

*Transmitted via Electronic Mail*

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Subject:

Semi-Annual Progress Report No. 4  
Revitalizing Auto Communities Environmental Response (RACER) Trust  
Buick City Site, Flint, Michigan

Reference:

30121887

Date:

October 14, 2022

Dear Mr. Bridgford:

On behalf of Revitalizing Auto Communities Environmental Response Trust (RACER), Arcadis of Michigan, LLC (Arcadis) is submitting this Semi-Annual Progress Report No.4 to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) in accordance with Section 8.9.3 of the RACER Trust's Corrective Action Consent Order (Consent Order), MMD Order No. 111-02-2020 for the Buick City Site located in Flint, Michigan (the Site) (**Figure 1**), which was effective on August 5, 2020.

This Semi-Annual Progress Report No. 4 covers the period of April 1 through September 30, 2022, and briefly summarizes the work performed to date, data collected, problems encountered, project schedule, and estimated percent complete for a list of ongoing Site activities. Areas of the Site and specific Site features discussed herein are presented on **Figure 2** (Northend of the site), **Figure 3** (Southend of the Site), and **Figure 4** (Bldg 04 and Hamilton Avenue Areas).

### **1. Work Performed**

The list below provides a summary of the work conducted from April 1 through September 30, 2022, at the Buick City Site. Site work included completing 100 soil borings and collecting approximately 286 soil

samples, 60 sediment samples, 16 plant samples, 167 groundwater samples, three surface water samples, and 100 storm/sanitary sewer samples.

- On April 14, 2022, the lagoon was identified to be overflowing into James P. Cole Boulevard. A sample of the overflow was collected and submitted for PFAS analysis. Also, on April 14, 2022, a berm was placed on the east side of the lagoon and flow from the lagoon was diverted onsite to a field south of the lagoon. Subsequent activities completed to identify and mitigate the source of water causing the lagoon to overflow (water line leak), to dewater the lagoon, and subsequently fill the lagoon are summarized below.
- On April 26, 2022, an investigation of the Outfall 011 storm sewer was completed. The investigation included completing a video inspection, noting flow present in laterals, and collecting samples from laterals and manholes along the storm sewer main.
- In April, two deep and two shallow injection wells were installed in the Building 04 area in preparation for the tracer test. In addition, eleven dose-response monitoring wells were installed adjacent to the injection wells to monitor the dye movement during the injection phase.
- In April and May 2022, the Outfall 003/004 Stormwater Treatment System was taken offline and decommissioned.
- In April and May 2022 investigation activities were completed to attempt to locate the source of the broken water line contributing to the overflow of the lagoon. Investigation activities included analyzing samples of water flowing from the western lagoon into MH 100-10 were collected from the Outfall 100 storm sewer for chlorine and fluoride; gauging wells in the area; conducting inspections, survey, and video of manholes; installing a plug at MH 100-10 and coordinating with City of Flint to attempt to identify the location of the leak and eliminate it.
- In May and June 2022, planning and dewatering activities were conducted at the lagoon in preparation for treating the impacted soils/sediment in the lagoon area and backfilling the former lagoon. The lagoon water, which contained elevated concentrations of PFAS, was pumped, treated with granular activated carbon, and subsequently discharged to the City of Flint sanitary sewer. This work was performed under a permit obtained from the city.
- In May 2022, the Yearly Trend Monitoring Report and PCB-Minimization Plan Report were prepared and submitted via MI-Waters.
- In July 2022 filling of the Lagoon began. This included removing and grinding up the phragmites and placing them back into the lagoon and treating the sediment inside the lagoon for PFAS impacts with various binding agents. The lagoon was also backfilled with a PFAS-impacted soil stockpile

adjacent to the lagoon, and approximately 6,000 cubic yards of PFAS-impacted soil surrounding the lagoon, including soils in the right-of-way adjacent to James P. Cole Boulevard. The stockpile and the surrounding soil were also treated with various binding agents before placing the material into the lagoon. The area where the surrounding soil was removed was backfilled with clean soil. The lagoon was further filled with over 20,000 cubic yards of clean soil material removed from the I-69 road construction project in Flint.

- On June 14, 2022, a plug was placed in the lateral discharging into manhole MH 3-6 to aid in determining its' effect on PFAS concentrations in the Outfall 003 storm sewer.
- On July 15, 2022, welds associated with the Outfall 002 lined manholes were repaired.
- In June tracer test preparation work continued by completing an injection rate test on the four injection wells to estimate injection flow rates for the tracer test.
- In June and July an investigation was conducted at the Building 86 Area to attempt to identify the source of PFAS entering the Outfall 005 storm sewer.
- In June and July preparations were completed for the decommissioning of Oil Interceptor #2. The field activities are slated to be completed in November/December 2022.
- On July 15, 2022, an evaluation of the Site storm sewers was completed to attempt to quantify dry weather flow.
- On July 28, 2022, an investigation was completed within Outfall 011 storm sewer to try and determine whether the PFAS impacts were primarily associated with main or laterals.
- On August 9, 2022, an excavation was completed at PCB Area #3 to remove PCB impacts > 50 ppm.
- On August 17, 2022 samples were collected from Outfall 001 at manholes MH 1-7 (upgradient of the ASW/former RACER property) and MH 1-3 (downgradient property boundary of the ASW/former RACER property), in conjunction with EGLE collecting samples downgradient at the Lockhart Chemical property.
- In August and September 2022, the annual review and update of the SWPPP was completed.
- On September 6, 2022, additional samples were collected from Outfall 013 to investigate periodic elevated detections of PFAS.
- On September 9, 2022, a soil berm was placed at the Southend of the Site on Division Street (vacated) to prevent Site runoff from flowing onto Hamilton Avenue.

- In September tracer testing activities by collecting baseline groundwater samples from the injection wells and the dose-response monitoring wells. These samples were analyzed for PFAS and for the dyes that will be used during the tracer test. The tracer test was started at the end of September in the two deep injection wells.

In addition to the specific Site activities noted above, various Site investigation activities were completed as listed below:

- LNAPL gauging and transmissivity testing were completed in June and July. Select wells associated with LNAPL Areas 7 and 10 were measured for the presence of LNAPL and transmissivity testing was completed to evaluate the potential of recoverability in these areas.
- PFAS soil and groundwater delineation investigation continued at the Former Aeration Lagoons in the Northend of the Site and Building 04, Factory 84 and Factory 86 Areas in the Southend of the Site.
- Groundwater elevations have been collected in monitoring wells near Hamilton Avenue and the lagoon every two to three weeks to monitor changes in groundwater levels as interim measures are completed.
- Historic detections of lead, arsenic and PCBs were identified in the historic database at concentrations warranting further investigation. Soil sampling activities began in mid-September and are ongoing.
- A soil lead investigation is being completed at the Site to delineate the detections of lead greater than 600 ppm. In addition, select samples are being submitted for TCLP analysis.
- Samples were collected from select manholes along storm sewer Outfall 001, 002, 003, 004, 006, 010, 011, and 013 to evaluate current conditions.
- Wet weather samples were collected from the Outfall 003 and 011 as required for the NPDES permit annual wet weather sampling event.
- Additional PFAS investigation samples were collected from the sanitary sewer in Hamilton Avenue.
- NPDES required weekly PCB sampling was completed in the Outfall 003 storm sewer.

## **2. Data Collected**

The samples collected as part of Site investigation or monitoring activities since April 1st are discussed below.

### **2.1 Storm Sewer Water Samples**

### *2.1.1 NPDES Sampling*

As required per Part 1, Section A 2 in the current National Pollution Discharge Elimination System (NPDES) Permit No. MI0001597, weekly composite samples were collected from Monitoring Point 003A. This data will be included in the 2022 Yearly Pollutant Minimization Plan (PMP) for PCBs reports, which will be submitted to EGLE as required in the NPDES permit.

### *2.1.2 PFAS Sampling*

In addition to the NPDES samples, storm sewer samples were collected from multiple storm sewers from April through September and analyzed for PFAS, as part of various investigation and/or monitoring activities at the Site, as follows:

In April, the following storm sewer samples were collected:

- Five samples were collected from select manholes along the Outfall 002 storm sewer at the Northend of the Site.
- Two samples were collected from Outfall 010 at the Southend of the Site.
- Eight samples were collected from select manholes and laterals along the Outfall 011 storm sewer at the Southend of the Site.

In June, the following storm sewer samples were collected:

- Two samples were collected from select manholes and lateral along Outfall 003 at the Northend of the Site.

In July, the following storm sewer samples were collected:

- Three samples were collected from select manholes along the Outfall 002 storm sewer at the Northend of the Site.
- One sample was collected from MH 4-2 along Outfall 004 at the Northend of the Site.
- Twenty samples were collected from select manholes and laterals along the Outfall 011 storm sewer at the Southend of the Site.
- Four samples were collected from select manholes along the Outfall 013 storm sewer at the Southend of the Site.

In August, the following storm sewer samples were collected:

- Two samples were collected from select manholes along the Outfall 001 storm sewer located in the Northend of the Site.

- Eight samples were collected from select manholes along the Outfall 002 storm sewer at the Northend of the Site.
- Eight samples were collected from Outfall 003 and select manholes at the Northend of the Site.

### *2.1.3 Various Constituent Sampling*

In addition to the NPDES samples, storm sewer samples were collected from multiple storm sewers from April through September and analyzed for various parameters (non-PFAS related), as part of various investigation and/or monitoring activities at the Site, as follows:

In July, the following storm sewer samples were collected:

- One sample was collected from the Outfall 010 manhole MH10-1A and analyzed for metals to evaluate post bulkheading conditions.
- One sample was collected from the Outfall 002 manhole MH2-18 and analyzed for copper and silver to evaluate post re-route conditions.

In August, the following storm sewer samples were collected:

- One wet weather sample was collected from the Outfall 003 monitoring point (MH 3-3) and submitted for PCB analysis as required by the NPDES permit.
- One wet weather sample was collected from the Outfall 011 monitoring point (MH 11-6) and submitted for laboratory analysis of copper as required by the NPDES permit yearly wet weather sampling event.
- One dry weather sample was collected from Outfall 013 manhole 13-6 and analyzed for mercury.
- One sample was collected from the Outfall 003 manhole MH3-3 and analyzed for copper, mercury, and silver to evaluate post re-route conditions.
- One sample was collected from the Outfall 002 manhole MH2-18 and analyzed for mercury to evaluate post re-route conditions.
- Two samples were collected from the Outfall 001 manholes MH 1-3 and MH 1-7 and analyzed for mercury.

In September, the following storm sewer samples were collected:

- One sample was collected from the Outfall 006 manhole MH6-2 and analyzed for mercury to evaluate current conditions.

### **2.2 Sanitary Sewer Water Samples**

The following samples were collected and submitted for PFAS analysis:

- In July 2022, two samples were collected from select sanitary sewer manholes along Hamilton

Ave.

### **2.3 Groundwater Samples**

In April, the following samples were collected and submitted for laboratory analysis of PFAS except as noted below:

- Two samples were collected from wells downgradient of former Factory 36 and analyzed for 1,4-dioxane, arsenic, and manganese.
- Eighty-eight samples were collected from monitoring wells installed along Hamilton Avenue and in the Factory 04 Area.

In May, the following samples were collected and submitted for laboratory analysis of PFAS:

- Twenty-nine samples were collected from monitoring wells installed near Hamilton Avenue and in the Factory 04 area.

In June, the following samples were collected and submitted for laboratory analysis of PFAS:

- Nine samples were collected from monitoring wells installed in the Factory 86 area.

In July, the following samples were collected and submitted for laboratory analysis of PFAS:

- Six samples were collected from monitoring wells installed along Hamilton Avenue
- Ten samples were collected from monitoring wells in the Factory 86 area.
- Eighteen samples were collected from monitoring wells in the Eastern Lagoon area.

### **2.4 Surface Water**

On July 25, 2022, two surface water samples were collected from rainwater ponded in the lagoon area and submitted for PFAS analysis.

### **2.5 Soil Samples**

In April the following soil samples were collected and submitted for analysis.:

- On April 20, 2022, four soil samples were collected from PCB Area #1 and submitted for PCB analysis and 10 soil samples were collected from Soil Impact Area #18 and submitted for manganese analysis.
- On April 21, 2022, four soil samples were collected at PCB Area #7 and submitted for PCB analysis; eight soil samples were collected from four locations at Soil Impact Area # 11 and submitted for benzo(a)pyrene analysis; five soil samples were collected from two locations at Soil

Impact Area # 13 and submitted for lead analysis; and two lead soil samples were collected from a location at Soil Impact Area #30 and submitted for lead analysis.

In May the following soil samples were collected and submitted for analysis:

- On May 3, 2022, three soil samples were collected from PCB Area #12 and submitted for PCB analysis; two samples were collected from Soil Impact Area #11 and submitted for benzo(a)pyrene analysis; and two lead soil samples were collected from Soil Impact Area #30 and submitted for lead analysis.

In June the following soil samples were collected and submitted for analysis:

- On June 6- 7, 2022, 38 soil samples were collected from eight locations in the Factory 86 area and submitted for PFAS analysis.
- June 8-15, 2022, 44 soil samples were collected from 14 locations in the Lagoon area and submitted for PFAS analysis.
- June 28, 2022, nine soil samples were collected from four locations in the Lagoon area and submitted for PFAS analysis.

In July the following soil samples were collected and submitted for analysis:

- July 13-14, 2022, 23 soil samples were collected from four locations in the Factory 86 area and submitted for PFAS analysis and eight soil samples were collected from four soil borings in the Lagoon area and submitted for PFAS analysis.

In August the following soil samples were collected and submitted for analysis:

- On August 23, 2022, seven soil samples were collected from five locations and submitted for Lead (total and TCLP) and PFAS analysis.

In September the following soil samples were collected and submitted for analysis:

- On September 22, 2022, 33 soil samples were collected from 9 locations in the Factory 40 area and submitted for lead analysis.
- On September 23, 2022, 16 soil samples were collected from 5 locations in the Factory 81 area and submitted for lead analysis.
- On September 26, 2022, 12 soil samples were collected from 4 locations in the Factory 40 area and submitted for lead analysis.
- On September 27, 2022, 14 soil samples were collected from 5 locations in the Factory 02 area and submitted for lead analysis.

- On September 28, 2022, 19 soil samples were collected from 8 locations in the Factory 02 and Factory 10 areas and submitted for PCB analysis.
- On September 29, 2022, 15 soil samples were collected from 5 locations in the Factory 10 area and submitted for PCB analysis.
- On September 30, 2022, 10 soil samples were collected from 2 locations in the Factory 10 area and submitted for PCB analysis.

### **2.6 Sediment and Soil Samples**

Between June 30 and August 10, 2022, 60 sediment and soil samples were collected from the lagoon area and submitted for PFAS analysis.

### **2.7 Biota Samples**

On June 30, 2022, 16 samples were collected from various parts of phragmites plants growing in the lagoon and submitted for PFAS analysis.

## **3. Problems Encountered**

### **3.1 Daylighting at Lagoon/City Water Leak – James P Cole**

During a Site visit conducted on April 14, 2022, water from the former aeration lagoon was found to be overflowing the east end of the lagoon onto James P Cole Blvd. An emergency response was initiated on April 14 to place a berm on Site, east of the lagoon eliminating the discharge to the road. The overflow was temporarily diverted on Site to a field south of the lagoon while the source of the water into the lagoon (broken City water line) could be located and addressed. In May 2022 the City located the suspected leaking water line and disconnected it. In June 2022 the lagoon was dewatered in preparation to be permanently abandoned by filling with soils.

### **3.2 Hamilton Ave /Outfall 011 Impacts**

Recent groundwater levels and PFAS analytical data have indicated an increase in groundwater levels and PFAS concentrations in Hamilton Avenue and downgradient of the Site on the Lear (former RACER) property. In addition, samples collected from select Outfall 011 storm sewer manholes show an increase in PFAS concentrations. Additional investigations and inspections are currently being completed to identify the cause of the concentration increases. However, implementation of any additional IMs will not be implemented until the conclusion of the tracer testing, as any changes to Site conditions could adversely affect the results of the testing.

### **3.3 Tracer Test Short Circuiting**

In September 2022, dye that had been injected into the two deep tracer injection wells was observed in both of the corresponding adjacent shallow injection wells. It was determined that “short-circuiting” of the dye was occurring between the deep injection and shallow injection wells. The cause of the short circuiting is being investigated but is thought to be due to nearby exploratory borings that may have been improperly abandoned, and/or voids created along the deep well casing created during the drilling. The exploratory borings will be overdrilled and abandoned with injected cement grout or bentonite and the deep injection wells will also be abandoned. A decision on whether to complete the tracer test in the deeper zone is under review now.

### **4. Project Schedule – Near-Term Milestone Activities Anticipated During the Next Semi-Annual Period**

Site work for the fourth quarter of 2022 and the first quarter of 2023 includes the following ongoing Site Activities:

- Continue to perform inspections and maintenance (as necessary) of Outfalls 002, 003, 004, and 005 until WRD ACO is signed. Dispose of waste as necessary.
- Continue to perform inspections of Oil Interceptor #2 until it is decommissioned.
- Continue Outfall 003A weekly sample collection for PCBs, until WRD ACO is signed.
- Continue quarterly P-trap inspections associated with the French drain flowing into the Outfall 005 storm sewer per the PCB Pollutant Minimization Plan under the NPDES permit.
- Continue semi-annual SWPPP inspections.

In addition, the following activities are planned to be continued/completed in fourth and first quarters.

- Cleaning/decommissioning of Oil Interceptor #2
- Complete semi-annual SWPPP Report for the NPDES permit
- Continue delineation of Site PFAS impacts
- Complete Feasibility Study and Interim Measures Workplans for Building 04 Area, Former GM Foam Generation Building and Outfall 005 storm sewer, pending approval of the CAF.
- Continue addressing PFAS impact at Outfalls and sanitary sewer

- Resume and continue the tracer test in the shallow aquifer zone.
- Complete the filling of the lagoon.

#### **5. Estimated Percent Complete**

This section presents a percentage complete for action items outlines in the CACO:

- Reconcile List of AOIs, AOCs, TSCA areas, etc. (Due Nov 3, 2020) – 100%
- Meeting with EGLE to discuss CA objectives, expectations, etc. (Due August 20, 2020) -100%
- Establish public repository (Due September 4, 2020) – 100%
- Public Involvement/Communications Plan (Due September 4, 2020) – 100%
- Corrective Action Framework (Due Nov 3, 2020) – 100%
- List of electronic files submitted to EGLE (Due February 1, 2021) – 100% (Note that EGLE did not request that the actual electronic files could be submitted in batches following the February 1 submittal. That process is ongoing.)
- Semi-annual progress reports – ongoing
- Need to identify investigation, further corrective action or EGLE approved institutional control for WMU 2, WMU 3, WMU 4, WMU 5, WMU 7 and WMU 10 – 15%
- CMS workplan (Due 90 days after approval of CAF) – 0%
- CMS field work (to start within 30 days of CAF WP approval) – 0%
- CMS Report (Due 60 days after completion of CMS activities) – 0%
- CM Implementation Plan (Due within 90 days of EGLE approval of the CMS) – 0%
- CA440 Remedy Decision (Due 10/15/22) – 0%
- C550RC Remedy Constructed (Due 12/31/24) – 0%
- CA800YE Ready for Reuse (6/1/24) – 0%
- CA 900Cr Performance Standards Attained (Due 9/30/26) – 0%
- CA750 – Re-Evaluated for PFAS – 0%

If you have any questions, please contact me.

Sincerely,

Mr. Dale Bridgford  
October 14, 2022

Arcadis of Michigan, LLC



Micki Maki  
Senior Technical Lead

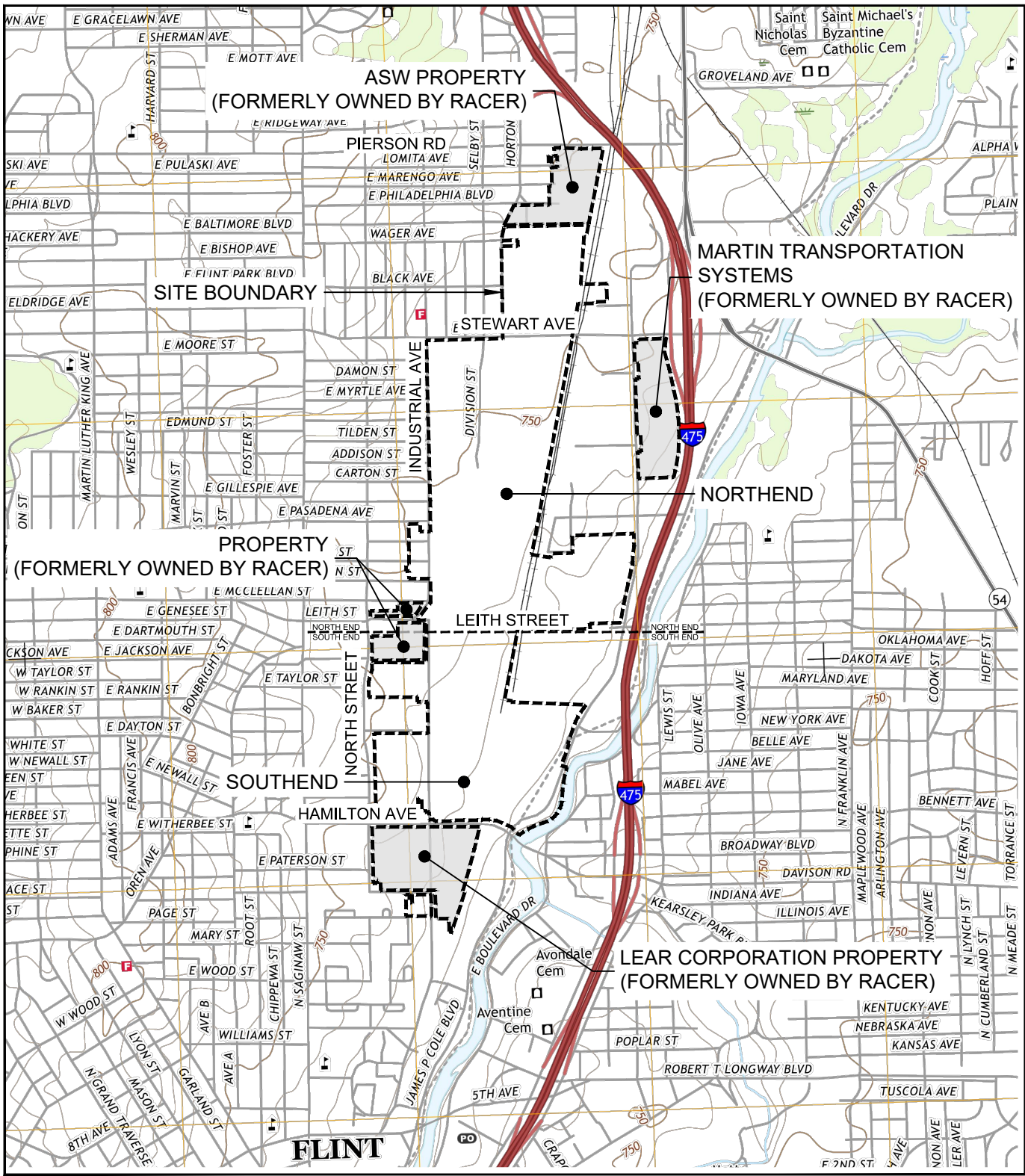
Copies:

Grant Trigger, RACER Trust (via email)  
Dave Favero, RACER Trust (via email)  
Flint Public Library

Attachments:

Figure 1 – RACER Buick City Site Map  
Figure 2 – Northend Work Locations  
Figure 3 – Southend Work Locations  
Figure 4 – Hamilton Avenue Work Locations

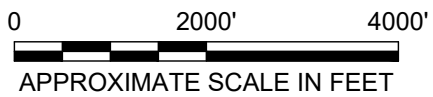
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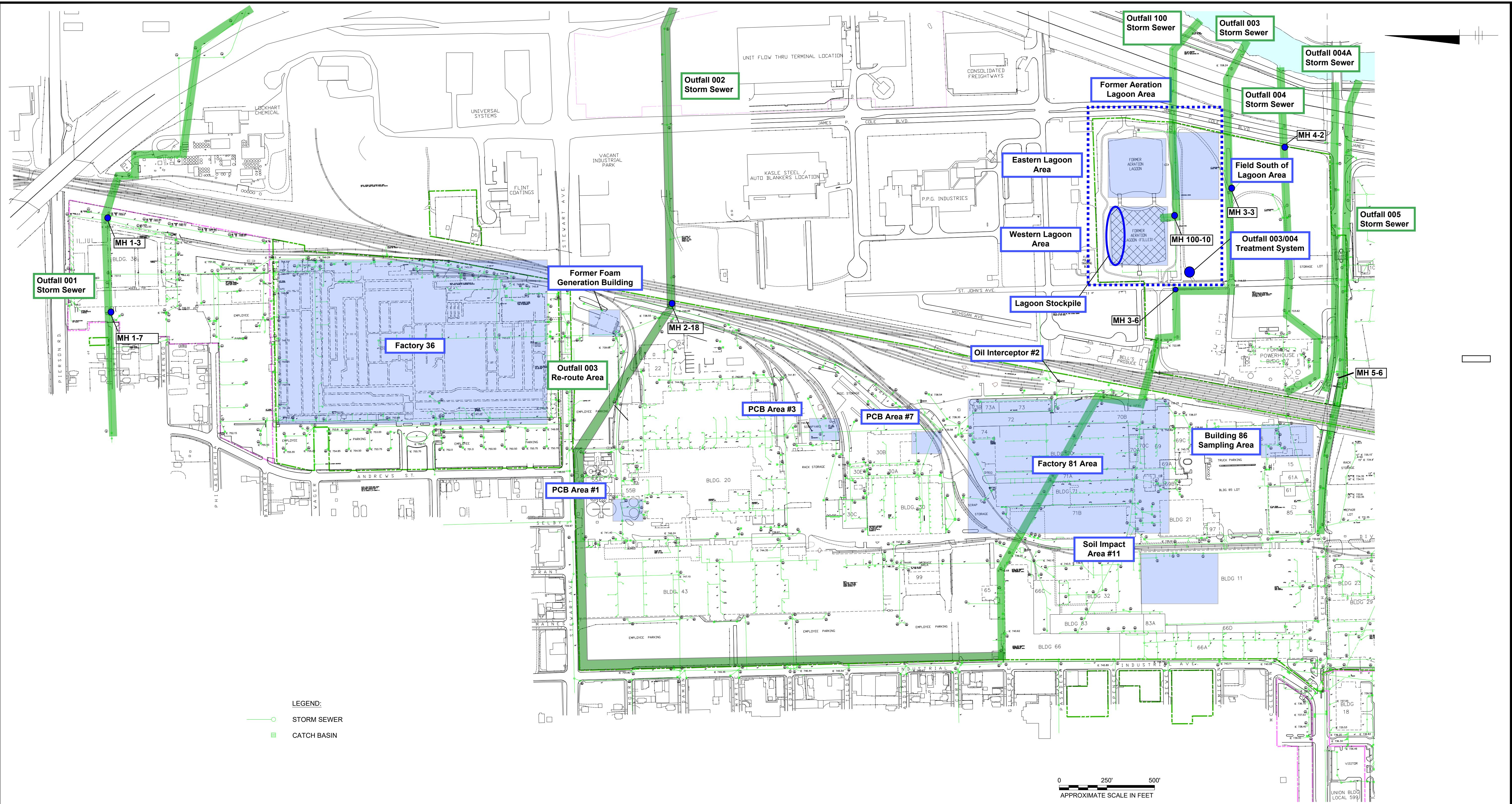


AREA LOCATION  
 MICHIGAN



RACER TRUST BUICK CITY FLINT, MICHIGAN	
<b>SITE LOCATION MAP</b>	
	Design & Consultancy for natural and built assets
FIGURE <b>1</b>	

CITY OF FLINT: DIVISION OF ENVIRONMENTAL SERVICES, 100 N. SANFORD ST., FLINT, MI 48906  
C:\Users\jbarber\OneDrive\Documents\Projects\Flint\Buck\City\RCRA\2021\01\01\GIS\RTS-F-STORM SEWER.dwg LAYOUT\_2\_SAVED\_4/14/2021 10:52 AM  
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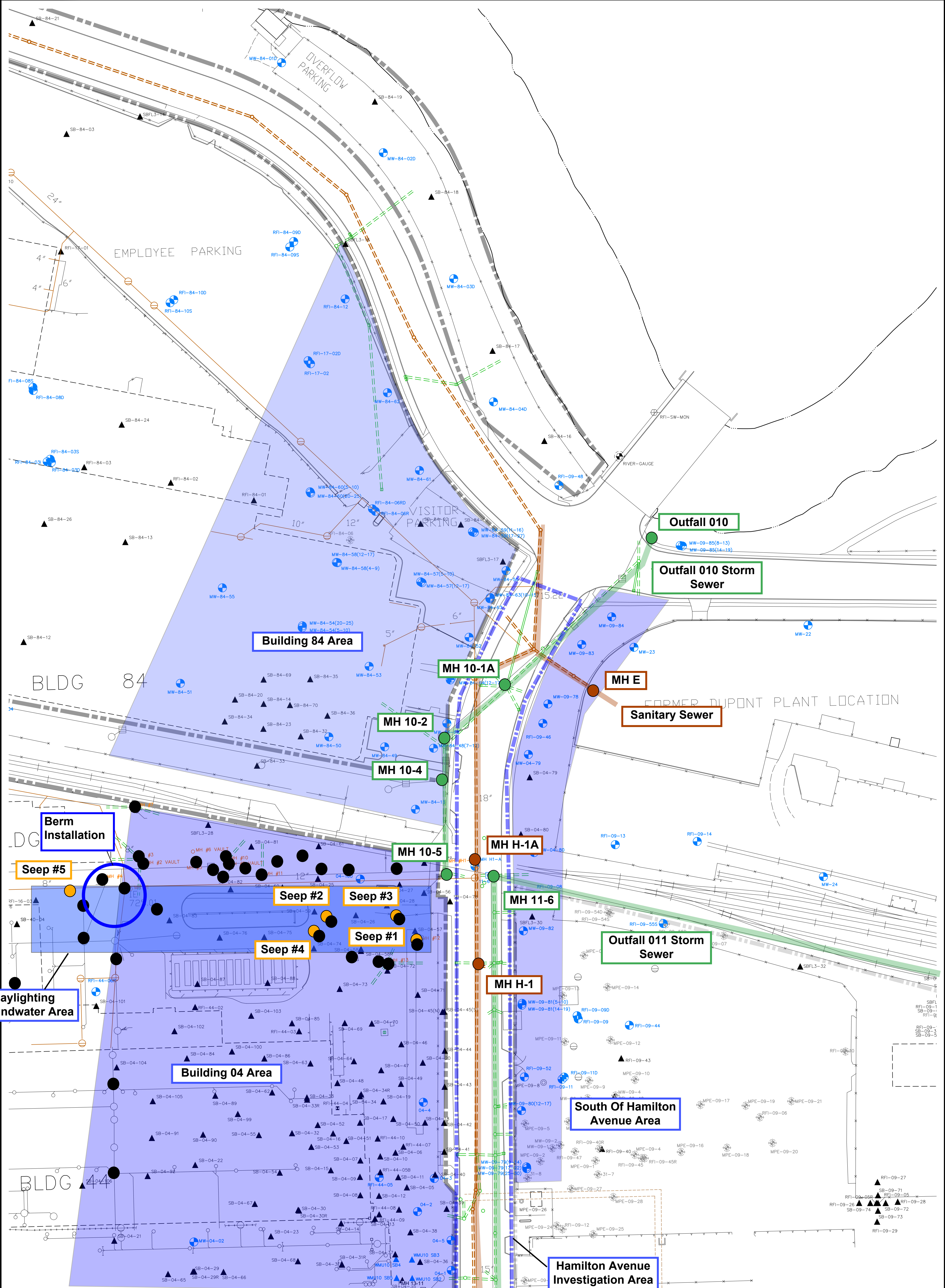
RACER TRUST  
BUICK CITY  
FLINT, MICHIGAN

**NORTHEND WORK AREAS**

**ARCADIS** Design & Consultancy  
for natural and built assets

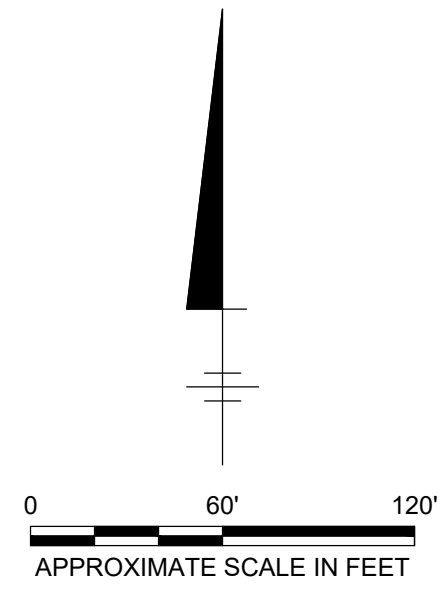
FIGURE  
**2**





**LEGEND:**

▲ SOIL BORING	⊗ RIVER GAUGE
⊗ ABANDONED MONITORING WELL	⊗ UNABLE TO LOCATE
⊕ MONITORING WELL (ACTIVE)	— HISTORICAL STORM SEWER LINE
⊖ PIEZOMETER	— STORM SEWER LINE (2018)
⊙ RECOVERY WELL	— SANITARY SEWER LINE
⊚ SOIL GAS POINT	--- RACER TRUST PROPERTY FORMER
⊛ SUB-SLAB MONITORING POINT	--- RACER TRUST PROPERTY
● TRANSECT POINT	● MANHOLE FILLED WITH CONCRETE
⊕ SURFACE WATER	



RACER TRUST  
 BUICK CITY  
 FLINT, MICHIGAN

**BLDG 04/HAMILTON AVENUE  
 WORK AREAS**

**ARCADIS** Design & Consultancy  
 for natural and  
 built assets

FIGURE  
**4**