Consent Decree Compliance Report #4

(Civil Action No. 1:24-cv-10290)

October 2025

(April 2025 to September 2025)

Lowell Regional Wastewater Utility

NPDES Permit Number: MA0100633
Report Due Date: October 31, 2025

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CONCENT DECREE COMPLIANCE REPORT #4

CERTIFICATION STATEMENT

I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

10/31/2025

Aaron Fox
Chief Utility Officer
Lowell Regional Wastewater Utility

Date

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1. Introduction

1.1 Overview

The Lowell Regional Wastewater Utility (The Utility) is a public utility located in Lowell, Massachusetts that owns, operates, and maintains a wastewater collection system comprised of a combined sewer system dating to the 1800s, newer separated sewer conveyance systems, an extensive stormwater drainage system, and a flood protection system. Wastewater flow is conveyed to the Duck Island Wastewater Treatment Facility (Duck Island) that delivers efficient secondary-level treatment of dry-weather sewage flows as well as wet-weather flows up to 112 million gallons per day (MGD).

The Utility's mission is to effectively manage wastewater and stormwater transport and treatment systems in a professional manner and strives to provide reliable, cost-effective, high-quality services that protect public health, promote environmental stewardship, and deliver outstanding service to our customers.

1.2 Utility Operations

The Utility's sewer system consists of approximately 226 miles of gravity sewers with 14 sewage pumping stations. Nine miles of large-diameter (36-inch to 120-inch) interceptors are located along the banks of the Merrimack and Concord Rivers and collect wastewater from the sewer system and convey it to Duck Island. Duck Island was designed to provide biological (activated sludge) treatment for an average dry-weather design flow of 32 million gallons per day (MGD). A map of the interceptor system is provided in *Figure 1-1*.

During wet-weather conditions, a maximum flow of approximately 112 MGD is processed at Duck Island. Flow exceeding the capacity of the biological and secondary clarifier systems (secondary treatment systems) results in activation of the High-Flow Treatment mode (as discussed in the Utility's High Flow Management Plan, *Appendix A*). Under the High-Flow Treatment mode, wet weather flow that exceeds secondary treatment capacity receives screening and primary clarification and then the flow is bypassed around the secondary treatment systems and is pre-chlorinated before being mixed with secondary treatment effluent. This mixture is then disinfected and discharged into the Merrimack River in compliance with the Utility's National Pollutant Discharge Elimination System (NPDES) effluent permit (MA0100633) requirements.

Flow that exceeds the Duck Island High-Flow Treatment capacity is stored in the interceptor system through an automated network of gates controlled by computational algorithms designed for this purpose and implemented in a Supervisory Control and Data Acquisition (SCADA) system. Flows to the collection system that exceed this interceptor storage capacity are diverted as combined sewer overflows (CSOs) to the Merrimack River, the Concord River and Beaver Brook, as necessary to prevent sewer system surcharges that may cause sewage back-ups into homes and streets.

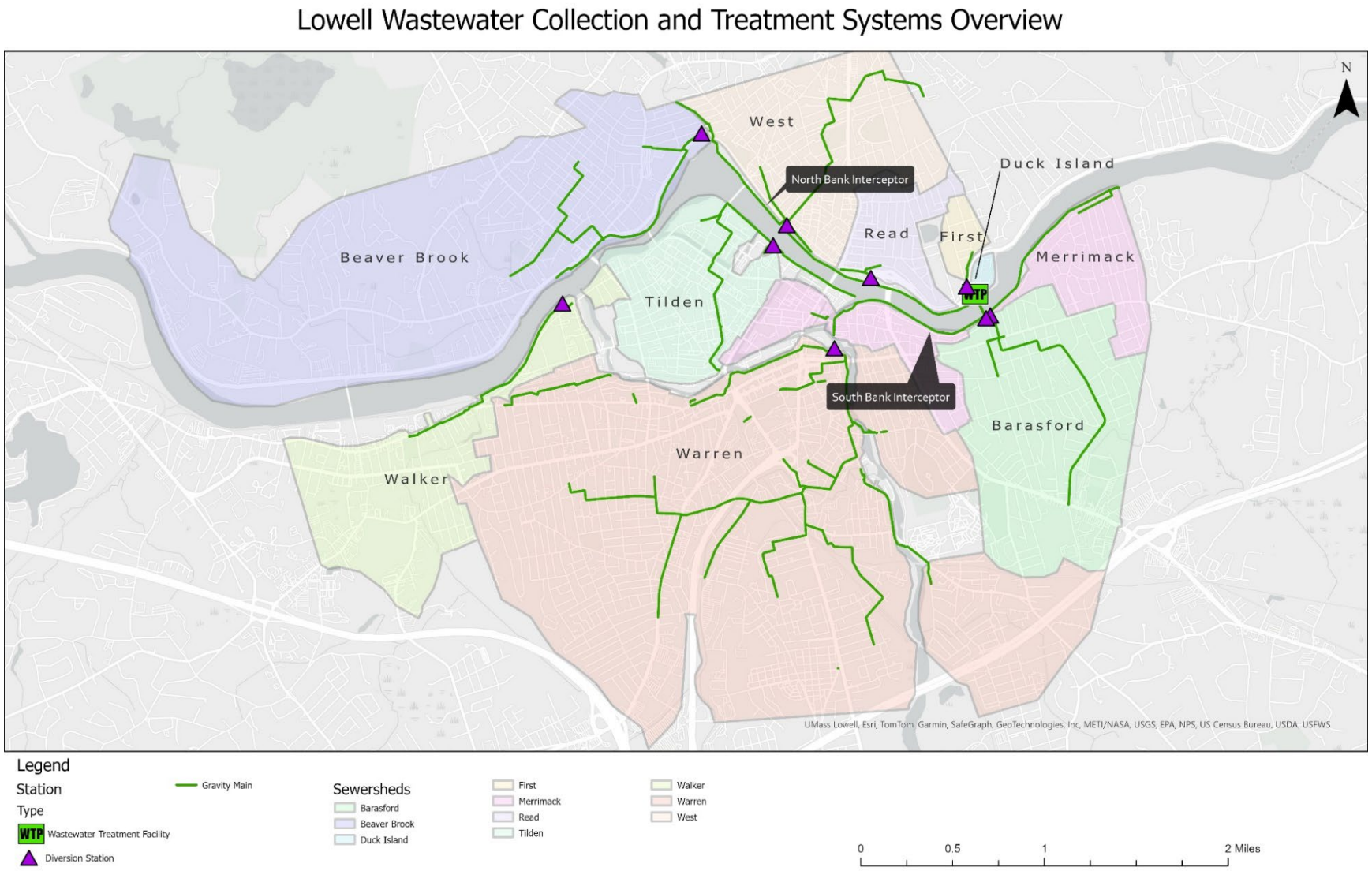

Figure 1-1. Lowell Wastewater Collection and Treatment Systems Overview

1.3 Consent Decree

In 2023, the regulatory agencies, along with the U.S. Department of Justice and the Commonwealth of Massachusetts Department of Justice, and the City and the Utility completed negotiations to develop a new Consent Decree (CD) with remedial measures to address violation findings (NPDES permit, Section 301(a) of the Clean Water Act and provisions of the 2003 Small MS4 General Permit). The CD was fully executed and filed with the US District Court on May 17, 2024 (Case: 1:24-cv-1290-DJC, Document 13).

As part of the CD, the City is required to submit a Compliance Report to the state and federal agencies for the previous six-month period, referred to as the Reporting Period (CD Paragraph 40). The bi-annual Reporting Periods run from October 1st thru March 31st and from April 1st thru September 30th, with the Compliance Reports due on April 30th and October 31st for the previous period.

The Compliance Report shall include:

a) A description of the activities undertaken during the Reporting Period directed at achieving compliance with the Consent Decree,

b) Identification of all plans, reports, and other deliverables required the Consent Decree that have been completed and submitted during the Reporting Period, and

c) A description of the expected activities to be taken during the next Reporting Period in order to achieve compliance with the Consent Decree.

This October 2025 Six-Month Compliance Report (Compliance Report #4) summarizes the Utility's compliance with the CD. *Appendix A* provides links to the NPDES and CD compliance reports that are submitted to the regulator agencies.

1.4 Unanticipated Compliance Challenges

Over the past six months, compliance challenges associated with the Article 97 conversion process have affected the implementation schedule for the Centralville Sewer Separation Program Phase 1 – Mainline Conduit Project. Land acquisition subject to the state's Article 97 conversion process is required, which necessitates extensive coordination with multiple state agencies and approval by the state legislature. The City, MassDEP and EPA have conducted regular meetings to review the status of the article 97 conversion process.

2. Overview of the Compliance Activities

Table 1 provides a summary of the CD Deliverables (with associated Paragraph), and a summary of activities performed by the Utility for the last six months of the reporting period and the next six months of the reporting period. In some cases, the Utility will provide additional information on the current status of each of these activities in the following sections of this report. Additional information can be found in the following sections:

- Section 3 - *Centralville (Humphrey's Brook) Drain Area Sewer Separation Program*
- Section 4 - *Phase 3 Sewer Separation Program*
- Section 5 - *Infiltration/Inflow Reduction Program*
- Section 6 - *Capacity, Management, Operation, & Maintenance (CMOM) Program*
- Section 7 - *Stormwater (MS4) Compliance Program*
- Section 8 - *Geographical Information System (GIS)*
- Appendix A - *NPDES and CD compliance reports.*

Table 1 Summary of Consent Decree Activities

Document Deliverable	CD Paragraph	Deadline	Compliance Progress in the Respective Period	
			Last Six Months (April 1, 2025, to September 30, 2025)	Next Six Months (October 1, 2025, to March 31, 2026)
Centralville Area Sewer Separation Preliminary Design Report (PDR) (Humphrey's Brook)	10	Dec. 31, 2023	The revised Centralville PDR was submitted on July 31st, 2024 to address comments from MassDEP and USEPA provided in a letter dated March 5, 2024 (on the original PDR submitted on December 31, 2023). The Revised PDR was approved by MassDEP and USEPA on November 6th, 2024.	
Centralville Area Sewer Separation Removal of Humphrey's Brook and Dracut Surface Flows (Phase 1)	10.b.i	Dec. 31, 2027	Public bidding closed and Albanese D&S was the winning low bidder and awarded the construction contract. The bid has been extended to November 30th to finalize the Article 97 conversion process. Attended multiple public neighborhood meeting with the Centralville Neighborhood Association and the Lowell Folk Fest. Additionally, secured services with a Public Relation firm to help support communication with creation of project logo, tri-fold document, and website improvements.	Finalize Article 97 conversion process and start construction. This will include utility test pits, submittal review, and sewer and water relocation. Coordination with National Grid to relocate gas mains. Attend neighborhood meetings with the Centralville Neighborhood Association.
Centralville Area Sewer Separation (Phase 2)	10.b.ii	December 31, 2031	All field services (borings, environmental data review, URAM, Survey, CCTV, manhole inspections) related to Phase 2A and Phase 2B were completed by August 2025. Initiated development of Phase 2A and Phase 2B 30% design drawings for drain corridor layout and identity utility conflicts that may require relocation. Initiated related specification development	Complete 90% design drawing and specifications for the Phase 2A project. Prepare and submit permit applications for the necessary permits. Complete 60% design drawing and specifications for the Phase 2A project and start the necessary permitting process for construction.
Phase 3 Areas Sewer Separation Preliminary Design Report (PDR)	11	Dec. 31, 2024	The Phase 3 Sewer Separation PDR was submitted on December 20, 2024. MassDEP and USEPA provided comments in a letter dated February 27, 2025, which the Utility responded to on March 28, 2025. The PDR was approved by MassDEP and USEPA on July 27th, 2025.	
Lower Highlands Area Sewer Separation (Phase 3A Lower Saunders)	11	Dec. 31, 2032	All field services (borings, Survey, CCTV, manhole inspections) related to Phase 3A were completed by September 2025. 60% design was completed and reviewed by City staff.	Submit the SRF Project Financial Assistance application package for CWSRF-19108: Phase 3A Sewer System Separation Project – Lower Saunders to SRF by October 3rd. Finalize drawings and specifications to prepare for bidding in March. Attend the November 10th Highlands Neighborhood meeting to make the public aware of the upcoming work.
Lower Highlands Area Sewer Separation (Phase 3B Grand	11	Dec. 31, 2032	Field services (borings, Survey, CCTV, manhole inspections) related to Phase 3B and Phase 3C are ongoing.	Initiate the Article 97 conversion process for the new canal outfalls associated with Phases 3B and 3C. Complete the scoped field investigations. Attend the November 10th

Document Deliverable	CD Paragraph	Deadline	Compliance Progress in the Respective Period	
			Last Six Months (April 1, 2025, to September 30, 2025)	Next Six Months (October 1, 2025, to March 31, 2026)
&3C - Pevey)				Highlands Neighborhood Association meeting to inform the public of the upcoming project activities.
LTCP Scope of Work	12	Sept. 1, 2032	No work occurred.	No planned work will occur.
LTCP Delivery	13	Sept. 1, 2034	No work occurred.	No planned work will occur.
CMOM Program Self-Assessment	14	Dec. 30, 2022	The CMOM Program Self-Assessment was submitted on December 30, 2022 (*Appendix A*).	
CMOM Corrective Action Plan	15/16	Dec. 19, 2024	The SSO Emergency Response Plan, IV.D.1 and IV.D.2, was drafted in preparation of the upcoming deliverable.	The SSO Emergency Response Plan, IV.D.1 and IV.D.2, is to be submitted by October 31, 2025. Conduct SSO training, IV.D.3, with the newly established SSO Emergency Response Plan. Initiate the review process of the Sewer Use Ordinance (SUO), III.F.1 and Force Mains (IV.B.3) to identify deficiencies.
CMOM Program Implementation Annual Report	17/19	April 30th yearly	No work occurred.	The 2025 NPDES Permit Annual Report (*Appendix A*) is to be submitted by April 30th, 2026. The CMOM Program Implementation Annual Report and the Co-Permittee I/I Analysis Annual Report will continue to be submitted as part of the NPDES Annual Report.
I/I Analysis Report	18	Jan. 31, 2024	The I/I Analysis Report was submitted on January 31st, 2024 with a supplemental memorandum report submitted on March 20th, 2025.	
I/I Implementation	18	Ongoing	SSES Phase 1 report was submitted on April 14th, 2025. Review of previous CCTV and flow data for the SSES Phase 1 construction project in the downtown neighborhood. Finalized scope and started to develop drawing set for the construction project. Prepare for ~94,000 LF of smoke testing	Submit the SRF Project Financial Assistance application package for CWSRF-19130 to SRF by October 3rd. Prepare final drawings and specifications to bid for SSES Phase 1 downtown work. Conduct smoke testing in November 2025 in sections of the downtown and highland neighborhoods.
High Flow Management Plan	20	April 30, 2023	The updated HFMP was submitted on April 30, 2023 and is linked in *Appendix A*. The Utility continues to implement and assess the performance of the High Flow Management Plan to minimize CSO discharges.	
Municipal Separate Stormwater Ordinances	21, 22, 23	March 31, 2024	Ordinances were voted on by City Council and became effective on January 2, 2024. The ordinances were submitted to the agencies on March 19, 2024.	
Implement Updated IDDE	24, 25, 26, 27 and 30	Dec. 31, 2023	The City continues to implement the draft IDDE program based on the December 31, 2023 submittal.	
Wet Weather Sampling Program	28	June 15, 2031	Wet-weather outfall inspections resulted in the collection of forty-four (44) samples. Results are included in *Table 5*.	Continue monitoring and sampling drainage outfalls for wet-weather flow.

Document Deliverable	CD Paragraph	Deadline	Compliance Progress in the Respective Period	
			Last Six Months (April 1, 2025, to September 30, 2025)	Next Six Months (October 1, 2025, to March 31, 2026)
Illicit Discharge Removal/Abatement	29		The City continued enforcement of its IDDE ordinance. One (1) illicit discharges was removed on April 29th from Lowell's MS4. GI/LID was not viable for removal.	The City will continue proper enforcement of its IDDE ordinance and to implement and enforce corrective measures to resolve known illicit discharges.
Semi-Annual IDDE Report	31	April 30th & Oct. 31st yearly	Work was performed to prepare the Semi-Annual Compliance Report for October 31, 2025.	Work will be performed to prepare the Semi-Annual Compliance Report for April 30, 2026.
Best Management Practices	32		GI/LID was not viable for the removal of illicit discharges found during this reporting period.	To be considered in the IDDE Program Implementation as illicit discharges are discovered.
Updated SWMP	33.a	Dec. 31, 2023	The Stormwater Management Plan was submitted on December 31, 2023 (*Appendix A*). The City will report on its progress on the SWMP in the annual MS4 Compliance Report.	
Phosphorus Source Identification Report	33.c (ii)	January 31, 2026	Separate stormwater catchments were delineated in GIS for the Lowell owned discharge points. Works continues towards finalizing the PSIR for submission.	City will finalize and submit the PSIR by January 31, 2026.
Phosphorus BMP Demonstration Plan	33.d	January 31, 2027	No work occurred.	No planned work will occur.
Existing Stormwater GIS	34	August 31, 2022	On August 31, 2022, the City submitted to EPA and MassDEP in electronic format the current version of the City's stormwater collection system and wastewater collection system geographic information system (GIS) map.	
Updated Stormwater GIS	35	Sept. 30, 2024	The updated Stormwater Collection System GIS Map was submitted on September 30, 2024 to MassDEP and EPA.	
Annual GIS Update	36	April 30th yearly	An updated link to the Updated GIS Map was submitted on April 30, 2025.	The Utility will continue to update the GIS Maps as new information is identified.
SSO and CSO Reporting Requirements	37, 38, & 39	Ongoing	The City is in compliance with State Regulations 314 CMR 12.03(8) and 314 CMR 16, and USEPA Regulations 40 CFR 122.63(f) for reporting and notification rules for SSO and CSO discharges. A summary of the annual SSO/CSO discharges for the City were provided in NPDES Permit Annual Report submitted on March 31, 2024.	
CD Semi-Annual Compliance Reports	40	April 30th & Oct. 31st yearly	Work was performed to prepare the Semi-Annual Compliance Report for October 31st, 2025.	Work will be performed to prepare the Semi-Annual Compliance. Report for April 30th, 2026.
Maintenance of Website	41	Ongoing	The City of Lowell's Website was updated and will continue to be updated for deliverables submitted to the agencies or prepared for public comment.	

3. Centralville (Humphrey's Brook) Drain Area Sewer Separation Program

The Consent Decree (CD) requires the Utility to develop a program to separate the combined sewer system in the Humphrey's Brook Drainage Basin in several phases. This includes the preparation and submittal of a Preliminary Design Report (PDR) (Paragraph 10) and the completion of two phases of final design and construction of the Separation Program (Paragraphs 10.b.i and 10.b.ii). The intent of the sewer separation program is to reduce CSO discharges. Additionally, the projects will remove three surface water inflow sources from Dracut that will also reduce the base sewer flow treated at Duck Island shown in *Figure 3-1*.

During the development of the PDR, the Utility renamed the project to Centralville to reflect the nomenclature the Lowell citizens utilize and the inclusion of additional combined sewer area within Centralville neighborhood that may also be considered for sewer separation to reduce CSO discharges.

3.1 PDR

The Utility contracted with CDM Smith Inc. (CDM) to assist in the planning, development, and execution of this program. In December 2023, the Utility submitted the Centralville Sewer Separation PDR, summarizing an approach to separate the combined sewer system in this neighborhood. The report includes assessment based on field investigation, extensive modeling to determine pipe conveyance, and 30% design drawings of the proposed separation plan.

MassDEP and USEPA completed a review of the PDR, submitted on December 31, 2023, and provided comments in a letter dated March 5, 2024. The comments focused on request for additional input on the use of green infrastructure strategies in the program, the Utility's proposal not to separate small portions of the combined sewer system because of hydraulic/river flood challenges, and the need to provide estimates of annual CSO discharge reduction and other benefits achieved by the separation program. The Utility and CDM Smith met with the agencies on May 10, 2024 to fully discuss the comments and provide further Utility input.

CDM Smith submitted the Centralville Revised PDR on July 31, 2024, based on the May 10, 2024 meeting, and established a recommended implementation plan for new drains to complete the sewer separation of the Centralville area, as shown in *Figure 3-1*. The implementation plan includes three phases of construction work that will meet the CD objectives and deadlines. The revised PDR was approved by the MassDEP and USEPA on November 6, 2025.

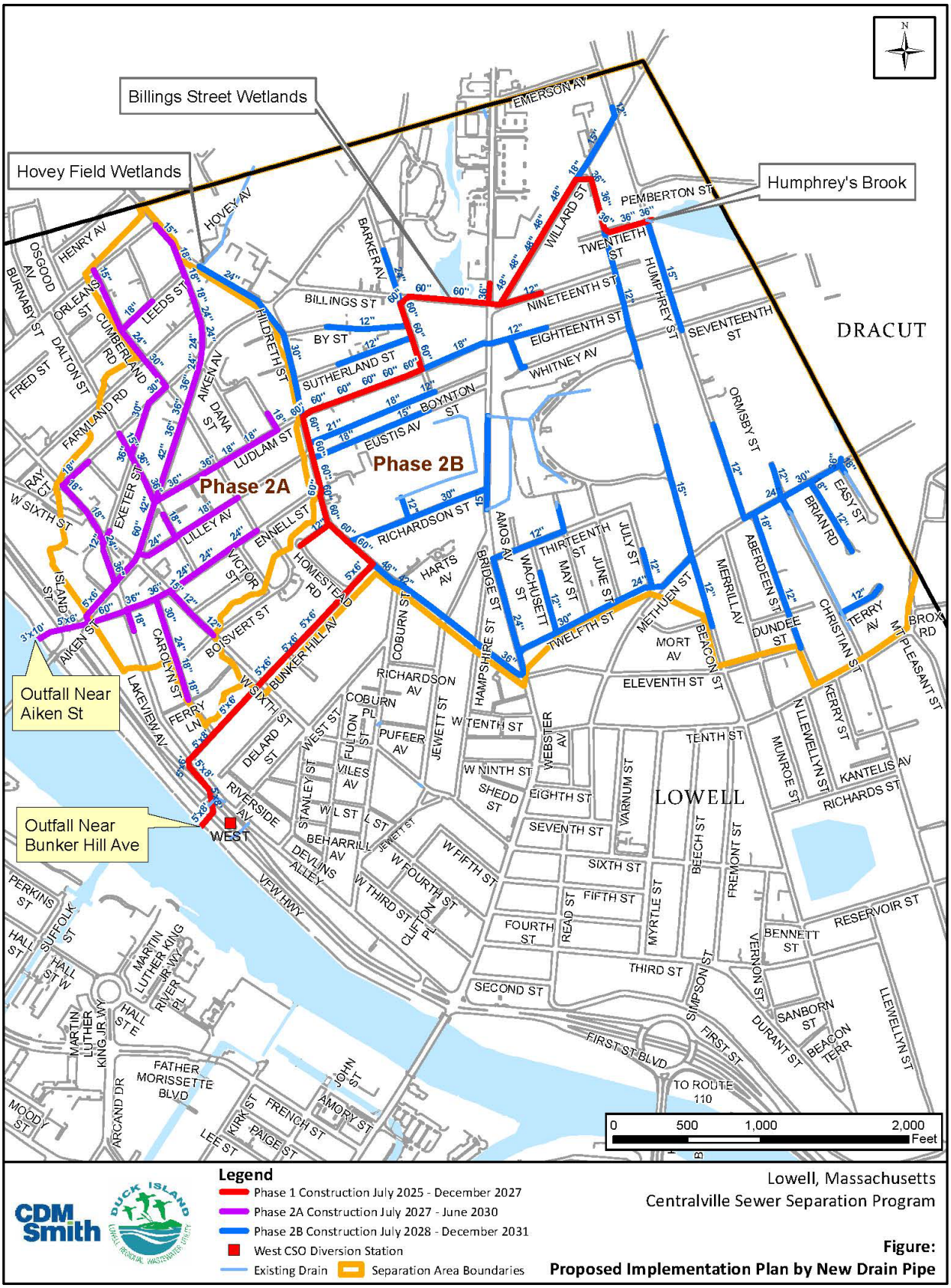

Figure 3-1 Centralville Sewer Separation

3.2 Phase 1 Design & Construction

The Phase 1 Final Design (Paragraph 10.b.i) requires the construction of the mainline drain conduit to remove the Humphrey's Brook and Billings Street Wetlands from the sewer system and this will entail the installation of a large diameter conveyance system ranging from 36 inches in diameter to a 5-foot by 8-foot box culvert and a new outfall (Bunker Hill) to the Merrimack River near the West CSO Station. The Phase 1 work is depicted in red on *Figure 3-1*.

3.2.1 Last Six Months of the Reporting Period

In the last six months, the Final Design work included the following:

- Continued integration with USACE, EEA (MEPA, EJ, and DCR), MassDOT, MassDEP/USEPA, and FEMA for all potential permitting documents include the USACE Section 408 Application, USACE 404 Permit, ENF/EIR, Massachusetts Historical Commission notification, MassDOT coordination and access permits as required, and NOI.
- Continued land acquisition for project, Article 97 and local easements.
- Completed SRF Loan application.
- Established a construction communication team.
- Worked with a public relations firm to develop project specific logo, literature, magnets, and project website to help with outreach to residents.
- Attended neighborhood meetings (May 14th, August 4th and September 8th) and Local events (Centralville Community Cookout and Lowell Folk Fest) to continue outreach to residents.
- Received construction bids, evaluated construction bids, and construction contract awarded.
- Start of construction delayed due to USACE permit issuance (September) and Article 97 legislation.
    - Continued updates and coordination with MassDEP and SRF prior to start of construction.

3.2.2 Next Six Months of the Reporting Period

In the next six months, the Final Design work will include:

- Coordinate with national grid on gas relocations.
- Coordination with MassDOT Drainage improvements to discharge to Phase 1 at VFW Highway.
- Start construction including utility test pits, constructor submittal reviews, sewer relocations, and water relocations necessary ahead of drain installations (pending SRF approval).

3.3 Phase 2 Design

Work on the Phase 2 Design (Paragraph 10.b.ii) has been integrated with the Phase 1 Design (as it relates to the connection drains that convey flow to the Phase 1 mainline drain conduit and the relationship between connecting pipe inverts). The Phase 2A work is depicted in purple and Phase 2B work depicted in blue on *Figure 3-1*.

3.3.1 Last Six Months of the Reporting Period

In the last six months, the Final Design work included the following:

- Completed Phase 2A Boring Program including 43 borings completed (depths vary up to 29 feet below grade), 9 groundwater observation wells installations, and geotechnical and analytical testing). GDR Phase 2A completed July 2025.
- Completed Phase 2B Boring Program including 63 borings completed (depths vary up to 27 feet below grade), 10 groundwater observation wells installations, and geotechnical and analytical testing). GDR Phase 2B completed August 2025. *Figure 3-2* shows completed boring locations for all phases.
- Environmental Data Report Phase 2A August 2025. Note while this report documents new exceedances of MCP criteria, no new notification to MassDEP is required. The URAM Plan submitted in March 2025 covers the entire project area (Phase 1, Phase 2A, Phase 2B). These new exceedances and any future ones will be reported to MassDEP via our routine URAM Status Reports.
- Prepared and Issued URAM status reports for Centralville.
- Continued evaluation and development of Environmental Data Report Phase 2B.
- Survey Phase 2A final completed (August) and Phase 2B draft completed (September) and is being evaluated. Minor field work confirmations ongoing.
- Completed evaluation and recommendations memo for sewer pipe CCTV and manhole inspections investigated within project areas in 2025.
- Completed field investigations and recommendations regarding inflow sources near Hovey Field in phase 2A.
- Initiated development of Phase 2A and Phase 2B 30% design drawings for drain corridor layout and identity utility conflicts that may require relocation. Initiated related specification development.

3.3.2 Next Six Months of the Reporting Period

In the next six months, the Final Design work will include:

- Finalize Environmental Data Report Phase 2B.
- Continued development of phase 2A design drawings and specifications to 60% milestone (November).
- Distribute phase 2A 60% milestone to utilities and stakeholders for review and coordination.
- Prepare materials management plans and specifications for Phase 2A/2B.
- Continued development of Phase 2B 30% design and advancement of drawings and specifications towards 60% milestone (February).
- Prepare and submit permit applications for Phase 2A including USEPA Section 401, USEPA Section 404, MassDEP Chapter 91 Minor Modification Request, Lowell Conservation Commission NOI, MassDOT Access Permit, Mass DCR Article 97 approval, and Mass DCR Access permit.

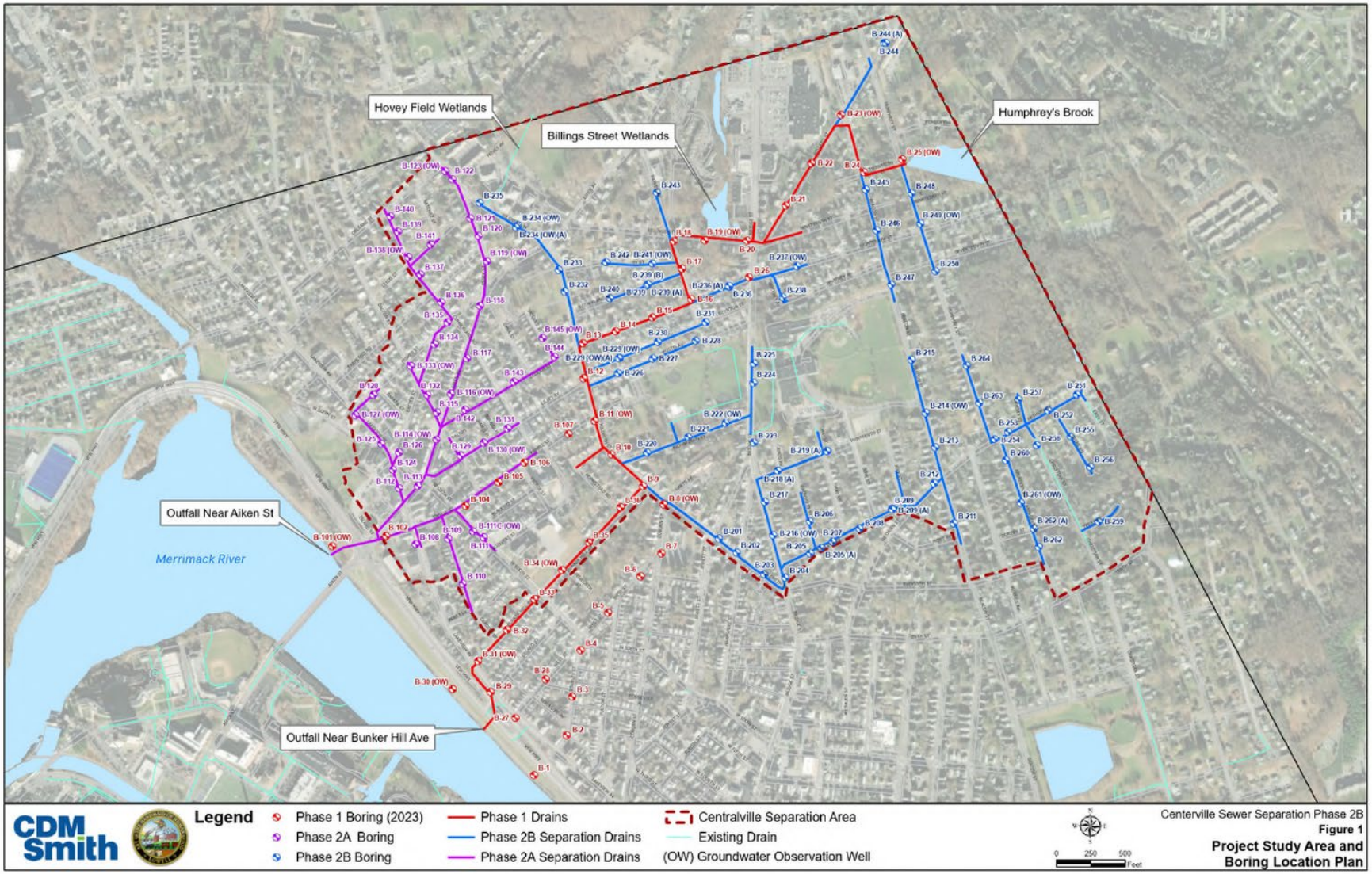

Figure 3-2: Completed Borings

4. Phase 3 Sewer Separation Program

The Phase 3 Candidate Area Sewer Separation Program (Paragraph 11) involves the preliminary design for potential sewer separation for 19 candidate combined sewer system subbasins in the Tilden, Warren, Barasford, West, and Merrimack CSO Basin shown in *Figure 4-1*. The intent of this program is to help to further reduce CSO discharges and to assess potential solutions using sewer separation to mitigate chronic sanitary sewer overflows (SSOs), or to consider other extraneous flow reduction approaches. The CD focuses on two chronic SSO locations – Douglas Road in the Barasford CSO Basin and the Pevey/Boys and Girls Club in the Warren CSO Basin.

Based on the system-wide implementation challenges, the Utility elected to proceed with the Grand, Lower Saunders, and Pevey Phase 3 Candidate Area Separation Project, shown in *Figure 4-2*. On December 20, 2024 CDM Smith submitted the Phase 3 Sewer Separation PDR to MassDEP and USEPA. MassDEP and USEPA provided comments in a letter dated February 27, 2025, which the Utility responded to on March 28, 2025. MassDEP issued an approval letter for the Preliminary Design Report on July 23, 2025.

4.1 Last Six Months in the Reporting Period

During this period, the Utility contracted with Kleinfelder Northeast, Inc. (Kleinfelder) as the design engineer to bring the Phase 3 Sewer Separation projects forward from the preliminary design previously completed by CDM Smith to final design and construction. One of the first tasks completed by Kleinfelder was a detailed review of the PDR and the recommendations presented therein. Through that review and a subsequent hydraulic analysis of the existing Lower Saunders stormwater outfall, Kleinfelder determined that the previously recommended and approved level of CSO control for the Lower Saunders catchment could be achieved without the need to increase the outfall size from 24-inch to the planned 30-inch outfall for this catchment. Based on this review and a subsequent CCTV inspection of the outfall confirming its existing condition as acceptable for reuse, Kleinfelder recommended the reuse of this outfall, significantly reducing the permitting and land acquisition requirements for this project.

The Utility had previously been approved for Clean Water SRF funding for the advancement of the Phase 3A Sewer Separation project, which required the submission of an SRF Application. The SRF process also requires that all permits and rights to land use/easements are procured prior to receiving approval to proceed with construction of the project. Given the originally planned Phase 3A – Grand Sewer Separation Project would require a new outfall to the Pawtucket Canal and significant permitting and Article 97 change in use petitions, which often take over a year to finalize and would jeopardize the ability to issue a notice to proceed to a contractor by June 30, 2026, the Utility, at the recommendation of Kleinfelder, has re-sequenced the Phase 3 Sewer Separation program as follows and shown in *Figure 4-2*:

- Phase 3A – Lower Saunders Separation Project (including School Street Drain Separation and Inland Street Drain)
- Phase 3B – Grand Separation Project
- Phase 3C – Pevey Separation Project

Significant field investigations occurred during the summer of 2025 to gather existing conditions and design information for the entire Phase 3 Sewer Separation program catchment as described below:

- Topographic Survey – Base mapping survey was collected for all 3 phases of the Phase 3 Separation area.
- Utility Designation – Conducted electronic utility designation to confirm locations of underground utilities throughout the Lower Saunders (Phase 3A) and Grand (Phase 3B) catchment limits.
- Geotechnical Exploration Program – A total of 52 explorations were conducted throughout the limits of all 3 phases of the Phase 3 Separation area. Soil and groundwater samples were also collected and analyzed for the presence of oil and hazardous materials throughout the area.
- Pipeline Closed-Circuit Television and MH/CB Inspections – Conducted a total of 20,000 LF of supplemental CCTV investigations and completed 80 manhole/catch basin inspections.

The project team facilitated meetings with various public and private utility companies and City agencies to discuss the project and advanced the development of the project plans and specifications for submission to the SRF program in early October 2025.

4.2 Next Six Months in the Reporting Period

Over the next six months, Kleinfelder will advance the design development for the Phase 3A – Lower Saunders Sewer Separation project. A set of constructable plans for the project will be submitted to SRF by October 3, 2025, with a construction set targeted for public bidding in March 2026. During the design finalization, the project team will attend public meeting(s) to provide the public the opportunity to provide feedback.

In addition, an alternatives analysis for the Phase 3B – Grand Sewer Separation Project will be completed to finalize an outfall alignment and initiate the land acquisition/Article 97 and permitting process.

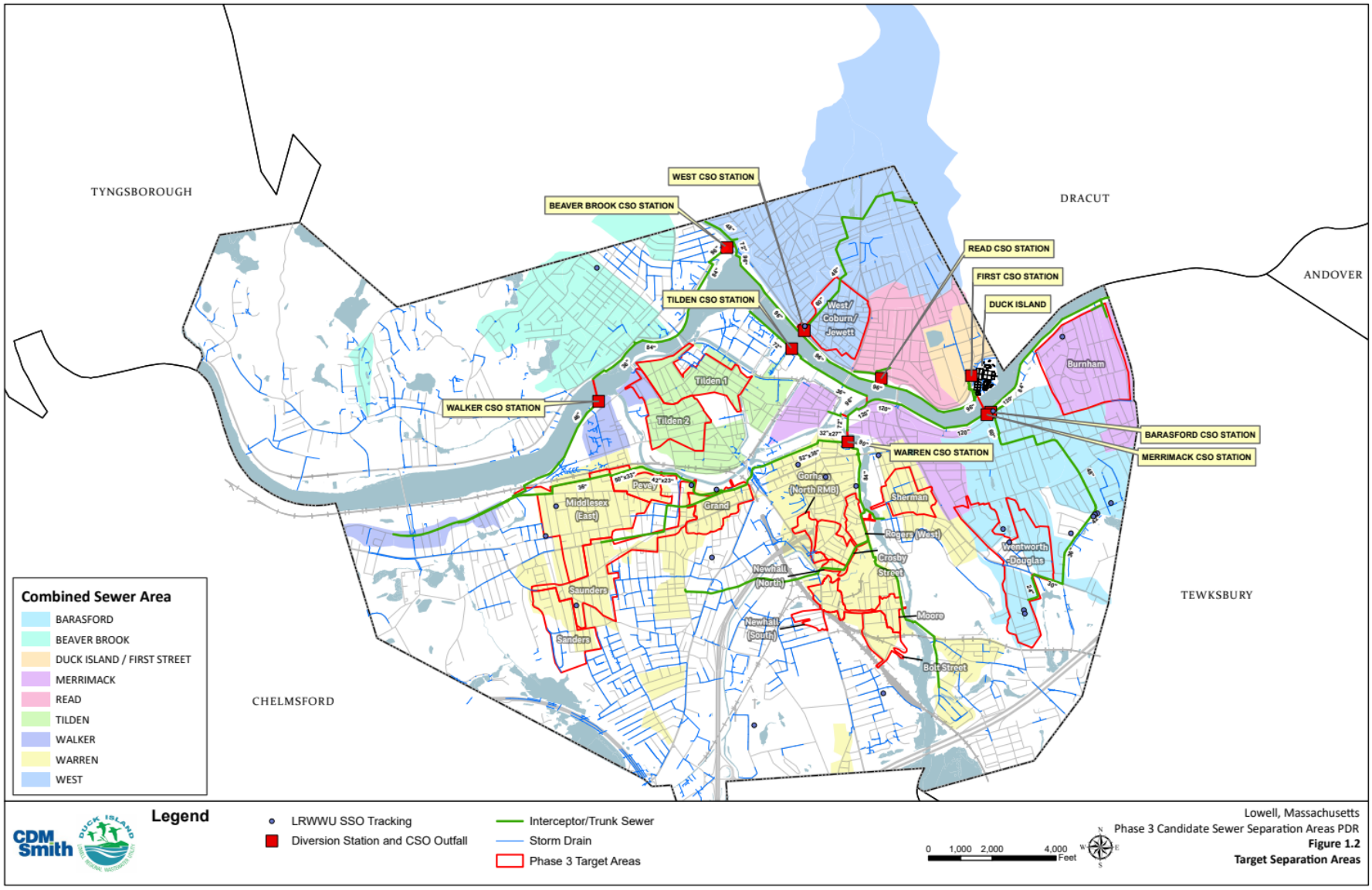

Figure 4-1 Phase 3 Sewer Separation Target Areas

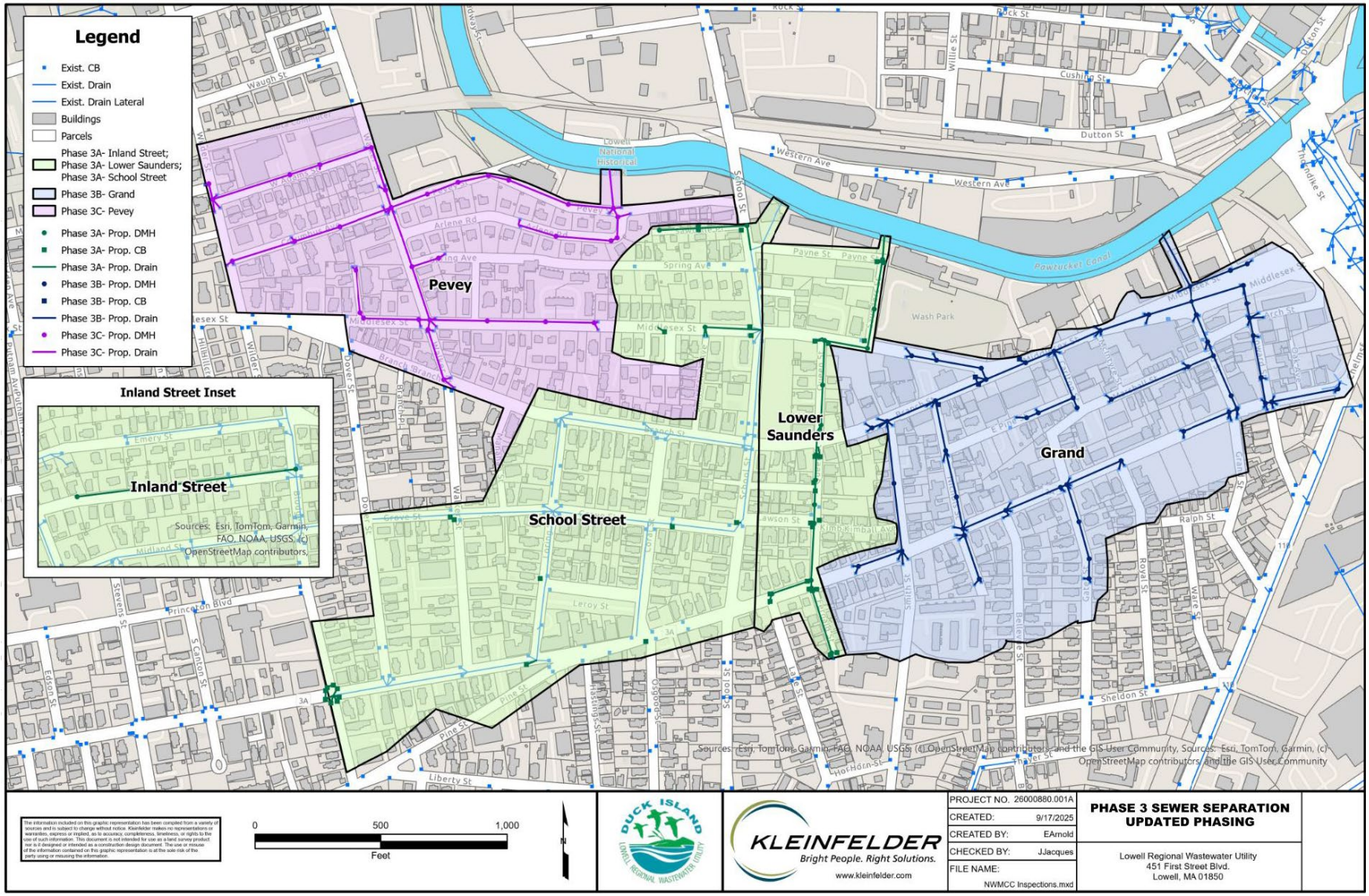

Figure 4-2: Phase 3 Candidate Area Separation Projects

5. Infiltration/Inflow Reduction Program

The Utility's Infiltration and Inflow (I/I) Reduction Program (Paragraph 18) was developed to identify and remove infiltration and inflow from the sewer system in accordance with 314 C.M.R. §12.04(2). The program is based on the I/I Analysis Report, submitted on January 31, 2024 (*Appendix A*), and was subsequently updated through the I/I Analysis Supplemental Report, submitted on March 28, 2025 (*Appendix A*). The I/I Analysis Supplemental Report provides revised recommendations, schedule, and projected costs for subsequent phases of Sewer System Evaluation Surveys (SSES). These recommendations serve as a road map for the Utility to implement an ongoing plan to execute I/I investigations and reduction efforts. The revised SSES phases are shown in *Figure 5-1*.

5.1 Last Six Months in the Reporting Period

In the last six months work included:

- The Phase 1 SSES Report was submitted to the City on April 14, 2025 (*Appendix A*). The SSES Phase 1 Report summarizes the field investigations completed and provides recommendations for sewer system rehabilitation and repair, including estimated design and construction costs.
- Design for the Phase 1 Downtown Area Sewer Improvements Project commenced following the submission of the Phase 1 SSES Report *Figure 5-2*.
- A loan application for the Phase 2 Downtown Area Sewer Improvements Project based on recommendations made in the SSES Phase 1 Report was submitted to MassDEP in July 2025.

5.2 Next Six Months in the Reporting Period

In the next six months, planned work includes:

- Begin approximately 90,000 LF of smoke testing in the Phase 2 SSES area *Figure 5-3*.
- Submitted Phase 1 Downtown Area Sewer Improvement Project to MassDEP for technical review in October 2025.
- Design of the Phase 1 Downtown Area Sewer Improvements Project to be finalized and move to the bidding phase to meet SRF requirements.

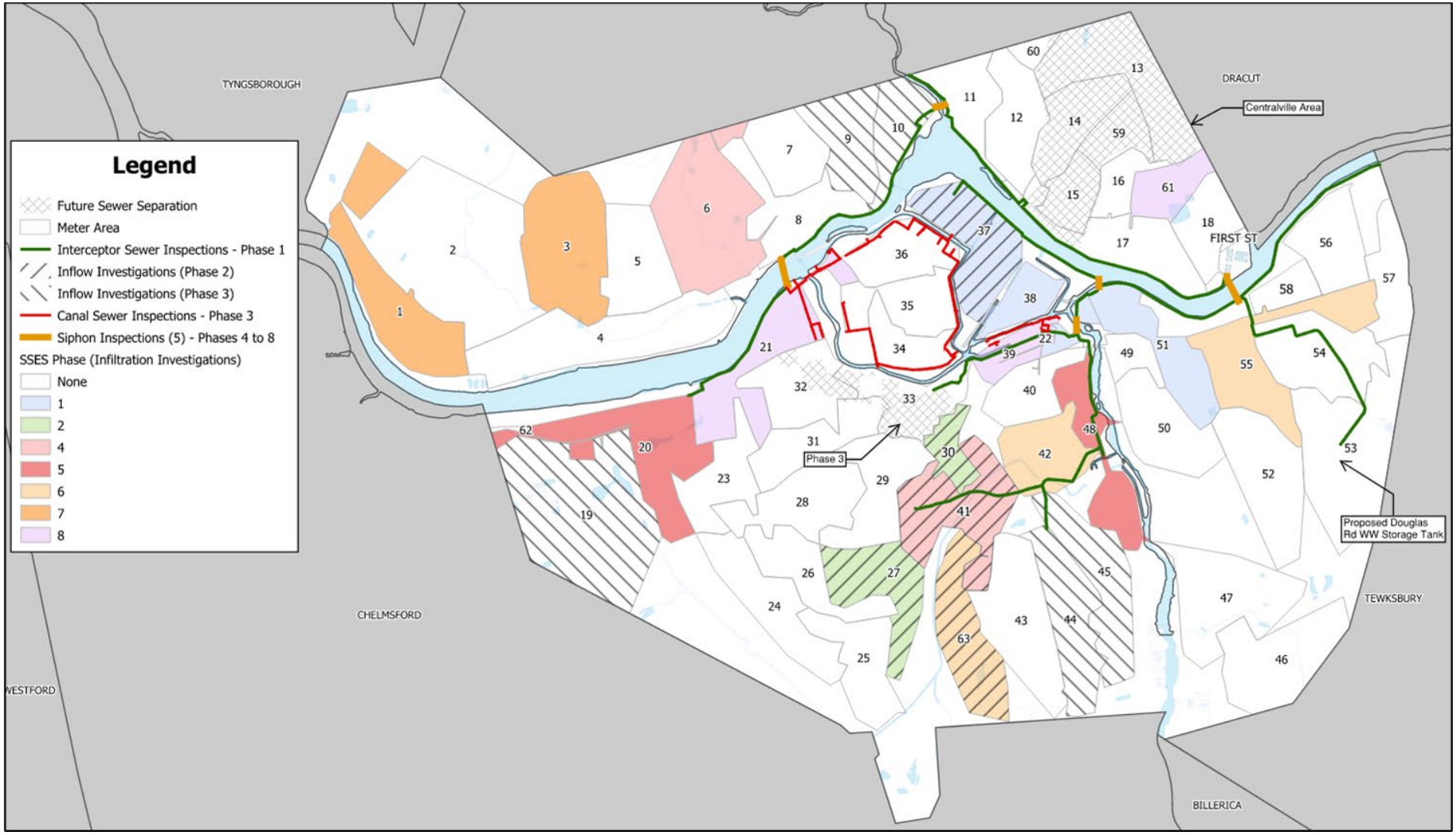

Figure 5-1 SSES Program Phases

Figure 5-2 Phase 1 Downtown Area Sewer Improvements

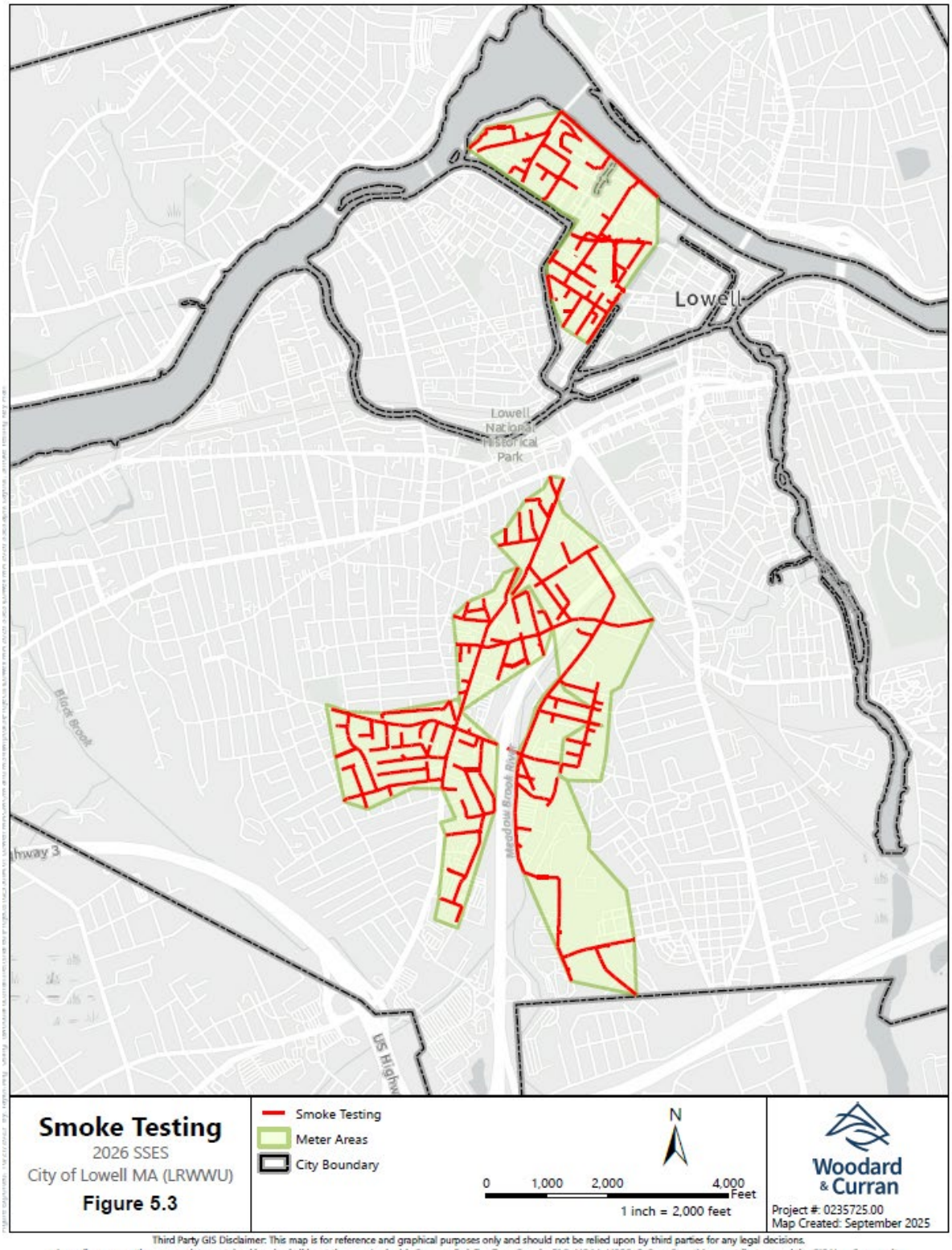

Figure 5-3 Phase 2 Smoke Testing

6. CMOM Program

The Utility's Capacity, Management, Operation, and Maintenance (CMOM) Program Self-Assessment (PSA) (CD Paragraph 14), developed in 2022 (*Appendix A*), was designed to evaluate the CMOM programs and identify areas needing improvement. Upon completing the assessment, it was found that Lowell's CMOM program is strong but could be enhanced in certain areas. The EPA and MassDEP provided comments on the CMOM PSA on August 21, 2024. Per Consent Decree Paragraph 15, a CMOM Corrective Action Plan (CAP) (CD Paragraph 16) was submitted on December 19, 2024 (*Appendix A*). The CMOM CAP was approved by the EPA and MassDEP on April 18, 2025. This plan identified sixteen (18) assessment items across four (4) CMOM PSA categories and ten (10) subcategories as being deficient and in need of requiring future action in the CMOM PSA (*Table 2*). The Utility has already addressed nine (9) of the identified deficiencies. The CAP will serve as a roadmap for the Utility to implement ongoing improvements in its collection system.

6.1 Last Six Months in the Reporting Period

The CMOM CAP was approved by the EPA and MassDEP on April 18, 2025. The Utility, in coordination with Woodard & Curran, has developed a draft Sanitary Sewer Overflow (SSO) Emergency Response Plan addressing CMOM Checklist Items IV.D.1 and IV.D.2. In addition, the Utility has initiated a review of the Sewer Use Ordinance (SUO) to address Checklist Item III.F.1

6.2 Next Six Months in the Reporting Period

The Utility plans to conduct SSO response training (IV.D.3) for appropriate staff in accordance with the protocols established in the submitted SSO Emergency Response Plan. Additionally, the Utility will complete its review of the Sewer Use Ordinance (III.F.1) and force mains (IV.B.3) and begin compiling a list of findings and recommendations for improvement.

Table 2: CMOM CAP Deficiencies and Status

Deficiency	Self-Assessment Category	Self-Assessment Sub-Category	Checklist Reference	Source	Deliverable Date / Status
1	Collection System Management	Organizational Structure	III.A.4	PSA	Complete
2		Communication and Customer Service	III.C.1	PSA	10/31/2026
3		Legal Authority	III.F.1	PSA	4/30/2026
4			III.F.4	PSA	4/30/2027
5			III.F.5	PSA	Complete
6			III.F.6	Agency Comments	Complete
7	Collection System Operation	Hydrogen Sulfide Monitoring and Control	IV.B.3	Agency Comments	4/30/2026
8		Emergency Preparedness and Response	IV.D.1	PSA	10/31/2025
9			IV.D.2	PSA	10/31/2025
10			IV.D.3	PSA	4/30/2026
11		Pump Stations - Inspection	IV.F.5	PSA	Complete
12	Equipment and Collection System Maintenance	Maintenance Right-of Way	V.B.1	PSA	10/31/2028
13		Parts Inventory	V.C.3	PSA	Complete
14	SSES	System Assessment	VI.A.2	PSA	Complete
15			VI.A.3	PSA	Complete
16			VI.A.4	PSA	4/30/2028
17			VI.A.5	PSA	Complete
18		Manhole Inspection	VI.B.2	PSA	Complete

7. Stormwater (MS4) Compliance Program

For Federal and State stormwater regulations, the City is operating under the 2003 Massachusetts Small Municipal Separate Storm Sewer Systems (MS4) General Permit. An Annual Report on the City's compliance with the 2003 MS4 Program will be submitted on April 30, 2024 (*Appendix A*).

In accordance with the CD, the City shall remain under the 2003 MS4 permit with additional requirements stipulated per the CD. These requirements include:

- The development and implementation of an updated Illicit Discharge Detection Elimination (IDDE) program (Paragraphs 24, 25, 26, 27, 28, 29, and 30),
- Additional stormwater mapping requirements (Paragraph 36),
- Utilization of Best Management Practices in stormwater management design (Paragraph 32),
- Updates to ordinances to address pre- and post-construction stormwater controls (Paragraphs 21, 22, 23), and
- Updates to the Stormwater Management Program (initially issued in 2003) (Paragraph 33.a) to update the Minimum Control Measures (MCM) and Best Management Practices (BMPs) to minimize the impact of phosphorus, including a Phosphorus Source Identification Report (Paragraph 33.c) and development of an BMP demonstration project for phosphorus control on a municipal property. (Paragraph 33.d)

The Utility updated and submitted a Stormwater Management Plan (SWMP) and Illicit Discharge Detection Elimination (IDDE) Program to MassDEP and USEPA on December 31st, 2023 (*Appendix A*).

7.1 Last Six Months in the Reporting Period

In the last six months work included:

- Summer messaging was distributed alongside Lowell Wastewater branded pet waste bag dispensers and yard waste bags to promote proper pet waste management and lawn care practices.
- Lowell Wastewater personnel participated in multiple public engagement event, including most notably the City of Lowell's annual Folk Festival. Wastewater personnel staffed an official booth, promoted the IDDE program, gave active demonstrations utilizing an Enviroscape watershed model, and informed the public of proper stormwater management practices and habits to adopt into their day-to-day.
- Participated in a touch-a-truck event for a City-run summer camp on August 8th.
- Trainings related to proper sampling methodologies and catchment mapping procedures, field application support, good housekeeping practices, and public outreach were held on April 8 (five employees), April 28 (one employee), May 21 (four employees), June 4 (four employees), and July 22, 2025 (six employees).
- One (1) Illicit Connection was removed during the reporting period on April 29th. The Illicit Connection was previously identified during CCTV inspection of a municipal drainage system during the end of last reporting period; signs of sewage were found downstream of a lateral

connection, which was confirmed via dye testing to be a residential sewer service. Further summary of corrective actions taken are presented in *Table 3.*

- SSO discovery and actions taken are presented in *Table 4*.
- An analysis of all mapped discharge points was performed confirming City of Lowell ownership.
    - The City reviewed its mapping network for interconnections with MassDOT, UMass Lowell, and adjacent municipalities. A total of twenty-six (26) City of Lowell owned interconnections were identified.
    - A subsequent analysis of Lowell owned discharge points was performed to exclude any connected to non-separate stormwater networks, abandoned discharge points, duplicates, or those assets misidentified as discharge points. Of those reviewed, two hundred and sixty-six (266) Lowell owned discharge points remained.
    - Separate stormwater catchments were delineated in GIS for the Lowell owned discharge points.
    - The Lowell GIS database was updated to incorporate the following:
        - Incorporate Lowell owned discharge points.
        - Include catchment delineations.
        - Facilitate field investigation efforts utilizing handheld electronic devices.
- Two hundred and thirty-four (234) outfalls were inspected during dry-weather. Of those inspected, thirty (30) outfalls exhibited dry-weather flow. One (1) outfall exhibiting flow was inaccessible to be sampled given specific field conditions. A sampling plan will be developed for this location. Samples were collected and analyzed from the remaining twenty-nine (29) outfalls with dry-weather flow. Outfalls with incomplete results will be rescreened in dry-weather conditions. Existing dry weather sampling results can be found in *Table 5*.
- Ninety-one (91) outfalls were inspected during wet-weather. Of those inspected, thirty-two (32) outfalls exhibited wet-weather flow The outfalls that exhibited wet weather flow were sampled via consent decree requirements. Existing wet weather sampling results can be found in *Table 6*.
- The City continued work on the Phosphorus Source Identification Report. This included delineation of MS4 catchments, desktop phosphorus loading calculations, review of municipally owned parcels for feasibility of stormwater control measure construction, and preliminary prioritization of parcels for implementation.
- Submission of the annual MS4 Report submitted April 30, 2025 (*Appendix A*).
- Two hundred and forty (240) assets were mapped. One (1) new drainage SCMs/BMPs was identified and recorded as part of this process.

7.2 Next Six Months in the Reporting Period

In the next six months, planned work includes:

- Dry- and wet-weather outfall screening and sampling will be performed for any outfalls lacking the full suite of sampling data and any additional Lowell owned discharge points discovered during ongoing mapping and field investigation efforts.

- Update catchment priority ranking presented in the previous CD Semi Annual Submittal, *Table 5*, with up-dated outfall screening and sampling results.
- Refine web map platform facilitating field investigations utilizing handheld electronic devices.
- Continue wet-weather screening, dry-weather screening, and begin illicit discharge detection and elimination catchment investigations beginning with priority catchments.
- Begin illicit discharge detection and elimination catchment investigations beginning with priority catchments.
- Refine MS4 mapping based on field conditions observed during outfall screenings and catchment investigations.
- Complete Phosphorus Source Identification Report per CD Paragraph 33.c.
- Perform continued stormwater quality-related public education and outreach.

Table 3 Illicit Discharge Summary

Outfall Location		Illicit Discharge/Connection Verified				Illicit Discharge Removal Activities			Assessment: Is the City in compliance with schedule?
Basin ID	Outfall ID	Date Verified	Address Location	Type of Discharge[1]	Estimated Flow	Schedule for Removal	Actions Taken	Date Eliminated	
Private service	dDP-1260	3/4/2025	22 Florence Avenue	Residential	~100 gallons; total volume unknown	• Week of 1/27 – CCTV inspection uncovered signs of sewage downstream of a lateral connection within a municipal drain line. • 3/4 – Dye testing of private residence confirmed that the lateral connection was the residential sewer service for 22 Florence Avenue. • 3/12 – The property owner was notified that they had thirty (30) days to remove the illicit connection or else the Utility would coordinate its removal. • 4/17 - The property owner was notified that the thirty-day allotment for the illicit removal had elapsed and that the City would now be coordinating the removal, to be completed by 5/3/2025. • 4/29 - On-call contracted services removed the illicit connection and tied the residential sewer service into the municipal sanitary sewer.	CCTV inspection of a municipal drain line uncovered signs of sewage downstream of a lateral connection, that was later confirmed via dye testing to be a residential sewer service. Records investigation revealed that both the area sewer and drain were installed in 1907. Shortly after confirmation, the property owner was notified that they had thirty (30) days to remove the illicit connection, or else the Utility would coordinate its removal to ensure that the illicit connection would be removed within the sixty (60) day compliance window. After the thirty-day allotment for the illicit removal had elapsed, the resident was informed that the City would now be coordinating the work with on-call contractor services, and the resident was informed that they would be liable for expenses incurred by the City for this work. On April 29th, on-call contracted services removed the illicit connection and tied the residential sewer service into the municipal sanitary sewer. The City's legal team is working on issuing a lean on the subject property to cover the expenses incurred as part of this work. GI/LID features were not considered or implemented as a potential solution, given the nature of the source of the illicit.	4/29/2025	Yes

[1]Type of Discharge single-family residential, multifamily residential, commercial, industrial, exfiltration from a sanitary sewer

Table 4 SSO Summary (Last 6 Months)

Surcharge Type	Date & Time Overflow Started/Discovered	Date & Time Overflow Stopped	Location	Source of Notification to Lowell	Cause	Estimated Volume (Gal)	Catch Basin or Surface Waterbody Reached and Estimated Volume	Corrective Actions Taken	Date Reported to EPA and MassDEP	Date of the Last Event that Occurred at Same Location
Backup into Property	7/20/2025 7:15PM	7/20/2025 8:00 PM	13 Hurd St	Reported to LRWWU Staff by resident	Rain Event; Electrical equipment failure at Warren Station	16,853	No release to surface water	Gates at Warren Station were manually opened for the remainder of the event. The electrical equipment failure at Warren Station has since been resolved.	7/21/2025	No previous SSOs have occurred at this location.
Backup into Property	7/20/2025 7:15PM	7/20/2025 8:00 PM	15 Warren Street	Reported to LRWWU Staff by resident	Rain Event; Electrical equipment failure at Warren Station	20,197	No release to surface water	Gates at Warren Station were manually opened for the remainder of the event. The electrical equipment failure at Warren Station has since been resolved.	7/21/2025	No previous SSOs have occurred at this location.
SSO (Sanitary Sewer Manhole)	7/21/2025 10:15AM	7/20/2025 8:00 PM	192/202 Lawrence Street	Reported to LRWWU Staff by resident	Rain Event; Electrical equipment failure at Warren Station	430,000	Concord River	Gates at Warren Station were manually opened for the remainder of the event. The electrical equipment failure at Warren Station has since been resolved.	7/21/2025	7/21/2023
Backup into Property	7/20/2025 7:15PM	7/20/2025 8:00 PM	50 Warren Street	Reported to LRWWU Staff by resident	Rain Event; Electrical equipment failure at Warren Station	2,000	No release to surface water	Gates at Warren Station were manually opened for the remainder of the event. The electrical equipment failure at Warren Station has since been resolved.	7/21/2025	No previous SSOs have occurred at this location.
SSO (Sanitary Sewer Manhole)	7/20/2025 7:09 PM	7/20/2025 7:18 PM	657 Middlesex St (Eagle Ct)	Level Monitor alert notification	Rain Event	553	Pawtucket Canal	Alternative solutions being evaluated as part of the Phase 3 PDR	7/20/2025	8/19/2024
SSO (Sanitary Sewer Manhole)	7/20/2025 7:09 PM	7/20/2025 7:18 PM	67 Payne St	Level Monitor alert notification	Rain Event	1,023	Pawtucket Canal	Alternative solutions being evaluated as part of the Phase 3 PDR	7/20/2025	8/19/2024
SSO (Sanitary Sewer Manhole)	7/20/2025 7:20 PM	7/20/2025 7:26 PM	Windward/ Douglas Road	Level Monitor alert notification	Rain Event	412	Unnamed wetland	The capacity-related issue is being effectively addressed through the installation of the Douglas Road storage tank, which will significantly enhance our system's ability to manage and accommodate increased flows. This strategic addition aims to bolster overall capacity and ensure reliable performance during peak conditions	7/20/2025	8/19/2024

Table 5 Dry Weather Screen Results

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
1	Potential Illicit (a)	OUTGPS-000043	dDP-1060	-71.2954	42.625484	3.93	Concord River	8/19/2025	Yes	Moderate	Outfall	0	0	0	48	0.0106
2	Potential Illicit (a)	OUTGPS-000330	dDP-1106	-71.3179	42.628501	135.16	River Meadow Brook	5/8/2023	No	None	Outfall	--	--	--	--	--
3	Potential Illicit (c)	OUTGPS-000352	dDP-1107	-71.299	42.645933	5.15	Merrimack River	5/1/2025	Yes	Trickle	Outfall					1.76
4	Potential Illicit (e)	OUTGPS-000431	dDP-1039	-71.3616	42.650099	1.24	Merrimack River	5/14/2025	Yes	Trickle	Outfall		0.13			0.225
5	High Bacteria	OUTGPS-000310	dDP-913	-71.3178	42.613917	6.63	River Meadow Brook	7/1/2025	Yes	Trickle	Outfall	0	0.08	0		0
6	High Bacteria	OUTGPS-000139	dDP-1094	-71.3798	42.649798	6.39	Merrimack River	6/23/2025	Yes	Moderate	Outfall	0	0.1	0		0.017
7	Low Potential Illicit	OUTGPS-000349	dDP-944	-71.3608	42.648643	0.94	Merrimack River	6/6/2025	Yes[7]	Slow	Outfall	--	--	--	--	--
8	Low Potential Illicit	OUTGPS-000445	dDP-1127	-71.3148	42.640972	4.75	Lowell Canals	5/30/2025	Yes	Trickle	Outfall	0	0.11	0	0	0
9	Low Potential Illicit	OUTGPS-000268	dDP-887	-71.2835	42.650798	6.09	Merrimack River	6/4/2025	Yes	Slow	Outfall	0	0.08		39.7	0.0106
10	Low Potential Illicit	D-OUT-000247	dDP-1196	-71.2965	42.619599	38.99	Concord River	4/23/2025	Yes	Trickle	Outfall		0.09		0	0.034
11	Low Potential Illicit	OUTGPS-000299	dDP-977	-71.3492	42.63451	0.66	Black Brook	4/7/2025	Yes	Trickle	Outfall	0.25				0.0829
12	Low Potential Illicit	OUTGPS-000168	dDP-813	-71.2763	42.654725	5.94	Merrimack River	6/4/2025	Yes	Slow	Outfall	0		0.01	62	0.0137
13	Low Potential Illicit	--	dDP-1357	--	--	*	River Meadow Brook	8/25/2025	Yes	Moderate	dMH-3840	0.2			1	--
14	Low Potential Illicit	OUTGPS-000314	dDP-1104	-71.3445	42.644768	24.54	Merrimack River	5/21/2025	Yes	Moderate	Outfall	0			0	0
15	Low Potential Illicit	OUTGPS-000107	dDP-1089	-71.3231	42.614556	12.04	River Meadow Brook	6/10/2025	Yes	Moderate	Outfall	0			2	1.26
16	Low Potential Illicit	OUTGPS-000329	dDP-1105	-71.3171	42.628861	123.00	River Meadow Brook	8/19/2025	Yes	Moderate	Outfall	0.1		0.01	35	0.0159
17	Low Potential Illicit	OUTGPS-000338	dDP-934	-71.3414	42.62403	7.73	River Meadow Brook	5/21/2025	Yes	Trickle	Outfall	0	0.11		0	0
18	Low Potential Illicit	HW-000010	dDP-639	-71.3306	42.64536	4.89	Lowell Canals	4/30/2025	Yes	Moderate	dMH-3397	0	0.19		129.1	0.0234
19	Low Potential Illicit	OUTGPS-000429	dDP-1037	-71.3515	42.648185	*	Clay Pit Brook	5/21/2025	Yes	Trickle	Outfall	0	0.18		0	0
20	Low Potential Illicit	OUTGPS-000354	dDP-1108	-71.3172	42.645129	*	WESTERN CANAL	5/30/2025	Yes	Moderate	Outfall	0	0.12		155.3	0.02
21	Low Potential Illicit	OUTGPS-000275	dDP-991	-71.3384	42.622995	33.31	River Meadow Brook	6/30/2025	Yes	Moderate	Outfall	0	0.02		0	0
22	Low Potential Illicit	OUTGPS-000274	dDP-1016	-71.3342	42.618943	25.46	River Meadow Brook	4/15/2025	Yes	Moderate	Outfall	0.25	0.09	0	148.3	0.0638
23	Low Potential Illicit	OUTGPS-000283	dDP-895	-71.3011	42.635975	48.77	Concord River	6/18/2025	Yes	Moderate	Outfall	0	0.13	0	49.6	0.12
24	Low Potential Illicit	OUTGPS-000219	dDP-845	-71.3622	42.646298	4.60	Merrimack River	5/14/2025	Yes	Trickle	Outfall	0	0.09	0	3.1	0.0128
25	Low Potential Illicit	OUTGPS-000350	dDP-947	-71.3036	42.665602	4.52	Merrimack River	4/19/2025	Yes	Moderate	Outfall	0	0.11	0	3	0.0393
26	Low Potential Illicit	OUTGPS-000358	dDP-953	-71.2817	42.621476	1.54	Concord River	5/1/2025	Yes	Trickle	Outfall	0	0.15	0	2	0.0351
27	Low Potential Illicit	--	dDP-1281	--	--	0.56	Merrimack River	5/21/2025	Yes	Trickle	Outfall	0	0.13	0	0	0
28	Low Potential Illicit	OUTGPS-000134	dDP-794	-71.3638	42.647105	7.29	Clay Pit Brook	5/14/2025	Yes	Trickle	Outfall	0	0.11	0	0	0.017
29	Low Potential Illicit	D-OUT-000219	dDP-1227	-71.3189	42.659774	68.29	Beaver Brook	6/25/2025	Yes	Moderate	Outfall	0	0.07		9.8	--
30	Low Potential Illicit	OUTGPS-000265	dDP-884	-71.3187	42.618765	23.60	River Meadow Brook	8/11/2025	Yes	Slow	dMH-3856	0	0.16	0.01	71.7	--
31	Low Potential Illicit	OUTGPS-000087	dDP-755	-71.32	42.658458	17.19	Beaver Brook	8/11/2025	Yes	Slow	dMH-2606	0	0.15	0	0	--
32	Low Potential Illicit	OUTGPS-000278	dDP-1098	-71.2878	42.64997	3.00	Merrimack River	7/28/2025	Standing Water[7]	Standing Water	Outfall	--	--	--	--	--
33	Low Potential Illicit	D-OUT-000187	dDP-1172	-71.312	42.641727	*	Hamilton Canal	8/22/2025	Standing Water	Standing Water	Outfall	--	--	--	--	--
34	Low Potential Illicit	HW-000083	dDP-677	-71.3179	42.628501	*	River Meadow Brook	8/22/2025	Standing Water	Standing Water	Outfall	--	--	--	--	--
35	Low Potential Illicit	OUTGPS-000234	dDP-858	-71.2745	42.636567	11.51	Trull Brook	10/8/2025	Standing Water	Standing Water	dMH-4299	--	--	--	--	--
36	Low Potential Illicit	OUTGPS-000326	dDP-923	-71.3211	42.616229	163.26	River Meadow Brook	10/2/2025	Standing Water	Standing Water	Outfall	--	--	--	--	--
37	Low Potential Illicit	OUTGPS-000360	dDP-955	-71.3573	42.65077	9.73	Merrimack River	8/19/2025	No	None	Outfall	--	--	--	--	--
38	Low Potential Illicit	OUTGPS-000402	dDP-1000	-71.3547	42.631855	0.75	Black Brook	4/24/2025	No	None	Outfall	--	--	--	--	--
39	Low Potential Illicit	OUTGPS-000403	dDP-1001	-71.3547	42.631824	1.84	Black Brook	4/24/2025	No	None	Outfall	--	--	--	--	--
40	Low Potential Illicit	OUTGPS-000412	dDP-1010	-71.3493	42.629901	16.25	Black Brook	5/23/2023	No	None	Outfall	--	--	--	--	--
41	Low Potential Illicit	OUTGPS-000269	dDP-1015	-71.2846	42.649787	4.00	Merrimack River	9/30/2025	No	None	Outfall	--	--	--	--	--
42	Low Potential Illicit	OUTGPS-000136	dDP-1017	-71.3626	42.651712	1.51	Merrimack River	6/3/2024	No	None	Outfall	--	--	--	--	--
43	Low Potential Illicit	OUTGPS-000413	dDP-1020	-71.3438	42.65588	4.10	Merrimack River	5/21/2025	No	None	Outfall	--	--	--	--	--
44	Low Potential Illicit	OUTGPS-000427	dDP-1035	-71.3506	42.648666	*	N/A	8/7/2023	No	None	Outfall	--	--	--	--	--
45	Low Potential Illicit	OUTGPS-000428	dDP-1036	-71.3512	42.648117	4.30	Merrimack River	4/11/2025	No	None	Outfall	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
46	Low Potential Illicit	OUTGPS-000430	dDP-1038	-71.3135	42.632346	*	River Meadow Brook	4/29/2025	No	None	Outfall	--	--	--	--	--
47	Low Potential Illicit	OUTGPS-000271	dDP-1040	-71.3375	42.642686	2.04	Merrimack River	8/5/2025	No	None	Outfall	--	--	--	--	--
48	Low Potential Illicit	OUTGPS-000272	dDP-1042	-71.3383	42.641519	1.34	Merrimack River	8/19/2025	No	None	Outfall	--	--	--	--	--
49	Low Potential Illicit	OUTGPS-000433	dDP-1044	-71.3491	42.622306	1.73	Black Brook	5/20/2025	No	None	Outfall	--	--	--	--	--
50	Low Potential Illicit	OUTGPS-000436	dDP-1047	-71.321	42.661247	4.91	Beaver Brook	8/7/2023	No	None	Outfall	--	--	--	--	--
51	Low Potential Illicit	OUTGPS-000150	dDP-1057	-71.3149	42.653066	*	Merrimack River	8/15/2025	No	None	Outfall	--	--	--	--	--
52	Low Potential Illicit	OUTGPS-000163	dDP-1066	-71.3392	42.644006	1.93	Merrimack River	6/26/2025	No	None	Outfall	--	--	--	--	--
53	Low Potential Illicit	OUTGPS-000164	dDP-1067	-71.3382	42.64545	0.14	Merrimack River	7/8/2025	No	None	Outfall	--	--	--	--	--
54	Low Potential Illicit	OUTGPS-000101	dDP-1088	-71.2878	42.647638	*	Merrimack River	8/12/2025	No	None	Outfall	--	--	--	--	--
55	Low Potential Illicit	OUTGPS-000246	dDP-1095	-71.3136	42.652185	0.86	Merrimack River	8/15/2025	No	None	Outfall	--	--	--	--	--
56	Low Potential Illicit	OUTGPS-000258	dDP-1096	-71.3025	42.641641	1.85	Concord River	4/29/2025	No	None	Outfall	--	--	--	--	--
57	Low Potential Illicit	OUTGPS-000294	dDP-1100	-71.3728	42.646805	26.03	Merrimack River	4/10/2025	No	None	Outfall	--	--	--	--	--
58	Low Potential Illicit	OUTGPS-000300	dDP-1102	-71.2822	42.629959	*	Marginal Brook	4/17/2025	No	None	Outfall	--	--	--	--	--
59	Low Potential Illicit	OUTGPS-000357	dDP-1110	-71.282	42.621193	5.34	Concord River	5/1/2025	No	None	Outfall	--	--	--	--	--
60	Low Potential Illicit	OUTGPS-000366	dDP-1111	-71.3548	42.6452	21.56	Merrimack River	9/30/2025	No	None	Outfall	--	--	--	--	--
61	Low Potential Illicit	OUTGPS-000291	dDP-1117	-71.3495	42.622053	2.32	Black Brook	5/20/2025	No	None	Outfall	--	--	--	--	--
62	Low Potential Illicit	OUTGPS-000031	dDP-1122	-71.3352	42.645732	14.38	Merrimack River	5/31/2023	No	None	Outfall	--	--	--	--	--
63	Low Potential Illicit	OUTGPS-000124	dDP-1123	-71.3561	42.63749	*	Merrimack River	6/9/2025	No	None	Outfall	--	--	--	--	--
64	Low Potential Illicit	D-OUT-000117	dDP-1131	-71.3568	42.640158	0.72	Merrimack River	7/29/2025	No	None	Outfall	--	--	--	--	--
65	Low Potential Illicit	D-OUT-000182	dDP-1138	-71.3292	42.642923	0.57	Lowell Canals	5/20/2025	No	None	Outfall	--	--	--	--	--
66	Low Potential Illicit	D-OUT-000006	dDP-1156	-71.2852	42.648932	4.60	Merrimack River	9/30/2025	No	None	Outfall	--	--	--	--	--
67	Low Potential Illicit	D-OUT-000138	dDP-1158	-71.319	42.659846	*	Beaver Brook	6/25/2025	No	None	Outfall	--	--	--	--	--
68	Low Potential Illicit	D-OUT-000210	dDP-1182	-71.3048	42.642909	2.01	Concord River	4/29/2025	No	None	Outfall	--	--	--	--	--
69	Low Potential Illicit	D-OUT-000227	dDP-1184	-71.3056	42.64492	0.17	Concord River	6/17/2025	No	None	Outfall	--	--	--	--	--
70	Low Potential Illicit	D-OUT-000228	dDP-1185	-71.3054	42.644844	0.51	Concord River	6/17/2025	No	None	Outfall	--	--	--	--	--
71	Low Potential Illicit	D-OUT-000229	dDP-1186	-71.3056	42.647646	0.31	Merrimack River	6/17/2025	No	None	Outfall	--	--	--	--	--
72	Low Potential Illicit	D-OUT-000235	dDP-1190	-71.2943	42.620957	12.51	Concord River	4/23/2025	No	None	Outfall	--	--	--	--	--
73	Low Potential Illicit	D-OUT-000238	dDP-1192	-71.2918	42.620806	12.45	Concord River	4/23/2025	No	None	Outfall	--	--	--	--	--
74	Low Potential Illicit	D-OUT-000193	dDP-1195	-71.3185	42.659409	*	Beaver Brook	8/13/2025	No	None	Outfall	--	--	--	--	--
75	Low Potential Illicit	S-OUT-004772	dDP-1199	-71.3243	42.639863	*	Pawtucket Canal	4/17/2025	No	None	Outfall	--	--	--	--	--
76	Low Potential Illicit	OUT-007597	dDP-1218	-71.3437	42.65053	2.73	Merrimack River	8/26/2025	No	None	Outfall	--	--	--	--	--
77	Low Potential Illicit	OUT-007607	dDP-1222	-71.3565	42.65407	*	N/A	6/6/2025	No	None	Outfall	--	--	--	--	--
78	Low Potential Illicit	OUT-007609	dDP-1223	-71.3561	42.650704	*	N/A	6/6/2025	No	None	Outfall	--	--	--	--	--
79	Low Potential Illicit	OUT-007636	dDP-1252	-71.3047	42.662197	0.33	Merrimack River	4/24/2025	No	None	Outfall	--	--	--	--	--
80	Low Potential Illicit	OUT-007649	dDP-1264	-71.3158	42.638933	*	N/A	4/29/2025	No	None	Outfall	--	--	--	--	--
81	Low Potential Illicit	OUT-007650	dDP-1265	-71.3171	42.640713	1.25	Lowell Canals	6/13/2025	No	None	Outfall	--	--	--	--	--
82	Low Potential Illicit	OUT-007651	dDP-1266	-71.3165	42.641265	0.20	Lowell Canals	6/17/2025	No	None	Outfall	--	--	--	--	--
83	Low Potential Illicit	--	dDP-1267	-71.3362	42.621151	*	N/A	4/19/2025	No	None	Outfall	--	--	--	--	--
84	Low Potential Illicit	--	dDP-1271	--	--	4.92	Merrimack River	4/15/2025	No	None	Outfall	--	--	--	--	--
85	Low Potential Illicit	--	dDP-1275	--	--	*	Merrimack River	4/17/2025	No	None	Outfall	--	--	--	--	--
86	Low Potential Illicit	--	dDP-1277	--	--	2.39	Merrimack River	5/16/2025	No	None	Outfall	--	--	--	--	--
87	Low Potential Illicit	--	dDP-1278	--	--	2.25	Merrimack River	4/15/2025	No	None	Outfall	--	--	--	--	--
88	Low Potential Illicit	--	dDP-1283	--	--	*	N/A	8/22/2025	No	None	Outfall	--	--	--	--	--
89	Low Potential Illicit	--	dDP-1285	--	--	*	N/A	8/22/2025	No	None	Outfall	--	--	--	--	--
90	Low Potential Illicit	--	dDP-1286	--	--	*	N/A	5/21/2025	No	None	Outfall	--	--	--	--	--
91	Low Potential Illicit	--	dDP-1288	--	--	*	N/A	5/1/2025	No	None	Outfall	--	--	--	--	--
92	Low Potential Illicit	--	dDP-1290	--	--	*	Concord River	8/26/2025	No	None	Outfall	--	--	--	--	--
93	Low Potential Illicit	--	dDP-1291	--	--	*	Concord River	8/5/2025	No	None	Outfall	--	--	--	--	--
94	Low Potential Illicit	--	dDP-1292	--	--	*	Merrimack River	6/10/2025	No	None	Outfall	--	--	--	--	--
95	Low Potential Illicit	--	dDP-1294	--	--	*	Hamilton Canal	6/10/2025	No	None	Outfall	--	--	--	--	--
96	Low Potential Illicit	--	dDP-1295	--	--	*	Hamilton Canal	6/10/2025	No	None	Outfall	--	--	--	--	--
97	Low Potential Illicit	--	dDP-1296	--	--	*	Hamilton Canal	6/10/2025	No	None	Outfall	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
98	Low Potential Illicit	--	dDP-1297	--	--	*	Beaver Brook	5/16/2025	No	None	Outfall	--	--	--	--	--
99	Low Potential Illicit	--	dDP-1298	--	--	*	N/A	5/21/2025	No	None	Outfall	--	--	--	--	--
100	Low Potential Illicit	--	dDP-1299	--	--	*	Black Brook	5/21/2025	No	None	Outfall	--	--	--	--	--
101	Low Potential Illicit	--	dDP-1334	--	--	*	Merrimack River	8/7/2025	No	None	Outfall	--	--	--	--	--
102	Low Potential Illicit	--	dDP-1336	--	--	*	Merrimack River	8/22/2025	No	None	Outfall	--	--	--	--	--
103	Low Potential Illicit	--	dDP-1340	--	--	*	Merrimack River	7/3/2025	No	None	Outfall	--	--	--	--	--
104	Low Potential Illicit	--	dDP-1342	--	--	*	N/A	7/3/2025	No	None	Outfall	--	--	--	--	--
105	Low Potential Illicit	--	dDP-1343	--	--	*	N/A	7/3/2025	No	None	Outfall	--	--	--	--	--
106	Low Potential Illicit	--	dDP-1344	--	--	*	N/A	7/7/2025	No	None	Outfall	--	--	--	--	--
107	Low Potential Illicit	--	dDP-1347	--	--	*	N/A	8/7/2025	No	None	Outfall	--	--	--	--	--
108	Low Potential Illicit	--	dDP-1349	--	--	*	N/A	7/7/2025	No	None	Outfall	--	--	--	--	--
109	Low Potential Illicit	--	dDP-1350	--	--	*	Merrimack River	6/5/2025	No	None	Outfall	--	--	--	--	--
110	Low Potential Illicit	--	dDP-1351	--	--	*	Merrimack River	8/5/2025	No	None	Outfall	--	--	--	--	--
111	Low Potential Illicit	--	dDP-1352	--	--	*	Merrimack River	6/20/2025	No	None	Outfall	--	--	--	--	--
112	Low Potential Illicit	--	dDP-1356	--	--	*	N/A	8/25/2025	No	None	Outfall	--	--	--	--	--
113	Low Potential Illicit	--	dDP-1361	--	--	*	Merrimack River	7/28/2025	No	None	Outfall	--	--	--	--	--
114	Low Potential Illicit	--	dDP-1364	--	--	*	Merrimack River	8/26/2025	No	None	Outfall	--	--	--	--	--
115	Low Potential Illicit	--	dDP-1368	--	--	*	Black Brook	8/20/2025	No	None	Outfall	--	--	--	--	--
116	Low Potential Illicit	--	dDP-1371	--	--	*	N/A	7/3/2025	No	None	Outfall	--	--	--	--	--
117	Low Potential Illicit	--	dDP-1374	--	--	*	Merrimack River	8/7/2025	No	None	dMH-3763	--	--	--	--	--
118	Low Potential Illicit	HW-000091	dDP-683	-71.2817	42.621476	*	N/A	5/1/2025	No	None	Outfall	--	--	--	--	--
119	Low Potential Illicit	HW-000092	dDP-684	-71.3378	42.647099	*	Flaggy Meadow Brook	6/3/2025	No	None	Outfall	--	--	--	--	--
120	Low Potential Illicit	HW-000095	dDP-686	-71.2793	42.628317	0.27	Trull Brook	6/10/2025	No	None	Outfall	--	--	--	--	--
121	Low Potential Illicit	OUTGPS-000027	dDP-708	-71.3114	42.650753	*	Merrimack River	6/5/2025	No	None	Outfall	--	--	--	--	--
122	Low Potential Illicit	OUTGPS-000030	dDP-710	-71.3345	42.64628	*	Merrimack River	6/23/2025	No	None	Outfall	--	--	--	--	--
123	Low Potential Illicit	OUTGPS-000034	dDP-712	-71.3399	42.640324	*	Merrimack River	6/23/2025	No	None	Outfall	--	--	--	--	--
124	Low Potential Illicit	OUTGPS-000035	dDP-713	-71.353	42.640406	4.08	Merrimack River	6/24/2025	No	None	Outfall	--	--	--	--	--
125	Low Potential Illicit	OUTGPS-000037	dDP-715	-71.3514	42.64051	0.24	Merrimack River	7/30/2025	No	None	Outfall	--	--	--	--	--
126	Low Potential Illicit	OUTGPS-000038	dDP-716	-71.3508	42.640612	0.93	Merrimack River	6/24/2025	No	None	Outfall	--	--	--	--	--
127	Low Potential Illicit	OUTGPS-000041	dDP-719	-71.348	42.640946	0.41	Merrimack River	7/30/2025	No	None	Outfall	--	--	--	--	--
128	Low Potential Illicit	OUTGPS-000042	dDP-720	-71.3467	42.641137	2.76	Merrimack River	7/30/2025	No	None	Outfall	--	--	--	--	--
129	Low Potential Illicit	OUTGPS-000049	dDP-722	-71.3428	42.641762	3.62	Merrimack River	6/26/2025	No	None	Outfall	--	--	--	--	--
130	Low Potential Illicit	OUTGPS-000051	dDP-724	-71.3433	42.641674	0.13	Merrimack River	8/8/2025	No	None	dIN-6781	--	--	--	--	--
131	Low Potential Illicit	OUTGPS-000086	dDP-754	-71.3239	42.6539	*	Merrimack River	8/8/2025	No	None	Outfall	--	--	--	--	--
132	Low Potential Illicit	OUTGPS-000089	dDP-757	-71.3187	42.659949	1.15	Beaver Brook	6/25/2025	No	None	Outfall	--	--	--	--	--
133	Low Potential Illicit	OUTGPS-000100	dDP-766	-71.2901	42.646437	0.99	Merrimack River	6/10/2025	No	None	Outfall	--	--	--	--	--
134	Low Potential Illicit	OUTGPS-000102	dDP-767	-71.2878	42.649182	0.75	Merrimack River	8/19/2025	No	None	Outfall	--	--	--	--	--
135	Low Potential Illicit	OUTGPS-000105	dDP-770	-71.338	42.647267	2.22	Merrimack River	4/14/2025	No	None	Outfall	--	--	--	--	--
136	Low Potential Illicit	OUTGPS-000111	dDP-774	-71.309	42.631806	11.83	River Meadow Brook	5/8/2023	No	None	Outfall	--	--	--	--	--
137	Low Potential Illicit	OUTGPS-000128	dDP-790	-71.3533	42.637278	*	Merrimack River	4/17/2025	No	None	Outfall	--	--	--	--	--
138	Low Potential Illicit	OUTGPS-000135	dDP-795	-71.3633	42.652198	1.05	Merrimack River	8/5/2025	No	None	Outfall	--	--	--	--	--
139	Low Potential Illicit	OUTGPS-000143	dDP-801	-71.3759	42.65655	3.46	Merrimack River	4/9/2025	No	None	Outfall	--	--	--	--	--
140	Low Potential Illicit	OUTGPS-000151	dDP-803	-71.3145	42.652807	8.77	Merrimack River	8/15/2025	No	None	Outfall	--	--	--	--	--
141	Low Potential Illicit	OUTGPS-000156	dDP-808	-71.3132	42.651811	*	Merrimack River	5/29/2025	No	None	Outfall	--	--	--	--	--
142	Low Potential Illicit	OUTGPS-000157	dDP-809	-71.3135	42.651493	*	Merrimack River	5/29/2025	No	None	Outfall	--	--	--	--	--
143	Low Potential Illicit	OUTGPS-000160	dDP-811	-71.3404	42.642525	*	Merrimack River	8/7/2025	No	None	Outfall	--	--	--	--	--
144	Low Potential Illicit	OUTGPS-000161	dDP-812	-71.3398	42.643138	1.57	Merrimack River	8/7/2025	No	None	dIN-4846	--	--	--	--	--
145	Low Potential Illicit	OUTGPS-000190	dDP-820	-71.3038	42.643377	*	Concord River	10/8/2025	No	None	Outfall	--	--	--	--	--
146	Low Potential Illicit	OUTGPS-000191	dDP-821	-71.305	42.643559	*	Concord River	10/8/2025	No	None	Outfall	--	--	--	--	--
147	Low Potential Illicit	OUTGPS-000202	dDP-831	-71.3043	42.645517	*	Concord River	6/17/2025	No	None	Outfall	--	--	--	--	--
148	Low Potential Illicit	OUTGPS-000204	dDP-833	-71.3047	42.645313	*	Concord River	6/17/2025	No	None	Outfall	--	--	--	--	--
149	Low Potential Illicit	OUTGPS-000227	dDP-853	-71.3127	42.61584	*	N/A	6/10/2025	No	None	Outfall	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
150	Low Potential Illicit	OUTGPS-000229	dDP-854	-71.3748	42.65567	1.32	Merrimack River	4/9/2025	No	None	Outfall	--	--	--	--	--
151	Low Potential Illicit	OUTGPS-000230	dDP-855	-71.3756	42.655014	0.27	Merrimack River	4/9/2025	No	None	Outfall	--	--	--	--	--
152	Low Potential Illicit	OUTGPS-000231	dDP-856	-71.3561	42.650704	3.09	Merrimack River	5/30/2023	No	None	Outfall	--	--	--	--	--
153	Low Potential Illicit	OUTGPS-000232	dDP-857	-71.3565	42.65407	1.95	Merrimack River	5/30/2023	No	None	Outfall	--	--	--	--	--
154	Low Potential Illicit	OUTGPS-000236	dDP-860	-71.349	42.649694	5.63	Merrimack River	4/10/2025	No	None	Outfall	--	--	--	--	--
155	Low Potential Illicit	OUTGPS-000239	dDP-862	-71.2886	42.624663	2.76	Concord River	5/30/2025	No	None	Outfall	--	--	--	--	--
156	Low Potential Illicit	OUTGPS-000240	dDP-863	-71.2886	42.623679	19.05	Concord River	8/19/2025	No	None	Outfall	--	--	--	--	--
157	Low Potential Illicit	OUTGPS-000241	dDP-864	-71.2918	42.620818	*	Marginal Brook	4/23/2025	No	None	Outfall	--	--	--	--	--
158	Low Potential Illicit	OUTGPS-000250	dDP-871	-71.2945	42.620973	2.51	Concord River	5/27/2025	No	None	Outfall	--	--	--	--	--
159	Low Potential Illicit	OUTGPS-000251	dDP-872	-71.2952	42.619552	1.48	Concord River	5/30/2023	No	None	Outfall	--	--	--	--	--
160	Low Potential Illicit	OUTGPS-000252	dDP-873	-71.3307	42.617157	2.99	River Meadow Brook	6/10/2024	No	None	Outfall	--	--	--	--	--
161	Low Potential Illicit	OUTGPS-000253	dDP-874	-71.3313	42.617575	2.81	River Meadow Brook	6/10/2024	No	None	Outfall	--	--	--	--	--
162	Low Potential Illicit	OUTGPS-000254	dDP-875	-71.332	42.617939	4.64	River Meadow Brook	5/22/2023	No	None	Outfall	--	--	--	--	--
163	Low Potential Illicit	OUTGPS-000273	dDP-889	-71.33	42.616711	2.25	River Meadow Brook	4/16/2025	No	None	Outfall	--	--	--	--	--
164	Low Potential Illicit	OUTGPS-000285	dDP-896	-71.3303	42.648779	0.73	Lowell Canals	8/15/2025	No	None	Outfall	--	--	--	--	--
165	Low Potential Illicit	OUTGPS-000286	dDP-897	-71.347	42.622218	4.50	Black Brook	8/20/2025	No	None	Outfall	--	--	--	--	--
166	Low Potential Illicit	OUTGPS-000287	dDP-898	-71.347	42.622758	2.07	Black Brook	6/9/2025	No	None	Outfall	--	--	--	--	--
167	Low Potential Illicit	OUTGPS-000288	dDP-899	-71.3475	42.622769	2.14	Black Brook	5/20/2025	No	None	Outfall	--	--	--	--	--
168	Low Potential Illicit	OUTGPS-000289	dDP-900	-71.3484	42.622625	2.74	Black Brook	6/9/2025	No	None	Outfall	--	--	--	--	--
169	Low Potential Illicit	OUTGPS-000290	dDP-901	-71.3491	42.622227	*	Black Brook	6/9/2025	No	None	Outfall	--	--	--	--	--
170	Low Potential Illicit	OUTGPS-000295	dDP-903	-71.3728	42.646806	0.47	Merrimack River	4/10/2025	No	None	Outfall	--	--	--	--	--
171	Low Potential Illicit	OUTGPS-000301	dDP-904	-71.2867	42.634887	1.03	Merrimack River	10/8/2025	No	None	Outfall	--	--	--	--	--
172	Low Potential Illicit	OUTGPS-000322	dDP-919	-71.2822	42.629945	41.06	Trull Brook	4/17/2025	No	None	Outfall	--	--	--	--	--
173	Low Potential Illicit	OUTGPS-000323	dDP-920	-71.2822	42.629986	*	N/A	4/17/2025	No	None	Outfall	--	--	--	--	--
174	Low Potential Illicit	OUTGPS-000331	dDP-927	-71.2991	42.617099	2.98	Concord River	8/19/2025	No	None	dMH-3686	--	--	--	--	--
175	Low Potential Illicit	OUTGPS-000333	dDP-929	-71.3438	42.638215	1.66	Black Brook	4/19/2025	No	None	Outfall	--	--	--	--	--
176	Low Potential Illicit	OUTGPS-000339	dDP-935	-71.3417	42.624565	1.46	River Meadow Brook	5/20/2025	No	None	Outfall	--	--	--	--	--
177	Low Potential Illicit	OUTGPS-000341	dDP-937	-71.357	42.644611	0.94	Merrimack River	6/3/2024	No	None	Outfall	--	--	--	--	--
178	Low Potential Illicit	OUTGPS-000342	dDP-938	-71.3754	42.653724	0.79	Merrimack River	4/9/2025	No	None	Outfall	--	--	--	--	--
179	Low Potential Illicit	OUTGPS-000343	dDP-939	-71.375	42.653901	*	N/A	4/9/2025	No	None	Outfall	--	--	--	--	--
180	Low Potential Illicit	OUTGPS-000344	dDP-940	-71.3752	42.654167	1.53	Merrimack River	4/9/2025	No	None	Outfall	--	--	--	--	--
181	Low Potential Illicit	OUTGPS-000347	dDP-942	-71.3618	42.650905	0.41	Merrimack River	6/3/2024	No	None	Outfall	--	--	--	--	--
182	Low Potential Illicit	OUTGPS-000007	dDP-949	-71.3162	42.653985	0.25	Merrimack River	6/23/2025	No	None	Outfall	--	--	--	--	--
183	Low Potential Illicit	OUTGPS-000011	dDP-950	-71.3142	42.650867	0.23	Lowell Canals	5/29/2025	No	None	Outfall	--	--	--	--	--
184	Low Potential Illicit	OUTGPS-000355	dDP-952	-71.3171	42.645351	*	Western Canal	6/9/2025	No	None	Outfall	--	--	--	--	--
185	Low Potential Illicit	OUTGPS-000363	dDP-958	-71.3612	42.644784	30.88	Merrimack River	8/26/2025	No	None	Outfall	--	--	--	--	--
186	Low Potential Illicit	OUTGPS-000365	dDP-960	-71.3636	42.645691	3.32	Merrimack River	4/10/2025	No	None	Outfall	--	--	--	--	--
187	Low Potential Illicit	OUTGPS-000367	dDP-961	-71.2885	42.629373	6.35	Concord River	6/3/2025	No	None	Outfall	--	--	--	--	--
188	Low Potential Illicit	OUTGPS-000369	dDP-963	-71.3756	42.654797	*	Woods	4/9/2025	No	None	Outfall	--	--	--	--	--
189	Low Potential Illicit	OUTGPS-000381	dDP-974	-71.2968	42.647675	0.34	Merrimack River	8/26/2025	No	None	Outfall	--	--	--	--	--
190	Low Potential Illicit	OUTGPS-000297	dDP-976	-71.3492	42.634472	0.66	Black Brook	5/20/2025	No	None	Outfall	--	--	--	--	--
191	Low Potential Illicit	OUTGPS-000384	dDP-979	-71.3494	42.629916	*	Black Brook	5/1/2025	No	None	Outfall	--	--	--	--	--
192	Low Potential Illicit	OUTGPS-000386	dDP-981	-71.355	42.651134	4.59	Merrimack River	5/30/2023	No	None	Outfall	--	--	--	--	--
193	Low Potential Illicit	OUTGPS-000387	dDP-982	-71.3549	42.650924	0.34	Merrimack River	8/9/2023	No	None	Outfall	--	--	--	--	--
194	Low Potential Illicit	OUTGPS-000296	dDP-985	-71.3578	42.645801	19.04	Merrimack River	8/19/2025	No	None	Outfall	--	--	--	--	--
195	Low Potential Illicit	OUTGPS-000390	dDP-986	-71.3578	42.645799	*	Clay Pit Brook	6/7/2024	No	None	Outfall	--	--	--	--	--
196	Low Potential Illicit	OUTGPS-000391	dDP-987	-71.3791	42.653058	*	Clay Pit Brook	8/26/2025	No	None	Outfall	--	--	--	--	--
197	Low Potential Illicit	OUTGPS-000392	dDP-988	-71.3796	42.653371	2.40	Merrimack River	5/14/2025	No	None	Outfall	--	--	--	--	--
198	Low Potential Illicit	OUTGPS-000393	dDP-989	-71.3753	42.641924	*	Merrimack River	4/7/2025	No	None	Outfall	--	--	--	--	--
199	Low Potential Illicit	OUTGPS-000394	dDP-992	-71.3639	42.650046	0.49	Merrimack River	8/19/2025	No	None	Outfall	--	--	--	--	--
200	Low Potential Illicit	OUTGPS-000395	dDP-993	-71.3483	42.652538	0.47	Merrimack River	6/3/2025	No	None	Outfall	--	--	--	--	--
201	Low Potential Illicit	OUTGPS-000396	dDP-994	-71.3478	42.643698	0.92	Merrimack River	6/7/2024	No	None	Outfall	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
202	Low Potential Illicit	OUTGPS-000397	dDP-995	-71.3529	42.64204	*	Clay Pit Brook	6/7/2024	No	None	Outfall	--	--	--	--	--
203	Low Potential Illicit	OUTGPS-000398	dDP-996	-71.3764	42.652838	*	Clay Pit Brook	8/18/2025	No	None	dMH-2992	--	--	--	--	--
204	Low Potential Illicit	OUTGPS-000399	dDP-997	-71.3764	42.652822	2.74	Merrimack River	8/19/2025	No	None	Outfall	--	--	--	--	--
205	Low Potential Illicit	OUTGPS-000400	dDP-998	-71.3764	42.65281	0.64	Merrimack River	4/9/2025	No	None	Outfall	--	--	--	--	--
206	Low Potential Illicit	OUTGPS-000388	dDP-983	-71.3552	42.650735	*	Wetland	--	--	--	--	--	--	--	--	--
207	Low Potential Illicit	OUTGPS-000439	dDP-1050	-71.3058	42.64374	*	Concord River	--	--	--	--	--	--	--	--	--
208	Low Potential Illicit	D-OUT-000181	dDP-1137	-71.3288	42.642908	*	Lowell Canals	--	--	--	--	--	--	--	--	--
209	Low Potential Illicit	D-OUT-000024	dDP-1146	-71.2999	42.616771	13.99	Concord River	--	--	--	--	--	--	--	--	--
210	Low Potential Illicit	D-OUT-000207	dDP-1180	-71.3416	42.645074	11.60	Merrimack River	--	--	--	--	--	--	--	--	--
211	Low Potential Illicit	S-OUT-000231	dDP-1197	-71.344	42.638195	0.21	Black Brook	--	--	--	--	--	--	--	--	--
212	Low Potential Illicit	OUT-007637	dDP-1253	-71.2954	42.6255	*	Concord River	--	--	--	--	--	--	--	--	--
213	Low Potential Illicit	D-OUT-000060	dDP-1260	-71.3455	42.635328	12.20	Black Brook	--	--	--	--	--	--	--	--	--
214	Low Potential Illicit	--	dDP-1284	--	--	*	N/A	--	--	--	--	--	--	--	--	--
215	Low Potential Illicit	--	dDP-1289	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
216	Low Potential Illicit	--	dDP-1337	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
217	Low Potential Illicit	--	dDP-1338	--	--	*	Pawtucket Canal	--	--	--	--	--	--	--	--	--
218	Low Potential Illicit	--	dDP-1339	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
219	Low Potential Illicit	--	dDP-1346	--	--	*	N/A	--	--	--	--	--	--	--	--	--
220	Low Potential Illicit	--	dDP-1348	--	--	*	N/A	--	--	--	--	--	--	--	--	--
221	Low Potential Illicit	--	dDP-1353	--	--	*	N/A	--	--	--	--	--	--	--	--	--
222	Low Potential Illicit	--	dDP-1354	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
223	Low Potential Illicit	--	dDP-1355	--	--	*	N/A	--	--	--	--	--	--	--	--	--
224	Low Potential Illicit	--	dDP-1360	--	--	*	River Meadow Brook	--	--	--	--	--	--	--	--	--
225	Low Potential Illicit	--	dDP-1362	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
226	Low Potential Illicit	--	dDP-1378	--	--	*	Beaver Brook	--	--	--	--	--	--	--	--	--
227	Low Potential Illicit	--	dDP-1382	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
228	Low Potential Illicit	--	dDP-1383	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
229	Low Potential Illicit	OUTGPS-000040	dDP-718	-71.3493	42.64074	0.82	Merrimack River	--	--	--	--	--	--	--	--	--
230	Low Potential Illicit	OUTGPS-000187	dDP-817	-71.2989	42.646206	0.09	Merrimack River	--	--	--	--	--	--	--	--	--
231	Low Potential Illicit	OUTGPS-000249	dDP-870	-71.2945	42.620933	2.00	Concord River	--	--	--	--	--	--	--	--	--
232	Low Potential Illicit	OUTGPS-000259	dDP-879	-71.3025	42.641651	*	Concord River	--	--	--	--	--	--	--	--	--
233	Low Potential Illicit	OUTGPS-000335	dDP-931	-71.3439	42.638181	*	Black Brook	--	--	--	--	--	--	--	--	--
234	Low Potential Illicit	OUTGPS-000353	dDP-951	-71.3176	42.641842	2.91	Lowell Canals	--	--	--	--	--	--	--	--	--
235	Low Potential Illicit	OUTGPS-000368	dDP-962	-71.2813	42.619982	0.05	Concord River	--	--	--	--	--	--	--	--	--
236	Low Potential Illicit	OUTGPS-000383	dDP-978	-71.353	42.647355	4.67	Merrimack River	--	--	--	--	--	--	--	--	--
237	Low Potential Illicit	OUTGPS-000385	dDP-980	-71.3492	42.629782	*	Black Brook	--	--	--	--	--	--	--	--	--
238	Low Potential Illicit	OUTGPS-000439	dDP-1114	-71.3136	42.642444	0.34	Lowell Canals	6/17/2025	N/A	N/A	Outfall	--	--	--	--	--
239	Low Potential Illicit	OUTGPS-000440	dDP-1115	-71.3142	42.642397	2.58	Lowell Canals	6/17/2025	N/A	N/A	Outfall	--	--	--	--	--
240	Low Potential Illicit	D-OUT-000091	dDP-1133	-71.3374	42.647426	*	Flaggy Meadow Brook	6/9/2025	N/A	N/A	Outfall	--	--	--	--	--
241	Low Potential Illicit	D-OUT-000040	dDP-1176	-71.3171	42.640313	*	Hamilton Canal	6/13/2025	N/A	N/A	Outfall	--	--	--	--	--
242	Low Potential Illicit	D-OUT-000209	dDP-1181	-71.3491	42.649799	2.52	Merrimack River	6/11/2025	N/A	N/A	Outfall	--	--	--	--	--
243	Low Potential Illicit	D-OUT-000217	dDP-1183	-71.3405	42.63998	*	Merrimack River	7/31/2025	N/A	N/A	Outfall	--	--	--	--	--
244	Low Potential Illicit	--	dDP-1280	--	--	4.31	Merrimack River	6/11/2025	N/A	N/A	Outfall	--	--	--	--	--
245	Low Potential Illicit	HW-000009	dDP-638	-71.3388	42.644537	1.10	Merrimack River	6/26/2025	N/A	N/A	Outfall	--	--	--	--	--
246	Low Potential Illicit	HW-000011	dDP-640	-71.2794	42.633158	4.84	Trull Brook	6/16/2025	N/A	N/A	Outfall	--	--	--	--	--
247	Low Potential Illicit	HW-000028	dDP-648	-71.2946	42.622358	1.01	Concord River	6/13/2025	N/A	N/A	Outfall	--	--	--	--	--
248	Low Potential Illicit	HW-000029	dDP-649	-71.2946	42.622504	1.96	Concord River	6/13/2025	N/A	N/A	Outfall	--	--	--	--	--
249	Low Potential Illicit	HW-000035	dDP-654	-71.2733	42.638766	11.42	Trull Brook	6/10/2025	N/A	N/A	Outfall	--	--	--	--	--
250	Low Potential Illicit	HW-000036	dDP-655	-71.273	42.637888	0.61	Trull Brook	6/12/2025	N/A	N/A	Outfall	--	--	--	--	--
251	Low Potential Illicit	OUTGPS-000015	dDP-700	-71.3228	42.651516	0.29	Lowell Canals	6/10/2025	N/A	N/A	Outfall	--	--	--	--	--
252	Low Potential Illicit	OUTGPS-000016	dDP-701	-71.3228	42.651521	*	Merrimack River	6/10/2025	N/A	N/A	Outfall	--	--	--	--	--
253	Low Potential Illicit	OUTGPS-000032	dDP-711	-71.3379	42.641949	*	Merrimack River	8/15/2025	N/A	N/A	Outfall	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
254	Low Potential Illicit	OUTGPS-000039	dDP-717	-71.3507	42.640593	*	Merrimack River	7/30/2025	N/A	N/A	Outfall	--	--	--	--	--
255	Low Potential Illicit	OUTGPS-000207	dDP-836	-71.3235	42.61523	*	River Meadow Brook	6/20/2025	N/A	N/A	Outfall	--	--	--	--	--
256	Low Potential Illicit	OUTGPS-000371	dDP-965	-71.2726	42.637896	*	Swale	6/12/2025	N/A	N/A	Outfall	--	--	--	--	--
257	Low Potential Illicit	OUTGPS-000356	dDP-1109	-71.2825	42.621078	5.87	Concord River	8/19/2025	Unknown	Unknown	Outfall	--	--	--	--	--
258	Low Potential Illicit	D-OUT-000030	dDP-1144	-71.3196	42.622478	8.44	River Meadow Brook	6/13/2025	Unknown	Unknown	Outfall	--	--	--	--	--
259	Low Potential Illicit	D-OUT-000165	dDP-1167	-71.3134	42.652093	*	Merrimack River	8/15/2025	Unknown	Unknown	Outfall	--	--	--	--	--
260	Low Potential Illicit	D-OUT-000230	dDP-1187	-71.303	42.642866	0.18	Concord River	10/8/2025	Unknown	Unknown	dMH-3859	--	--	--	--	--
261	Low Potential Illicit	S-OUT-007510	dDP-1202	-71.3482	42.628401	24.02	Black Brook	8/19/2025	Unknown	Unknown	Outfall	--	--	--	--	--
262	Low Potential Illicit	--	dDP-1335	--	--	*	Merrimack River	6/26/2025	Unknown	Unknown	Outfall	--	--	--	--	--
263	Low Potential Illicit	OUTGPS-000292	dDP-902	-71.3494	42.629901	4.34	Black Brook	8/20/2025	Unknown	Unknown	Outfall	--	--	--	--	--
264	Low Potential Illicit	OUTGPS-000348	dDP-943	-71.3612	42.64964	1.15	Merrimack River	6/6/2025	Unknown	Unknown	Outfall	--	--	--	--	--
265	Low Potential Illicit	OUTGPS-000372	dDP-966	-71.3036	42.643089	*	Concord River	10/8/2025	Unknown	Unknown	Outfall	--	--	--	--	--
266	Low Potential Illicit	D-OUT-000206	dDP-1226	-71.3378	42.647099	1.12							--	--	--	--

Notes:

1) Sample was collected at the nearest upstream accessible drainage structure if outfall was inaccessible or submerged during screening. No sample was collected if no flow or standing water was observed.
2) Shaded values exceed screening thresholds (ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, chlorine > 0.02 mg/L, E. coli ≥ 235 MPN/100 mL). E. coli results below 2 MPN/100 mL detection limit are shown as "-".
3) Interconnections entering Lawrence (IN0002, IN0003, IN0004, IN0006, IN0009, and IN0010) are excluded from ranking.
4) RCP = Reinforced Concrete Pipe, VCP = Vitrified Clay Pipe, PVC = Polyvinyl Chloride, HDPE = High Density Polyethylene, CMP = Corrugated Metal Pipe
5) Catchment Area's marked with askrisk need mapping to confirm size.
6) Flow noted as N/A is due to the outfall not being located. Additional screening of the upstream features will be attempted.
7) Outfall to be rescreened.

a) Potential illicit category identified through EPA screening/sampling
b) Potential illicit category identified through olfactory or visual evidence of sewage
c) Potential illicit category identified through the following criteria: > 410 cfu/mL E. coli and/or > 130 cfu/mL Enterococcus AND >0.25 mg/L surfactants AND >0.5 mg/L ammonia
d) Potential illicit category identified through the following criteria: >0.25 mg/L surfactants AND >0.5 mg/L ammonia AND detectable chlorine
AND >0.25 mg/L surfactants AND >0.5 mg/L ammonia
e) Potential illicit category identified through the following criteria: > 410 cfu/mL E. coli and/or > 130 cfu/mL Enterococcus AND detectable ammonia
AND >0.25 mg/L surfactants AND >0.5 mg/L ammonia
High Bacteria category identified through the following criteria: > 410 cfu/mL E. coli and/or > 130 cfu/mL Enterococcus
Low Potential Illicit category identified with sampling and screening results which do not meet any of the above criteria

Table 6 Wet Weather Screen Results

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
1	Potential Illicit (a)	OUTGPS-000043	dDP-1060	-71.2954	42.625484	3.93	Concord River	9/8/2025	Yes	Moderate	Outfall	0	0.13	0	**1732.9**	<Null>
2	Potential Illicit (a)	OUTGPS-000330	dDP-1106	-71.3179	42.628501	135.16	River Meadow Brook	8/1/2025	No	None	dMH-2591	--	--	--	--	--
3	Potential Illicit (d)	OUTGPS-000035	dDP-713	-71.353	42.640406	4.08	Merrimack River	3/17/2025	Yes	Moderate	Outfall	**0.5**	**0.27**	**0.54**	73.7	0.223
4	Potential Illicit (e)	OUTGPS-000445	dDP-1127	-71.3148	42.640972	4.75	Lowell Canals	3/17/2025	Yes	Moderate	Outfall	0.25	0.12	**0.32**	**1046.2**	0.0542

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
5	Potential Illicit (e)	OUTGPS-000433	dDP-1044	-71.3491	42.622306	1.73	Black Brook	5/5/2025	Yes	Fast	Outfall	0.25	0.12	0	**1732.9**	0.0414
6	Potential Illicit (e)	OUTGPS-000150	dDP-1057	-71.3149	42.653066	*	Merrimack River	6/5/2023	Yes	Trickle	Outfall	0.25	0.19	**0.1**	**2420**	0.121
7	Potential Illicit (e)	S-OUT-004772	dDP-1199	-71.3243	42.639863	*	Pawtucket Canal	5/31/2025	Yes	Moderate	Outfall	0.25	**0.36**	**0.33**	**2420**	0
8	Potential Illicit (e)	OUTGPS-000396	dDP-994	-71.3478	42.643698	0.92	Merrimack River	5/9/2025	Yes	Moderate	Outfall	0.25	0.11	**0.17**	**960.6**	0.531
9	Potential Illicit (e)	OUTGPS-000397	dDP-995	-71.3529	42.64204	*	Clay Pit Brook	5/9/2025	Yes	Moderate	Outfall	0.25	**0.5**	**0.77**	**2420**	0.403
10	High Bacteria	OUTGPS-000274	dDP-1016	-71.3342	42.618943	25.46	River Meadow Brook	5/5/2025	Yes	Fast	Outfall	0	0.1	**0.54**	**2419.6**	0.129
11	High Bacteria	OUTGPS-000436	dDP-1047	-71.321	42.661247	4.91	Beaver Brook	6/5/2023	Yes	Moderate	Outfall	0	0.2	**0.2**	**2420**	0.262
12	High Bacteria	OUTGPS-000294	dDP-1100	-71.3728	42.646805	26.03	Merrimack River	5/10/2025	Yes	Moderate	Outfall	0	0.19	**0.16**	**2420**	0.0531
13	High Bacteria	OUTGPS-000291	dDP-1117	-71.3495	42.622053	2.32	Black Brook	5/5/2025	Yes	Fast	Outfall	0	0.173	0	**2419.6**	0.0595
14	High Bacteria	OUTGPS-000339	dDP-935	-71.3417	42.624565	1.46	River Meadow Brook	5/5/2025	Yes	Moderate	Outfall	0	0.12	**0.05**	**2419.6**	0.158
15	Low Potential Illicit	OUTGPS-000268	dDP-887	-71.2835	42.650798	6.09	Merrimack River	4/26/2025	Yes	Moderate	Outfall	0	0.07	0	178.2	0.0138
16	Low Potential Illicit	OUTGPS-000139	dDP-1094	-71.3798	42.649798	6.39	Merrimack River	8/18/2025	Yes	Moderate	Outfall	0	0.17	**0.12**	<Null>	<Null>
17	Low Potential Illicit	D-OUT-000247	dDP-1196	-71.2965	42.619599	38.99	Concord River	5/31/2025	Yes	Moderate	Outfall	0	**0.36**	**0.33**	0	0
18	Low Potential Illicit	OUTGPS-000168	dDP-813	-71.2763	42.654725	5.94	Merrimack River	4/25/2025	Yes	Trickle	Outfall	0.25	**0.42**	0	0	0.0574
19	Low Potential Illicit	OUTGPS-000329	dDP-1105	-71.3171	42.628861	123.00	River Meadow Brook	8/1/2025	Yes	Fast	dMH-2534	0	0.15	**0.78**	<Null>	<Null>
20	Low Potential Illicit	OUTGPS-000354	dDP-1108	-71.3172	42.645129	*	WESTERN CANAL	4/25/2025	Yes	Trickle	Outfall	0	0.12	0	0	0.0287
21	Low Potential Illicit	OUTGPS-000275	dDP-991	-71.3384	42.622995	33.31	River Meadow Brook	4/3/2025	Yes	Moderate	Outfall	0.25	0.11	0	27.9	0.0138
22	Low Potential Illicit	OUTGPS-000283	dDP-895	-71.3011	42.635975	48.77	Concord River	3/17/2025	Yes	Fast	Outfall	0.25	0.21	**0.22**	**287.8**	0.139
23	Low Potential Illicit	OUTGPS-000087	dDP-755	-71.32	42.658458	17.19	Beaver Brook	8/18/2025	Yes	Slow	dMH-3856	0	0.14	0	<Null>	<Null>
24	Low Potential Illicit	OUTGPS-000269	dDP-1015	-71.2846	42.649787	4.00	Merrimack River	4/26/2025	Yes	Moderate	Outfall	0	0.16	0	9.8	<0.0106
25	Low Potential Illicit	D-OUT-000238	dDP-1192	-71.2918	42.620806	12.45	Concord River	7/31/2025	Yes	Moderate	Outfall	0.25	**0.32**	**0.12**	<Null>	<Null>
26	Low Potential Illicit	--	dDP-1267	-71.3362	42.621151	*	N/A	7/31/2025	Yes	Moderate	Outfall	0.25	0.04	**0.14**	<Null>	<Null>
27	Low Potential Illicit	--	dDP-1286	--	--	*	N/A	4/3/2025	Yes	Trickle	Outfall	0.25	0	0	114.5	<0.0106
28	Low Potential Illicit	--	dDP-1292	--	--	*	Merrimack River	9/25/2025	Yes	Moderate	Outfall	<Null>	<Null>	<Null>	<Null>	<Null>
29	Low Potential Illicit	OUTGPS-000086	dDP-754	-71.3239	42.6539	*	Merrimack River	8/20/2025	Yes	Moderate	Outfall	0	**0.32**	**0.32**	<Null>	<Null>
30	Low Potential Illicit	OUTGPS-000105	dDP-770	-71.338	42.647267	2.22	Merrimack River	5/22/2025	Yes	Moderate	Outfall	0.25	**0.38**	**0.68**	0	0
31	Low Potential Illicit	OUTGPS-000342	dDP-938	-71.3754	42.653724	0.79	Merrimack River	10/30/2023	Yes	Trickle	Outfall	0	0.12	**0.09**	187	0.216
32	Low Potential Illicit	D-OUT-000060	dDP-1260	-71.3455	42.635328	12.20	Black Brook	9/25/2025	Yes	Slow	dMH-3873	0.25	**0.25**	**0.04**	<Null>	<Null>
33	Low Potential Illicit	--	dDP-1378	--	--	*	Beaver Brook	8/20/2025	Yes	Slow	Outfall	0.25	**0.69**	**0.17**	<Null>	<Null>
34	Low Potential Illicit	OUTGPS-000335	dDP-931	-71.3439	42.638181	*	Black Brook	8/14/2025	Standing Water	N/A	--	--	--	--	--	--
35	Low Potential Illicit	OUTGPS-000350	dDP-947	-71.3036	42.665602	4.52	Merrimack River	5/31/2025	No	None	Outfall	--	--	--	--	--
36	Low Potential Illicit	OUTGPS-000402	dDP-1000	-71.3547	42.631855	0.75	Black Brook	5/22/2025	No	None	Outfall	--	--	--	--	--
37	Low Potential Illicit	OUTGPS-000412	dDP-1010	-71.3493	42.629901	16.25	Black Brook	9/26/2025	No	None	dMH-3419	--	--	--	--	--
38	Low Potential Illicit	OUTGPS-000427	dDP-1035	-71.3506	42.648666	*	N/A	4/3/2025	No	None	Outfall	--	--	--	--	--
39	Low Potential Illicit	OUTGPS-000271	dDP-1040	-71.3375	42.642686	2.04	Merrimack River	9/25/2025	No	None	dIN-4841	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
40	Low Potential Illicit	OUTGPS-000163	dDP-1066	-71.3392	42.644006	1.93	Merrimack River	8/20/2025	No	None	Outfall	--	--	--	--	--
41	Low Potential Illicit	OUTGPS-000246	dDP-1095	-71.3136	42.652185	0.86	Merrimack River	9/25/2025	No	None	Outfall	--	--	--	--	--
42	Low Potential Illicit	OUTGPS-000258	dDP-1096	-71.3025	42.641641	1.85	Concord River	6/7/2025	No	None	Outfall	--	--	--	--	--
43	Low Potential Illicit	D-OUT-000138	dDP-1158	-71.319	42.659846	*	Beaver Brook	8/20/2025	No	None	Outfall	--	--	--	--	--
44	Low Potential Illicit	D-OUT-000229	dDP-1186	-71.3056	42.647646	0.31	Merrimack River	7/2/2025	No	None	Outfall	--	--	--	--	--
45	Low Potential Illicit	D-OUT-000235	dDP-1190	-71.2943	42.620957	12.51	Concord River	9/8/2025	No	None	dMH-4356	--	--	--	--	--
46	Low Potential Illicit	D-OUT-000193	dDP-1195	-71.3185	42.659409	*	Beaver Brook	8/20/2025	No	None	Outfall	--	--	--	--	--
47	Low Potential Illicit	OUT-007636	dDP-1252	-71.3047	42.662197	0.33	Merrimack River	5/31/2025	No	None	Outfall	--	--	--	--	--
48	Low Potential Illicit	OUT-007649	dDP-1264	-71.3158	42.638933	*	N/A	10/14/2025	No	None	Outfall	--	--	--	--	--
49	Low Potential Illicit	--	dDP-1271	--	--	4.92	Merrimack River	7/2/2025	No	None	Outfall	--	--	--	--	1.26
50	Low Potential Illicit	--	dDP-1278	--	--	2.25	Merrimack River	7/2/2025	No	None	Outfall	--	--	--	--	0.017
51	Low Potential Illicit	--	dDP-1288	--	--	*	N/A	7/31/2025	No	None	Outfall	--	--	--	--	--
52	Low Potential Illicit	--	dDP-1299	--	--	*	Black Brook	10/14/2025	No	None	Outfall	--	--	--	--	--
53	Low Potential Illicit	OUTGPS-000027	dDP-708	-71.3114	42.650753	*	Merrimack River	9/26/2025	No	None	Outfall	--	--	--	--	--
54	Low Potential Illicit	OUTGPS-000037	dDP-715	-71.3514	42.64051	0.24	Merrimack River	8/14/2025	No	None	Outfall	--	--	--	--	--
55	Low Potential Illicit	OUTGPS-000038	dDP-716	-71.3508	42.640612	0.93	Merrimack River	8/14/2025	No	None	Outfall	--	--	--	--	--
56	Low Potential Illicit	OUTGPS-000041	dDP-719	-71.348	42.640946	0.41	Merrimack River	8/14/2025	No	None	Outfall	--	--	--	--	--
57	Low Potential Illicit	OUTGPS-000042	dDP-720	-71.3467	42.641137	2.76	Merrimack River	8/14/2025	No	None	Outfall	--	--	--	--	--
58	Low Potential Illicit	OUTGPS-000049	dDP-722	-71.3428	42.641762	3.62	Merrimack River	8/14/2025	No	None	Outfall	--	--	--	--	--
59	Low Potential Illicit	OUTGPS-000051	dDP-724	-71.3433	42.641674	0.13	Merrimack River	8/21/2025	No	None	dIN-6781	--	--	--	--	--
60	Low Potential Illicit	OUTGPS-000100	dDP-766	-71.2901	42.646437	0.99	Merrimack River	8/20/2025	No	None	Outfall	--	--	--	--	--
61	Low Potential Illicit	OUTGPS-000156	dDP-808	-71.3132	42.651811	*	Merrimack River	4/3/2025	No	None	Outfall	--	--	--	--	--
62	Low Potential Illicit	OUTGPS-000157	dDP-809	-71.3135	42.651493	*	Merrimack River	4/3/2025	No	None	Outfall	--	--	--	--	--
63	Low Potential Illicit	OUTGPS-000160	dDP-811	-71.3404	42.642525	*	Merrimack River	8/20/2025	No	None	Outfall	--	--	--	--	--
64	Low Potential Illicit	OUTGPS-000161	dDP-812	-71.3398	42.643138	1.57	Merrimack River	8/20/2025	No	None	dIN-4846	--	--	--	--	--
65	Low Potential Illicit	OUTGPS-000230	dDP-855	-71.3756	42.655014	0.27	Merrimack River	9/25/2023	No	None	Outfall	--	--	--	--	--
66	Low Potential Illicit	OUTGPS-000239	dDP-862	-71.2886	42.624663	2.76	Concord River	8/30/2023	No	None	Outfall	--	--	--	--	--
67	Low Potential Illicit	OUTGPS-000240	dDP-863	-71.2886	42.623679	19.05	Concord River	9/8/2025	No	None	Outfall	--	--	--	--	--
68	Low Potential Illicit	OUTGPS-000241	dDP-864	-71.2918	42.620818	*	Marginal Brook	9/8/2025	No	None	Outfall	--	--	--	--	--
69	Low Potential Illicit	OUTGPS-000251	dDP-872	-71.2952	42.619552	1.48	Concord River	9/8/2025	No	None	Outfall	--	--	--	--	--
70	Low Potential Illicit	OUTGPS-000254	dDP-875	-71.332	42.617939	4.64	River Meadow Brook	10/14/2025	No	None	dMH-3485	--	--	--	--	--
71	Low Potential Illicit	OUTGPS-000273	dDP-889	-71.33	42.616711	2.25	River Meadow Brook	5/31/2025	No	None	Outfall	--	--	--	--	--
72	Low Potential Illicit	OUTGPS-000285	dDP-896	-71.3303	42.648779	0.73	Lowell Canals	9/8/2025	No	None	Outfall	--	--	--	--	--
73	Low Potential Illicit	OUTGPS-000288	dDP-899	-71.3475	42.622769	2.14	Black Brook	5/5/2025	No	None	Outfall	--	--	--	--	--
74	Low Potential Illicit	OUTGPS-000341	dDP-937	-71.357	42.644611	0.94	Merrimack River	5/22/2025	No	None	Outfall	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
75	Low Potential Illicit	OUTGPS-000344	dDP-940	-71.3752	42.654167	1.53	Merrimack River	4/26/2025	No	None	Outfall	--	--	--	--	--
76	Low Potential Illicit	OUTGPS-000007	dDP-949	-71.3162	42.653985	0.25	Merrimack River	6/5/2023	No	None	Outfall	--	--	--	--	--
77	Low Potential Illicit	OUTGPS-000011	dDP-950	-71.3142	42.650867	0.23	Lowell Canals	4/26/2025	No	None	Outfall	--	--	--	--	--
78	Low Potential Illicit	OUTGPS-000365	dDP-960	-71.3636	42.645691	3.32	Merrimack River	5/9/2025	No	None	Outfall	--	--	--	--	--
79	Low Potential Illicit	OUTGPS-000367	dDP-961	-71.2885	42.629373	6.35	Concord River	8/30/2023	No	None	Outfall	--	--	--	--	--
80	Low Potential Illicit	OUTGPS-000439	dDP-1050	-71.3058	42.64374	*	Concord River	8/21/2025	No	None	Outfall	--	--	--	--	--
81	Low Potential Illicit	D-OUT-000181	dDP-1137	-71.3288	42.642908	*	Lowell Canals	7/2/2025	No	None	Outfall	--	--	--	--	--
82	Low Potential Illicit	D-OUT-000024	dDP-1146	-71.2999	42.616771	13.99	Concord River	5/31/2025	No	None	Outfall	--	--	--	--	--
83	Low Potential Illicit	S-OUT-000231	dDP-1197	-71.344	42.638195	0.21	Black Brook	8/14/2025	No	None	Outfall	--	--	--	--	--
84	Low Potential Illicit	OUTGPS-000040	dDP-718	-71.3493	42.64074	0.82	Merrimack River	8/14/2025	No	None	Outfall	--	--	--	--	--
86	Low Potential Illicit	OUTGPS-000259	dDP-879	-71.3025	42.641651	*	Concord River	7/21/2025	No	None	Outfall	--	--	--	--	--
87	Low Potential Illicit	OUTGPS-000353	dDP-951	-71.3176	42.641842	2.91	Lowell Canals	4/26/2025	No	None	Outfall	--	--	--	--	--
88	Low Potential Illicit	OUTGPS-000368	dDP-962	-71.2813	42.619982	0.05	Concord River	9/8/2025	No	None	Outfall	--	--	--	--	--
89	Low Potential Illicit	OUTGPS-000440	dDP-1115	-71.3142	42.642397	2.58	Lowell Canals	4/26/2025	No	None	Outfall	--	--	--	--	--
90	Low Potential Illicit	--	dDP-1280	--	--	4.31	Merrimack River	7/2/2025	No	None	Outfall	--	--	--	--	--
91	Low Potential Illicit	D-OUT-000030	dDP-1144	-71.3196	42.622478	8.44	River Meadow Brook	9/8/2025	No	None	dMH-3772	--	--	--	--	--
92	Low Potential Illicit	S-OUT-007510	dDP-1202	-71.3482	42.628401	24.02	Black Brook	9/26/2025	No	None	dMH-3850	--	--	--	--	--
93	Low Potential Illicit	OUTGPS-000352	dDP-1107	-71.299	42.645933	5.15	Merrimack River	--	--	--	--	--	--	--	--	--
94	Low Potential Illicit	OUTGPS-000310	dDP-913	-71.3178	42.613917	6.63	River Meadow Brook	--	--	--	--	--	--	--	--	--
95	Low Potential Illicit	OUTGPS-000278	dDP-1098	-71.2878	42.64997	3.00	Merrimack River	--	--	--	--	--	--	--	--	--
96	Low Potential Illicit	OUTGPS-000360	dDP-955	-71.3573	42.65077	9.73	Merrimack River	--	--	--	--	--	--	--	--	--
97	Low Potential Illicit	OUTGPS-000388	dDP-983	-71.3552	42.650735	*	Wetland	--	--	--	--	--	--	--	--	--
98	Low Potential Illicit	OUTGPS-000431	dDP-1039	-71.3616	42.650099	1.24	Merrimack River	--	--	--	--	--	--	--	--	--
99	Low Potential Illicit	OUTGPS-000349	dDP-944	-71.3608	42.648643	0.94	Merrimack River	--	--	--	--	--	--	--	--	--
100	Low Potential Illicit	OUTGPS-000299	dDP-977	-71.3492	42.63451	0.66	Black Brook	--	--	--	--	--	--	--	--	--
101	Low Potential Illicit	--	dDP-1357	--	--	*	River Meadow Brook	--	--	--	--	--	--	--	--	--
102	Low Potential Illicit	OUTGPS-000314	dDP-1104	-71.3445	42.644768	24.54	Merrimack River	--	--	--	--	--	--	--	--	--
103	Low Potential Illicit	OUTGPS-000107	dDP-1089	-71.3231	42.614556	12.04	River Meadow Brook	--	--	--	--	--	--	--	--	--
104	Low Potential Illicit	OUTGPS-000338	dDP-934	-71.3414	42.62403	7.73	River Meadow Brook	--	--	--	--	--	--	--	--	--
105	Low Potential Illicit	HW-000010	dDP-639	-71.3306	42.64536	4.89	Lowell Canals	--	--	--	--	--	--	--	--	--
106	Low Potential Illicit	OUTGPS-000429	dDP-1037	-71.3515	42.648185	*	Clay Pit Brook	--	--	--	--	--	--	--	--	--
107	Low Potential Illicit	OUTGPS-000219	dDP-845	-71.3622	42.646298	4.60	Merrimack River	--	--	--	--	--	--	--	--	--
108	Low Potential Illicit	OUTGPS-000358	dDP-953	-71.2817	42.621476	1.54	Concord River	--	--	--	--	--	--	--	--	--
109	Low Potential Illicit	--	dDP-1281	--	--	0.56	Merrimack River	--	--	--	--	--	--	--	--	--
110	Low Potential Illicit	OUTGPS-000134	dDP-794	-71.3638	42.647105	7.29	Clay Pit Brook	--	--	--	--	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
111	Low Potential Illicit	D-OUT-000187	dDP-1172	-71.312	42.641727	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
112	Low Potential Illicit	HW-000083	dDP-677	-71.3179	42.628501	*	River Meadow Brook	--	--	--	--	--	--	--	--	--
113	Low Potential Illicit	OUTGPS-000234	dDP-858	-71.2745	42.636567	11.51	Trull Brook	--	--	--	--	--	--	--	--	--
114	Low Potential Illicit	OUTGPS-000326	dDP-923	-71.3211	42.616229	163.26	River Meadow Brook	--	--	--	--	--	--	--	--	--
115	Low Potential Illicit	OUTGPS-000403	dDP-1001	-71.3547	42.631824	1.84	Black Brook	--	--	--	--	--	--	--	--	--
116	Low Potential Illicit	OUTGPS-000136	dDP-1017	-71.3626	42.651712	1.51	Merrimack River	--	--	--	--	--	--	--	--	--
117	Low Potential Illicit	OUTGPS-000413	dDP-1020	-71.3438	42.65588	4.10	Merrimack River	--	--	--	--	--	--	--	--	--
118	Low Potential Illicit	OUTGPS-000428	dDP-1036	-71.3512	42.648117	4.30	Merrimack River	--	--	--	--	--	--	--	--	--
119	Low Potential Illicit	OUTGPS-000430	dDP-1038	-71.3135	42.632346	*	River Meadow Brook	--	--	--	--	--	--	--	--	--
120	Low Potential Illicit	OUTGPS-000272	dDP-1042	-71.3383	42.641519	1.34	Merrimack River	--	--	--	--	--	--	--	--	--
121	Low Potential Illicit	OUTGPS-000164	dDP-1067	-71.3382	42.64545	0.14	Merrimack River	--	--	--	--	--	--	--	--	--
122	Low Potential Illicit	OUTGPS-000101	dDP-1088	-71.2878	42.647638	*	Merrimack River	--	--	--	--	--	--	--	--	--
123	Low Potential Illicit	OUTGPS-000300	dDP-1102	-71.2822	42.629959	*	Marginal Brook	--	--	--	--	--	--	--	--	--
124	Low Potential Illicit	OUTGPS-000357	dDP-1110	-71.282	42.621193	5.34	Concord River	--	--	--	--	--	--	--	--	--
125	Low Potential Illicit	OUTGPS-000366	dDP-1111	-71.3548	42.6452	21.56	Merrimack River	--	--	--	--	--	--	--	--	--
126	Low Potential Illicit	OUTGPS-000031	dDP-1122	-71.3352	42.645732	14.38	Merrimack River	--	--	--	--	--	--	--	--	--
127	Low Potential Illicit	OUTGPS-000124	dDP-1123	-71.3561	42.63749	*	Merrimack River	--	--	--	--	--	--	--	--	--
128	Low Potential Illicit	D-OUT-000117	dDP-1131	-71.3568	42.640158	0.72	Merrimack River	--	--	--	--	--	--	--	--	--
129	Low Potential Illicit	D-OUT-000182	dDP-1138	-71.3292	42.642923	0.57	Lowell Canals	--	--	--	--	--	--	--	--	--
130	Low Potential Illicit	D-OUT-000006	dDP-1156	-71.2852	42.648932	4.60	Merrimack River	--	--	--	--	--	--	--	--	--
131	Low Potential Illicit	D-OUT-000210	dDP-1182	-71.3048	42.642909	2.01	Concord River	--	--	--	--	--	--	--	--	--
132	Low Potential Illicit	D-OUT-000227	dDP-1184	-71.3056	42.64492	0.17	Concord River	--	--	--	--	--	--	--	--	--
133	Low Potential Illicit	D-OUT-000228	dDP-1185	-71.3054	42.644844	0.51	Concord River	--	--	--	--	--	--	--	--	--
134	Low Potential Illicit	OUT-007597	dDP-1218	-71.3437	42.65053	2.73	Merrimack River	--	--	--	--	--	--	--	--	--
135	Low Potential Illicit	OUT-007607	dDP-1222	-71.3565	42.65407	*	N/A	--	--	--	--	--	--	--	--	--
136	Low Potential Illicit	OUT-007609	dDP-1223	-71.3561	42.650704	*	N/A	--	--	--	--	--	--	--	--	--
137	Low Potential Illicit	D-OUT-000219	dDP-1227	-71.3189	42.659774	68.29	Beaver Brook	--	--	--	--	--	--	--	--	--
138	Low Potential Illicit	OUT-007650	dDP-1265	-71.3171	42.640713	1.25	Lowell Canals	--	--	--	--	--	--	--	--	--
139	Low Potential Illicit	OUT-007651	dDP-1266	-71.3165	42.641265	0.20	Lowell Canals	--	--	--	--	--	--	--	--	--
140	Low Potential Illicit	--	dDP-1275	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
141	Low Potential Illicit	--	dDP-1277	--	--	2.39	Merrimack River	--	--	--	--	--	--	--	--	--
142	Low Potential Illicit	--	dDP-1283	--	--	*	N/A	--	--	--	--	--	--	--	--	--
143	Low Potential Illicit	--	dDP-1285	--	--	*	N/A	--	--	--	--	--	--	--	--	--
144	Low Potential Illicit	--	dDP-1290	--	--	*	Concord River	--	--	--	--	--	--	--	--	--
145	Low Potential Illicit	--	dDP-1291	--	--	*	Concord River	--	--	--	--	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
146	Low Potential Illicit	--	dDP-1294	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
147	Low Potential Illicit	--	dDP-1295	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
148	Low Potential Illicit	--	dDP-1296	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
149	Low Potential Illicit	--	dDP-1297	--	--	*	Beaver Brook	--	--	--	--	--	--	--	--	--
150	Low Potential Illicit	--	dDP-1298	--	--	*	N/A	--	--	--	--	--	--	--	--	--
151	Low Potential Illicit	--	dDP-1334	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
152	Low Potential Illicit	--	dDP-1336	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
153	Low Potential Illicit	--	dDP-1340	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
154	Low Potential Illicit	--	dDP-1342	--	--	*	N/A	--	--	--	--	--	--	--	--	--
155	Low Potential Illicit	--	dDP-1343	--	--	*	N/A	--	--	--	--	--	--	--	--	--
156	Low Potential Illicit	--	dDP-1344	--	--	*	N/A	--	--	--	--	--	--	--	--	--
157	Low Potential Illicit	--	dDP-1347	--	--	*	N/A	--	--	--	--	--	--	--	--	--
158	Low Potential Illicit	--	dDP-1349	--	--	*	N/A	--	--	--	--	--	--	--	--	--
159	Low Potential Illicit	--	dDP-1350	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
160	Low Potential Illicit	--	dDP-1351	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
161	Low Potential Illicit	--	dDP-1352	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
162	Low Potential Illicit	--	dDP-1356	--	--	*	N/A	--	--	--	--	--	--	--	--	--
163	Low Potential Illicit	--	dDP-1361	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
164	Low Potential Illicit	--	dDP-1364	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
165	Low Potential Illicit	--	dDP-1368	--	--	*	Black Brook	--	--	--	--	--	--	--	--	--
166	Low Potential Illicit	--	dDP-1371	--	--	*	N/A	--	--	--	--	--	--	--	--	--
167	Low Potential Illicit	--	dDP-1374	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
168	Low Potential Illicit	HW-000091	dDP-683	-71.2817	42.621476	*	N/A	--	--	--	--	--	--	--	--	--
169	Low Potential Illicit	HW-000092	dDP-684	-71.3378	42.647099	*	Flaggy Meadow Brook	--	--	--	--	--	--	--	--	--
170	Low Potential Illicit	HW-000095	dDP-686	-71.2793	42.628317	0.27	Trull Brook	--	--	--	--	--	--	--	--	--
171	Low Potential Illicit	OUTGPS-000030	dDP-710	-71.3345	42.64628	*	Merrimack River	--	--	--	--	--	--	--	--	--
172	Low Potential Illicit	OUTGPS-000034	dDP-712	-71.3399	42.640324	*	Merrimack River	--	--	--	--	--	--	--	--	--
173	Low Potential Illicit	OUTGPS-000089	dDP-757	-71.3187	42.659949	1.15	Beaver Brook	--	--	--	--	--	--	--	--	--
174	Low Potential Illicit	OUTGPS-000102	dDP-767	-71.2878	42.649182	0.75	Merrimack River	--	--	--	--	--	--	--	--	--
175	Low Potential Illicit	OUTGPS-000111	dDP-774	-71.309	42.631806	11.83	River Meadow Brook	--	--	--	--	--	--	--	--	--
176	Low Potential Illicit	OUTGPS-000128	dDP-790	-71.3533	42.637278	*	Merrimack River	--	--	--	--	--	--	--	--	--
177	Low Potential Illicit	OUTGPS-000135	dDP-795	-71.3633	42.652198	1.05	Merrimack River	--	--	--	--	--	--	--	--	--
178	Low Potential Illicit	OUTGPS-000143	dDP-801	-71.3759	42.65655	3.46	Merrimack River	--	--	--	--	--	--	--	--	--
179	Low Potential Illicit	OUTGPS-000151	dDP-803	-71.3145	42.652807	8.77	Merrimack River	--	--	--	--	--	--	--	--	--
180	Low Potential Illicit	OUTGPS-000190	dDP-820	-71.3038	42.643377	*	Concord River	--	--	--	--	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
181	Low Potential Illicit	OUTGPS-000191	dDP-821	-71.305	42.643559	*	Concord River	--	--	--	--	--	--	--	--	--
182	Low Potential Illicit	OUTGPS-000202	dDP-831	-71.3043	42.645517	*	Concord River	--	--	--	--	--	--	--	--	--
183	Low Potential Illicit	OUTGPS-000204	dDP-833	-71.3047	42.645313	*	Concord River	--	--	--	--	--	--	--	--	--
184	Low Potential Illicit	OUTGPS-000227	dDP-853	-71.3127	42.61584	*	N/A	--	--	--	--	--	--	--	--	--
185	Low Potential Illicit	OUTGPS-000229	dDP-854	-71.3748	42.65567	1.32	Merrimack River	--	--	--	--	--	--	--	--	--
186	Low Potential Illicit	OUTGPS-000231	dDP-856	-71.3561	42.650704	3.09	Merrimack River	--	--	--	--	--	--	--	--	--
187	Low Potential Illicit	OUTGPS-000232	dDP-857	-71.3565	42.65407	1.95	Merrimack River	--	--	--	--	--	--	--	--	--
188	Low Potential Illicit	OUTGPS-000236	dDP-860	-71.349	42.649694	5.63	Merrimack River	--	--	--	--	--	--	--	--	--
189	Low Potential Illicit	OUTGPS-000250	dDP-871	-71.2945	42.620973	2.51	Concord River	--	--	--	--	--	--	--	--	--
190	Low Potential Illicit	OUTGPS-000252	dDP-873	-71.3307	42.617157	2.99	River Meadow Brook	--	--	--	--	--	--	--	--	--
191	Low Potential Illicit	OUTGPS-000253	dDP-874	-71.3313	42.617575	2.81	River Meadow Brook	--	--	--	--	--	--	--	--	--
192	Low Potential Illicit	OUTGPS-000286	dDP-897	-71.347	42.622218	4.50	Black Brook	--	--	--	--	--	--	--	--	--
193	Low Potential Illicit	OUTGPS-000287	dDP-898	-71.347	42.622758	2.07	Black Brook	--	--	--	--	--	--	--	--	--
194	Low Potential Illicit	OUTGPS-000289	dDP-900	-71.3484	42.622625	2.74	Black Brook	--	--	--	--	--	--	--	--	--
195	Low Potential Illicit	OUTGPS-000290	dDP-901	-71.3491	42.622227	*	Black Brook	--	--	--	--	--	--	--	--	--
196	Low Potential Illicit	OUTGPS-000295	dDP-903	-71.3728	42.646806	0.47	Merrimack River	--	--	--	--	--	--	--	--	--
197	Low Potential Illicit	OUTGPS-000301	dDP-904	-71.2867	42.634887	1.03	Merrimack River	--	--	--	--	--	--	--	--	--
198	Low Potential Illicit	OUTGPS-000322	dDP-919	-71.2822	42.629945	41.06	Trull Brook	--	--	--	--	--	--	--	--	--
199	Low Potential Illicit	OUTGPS-000323	dDP-920	-71.2822	42.629986	*	N/A	--	--	--	--	--	--	--	--	--
200	Low Potential Illicit	OUTGPS-000331	dDP-927	-71.2991	42.617099	2.98	Concord River	--	--	--	--	--	--	--	--	--
201	Low Potential Illicit	OUTGPS-000333	dDP-929	-71.3438	42.638215	1.66	Black Brook	--	--	--	--	--	--	--	--	--
202	Low Potential Illicit	OUTGPS-000343	dDP-939	-71.375	42.653901	*	N/A	--	--	--	--	--	--	--	--	--
203	Low Potential Illicit	OUTGPS-000347	dDP-942	-71.3618	42.650905	0.41	Merrimack River	--	--	--	--	--	--	--	--	--
204	Low Potential Illicit	OUTGPS-000355	dDP-952	-71.3171	42.645351	*	Western Canal	--	--	--	--	--	--	--	--	--
205	Low Potential Illicit	OUTGPS-000363	dDP-958	-71.3612	42.644784	30.88	Merrimack River	--	--	--	--	--	--	--	--	--
206	Low Potential Illicit	OUTGPS-000369	dDP-963	-71.3756	42.654797	*	Woods	--	--	--	--	--	--	--	--	--
207	Low Potential Illicit	OUTGPS-000381	dDP-974	-71.2968	42.647675	0.34	Merrimack River	--	--	--	--	--	--	--	--	--
208	Low Potential Illicit	OUTGPS-000297	dDP-976	-71.3492	42.634472	0.66	Black Brook	--	--	--	--	--	--	--	--	--
209	Low Potential Illicit	OUTGPS-000384	dDP-979	-71.3494	42.629916	*	Black Brook	--	--	--	--	--	--	--	--	--
210	Low Potential Illicit	OUTGPS-000386	dDP-981	-71.355	42.651134	4.59	Merrimack River	--	--	--	--	--	--	--	--	--
211	Low Potential Illicit	OUTGPS-000387	dDP-982	-71.3549	42.650924	0.34	Merrimack River	--	--	--	--	--	--	--	--	--
212	Low Potential Illicit	OUTGPS-000296	dDP-985	-71.3578	42.645801	19.04	Merrimack River	--	--	--	--	--	--	--	--	--
213	Low Potential Illicit	OUTGPS-000390	dDP-986	-71.3578	42.645799	*	Clay Pit Brook	--	--	--	--	--	--	--	--	--
214	Low Potential Illicit	OUTGPS-000391	dDP-987	-71.3791	42.653058	*	Clay Pit Brook	--	--	--	--	--	--	--	--	--
215	Low Potential Illicit	OUTGPS-000392	dDP-988	-71.3796	42.653371	2.40	Merrimack River	--	--	--	--	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
216	Low Potential Illicit	OUTGPS-000393	dDP-989	-71.3753	42.641924	*	Merrimack River	--	--	--	--	--	--	--	--	--
217	Low Potential Illicit	OUTGPS-000394	dDP-992	-71.3639	42.650046	0.49	Merrimack River	--	--	--	--	--	--	--	--	--
218	Low Potential Illicit	OUTGPS-000395	dDP-993	-71.3483	42.652538	0.47	Merrimack River	--	--	--	--	--	--	--	--	--
219	Low Potential Illicit	OUTGPS-000398	dDP-996	-71.3764	42.652838	*	Clay Pit Brook	--	--	--	--	--	--	--	--	--
220	Low Potential Illicit	OUTGPS-000399	dDP-997	-71.3764	42.652822	2.74	Merrimack River	--	--	--	--	--	--	--	--	--
221	Low Potential Illicit	OUTGPS-000400	dDP-998	-71.3764	42.65281	0.64	Merrimack River	--	--	--	--	--	--	--	--	--
222	Low Potential Illicit	D-OUT-000207	dDP-1180	-71.3416	42.645074	11.60	Merrimack River	--	--	--	--	--	--	--	--	--
223	Low Potential Illicit	--	dDP-1284	--	--	*	N/A	--	--	--	--	--	--	--	--	--
224	Low Potential Illicit	--	dDP-1289	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
225	Low Potential Illicit	--	dDP-1337	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
226	Low Potential Illicit	--	dDP-1338	--	--	*	Pawtucket Canal	--	--	--	--	--	--	--	--	--
227	Low Potential Illicit	--	dDP-1339	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
228	Low Potential Illicit	--	dDP-1346	--	--	*	N/A	--	--	--	--	--	--	--	--	--
229	Low Potential Illicit	--	dDP-1348	--	--	*	N/A	--	--	--	--	--	--	--	--	--
230	Low Potential Illicit	--	dDP-1353	--	--	*	N/A	--	--	--	--	--	--	--	--	--
231	Low Potential Illicit	--	dDP-1354	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
232	Low Potential Illicit	--	dDP-1355	--	--	*	N/A	--	--	--	--	--	--	--	--	--
233	Low Potential Illicit	--	dDP-1360	--	--	*	River Meadow Brook	--	--	--	--	--	--	--	--	--
234	Low Potential Illicit	--	dDP-1362	--	--	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
235	Low Potential Illicit	--	dDP-1382	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
236	Low Potential Illicit	--	dDP-1383	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
237	Low Potential Illicit	OUTGPS-000187	dDP-817	-71.2989	42.646206	0.09	Merrimack River	--	--	--	--	--	--	--	--	--
238	Low Potential Illicit	OUTGPS-000249	dDP-870	-71.2945	42.620933	2.00	Concord River	--	--	--	--	--	--	--	--	--
239	Low Potential Illicit	OUTGPS-000265	dDP-884	-71.3187	42.618765	23.60	River Meadow Brook	--	--	--	--	--	--	--	--	--
240	Low Potential Illicit	OUTGPS-000383	dDP-978	-71.353	42.647355	4.67	Merrimack River	--	--	--	--	--	--	--	--	--
241	Low Potential Illicit	OUTGPS-000385	dDP-980	-71.3492	42.629782	*	Black Brook	--	--	--	--	--	--	--	--	--
242	Low Potential Illicit	OUTGPS-000439	dDP-1114	-71.3136	42.642444	0.34	Lowell Canals	--	--	--	--	--	--	--	--	--
243	Low Potential Illicit	D-OUT-000091	dDP-1133	-71.3374	42.647426	*	Flaggy Meadow Brook	--	--	--	--	--	--	--	--	--
244	Low Potential Illicit	D-OUT-000040	dDP-1176	-71.3171	42.640313	*	Hamilton Canal	--	--	--	--	--	--	--	--	--
245	Low Potential Illicit	D-OUT-000209	dDP-1181	-71.3491	42.649799	2.52	Merrimack River	--	--	--	--	--	--	--	--	--
246	Low Potential Illicit	D-OUT-000217	dDP-1183	-71.3405	42.63998	*	Merrimack River	--	--	--	--	--	--	--	--	--
247	Low Potential Illicit	HW-000009	dDP-638	-71.3388	42.644537	1.10	Merrimack River	--	--	--	--	--	--	--	--	--
248	Low Potential Illicit	HW-000011	dDP-640	-71.2794	42.633158	4.84	Trull Brook	--	--	--	--	--	--	--	--	--
249	Low Potential Illicit	HW-000028	dDP-648	-71.2946	42.622358	1.01	Concord River	--	--	--	--	--	--	--	--	--
250	Low Potential Illicit	HW-000029	dDP-649	-71.2946	42.622504	1.96	Concord River	--	--	--	--	--	--	--	--	--

Rank	Catchment Category	Historic ID	Unique ID	Latitude	Longitude	Catchment Area (acres)[5]	Receiving Water	Screening Date	Flow	Flow Description (if present)	Sample Location	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100 mL)	Total Phosphorous (mg/L)
251	Low Potential Illicit	HW-000035	dDP-654	-71.2733	42.638766	11.42	Trull Brook	--	--	--	--	--	--	--	--	--
252	Low Potential Illicit	HW-000036	dDP-655	-71.273	42.637888	0.61	Trull Brook	--	--	--	--	--	--	--	--	--
253	Low Potential Illicit	OUTGPS-000015	dDP-700	-71.3228	42.651516	0.29	Lowell Canals	--	--	--	--	--	--	--	--	--
254	Low Potential Illicit	OUTGPS-000016	dDP-701	-71.3228	42.651521	*	Merrimack River	--	--	--	--	--	--	--	--	--
255	Low Potential Illicit	OUTGPS-000032	dDP-711	-71.3379	42.641949	*	Merrimack River	--	--	--	--	--	--	--	--	--
256	Low Potential Illicit	OUTGPS-000371	dDP-965	-71.2726	42.637896	*	Swale	--	--	--	--	--	--	--	--	--
257	Low Potential Illicit	OUTGPS-000356	dDP-1109	-71.2825	42.621078	5.87	Concord River	--	--	--	--	--	--	--	--	--
258	Low Potential Illicit	D-OUT-000165	dDP-1167	-71.3134	42.652093	*	Merrimack River	--	--	--	--	--	--	--	--	--
259	Low Potential Illicit	D-OUT-000230	dDP-1187	-71.303	42.642866	0.18	Concord River	--	--	--	--	--	--	--	--	--
260	Low Potential Illicit	--	dDP-1335	--	--	*	Merrimack River	--	--	--	--	--	--	--	--	--
261	Low Potential Illicit	OUTGPS-000292	dDP-902	-71.3494	42.629901	4.34	Black Brook	--	--	--	--	--	--	--	--	--
262	Low Potential Illicit	OUTGPS-000348	dDP-943	-71.3612	42.64964	1.15	Merrimack River	--	--	--	--	--	--	--	--	--
263	Low Potential Illicit	OUTGPS-000372	dDP-966	-71.3036	42.643089	*	Concord River	--	--	--	--	--	--	--	--	--
264	Low Potential Illicit	OUT-007637	dDP-1253	-71.2954	42.6255	*	Concord River	9/8/2025	Unknown	Unknown	--	--	--	--	--	--
265	Low Potential Illicit	OUTGPS-000039	dDP-717	-71.3507	42.640593	*	Merrimack River	8/14/2025	Unknown	Unknown	--	--	--	--	--	--
266	Low Potential Illicit	OUTGPS-000207	dDP-836	-71.3235	42.61523	*	River Meadow Brook	9/26/2025	Unknown	Unknown	--	--	--	--	--	--
266	Low Potential Illicit	D-OUT-000206	dDP-1226	-71.3378	42.647099	1.12							--	--	--	--

Notes:

1) Sample was collected at the nearest upstream accessible drainage structure if outfall was inaccessible or submerged during screening. No sample was collected if no flow or standing water was observed.
2) Shaded values exceed screening thresholds (ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, chlorine > 0.02 mg/L, E. coli ≥ 235 MPN/100 mL). E. coli results below 2 MPN/100 mL detection limit are shown as "-".

3) Interconnections entering Lawrence (IN0002, IN0003, IN0004, IN0006, IN0009, and IN0010) are excluded from ranking.
4) RCP = Reinforced Concrete Pipe, VCP = Vitrified Clay Pipe, PVC = Polyvinyl Chloride, HDPE = High Density Polyethylene, CMP = Corrugated Metal Pipe

5) Catchment Area's marked with asterisk need mapping to confirm size.
6) Flow noted as N/A is due to the outfall not being located. Additional screening of the upstream features will be attempted.

7) Outfall to be rescreened.

a) Potential illicit category identified through EPA screening/sampling

b) Potential illicit category identified through olfactory or visual evidence of sewage
c) Potential illicit category identified through the following criteria: > 410 cfu/mL E. coli and/or > 130 cfu/mL Enterococcus AND >0.25 mg/L surfactants AND >0.5 mg/L ammonia
d) Potential illicit category identified through the following criteria: >0.25 mg/L surfactants AND >0.5 mg/L ammonia AND detectable chlorine
AND >0.25 mg/L surfactants AND >0.5 mg/L ammonia
e) Potential illicit category identified through the following criteria: > 410 cfu/mL E. coli and/or > 130 cfu/mL Enterococcus AND detectable ammonia
AND >0.25 mg/L surfactants AND >0.5 mg/L ammonia

High Bacteria category identified through the following criteria: > 410 cfu/mL E. coli and/or > 130 cfu/mL Enterococcus
Low Potential Illicit category identified with sampling and screening results which do not meet any of the above criteria

8. Geographical Information System (GIS)

The Utility engaged CDM Smith in 2007 to develop a GIS database of the wastewater collection system based on historic paper records that were digitized to include the information in electronic database. In 2017, additional requirements for improved data-management were identified in conversations with ESRI water-sector representatives, wherein it was made clear that the common ArcMap platform would be supplanted by ArcGIS Pro and the related Utility Network data schema. Lowell's GIS & Data Management team determined that it was in the Utility's best interest upgrade to ESRI's ArcGIS Enterprise. In Spring 2024 the Utility completed its upgrade to the ArcGIS Enterprise platform, improving field data collection capabilities and providing a more robust data structure. The Utility completed an initial delineation of drainage catchments throughout the City by overlaying existing mapped drainage systems with topographic data.

The annual updated GIS Map includes the best available information on the sewer and stormwater collection systems. A link to this Map (Paragraph 36a, 36b, 36c.i, & 26c.ii) was provided to the agencies in the CD Compliance Report transmittal email on April 30th, 2024. The Collection System & MS4 Mapping GIS Map includes the best available information on the sewer and stormwater collection systems. A link to this Map (Paragraph 35) was provided to the agencies in the CD Compliance Report transmittal email on September 30th, 2024. Additional information regarding the Utility's investigations, remediation, and capital projects completed for the City's MS4 and Collection System (Paragraph 36c.iii) are depicted in *Figure 3-2*, *Figure 4-1*, *Figure 5-1*, *Figure 5-2, Figure 5-3, Figure 8-1*, and *Figure 8-2*.

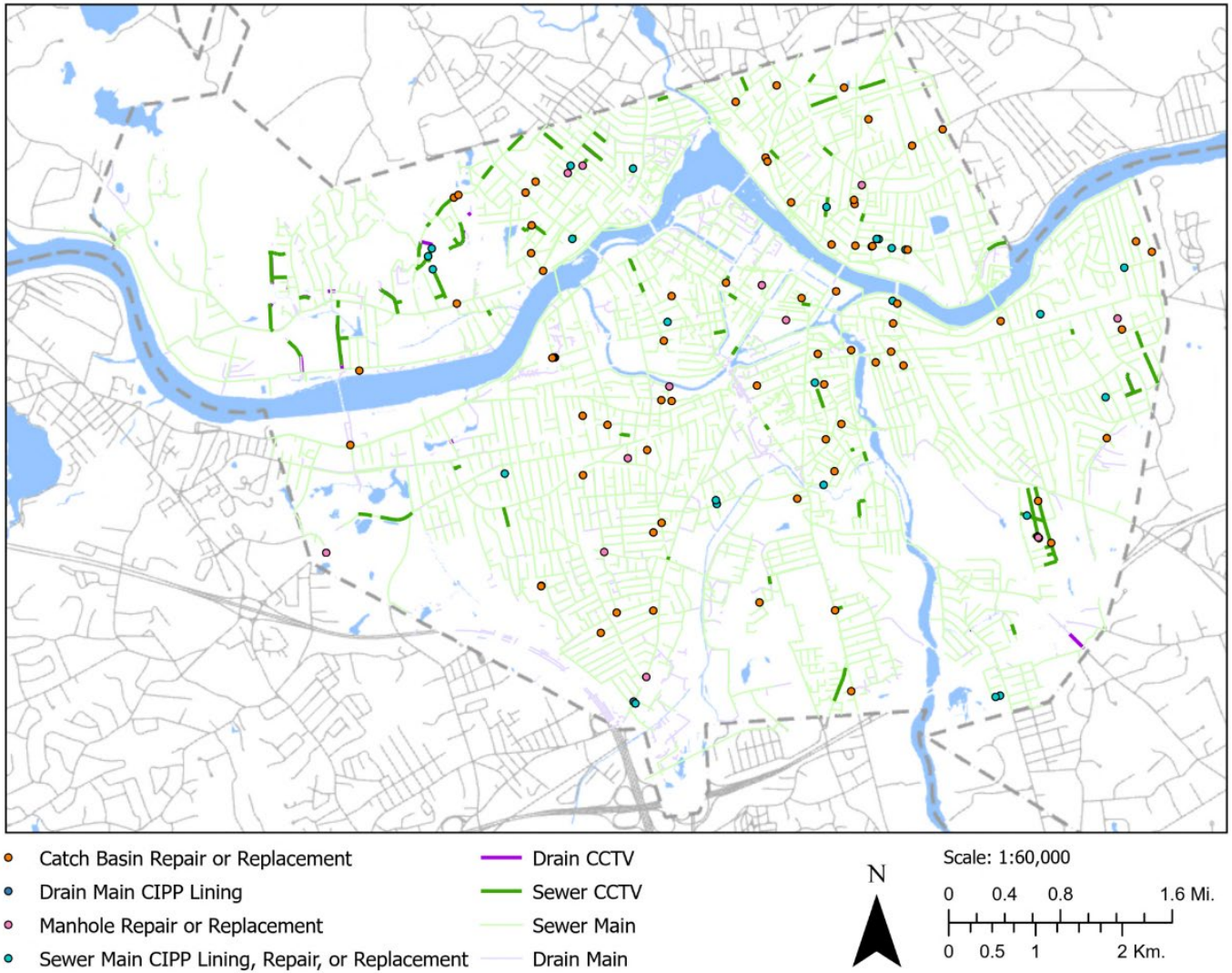

Figure 8-1 Infrastructure Remediation Summary

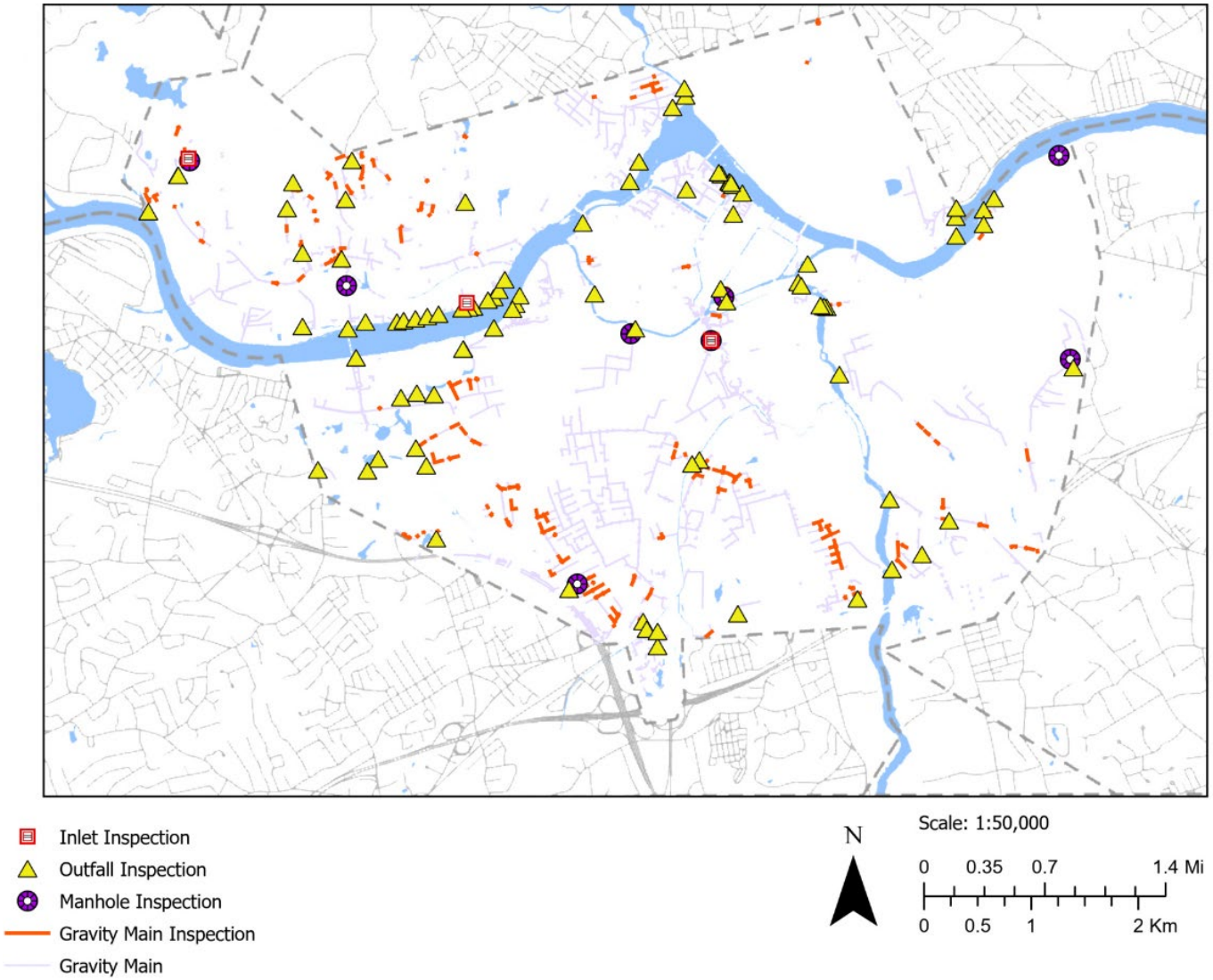

Figure 8-2 MS4 Investigations & Sampling

Appendix A: The Utility Online Webpage

The Utility makes electronic copies of all submissions to the regulatory agencies publicly available on the City's website. This includes supporting documentation to this Annual Report. This page is accessible via the following link: https://www.lowellma.gov/1076/

The reader is encouraged to review the posted documentation, referenced within this report, for a more detailed overview of the Utility's core operational programs related to the operation and maintenance of its collection system.

The following are links to specific reports and submissions referenced:

CMOM Self-Assessment: https://lowellma.gov/DocumentCenter/View/20980

CMOM Corrective Action Plan (CAP): www.lowellma.gov/DocumentCenter/View/29235

Inflow and Infiltration Analysis Report: https://lowellma.gov/DocumentCenter/View/25284

I/I Analysis Supplemental Report: https://www.lowellma.gov/DocumentCenter/View/30402

SSES Phase 1 Report: www.lowellma.gov/DocumentCenter/View/30588

Centralville Sewer Separation PDR: https://lowellma.gov/DocumentCenter/View/25108

Pretreatment Annual Report: https://lowellma.gov/DocumentCenter/View/22634

High Flow Management Plan: https://lowellma.gov/DocumentCenter/View/22823

Inflow and Infiltration Control Plan: https://lowellma.gov/DocumentCenter/View/20979

Stormwater Management Plan: www.lowellma.gov/DocumentCenter/View/21025

IDDE Plan: www.lowellma.gov/DocumentCenter/View/21026

CMOM and MS4 Annual Report: https://www.lowellma.gov/1702