2024 NPDES Wastewater Report

Lowell Regional Wastewater Utility

NPDES Permit Number: MA0100633

Report Date: March 31, 2025

CMOM, I/I, CSO, SSO, AND NMC
ANNUAL REPORT

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.

3/20/2025

Aaron Fox
Executive Director
Lowell Regional Wastewater Utility

Date

List of Figures

List of Tables

1. Introduction

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

This 2024 NPDES Wastewater Report documents and summarizes the performance of the Utility in compliance with its National Pollutant Discharge Elimination System (NPDES) permit (MA0100633) and the Consent Decree (CD) filed on May 17, 2024 (Case: 1:24-cv-10290-DJC, Document 13). The report documents programs implemented to maintain, repair, and replace the sewer collection system (including sewer pipes, manholes, pump stations, and related appurtenances and facilities) and combined sewer overflow (CSO) stations/outfalls, which operates in accordance with its NPDES permit and all applicable State and Federal regulations, for calendar year 2024 and planned activities for calendar year 2025. Additionally, the Utility implements an ISO-14001 compliant Environmental Management System to minimize its environmental impact.

The Utility's sewer system consists of approximately 226 miles of gravity sewers and 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). There are nine (9) Combined Sewer Overflow (CSO) Stations that divert excess wet weather flow into the Merrimack and Concord Rivers, as well as Beaver Brook, through dedicated outfalls. A plan view of Duck Island, interceptor system, and CSO Stations is provided in *Figure 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 systems) causes 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 in excess of secondary treatment capacity receives screening and primary clarification and then the flow is bypassed around the secondary treatment system 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 NPDES effluent permit requirements.

Flow in excess of 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 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.

As part of the NPDES permit and CD, the Utility is required to submit an annual report that summarizes the activities performed for the calendar year to comply with:

- Collection System Operations and Management (Paragraph Part 1.C.5(b) in the NPDES Permit and the Capacity, Management, Operation, and Maintenance (CMOM) Annual Report in the CD (Paragraph 17). *Section 2* (and other portions of this report) summarizes these compliance actions.
- Infiltration and Inflow control (I/I), Paragraph Part 1.C.5(b) in the NPDES Permit and Paragraph 18 in the CD. *Section 2.6* discusses the Utility's I/I mitigation programs and activities for 2024 and the upcoming year.
- CSO Discharge Reporting and Annual Maintenance and Certification, which is found under the Nine Minimum Control (NMC) Minimum Implementation Levels (Paragraph Part 1.F.3 in the NPDES Permit). This includes CSO activity and wet-weather data (*Section 3.3*), certification of adequate recording of CSOs (*Section 3.1*), inspections of CSO facilities (*Section 3.2*), and reports on the Utility's Nine Minimum Controls (NMC) program (*Section 4)*. This report references publicly available documents, with links to these documents found in *Appendix A*.
- Unauthorized SSO discharge reporting (Paragraph Part 1.C.5(b) in the NPDES Permit. *Section 2.5* summarizes the SSO discharges that have occurred in the reported period, the causes of the discharge, the ultimate location of the discharges, and any activities to resolve the discharge.
- Nine Minimum Control Minimum Implementation measures and activities over the reporting period (Paragraph Part 1.F.3 in the Consent Decree). *Section 4* documents the NMC program implemented by the Utility for 2024, the modifications to the NMC, activities for compliance, and potential modifications to the program (if applicable).

The Utility has continued to commit substantial resources toward reduction of CSOs, identification of I/I, and maintenance and operation of its wastewater collection and treatment systems.

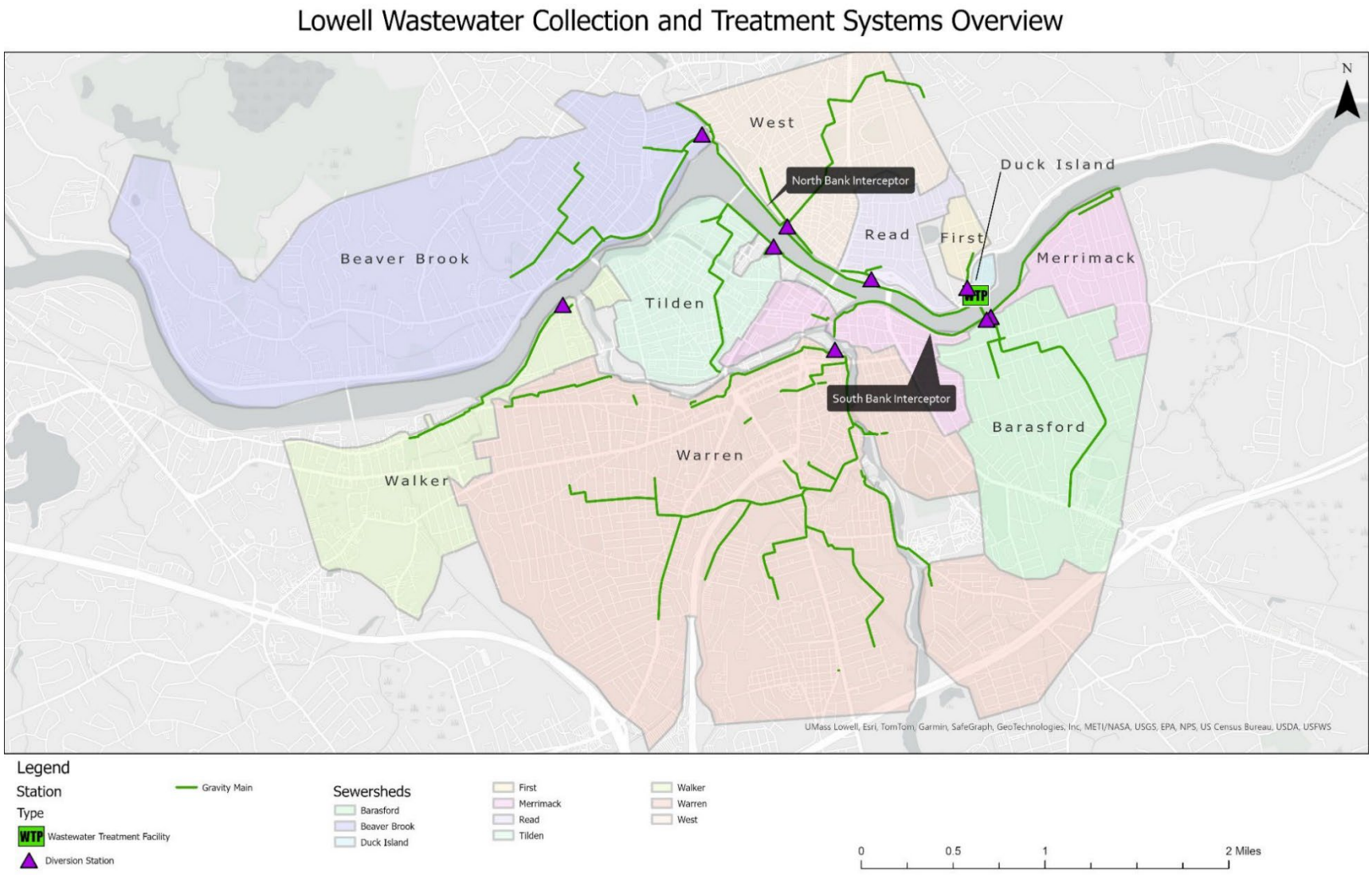

Figure 1. Lowell Wastewater Collection and Treatment Systems Overview

2. CMOM Program Plan and Annual Report

The Utility funded its CMOM program at a rate of $9.46M in FY2024; this accounts for 29.5% of the Utility's overall budget for the year. This funding supported a variety of ongoing maintenance programs, including cleaning, inspection, and repair work:

- Cleaning of 2,102 catch basins (31.6% of all catch basins)
- Replacement of 933 feet of sewer pipe
- Repair and replacement of 24 catch basins
- Repair and replacement of 18 manholes
- New installation of 18 catch basins
- New installation of 3 manholes
- Cleaning of 47,000 feet of sewer and drain lines
- Video inspection of 19.6 miles (103,362 feet) of sewer and drain lines
- Remedied 286 catch basin, residential sewer-backup and street-flooding reports
- Bi-annual street sweeping yielding removal of 918 tons of sediment and debris prior to entering the collection system
- Reduced buried manhole inventory by 55 manholes, from 348 to 293

The following subsections include a detailed presentation of sewer rehabilitation work performed in 2024.

2.1 Collection System Management

The purpose of Lowell's collection system is to protect public health and the environment by conveying sewage to Duck Island for treatment, and to prevent unnecessary property damage from flooding or sewer surcharging.

Lowell's collection system is managed by the Maintenance Manager and Collection System Supervisor, who works in coordination with other Utility staff to plan, perform and document the physical and operational states of the assets that make up the collection system: catch basins and manholes; sewer laterals, mains, trunk lines and interceptors; pump stations; communications networks, sensors and associated automated equipment.

The Collection System Supervisor also responds to customer requests regarding sewage back-ups and surcharges, as well as participating in weekly Infrastructure Meetings to identify, discuss and address performance issues related to the CMOM program.

2.1.1 Organizational Structure

An organizational chart depicting divisions and positions of all staff at the Utility is provided in *Table 1* and *Figure 2*. Positions that have responsibilities related to collection systems operations are shown in green, with a gradient shading reflective of the percentage of time dedicated to the collection system. Staff not regularly assigned to the collection system still support efforts on as needed basis. The percentage indicated next to the position indicates the time dedicated to the collection system.

The Utility made modifications to the organizational chart, enhancing internal resources for the collection system. These changes took effect in the final week of December and are not reflected in this report or its appendices. The organizational adjustment involved the creation of four new positions (Collections Manager, Pretreatment/Lab Technician, and two [2] Field Technicians) and revising job descriptions and duties for existing roles.

Table 1: Collection System Employee Allocation

Position	Number of Employees	Time Dedicated to the Collection System (%)
Collection System Manager	1	100
Collection System Supervisor	1	100
Collection System Operator	5	100
Field Technician	2	50
TV Inspector	2	100
Pretreatment Coordinator	1	100
Engineering Manager	1	60
Engineering Supervisor	1	90
Staff Engineer	3	100

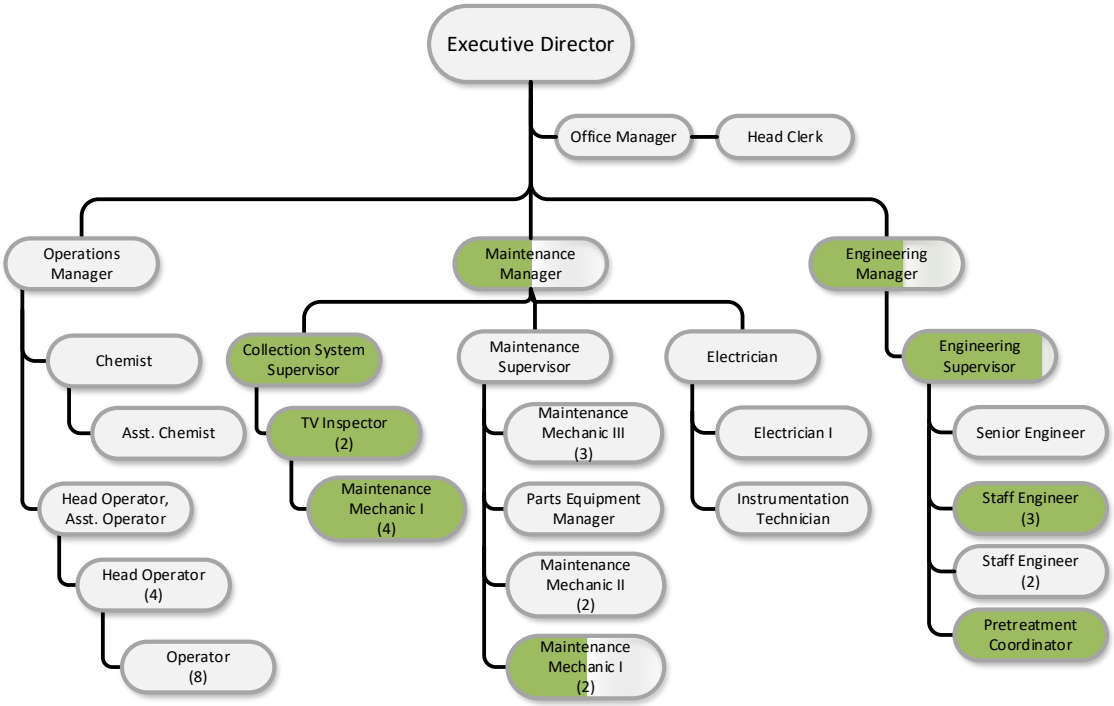

Figure 2. Lowell Wastewater Organizational Chart

Job descriptions are maintained by the Office Manager and include job duties, minimum requirements, special qualifications and certifications or licenses that are required. Advancement is encouraged through multiple practices, including educational reimbursement for advanced degrees; annual stipends for certifications achieved and maintained; and preferential consideration for open positions. Copies of these job descriptions can be found in *Appendix B*.

In addition to these positions, the Utility hires outside contractors for various collection system maintenance activities; this work includes small-to-medium sized replacement and repair work (Defelice Construction & Meninno Construction), catch basin cleaning (BMC & Truax), heavy sewer line cleaning (Rapid Flow), CIPP lining (National Water Main), and street sweeping (City of Lowell – DPW). Furthermore, the Utility also utilizes year-round part- and full-time interns to help meet the demands of our CMOM program.

2.1.2 Collection System Mapping

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. It is estimated that about 86% of Lowell's GIS database was originally developed on these paper plans. Since then, the City has continued to inspect (via CCTV through various maintenance and capital improvement programs) and update the GIS platform. Updates to Lowell's GIS system are continuously being made by engineering staff and CMOM field personnel. It is estimated that comprehensive GIS records exist for 90% of Lowell's collection system. 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 Utility field crews are equipped with iPads and have access to GIS maps of the collection system via ESRI's ArcGIS Field Maps application. Additionally, Lowell employees access an online GIS utility viewer that is maintained by the City's Management Information Systems (MIS) department. This viewer provides an overview of the City by parcel and contains hyperlinks to scanned sewer tie cards. CCTV inspections performed by in-house staff are recorded to Lowell's GIS database through integration with Granite CUES software onboard the video truck.

The Utility worked with Wright-Pierce in 2024 to identify the location of sewer pipes that are outside of city streets to determine if the City has easements for these sewer pipes and facilities for access and maintenance. An initial inventory utilizing existing sewer sheets and deed research was completed. Wright-Pierce is currently tasked with developing an approach to complete further easement discovery and to develop a process to acquire any required easements for access and maintenance.

The Utility currently has 293 manholes attributed as buried, 55 less than last calendar year (15.8% reduction), within its GIS database as depicted in *Figure 3*. During CCTV inspection and paving activities buried manholes are identified and raised.

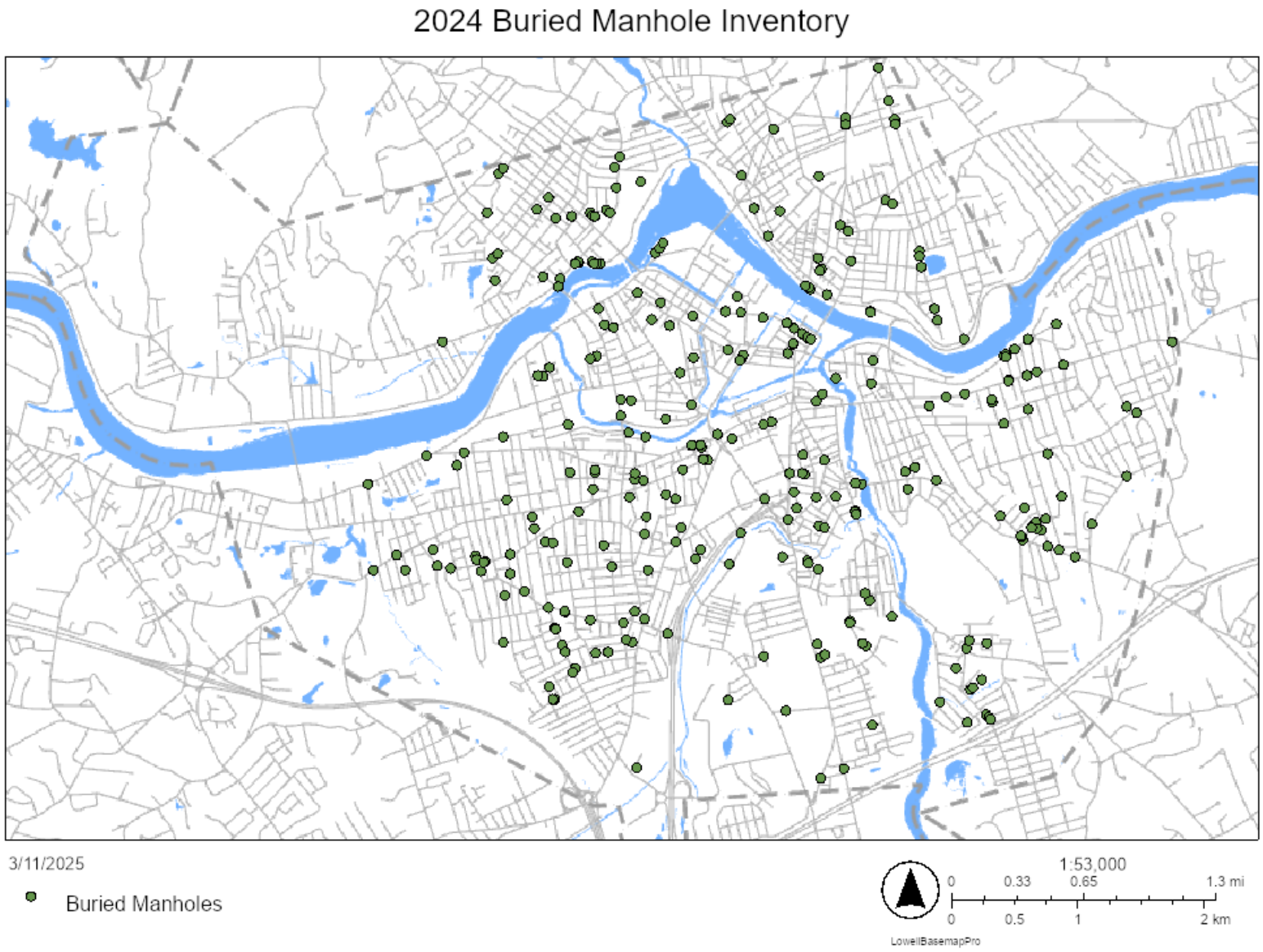

Figure 3. Buried Manhole Inventory

2.2 Summary of Collection System Maintenance - 2024

The Utility has contracted with CDM Smith to assist in the planning, development, and execution of future sewer separation projects throughout Lowell's collection system. In July 2024 the Utility submitted the Revised Centralville Sewer Separation Preliminary Design Report (PDR), establishing a recommended implementation plan for new drains to complete the sewer separation of the Centralville area, detailed in *Figure 4*. The implementation plan, approved by MassDEP in November 2024, includes three phases of construction work that will meet the CD objectives and deadlines.

The Phase 3 Sewer Separation PDR was submitted in December 2024, providing a recommended planning and implementation schedule for design and construction of targeted sewer separation projects across Lowell based on assessment of CSO/SSO benefits, costs, and construction challenges. The targeted Phase 3 projects are shown in *Figure 5*. Part of the Phase 3 PDR included design of a wet-weather flow storage facility to address sewer surcharging and SSOs along Douglas Road and Windward Road. This storage tank was designed by Tighe & Bond and the Waterline won the bid commencing construction in 2025. Additional details about these efforts can be found in *Appendix A.*

In January 2024 the Utility submitted an I/I Analysis Report that provided recommendations, schedule, and projected costs for subsequent phases of Sewer System Evaluation Surveys (SSES), discussed in detail in *Section 2.6*. As part of these efforts in 2024, 10 areas were re-metering from April 2024 to September 2024 to address quality issues identified in the I/I Analysis Report. The re-metered areas are shown in *Figure 6*. The Utility completed Phase 1 SSES field investigations as outlined the in the I/I Analysis Report, including multi sensor inspection (MSI) of 51,300 linear feet of interceptor pipe and 146 associated manhole inspections. Additionally, approximately 21,300 linear feet of CCTV inspection and 137 manhole inspections were performed on some of the City's oldest piping infrastructure within the downtown area. *Figure 12* provides an overview of activities performed within this SSES Phase.

The Utility utilizes ESRI's ArcGIS applications (Field Maps and Survey123) to document CMOM related repair and cleaning activities in real time. *Figure 7* and *Figure 8* present maps of collection system sewer repairs, replacements, and cleaning activities undertaken in 2024. These projects include: 933 feet of new sewer pipe installed; repair and replacement of 42 catch basins; repair and replacement of 21 manholes. Also included in this total are 2,102 sewer and drainage system catch-basins cleaned; and associated miscellaneous items like test pits, paving and sidewalk repairs.

The Utility submitted its CMOM Corrective Action Plan (CAP) to EPA and DEP in December 2024. This assessment found that while Lowell maintains a strong CMOM program and eighteen (18) deficiencies. This document provides recommendations for both short-term and long-term corrective actions and a schedule for implementation which can be found in *Appendix A*.

In August 2024, the Utility collaborated with Hull Street Energy to discover the Kearney Square inflow was due to a failed hatch that cross-connects the Canal to the sewer. Hull Street Energy made a temporary repair to limit the inflow and is working through installing a permanent solution in 2025.

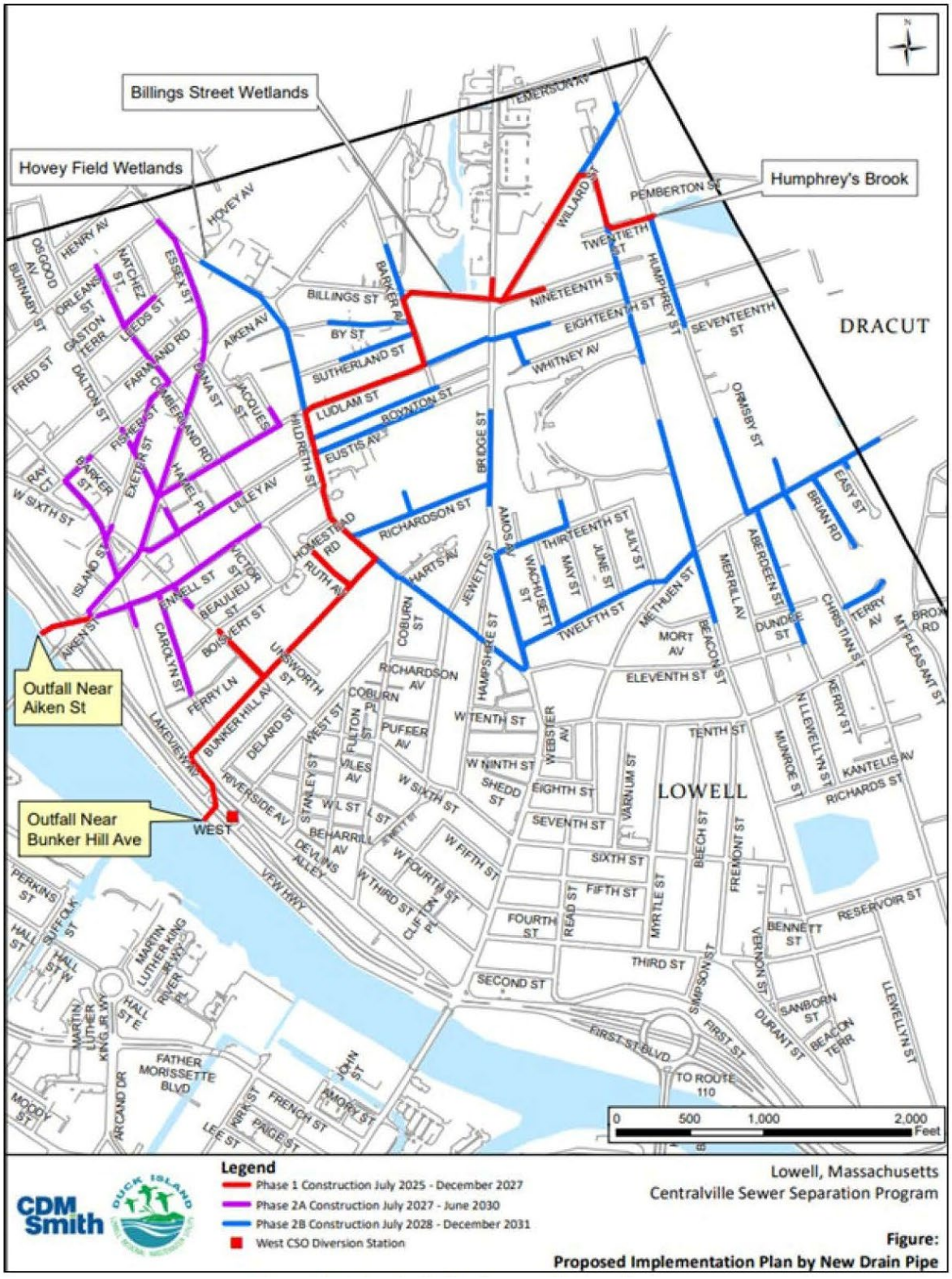

Figure 4. Phase 1 & 2 Centralville Sewer Separation

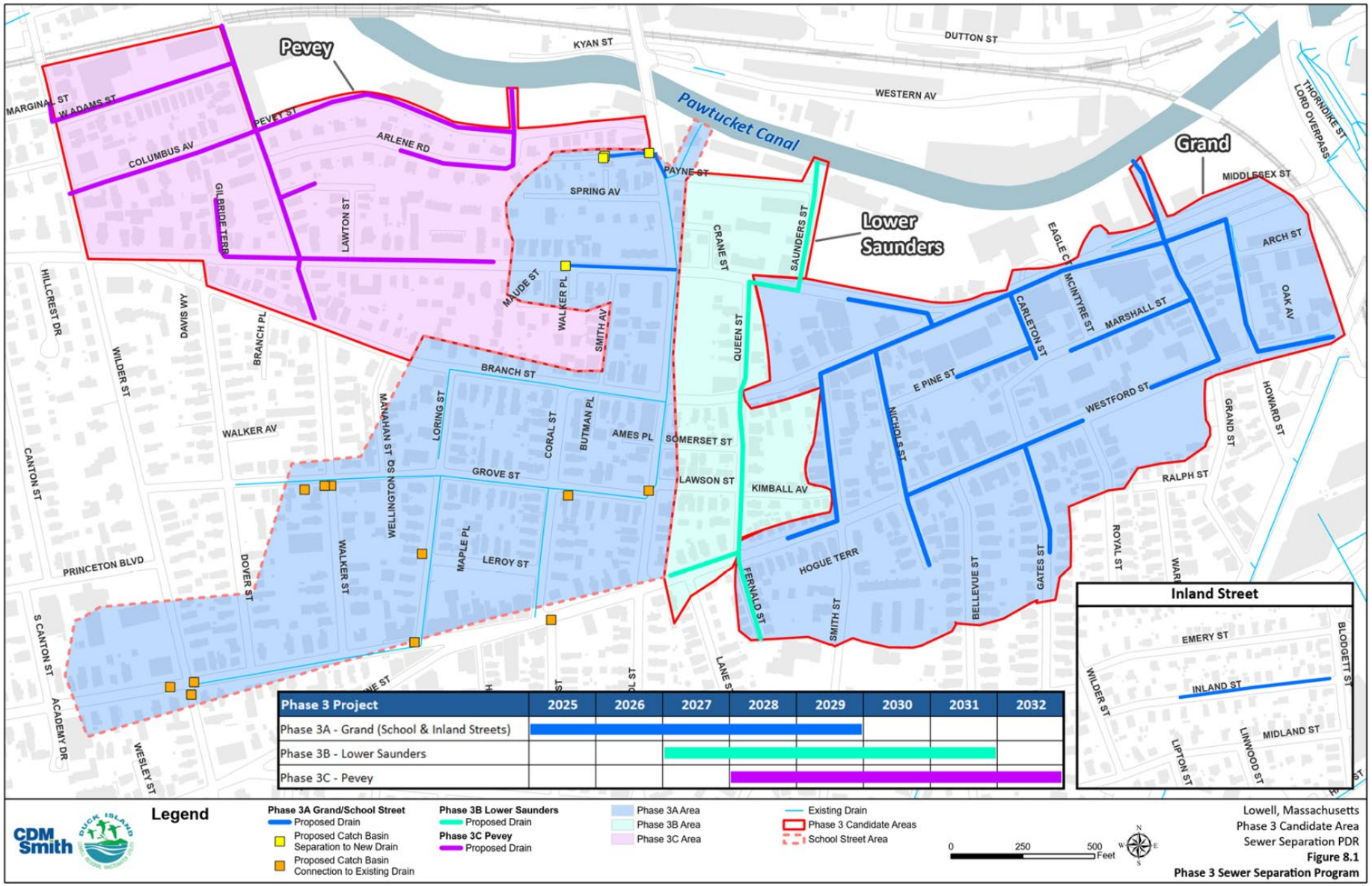

Figure 5. Phase 3 Target Areas

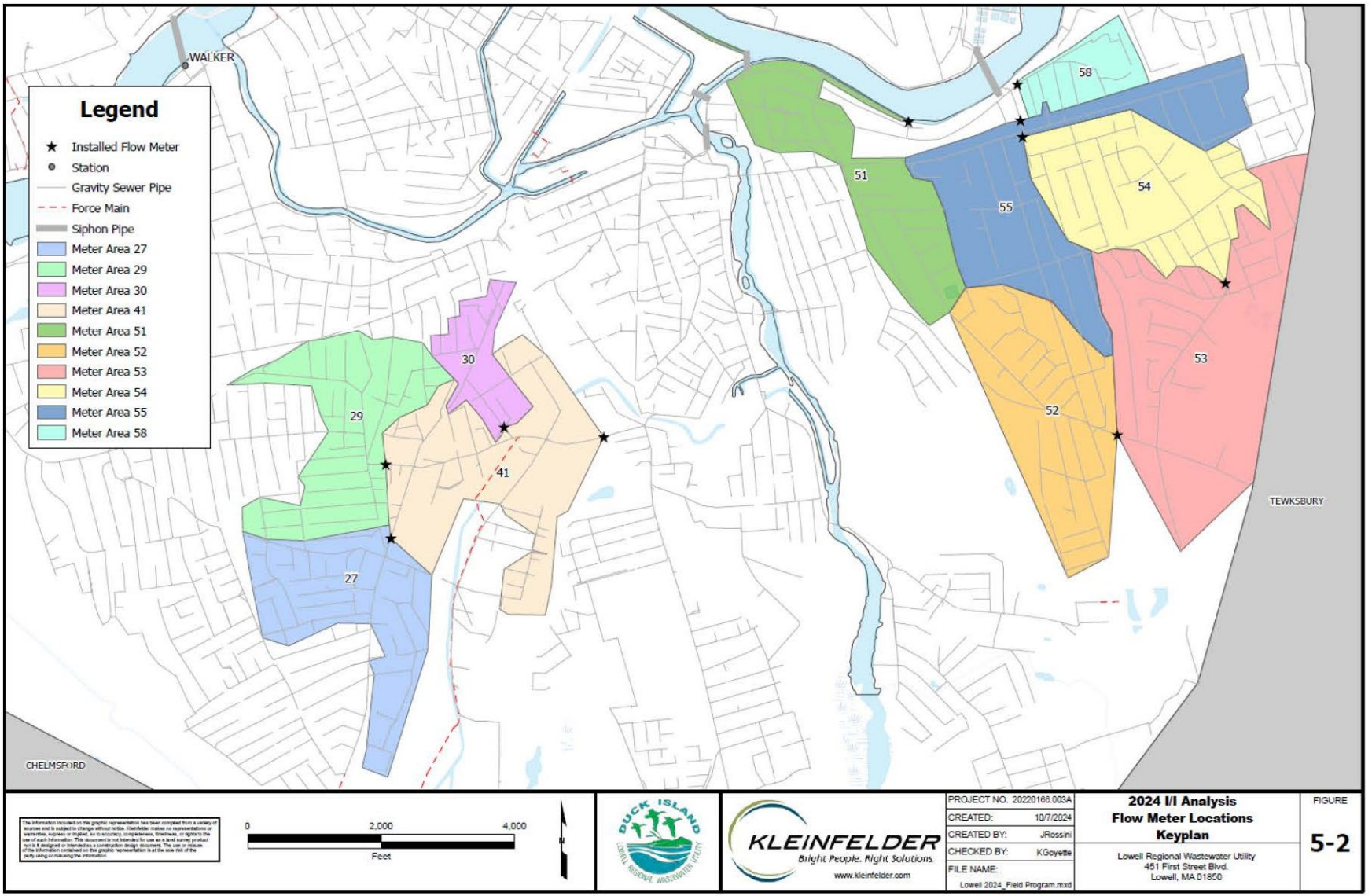

Figure 6. 2024 Re-Metering Areas

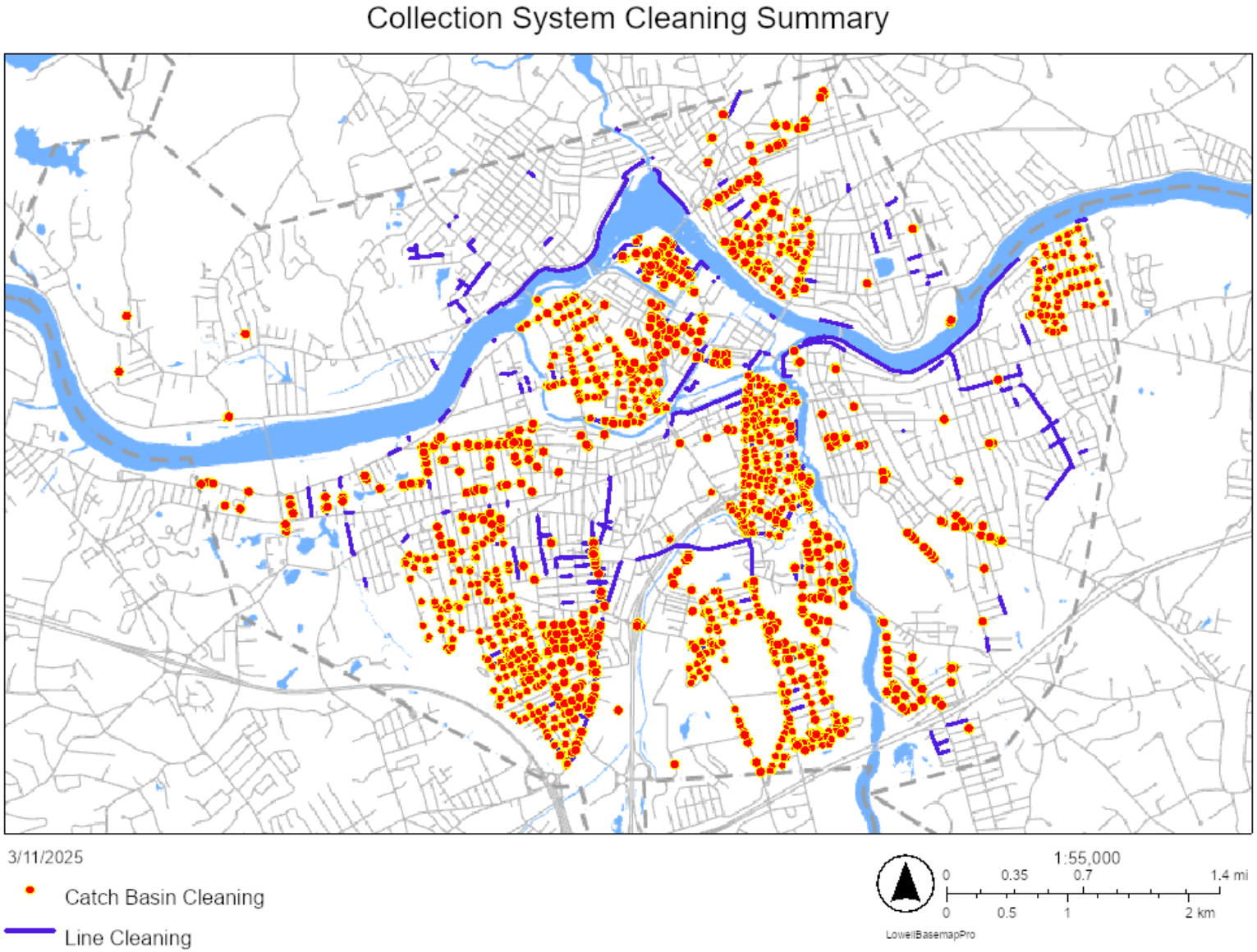

Figure 7. 2024 Collection System Cleaning Summary

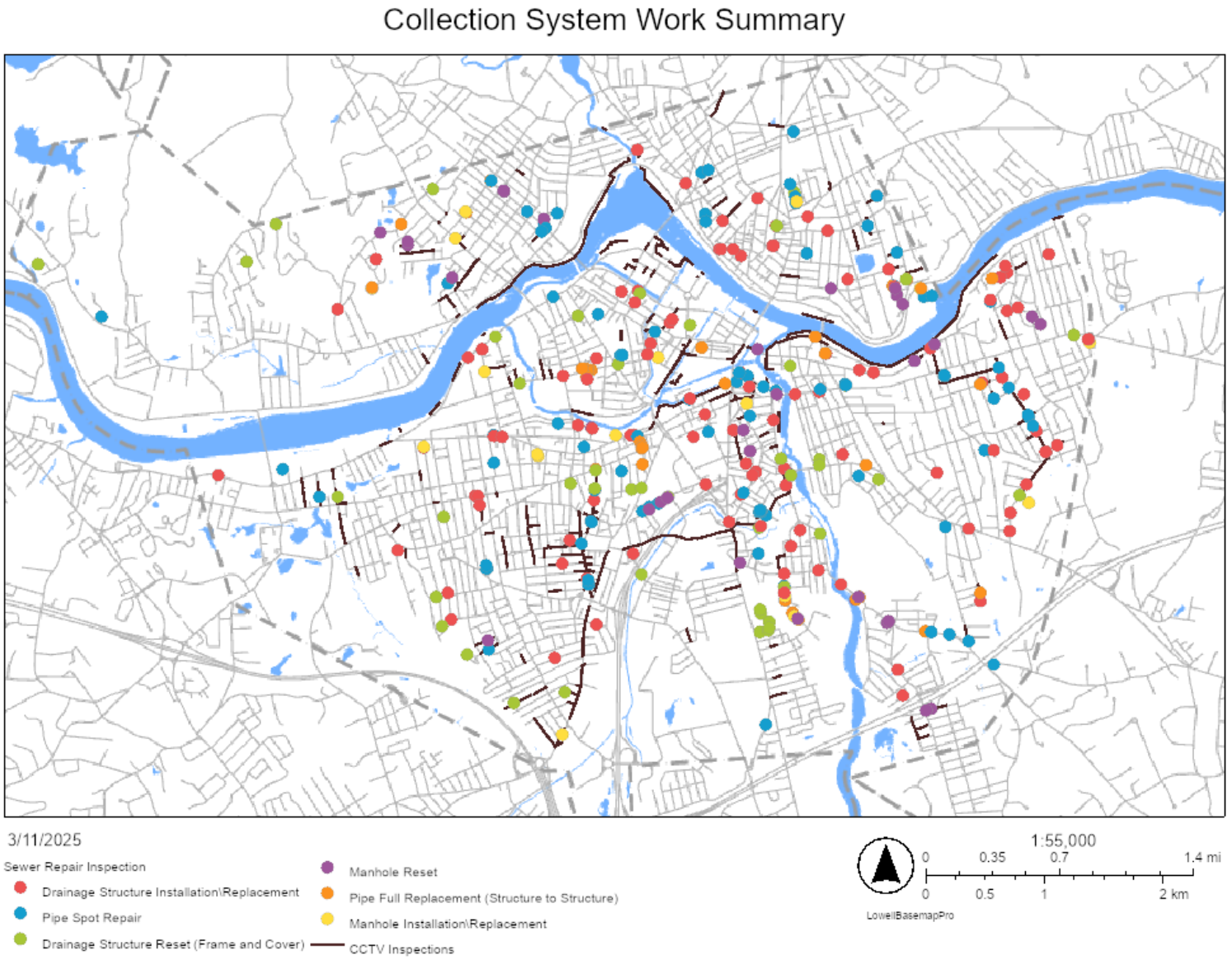

Figure 8. 2024 Maintenance and Inspection Summary

2.3 Collection System Expenditures

The Utility's FY2024 operating budget totaled $32.04 million. This included funds for operation and maintenance and debt services related to capital improvements of the sewerage-drainage collection systems at $9.46 million: 29.5% of the total operating budget. The $9.46 million includes direct costs such as salaries, wages, and utilities, and indirect costs for services provided by other City of Lowell departments and employee overhead costs. Additionally, the Utility spent $4.84 million on engineering services to support collection system capital and O&M projects. This budget also includes debt services on prior work performed under capital improvement projects and Long-Term Control Plan (LTCP) projects directed toward high-flow management and CSO control.

Table 2 below summarizes the expenditures for collection system maintenance activities in FY2024. Budgeting for supported collection system maintenance services is pulled from this total operating cost.

Table 2: FY2024 Collection System Expenditures

FY2024 Line-Item	Cost
Street Sweeping	$ 75,030
Catch Basin Cleaning	$ 197,838
Heavy Cleaning	$ 27,385
CIPP Lining	$ 350,000
On-call Repairs	$ 788,327
Engineering Services	$ 4,837,484
Direct Costs (salary, station upkeep, etc.)	$ 1,691,507
Debt Services	$ 5,982,822
Indirect Costs	$ 347,425
FY24 Overall CMOM Budget	$ 14,297,818

2.4 Planned Collection System Investigation/Actions - 2025

The Utility follows the City's paving schedule to identify and complete sewer repairs ahead of new paving projects. Sewer lines that fall within the extents of any proposed paving areas are video inspected, assessed for repair, and repaired/CIPP lined ahead of the scheduled paving. This work is completed before paving takes place, as a five-year road work moratorium exists on all paved roads.

Figure 9 shows a map showing areas identified for planned investigations, collection system maintenance, repairs and lining projects to be completed in 2025.

The Utility will continue to proceed with the Centralville sewer separation projects in 2025. Bidding for Phase 1 is targeted for March 2025 with construction beginning in the Summer/Fall 2025. Phase 2A/B work will include surveying, borings, CCTV and manhole inspection in the Winter/Spring 2025 with design efforts continuing throughout the year.

The Phase 3 Sewer Separation PDR (*Appendix A)* was submitted December 20th, 2024, and is pending comments/final approval. The Utility has selected Kleinfelder as the engineering consultant for Phase 3.

Phase 3 work will include surveying, borings, CCTV and manhole inspection and design efforts continuing throughout the year within project areas indicated in *Figure 5*.

The Utility is continuing to work with Kleinfelder to develop the SSES Phase 1 Report, summarizing field activities performed within 2024 and providing recommendations for I/I reduction in the collection system. Based on these recommendations, the design of the Phase 1 SSES Rehabilitation Project will begin. The I/I Analysis report will be amended based on the data from the 10 re-metered areas, which will inform the 2025 investigative work as part of SSES Phase 2.

Additionally, Waterline Industries is under contract to commence construction on the Douglas Road Wet Weather Storage Facility in Spring 2025 with an anticipated 18-month construction schedule. The tank has been sized for a 25-year storm with the goal of relieving recurring SSOs that occur along Douglas Road within the Barasford CSO Basin.

The Utility submitted its CMOM Corrective Action Plan on December 19th, 2024. Development of a written SSO Emergency Response Plan is to be submitted by October 31st, 2025. Additional details can be found in the CAP document in *Appendix A*.

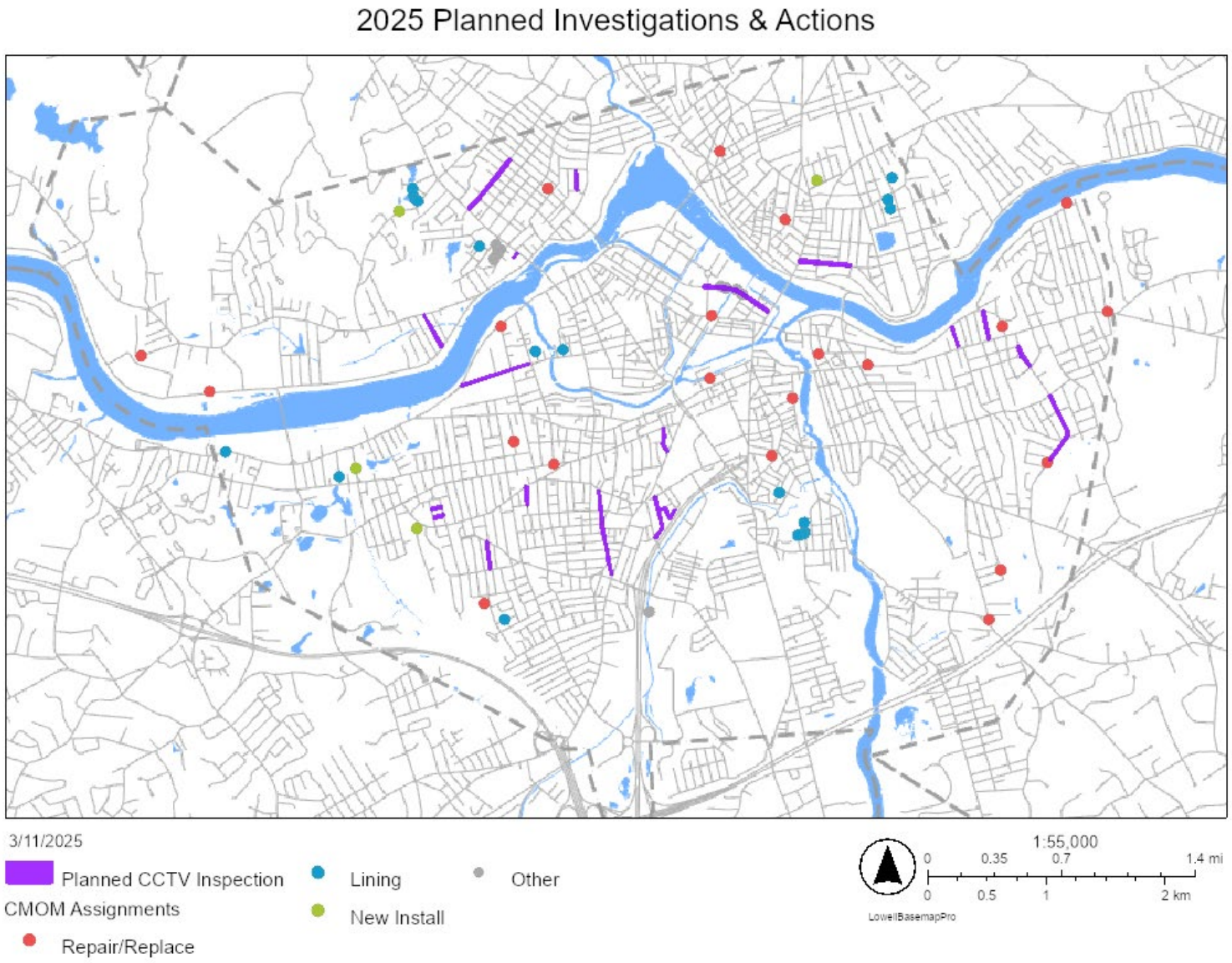

Figure 9. 2025 Planned Investigations and Actions

2.5 Unauthorized Discharges Summary 2024

The following section details and summarizes the unauthorized discharges (i.e. sewer surcharges and overflows) that have occurred in Lowell's collection system in 2024. The following section is specific to unauthorized discharges. Information pertaining to regulated discharges, (i.e. CSOs and treated bypass), can be found in *Section 3*.

The Utility launched a Sewer Check Valve Reimbursement Program at the end of 2023. During 2024 this program provided reimbursement to six (6) residents of Lowell who installed check valves within their service lines in areas of the combined sewer system. This allows them to have short-term protection from residential sewer backups while the Utility assesses and implements long-term, system wide solutions and removes or greatly lessens the financial burden to the resident.

2.5.1 Sewer Surcharge Notification Program

The Utility follows the reporting procedures outlined in 314 CMR 16.00 Notification Requirements to Promote Public Awareness of Sewage Pollution. For unauthorized discharges that directly impact a waterbody, initial notification to the public is made via email and text alert within two hours of the overflow start time or discovery. Downstream waterway users and regulatory authorities are required to be recipients of this notification. Templates for all reporting forms can be found in *Appendix C*.

Table 3 presents SSO events and associated details including type of overflow, date, estimated volume, where the sewage was discharged to (e.g., residential property/basement, ground/street surface, receiving water), root cause, and corrective actions taken to resolve the cause of the surcharge/overflow. *Figure 10* displays these events on a map of Lowell. Lowell experienced twelve (12) sewer surcharges in 2024 at 9 unique locations.

Table 3. Sewer Surcharges & Overflows (2024)

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
SSO (Sanitary Sewer Manhole)	1/10/2024 3:13 AM	1/10/2024 3:50 AM	Windward/ Douglas Road	Level monitor alert notification	Rain event	3,582 gallons	Unnamed wetland 3,582 gallons	The area and alternative solutions are being evaluated as part of the Phase 3 PDR.	1/10/2024	8/18/2023
Backup into Property	4/10/2024 1:32 PM	4/10/2024 2:24 PM	21 Riverby Street	Civic plus request submitted to the Utility by resident	Debris accumulation in a dead end manhole	Unknown	No release to surface water	Sewer line cleaned by jetting and affected area was cleaned and disinfected. Debris blockages has since been removed.	4/11/2024	No previous SSOs have occurred at this location
SSO (Sanitary Sewer Manhole)	4/11/2024 9:31 AM	4/11/2024 11:30 AM	240 Industrial Ave East	Civic plus request submitted to the Utility by resident	Pipe blockage due to grease	Unknown	No release to surface water	Sewer line cleaned by jetting and affected area was cleaned and disinfected. Grease blockages has since been removed.	4/11/2024	No previous SSOs have occurred at this location
SSO (Sanitary Sewer Manhole)	8/15/2024 3:43 PM	8/15/2024 3:58 PM	657 Middlesex Street (Eagle Ct)	Level monitor alert notification	Rain event	758 gallons	Pawtucket Canal	The area and alternative solutions are being evaluated as part of the Phase 3 PDR	8/16/2024	9/11/2023
SSO (Sanitary Sewer Manhole)	8/15/2024 3:44 PM	8/15/2024 3:57 PM	67 Payne Street	Level monitor alert notification	Rain event	832 gallons	Pawtucket Canal	The area and alternative solutions are being evaluated as part of the Phase 3 PDR	8/16/2024	9/11/2023
Backup into Property	8/15/2024 5:58 PM	8/15/2024 4:00 PM	21 Tyler Park	Civic Plus Request submitted by the resident	Rain Event	Unknown	No release to surface water	In response to the recent heavy rainfall. LRWWU is conducting thorough inspections of gravity sewer mains both upstream and downstream of impacted area. Our primary objective is to ensure continuous flow within the collection system. Additionally, we are performing comprehensive assessments of the affected sewer system to address any further issues and maintain system integrity.	8/16/2024	No previous SSOs have occurred at this location
Backup into Property	8/15/2024 4:30 PM	8/15/2024 4:00 PM	89 Mary Theresa Terrace	Direct call from the resident to our Collection System Supervisor	Rain Event	Unknown	No release to surface water	LRWWU has completed an initial inspection and jetting of the sewer main to resolve immediate concerns. We are currently undertaking a detailed evaluation of the affected sewer main to thoroughly assess the issue and devise a long-term solution.	8/16/2024	No previous SSOs have occurred at this location
SSO (Sanitary Sewer Manhole)	8/19/2024 8:54 PM	8/19/2024 8:55 PM	67 Payne St	Level Monitor alert notification	Rain Event	134 gallons	Pawtucket Canal	Alternative solutions being evaluated as part of the Phase 3 PDR	8/19/2024	8/15/2024
SSO (Sanitary Sewer Manhole)	8/19/2024 8:54 PM	8/19/2024 8:57 PM	657 Middlesex St (Eagle Ct)	Level Monitor alert notification	Rain Event	232 gallons	Pawtucket Canal	Alternative solutions being evaluated as part of the Phase 3 PDR	8/19/2024	8/15/2024
SSO (Sanitary Sewer Manhole)	8/19/2024 3:15 PM	8/19/2024 2:30 PM	Windward /Douglas Road	LRWWU Staff	Rain Event	Unknown	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	8/19/2024	1/10/2024

Backup into Property	10/20/2024 12:02 PM	10/20/2024 12:53 PM	1 Franklin Court S	CivicPlus Request	Grease Blockage	Unknown	No release to surface water	A grease blockage caused a 12-inch sewer line to cause a backup into property basement at 1 Franklin Court S. The affected line has since been jetted and the grease blockage has been cleared	10/21/2024	No previous SSOs have occurred at this location.
Backup into Property	11/8/2024 7:48 PM	11/8/2024 11:08 PM	161 Mt Pleasant St	CivicPlus Request	Debris Blockage	Unknown	No release to surface water	In-house CCTV investigation confirmed that a debris buildup was restricting the 8-inch dead end sewer main, causing the property backup. The debris was removed via hydro-jetting, and the line was then flushed to confirm proper function.	11/9/2024	No previous SSOs have occurred at this location.

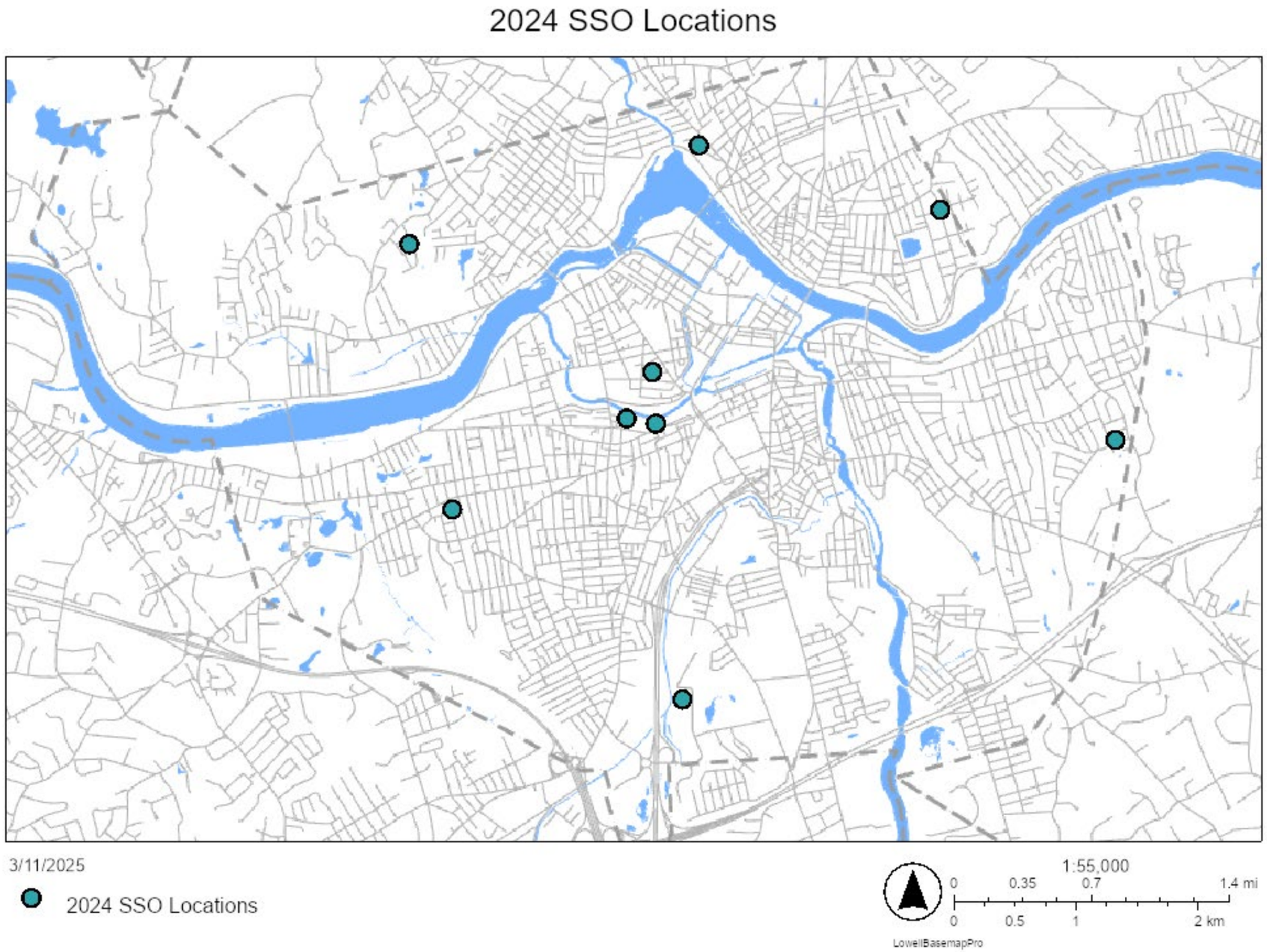

Figure 100. 2024 Sewer Surcharges and Overflows

2.6 Infiltration/Inflow Summary for Reporting Year 2024

The Utility developed an Infiltration/Inflow (I/I) Abatement Plan and Analysis Report to provide a comprehensive approach and schedule to identify and investigate locations of excessive I/I within the Utility's sewer system compliant with MassDEP regulation 314 CMR 12.04(2). In 2024, the Utility performed the following work:

1. Completed Phase 1 SSES Field Investigations, see *Figure 11*, including:
    a. 56,000 LF of multi-sensor inspections (Digital CCTV & Sonar) of interceptor pipe
    b. 197 manhole inspections along the interceptors
    c. 21,300 LF of CCTV inspections in the downtown area (Meter Areas 51, 38, 37)
        i. 86 additional manhole inspections in associated area
2. Conducted re-metering of 10-meter areas to address data quality issues (*Figure 6*)
3. Worked with Boott Hydro to remove approx. 0.15 MGD inflow source from collections system (below). The source was determined to be a failed hatch that cross-connects the canal to the sewer. The Utility will continue to coordinate with Hull Street Energy to locate and remove inflow sources originating from the canal system.

Findings and results from the re-metered areas are to be summarized in an updated I/I Analysis Report in accordance with MassDEP guidelines and can be found by navigating to the appropriate link in *Appendix A.* The 2023 I/I Analysis Report recommendations outline an 8-phase SSES, from 2023 to 2032, that include the following inspection approaches: smoke testing, building inspections, dye testing, flow isolation, CCTV inspections/cleaning, manhole inspections, siphon inspections/cleaning, and interceptor inspections. The SSES will organically drive future repair/rehabilitation projects within the Utility's collection system.

Properties are not inspected for I/I sources during a property transfer, but the Utility has also developed a private inflow control program which establishes criteria to require private inflow removal from highly impervious properties within the city that are undergoing substantial reinvestment. Projects that meet the criteria thresholds are required to detain the first inch of rainfall that falls across the impervious area on site. This is done to mitigate the effects that peak rainfall has on the collection system and minimize this rainfall's contributions to downstream sewer surcharges.

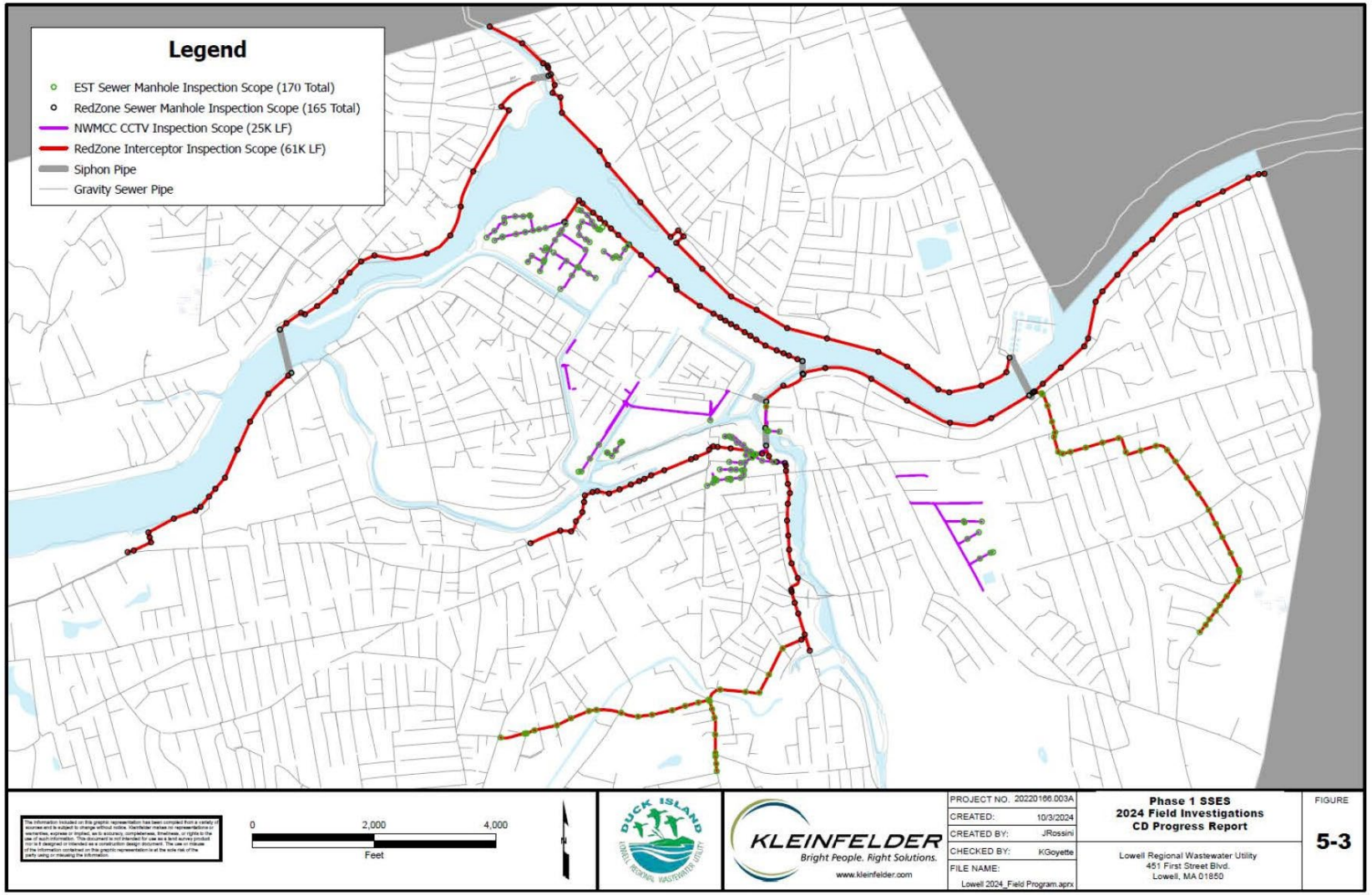

Figure 111. 2024 I/I Investigations

Additionally, the Utility continued to implement a program to analyze the flow in the sewers, mostly along the interceptors or collector pipes adjacent to rivers, streams and other waterbodies, for specific conductance to evaluate potential changes in specific conductance that might identify potential leaks of surface water into the sewer system. A thorough overview of this program can be found in supporting documentation online in *Appendix A*, Inflow and Infiltration Control Plan.

The rolling twelve-month average daily flow through Duck Island was 26.9 MGD in 2024. This daily flow rate exceeded the target threshold of 80 percent of the facility's 32 MGD design flow. Based on this triggering threshold, under paragraph Part I.C.f of the NPDES Permit, the Annual Report shall include:

> (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
>
> (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

The Utility continues to make efforts to comply with both flow and other NPDES effluent limits. As discussed above, the Utility will complete inspections of all its large diameter interceptor and collector pipes adjacent to receiving waters to determine if there are any significant sources of I/I. System inspections along the interceptor system area are also ongoing to identify any open manholes or sources of inflow. The Utility is implementing its SSES program to identify and reduce sources of extraneous flow in the system and is continuing to conduct a major sewer separation program of its combined sewer system including the removal of major inflows from Dracut that enter the sewer system (Humphreys' Brook and Billings Street Wetlands), which will be completed in 2027. CDM concluded that the Phase 1 project will separate 460 acres and reduce CSOs by 22 million gallons per year once completed.

2.7 Infiltration/Inflow Summary Surrounding Communities 2024

The Utility's Member Communities Wastewater Collection and Conveyance Systems are summarized in *Table 4. Figure 12* shows Lowell and its member community's gravity sewer systems.

Table 4. Community I/I Summary

Regional Community	Data Source	Miles of Pipe	Pipe Material	Pipe Age (years)	Pipe Diameters	Contribution to DIWWTF
Chelmsford	2021 I/I Plan	167	PVC, DI	40	8" to 30"	Majority of the flow
Dracut	2017/2018 I/I Report	125	PVC, DI, RC, and AC	50	8" to 42"	Small portion of East Dracut goes to GLSD
Tewksbury	2018 I/I Report	158	PVC, RC, DI, VC, AC	40	8" to 42"	Majority of the flow
Tyngsborough	2017 I/I Report	22	AC, DI	50	N/A	All flow (predominately via Dracut system)

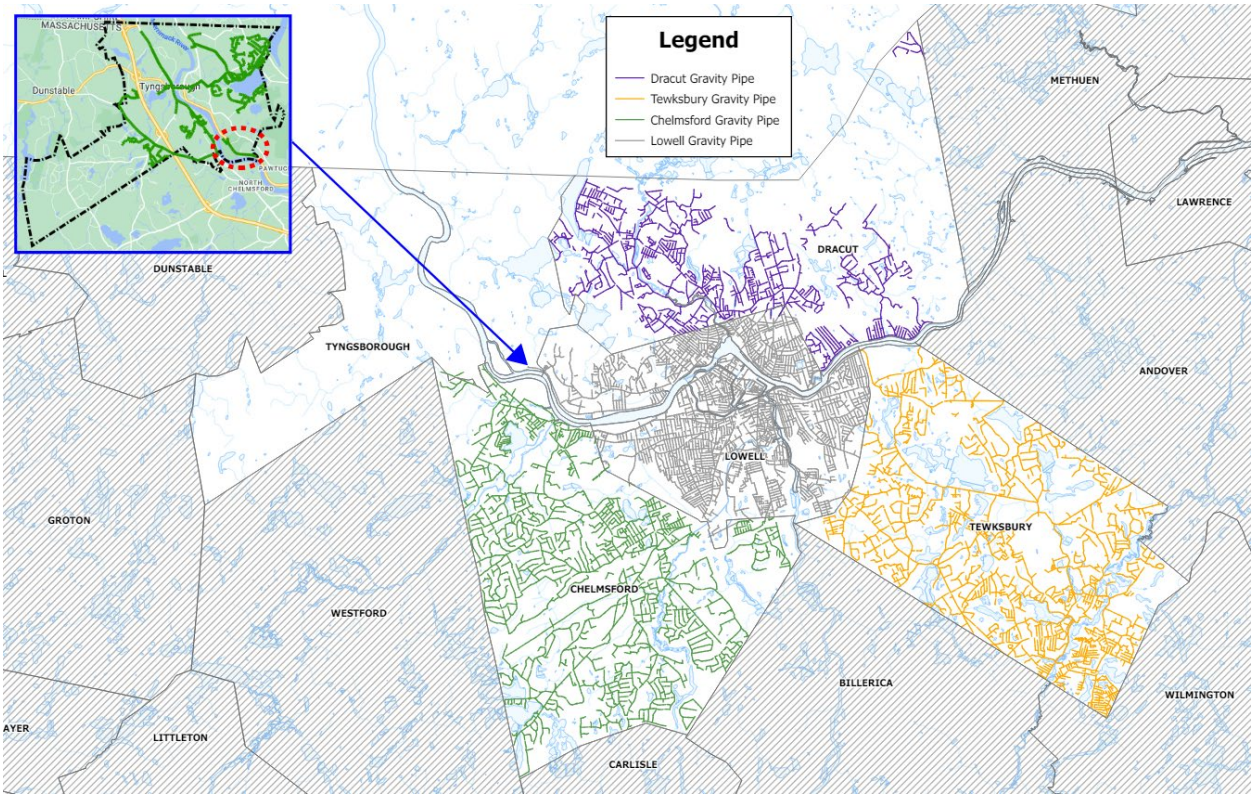

Figure 122. Lowell Communities Collection Systems

The Utility and its member communities flow data was compiled from a collection of sources. While Chelmsford and Tyngsborough's data did not provide enough granularity for comprehensive I/I analyses, the average day, peak day, and peak monthly average flows were calculated. Given the variability in recorded flow frequency of the provided data, an I/I analysis was conducted solely for Duck Island, Dracut, and Tewksbury. With five-minute interval flow data and daily rainfall, average day I/I was able to be determined for the Duck Island, Dracut, and Tewksbury. Alternatively, with semi-weekly intermittent data, I/I was effectively indeterminate without the ability to evaluate diurnal patterns for Chelmsford and Tyngsborough. The average daily flows, peak daily flows, peak monthly average flows, and average day I/I were calculated. I/I analysis for the Duck Island, Tewksbury, and Dracut were performed following MassDEP's 2017 Guidelines for Performing I/I Analyses and Sewer System Evaluation Surveys (SSES).

Chelmsford, Dracut, and Tewksbury were found to contribute average daily flows of 2.53 MGD, 2.58 MGD, and 2.21 MGD respectively. A small tributary area of Tyngsborough contributed 0.025 MGD to their direct connection along Pawtucket Boulevard. *Table 5* summarizes the Utility and its member communities flow characteristics for 2024.

Since Chelmsford and Tyngsborough flows are based on semi-weekly totals, I/I contributions could not be determined. Of the 7.34 MGD average daily flows conveyed to Duck Island from the member communities, at least 2.93 MGD are estimated to be I/I contributions from Dracut and Tewksbury. Of the

7.34 MGD average daily flows conveyed to Duck Island from the member communities, at least 2.88 MGD are estimated to be I/I contributions from Dracut and Tewksbury. Monthly average dry-weather flows and monthly average infiltration for Lowell, Dracut, and Tewksbury are provided in *Table 6*, *Table 7*, and *Table 8*. Inflow sources that consistently enter the system will be exhibited within these infiltration values, i.e. Humphrey's Brook, Billings Brook, and Hovey Field.

Table 5: 2024 I/I Analysis Lowell and Surrounding Communities

Flow Source	Parameter	MGD
Town of Chelmsford	AVG DAILY FLOW	2.53
	[1]AVG DAILY BASE SANITARY FLOW	N/A
	PEAK DAY FLOW	4.69
	PEAK MONTHLY AVG FLOW	3.39
	[1]AVG DAILY I/I	N/A
Town of Dracut	AVG DAILY FLOW	2.58
	AVG DAILY BASE SANITARY FLOW	1.24
	PEAK DAY FLOW	6.80
	PEAK MONTHLY AVG FLOW	4.28
	AVG DAILY I/I	1.34
Town of Tewksbury	AVG DAILY FLOW	2.21
	AVG DAILY BASE SANITARY FLOW	0.67
	PEAK DAY FLOW	5.42
	PEAK MONTHLY AVG FLOW	3.31
	AVG DAILY I/I	1.54
Town of Tyngsborough	AVG DAILY FLOW	0.025
	[1]AVG DAILY BASE SANITARY FLOW	N/A
	PEAK DAY FLOW	0.035
	PEAK MONTHLY AVG FLOW	0.034
	[1]AVG DAILY I/I	N/A
Community Members Total	AVG DAILY FLOW	7.34
	[1]AVG DAILY BASE SANITARY FLOW	N/A
	PEAK DAY FLOW	16.95
	PEAK MONTHLY AVG FLOW	11.01
	[1]AVG DAILY I/I	N/A
Lowell Duck Island (RAW)	AVG DAILY FLOW	26.94
	AVG DAILY BASE SANITARY FLOW	7.57
	PEAK DAY FLOW	91.69
	PEAK MONTHLY AVG FLOW	43.17
	AVG DAILY I/I	19.36
Lowell Duck Island (SOLO)	AVG DAILY FLOW	19.59
	AVG DAILY BASE SANITARY FLOW	3.11
	PEAK DAY FLOW	74.74
	PEAK MONTHLY AVG FLOW	32.16
	[2]AVG DAILY I/I	16.48

[1] Unable to determine parameter based on data provided

[2] Includes I/I contributions from Chelmsford and Tyngsborough

Table 6: Lowell I/I Dry Weather Analysis

Lowell (Duck Island) Influent Dry Weather Analysis						
Month	Monthly Total Rain (Inches)	Dry Weather Dates	*Average Daily Flow Parameters (MGD)			
			Raw	Night-time	Base Sanitary	Infiltration
Jan	5.91	1/5 - 1/7	29.17	25.63	8.66	20.51
Feb	0.71	2/20 - 2/22	26.11	22.40	8.19	17.92
Mar	7.94	3/12 - 3/14	40.42	38.61	9.54	30.89
Apr	3.47	4/25 - 4/27	29.23	25.42	8.89	20.34
May	2.99	5/23 -2/25	23.09	19.96	7.12	15.97
Jun	0.19	6/1 - 6/3	24.45	20.86	7.77	16.69
Jul	1.40	7/26 - 7/28	17.57	14.20	6.21	11.36
Aug	0.40	8/15 - 8/17	23.42	17.41	9.48	13.93
Sep	1.14	9/8 - 9/10	17.07	13.36	6.38	10.69
Oct	0.89	10/22 - 10/24	15.33	11.53	6.10	9.23
Nov	3.24	11/1 - 11/3	15.52	11.76	6.10	9.41
Dec	3.43	12/1 - 12/3	18.07	14.53	6.45	11.63
		Average:	23.29	19.64	7.57	15.71

*includes Combined Community Member Contributions

Table 7: 2024 Dracut Dry Weather Analysis

Dracut (Book, First, Willard Meters Compiled) Dry Weather Analysis						
Month	Monthly Total Rain (Inches)	Dry Weather Dates	Average Daily Flow Parameters (MGD)			
			Raw	Night-time	Base Sanitary	Infiltration
Jan	5.91	1/5 - 1/7	3.09	1.92	1.56	1.53
Feb	0.71	2/20 - 2/22	2.59	1.89	1.08	1.51
Mar	7.94	3/12 - 3/14	3.84	3.24	1.24	2.59
Apr	3.47	4/25 - 4/27	2.84	1.60	1.56	1.28
May	2.99	5/23 -2/25	2.38	1.39	1.27	1.11
Jun	0.19	6/1 - 6/3	2.35	1.30	1.32	1.04
Jul	1.40	7/26 - 7/28	1.97	1.09	1.10	0.88
Aug	0.40	8/15 - 8/17	1.77	0.79	1.14	0.63
Sep	1.14	9/8 - 9/10	1.94	1.00	1.14	0.80
Oct	0.89	10/22 - 10/24	1.72	0.61	1.23	0.49
Nov	3.24	11/1 - 11/3	1.83	0.81	1.19	0.65
Dec	3.43	12/1 - 12/3	2.06	1.29	1.03	1.03
		Average:	2.37	1.41	1.24	1.13

Table 8: 2024 Tewksbury Dry Weather Analysis

Tewksbury (Burnham Meter) Dry Weather Analysis						
Month	Monthly Total Rain (Inches)	Dry Weather Dates	Average Daily Flow Parameters (MGD)			
			Raw	Night-time	Base Sanitary	Infiltration
Jan	5.91	1/5 - 1/7	2.10	1.96	0.53	1.57
Feb	0.71	2/20 - 2/22	2.25	2.14	0.54	1.72
Mar	7.94	3/12 - 3/14	3.48	2.27	1.67	1.81
Apr	3.47	4/25 - 4/27	2.31	1.95	0.74	1.56
May	2.99	5/23 -2/25	1.79	1.55	0.55	1.24
Jun	0.19	6/1 - 6/3	1.80	1.57	0.54	1.26
Jul	1.40	7/26 - 7/28	1.82	1.44	0.67	1.15
Aug	0.40	8/15 - 8/17	1.75	1.52	0.53	1.22
Sep	1.14	9/8 - 9/10	1.76	1.30	0.72	1.04
Oct	0.89	10/22 - 10/24	1.54	1.29	0.51	1.03
Nov	3.24	11/1 - 11/3	1.53	1.18	0.58	0.95
Dec	3.43	12/1 - 12/3	1.76	1.60	0.48	1.28
		Average:	1.99	1.65	0.67	1.32

3. CSO Reporting and Certification Summary 2024

Over the course of 2024, Lowell experienced 113 days of precipitation, as measured by the Duck Island gauge. Total precipitation for 2024 was 31.7 inches. High Flow and CSO data summaries are provided in *Section 3.3*.

This precipitation required activation of Lowell's High-Flow Treatment mode 63 times throughout the year, resulting in the successful capture and treatment of 940 MG of flow in excess of the biological-treatment system capacity. CSO diversions related to these events occurred during 30 of these activations, resulting in a total of 386 MG.

The Utility follows the reporting procedures outlined in 314 CMR 16.00 Notification Requirements to Promote Public Awareness of Sewage Pollution. For unauthorized discharges that directly impact a waterbody, initial notification to the public is made via email and text alert within two hours of the overflow start time or discovery. Downstream waterway users and regulatory authorities are required to be recipients of this notification. Templates for all reporting forms can be found in *Appendix C*.

3.1 CSO Records Certification

All data from High-Flow Treatment and CSO events are reviewed by the Utility staff prior to data being uploaded to the City website or reported to regulatory authorities. This review process is critical to ensuring accurate representation to the public regarding collection system and treatment plant performance during high-flow events. Electronic instruments are installed at key points throughout the collection system, and calculations are automated via Lowell's SCADA system to streamline this process; however, the recorded data is still reviewed by trained staff members to ensure that any potential miscalculations are corrected, ensuring that only correct and accurate data is reported. Fluctuations in levels at points in the collection system have the potential to trigger a false notification of an overflow, and need to be reviewed to ensure details are correct before data is uploaded.

As part of the review process, a member of the Utility's engineering group will review the calculated volumes and conditions that caused the high flow event to ensure data is consistent with the set parameters of high flow operation, and that the data is within expected ranges. This review process entails a detailed review of SCADA instrument records and, where necessary, recalculation of discharge volumes using external programs developed to consider infrequent but relevant flow conditions such as backwater effects from high river levels. SCADA instrument records may be used to compare levels, flows, or volumes at remote stations as well as rain volumes and river elevation. Following this review process, detailed reports are uploaded to the City's website and are reported to relevant agencies.

The final record of CSO discharge volumes is presented in *Section 3.3* and is hereby certified by Lowell Engineering staff as a true and accurate estimation of all CSO discharges from Lowell's permitted outfalls in 2024; a signed certification statement can be found in *Appendix D*. These records are stored at Duck Island in Lowell's Water Information Management System (WIMS).

3.2 CSO Station Inspection Certification

CSO structures are inspected regularly by maintenance personnel on the Structures Crew. The Structures Crew visits pump stations daily. All inspection records are collected digitally and managed by the Utility's engineering staff.

CSO diversion stations are inspected weekly by the same personnel. Structures are inspected to verify that the grounds are clear and accessible, including any need for landscaping services; record wet-well conditions (normal, flooded, evidence of flooding, high wet-well level); HVAC systems, lighting, and SCADA systems are functional; and perform basic cleaning tasks. Additionally, as part of each inspection, visual inspections of each associated CSO outfall for evidence of any dry-weather discharges are performed.

Records of these visual inspections are documented using doForm checklists unique to each station. The doForms are designed to host streamlined single-choice questions that guide recording personnel through the inspection. If a submitted inspection form contains any anomalous or concerning answers, an automatic alert is triggered and distributed to the Operations Manager, Maintenance Manager and Engineering Manager for review.

In 2024, all CSO structures were routinely inspected; observed issues are logged into the MP2 work-order system and/or discussed at the weekly collection system meetings, as necessary. A signed certification statement can be found in *Appendix D*.

3.3 Precipitation, High Flow Treatment & CSO Data

Table 9: 2024 HFM Data

Date	Duck Island Effluent		Duck Island Rain		Secondary Bypass Flow			Combined Sewer Overflows		
	Flow (MG)	Peak Hour (MGD)	Rain Days	Rain Inches	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)
Jan 2024	1337	105.6	14	5.9	15	227.1	331.2	4	29.8	135.16
Feb 2024	871	58.0	10	0.7	0	0.00	0.00	0	0.00	0.00
Mar 2024	1317	105.6	15	7.9	13	144.2	242.1	7	18.0	82.65
Apr 2024	1252	108.1	13	3.6	9	112.7	182.2	2	16.5	103.50
May 2024	833	97.9	13	2.9	5	15.0	24.2	3	3.0	10.36
Jun 2024	663	93.7	4	0.2	2	7.3	9.7	2	0.6	0.11
Jul 2024	594	101.4	11	1.8	5	13.0	21.6	4	1.3	2.10
Aug 2024	694	98.5	17	6.2	7	26.2	43.1	4	5.6	40.61
Sep 2024	525	44.3	3	1.1	0	0.00	0.00	0	0.00	0.00
Oct 2024	503	46.3	6	0.9	1	0.2	0.1	0	0.00	0.00
Nov 2024	561	99.5	7	3.2	3	21.8	31.2	1	1.0	1.44
Dec 2024	690	97.2	15	3.4	3	25.6	54.2	3	3.8	10.46
Total	9841		128	37.8	63	593.0	939.7	30	79.5	386.3
Max	1337	108.1	17	7.9	15	227.1	331.2	7	29.8	135.2

Table 10: 2024 Monthly CSO Data

Date	Barasford Street			Beaver Brook			Merrimack Street			Read Street			Tilden Street			Walker Street			Warren Street			West Street		
	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)	Event (No.)	Duration (Hours)	Volume (MG)
Jan 2024	3	29.8	56.27	2	5.0	4.35	4	15.1	20.77				2	8.4	4.63	1	1.5	2.02	1	4.0	11.15	3	15.9	36.0
Feb 2024																								
Mar 2024	5	11.7	21.94	3	5.8	4.01	5	10.1	18.47				5	10.9	4.00	1	0.3	0.04	4	4.0	4.60	7	18.0	29.5
Apr 2024	1	15.9	28.81	1	0.1		1	15.6	65.77				1	2.2	0.34				1	0.3	0.18	2	16.5	8.4
May 2024	1	1.8	3.16	1	0.6	0.10	1	2.3	2.76				3	3.0	0.43				1	0.3	0.01	1	2.2	3.9
Jun 2024													1	0.6	0.09				2	0.4	0.02			
Jul 2024				2	1.1	0.53	1	0.8	1.00				3	1.3	0.41	1	0.4	0.13	3	0.9	0.03			
Aug 2024	2	2.2	3.59	4	4.0	6.03	4	5.6	12.13	2	0.3	0.08	4	4.0	4.25	3	2.2	3.71	4	3.2	1.12	4	3.8	9.7
Sep 2024																								
Oct 2024																								
Nov 2024							1	0.4	0.34													1	1.0	1.1
Dec 2024	2	1.6	1.36	1	0.2	0.05	2	3.3	4.55				2	1.6	0.38				2	0.7	0.02	3	3.8	4.1
Total	14	63.0	115.1	14	16.8	15.07	19	53.1	125.8	2	0.3	0.08	21	31.9	14.53	6	4.4	5.9	18	13.8	17.13	21	61.2	92.67
Max	5	29.8	56.27	4	5.8	6.03	5	15.6	65.77	2	0.3	0.08	5	10.9	4.63	3	2.2	3.71	4	4.0	11.15	7	18.0	35.97

4. Nine Minimum Controls Report

The Nine Minimum Controls (NMC) are required under the Utility's NPDES permit. *Table 11* lists each NMC, the documentation requirements, and where in this report (or on outside links) additional supporting information can be found.

Table 11. Nine Minimum Controls

Control	Documentation Requirements	Reported At/Details
1. Proper operation and regular maintenance programs for the sewer system and combined sewer overflow points	a. Organizational O&M responsibilities chart b. Funding allocated for O&M c. List of critical facilities and structures (regulators, tide gates, pumping stations, sections of sewer lines prone to sedimentation or obstruction) and inspection plan (locations, frequency, procedures, documentation, reporting of periodic and emergency inspections and maintenance)	**a.** Section 2.1.1 **b.** Section 2.3 **c.** Appendix A
2. Maximize Use of the Collection System for Storage	a. Identification of maintenance or design deficiencies that restrict the use of otherwise available system capacity b. Adequacy of tide gate maintenance and repair procedures c. Document the method for optimal setting of regulators d. Document procedures for identification and removal of obstructions to flow. Include a summary of the locations where sediment is removed, the number of times each year the sediment is removed and the total quantity of material removed each year	Appendix A: Combined Sewer Overflow Plan, for details pertaining to the Utility's High Flow Management Plan and CMOM procedures.
3. Review and modification of the Industrial Pretreatment Program (IPP) to assure CSO impacts are minimized	a. Review legal authority and identify those activities for which the community has or can obtain authority to address CSO induced water quality violations (e.g., authority to require non-domestic dischargers to store wastewater during precipitation events or require them to implement runoff controls) b. Inventory non-domestic dischargers that may contribute to CSO induced water-quality violations c. Assess whether identified dischargers cause or contribute to CSO induced water-quality violations by using monitoring, dilution calculations or other reasonable methods d. Evaluate and propose feasible site-specific modifications to address non-domestic dischargers identified as significant	Appendix A: Pretreatment Report. This document is submitted separately by the Utility's Pretreatment Coordinator.
4. Maximization of flow to the treatment facility	Evaluate and implement where possible: a. Use of off-line or unused POTW capacity for storage of wet-weather flows b. Use of excess primary treatment for treatment of wet-weather flows. If the use of excess primary capacity will result in violations of the NPDES permit limits, the community shall get approval from the permitting authority prior to implementation	*Appendix A*: High Flow Management Plan (HFMP). This documents the procedure that follows the logic: 1. Maximize flow to the Duck Island treatment facility 2. Maximize use of available storage in the collection system's interceptors upstream of flow-control gates 3. Prevent sewer surcharging by diverting flow through CSO stations
5. Prohibition of CSO discharges during dry weather	a. Document that monitoring and inspections are adequate to detect and correct dry-weather overflows (DWOs) in a timely manner b. Document that inadequate DWOs due to inadequate sewer system capacity have been eliminated c. Document that DWOs due to clogging of pipes and regulators or other maintenance problems have been eliminated to the maximum extent practicable	a. Section 3.3 b. Section 2.5 c. Section 2.5

Control	Documentation Requirements	Reported At/Details
6. Control of solid and floatable material in CSO Discharges	Document that low-cost control measures to reduce solids and floatables discharged from CSOs have been implemented to the maximum extent practicable. Alternatives shall include: a. Baffles in regulators or overflow structures b. Trash racks in CSO discharge structures c. Static screens in CSO discharge structures d. Catch basin modifications	Street sweeping is implemented bi-annually throughout Lowell, which serves to reduce the amount of litter washed into the collection system. Catch basins have hoods and deep-sumps to minimize the amount of floatable and solids leaving the basin. Further opportunities will be explored to further reduce discharge of solids and floatables from CSO outfalls in Lowell. More details at Appendix A
7. Pollution prevention programs that focus on contaminant reduction activities	a. Prevention through increased public education and awareness b. Control of disposal (garbage receptacles, collection and education) c. Control of illegal dumping (law enforcement, public education, disposal programs) d. Street cleaning e. Hazardous waste collection days	a. Lowell's website includes visual graphics depicting how the *collection* and *treatment* systems operate, and how the public can take actions to reduce impacts on operations and maintenance. The Utility attended multiple public events including Lowell Folk Fest. b. Hazardous waste collection days are held regularly at Duck Island and other programs are actively managed by the City's Solid Waste and Recycling Office. c. The Utility labels catch basin to notify residents not to dispose of wastes in these receptacles. d. Bi-annual street sweeping, which is coordinated with the City's DPW, saw to the prevention of 918 tons of debris from entering the collection system. e. Addressed in (b)
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts	a. Ensure that the public receives adequate notification of CSO impacts on pertinent water use areas, particularly beach and recreational areas affected b. Where applicable, provide users of these types of areas with a reasonable opportunity to inform themselves of the potential health risks c. The minimum control level, found in Section C.2.e. of the permit, is posting of CSO discharge points	A description of the Utility's CSO Public Notification and Reporting Plan can be found in Section 3.2 of this document.
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls	a. If possible, initiate monitoring and/or inspection activities above and beyond the minimum control levels specified in this permit b. Examples include CSO monitoring or receiving water monitoring for pollutants of particular concern to better characterize quality of the CSOs and their impacts on all receiving waters	As part of 314 CMR 16.00 reporting procedures, an affected area was determined for CSO, treatment plant bypass, and SSO discharges from the combined sewer system to potential receiving waterbodies. The affected area due to a CSO release from Lowell's regulator(s) extends approximately 12.3 miles downstream. The affected areas for treatment plant bypass and SSO discharges were estimated to be 591 feet and 222 feet respectively; however, for the purpose of notification distribution, the CSO area of affect is used. More details are provided in Appendix A, Combined Sewer Overflow Plan

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 directly within the 2024 NPDES Wastewater Report:

Inflow and Infiltration Analysis Report 2023:

https://lowellma.gov/DocumentCenter/View/25284

Centralville Sewer Separation Preliminary Design Report:

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

Combined Sewer Overflow Plan:

https://lowellma.gov/DocumentCenter/View/21016

Phase 3 Sewer Separation Preliminary Design Report

https://www.lowellma.gov/DocumentCenter/View/29247

CMOM Corrective Action Plan (CAP)

https://www.lowellma.gov/DocumentCenter/View/29235

Appendix B: Lowell Wastewater Job Descriptions

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JOB TITLE: **MAINTENANCE MANAGER**

SECTION: **WASTEWATER**

REPORTS TO (JOB TITLE): **EXECUTIVE DIRECTOR**

JOB TITLES SUPERVISED: **MAINTENANCE SUPERVISOR**

HEAD ELECTRICIAN

INSTRUMENTATION ELECTRICIAN

MECHANIC IIIs

MECHANIC IIs

MECHANIC Is

TV INSPECTION OPERATOR

COLLECTION SYSTEM SUPERVISOR

JOB TITLE: MAINTENANCE MANAGER

JOB PURPOSE:

Efficiently maintain the Wastewater Treatment Facility and Collection System in a cost effective manner and comply with all Federal, State and Local Regulations and Laws Training, scheduling, and monitoring staff; enforcing standards and procedures.

ESSENTIAL JOB RESULTS:

1. OVERSEE MAINTENANCE DEPT
   - Supervising all maintenance personnel
   - Scheduling and assigning employees and following up on work results

2. MAINTAINS THE MAINTENANCE DEPT
   - Initiating, coordinating, and enforcing standards and procedures

3. COMPLY WITH FEDERAL,STATE, AND LOCAL LEGAL REQUIREMENTS
   - Studying existing and new legislation
   - Enforcing adherence to requirements
   - Advising upper management on needed action

4. ENSURES OPERATION OF PLANT AND COLLECTION EQUIPMENT
   - Developing and enforcing preventive maintenance programs
   - Studying manufacturers instructions
   - Establishing repair and installation policies and procedures
   - Troubleshooting malfunctions
   - Coordinating trades people
   - Maintaining equipment and parts inventory
   - Evaluating new equipment and techniques
   - Recommending equipment purchases and replacements
   - Maintains integrity and safety of the Utility's vehicle fleet

5. IDENTIFIES MANAGEMENT AND EMPLOYEE CONCERNS
   - Surveying environmental, operations, and occupational conditions
   - Holding and attending Staff Meetings
   - Surveying and interfacing with employees

6. DETERMINES SERVICE EQUIPMENT, AND PERSONNEL REQUIREMENTS
   - Conducting inspections

7. MAINTAINS CLEAN WORKING ENVIRONMENT
   - Assigning housekeeping, custodial and landscaping duties

8. ACHIEVES FINANCIAL OBJECTIVES
   - Working within and monitoring the maintenance budget
   - Scheduling and analyzing for cost effectiveness

- Writes specifications for contracts to be bid
- Participates in the City's procurement process

9. MAINTAINS MAINTENANCE DEPARTMENT COHESIVENESS
   - Setting policy and goals for collection system work, maintenance work, and preventive maintenance
   - Enforcing policies and procedures

10. MAINTAINS MAINTENANCE STAFF
    - Recruiting, interviewing, selecting orientating and training employees

11. MAINTAINS MAINTENANCE STAFF JOB RESULTS
    - Coaching, counseling and disciplining employees
    - Participates in the disciplinary process
    - Planning, monitoring, and appraising job results

12. MAINTAINS PROFESSIONAL AND TECHNICAL KNOWLEDGE
    - Attending educational workshops, seminars, courses or conferences
    - Reviewing professional publications and establishing personal networks

13. COORDINATE FACILITY EFFORTS
    - Interfacing with Operations and Engineering Divisions
    - Exchanging information and scheduling mutual projects
    - Managing assigned contractor activities

14. MAINTAINS MAINTENANCE EFFECTIVENESS
    - Setting department goals
    - Coordinating department functions
    - Evaluating department functions for effectiveness

15. COORDINATE WITH OTHER CITY DEPARTMENTS
    - Interfacing with other City Departments
    - Availing needed resources

16. ORDER AND TRACK SUPPLIES AND SPARE PARTS
    - Maintaining records and usages
    - Conferring with Maintenance Supervisor, Head Electrician, Instrumentation Electrician and Collection System Supervisor
    - Tracking amounts used

17. KEEPS EXECUTIVE DIRECTOR INFORMED
    - Reviewing, analyzing and summarizing information
    - Identifying trends
    - Submitting written reports

18. MAINTAINS SAFE WORKING ENVIRONMENT

- Establishing and enforcing safety rules, regulations, and procedures
- Attending safety seminars
- Acting on reported safety concerns
- Member of the Utility's Safety Group
- Following Safety Group recommendations

19. MAINTAINS HISTORICAL RECORDS
    - Filing and compiling logs, reports, records, charts and related documents
    - Managing Utility's CMMS Program

20. CONTRIBUTES TO TEAM EFFORT
    - Accomplishing related results as needed.

ENVIRONMENT

PHYSICAL DEMANDS

_x_ Balancing _x_ Crouching _x_ Hearing _x_ Seeing _x_ Sitting _x_ Carrying _x_ Feeling _x_ Kneeling _x_ Close _x_ Standing _x_ Climbing _x_ Fingering _x_ Lifting _x_ Far _x_ Stooping _x_ Crawling _x_ Grasping _x_ Pulling _x_ Color _x_ Talking _x_ Depth _x_ Walking

EXPOSURES

_x_ Airborne Particles _x_ Explosives _x_ Muscular strain _x_ Temperatures _x_ Caustics _x_ Fumes _x_ Noise _x_ Toxicants _x_ Chemicals _x_ High places _x_ Odors _x_ Vibrations _x_ Electrical _x_ Moving parts _x_ Vision strain _x_ Weather

SUPERVISORY-MANAGEMENT RESPONSIBILITY

_x_ Hire/discipline/terminate _x_ Assign and check work _x_ Train _x_ Plan/appraise job results

Number of employees supervised 1 - 20

CITY OF LOWELL
Job Posting
Please Post: June 11, 2019
Deadline: June 25, 2019
Wastewater Utility
Collection Systems Supervisor

Job Title: **Collection Systems Supervisor** (2900-05, 2661)
Department: WWTP
Reports To: Maintenance Superintendent
May Report to: Maintenance Supervisor, Head Electrician
Union: MVEA Waste Water Unit II
Salary: $1,234.70 (min) to $1,396.78 (max) per week; 40hrs/week
FLSA Status: Non Exempt

SUMMARY
Ensures proper maintenance of entire sewer system in a safe, cost effective and efficient manner complying with all regulations

ESSENTIAL DUTIES AND RESPONSIBILITIES include the following. Other duties may be assigned.

1. SUPERVISE SUBORDINATES, MAINTAINS STAFF JOB RESULTS
   By
   - Assigning and delegating tasks
   - Coordinating work activities
   - Inspection and check of subordinates (Mechanics and TV Inspection Operators) work and job performance
   - Coaching and counseling subordinates
   - Recommends disciplinary action
   - Participates in the disciplinary process

2. MAINTAINS SEWER SYSTEM
   By
   - Coordinating all activities
   - Installation of new equipment
   - Maintenance inspection and repair of all existing systems

3. MAINTAINS COLLECTION SYSTEM
   By
   - Training subordinates
   - Having a thorough knowledge of the collection system, structures, policies and procedures
   - Following policies and procedures
   - Carrying out assignments
   - Ensuring working order of equipment
   - Ensure subordinates perform requirements
   - Reporting and recording abnormalities
   - Taking corrective action

- Reporting needed changes
- Responsible for TV Inspection Crew
- Responsible for Wastewater related street sweeping program
- Responsible for catch basin cleaning program
- Responsible for root treatment program
- Responsible for sewer line heavy cleaning program
- Responsible for sewer lining program
- Required to carry a cell phone

4. ENSURES PROPER OPERATION OF SEWER SYSTEM
   By
   - Performing preventative maintenance requirements
   - If needed, follow manuals, schematic diagrams, blueprints, and other specifications
   - Investigates illegal entry and discharges into the sewer system
   - Troubleshooting

5. MAY INSTALL NEW EQUIPMENT/MAKE REPAIRS TO EXISTING EQUIPMENT
   By
   - Using all equipment available
   - Managers and coordinates wastewater contractors

6. REPAIR AND MAINTAIN SEWER SYSTEM AND ALL ASSOCIATED STRUCTURES
   By
   - Diagnosing problems
   - Informing user (s) if necessary
   - Informing Maintenance Superintendent and/or Maintenance Supervisor
   - Coordinating repairs with outside contractors and/or City Engineer and/or related City departments

7. CONTROLS DOWNTIME OF SEWER SYSTEM
   By
   - Expediting needed repairs and/or cleaning in a timely manner

8. COORDINATES ROUTINE AND EMERGENCY WORK
   By
   - Informing outside contractors of needs Directs and operates equipment and personnel where required

9. MAINTAINS SEWER COLLECTION EQUIPMENT, PARTS AND SUPPLY INVENTORIES
   By
   - Checking stock to determine inventory level
   - Anticipating needed equipment, parts, and supplies
   - Reporting needs

10. CONSERVES SEWER SYSTEM RESOURCES
    By
    - Using equipment and supplies as needed to accomplish job results

11. MAINTAINS SEWER COLLECTION EQUIPMENT
    By
    - Performing minor repairs to all associated equipment

- Report any malfunctioning equipment

12. PROVIDES SEWER SYSTEM INFORMATION
    By
    - Answering questions and requests
    - Enters collection system information into computer data base
    - Enters collection system calls into computer data base

13. PREPARES SEWER SYSTEM REPORTS
    By
    - Collecting, analyzing, and summarizing information and trends
    - Submitting written reports

14. MAINTAIN PROFESSIONAL AND TECHNICAL KNOWLEDGE
    By
    - Attending educational workshops
    - Reviewing technical publications
    - Establishing personal networks
    - Maintain required licenses

15. MAINTAINS CONTINUITY AMONG WORK TEAMS
    By
    - Documenting and communicating actions, irregularities and continuing needs

16. WORK SAFTLY
    By
    - Knowing and following facility safety rules and regulations
    - Attending in plant and outside safety seminars and courses
    - Reporting unsafe conditions
    - Consider safety aspects of jobs before assigning or performing
    - Issues confined space entry permits for collection system jobs
    - Keep subordinates informed and updated of safety procedure changes and updates

17. COORDINATE WITH OTHER CITY DEPARTMENT PERSONNEL
    By
    - Availing needed resources
    - Represents the Utility at applicable Conservation Commission hearings
    - Represents the Utility at DPD Projects Meetings
    - Represents the Utility on litigation involving the collection system
    - Determines and obtains police details as needed
    - Obtains necessary permits for collection system work
    - Provides City Engineers and Utility Engineers with as built of sewer repairs

18. MAINTAINS CLEAN WORKING ENVIRONMENT
    By
    - Assigning and performing housekeeping, custodial, and landscaping duties

19. HELPS THE PUBLIC
    By
    - Being courteous
    - Investigate complaints promptly

- Investigates claims of damage caused by the collection system
- Assure prompt action

20. CONTRIBUTES TO TEAM EFFORT
    By
    - Being courteous
    - Investigate complaints promptly
    - Investigates claims of damage caused by the collection system
    - Assure prompt action

SUPERVISORY RESPONSIBILITIES
Supervise between 1-15 employees. Assign and check work of subordinates. Train subordinates and plan/appraise job results.

EDUCATION and/or EXPERIENCE
Required to have a high school education or GED due to the nature of the equipment and system mechanics working with and within;
The variety of duties will require experience in at least one of several fields involved in plant maintenance;

QUALIFICATIONS
To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

LANGUAGE SKILLS
Ability to read and comprehend simple instructions, short correspondence, and memos. Ability to write simple correspondence. Ability to effectively present information in one-on-one and small group situations to customers, clients, and other employees of the organization.

MATHEMATICAL SKILLS
Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to draw and interpret bar graphs.

REASONING ABILITY
Ability to apply common sense understanding to carry out detailed but uninvolved written or oral instructions. Ability to deal with problems involving a few concrete variables in standardized situations.

CERTIFICATES, LICENSES, REGISTRATIONS
CDL with hoisting engineer's license required.

PHYSICAL DEMANDS
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.
Must meet physical requirements for Commercial Drivers as set forth under 49 CFR 391.41; samples are listed below:
While performing the duties of this job, the employee is frequently required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; climb or balance; stoop, kneel, crouch, or crawl; talk or hear; taste or smell, climb, carry objects, crouch, grasp, lift, and pull. The employee must occasionally

lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, depth perception, and ability to adjust focus.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is frequently exposed to moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, outside weather conditions, extreme cold, extreme heat, risk of electrical shock, explosives, toxicants, risk of radiation, and vibration. The employee is occasionally exposed to wet and/or humid conditions and high, precarious places. The noise level in the work environment is usually loud.

The City of Lowell is a smoke and drug free employer and requires a physical with drug screen and CORI, post offer.

Qualified individuals may send application/resume with cover letter to the Human Relations Office, Mary Callery, HR Director Room 19 - City Hall, Lowell, MA 01852 by 8:00 PM on the deadline of June 25, 2019. Applicants may also send application/resume with cover letter to fax 978-446-7102 or email to cityjobs@lowellma.gov

EOE/AA/504 Employer

CITY OF LOWELL
Job Description
Please Post: January 13, 2021
Deadline: Open Until Filled
Waste Water Treatment Plant
Television Inspection Operator

Job Title: **Television Inspection Operator** (2600- 28, 2848)
Department: WWTP
Reports To: Maintenance Superintendent; Head Collection System Operator
May Report To: Maint. Supervisor; Plant Electrician; Instrumentation Electrician
Union: MVEA WWTP, Unit I
FLSA Status: Non Exempt
Salary: $23.1653 (min) to $26.5265 (max) per hour (40 hours per week)

SUMMARY
Set up and operation of TV Inspection equipment, including cameras, winches and all related equipment. Perform video inspection of wastewater utility collection system infrastructure.

ESSENTIAL DUTIES AND RESPONSIBILITIES
include the following. Other duties may be assigned.

- Operates the TV camera and video related equipment associated with internal pipeline inspections.
- Participates in precision shop and field work calibrating, troubleshooting, installing, repairing and maintaining internal pipeline inspection equipment.
- Performs preventive maintenance on all related equipment to insure its dependability and readiness.
- Insures the vehicle is fully stocked at all times to insure immediate response.
- Insures all equipment is secured daily, or when left unattended.
- Orders and maintains inventory of necessary supplies.
- Insures vehicle and all related equipment is always presented in a clean and workmanlike condition.
- Locates sources of problems with all equipment by observing all equipment in operation; Observes and listens for problems during equipment operation; Making Necessary repairs.
- Removes defective equipment by dismantling device; Using necessary tools available
- Controls Downtime by performing preventive maintenance: Making repairs, adjustments, or new installation as expeditiously as possible; Performing Mechanic I duties that may include, but not limited to, operating the Vaccon trucks, CSO and pump station inspections, screenings removal and other duties, etc. Performing all other duties assigned.
- Provides television information by Answering questions; Passing on information; Maintaining video library for work performed

- Performs required television equipment maintenance by performing repairs to television equipment; Troubleshooting and making recommendations to accomplish job results; Operate television equipment and vehicle
- Installs new equipment by using hand and power tools and measuring devices
- Performs preventive maintenance by knowing lubrication and adjustment requirements on related equipment; Maintaining a clean work environment
- Maintains professional and technical knowledge by attending educational workshops, seminars, and courses; reviewing professional publication; Maintaining required licenses
- Helps the public by being courteous; Investigating complaints promptly; Assuring prompt action
- Works Safely by knowing facility rules and regulations; Attending in-house and outside safety seminars and courses; Reporting unsafe conditions
- Maintains clean work environment by performing housekeeping and custodial duties
- Contributes to team effort By: Accomplishing related results as needed

QUALIFICATIONS
To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

EDUCATION and/or EXPERIENCE
Required to have a high school education or GED due to the nature of the equipment and system mechanics working with and within;
The variety of duties will require experience in at least one of several fields involved in plant maintenance; At least five years experience required in associated field.

CERTIFICATES, LICENSES, REGISTRATIONS
Commercial Driver's License from Registry of Motor vehicles. Good driving record. License commensurate with equipment repairing. Hoisting License required.

LANGUAGE SKILLS
Ability to read and interpret documents such as safety rules, operating and maintenance instructions, and procedure manuals. Ability to write routine reports and correspondence. Ability to speak effectively before groups of customers or employees of organization.

MATHEMATICAL SKILLS
Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to draw and interpret bar graphs.

REASONING ABILITY
Ability to apply common sense understanding to carry out instructions furnished in written, oral, or diagram form. Ability to deal with problems involving several concrete variables in standardized situations.

PHYSICAL DEMANDS

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, or feel or operate objects, tools, or controls and reach with hands and arms. The employee frequently is required to stand and talk or hear. The employee is occasionally required to walk; sit; climb or balance; stoop, kneel, crouch, or crawl; and taste or smell. The employee must frequently lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly exposed to moving mechanical parts. The employee is frequently exposed to vibration. The noise level in the work environment is usually moderately loud office setting.

The City of Lowell is a smoke and drug free employer and requires a physical with drug screen and CORI, post offer.

Qualified individuals should send application/resume with cover letter to the Human Relations Office, Mary Callery, HR Director, Room 19 - City Hall, Lowell, MA 01852 by the Deadline, Open Until Filled. Applicants may also send application/resume with cover letter to fax 978-446-7102 or email to cityjobs@lowellma.gov

EOE/AA/504 Employer

City of Lowell
Job Posting
Please Post: March 24, 2021
Deadline: Open Until Filled
Wastewater Utility
Maintenance Mechanic I

Job Title: **Maintenance Mechanic I** (2600-23, 2880)
Department: Wastewater Utility
Reports To: Maint. Supt; Plant Engineer; Head Mechanic & Skilled Mechanic
Union: MVEA WWTP Unit I
Salary: $806.96 (min) to $977.53 (max) weekly; 40 hours/week
FLSA Status: Non-exempt

SUMMARY

Performs equipment maintenance, installation and repair work on process and domestic equipment and piping systems found in a large complex wastewater treatment plant and outlying structures both in existence and to be added in the future. Must be able to perform work at a lower grade.

ESSENTIAL DUTIES AND RESPONSIBILITIES include the following. Other duties may be assigned.

Responsible for routine maintenance tasks as well as working under mechanics in repair and installation of domestic and process piping and equipment systems.

Must be capable of a wide variety of physical tasks in carrying out instructions received from the head mechanic and mechanic.

Typical duties may include but are not limited to assisting in removal or breakdown of equipment for maintenance or repair, cleaning and unplugging line process lines, preventative maintenance including greasing and oil requirements of various equipment items.

Repair and maintenance of both on and off plant vehicles are part of the maintenance mechanic's normal duties.

Also included in duties are the maintenance of buildings, tanks and wet well structures in site and outlying structures.

Due to the nature of the installation, these tasks are sometimes difficult and unpleasant.

Driving a dump truck, pick-up truck, van or mack sludge vehicle is also included in this position for on plant site use and between plant and outlying structures.

SUPERVISORY RESPONSIBILITIES

May exercise working supervision over a small group comprised of laborers and at times operations personnel on loan to the maintenance department.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or

ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

EDUCATION and/or EXPERIENCE
Required to have a high school education or GED due to the nature of the equipment and system mechanics working with and within; Knowledge of plant and equipment maintenance is required as well as experience in wastewater treatment of a similar application. A minimum of five years experience in building and machine maintenance is required. Education and training should indicate ability to function well in machine and building maintenance environment.

LANGUAGE SKILLS
Ability to read and interpret documents such as safety rules, operating and maintenance instructions, and procedure manuals. Ability to write routine reports and correspondence. Ability to speak effectively before groups of customers or employees of organization.

MATHEMATICAL SKILLS
Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to draw and interpret bar graphs.

REASONING ABILITY
Ability to apply common sense understanding to carry out instructions furnished in written, oral, or diagram form. Ability to deal with problems involving several concrete variables in standardized situations.

CERTIFICATES, LICENSES, REGISTRATIONS
Current and valid Commercial Driver's and Hoisting license required, must be obtained within 1 year of appointment. Good driving record.

PHYSICAL DEMANDS
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. Must meet physical requirements for Commercial Drivers as set forth under 49 CFR 391.41; samples are listed below:
While performing the duties of this job, the employee is frequently required to stand. The employee is occasionally required to walk; sit; use hands to finger, handle, or feel; reach with hands and arms; climb or balance; stoop, kneel, crouch, or crawl; talk or hear; and taste or smell. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

WORK ENVIRONMENT
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.
While performing the duties of this job, the employee is frequently exposed to moving mechanical parts. The employee is occasionally exposed to wet and/or humid conditions; high, precarious

places; fumes or airborne particles; toxic or caustic chemicals; outside weather conditions; risk of electrical shock; risk of radiation; and vibration. The noise level in the work environment is usually loud.

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EOE/AA/504 Employer

POSITION: **ENGINEERING MANAGER**

REPORTS TO: **EXECUTIVE DIRECTOR**

SUPERVISION EXERCISED:
Engineering Supervisor
Staff Engineers
Pretreatment Coordinator

JOB PURPOSE: Supervises and directs the engineering and pretreatment activities of the utility. Supervises and directs activities of contractors and consulting engineers working for the Utility. Supports, assists, and advises operation, lab, and maintenance departments in operating and maintaining the utility in the best interest of the City. Develops and maintains plans, records, and files of engineering and pretreatment activities.

ESSENTIAL JOB RESULTS

1. OVERSEE ENGINEERING DIVISION:
   - Supervising Staff Engineers, Pretreatment Coordinator and Engineering Supervisor
   - Scheduling and assigning employees and follow up on work results

2. MAINTAINS ENGINEERING DIVISION:
   - Initiating, coordinating, and enforcing standards and procedures

3. COMPLIES WITH FEDERAL, STATE, AND LOCAL LEGAL REQUIREMENTS
   - Studying existing and new legislation
   - Enforcing adherence to requirements
   - Advising management on needed actions
   - Maintains communication with regulatory agencies regarding engineering, pretreatment and inter-municipal activities
   - Confers with municipal, state, and federal officials and with outside consultants on technical and administrative matters

4. MAINTAINS ENGINEERING STAFF JOB RESULTS:
   - Coaching, counseling, and disciplining employees
   - Participates in the disciplinary process
   - Planning, monitoring and appraising job results

5. ACHIEVES FINANCIAL OBJECTIVES:
   - Assists Executive Director on financial grant and loan programs and applications, filing for grants, and adherence to conditions set forth in such grants/loans.
   - Scheduling expenditures
   - Analyzing variances
   - Initiating corrective actions

6. COORDINATE FACILITY EFFORTS:

- Participating in plant wide projects aimed at the improvement of operations, maintenance, and management
- Consulting with operations and maintenance supervisors to provide engineering and technical advice and assistance in the solution of new, complex, or unusual problems of an engineering nature it he design operation and maintenance of the utility and related facilities
- Interfacing with maintenance and operations
- Exchanging information
- Scheduling mutual projects

7. MAINTAINS ENGINEERING EFFECTIVENESS:
   - Setting Division goals
   - Coordinating department functions
   - Evaluating department functions for effectiveness
   - Responsible for developing specifications, plans, contracts, and bidding documents for work the Utility desires to let out to contract or purchase.
   - Responsible for the proper supervision and inspection of contracted work to insure conformance to specifications.
   - Reviews and advises on change orders that occur during the progress of construction.
   - Reviews and approves payment requests for contracted work.

8. COORDINATE WITH OTHER CITY DEPARTMENTS:
   - Interfacing with other city department heads
   - Availing needed resources

9. OVERSEE PRETREATMENT AND INTERMUNICIPAL ACTIVITIES:
   - Meeting daily with Pretreatment Coordinator
   - Coordinating pretreatment program requirements
   - Coordinating intermunicipal requirements
   - Oversees the intermunicipal agreements and adherence to the intermunicipal agreements
   - Review inspections, sampling, test results, work schedules and reports
   - Review results

10. MAINTAIN ENGINEERING COHESIVENESS:
    - Setting policy and goals
    - Enforcing policies and procedures

11. KEEPS EXECUTIVE DIRECTOR INFORMED:
    - Advising Executive Director on all matters pertaining to engineering, pretreatment and intermunicipal functions
    - Reviewing, analyzing and summarizing information
    - Identifying trends
    - Submitting written reports

12. HELPS THE PUBLIC:
    - Being courteous, assessable and prompt
    - Investigates complaints promptly, assuring prompt action

13. MAINTAINS ENGINEERING STAFF
    - Recruiting, interviewing, selecting orienting, and training Employees
    - Preparing personnel schedules and enforcing work rules in accordance with established utility policies
    - Responsible for staffing, training, resolution of personnel problems, grievances and related issues for the Engineering Division
    - Directing and supervising the performance of duties and tasks of personnel assigned to work under his direction

14. MAINTAINS HISTORICAL RECORDS:
    - Filling and compiling logs, reports, records, charts, and related documents

15. MAINTAINS PROFESSIONAL AND TECHNICAL KNOWLEDGE:
    - Attending educational workshops, seminars, courses or conferences
    - Reviewing professional publications
    - Establishing personal networks
    - Maintaining required licenses

16. IDENTIFIES MANAGEMENT AND EMPLOYEE CONCERNS:
    - Surveying environmental, operational and occupational conditions
    - Holding and attending staff meetings
    - Surveying and interfacing with employees
    - Developing, recommending and executing new or improved current or long range plans, policies, procedures, and practices relative to the utility

17. MAINTAINS SAFE WORKING ENVIRONMENT:
    - Establishing and enforcing safety rules, regulations, and procedures
    - Attending safety seminars
    - Acting on reported safety concerns
    - Follow safety committee recommendations

18. MAINTAINS CLEAN WORKING ENVIRONMENT:
    - Assigns housekeeping, custodial and landscaping duties

19. CONTRIBUTES TO TEAM EFFORT
    - Accomplishing related results as needed
    - Performing administrative and technical duties as assigned
    - Performing other duties as assigned
    - Subject to call for emergency work during any given 24-hour period
    - Required to carry a beeper

REQUIREMENTS AND QUALIFICATIONS

- A college bachelors degree in sanitary, civil, environmental or mechanical engineering. A Masters Degree is preferred.

- Engineer In Training (EIT) certification preferred

- Possession of a Massachusetts Grade 6 Operator certification
- Thorough knowledge of the principles, practices and procedures of modern professional, environmental engineering, particularly as applied to wastewater treatment
- Thorough knowledge of the principles, methods, procedures, systems, equipment and materials used in designing, construction, operating and maintaining a large, activated sludge wastewater treatment plant and associated facilities
- Thorough knowledge of the occupational hazards and safety precautions involved in the work
- Considerable knowledge of industrial wastes and their effect on wastewater processes and equipment
- Considerable knowledge of standard laboratory methods in the examination of wastewater
- Ability to plan, administer, coordinate and direct the engineering, pretreatment and intermunicipal activities of a large activated sludge wastewater treatment plant
- Ability to plan, assign, supervise and review the work of subordinates
- Ability to establish and maintain effective working relationships with subordinates, government officials, consultants, industrial officials, and the general public
- Ability to express oneself clearly and concisely, orally and in writing
- Must be reliable, thorough, dependable with the ability to work both independently and as head of a team
- Provide positive leadership and management control to the engineering personnel by his/her actions and examples
- Must be able to accept instruction, formulate plans of action, implementation changes, and ensure their compliance
- Must present a neat, courteous and professional appearance and attitude at all times

POSITION: **ENGINEERING SUPERVISOR**

REPORTS TO: **ENGINEERING MANAGER**
EXECUTIVE DIRECTOR

SUPERVISION EXERCISED: Staff Engineers
Pretreatment Coordinator

JOB PURPOSE: Supervises and directs the engineering and pretreatment activities of the utility. Supervises and directs activities of contractors and consulting engineers working for the Utility. Supports, assists, and advises operation, lab, and maintenance departments in operating and maintaining the utility in the best interest of the City. Develops and maintains plans, records, and files of engineering and pretreatment activities.

ESSENTIAL JOB RESULTS

1. OVERSEE ENGINEERING DIVISION:
   - Supervising Staff Engineers and Pretreatment
   - Scheduling and assigning employees and follow up on work results

2. MAINTAINS ENGINEERING DIVISION:
   - Initiating, coordinating, and enforcing standards and procedures

3. COMPLIES WITH FEDERAL, STATE, AND LOCAL LEGAL REQUIREMENTS

   By
   - Studying existing and new legislation
   - Enforcing adherence to requirements
   - Advising management on needed actions
   - Maintains communication with regulatory agencies regarding engineering, pretreatment and inter-municipal activities
   - Confers with municipal, state, and federal official and with outside consultants on technical and administrative matters

4. MAINTAINS ENGINEERING STAFF JOB RESULTS:
   - Coaching, counseling, and disciplining employees
   - Participates in the disciplinary process
   - Planning, monitoring and appraising job results

5. ACHIEVES FINANCIAL OBJECTIVES:
   - Assists Executive Director on financial grant and loan programs and applications, filing for grants, and adherence to conditions set forth in such grants/loans.
   - Scheduling expenditures
   - Analyzing variances
   - Initiating corrective actions

6. COORDINATE FACILITY EFFORTS:

- Participating in plant wide projects aimed at the improvement of operations, maintenance, and management
- Consulting with operations and maintenance supervisors to provide engineering and technical advice and assistance in the solution of new, complex, or unusual problems of an engineering nature it he design operation and maintenance of the utility and related facilities
- Interfacing with maintenance and operations
- Exchanging information
- Scheduling mutual projects

7. MAINTAINS ENGINEERING EFFECTIVENESS:
   - Setting Division goals
   - Coordinating department functions
   - Evaluating department functions for effectiveness
   - Responsible for developing specifications, plans, contracts, and bidding documents for work the Utility desires to let out to contract or purchase.
   - Responsible for the proper supervision and inspection of contracted work to insure conformance to specifications.
   - Reviews and advises on change orders that occur during the progress of construction.
   - Reviews and approves payment requests for contracted work.

8. COORDINATE WITH OTHER CITY DEPARTMENTS:
   - Interfacing with other city department heads
   - Availing needed resources

9. OVERSEE PRETREATMENT AND INTERMUNICIPAL ACTIVITIES:
   - Meeting daily with Pretreatment Coordinator
   - Coordinating pretreatment program requirements
   - Coordinating intermunicipal requirements
   - Oversees the intermunicipal agreements and adherence to the intermunicipal agreements
   - Review inspections, sampling, test results, work schedules and reports
   - Review results

10. MAINTAIN ENGINEERING COHESIVENESS:
    - Setting policy and goals
    - Enforcing policies and procedures

11. KEEPS EXECUTIVE DIRECTOR INFORMED:
    - Advising Executive Director on all matters pertaining to engineering, pretreatment and intermunicipal functions
    - Reviewing, analyzing and summarizing information
    - Identifying trends
    - Submitting written reports

12. HELPS THE PUBLIC:
    - Being courteous, assessable and prompt
    - Investigates complaints promptly, assuring prompt action

13. MAINTAINS ENGINEERING STAFF:
    - Recruiting, interviewing, selecting orienting, and training Employees
    - Preparing personnel schedules and enforcing work rules in accordance with established utility policies
    - Responsible for staffing, training, resolution of personnel problems, grievances and related issues for the Engineering Division
    - Directing and supervising the performance of duties and tasks of personnel assigned to work under his direction

14. MAINTAINS HISTORICAL RECORDS:
    - Filling and compiling logs, reports, records, charts, and related documents

15. MAINTAINS PROFESSIONAL AND TECHNICAL KNOWLEDGE:
    - Attending educational workshops, seminars, courses or conferences
    - Reviewing professional publications
    - Establishing personal networks
    - Maintaining required licenses

16. IDENTIFIES MANAGEMENT AND EMPLOYEE CONCERNS:
    - Surveying environmental, operational and occupational conditions
    - Holding and attending staff meetings
    - Surveying and interfacing with employees
    - Developing, recommending and executing new or improved current or long range plans, policies, procedures, and practices relative to the utility

17. MAINTAINS SAFE WORKING ENVIRONMENT:
    - Establishing and enforcing safety rules, regulations, and procedures
    - Attending safety seminars
    - Acting on reported safety concerns
    - Follow safety committee recommendations

18. MAINTAINS CLEAN WORKING ENVIRONMENT:
    - Assigns housekeeping, custodial and landscaping duties

19. CONTRIBUTES TO TEAM EFFORT:
    - Accomplishing related results as needed
    - Performing administrative and technical duties as assigned
    - Performing other duties as assigned
    - Subject to call for emergency work during any given 24-hour period
    - Required to carry a beeper

REQUIREMENTS AND QUALIFICATIONS

- A college bachelors degree in sanitary, civil, environmental or mechanical engineering. A Masters Degree is preferred.

- Engineer In Training (EIT) certification preferred

- Possession of a Massachusetts Grade 6 Operator certification
- Thorough knowledge of the principles, practices and procedures of modern professional, environmental engineering, particularly as applied to wastewater treatment
- Thorough knowledge of the principles, methods, procedures, systems, equipment and materials used in designing, construction, operating and maintaining a large, activated sludge wastewater treatment plant and associated facilities
- Thorough knowledge of the occupational hazards and safety precautions involved in the work
- Considerable knowledge of industrial wastes and their effect on wastewater processes and equipment
- Considerable knowledge of standard laboratory methods in the examination of wastewater
- Ability to plan, administer, coordinate and direct the engineering, pretreatment and intermunicipal activities of a large activated sludge wastewater treatment plant
- Ability to plan, assign, supervise and review the work of subordinates
- Ability to establish and maintain effective working relationships with subordinates, government officials, consultants, industrial officials, and the general public
- Ability to express oneself clearly and concisely, orally and in writing
- Must be reliable, thorough, dependable with the ability to work both independently and as head of a team
- Provide positive leadership and management control to the engineering personnel by his/her actions and examples
- Must be able to accept instruction, formulate plans of action, implementation changes, and ensure their compliance
- Must present a neat, courteous and professional appearance and attitude at all times

City of Lowell
Job Posting
Please Post: December 15, 2020
Deadline: Open Until Filled
Staff Engineer
Lowell Regional Wastewater Utility
Anticipated Vacancy

Job Title: **Staff Engineer** (2300-08, INC, 2840)
Department: Lowell Regional Wastewater Utility (LRWWU)
Reports To: Wastewater Engineering Supervisor; Executive Director
Union: MVEA - WWTP Unit IIP
FLSA Status: Non Exempt
Salary: $1,087.45 (min) to $1,246.48 (max) per week; 40hrs/week

SUMMARY
A Wastewater Engineer is responsible for management and administration of various tasks and programs within the LRWWU Engineering Division. A Wastewater Engineer provides technical support and project management assistance to the Wastewater Engineering Manager, the Wastewater Engineering Supervisor, and other division staff.

QUALIFICATIONS
The requirements listed below are representative of the knowledge, skill, and ability required of the Engineering Supervisor. To perform this job successfully, an individual must meet the education and experience requirements and be able to perform each essential duty satisfactorily.

EDUCATION AND EXPERIENCE
- A bachelor's degree in civil/environmental engineering, environmental studies, physical sciences, or a comparable area of study is required.
- Certification as an Engineer-In-Training (EIT) is preferred.
- Experience with engineering design, project management is required and program administration, especially in the municipal wastewater treatment industry, is preferred.

ESSENTIAL DUTIES AND RESPONSIBILITIES
Below are some of the essential duties and responsibilities of the position. Depending upon experience, education, skills, and the needs of the LRWWU Engineering Division, the duties described below may or may not be assigned. Other duties not listed below may be assigned by the Engineering Manager as deemed necessary to fulfill the overall objectives of the department.

- Administer tasks in any of the following division programs: Inter-Municipal Program (IMP), Storm-Water Management (SWM), Utility Safety Program, Industrial Pretreatment Program (IPP), Fats, Oil & Grease (FOG) Program, Long Term Control Program (LTCP), Capital Improvements Program (CIP), Geographical Information Systems (GIS), Website Development, and Supervisory Control and Data Acquisition (SCADA) Management. Task include permitting, inspection, correspondence, billing, regulatory compliance, planning and

design, project management, environmental monitoring, program implementation and maintenance, contractor oversight, and database management.

- Participate in design review process and make recommendations for design revisions; support other members of department, including operations and maintenance personnel; supervise contractors and consultants during design, bidding, and construction of projects, as required.
- Craft reports and other documents that describe work activities; create spreadsheets, tables, charts that summarize data and convey information; maintain electronic and paper files, including design reports, meeting minutes, technical memoranda, computer programs, correspondence, databases, and other records.
- Participate in planning and implementation of program objectives; support other Wastewater Engineering staff by providing technical assistance and support; participate in team projects and support efforts of other group members as needed. This includes assistance with pretreatment and intermunicipal responsibilities, as well as engineering projects, if necessary.
- Participate in Wastewater department programs and projects as needed; provide technical assistance to the operations and maintenance divisions; respond to emergency calls outside of normal working hours; keep Executive Director and Engineering Manager informed of Wastewater Engineering functions; interact in a professional manner with city departments, other organizations, public officials, and the general public.
- Refine skills related to mathematical concepts and calculations; enhance knowledge of the principles and practices of wastewater / stormwater treatment and transport; advance proficiency in organizing technical materials and writing letters; improve knowledge of federal and state regulations related to wastewater and stormwater management.
- Obtain and maintain professional licenses and certifications; establish and utilize professional networks; attend educational workshops, conferences, and seminars; reviews technical publications and refine knowledge
- Contribute to the preparation and submittal of reports and correspondence to the United States Environmental Protection Agency and the Massachusetts Department of Environmental Protection; maintain a working knowledge of relevant rules and regulations; coordinate and communicate with other agencies as needed; comply with federal, state, and local legal requirements.
- Collaborate with the Wastewater Engineering Manager, the Wastewater Engineering Supervisor, and other staff members in the LRWWU Engineering division regarding all project work; attend staff meetings as necessary.
- Interact with supervisors in other LRWWU divisions as needed, particularly the Operations Superintendent, Maintenance Superintendent, and Executive Director.
- Foster a safe and productive work environment by engaging in effective work practices and procedures; perform housekeeping and custodial duties as needed.

CERTIFICATES, LICENSES, AND REGISTRATIONS

- Engineer-In-Training certification is preferred.
- Valid motor vehicle license is required; commercial driver's license is preferred.
- Wastewater treatment operator's and wastewater collection system licenses are preferred.
- Hazwoper emergency responder training is desired.

LANGUAGE SKILLS

Ability to read, analyze, and interpret general business periodicals, professional journals, technical procedures, or governmental regulations. Ability to write reports, business

correspondence, and procedure manuals. Ability to effectively present information and respond to questions from groups of managers, clients, customers, and the public.

MATHEMATICAL SKILLS
Ability to work with mathematical concepts such as probability and statistical inference, and fundamentals of plane and solid geometry, trigonometry, and calculus. Ability to apply concepts such as fractions, percentages, ratios, and proportions to practical situations.

COMPUTER SKILLS
Ability to utilize computer programs such as *Word, Excel, PowerPoint,* and *Access*. Ability to create tables, charts, and spreadsheets and facility with email messaging. Familiarity with *AutoCad* and *GIS* a plus.

REASONING ABILITY
Ability to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Ability to interpret information presented in written, oral, schematic, or schedule form.

PHYSICAL DEMANDS
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.
While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; climb or balance; stoop, kneel, crouch, or crawl; talk or hear; and taste or smell. The employee must occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

WORK ENVIRONMENT
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is occasionally exposed to moving mechanical parts; high, precarious places; fumes or airborne particles; toxic or caustic chemicals; outside weather conditions; risk of electrical shock; and vibration. The noise level in the work environment is usually moderate.

The city of Lowell is a smoke and drug free employer and requires a physical with drug screen and CORI, post offer.

Qualified applicants should send resume/application with cover letter to Mary Callery, HR Director, Human Relations Office, Room 19 City Hall, Lowell, MA 01852 by Deadline: Open Until Filled. Applicants may also send resume and /or application to fax # 978-446-7102 or email to cityjobs@lowellma.gov

EOE/AA/504 Employer

City of Lowell
Job Description
Please Post ~ January 8, 2008
Deadline ~ January 18, 2008
Pretreatment Coordinator
Lowell Regional Wastewater Utility

Job Title: ***Pretreatment Coordinator***
Department: Lowell Regional Wastewater Utility (LRWWU)
Reports To: Wastewater Engineering Supervisor; other designated personnel
Salary: ***$822.29 (min) to $947.86 (max) per week***

SUMMARY

The Pretreatment Coordinator implements the LRWWU Industrial Pretreatment Program (IPP) by managing the daily activities of the program and coordinating the efforts of other staff members assigned to support the program.

ESSENTIAL DUTIES AND RESPONSIBILITIES

Below are the essential responsibilities of the position. Other duties not listed below may be assigned by the Wastewater Engineering Supervisor as deemed necessary to fulfill the overall objectives of the industrial pretreatment program and other LRWWU programs.

- Review industrial sewer user permit applications and craft sewer user permits.
- Conduct sewer user facility inspections and surveillance visits, and write inspection reports.
- Manage sewer user monitoring database, including data input of self monitoring and utility monitoring results.
- Assist with sewer user monitoring program, including the collection of sewer discharge samples.
- Maintain electronic and paper pretreatment program files, including sewer user database, permits, inspection reports, sampling results, and correspondence.
- Correspond with industrial sewer users regarding all aspects of the pretreatment program.
- Prepare and submit pretreatment reports and correspondence to the United States Environmental Protection Agency and the Massachusetts Department of Environmental Protection.
- Create and transmit a variety of sewer user bills and abatements.
- Implement a Fats, Oils & Grease (FOG) Program.
- Develop pretreatment program documents such as IPP enforcement response plan, IPP local limits, FOG control plan, and local sewer use ordinance.
- Coordinate a hazardous spill response program.
- Understand federal and state regulations related to sewer discharges and industrial pretreatment programs.
- Participate in team projects and support the efforts of other group members.
- Inform Wastewater Engineering Supervisor of pretreatment program activities.
- Foster a safe and productive work environment by engaging in effective work practices and procedures.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and ability required for the position.

EDUCATION AND EXPERIENCE

- A bachelor's degree in engineering, science, environmental studies, or a comparable degree is preferred.
- Knowledge of the principles and practices of industrial and municipal wastewater treatment is desired.
- Facility with mathematical concepts and calculations related to wastewater treatment is required.
- Proficiency in organizing technical materials, writing letters, and project management is required.

- Ability to read, interpret, and understand regulations and laws related to wastewater treatment is required.
- Familiarity with wastewater sample collection and analysis is required.

LANGUAGE SKILLS
Ability to read, analyze, and interpret general business periodicals, professional journals, technical procedures, or governmental regulations. Ability to write reports, business correspondence, and procedure manuals. Ability to effectively present information and respond to questions from groups of managers, clients, customers, and the public.

MATHEMATICAL SKILLS
Ability to work with mathematical concepts such as probability and statistical inference, and fundamentals of plane and solid geometry and trigonometry. Ability to apply concepts such as fractions, percentages, ratios, and proportions to practical situations.

REASONING ABILITY
Ability to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Ability to interpret information presented in written, oral, schematic, or schedule form.

CERTIFICATES, LICENSES, AND REGISTRATIONS

- Valid motor vehicle license is required.
- Wastewater treatment operator's license is preferred.
- Wastewater collection system license is preferred.
- Hazwoper emergency responder training is preferred.

PHYSICAL DEMANDS
The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is occasionally required to stand; walk; sit; use hands to finger, handle, or feel; reach with hands and arms; climb or balance; stoop, kneel, crouch, or crawl; talk or hear; and taste or smell. The employee must occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus.

WORK ENVIRONMENT
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is occasionally exposed to moving mechanical parts; high, precarious places; fumes or airborne particles; toxic or caustic chemicals; outside weather conditions; risk of electrical shock; and vibration. The noise level in the work environment is usually moderate.

The city of Lowell is a smoke and drug free employer and requires a physical with drug screen and CORI, post offer.

Qualified applicants send resume/application to the Human Relations Office, Room 19 City Hall, Lowell, MA 01852 by 4:00 pm on: Deadline - January 18, 2008
EOE/AA/504 Employer

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Appendix C: Overflow Notification Templates

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Overflow Start Notification Template

This is a public notification that as of {Event Start Date and Time} discharges of {Overflow Type} are currently underway at the Lowell Wastewater Utility and its diversion structures.

Diversions occur only when necessary to reduce risks to public health and safety that would otherwise result from street flooding and property damage. We are constantly working to improve our high-flow management program in order to reduce the volume and frequency of these discharges. Overflow discharges can occur in multiple ways. Blended wastewater overflows are a mixture of treated and partially treated wastewater. Combined Sewer overflow (CSO) diversions are an untreated mixture of stormwater and sewage. The tables below give details on active outfalls.

Blended Wastewater

Outfall #	Name	Latitude	Longitude	Receiving Water	Average Discharge Volume (MG)	Active/Inactive
35	Lowell Wastewater Facility	42.645	-71.2888	Merrimack River	6.23	Active/Inactive

Combined Sewer Overflows

Outfall #	Name	Latitude	Longitude	Receiving Water	Average Discharge Volume (MG)	Active/Inactive
002-SDS#1	Walker Station	42.646	-71.3341	Merrimack River	0.995	Active/Inactive
007-SDS#2	Beaver Brook	42.659	-71.3193	Beaver Brook	0.53	Active/Inactive
008-SDS#3	West Station	42.653	-71.3103	Merrimack River	3.4	Active/Inactive
011-SDS#4	Read Station	42.648	-71.3011	Merrimack River	0.02	Active/Inactive
012-SDS#5	First Street	42.648	-71.2909	Merrimack River	0	Active/Inactive
020-SDS#6	Warren Station	42.643	-71.305	Concord River	1.86	Active/Inactive
027-SDS#7	Tilden Station	42.651	-71.3115	Merrimack River	0.43	Active/Inactive
030(1)-SDS#8	Barasford Station	42.645	-71.2884	Merrimack River	1.025	Active/Inactive
030(2)	Merrimack Station	42.645	-71.2888	Merrimack River	2.43	Active/Inactive

Avoid contact with these water bodies for 48 hours after the discharge or overflow ceases due to increased health risks from bacteria and other pollutants. A follow-up email will be distributed when these discharges have ceased.

Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110) | Lowell, MA 01850
T: 978.674.1600 **|** E: csonotification@lowellma.gov
Visit Our Website For More Information

Overflow Update/Continuation Notification Template

This is a public notification that as of {Current Time} the {Overflow Type} discharge event that started at {Event Start Date and Time} is still underway at the Lowell Regional Wastewater Utility and its diversion structures.

Diversions occur only when necessary to reduce risks to public health and safety that would otherwise result from street flooding and property damage. We are constantly working to improve our high-flow management program in order to reduce the volume and frequency of these discharges. Overflow discharges can occur in multiple ways. Blended wastewater overflows are a mixture of treated and partially treated wastewater. Combined Sewer overflow (CSO) diversions are an untreated mixture of stormwater and sewage. The tables below give details on active outfalls.

Blended Wastewater

Outfall #	Name	Latitude	Longitude	Receiving Water	Average Discharge Volume (MG)	Active/Inactive
35	Lowell Wastewater Facility	42.645	-71.2888	Merrimack River	6.23	Active/Inactive

Combined Sewer Overflows

Outfall #	Name	Latitude	Longitude	Receiving Water	Average Discharge Volume (MG)	Active/Inactive
002-SDS#1	Walker Station	42.646	-71.3341	Merrimack River	0.995	Active/Inactive
007-SDS#2	Beaver Brook	42.659	-71.3193	Beaver Brook	0.53	Active/Inactive
008-SDS#3	West Station	42.653	-71.3103	Merrimack River	3.4	Active/Inactive
011-SDS#4	Read Station	42.648	-71.3011	Merrimack River	0.02	Active/Inactive
012-SDS#5	First Street	42.648	-71.2909	Merrimack River	0	Active/Inactive
020-SDS#6	Warren Station	42.643	-71.305	Concord River	1.86	Active/Inactive
027-SDS#7	Tilden Station	42.651	-71.3115	Merrimack River	0.43	Active/Inactive
030(1)-SDS#8	Barasford Station	42.645	-71.2884	Merrimack River	1.025	Active/Inactive
030(2)	Merrimack Station	42.645	-71.2888	Merrimack River	2.43	Active/Inactive

Avoid contact with these water bodies for 48 hours after the discharge or overflow ceases due to increased health risks from bacteria and other pollutants. A follow-up email will be distributed when these discharges have ceased.

Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110) | Lowell, MA 01850
T: 978.674.1600 **|** E: csonotification@lowellma.gov
Visit Our Website For More Information

Overflow Cease/End Notification Template

This is a public notification that as of {Event End Date and Time} the discharges of {Overflow Type} have ceased.

Diversions occur only when necessary to reduce risks to public health and safety that would otherwise result from street flooding and property damage. We are constantly working to improve our high-flow management program in order to reduce the volume and frequency of these discharges. Overflow discharges can occur in multiple ways. Blended wastewater overflows are a mixture of treated and partially treated wastewater. Combined Sewer overflow (CSO) diversions are an untreated mixture of stormwater and sewage. The tables below give details on the outfalls for the Lowell Regional Wastewater Utility.

Blended Wastewater

Outfall #	Name	Latitude	Longitude	Receiving Water	Average Discharge Volume (MG)	Active/Inactive
35	Lowell Wastewater Facility	42.645	-71.2888	Merrimack River	6.23	Inactive

Combined Sewer Overflows

Outfall #	Name	Latitude	Longitude	Receiving Water	Average Discharge Volume (MG)	Active/Inactive
002-SDS#1	Walker Station	42.646	-71.3341	Merrimack River	0.995	Inactive
007-SDS#2	Beaver Brook	42.659	-71.3193	Beaver Brook	0.53	Inactive
008-SDS#3	West Station	42.653	-71.3103	Merrimack River	3.4	Inactive
011-SDS#4	Read Station	42.648	-71.3011	Merrimack River	0.02	Inactive
012-SDS#5	First Street	42.648	-71.2909	Merrimack River	0	Inactive
020-SDS#6	Warren Station	42.643	-71.305	Concord River	1.86	Inactive
027-SDS#7	Tilden Station	42.651	-71.3115	Merrimack River	0.43	Inactive
030(1)-SDS#8	Barasford Station	42.645	-71.2884	Merrimack River	1.025	Inactive
030(2)	Merrimack Station	42.645	-71.2888	Merrimack River	2.43	Inactive

Avoid contact with these water bodies for 48 hours after the discharge or overflow ceases due to increased health risks from bacteria and other pollutants.

Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110) | Lowell, MA 01850
T: 978.674.1600 **|** E: csonotification@lowellma.gov
Visit Our Website For More Information

Overflow Text-Message Alerts

Start

This is a public notification that as of {Event Start Date and Time} discharges of {Overflow Type} are currently underway at the Lowell Wastewater Utility and its diversion structures.

Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110) | Lowell, MA 01850
T: 978.674.1600 | E: csonotification@lowellma.gov
WEB: https://www.lowellma.gov/1287

Update

This is a public notification that as of {Current Time} the {Overflow Type} discharge event that started at {Event Start Date and Time} is still underway at the Lowell Regional Wastewater Utility and its diversion structures.

Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110) | Lowell, MA 01850
T: 978.674.1600 | E: csonotification@lowellma.gov
WEB: https://www.lowellma.gov/1287

End

This is a public notification that as of {Event End Date and Time} the discharges of {Overflow Type} have ceased.

Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110) | Lowell, MA 01850
T: 978.674.1600 | E: csonotification@lowellma.gov
WEB: https://www.lowellma.gov/1287

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

A. Reporting Facility

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Facility Information

Reporting Sewer Authority _____ Permit # _____

2. Authorized Representative Transmitting Form:

First Name _____ Last Name _____ Telephone No. _____

Title _____ E-mail Address _____

B. Phone Notifications:

See DEP Regional Office telephone and fax numbers at the end of this form.

1. **MassDEP staff** contacted: first name _____ last name _____

   Date/Time contacted: Date _____ Time _____ ☐ am ☐ pm

2. **EPA staff** contacted: first name _____ last name _____

   Date/Time EPA contacted: Date _____ Time _____ ☐ am ☐ pm

3. Board of Health contacted: First Name _____ Last Name _____

   Date/Time contacted: Date _____ Time _____ ☐ am ☐ pm

4. Others notified (select all that apply); ☐ Conservation Commission

   ☐ Harbormaster ☐ Shellfish Warden ☐ Division of Marine Fisheries

   ☐ Downstream Drinking Water Supplier ☐ Watershed Association

   ☐ Beach Resource Manager ☐ Other: _____ (specify)

C. SSO Information

1. SSO Discovered: Date _____ Time _____ ☐ am ☐ pm

   By: _____

2. SSO Stopped: Date _____ Time _____ ☐ am ☐ pm

3. SSO Discharge from: ☐ Sanitary Sewer Manhole ☐ Pump Station

   ☐ Backup into Property ☐ Other: _____ (specify)

4. SSO Discharge to: ☐ Ground Surface (no release to surface water)

   ☐ Direct to Receiving Water _____ (surface water)

   ☐ Catch basin to Receiving Water _____ (surface water)

   ☐ Backup into Property Basement

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

C. SSO Information (cont.)

Location: _____
(Description of discharge site or closest address)

5. Estimated SSO Volume at time of this Report: _____

   Method of Estimating Volume: _____

6. Cause of SSO Event:

   ☐ Rain Event ☐ Pump Station Failure ☐ Insufficient Capacity in System

   ☐ Treatment Unit failure

   ☐ Sewer System Blockage: ☐ Pipe Collapse ☐ Root Intrusion ☐ Grease Blockage

   ☐ Other: _____
   (Specify)

7. Corrective Actions Taken:

Impact Area cleaned and/or disinfected: ☐ Yes ☐ No

Corrective Actions Completed: ☐ Yes ☐ No

D. Comments/Attachments/Follow-up

I wish to provide (select all that apply):

☐ Attachment ☐ Additional comments below: ☐ No additional comments or attachments

Additional comments and planned actions:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Watershed Permitting Program

Sanitary Sewer Overflow (SSO)/Bypass Notification Form

FOR DEP USE ONLY

Tax Identification Number

E. Certification Statement

I certify under penalty of law 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 am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

Date Signed

Please keep a copy of this report for your records. When submitting additional information, include the MassDEP Incident Number from this report.

MassDEP Regional Office and EPA Telephone and Fax Numbers:

Northeast Region	Phone: 978-694-3215	Fax: 978-694-3499
Southeast Region	Phone: 508-946-2750	Fax: 508-947-6557
Central Region	Phone: 508-792-7650	Fax: 508-792-7621
Western Region	Phone: 413-784-1100	Fax: 413-784-1149
EPA Contact	Phone: 617-918-1870	Fax: 617-918-0870
DEP 24-hour emergency	Phone: 888-304-1133	

Appendix D: Signed CSO Records/Station Inspections Certifications

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LOWELL REGIONAL WASTEWATER UTILITY

WASTEWATER COLLECTION AND TREATMENT

Aaron Fox
EXECUTIVE DIRECTOR

SERVING LOWELL
CHELMSFORD
DRACUT
TEWKSBURY
TYNGSBORO

March 31, 2025

U.S. Environmental Protection Agency
EPA New England, Region 1
5 Post Office Square – Suite 100
Boston MA 02109

Massachusetts Department of Environmental Protection
Northeast Regional Office
150 Presidential Way
Woburn, MA 01801

Subject: Annual Certification Statement of CSO Discharges for NPDES Permit No. MA0100633

To Whom It May Concern,

On behalf of the Lowell Regional Wastewater Utility (LRWWU), I hereby certify that all CSO discharges from LRWWU's permitted outfalls have been recorded for the 2024 reporting period. CSO discharge records are kept on file.

These records include dates and times of CSO events, CSO volumes and durations, precipitation amounts, and wet weather flows treated by the Utility.

Respectfully,

Clifton Hall

Staff Engineer

LRWWU

LOWELL REGIONAL WASTEWATER UTILITY

WASTEWATER COLLECTION AND TREATMENT

Aaron Fox
EXECUTIVE DIRECTOR

SERVING LOWELL
CHELMSFORD
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U.S. Environmental Protection Agency
EPA New England, Region 1
5 Post Office Square – Suite 100
Boston MA 02109

Massachusetts Department of Environmental Protection
Northeast Regional Office
150 Presidential Way
Woburn, MA 01801

Subject: Annual Certification Statement of CSO Structure Inspections for NPDES Permit No. MA0100633

To Whom It May Concern,

On behalf of the Lowell Regional Wastewater Utility (LRWWU), I hereby certify that all CSO structures have been routinely inspected during the 2024 reporting period. Inspection records are kept on file.

These inspections include the date, the time, the inspectors, the general conditions of the facility, and notes on the operating condition of the facility.

Respectfully,

Real Betty

Real Betty

Collections System Manager