

**City of
Fitchburg**



**Department of
Public Works**

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STREETS & PARKS

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WATER

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February 26, 2025

U. S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Mail code OES04-04
Boston, Massachusetts 02109-3912
Attn: Beth Kudarauskas

Massachusetts D.E.P., CERO
8 New Bond Street
Worcester, MA 01606
Attn: Dan Kurpaska

Subject: Semi-Annual Progress Report
August 2024 – February 2025 Reporting Period
Consent Decree, IX. REPORTING, Paragraph 70

Dear Mr. Handler and Mr. Kurpaska,

In accordance with Section VII, paragraph 70 of the Remedial Measures of the Consent Decree (Decree) signed by Fitchburg's Mayor on June 1, 2012, this submission provides EPA and the MassDEP with a report on the City's compliance with Section VII during the preceding six months (August 2024 – January 2025 Reporting Period) as described by Paragraph 70.

The report organization structure is formatted to separately address each relevant section, as it appears in the Decree, and includes all pertinent attachments.

As requested in the February 2013 thru July 2013 Reporting Period, the City is not including a GIS map of water resources and topographic features, as the data contained therein has not changed from the original GIS mapping submission and will not likely change in the foreseeable future. In the event there are significant changes in either water resources or topography, the City shall provide GIS mapping submission reflecting those changes in that reporting period's submission with narrative explanation of said changes.

GIS maps updates and figures, will be provided (electronically and hard copies) under separate cover, and will be provided via email and as printed full-size copy, via U.S. mail.

Semi-Annual Progress Report
August 2024 through February 2025 Reporting Period

A. SEWER SYSTEM

Staffing

There were two major staffing changes during the reporting period. The Plant Superintendent position has been vacated and we are presently looking for a replacement at the Wastewater Treatment Facility. On February 5, 2024 Joseph Guy was hired as Wastewater Collections' new GIS Engineer.

"Problem Area" Checks

The City has been more proactive in checking "problem areas" throughout the collections system that have a history of sewer system overflows. These areas have been checked on an approximate bi-weekly basis. The "Problem Area" list is continually updated based on both recent SSO events, and on improvements to a known "Problem Area" that would minimize future SSO occurrences.

Geographical Information Systems (GIS) Maps

Four maps were updated for this semi-annual report.

- 1.) Base Map (Map 1 of 4): The City's parcel and roadway data is shown on this map along with municipal boundaries. The map has been updated with the latest parcel data from the City's Assessor and Engineering Offices.
- 2.) Combined and Separate Sewers (Map 2 of 4): The City's sewer system is shown including combined and separated sewers along with pipe sizes and materials. Regulator manholes, combination manholes, and standard sewer manholes are also shown. Lastly, the City is close to completion of sewer rim elevations with its GPS unit. The few remaining manholes are newly constructed or cannot be located due to signal obstructions. The City raised 1 buried manhole to grade during the reporting period, and repaired 24 manhole covers. These locations are shown.
- 3.) Storm Drainage (Map 3 of 4): This map depicts record drawing storm drain data including the City's current GPS shots of catch basins and drain manholes. We will continue to locate drain structures but the Wastewater Division's main concentration will be to locate all sewer related infrastructure. As part of the City's MS4 Program, a more aggressive GPS survey program for storm system assets location is ongoing, and is headed by the Fitchburg DPW - Engineering Division, with assistance from the Wastewater Division.

4.) "Extraneous Flow Investigation, Remediation, and Capital Projects" (Map 4 of 4): This map includes sewer projects that have been accomplished within the reporting period and projects that are planned following the reporting period. During the reporting period the City replaced, raised, and reset numerous manhole frames and covers. Manhole castings found in fair condition with fewer than 3 vent holes in the cover, or within a combined sewer area, or in an off-road easement, then the City did not replace the casting with a new vent-less casting. The City also: (1.) completed a major sewer repair on Depot St., (2.) continued with post-construction monitoring of the CSO 007, 011, 039, 048 Separation Project, (3.) continued the ongoing construction of the "CSO 010 Separation/Rehabilitation Project". (4.) Began construction of the "CSO 032, 045 and 083 Separation/Rehabilitation Project". The locations of these improvements and others are noted on the map.

Also, contained on this "Extraneous Flow Investigation, Remediation, and Capital Improvement Projects" map (Map 4 of 4) is the City's current status of its sewer cleaning and CCTV program. Pipes are color coded based on their condition rating.

The City is working diligently to separate its combined sewers. In early 2013 the City reported 71,097 feet of combined sewer pipe in its system. As of the close of this reporting period, the City has a total remaining combined sewer length of approximately 38,717 feet, or approximately 7.33 miles.

Capacity, Management, Operation & Maintenance (CMOM) Related Activities, and GIS Maps

The collection operators continue to make progress with CCTV inspections and condition coding all 143.9 miles (approximate length) of sewer pipe within the City. By the close of the reporting period, the City had condition coded approximately 93.6% of its sewer system. The majority of pipes remaining to be coded are either located within difficult to access easements, egg-shaped pipes, 6-inch diameter pipes, or odd-shaped brick conduits. Some of the sewers are likely never to be inspected until they are replaced, as there are no access points. Some of the uninspected sewers are small diameter force mains where a CCTV camera is too large to fit in the pipe. The City has had great progress however using outside contractors to CCTV portions of its remaining sewers through SSES or combined sewer separation work. Many of the remaining sections will be televised within the next 2-years as part of the Downtown Separation Project (**CSOs 010, 032, 045, and 083**). Since many of the remaining sewers to be televised are beyond in-house capabilities, the City has begun a second round of CCTV of the entire system, with 9.4% having been camera surveyed under the second round.

As the majority of remaining sewers to be inspected are outside the City's capabilities to inspect, the City has actively been outsourcing this work. The City completed the inspection of sewers in the "Downtown Separation Project" (**CSO 010, 032, 045, and 083 Separation/Rehabilitation Project**) during a previous reporting period. The City's engineering consultant completed their review of the inspections during a previous reporting period, which included the review of 68,800 LF of sewer/drain CCTV and CCTV/Laser/Sonar inspections. A draft report of the CSO 010, 032, 045, and 083 Separation/Rehabilitation Project was provided to the City in October 2022. The report was finalized during the previous reporting period and provided to the City in February 2024.

The following table (*Table No. 1*, on Page 4) summarizes manhole inspections to date

TABLE No. 1

SEWER MANHOLE INSPECTION TOTALS

	Total Inspected	Total Manholes	Percent of Inspections Completed
Inspection Totals	2,215	3,625	61.1%

Global Positioning Satellite (GPS) System Update

The City is continuing to locate all of its sewer manholes, drain manholes and catch basins with its GPS unit. To date the City has located the following assets:

- 3,610 publicly-owned sewer manholes out of 3,625 (99.6% completed), which leaves 10 manholes to be located.
- 2,520 drain manholes (out of an unknown total).
- 4,048 catch basins (out of an unknown total).
- 369 sewer laterals
- 24 sewer clean-outs
- 1,459 other asset types. Other asset types typically include other types of utility manholes, services, or locations of dig-safe mark-outs.

Asset Management

During the past reporting period, the Wastewater Division has continued to use See Click Fix web-based software to respond and track service calls and other on-call related issues. Wastewater Collections is using the software to log, track and report on all sewer service calls this past reporting period. In this past reporting period, the City also continues to track CSO inspections, manhole inspections, pump station inspections, and service calls, among other day-to-day activities.

Intermittent Stream Connections to Sewer

No intermittent streams were removed from the sanitary system during the reporting period.

Meter Maintenance

The City has been maintaining its 8 flow meters located at regulator manholes throughout the reporting period. ADS long-range ultrasonic depth sensors are also maintained at CSO 45 to provide additional monitoring redundancy and accuracy at the regulators.

The table below (*Table No. 2*) includes the reporting period's summary of CSO overflows. In accordance with Paragraph 70, Subparagraph d. of the Consent Decree, *Table No. 2* includes notes on whether or not the meter was malfunctioning for a time during the reporting period. During the reporting period, the City generally had good meter coverage. .

TABLE No. 2

OVERFLOW DATA FOR REPORTING PERIOD February 1, 2024 TO February 1, 2025

Meter	Location	Events	Volume (Gallons)	Notes:
CSO-004	Cleghorn St. at Oak Hill Rd.	0	0	Weir wall raised 6-inches on 5/12/21
CSO-007	Cushing St. at Riverfront Park	-	-	Regulator closed on May 3, 2021
CSO-010	Main St. at River St.	0	0	Will be closed as part of Downtown Separation Project in 2025. Raised weir wall from 20" to 30" above sensor on 5/12/21.
CSO-032	#543 Main St. at Post Office	15	321,000	Will be closed as part of Downtown Separation Project in 2025. Weir wall raised on May 12, 2021
CSO-039	Water St. at Walnut St.	-	-	Regulator closed on August 24, 2021.
CSO-041	Benson Rd. near Falulah St.	0	0	Upsizing of pipe downstream and upstream I/I work necessary for closure. 5 catch basins upstream connected to sanitary sewer

CSO-045	Main St. at Oliver/Putnam St.	14	1,206,000	Down-looking sensor used to estimate overflows. Modified calculations by using Francis Formula weir equation for increased overflow estimation. Will be closed as part of Downtown Separation Project in 2025.
CSO-048	#85 Water St.	-	-	Regulator 48 was closed on May 24, 2022.
CSO-064	Water St. Easement near former "Halloween World"	17	2,407,000	Regulator on main interceptor sewer. Inflow removal upstream and sewer upsizing likely
CSO-076	Birch St. at Heywood St.	0	0	Downstream pipe undersized. No known combined sewers upstream.
CSO-83	Main St. at Prichard St.	0	0	Will be closed as part of Downtown Separation Project in 2025. Meter did not record any Overflow Event, however visual aid was activated. Possible cause could have been vermin.
Totals		36	3,934,000	

The City has been servicing the meters on a roughly 3-month frequency to help maintain high data quality. During the reporting period, the meter manufacturer (ADS Environmental Services, or 'ADS') conducted multiple visits to all of the City's flow meters to ensure they were functioning as designed.

The City has been maintaining its ECHO down-looking sensors to keep abreast of potential problems in the collection system. In addition, the ECHO meters are also deployed at the City's four (4) major siphons, to determine if the siphon cleaning started during this reporting period will have a noticeable effect on sewer surcharging in the siphon head chambers. The ECHO deployment locations are shown on Map 4 of 4 ("*Extraneous Flow Investigation, Remediation, and Capital Projects*"). On Map 4 of 4, the ECHOs are designated by an "LS" symbol (for "level sensor"), and are described in the legend as "wireless ultrasonic level sensors".

The City's wastewater engineering consultant assisted the City with implementing their public notification system for CSO events in accordance with MassDEP regulation 314 CMR 16.00 and submitted the final CSO Public Notification Plan in January 2023. The City plans to continue adjusting the public notification system as needed.

CSO Weir Wall Adjustments

No weir wall adjustments were made.

Post-Construction Monitoring Plan & Post-Construction Monitoring Report

In late May 2016, the City was approved to proceed with the Post-Construction Monitoring Plan (PCMP) field sampling program. The City requested and received an extension from MassDEP and EPA to extend the performance of PCMP sampling, as working hours, lab hours, and timeliness of events limits the time available to sample a wet weather event to only 4 or 5 hours a day. The City finished the final wet weather sampling within calendar 2017, and the Post-Construction Monitoring Report (PCMR) was submitted for review and approval at the end of February 2018. To date, we have not received a response from either the MassDEP or EPA most recently updated and submitted to the MassDEP and the EPA in March 2017.

The City's CSO 007, 011, 039, 048 Separation/Rehabilitation Project was completed in 2023. Punch list items were addressed and the construction for this project is complete. Following the conclusion of the construction, the City has commenced the post construction monitoring for the project, which includes flow metering and outfall sampling to evaluate the effectiveness of the sewer separation work.

Hydraulic Model & Hydraulic Capacity Assessment

As required under Paragraphs 41 through 46 of the Consent Decree, the City is required to develop a hydraulic model for all pipes in the City 12-inches and larger, and for all CSOs. During the previous reporting period, the City received conditional approval of its Hydraulic Model. The model was approved based on the understanding that additional model runs and analyses would be conducted under the Capacity Assessment Report which was submitted (under separate cover) at the end of August 2018. To date, we have not received a response from either the MassDEP or EPA on the Capacity Assessment Report.

The City, in discussions with its Consultant, have determined that the most appropriate time for a full hydraulic model update of the system will be after the Downtown Separation Project. The third and final phase of the Downtown Separation Project is currently in the design stage with construction anticipated to begin in 2025. Updating the model before this time seems ill advised, due to the drastic changes that will occur to the collection system after this project.

Sewer System Evaluation Survey

As required under Paragraphs 26 and 27 of the Consent Decree The City previously submitted the SSES Phase 1 and SSES Phase 2 reports and addressed comments from MassDEP. As a strategic deviation, due to the criticality of the trunk line sewer asset, the City has prioritized the investigative work associated with the trunk sewer line ("Phase 4" in the previously submitted SSES Scope of Work), ahead of the "Phase 3" SSES work (meter basins M06, M14, and M18). As part of the project, approximately 30,150 LF of interceptor sewers ranging from 18 to 48-inches in diameter were inspected using a combination of CCTV, laser, sonar, and hydrogen sulfide monitoring. Additionally, 138 manholes were inspected along the interceptor, including manholes along the interceptor not inspected during Phase I of the SSES. The project also included 69 successful building inspections and approximately 18,500 LF of smoke testing.

The City submitted the final SSES Phase 4 Report to MassDEP and EPA in November 2022. MassDEP granted conditional approval of the report on April 11th, 2024, and requested a narrative

addressing 4 items related to the report. The City submitted a narrative addressing these items to MassDEP on July 10th, 2024.

Combination Manholes Program

There were one (0) qualifying rain events during the reporting period that met the criteria (2 or more inches of rainfall, within a 24-hour period) necessary to perform combination manhole (CMH) inspections. Rainfall data is recorded at the City's primary rain gage at the Department of Public Works Building (at #301 Broad Street, Fitchburg). An additional rain gauge is also maintained at the east end of the City, on the roof of the East Wastewater Treatment Facility. The City often inspects all the combination manholes after a large rain less than 2-inches, as (9) inspections were made during these events.

During the reporting period, there were a total of 36 flow transferences to either the drain side or sewer side of the CMHs during the nine events that the manholes were inspected. These overflows are taking place in a total of 95 remaining combination manholes. The City reported 262 total combination manholes existing in the system in 2008.

The NPDES permit states that the City has two years to separate CMHs if they show evidence of transference. In the past, the City has prioritized CMHs that transfer sanitary water to the storm drain over CMHs that transfer storm drain water to the sanitary sewer. As a result, in the past the City has first prioritized those manholes that show evidence of transference to the drain side of a manhole. In the past 5 plus years however, the City has received multiple prices for separating combination manholes. It has been determined that pricing is very unfavorable when mobilizing and demobilizing multiple times throughout the City to separate manholes. In addition, separating one manhole on a street does not solve transference issues if other combination manholes remain on the same street. Due to the aforementioned reasons, the City has been prioritizing separation of manholes based on a number of factors including road paving locations, frequency of flow transference, and locations within a combined sewer separation project area. The City has been concentrating separation in specific areas to receive better pricing, but also to drastically reduce the chance for transference from a specific area or street.

During the CSO 010 separation project there were (5) combination manholes separated during this past reporting period. The City has currently budgeted over \$360,000 for each of the next two fiscal years for combination manhole separation.

In Spring 2019, the City executed an agreement with Weston & Sampson to develop contract documents for bidding with design plans for the separation of 150 combination manholes that have shown signs of transference. The City is currently evaluating the feasibility of placing a project out to bid to separate a significant portion of the combination manholes included in the Combination Manhole Separation Program.

In December 2020, The City submitted their Wastewater Management Plan Phase II Report. As identified in the report, the City plans to integrate the combination manhole separation program with the remaining combined sewer separation program to achieve an accelerated, cost-effective separation of combination manholes upstream of combined sewers. The remaining combination manholes that are not upstream of combined sewers that have shown signs of transference will be separated as funding is available and in advance of the completion of the remaining combined sewer separation projects.

As part of the completed CSO 007, 011, 039, 048 Separation/Rehabilitation Project, the City separated 19 combination manholes. As part of the City's current sewer separation project in the downtown area (*CSO 010, 032, 045, 083 Separation/Rehabilitation Project*), the City plans to separate a total of 10 combination manholes. Due to the size of this project, the City has decided to perform the construction in 3 phases, with 7 of the 10 combination manholes being separated during the first phase and 3 combination manholes being separated during the second phase. Construction for the first phase commenced in Summer 2023 and 4 of the 7 combination manholes in the project area have been separated to date.

The City also has plans to separate additional combination manholes using DPW crews, many of the combination manholes are shallow in depth, and relatively simple for separation. In the coming reporting period the City expects to make additional progress in separating manholes. During the reporting period, the City was much occupied raising failing sewer manhole covers, which minimized additional in-house progress on separating combination manholes.

Status of Regulators and Outfalls

In 2023, The City completed construction of the 'CSO 007, 011, 039, 048 Separation/Rehabilitation Project'. This project involved the closure of CSO Regulators 007, 039, and 048. In addition, combined sewers upstream of the previously closed CSO 011 were separated on Clarendon Street. In total, approximately 4,800 linear of combined sewers were separated through the installation of 4,850 linear feet of PVC sewers and 2,700 linear feet of HDPE drains. 2,100 linear feet of existing sewers were replaced, and 20,000 linear feet of sewers were rehabilitated to repair structural defects and reduce infiltration/inflow in the project area. In addition, the project (as bid) permanently separated 19 combination manholes. Necessary change orders have also resulted in the additional separation of 2,100 LF of combined sewers. As part of the project, CSO Regulator 007 was permanently closed on May 3, 2021, CSO Regulator 039 was closed on August 26, 2021, and CSO 048 was closed on May 24, 2022. This project was funded through the State Revolving Fund (SRF).

The City was included on MassDEP's 2021 SRF Intended Use Plan for the investigation phase of the CSO 010, 032, 045, 083 Separation/Rehabilitation Project. This project includes the separation of approximately 28,350 LF of combined sewers and the rehabilitation of 47,300 LF of sanitary sewers in the downtown area of the City. The project will result in the closure of CSO Regulators 010, 032, 045, and 083. A draft report of the CSO 010, 032, 045, 083 Separation/Rehabilitation Project was provided to the City in October 2022, and included the results of the following:

- 871 attempted manhole/catch basin inspections
- Approximately 63,400 LF of smoke testing
- 68,800 LF of CCTV and Multi-Sensor Inspections
- 43 dye tests
- 913 attempted building inspections (553 successful)

The City received the final report in February 2024. Due to the size of the CSO 010, 032, 045, 083 separation project, the City has elected to conduct the project in three construction phases. During the first phase, the City will close CSO 010 through the separation of 5,800 LF of combined sewers and rehabilitation of 10,300 LF of sanitary sewers. During the second phase, the City will close CSO 032 through the separation of 11,300 LF of combined sewers and rehabilitation of 25,300 LF of sanitary

sewers. During the third phase, the City will close CSOs 045 and 083 through the separation of 11,000 LF of combined sewers and rehabilitation of 12,700 LF of sanitary sewers.

In August 2022, the City submitted an SRF Project Evaluation Form for the second phase of the project, and the City was included on the 2023 Intended Use Plan during the previous reporting period. The City submitted a Construction Stage Application on October 13th, 2023, for Financial Assistance for the second phase of the project. The City submitted an SRF Project Evaluation Form for the third phase of the project on July 25th, 2024.

The construction for the first phase of the project commenced in Summer 2023 with an anticipated end date in 2025. Bids for construction for the second phase of the project were opened during the previous reporting period, with construction beginning in November 2024. Construction for the third phase of the project is expected to commence in Summer 2025.

Sewer Connection Summary

Table No. 4 below is a report of all new sewer connections to the sewer system in Calendar Year 2021, which includes the type of connection and the estimated average daily flow for each connection. A list of any I/I work conducted to offset the new flows is also listed, or if an I/I fee was assessed instead, if the additional flow was greater than 15,000 GPD.

Table No. 4					
New Sewer Connections - 2023 Calendar Year					
Date Issued	House #	Street	Occupancy Type	Work Description	Estimated Flow (GPD)
02/20/24	N/A	King Street	Residential	New sewer connection	440
02/20/24	1341	Ridge Road	Residential	New sewer connection	220
02/20/24	1341	Ridge Road	Residential	New sewer connection	220
05/06/24	1341	Ridge Road	Residential	New sewer connection	220
05/06/24	1341	Ridge Road	Residential	New sewer connection	220
05/06/24	1341	Ridge Road	Residential	New sewer connection	220
05/28/24	299	Lunenburg Street	Commercial	New sewer connection	1000
06/21/24	100	Clarendon Street	Residential	New sewer connection	220
07/23/24	N/A	Cobbler Drive	Industrial	New sewer connection	1000
07/26/24	N/A	Meadowbrook Lane	Residential	New sewer connection	2,420
08/16/24	N/A	Town of Lunenburg	Residential	New sewer connection	440
09/09/24	380	Wanoosnoc Road	Residential	New sewer connection	440
09/10/24	167	Canton Street	Residential	New sewer connection	330
09/27/24	80	Bond Street	Residential	New sewer connection	110
11/13/24	69	Culley Street	Residential	New sewer connection	330
Total Estimated Added Average Daily Flow (ADF):					7,830

B. POTW TREATMENT PLANT

Chemically Enhanced Primary Treatment (CEPT) Upgrade Project

As noted in the City's February 2017 Semi-Annual Remedial Measures reporting on this Consent Decree project, we herein and henceforth limit reporting to operational comment updates, as noted in the following paragraph.

Plant operations have maintained a continuous CEPT mode for the plant process. Wet-weather CEPT operations appear to be increasingly effective, and operations staff appear to have addressed process issues that relate to low pH. The overall compliance of the treatment operation appears to be significantly improved.

Long-Term Preventative Maintenance Plan

The Long-Term Preventative Maintenance Plan has been implemented and practices and protocols contained therein are being carried out. The system is continually being populated with new systems and equipment as work is being performed in an effort to build a completed history of maintenance procedures.

The plan is also reviewed with any new employees to insure they are familiar with the practice and procedures in the plan.

Preventative maintenance work completed between August 1 2024 and January 31 2025 included:

August 2024

- Main Galley Painting -ongoing.
 - #3 Primary Basin - Drained, Cleaned and inspected - replaced 2 static bushing, 1 flight and rotted bracket.
 - #1 Primary Basin- drained, clean and inspected basin. Replaced 1 idler gear static bushing secured worm gear to skimming's trough.
 - #2 Primary Basin - Drain cleaned and inspected- replaced 3 static bushing for idlers.
 - #3 Fournier Press - replaced leaking hose.
 - GBT Room - repaired poly strainer.
 - Aerzen Blower 2AB-2 - performed W13 maintenance.
 - West Plant Flock Tank - repaired gear reducer coupling.
 - Control Room Project - ongoing
 - 2012 TX Gator- replaced tires
- *Completed 92 Preventative Maintenance Work Orders and 8 Demand Work Orders.*

September 2024

- 1-A Primary Basin - replaced skimming Actuator.
- Building #6 Bisulfite - insulated carry water lines.

- Bay #4 and #5 - Ground pavement and repaved.
- 1-1 Aeration Basin - Started Effluent gate stanchion repair.
- 2022 Ford F 350 - performed oil service.
- Generator room - replaced outside air fan unit.
- Hypo Fill Station - repaired leak.
- Primary Skimming recirc line - replaced open close indicator.
- 2AB-4 Aerzen Blower - Replaced VFD heat sink cooling fans, troubleshoot VFD Drive ongoing
- Control room Project - Ongoing.

➤ *Completed 90 Preventative Maintenance Work Orders and 9 Demand Work Orders.*

October 2024

- 2022 F -350 - annual state safety inspection performed.
 - 2017 F-350 - New tires.
 - 1-1 Aeration Basin - Started Effluent gate stanchion repair - ongoing.
 - Control room project - ongoing
 - 2012 Bucket truck - problem solved from bucket swap, annual lift inspection performed.
 - 2AB-4 Aerzen Blower - Replaced VFD heat sink cooling fans, troubleshoot VFD -ongoing
 - 2AB-1 Aerzen Blower - performed W13 maintenance.
 - 2AB-3 Aerzen Blower - replaced belts.
 - Headworks Grit Chamber #1 & 2 - drain, remove grit and rags.
 - East Plant Elevator- Annual safety inspection performed.
 - 1st Stage Aeration VFD Cabinets - cleaned and check electrical connections.
 - Gravity Thickener #1 Hypo pump - replaced tube element.
 - 3A primary basin skimming trough - worm gear disengaged troubleshoot and re-align gear .

➤ *Completed 94 Preventative Maintenance Work Orders and 9 Demand Work Orders.*

November 2024

- Control room project - ongoing.
 - 1-1 Aeration basin - completed stanchion repair.
 - 2-1B Invent mixer - replaced motor bearings.
 - 2AB-2 Aerzen Blower - performed W13 maintenance.
 - 2016 Ford Escape - annual state inspection performed.
 - Fourier SC-1 Conveyor - replaced liners.
 - Southwest Air Handler - replaced motor.
 - 2017 F 350 - replaced electrical plow harness and annual safety Inspection.
 - 2AB-1 thru 3 Aerzen blower VFD drives - replaced heatsink fan units.

- #2 Gravity Belt Thickener – replaced belt.
- 2nd Stage Aeration Basins – Drained and cleaned basins
- 1-A Primary Basin Actuator – completed the communication issue.
- 2nd Stage Wet Well Pump – replaced seal and bearing oil.

➤ *Completed 73 Preventative Maintenance Work Orders and 9 Demand Work Orders.*

December 2024

- Clarifier 1st stage side 2 - reset RAS seal.
 - 1st #2 Ras pump and #1 WAS pump – cleared pumps of debris.
 - Bar Racks – clean and repair viewing panels, inspect and serviced chains and buckets .
 - 2nd Stage Aeration Basins – drain clean and inspected basins.
 - Headworks Boiler room – repaired condensate pumps and replaced gauges.
 - 2013 Equinox – state inspection performed.
 - #4 Penn Valley Pump – replaced lower housing gasket.
 - Manich Poly Makeup system side 2 – troubleshoot and replaced VFD drive.
 - #1 Gravity Thickening Tank – replaced drive chain.
 - Main Galley – painting ongoing

Completed 86 Preventative Maintenance Work Orders and 15 Demand Work Orders.

January 2025

- Tate Andale Strainer – replace strainer baskets, clean all shower nozzles reassemble.
 - Backflow preventors - tested.
 - Emergency generators - serviced.
 - #2 Manich poly system – replaced drive and programed.
 - Boilers and compressors – insurance inspections performed.
 - Fournier #2 Compressor – replaced belts.
 - #1 Plant air compressor – replaced zero drain trap.
 - Fournier Press #2 & #3 Poly feed pumps – replaced stators.
 - Repair steam leak main galley.
 - 2-1 Clarifier – lube and tighten drive chain.
 - #2 Primary basin side B – de-iced longitudinal drive sprocket and tighten chain.
 - Control room /Lab Project- started up again -ongoing.
 - 2013 Chevy Equinox – performed oil service.

➤ *Completed 82 Preventative Maintenance Work Orders and 12 Demand Work Orders.*

Looking forward, the City plans to:

East Plant

- Admin Wing HVAC replace.
- Lab and Control Room Upgrade in progress.
- Admin Wing Roof Replacement.
- Remove APC stack
- Process Roof replace
- Sludge transfer galley - replace plunger pumps

Wet-Weather Operations

The City has not introduced any septage or other high strength side streams not associated with plant operations during times that any portion of the flow was bypassing the secondary treatment system, or during times when a secondary system bypass was likely to occur within two hours. We are continuing this practice as required, and will conduct periodic review sessions with plant staff to ensure all personnel are aware of wet weather operational procedures.

- Presently our current Rolling Monthly Total Phosphorus average is 0.55 mg/L for the period of September, 2024 to December 31, 2024.

Comparing (pre- SSU Project) October 2016 plant performance with October 2020 and October 2024 performance:

<u>Metric</u>	<u>October 2016</u>	<u>October 2020</u>	<u>October 2024</u>
Total Flow, MG (month)	175.3 MG	300.0 MG	125.9 MG
Max. Daily Flow, MG	10.4 MG	20.6 MG	7.8 MG
Total Rain, inches (month)	5.3"	5.6"	1.3"
Max. Daily Rain, inches	2.6"	1.6"	0.4"
Rain Events >1.0"	8	3	5
Total Bypass, MG (month)	11.168 MG	.628 MG	0.0 MG
Max. Daily Bypass, MG	8.728 MG	.381 MG	0.0 MG
BOD ₅ In (Pounds)	740,267	682,503	393,488
BOD ₅ Out (Pounds)	9716	14,856	6,901
BOD ₅ Removal Efficiency	97.3%	97.8%	97.42%
TSS In (Pounds)	667,896	779,325	532,009
TSS Out (Pounds)	26,619	19,401	9,226
TSS Removal Efficiency	96.0%	97.8%	97.3%

Plant performance metrics (post- SSU Project), considering that the newly completed plant upgrades will continue to improve treatment performance, together with the continuing combined sewers separation program, combination manholes separation, and infiltration and inflow removal program, will all further assist and improve (reduce) effects on the plant from wet-weather, and

gives the City an expectation for improved plant performance and continuing improved Permit compliance.

Since the implementation of the State Point Analysis system, developed by Wright-Pierce, plant operations have seen reductions in the length of time (duration) of secondary system bypasses, reduction in E. Coli violations, and reductions in both BOD and TSS violations of the NPDES permit.

C. WASTEWATER MANAGEMENT PLAN

In accordance with the Consent Decree, the City submitted Phase I of the Wastewater Management Plan (WMP) to EPA and MassDEP in May 2019. The WMP Phase I Report discussed historical improvements to the City's wastewater collection system and improvements to the EWWTF. In addition, the WMP included a CSO Long Term Control Plan (LTCP) that developed a schedule to meet CSO conditions in the City's 2010 NPDES Permit by the end of 2030. To date, the City has not received a response from EPA or MassDEP on the WMP Phase I Report and CSO LTCP.

The WMP Phase II Report was submitted to EPA and MassDEP in December 2020. The WMP Phase II Report discussed infrastructure studies and improvements completed between 2019 and 2020 and the pursuit of various funding opportunities. In addition, the WMP Phase II Report also updated the anticipated schedule to meet CSO conditions in the NPDES Permit by the end of 2030. The WMP Phase II Report also discussed the Secondary System Upgrades (SSU) Project at the EWWTF and provided an analysis of the preliminary performance results of the SSU Project based on meeting the City's 2010 NPDES Permit. To date the City has not received a response from EPA or MassDEP on the WMP Phase II Report.

The City submitted the WMP Phase III – Part 1 Infrastructure Improvements Report to EPA and MassDEP in December 2023, which focused on the CSO separation work that had been completed since the submittal of the WMP Phase II Report in December 2020. The Part 1 report discussed infrastructure studies and improvements completed between 2020 and 2023 and the pursuit of various funding opportunities. The Part 1 report also outlined the City's plan for upcoming CSO projects to meet the 2030 Consent Decree deadline for combined sewer separation. To date the City has not received a response from EPA or MassDEP on the WMP Phase III Part 1 Report.

Due to the anticipated issuance of the updated NPDES Permit, the City requested from EPA and MassDEP a one (1) year extension to December 31, 2024, for the portion of the WMP Phase III Report that pertains to the updated NPDES permit and all items related to the EWWTF. The extension was granted and provided to the City by the United States Department of Justice (DOJ) via an email sent on December 21, 2023. The draft updated 2024 NPDES Permit was provided to the City by the EPA Region 1 on December 15, 2023 and was finalized on April 11, 2024.

The City submitted the WMP Phase III Part 2 – EWWTF Improvements Report to EPA and MassDEP during the previous reporting period on December 31, 2024. The WMP Phase III Part 2 report reviewed the performance results from the EWWTF's SSU Project since the submittal of the WMP Phase II Report and provided a Capital Improvement Project schedule update related to upcoming combined sewer separation projects. To date the City has not received a response from EPA or MassDEP on the WMP Phase III Part 2 report.

D. ILLICIT CONNECTIONS

The Wastewater Division has continued coordinating with the Building Department to halt acceptance of any Building Permits/Occupancy Permits at properties until the any discovered inflow source is removed. Going forward, in the course of ongoing and periodic repeat CCTV work, any suspected illicit connections will be identified for further investigation, to confirm or rule out as an illicit connection. If determined to be illicit connections, the area infrastructure will be reviewed and evaluated for the feasibility of redirecting confirmed illicit connections. In addition, the City plans to incorporate all building inspection data gathered as a result of SSES work conducted by its Consultant, into the City's GIS, for tracking purposes.

Eight (8) properties had private inflow sources (roof leaders/sump pumps) redirected from the sanitary system in the CSO 007, 011, 039, 048 Separation/Rehabilitation Project area. The connections were removed under the City's Financial Assistance Program for removing private I/I sources. Under this program, the City has been reimbursing homeowners up to 50% of the cost to remove an I/I source within the CSO 007, 011, 039, 048 Separation/Rehabilitation Project Area. The program is planned to be extended to the 'Downtown Separation Project' area, where multiple sources of private I/I have been identified.

E. INTERIM PHOSPHORUS LIMITS

The City has been complying with the interim phosphorus limits contained in Attachment 9b of the Consent Decree. The Treatment Facility is presently maintaining a rolling average of .5 ppm. The City attributes the sustained compliance, with respect to interim phosphorus limits compliance, to contributions from the CEPT primary treatment improvements, the State Point system, and the hard work of the plant operations and maintenance personnel.

VIII. SUPPLEMENTAL ENVIRONMENTAL PROJECT (SEP)

No SEP activities took place during the reporting period.

If there are any comments or questions regarding the above subject please contact the undersigned at (978) 829 - 1930.

Sincerely,

FITCHBURG DPW, WASTEWATER DIVISION



Mark McNamara
Fitchburg DPW Deputy Commissioner of Wastewater

Electronic & Hard Copy: Beth Kudarauskas, USEPA, Region 1 Office
Dan Kurpaska, MassDEP, Central Region Office

Electronic copy:
(Transmittal letter only) Chief, Environmental Enforcement Section, DOJ
Anu Balakrishna, Assistant U.S. Attorney
Jeff Kopf, Senior Enforcement Counsel, EPA Region 1
Louis Dundin, Assistant Attorney General, Massachusetts AG

Electronic copy: Lisa Mead, Mead, Talerman & Costa, Fitchburg City Solicitor
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Capria Curtin, MassDEP, Central Regional Office
James Laughlin, MassDEP, Central Regional Office

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Mark McNamara, DPW Deputy Commissioner Wastewater