Haverhill

Robert E. Ward, DPW Director
Phone: 978-374-2382 Fax: 978-521-4083
rward@haverhillwater.com

October 31, 2023

Ms. Elizabeth Kudarauskas
U.S. EPA – New England, Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Subject: City of Haverhill, MA NPDES Permit #MA 0101621
Consent Decree Submittal (Civil Action No. 16-11698-IT)
Compliance Report Number 14

Dear Ms. Kudarauskas:

Enclosed is Compliance Report No. 14 as required by Section IX.67 of the Consent Decree. This report is for the January1, 2023 through June 30,2023 reporting period.

If you require additional information, please call me at (978) 374-2382.

Sincerely,

Robert E. Ward
DPW Director

Enclosure(s)

cc: Chief, Environmental Enforcement Section, U.S. DOJ
Susan Poswistilo, U.S. Attorney, MA District
Michael Wagner, USEPA, wagner.michael@epa.gov
Belinda Stansbury, MassDEP, Belinda.Stansbury@state.ma.us
I. Andrew Goldberg, MA Assistant Attorney General, andy.goldberg@state.ma.us
Mayor James J. Fiorentini, City of Haverhill, mayor@cityofhaverhill.com
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CITY OF HAVERHILL, MASSACHUSETTS NPDES PERMIT NO. MA0101621 Consent Decree (Civil Action No. 16-11698-It, 11/10/16)

Compliance Report No. 14 January - June 2023

October 2023

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SECTION 1 INTRODUCTION

1.1 BACKGROUND

The United States Environmental Protection Agency (EPA), Massachusetts Department of Environmental Protection (MassDEP), and the City of Haverhill entered into a Consent Decree to require the City to take measures necessary to meet the requirements of the Clean Waters Act and the Massachusetts Clean Water Act, and to achieve and maintain compliance with the Small Municipal Separate Stormwater Sewer System (MS4) General Permit and the Publicly Owned Treatment Works (POTW) Permit, and all applicable federal and state regulations. The effective date of the Consent Decree is November 10, 2016.

As part of the Consent Decree, the City is required to submit a Compliance Report to EPA and MassDEP for the previous six-month period, referred to as a "Reporting Period." The bi-annual Reporting Periods run from January through June and July through December, with the Compliance Reports due on April 30th and October 31st for the previous period.

The goal of this Compliance Report is to provide the EPA and MassDEP an updated summary of the work performed by the City to achieve and maintain compliance over the course of the Reporting Period.

1.2 UNFORESEEN CHALLENGES

Since March 2020, the City continues to face both external and internal challenges that impacts their ability to perform required tasks as originally scheduled.

1.2.1 Vacant Positions

The Water/Wastewater Engineer position remains vacant. Every effort continues to be made to fill this critical role. At this time, the City is also working to hire two qualified collections system operators. The Collection System Supervisor position is advertised for hire as an anticipated opening. Every effort continues to be made to find a long-term solution for this critical role. This position is currently being filled by a retired City Employee.

1.3 REPORT ORGANIZATION

The Compliance Report is divided into several sections including:

- IDDE Program
- SSO and Building/Private Party Backup Events
- Construction Site Inspection and Enforcement Program
- General Status
- Secondary Treatment Bypass
- CMOM Corrective Action Plan (per MassDEP request)

Each section summarizes the City's actions, activities, and events that have occurred over the previous Reporting Period in accordance with the Consent Decree.

1.4 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.

Robert E. Ward
Deputy DPW Director
City of Haverhill, Massachusetts

10/31/23
(date)

SECTION 2 IDDE PROGRAM

2.1 INTRODUCTION

The City identified and inspected 1,200 stormwater outfalls (13 of these outfalls are shared stormwater/combined sewer overflow (CSO) outfalls) as part of the 2014/2015 Stormwater Outfall Inspection Report. Based on the findings, the City established a draft schedule of prioritized inspections.

In 2017, the City prepared the "Illicit Discharge Detection and Elimination (IDDE) Manual." The manual identified the procedures that the City will follow to continue their comprehensive inspections of its stormwater outfalls, upstream system investigations, and enforcement procedures when an illicit connection is identified. Most recently, the IDDE Manual was updated in 2020 to be in compliance with the City's MS4 permit.

The IDDE Manual can be found on the City's Stormwater website at: www.cityofhaverhill.com/departments/storm_water_program/index.php

2.2 CURRENT REVISED PRIORITY LISTING

The City continues to conduct IDDE sampling and update priorities based on field investigation and lab analysis testing results. The current IDDE investigation priorities as of December 2021 are shown in Table 2-1. The current priorities categories reflect the following inventory: 4 Problem Priority outfalls; 3 High Priority outfalls; and 34 Low Priority outfalls. Table 2-1 has been updated with the most recent sampling results for each outfall. The priority listing of outfalls, with sample results, is also available at the City's stormwater website.

2.3 IDDE INVESTIGATION PROGRESS REPORTING

Table 2-2 shows the City's progress to date on their IDDE investigations during the reporting period (January through June 2023). Updated results for outfall catchment areas have been updated on Table 2-2 and IDDE catchment investigation maps in Appendix. Table 2-3 shows the City's current list of priority outfalls for maintenance.

Using GIS, the City identified a total of 26.12 miles of storm drain piping and 2,617 drainage manholes and catch basins in the tributary area upstream of the outfalls included in the Priorities List as Problem, High, Low priorities. The total length investigated is included and updated from previous reporting for a cumulative percentage investigated. Some outfalls are considered fully investigated if there is no flow in an upstream asset.

During this reporting period two outfalls were inspected for dry weather flow, opportunities for outfall investigations and catchment investigations were limited due to extended heavy rain resulting in high groundwater and regularly flowing outfalls, five outfalls were removed from the priority list and are detailed in section 2.4, 24 Outfall Maintenance inspections were completed and closed see table 2-3, and the phosphorus source identification report was completed for the catchment areas affected.

TABLE 2-1

PRIORITIZED LIST OF OUTFALL SUB-AREA INVESTIGATIONS

(BASED ON OUTFALL INSPECTION PROGRAM)

SUMMARY OF WATER QUALITY TESTING OF DRY WEATHER FLOW AT MS4/CSO OUTFALLS

Outfall Information				Field Inspection Information	Dry-Weather Flow Characteristics						Field Parameter Test Results							Coliform Laboratory Sampling/Analysis					
GIS Id	Dia	Material	Outfall Location	Date	Previous Rainfall	Flow Description	Odor	Color	Floatables	Turbidity	Sample Time	Sample Temp (F)	pH	Conductivity	Ammonia (mg/l)	Surfactants (mg/l)	Chlorine (mg/l)	Sample Date for Bacteria	Previous Rainfall (inches)	Previous Rainfall (Date)	Previous Rainfall (End Time)	E.Coli (MPN/ 100 ml)	Entrocuccus (MPN/ 100 ml)
Problem Priority																							
UNK0955	36"	RCP	South Main St(Dominator Plaza)	9/16/2020	.01" ON 9/13/2020	Trickle	None	Clear	None	None	725	62.2	7	1630	0.13	0.1	0	9/16/2020	0.1	9/13/2020		>2400	
PL0891	30"	RCP	Main St @ Marsh Ave	5/2/2022	.4" ON 4/27/2022	Moderate	None	None	None	Clear	710	45	6.8	1470	0.2	0	0	5/2/2022	0.4	4/27/2022	225	15406	
PL0891 wet weather	30"	RCP	Main St @ Marsh Ave	**5/2/2023**	Current	Moderate	None	None	None	Clear	904	52	6.8	908	0.37	0.28	0	5/2/2023	Current			687	
MR1109	12"	RCP	350 Water Street	11/9/2020	.01" ON 11/3/2020	Trickle	None	None	None	None	930	59.3	7.31	3	0	0	0	12/10/2015	0.1	12/3/2015		1413.6	> 2420
UNK1767	36"	CMP	Tudor Ct	6/23/2020	.02" ON 6/11/2020	Trickle	None	Clear	None	Clear	750	64	7	453	0.07	0	0	6/23/2020	0.2	6/11/2020		>2400	
UNK1767 wet weather	36"	CMP	Tudor Ct	**5/2/2023**	Current	Moderate	None	None	None	Clear	955	39	6.9	620	0.083	0	0	5/2/2023	Current			4727	
High Priority																							
LR1260	3'x4'	OTHER, Blocks	140 Hale Street	5/2/2022	.4" ON 4/27/2022	Trickle	None	None	None	None	745	42	7.4	608	0.14	0	0.02	5/2/2022	0.4	4/27/2022	225	195.99	
UNK1166	34"	RCP	8 Franzone Dr	6/11/2020	0.01 ON 6/11/2020	Substantial	None	Clear	None	Clear	831	62	6.5	1000	0.09	0	0.03	6/11/2020	0.01	6/11/2020		461.1	
UNK1177	48"	RCP	Franzone Dr	6/11/2020	0.01" ON 6/11/2020	Substantial	None	Clear	None	Clear	925	63	6.1	1000	0.1	0.15	0.01	6/11/2020	0.01	6/11/2020		770.1	
Low Priority																							
BZB0847	15"	RCP	Fermanagh St	5/2/2022	.4" ON 4/27/2022	Trickle	None	Clear	None	None	830	54	6.9	727	1.42	0	0	5/2/2022	0.4	4/27/2022	225	4874	
MR20718	10"	RCP	1 Water Street	8/14/2015	0.57" ON 8/11/15	No Information	None	None	None	None	1000	78	7.99	2		0	0	8/31/2015	0.19	8/23/2015		556	631
FBO0638	12"	RCP	Hilldale Ave.	5/11/2022	.2" ON 5/4/2022	No Flow																	
PL1222	36"	RCP	West Gile St.	5/11/2022	.2" ON 5/4/2022	Substantial	None	None	None	None	805	48	7.3	545	0.25	0.07	0	5/11/2022	0.2	5/4/2022	1325	2419.57	
UNK0661	24"	RCP	Parkridge Rd.	5/2/2022	.4" ON 4/27/2022	Trickle	None	Clear	None	None	910	48	6.4	1880	0	0	0	5/2/2022	0.4	4/27/2022	225	31.29	
MR0982	18"	CLAY	20 Back Lane	5/11/2022	.2" ON 5/4/2022	Trickle	None	None	None	None	730	49	8.6	374	0.17	0	0	5/11/2022	0.2	5/4/2022	1325	12.11	6.2
MR23912	8"	STEEL	120 Merrimack St	5/10/2022	.2" ON 5/4/2022	No Flow																	
MR1140	15"	RCP	River St	11/4/2021	1.9" on 10/31/2021	Trickle	None	None	Other	Cloudy	1045	42.6	8.18	484	0	0		11/13/2014	0.06	11/7/2014		62.4	
MR0834	48"	RCP	Merrimac River (Bradley Ave)	6/30/2021	.01" ON 6/25/2021	No Flow																	
MR0662	18"	RCP	Parkridge Rd.	5/25/2022	.2" on 5/22/2022	Trickle	None	Clear	None	None	845	54	7.3	1061	0.12	0	0.02	5/25/2022	0.2	5/22/2022		0	
LR0963	15"	HDPE	Alvanos St	6/7/2022	.1" ON 6/3/2022	Trickle	None	Clear	None	None	725	49	7.2	1146	0.12	0.07	0	6/7/2022	0.1	6/3/2022	915	23	
CB1198	NA	RCP	Research Dr	11/4/2014	0.25" ON 11/2/14	Moderate	None	Clear	None	Clear	1003	50.2	7.06	208	0	0.25		11/13/2014	0.06	11/7/2014		21.3	

MR0770	36"	RCP	Merrimac River (River St)	9/23/2014	0.36" ON 9/21/14	Trickle	None	Clear	None	Clear	930	60.6	7.86	713	0	0.25		9/30/2014	0.01	9/29/2014		19.9	
UNK1836	36"	RCP	Computer Dr	5/25/2022	.2" on 5/22/2022	Trickle	None	Clear	None	Clear	800	51	7.06	6	0.155	0.06	0.05	5/25/2022	0.2	5/22/2022	2110	0	
FP7115	12"	RCP	Brickett Ln	5/25/2022	.2" on 5/22/2022	No Information	None	Brown	Other	Cloudy	720	45	6.8	620	0.85	0	0.03	5/25/202	0.2	5/22/2022		6.32	
DPI0969	15"	RCP	Diana Road	5/25/2022	.2" on 5/22/2022	Moderate	None	Clear	None	Clear	930	52	7.2	1068			0	5/25/202	0.2	5/22/2022			
DPO0657	45"	RCP	44 Sarah J Circle	6/9/2015	0.1" ON 6/6/15	Trickle	None	None	None	Slight Cloudiness	925	65.4	6.94	206	0	0	0	7/7/2015	0.02	7/4/15		4.1	
UNK1011	24"	RCP	Lake Street	6/15/2022	.01" ON 6/13/2022	Trickle	None	None	None	None	815	61	8.2	1795	0	0	0	6/15/2022	0.01	6/13/2022	0045	8.52	
UNK0627	15"	RCP	Haley Rd	5/21/2015	0.07" ON 5/19/15	No Information	None	None	None	None	840	64.5	6.82	791	0	0	0.25	5/22/2015	0.07	5/19/15		2	
DPI0947	18"	RCP	177 Brook Street	6/15/2022	.01" ON 6/13/2022	Trickle	None	None	None	None	855	60	7.8	1144	0	0	0.02	6/15/2022	0.01	6/13/2022	0045	34.51	
UNK1189	NA	NA	Primrose St (Dpw)	6/15/2022	.01" ON 6/13/2022	No Flow																	
TS0984	24"	RCP	Newton Rd	5/11/2015	0.03" ON 5/12/15	Moderate	None	Brown	None	Slight Cloudiness	1111	62.2	6.81	76	0	0	0.25	5/22/2015	0.07	5/19/15		<1	
TS0989	24"	RCP	Newton Rd	5/18/2015	0.03" ON 5/12/15	Substantial	None	Clear	None	Slight Cloudiness	1100	63.3	7.2	48	0	0	0.25	5/22/2015	0.07	5/19/15		<1	
UNK1750	24"	RCP	36 Magnavista	5/18/2015	0.03" ON 5/12/15	Trickle	None	None	None	None	955	64.7	7.6	574	0	0	0.25	5/22/2015	0.07	5/19/2015		<1	
UNK1040	24"	RCP	Gile St.	11/4/2021	1.9" on 10/31/2021	Trickle	None	None	None	None	930	63.1	7.3	877	0	0	0	5/22/2015	0.07	5/19/2015		<1	
UNK0902	40"	CMP	Shelley Rd - CULVERT	11/4/2021	1.9" on 10/31/2021	Moderate	None	Clear	None	Clear		62.6	7.02	1567	0	0	0						
DPO1007	54"	CMP	Kenilworth Ln	5/19/2021	44697	No Flow																	
UNK0848	18"	RCP	Woodrow Ave	9/9/2020	.1" ON 9/3/2020	No Flow																	
FB0723	18"	RCP	Hanna Ridge Rd.	7/31/2019	1.2" ON 7/23/19	Moderate	None	None	None	Clear	923	76.6	7.77	440	0	<0.05	0	7/31/2019	1.2	7/23/2019	1045	8.5	
UNK0888	NA	NA	West Lowell Street	6/12/2015	0.1" ON 6/6/15	Moderate																	
UNK1188	32"	RCP	Primrose Street	7/16/2019	0.45" ON 7/12/19	Trickle	None	None	None	Clear	930	73.9	7.48	855	0.5	<0.05	0	7/16/2019	0.45	7/12/2019	2045	770.1	
MR38714	6"	PVC	Parkridge Rd. - STREAM CONVEY	6/14/2022	.01" ON 6/13/2022	No Flow																	
MR38718	18"	RCP	Merrimack River	9/26/2019	0.01" ON 9/23/19	Trickle	None	None	None	Clear	1013	68.1	8.01	509	0	<0.05	0	9/29/2019	0.01	9/23/2019	2240	>2400	
LR39512	48"	RCP	Little River	7/31/2019	1.2" ON 7/23/19	No Flow																	

NOTE: Data exceeds one of the parameter thresholds that suggest it should be added to the IDDE program

TABLE 2-2
SUMMARY OF IDDE INVESTIGATIONS OF SYSTEMS WITH POTENTIAL ILLICIT CONNECTIONS BY BASIN
(BASED ON OUTFALL INSPECTION PROGRAM)
2014-2023 Dry-Weather MS4/Stormwater Outfall Inspection Program
IDDE INVESTIGATION PRIORITIES

		Current Report Period						Completed to Date			
		January 2023 - June 2023						Including this Reporting Period			
Basin ID	**Outfall ID**	**Existing System Estimates**		**Investigated**				**Complete to Date**			
		Length of Pipe (ft)	**Number of Manholes and Catch Basins**	**Length of Pipe (ft)**	**Percent Completed**	**Number of Manholes and Catch Basins**	**Percent Completed**	**Length of Pipe (ft)**	**Percent Completed**	**Number of Manholes and Catch Basins**	**Percent Completed**
Buswell Brook	BZB0847	1,697	24					1,697	100%	24	100%
Buswell Brook TOTAL		**1,697**	**24**	**0**	**0%**	**0**	**0%**	**1,697**	**100%**	**24**	**100%**
Creek Brook	CB1193	70	0					70	100%		
	CB1198	144	5					144	100%	5	100
	CB1710	71	0					71	100%		
Creek Brook Outlet TOTAL		**285**	**5**	**0**	**0%**	**0**	**0%**	**285**	**100%**	**5**	**100%**
Detention Pond Outlet	DPO0657	422	7								
	DPO0696	61	2					61	100%	2	100%
	DPO1079	37	0								
Detention Pond Outlet TOTAL		**520**	**9**	**0**	**0%**	**0**	**0%**	**61**	**12%**	**2**	**22%**
Detention Pond Inlet	DPI0946	7,421	172					7,421	100%	172	100%
	DPI0947	1,360	11								
	DPI0969	1,515	22								
	DPI1007	1,634	0								
	DPI1074	694	14								
	DPI1094	22	0					22	100%		
Detention Pond Inlet TOTAL		**12,646**	**219**	**0**	**0%**	**0**	**0%**	**7,443**	**59%**	**172**	**79%**
Fishing Brook	FBO0638	852	15					852	100%	15	100%
Fishing Brook TOTAL		**852**	**15**	**0**	**0%**	**0**	**0%**	**852**	**100%**	**15**	**100%**
Frey's Pond	FP7115	72	3					72	100%	3	100%
Frey's Pond TOTAL		**72**	**3**	**0**	**0%**	**0**	**0%**	**72**	**100%**	**3**	**100%**
Johnston's Creek	JC1028	1,397	12					1,397	100%	12	100%

Johnston's Creek TOTAL		**1,397**	**12**	**0**	**0%**	**0**	**0%**	**1,397**	**100%**	**12**	**100%**
Little River	LR0952	7,268	88					7,268	100%	88	100%
	LR0963	703	11								
	LR0993	539	4					539	100%	4	100%
	LR0995	822	0								
	LR1103	4,418	4					4,418	100%	4	100%
	LR1260[1]	26,134	614					26,134	100%	622	100%
Little River TOTAL		**39,884**	**721**	**0**	**0%**	**0**	**0%**	**38,359**	**96%**	**718**	**100%**
Merrimack River	MR0662	210	5								
	MR0770	2,980	47								
	MR0834	756	8					756	100%	8	100%
	MR0982	128	10					128	100%	10	100%
	MR1109	941	12					941	100%	12	100%
	MR1138	289	18					289	100%	18	100%
	MR1140	90	2								
	MR1141[2]	3,899	104					3,899	100%	104	100%
	MR1164	1,746	116					1,746	100%	116	100%
	MR20718	NA									
	MR23912	0	1								
	MR38718	1,713	30					1,713	100%	30	100%
	MR24314	541	24					541	100%	24	100%
Merrimack River TOTAL		**13,293**	**377**	**0**	**0%**	**0**	**0%**	**10,013**	**75%**	**322**	**85%**
Pentucket Lake	PL0891	5,463	128					5,463	100%	128	100%
	PL1222[1]	3,292	102					3,292	100%	102	100%
Pentucket Lake TOTAL		**8,755**	**230**	**0**	**0%**	**0**	**0%**	**8,755**	**100%**	**230**	**100%**
Tilton Swamp	TS0984	52	1					52	100%	1	100%
	TS0989	3,893	47								
Tilton Swamp		**3,945**	**48**	**0**	**0%**	**0**	**0%**	**52**	**1%**	**1**	**2%**
Unknown	UNK0627	254	8								
	UNK0661	410	11					410	100%	11	100%
	UNK0668	854	18								
	UNK0788	869	16					869	100%	16	100%
	UNK0836	842	12								
	UNK0883	570	7								
	UNK0898	91	0					91	100%		
	UNK0902	54	2								

	UNK0951	1,910	34					1,910	100%	34	100%
	UNK0953	225	0					225	100%		
	UNK0954	81	0					81	100%		
	UNK0955	6,058	146					6,058	100%	146	100%
	UNK1011	5306	44								
	UNK1020	71	2								
	UNK1040	1414	21								
	UNK1063	49	0								
	UNK1166	1,079	28					1,079	100%	28	100%
	UNK1177	156	3					156	100%	3	100%
	UNK1188	25,926	470					25,926	100%	470	100%
	UNK1189	2,043	17					2,043	100%	17	100%
	UNK1680	719	8								
	UNK1750	1,239	23					1,239	100%	23	100%
Unknown	UNK1767	2,077	52					2,077	100%	52	100%
	UNK1835	761	10					761	100%	10	100%
	UNK1836	1179	22								
	UNK1886	20	0					20	100%		
	UNK1887	20	0					20	100%		
	UNK1888	21	0					21	100%		
	UNK1889	21	0					21	100%		
Unknown TOTAL		**54,319**	**954**	**0**	**0%**	**0**	**0%**	**43,007**	**79%**	**810**	**85%**
West Meadow Brook	WMB0738	80	0					80	100%		
	WMB0739	80	0					80	100%		
	WMB0740	82	0					82	100%		
	WMB0759	20	0					20	100%		
West Meadow Brook TOTAL		**262**	**0**					**262**	**100%**		
GRAND TOTAL		**137,927**	**2,617**	**0**	**0%**	**0**	**0%**	**112,255**	**81%**	**2,314**	**88%**
		26.12mi.		**0.00mi.**				**21.26mi.**			

[1] **Estimate Base upon Percentage of Manholes Inspected**
[2] **Catchment includes State owned drainage and outfall. City inspected City owned drainage.**

TABLE 2-3

OUTFALL MAINTENANCE PRIORITY TABLE

JANUARY THROUGH JUNE 2023

Outfall ID	Work Order Number	High Priority		Medium Priority	Low Priority					Inspection Date	Re-Inspection Date
		Could Not Locate	Buried	Fully Submerged in Sediment	Partially Submerged in Sediment	Fully Submerged in Water	Partially Submerged in Water	Abnormal Vegatation	Outfall Damage		
LR1150	ST00001282		X							June-19	June-23
CB1199	ST00000595				X					August-19	May-23
CB1200	ST00000596				X					August-19	May-23
CB1201	ST00000597				X					August-19	May-23
CL0681	ST00000600				X					April-19	May-23
DPI0841	ST00000608				X					April-19	May-23
DPI0965	ST00000609				X					April-19	May-23
MR23515	ST00000652				X					May-23	
MR23520	ST00000657				X					May-23	
MR23522	ST00000659				X					June-23	
UNK0626	ST00000674				X					April-19	May-23
UNK0756	ST00000691				X					April-19	May-23
UNK0962	ST00000709				X					May-23	
UNK1801	ST00000758				X					July-19	June-23
UNK1806	ST00000760				X					May-23	
UNK32717	ST00000791				X					May-19	May-23
UNK34712	ST00000793				X					May-23	
UNK34713	ST00000794				X					May-19	May-23
UNK1902	ST00001296							X		May-19	May-23
DPI1131	ST00000619						X			May-19	May-23
DPI1162	ST00000621						X			May-19	May-23
UNK1177	ST00000729						X			June-19	June-23
UNK1823	ST00000761						X			July-21	May-23
LR0979	ST00001304								X	April-19	June-23
MR1224	ST00000540		X								
UNK0888	ST00000478		X							March-19	
UNK0889	ST00000554		X							August-18	
UNK0905	ST00000556		X							August-18	
UNK0997	ST00000560		X							August-18	
UNK1033	ST00000562		X							June-18	
UNK1136	STI0001311		X							August-18	
UNK1207	STI0001312		X							March-19	
UNK1221	ST00000568		X							August-18	
UNK1907	STI0001313		X							August-18	
UNK35912	STI0001314		X							August-18	
UNK1773	ST00000575		X							March-19	
UNK1774	ST00000576		X							August-18	
CB1196	ST00000510			X						March-19	
DPI0655	ST00000514			X						March-19	
DPI1008	ST00000520			X						April-19	
DPO1154	ST00000524			X						March-19	
JP1179	ST00000530			X						April-19	
LR0844	ST00000083			X						March-19	
LR1118	ST00001283			X						March-19	
MR1278	ST00000541			X						April-19	
MR24329	ST00000544			X						April-19	
SB11512	ST00000545			X						August-18	
TS0987	ST00000548			X						March-19	
UNK0064	ST00000551			X						April-19	
UNK0782	ST00000553			X						March-19	
UNK0935	ST00000558			X						March-19	
UNK1017	ST00000561			X						March-19	
UNK1076	ST00000563			X						March-19	
UNK1137	ST00000564			X						March-19	
UNK1183	ST00000566			X						March-19	
UNK1748	ST00000573			X						March-19	
UNK1772	ST00000574			X						March-19	
UNK1906	ST00000580			X						March-19	

UNK25513	ST00000583			X						March-19	
UNK31513	ST00000584			X						March-19	
CL0701	ST00000603				X					April-19	
DPI0634	ST00000606				X					April-19	
DPI1081	ST00000615				X						
DPI1090	ST00000617				X					April-19	
FB7114	ST00000629				X					April-19	
LR0931	ST00000635				X					April-19	
LR1099	ST00000636				X					April-19	
LR1102	ST00000637				X					April-19	
MR23513	ST00000650				X					August-21	
MR23514	ST00000651				X						
MR23516	ST00000653				X						
MR23517	ST00000654				X						
MR23518	ST00000655				X						
MR23519	ST00000656				X						
MR23523	ST00000660				X						
MR23524	ST00000661				X						
MR23525	ST00000662				X						
MR24316	ST00000663				X					April-19	
MR24318	ST00000664				X						
MR24718	ST00000665				X					April-19	
SB1117	ST00000668				X					April-19	
UNK0885	ST00000701				X					April-19	
UNK0950	ST00000706				X					April-19	
UNK1000	ST00000710				X					April-19	
UNK1005	ST00000711				X					April-19	
UNK1006	ST00000712				X					April-19	
UNK1111	ST00000717				X					April-19	
UNK1123	ST00000718				X					April-19	
UNK1160	ST00000722				X					April-19	
UNK1174	ST00000726				X					April-19	
UNK1205	ST00000732				X					April-19	
UNK1213	ST00000734				X					April-19	
UNK1263	ST00000736				X					April-19	
UNK1265	ST00000737				X					April-19	
UNK1684	ST00000742				X					April-19	
UNK1686	ST00000744				X					July-19	
UNK1738	ST00000751				X					May-21	
UNK1802	ST00000759				X					July-19	
UNK1867	ST00000770				X						
UNK1891	ST00000773				X					April-19	
UNK1899	ST00000775				X					July-19	
UNK1900	ST00000776				X					July-19	
UNK24721	ST00000780				X					August-19	
UNK26725	ST00001286				X					May-19	
UNK26726	ST00000784				X						
CB0977	ST00001288							X			
DPO0657	ST00001291							X		May-19	
FB0715	ST00001293							X			
UNK0906	ST00001294							X			
DPI0945	ST00000519					X				May-19	
DPI1133	ST00000522					X				May-19	
MR20719	ST00000542					X					
TS0989	ST00000549					X				April-19	
KL26714	ST00000533					X					
DPI0970	ST00000610						X				
DPI1007	ST00000614						X				
DPI1084	ST00000616						X				
DPI1125	ST00000618						X				
DPI1197	ST00001299						X				
KL1178	ST00000633						X			April-19	
LR1260	ST00000642						X				
TS0984	ST00000670						X			April-19	
TS33514	ST00000673						X			April-19	
UNK0665	ST00000678						X			May-19	
UNK0666	ST00000679						X			May-19	
UNK0729	ST00000689						X				
UNK0955	ST00000708						X				

FB1168	ST00000723						X				
UNK1176	ST00000728						X			July-19	
UNK1188	ST00001301						X			April-19	
UNK1206	ST00000733						X			May-19	
UNK1220	ST00000735						X				
UNK1695	ST00000745						X			April-19	
UNK1749	ST00000752						X			April-19	
UNK6316	ST00001303						X			May-19	
UNK8312	ST00000797						X				
MR0607	ST00001305								X	May-19	
TS0983	ST00001307								X	April-19	
UNK1173	ST00001308								X		
MR0927	ST00001309										
UNK1189	ST00001310										
Unknown Ownership Outfalls											
Inspection dates in blue indicate an item has been closed											

2.4 IDENTIFIED ILLICIT CONNECTIONS AND CURRENT RESOLUTION STATUS

The ongoing and cumulative status of the City's efforts to remove any identified illicit connections or discharges is summarized in Table 2-4.

Merrimack River Basin Outfalls – MR1164 has been removed from the priority list as it is seasonal groundwater flow from top of catchment.

Little River Basin Outfalls – LR0952 has been removed from the priority list as it is connected to athletic field drainage and is considered an excluded outfall. Upstream investigation showed no flow from catchment not originating from athletic field drainage.

Unknown Basin Outfalls - UNK0951– has been removed from the priority list as it is connected to athletic field drainage and is considered an excluded outfall. UNK1020 was removed from the priority list as sampling results were within acceptable permit limits. UNK1680 was removed from the priority list for no flow.

Pentucket Lake Basin Outfalls – PL0891 was sampled for wet weather flows and sample results are shown on table 2-1.

Detention Pond Inlets Outfalls – DPI0696 was removed from the priority list as it is connected to athletic field drainage and is considered an excluded outfall.

TABLE 2-4
SUMMARY OF ILLICIT DISCHARGES IDENTIFIED BY BASIN AND CURRENT STATUS
(JANUARY through JULY 2023)

Description		Illicit Discharge/Connection Verified				Ongoing Illicit Discharge Removal Activities					Final Illicit Connection Removal Actions				Assessment: Is the City in compliance with the schedule?
Basin ID	**Outfall ID**	**Date Verified**	**Address Location**	**Type of Discharge[1]**	**Estimated Flow**	**Removed?**	**Reasons Why Not**	**Schedule for Removal**	**Reason why expedited**	**Legal Actions against Private Property Owners**	**Actions Taken (with Dates)**	**Date Connection Eliminated**	**Est. Cost of Removal**	**Estimated Volume Removed (gallons)**	
Little River	LR1260	10/26/2017	29 Union Street	Single family broken sewer	400 gpd	not removed	gave extension	Was removed on 2/24/18			Catchment investigation completed on 10/10/2020. City currently conducting sewer separation project			60,000	
Merrimack River	MR1164	11/19/2016	Market Basket Parking Lot	groundwater into drain	Seasonal Flow/ Not able to estimate	N/A	N/A	N/A	N/A	N/A	This dry weather flow appears to be from a groundwater discharge into the drainage system across a parking lot. Additional testing is required to confirm bacteria source is groundwater.	N/A	N/A	N/A	Yes, the City is in compliance with resolving this "illicit discharge".
	MR1109	12/21/2020	350 Water St	IDDE conducted and needs further investigation to determine the source.	500gpd	not removed	verifying bacteria counts				CCTV conducted on 12.21.2020 no defects found. Flow appears to be from top of catchment from depression/wetland flowing through drain. Additional CCTV required in nearby sewer lines to confirm no infiltration				Yes, the City is in compliance

Pentucket Lake	PL0891	10/5/2016	Marsh Avenue	leaking sewer/ exfiltration	Not able to estimate	X	Sewer replacement costs/lengths are extensive; cost exceeds discretionary funds; new fund required in next fiscal year to complete project	2021	This connection is being removed as quickly as possible and dependent on the availability of funds within the fiscal year.	NOV	10/5/18-10/10/18: SMH-2190-point repair and manhole rehabilitation complete. 10/11/18-10/16/18: Installation of CIPP main line liner on Main St 10/17/18-10/23/18: Installation of CIPP main line liner on Marsh Ave. 10/24/18: Began installing CIPP of sewer laterals. Groundwater is too high causing flooding in homes. Project on hold until mid-end March. Project is complete. 6/9/2020: illicit connection located at lateral from laundromat, owner notified to repair, repaired as of December 2021, followup testing to be completed next reporting period	12/2021	$ 446,000	-	The Marsh Ave sewer repair project was bid on and awarded to National Water Main Cleaning Co. and the contract had to be extended to 6/30/19 due to high groundwater. Project was completed by the end of June 2019 but after review of CCTV, it was determined that more CCTV needs to be conducted and 1 defect in lining needs to be repaired.
	UNK0951	11/1/2017	Brook Street	Leaking sewer running through drain	Not able to estimate	not removed	Not able to fix due to weather	As soon as weather permits	-	-	Catchment investigation shows flow originating from upstream athletic field drainage	4/17/2018	$ 4,277	-	Yes, the City is in compliance
	UNK0955	10/14/2016	South Main St	Contaminated private line discharges to City line.	Not able to estimate	not removed	unable to complete investigation due to weather	As soon as weather permits			drain manholes will be exposed and CCTV'd when weather permits to identify source of illicit flow. CCTV conducted showing no infiltration from shopping plaza, additional CCTV will continue in upcoming reporting period.				
	UNK1166	6/11/2020	Franzone Dr	Upstream contamination needs additional IDDE	10gpm est	not removed	CCTV to be completed in next reporting period								
	UNK1188	12/25/2012	34 Columbia Pk., 66 Columbia Pk., 74 Columbia Pk., 80 Columbia Pk., 90-92 Columbia Pk.	5 Single family	N/A	N/A	N/A	N/A	N/A	N/A	5-house sewer services through a drainpipe that were dripping. Install a PVC sleeve through drain	6/8/2016	$ 13,000	26,481	The city is in compliance. 60-day deadline was not applicable until November 2016.
	UNK1767	6/23/2020	Tudor Ct	IDDE conducted. CCTV needs to be completed. High ammonia from private pipe. Dye tested home and their waste goes to sewer.	N/A	not removed	CCTV to be completed in next reporting period								
Detention Pond Outlet	DPO0696	6/12/2015	Pamela Lane	Private drain and outfall DPI0697 that discharge to detention pond and not contaminated.	Not able to estimate	N/A	N/A	N/A	N/A	N/A	No Flow present on multiple inspections in 2020. City will continue to monitor for dry weather flow	N/A	N/A	N/A	Yes, the City is in compliance
											Grand Total =		$ 463,277	86,481	

SECTION 3 SSO & BUILDING/PRIVATE PARTY BACKUP EVENTS

3.1 SSO ACTIVITY

A chronological list of the sanitary sewer overflows (SSO) and building/private party backup events that occurred during this Reporting Period (January through June 2023), are listed in Table 3-1, and shown in Figure 3-1.

Over the Reporting Period, there were a total of nine reportable SSO events associated with the City's sewer collection system and are listed in Table 3-1. None of these SSO's met the criteria for public notification.

It is important to note that the SSO's associated with the City collection system operations continue to not be a result of pipe capacity deficiencies and the City continues to make significant progress in reducing the number of SSOs that occur in the system, which are attributed to City operations. For this six-month reporting period, the City had nine SSOs that were directly attributable to unanticipated City collection system conditions. The EPA reported annual average SSOs in a typical nationwide system is about four SSOs per 100 miles

TABLE 3-1
SANITARY SEWER OVERFLOW EVENTS
JANUARY THROUGH JUNE 2023

Cityworks Work Order	WO 7802	WO 8010	WO 8140	WO 8214	WO 8789	WO 8893	WO 9071	WO 9229	NA
SSO ID	SSO-23-01	SSO-23-02	SSO-23-03	SSO-23-04	SSO-23-05	SSO-23-06	SSO-23-07	SSO-23-08	SSO-23-09
SSO Address	135 Ward Hill Avenue	177 Lowell Avenue	217 Concord Street	89 Griffin Street	4-8 Fairfeild Street	115 Emerson Street	4 Westford Street	97 Newark Street	53 Belvidere Height Drive
Start Date/Time	1/11/2023 19:30	1/26/2023 10:30	2/1/2023 13:45	2/5/2023 10:30	3/10/2023 14:00	3/20/2023 8:45	3/29/2023 10:30	4/7/2023 8:15	4/22/2023 10:45
End Date/Time	1/11/2310:15	1/26/2023 11:00	2/1/2023 14:05:00 PM	2/5/2023 11:30	3/10/2023 14:30	3/20/2023 9:15	3/29/2023 10:45	4/7/2023 9:05	4/22/2023 11:15
Date Reported EPA/DEP	1/12/2023 10:30	1/27/2023 10:00	2/1/2023 18:30	2/5/2023 13:30	3/11/2023 10:00	3/20/2023 16:00	3/29/2023 17:00	4/7/2023 11:00	4/23/2023 9:00
Who Notified	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis	Isaiah Lewis
Reason For Occurrence	Sewer Main Blocked	Sewer Main Blocked	Sewer Main Blocked	Sewer Main Blocked	Sewer Main Blocked	Contractor Broke Sewer Service	Sewer Main Blocked	Sewer Main Blocked	Private sewer service broken
Date Of Last SSO Occurrence	First Occurance	7/25/2009 9:15	First Occurance	4/8/2020 12:59	First Occurance	First Occurance	6/21/2010 17:35	First Occurance	First Occurance
SSO Est. Volume	1000	200	50	1000	30	50	100	500	100
Receiving Waters If Sewerage Entered	NA	NA	NA	NA	NA	NA	NA	NA	NA
Method Use To Estimate Volume	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
Nearest CB Location ID	CB-711	CB-2470	CB-7372	CB-2505	CB-7063	CB-6220	CB-7060	CB-1379	NA
Distance To Nearest CB (Ft.)	70	39	330	424	282	72	398	130	NA
Name Of Receive Water Whether Or Not There Was A Release	NA	NA	NA	NA	NA Combine Sewer	NA Combine Sewer	NA Combine Sewer	NA	NA
Entered CB Yes Or No	YES	NO	NO	NO	NO	YES	NO	NO	NO
Measured Taken Stop SSO	Plugged CB JETVAC	Flushed sewer main	Flushed sewer main	Flushed sewer main	Flushed sewer main	CCTV Line Contcted Gas Company	Flushed sewer main	Flushed sewer main	Contacted BOH
Decontaminate	YES	YES	YES	YES	YES	YES	YES	YES	YES
Measured Taken To Prevent Future Overflows	CCTV Line	CCTV Line	CCTV Line		This is on a PM	NA	Place standard frame and cover	CCTV Line	Private
Sewerage Location Into Stream	NO	NO	NO	NO	NO	NO	NO	NO	NO
SSO Ownership City Or Private	CITY	CITY	CITY	CITY	CITY	Private Gas Company	CITY	CITY	Private

SECTION 4 CONSTRUCTION SITE INSPECTION AND ENFORCEMENT PROGRAM

4.1 ENFORCEMENT ACTIVITY

At their June 26, 2018, Haverhill City Council meeting, the Council passed and adopted a Pre and Post Construction Stormwater Management Ordinance (Ch. 219) as required by the Consent Decree and MS4 Stormwater permit.

The City permitted three projects under this ordinance in 2021. No new projects have been filed in 2022. Of the three projects permitted in 2021, only two have commenced. Regular inspections are conducted by the Engineering Office's Clerk-of-the-Works for both the Sylvan Hill Crossing residential subdivision and the Approval-Not-Required lots on Tenadel Avenue. With these projects still under construction, no as-built plans have been received.

Thus far, most projects meeting the one acre and MS4 connection requirements have been exempt under the Ordinance due to their being permitted by the Conservation Commission per Massachusetts Stormwater regulations and Wetlands Protection Act. In addition, the Ordinance has served as a deterrent, as there have been instances where projects have been redesigned to reduce proposed disturbances to less than one acre.

SECTION 5 GENERAL STATUS

5.1 INTRODUCTION

This section summarizes the actions taken by the City of Haverhill to achieve Consent Decree compliance within the Reporting Period.

For the fourteenth reporting period (January through June 2023) there was one deliverable and/or activities due within that timeframe to achieve compliance. The deliverable/activity is shown in Table 5-1 below.

In June 2021, The City Council passed a Loan Authorization for $7,037,000, for sewer improvements. This project includes replacing sewer lines in various locations, installing a cured in place lining in a 54-inch sewer main, and rehabbing sewer lines in other various locations. In October of 2022, the City submitted the Locke Street Preliminary Design Report as well as updated Final Long Term Control Plan schedules for the Locke Street and Wastewater Treatment Plant projects.

Construction of the Primrose Street portion of the 2022 Water and Sewer Improvement continued during this reporting period. The project cost is $3.2 Million and includes:

- Installing 2,056 feet of HDPE drainpipe ranging in size from 12 to 48-inches.
- Montclair Avenue replacing 600 feet of vitrified clay with 8-inch PVC pipe.
- Smiley Avenue replacing 250 feet of 10-inch vitrified clay with 10-inch PVC pipe.
- Manners Avenue replaced 300-feet of 8-inch vitrified clay with an 8-inch PVC pipe.
- Moore Street replaced 425-feet of 18-inch brick with 18-inch PVC pipe.
- Maple Avenue replaced 675 feet of 10-inch concrete pipe with 12-inch PVC pipe.
- Green Street replaced 400 feet of 18-inch brick pipe with 18-inch PVC pipe.
- Race Street replaced 1300 feet of 15-inch vitrified clay pipe with 15-inch PVC pipe.
- Cured in place sewer linear is approximately 2,133 feet ranging in size from 8-inch to 12-inch.

Wright-Pierce Completed the City's Water Pollution Abatement Facility's Rehabilitation and Upgrade Project Evaluation in February of this reporting period. The City has drafted a new RFQ that meets the requirements of the American Rescue Plan Act (ARPA). The new RFQ includes preliminary design, final design, bidding, and construction.

The City has almost fully implemented a new Computerized Maintenance Management System (CMMS), Cityworks. The system's CCTV module is the last piece to implement and will be utilized to develop consequence of failure, likelihood of failure, and overall "risk" values through CCTV and will be integrated into the City's long-term CIP. During this reporting period, the City was waiting for a software update that would fix a bug in the Cityworks CCTV module. The CCTV module will be fully implemented in the next reporting period. Cityworks also has reporting capabilities for outfall inspection and investigation, catch basin cleaning and inspection, and any corrective or preventative maintenance associated with sewer and stormwater (lift station checks, cleaning of sewer lines, etc.) Cityworks is also being utilized within the wastewater treatment plant for corrective and preventative maintenance.

Outfall Inspection Program work orders generated from the City's CMMS from January through June 2023 are attached to this Compliance Report in Appendix A.

TABLE 5-1

SUBMISSIONS WITHIN CURRENT REPORTING PERIOD

Part	***Activity***	**Due Date**	**Submittal Date**
Effective Date of Consent Decree (11/10/2016)			
IX	**Compliance Reporting**		
	Annual CSO report	3/31/2023	4/30/2023

5.2 ISSUES OF NONCOMPLIANCE

The City is in compliance with the requirements of this Consent Decree.

5.3 LOOKING AHEAD - SIX MONTH FORECAST

The anticipated future deliverable required under the Consent Decree for the next Reporting Period, July through December 2023, is shown in Table 5-2.

TABLE 5-2
FUTURE DELIVERABLES DURING THE PROCEEDING REPORTING PERIOD
(JULY THROUGH DECEMBET 2023)

Part	*Activity*	*Trigger Event*	*# Days Due Post Trigger Event*	Due Dates
Effective Date of Consent Decree		**11/10/2016**		
M	CSO Monitoring			
	Annual CSO Activation Report	12/31/23	90	3/31/24
IX	Compliance Reporting			
	Compliance Report No. 15	12/31/23	120	4/30/2024

SECTION 6 SECONDARY TREATMENT BYPASS

6.1 INTRODUCTION

The intent of this section is to summarize the secondary treatment bypass events that occurred at the City of Haverhill's Water Pollution Abatement Facility during the reporting period, January through June 2023.

6.2 BYPASS EVENTS

There was one secondary treatment bypass event that occurred during the reporting period, which is listed in Table 6-1. The table provides the following information as required under the Consent Decree:

- The date(s) of the Bypass
- The date(s) when the Bypass occurred, and the rainfall totals (inches)
- The presence, or absence of snowmelt
- The total plant influent flow (MGD)
- The total secondary treatment Bypass volume (MG)
- The start/stop time for each Bypass event, and plant flows at both the start and stop of the Bypass event
- The type and number of unit operations and processes that went offline, and the reason of each
- The total gallons of septage received on each Bypass event day
- During the time of Bypass, additional operations information
    - Influent and Effluent total suspended solids
    - The mean cell residence time for each aeration tank
    - The sludge blanket depth in the secondary clarifiers
    - The mixed liquor suspended solids in the aeration tanks

The Secondary bypass facilities have been activated on only two occasions since September 7, 2017.

TABLE 6-1
SECONDARY TREATMENT BYPASS EVENTS

Bypass Event	#	2023-01	
Date of Bypass		5/1/2023	
Date of Rainfall		5/1/2023	5/2/2023
Weather Rainfall	Inches	2.75	0.02
snow melt	(y/n)	No	No
Influent Flow	MGD	37.08	26.65
Bypass Flow Total	MG	2.59	0.00
Q, bypass start time		12:00 AM	
Plant Flows @ Start	MGD	60	
Q, bypass stop time		2:10 AM	
Plant Flows @ Stop	MGD	60	
Max Influent		64.14	54.6
Influent Septage Received	Gallons	54,100	45,000
Influent TSS	mg/L	108	88
Effluent TSS	mg/L	15.92	9.59
Aeration Basin #1 Sludge Volume Index	ml/g	160	178
MLSS Lab	mg/L	1,316	2,242
Mean Cell Residence Time	Days	2.63	3.09
Aeration Basin #2 Sludge Volume Index	ml/g	178	170
MLSS Lab	mg/L	1,122	1,760
Mean Cell Residence Time	Days	2.52	2.73
Aeration Basin #3 Sludge Volume Index	ml/g	199	199
MLSS Lab	mg/L	1,304	2,270
Mean Cell Residence Time	Days	2.62	3.11
Aeration Basins Online	#	3	3
Secondary Clarifier #1 Depth of Blanket	ft	11.0	4.0
Secondary Clarifier #2 Depth of Blanket	ft	10.0	4.0
Secondary Clarifier #3 Depth of Blanket	ft	10.0	3.0
Secondary Clarifiers Online	#	3	3

Note:

Gaps for requested data are due to secondary treatment bypass events occuring on a non-sampling days. Refer to Section 6.3 regarding NOAA rainfall data.

6.3 RAINFALL DATA

The Facility's operating data is captured and recorded by the SCADA/WIMS Systems each day from 12:00 AM until 11:59 PM. The National Oceanic and Atmospheric Administration (NOAA) weather station recording procedures require that precipitation is recorded from 7:00 AM to 6:59 AM, with the data observed on the second day. The date inconsistencies between WPAF and NOAA data result.

SECTION 7 CMOM CORRECTIVE ACTION PLAN

7.1 INTRODUCTION

Pursuant to the Consent Decree, the City of Haverhill submitted the Capacity, Management, Operation, and Maintenance Program Assessment Corrective Action Plan (CMOM), dated February 22, 2017, to MassDEP and EPA. In their review letter dated August 3, 2017, MassDEP requested that a summary of the status of CMOM-Related corrective actions that occurred during the reporting period be included in the Compliance Report.

7.2 CMOM CORRECTIVE ACTIONS

The CMOM identified 26 deficiencies, their recommended corrective actions, and an implementation schedule, which are listed below. Table 7-1 was simplified for readability purposes. Item 10 was duplicated and was deleted in Compliance Report Number 10, thus now equaling 25-deficiencies.

Table 7-1 has been updated and all items that have been completed are deleted from this table. To view the complete table see the previous year submission located here.

7.3 ADDITIONAL CMOM-RELATED ACTIVITIES

In conjunction with the corrective activities, the City has also performed additional activities as outlined and recommended in the CMOM Program, which includes collection system maintenance and construction activities. The expenses related to collection system maintenance activities from January through June 2023 (Reporting Period 14) are listed in Table 7-2 below.

Table 7-1 CMOM Deficiencies Completed

Action #	Deficiency	Recommended Corrective Action	Implementation Schedule	Status
1	The City does not have a formal long-term plan to mitigate SSO.			This action item has been completed and closed. Please see CD12 for final comments.
2	The City does not have a comprehensive system to prioritize investigations, repairs, and rehabilitation.			This action item has been completed and closed. Please see CD12 for final comments.
3	The City does not have updated job descriptions that match technical requirements for a modern collection system utility.			This action item has been completed and closed. Please see CD12 for final comments.
4	Although the City training program includes some key safety training, staff would benefit from a formalized safety and technical training program.			This action item has been completed and closed. Please see CD12 for final comments.
5	Although the City uses MaintStar to track customer complaints, they do not use the database to prioritize preventative maintenance.			This action item has been completed and closed. Please see CD12 for final comments.
6	The City lacks a comprehensive, risk-based approach to maintenance planning.			This action item has been completed and closed. Please see CD12 for final comments.
9	The City should update recordkeeping pertaining to private systems			This action item has been completed and closed. Please see CD12 for final comments.
10	The City does not have a finalized version of their capital improvement plan – which will include pump station upgrades, collection system rehabilitation, and WWTP upgrades			This action item has been completed and closed. Please see CD12 for final comments.

Action #	Deficiency	Recommended Corrective Action	Implementation Schedule	Status
12	The City does not have a standard procedure for maintaining safety training records.			This action item has been completed and closed. Please see CD12 for final comments.
13	The City has a general emergency response plan (ERP). The Division recently completed an ERP for responding to SSOs. The Division lacks ERP for other collection system emergencies.			This action item has been completed and closed. Please see CD12 for final comments.
18	Not all pump stations have communication ability. Lack of communication at pump stations has contributed to SSOs.			This action item has been completed and closed. Please see CD12 for final comments.
19	11 pump stations do not have working backup power, though most of these have connections for a portable generator or are small enough to pump out.			This action item has been completed and closed. Please see CD12 for final comments.
21	The City does not have a dedicated location for offloading and dewatering sewer cleanings. The City does not have an enclosed location for storage of their sewer maintenance vehicles.			This action item has been completed and closed. Please see CD12 for final comments.
25	The City lacks public education materials associated with roof leaders and sump pumps.			This action item has been completed and closed. Please see CD12 for final comments.

7.4 REMAINIG DEFICIENCIES

Action Number 7

Deficiency: Local limits need to be updated.

Recommended Corrective Action:

Perform a local limits study and update the limits table in the ordinance (per Appendix E, Sewer Ordinance Review from CMOM Program Assessment and Corrective Action Plan prepared by Woodard & Curran, February 2017).

Implementation Schedule:

Within **one year** after EPA approves the CMOM Action Plan

Status:

Final NPDES Permit went into effect on January 1, 2020. Local limits evaluation was finalized and submitted to EPA for review on June 23, 2021. At the time of this submission the Local Limits have been reviewed and approved by the EPA and has been posted as a Public Notice for comment and will be presented to the City Council for approval.

Action Number 8

Deficiency:

The City needs to improve implementation and enforcement of their Sewer Use Ordinance (SUO).

Recommended Corrective Action:

Improve implementation and enforcement of the SUO. Begin mapping Food Service Establishments in GIS and building database of grease trap inspectional data.

Implementation Schedule:

Within **one year** after EPA approves the CMOM Action Plan

Status:

Cityworks (CMMS) has been updated to reflect all food service establishments (FSE) and is updated as new Food Service Wastewater Discharge Permits are issued. The City hired Wright Pierce to conduct FSE annual FOG inspections and to update the Cityworks CMMS system with pass/fail designations.

In December of 2020, the City completed draft updates to the SUO for FOG inspection implementation and enforcement, as well as an update to the Enforcement Response Plan. These drafts are being reviewed before seeking City Council Approval.

Action Number 11

Deficiency:

The City has not verified that other air relief valves do not exist. Maintenance of air relief valves has not been performed historically.

Recommended Corrective Action:

Review record drawings and inspect force main routes to confirm location of air relief valves. If located, enter int GIS and schedule routine maintenance in CMMS.

Implementation Schedule:

Within **one year** after EPA approves the CMOM Action Plan

Status:

Ongoing.

Action Number 14

Deficiency:

The City does not have formal emergency response training.

Recommended Corrective Action:

Implement a program for training and practicing emergency response.

Implementation Schedule:

Within **one year** after EPA approves the CMOM Action Plan

Status:

The Wastewater Staff have been trained and additional training will be documented in the City's Access File. For minor emergencies, the staff prepares in advance of a weather event (e.g., setting up bypass pumps at the Marginal Pump Station, verifying that equipment has fuel (gasoline, diesel, or propane), along with procuring rental generators. The need for training is incorporated into these routine preparations. The City has contracted with United Alliance to assist with training needs.

Action Number 15

Deficiency:

The City has a hydraulic model for interceptors and CSOs, but there is no city-wide hydraulic model.

Recommended Corrective Action:

Although developing a comprehensive hydraulic model is not a high priority, Woodard & Curran recommends building out the model as required to address capacity issues and plan for new development as the need arises.

Implementation Schedule:
As Needed

Status:

The City's GIS system is updated on an ongoing basis which will provide a good foundation for a future model.

Action Number 16

Deficiency:

The City does not have adequate staff to perform sufficient preventative maintenance on all 36 pump stations part of the collection system.

Recommended Corrective Action:

Follow the recommendations of the Wastewater Treatment Plant & Collection System Staffing Analysis (Woodard & Curran, 2017) to assign sufficient resources to keep up with required maintenance.

Implementation Schedule:

Within **one year** after EPA approves the CMOM Action Plan

Status:
The City developed a job description for a new Collection System MEO/laborer and hired a qualified candidate. The City outsources many tasks. See response to Item #19. The Mission Systems improve the monitoring of pump stations resulting in reduced staff time for routine inspections (weekly vs. daily) and more time on preventative maintenance.

Action Number 17

Deficiency:

Although there is generally sufficient redundancy of pumps and level controls, some stations require specific upgrades related to redundancy.

Recommended Corrective Action:

The City will utilize the recommendations of the Pump Station Evaluation (Wright Pierce, 2016) to evaluate future rehabilitation.

Implementation Schedule:

Ongoing

Status:

The replacement/upgrades to the Carleton Street and North Avenue Pump Stations are complete and online. The City will be standardizing all their pump stations during upgrades and additional pump stations will be recommended for rehabilitation/upgrades as outlined in the Pump Station CIP. Mission alarms are currently installed in all thirty-six lift stations. Three more stations in design with another one being evaluated.

Action Number 20

Deficiency:

There is currently no schedule for cleaning sewer lines on a system-wide basis.

Recommended Corrective Action:

The City will utilize a 20-year plan to inspect all sewer pipes calculated to have a consequence of failure value ≥ 3 (approximately 57% of system). See the Collection System CIP (Appendix B) for additional information.

Implementation Schedule:

Will begin to implement program within six **months** after EPA approves the CMOM Action Plan

Status:
The City has purchased their own vac truck. Sewers are designed to achieve self-cleaning velocities. The City has used the Vac-Truck to clean the City's sewers, as necessary. The City has added flushing PMs with more flushing being conducted with 246 sewer mains cleaned. Sewer lines are also cleaned prior to planned CCTV inspections.

Action Number 22

Deficiency:

The City does not have a list of assets located on rights-of-way. The City has also not developed an SOP for maintenance of rights-of-way and easements.

Recommended Corrective Action:

Identify off-street assets using GIS. Schedule preventative maintenance for maintaining accessibility in CMMS. Develop SOPs for specific easements as necessary, including contacting property owners to obtain keys, etc.

Implementation Schedule:

Within **two years** after EPA approves the CMOM Action Plan

Status:

The City has input easements into GIS as assets. These assets will be populated, and SOPs will be made, as well as the development of a preventative maintenance plan. These easements will be added to our CMMS program and a PM schedule will be created for easement inspections.

Action Number 23

Deficiency:

There is no systematic program for uncovering manholes that have been paved over.

Recommended Corrective Action:

• Identification of paved over manholes as part of routine.
• Add paved-over manholes to GIS.
• Adding work orders to CMMS for raising paved-over manholes.

Implementation Schedule:

Within **two years** after EPA approves the CMOM Action Plan

Status:

The City's highway department distributes a street paving list to each department. The engineering department investigates those streets and puts a list together of buried manholes. This list is then given to the Highway Department, and they raise the manholes. Paved over manholes are added to GIS on an ongoing basis as they are discovered." A SOP has been developed for identifying, locating, and exposing covered manholes.

Action Number 24

Deficiency:

Although the City has identified areas with high measured inflow, building inspections have not been performed.

Recommended Corrective Action:

The City will perform trial building inspections to a sample of 10% of buildings located in Areas 14 & 23 Infiltration and Inflow Report (CDM Smith, 2011). Sample brochures will be sent out to buildings where inspections are not successfully completed.

Implementation Schedule:

Within **two years** after EPA approves the CMOM Action Plan

Status:

The City is considering this as part of their Phase 3 CSO work. However, recommended corrective action is only practical in separated sewer areas. I/I Brochures are available on the City's Website click here.

Action Number 26

Deficiency:

The City does not have a system-wide manhole inspection program

Recommended Corrective Action:

Perform manhole inspections using NASSCO Level 1 MACP. Prioritize and schedule using the risk-based approach described in Appendices B and F rehabilitation. The City plans to complete manhole inspections while performing pipe inspections.

Implementation Schedule:

Will begin to implement program within **six months a**fter EPA approves the CMOM Action Plan

Status:

Manhole inspections are ongoing as part of pipe inspections. As the City contracts with engineering firms for CCTV work, their scope will also include manhole inspections. The City has implemented NAASCO MACP sewer inspection standards and requires contractors to be NAASCO certified when performing inspections. In addition, MACP Level 1 form has been created in the City's CMMS Utility Cloud.

The City will ask CCTV venders to perform a MACP level 1 when they CCTV a sewer segment. 29 MACP level 1 inspections were done in the first half of 2023. Level 1 inspections consist of a basic visual inspection of various sections of a manhole and a condition of that section ranging from "poor" to "good" or "sound". A SOP has been developed for performing NAASCO MACP level 1 inspections.

TABLE 7-2

Account	CD Report No. 14 Totals:	Account Description
Lift Station Operation and Maintenance	$57,159	Used to fund costs for all maintenance and repair of the wastewater collection system. Haverhill's system includes approximately 200 miles of gravity sewer which includes 8-inch up to 72-inch pipe, 36 pumping stations and 3 siphons under the Merrimack River.
Sewer Assessment & Inspection	$102,179	Used to fund cleaning, CCTV inspection, and assessment of sewer lines and grit removal
Service Contracts	$72,917	Used to fund the annual service contracts for various items in the wastewater department.
Wastewater Infrastructure	$65,639	This account is used for sewer repair miscellaneous items. This is an annual appropriation funded from the current year's revenues.
Wastewater Capital	$73,609	Funds are used for expenditures greater than $10,000 with a life greater than 3 years. This is an annual appropriation funded from current year revenues.
Stormwater Expense	$113,082	Funds various expenses related to stormwater system operation and maintenance, street sweeping, federal and state permit requirements, and the downtown flood system. There is currently no revenue source for stormwater expenditures.
Total Spent During Reporting Period	$484,585	