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"Award Winning Water"

March 31, 2022

Richard Healey
Water Enforcement Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Re: CAO LIS 09-146-001

Dear Mr. Healey:

In accordance with paragraph 5 of the referenced order, please find the attached report from CWB Engineers that provides a full and comprehensive summary of the work performed to address the collection system deficiencies as defined in the order. The deadline for compliance with regards to addressing the collection system overflows is today, March 31 per the order. We feel that the report provides information describing the steps taken to achieve compliance through the funding and completion of a large slate of projects totaling more than \$30 million over the past five years.

As I mentioned during our phone conversation, we are very pleased with the results of our efforts and welcome the opportunity to visit with your staff to address any questions or comments that you may have. We appreciate your cooperation and continued support during this process and look forward to discussing our path forward.

Respectfully Submitted,

Steve Mallett, Jr., P.E.
Chief Executive Officer
City Corporation – Russellville Water & Sewer

cc: Mr. David Ramsey, ADEQ Enforcement Branch Manager

205 W. 3rd Place
PO Box 3186
Russellville, AR 72811
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Consent Administrative Order Collection System - Completion Report



*Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118*



*City Corporation
205 W 3rd Place
Russellville, AR 72801*

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1. Document History

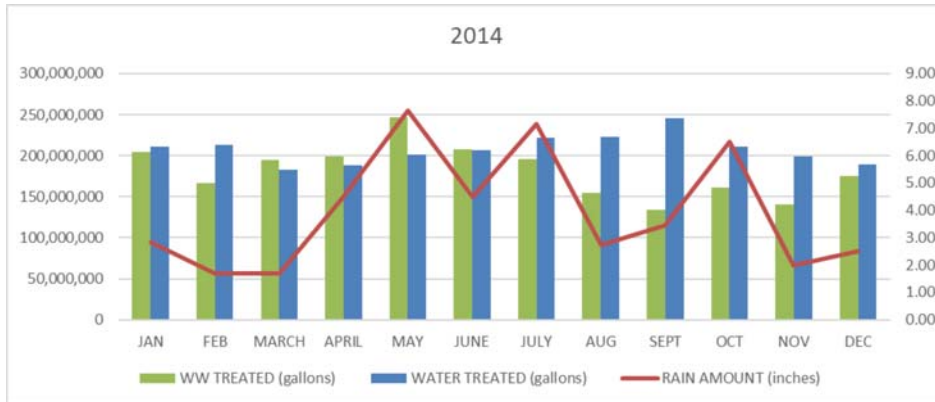
City Corporation entered into a Consent Administrative Order LIS No. 09-146 AFIN 58-00105 with the Arkansas Department of Environmental Quality (ADEQ). The CAO was executed November 6, 2009 and became effective December 25, 2009.

CAO Summary

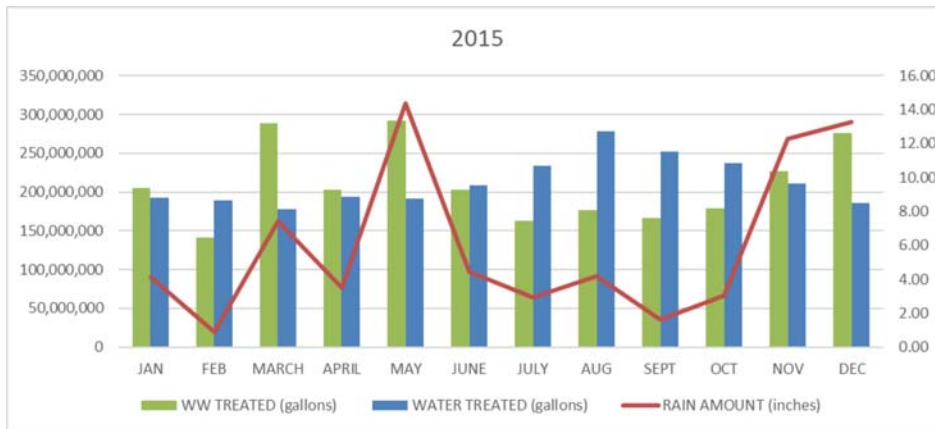
Findings of Fact	<p><i>Multiple violations at the PCW</i> <i>Excessive SSOs and peak flow at the PCW</i></p>
Order and Agreement	<p><i>Complete an SSES of the entire system and establish a milestone schedule</i> <i>SSO Plan with milestone schedule</i> <i>Address dry weather overflows</i> <i>Evaluate pump stations and identify deficiencies</i> <i>Create an Overflow Response Plan</i> <i>Establish an inventory of spare parts</i> <i>Develop a CMOM and update annually</i></p>

The CAO was amended on June 2nd 2014. The amendment was related to the Pollution Control Works (PCW) and did not alter the collection system agreement.

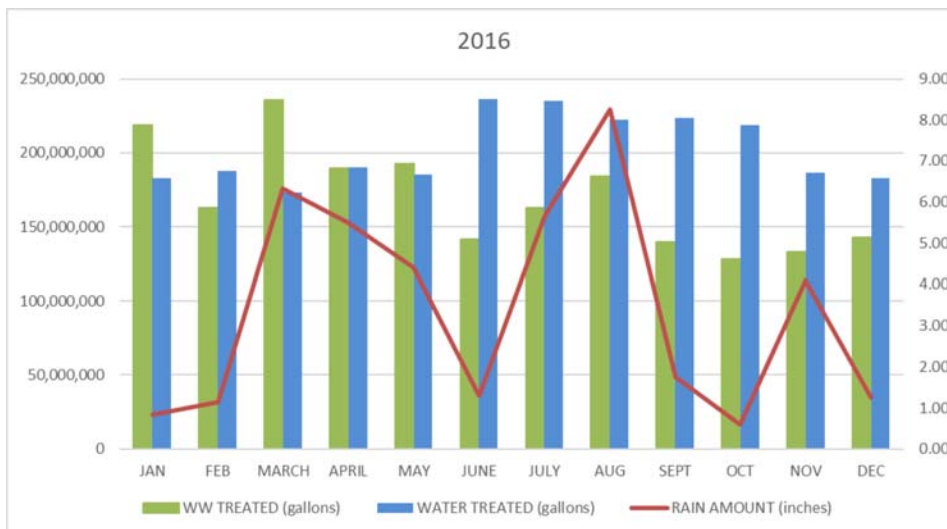
2. Average Monthly Flows



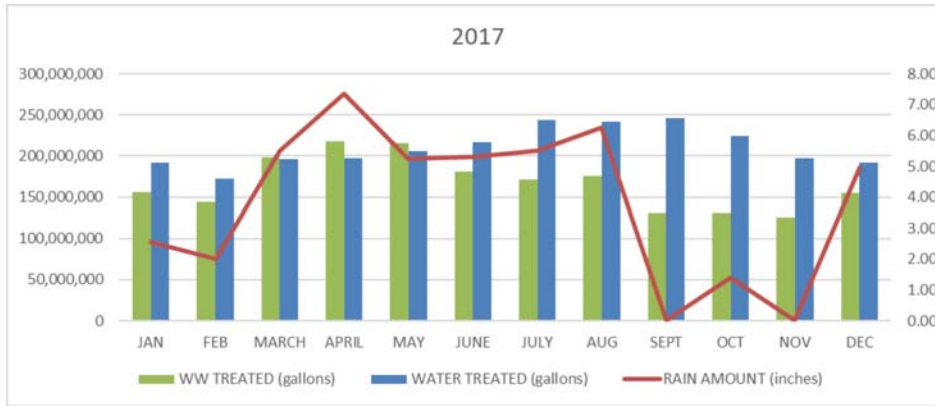
Total WW= 2,181 MG
 Total Water=2,495 MG
 Total Rain=47.25 in



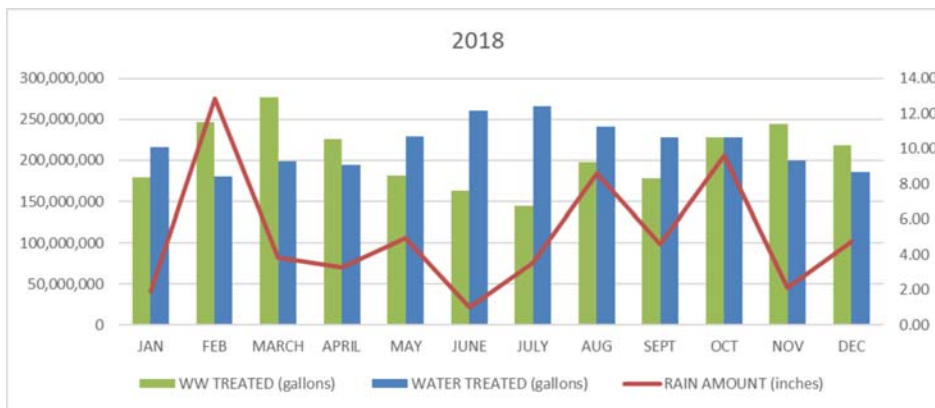
Total WW=2,519 MG
 Total Water=2,549 MG
 Total Rain=72.07 in



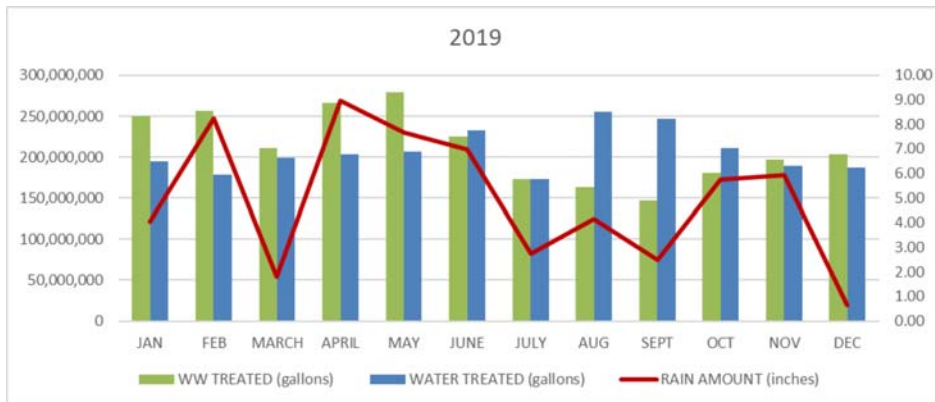
Total WW=2,030 MG
 Total Water=2,424 MG
 Total Rain=41.11 in



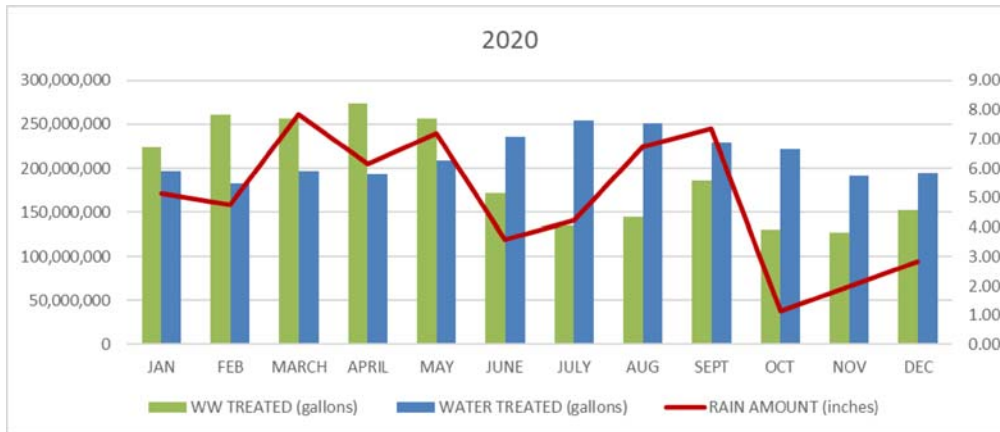
Total WW=2,001 MG
 Total Water=2,526 MG
 Total Rain=46.06 in



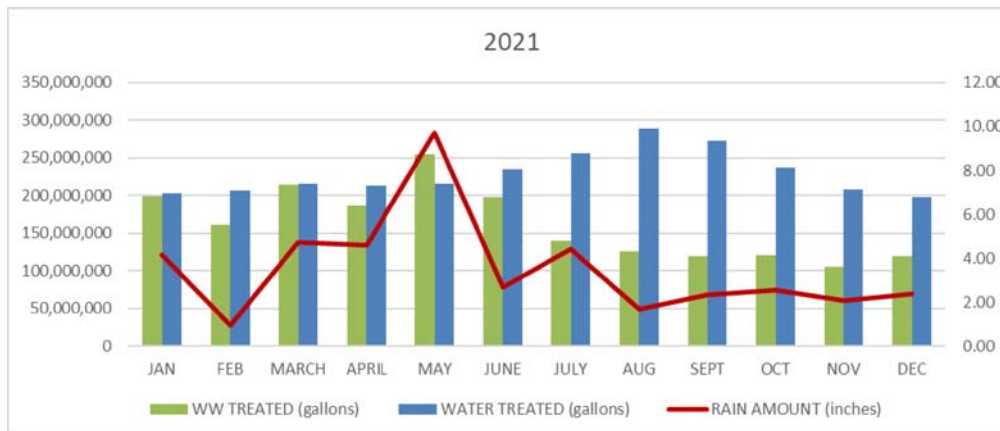
Total WW=2,483 MG
 Total Water=2,626 MG
 Total Rain=60.95 in



Total WW=2,552 MG
 Total Water=2,477 MG
 Total Rain=59.40 in



Total WW=2,317 MG
 Total Water=2,556 MG
 Total Rain=58.93 in



Total WW=1,948 MG
 Total Water=2,749 MG
 Total Rain=42.29 in

3. Sanitary Sewer Improvements

City Corporation has taken a proactive approach to aggressively and efficiently removing I/I in the system. City Corp has systematically evaluated the entire collection system through a system wide SSES and flow study. The resulting problematic basin areas were then evaluated using extensive field studies to identify pipe, manholes, and service lines for rehabilitation. The results of this 10+ year journey have been significant. City Corp has spent over \$30 million in the collection system since 2010. This includes SSES efforts, engineering, televising, cleaning, manhole rehab, line rehab, pump station improvements, service line defects, and hydraulic upgrades.

3.1 Basin Collection System Rehab

Project Name	Line Improvements	Service Improvements	New Manholes	Cost
Basins 7,14	18,739 LF	167 EA	69 EA	\$2,180,965.75
Basin 23	11,142 LF	114 EA	33 EA	\$1,565,089.50
Basins 1,2,8,11	11,161 LF	99 EA	4 EA	\$1,106,569.00
Basins 3,5,6	14,563 LF	160 EA	36 EA	\$1,680,690.78
Basins 17,18,20,21	16,883 LF	190 EA	77 EA	\$1,949,040.00
Basins 9,15,25	20,709 LF	218 EA	61 EA	\$2,142,697.75
Basins 13,16,26	17,550 LF	137 EA	41 EA	\$1,889,887.59
*Basins 12,19,24	17,099 LF	270 EA	77 EA	\$3,249,156.69

* In construction

3.2 Basin Manhole Rehab

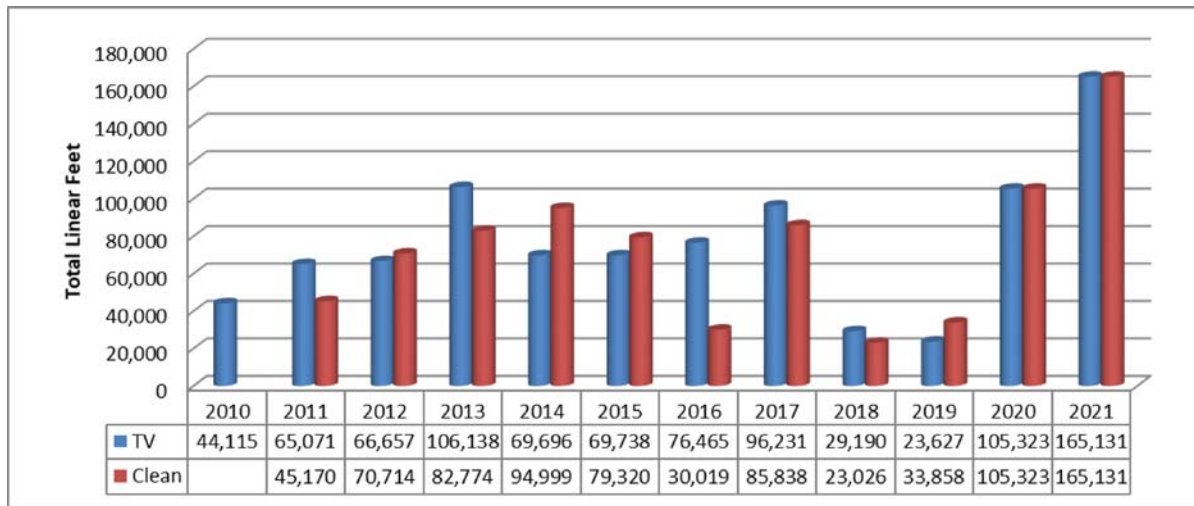
City Corporation has completed a system wide manhole rehab program. Every manhole that could be located and accessed, was visually inspected and evaluated. The results were two large manhole projects that addressed 1583 manholes at a construction cost of nearly \$2.2 million.

Project Name	Manholes Rehabbed	Cost
Manhole Rehab Phase I	616 EA	\$768,826.30
*Manhole Rehab Phase II & III	967 EA	\$1,407,777.00

* In Construction

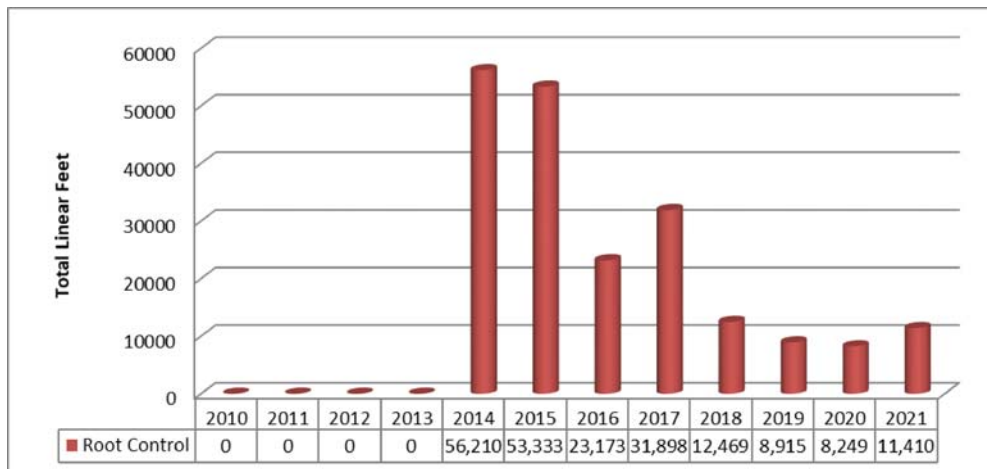
3.3 Clean & TV

City Corporation has been implementing improvement to their cleaning and televising program since the very start of the CAO. They have worked to train staff to TV and document their lines. Additionally, they have contracted with multiple cleaning and televising crews throughout this process. To date, City Corp has cleaned 816,172 LF of pipe or the equivalent of 80% of their system. They have televised 917,382 LF of pipe or the equivalent of 90% of their system.



3.4 Root Control

City Corporation has obtained the service of Duke's Root Control, Inc. to apply a root control product to the collection system. Duke's will apply a product called "Razerooter II", which contains the active ingredient diquat dibromide ("diquat"). "Razerooter II" is the only diquat-based, sewer root control product that is registered with the US Environmental Protection Agency (EPA Registration No 64898-8) and the Arkansas State Plant Board. This is an ongoing annual root control program that was implemented in 2014.



3.5 LS Improvements

Lift Station	Improvements Needed	Improvements Completed
10 th Street	None	
Lift Station "A"	Alleviating the drainage issues within the vault and correcting rust concerns	Repairs were completed
Lift Station "B"	Alleviating the drainage issues within the vault and correcting rust concerns	Repairs were completed
Lift Station "C"	None	
Center Valley	None	
Cove Landing	None	
South Frankfort (Darling)	None	
Grace	None	
Prairie Creek	Repair wall leak, Evaluate condition of wet well and ventilation system	Installed new 215HP Flygt pump on 12/30/2016
Rimrock	Schedule more frequent removal of Grease	Completed
Shadow Valley	Investigate why pumps are not running at full power	
Shiloh Manor	Schedule more frequent removal of Grease	Completed
Tex Vet	Alleviating the drainage issues within the vault and correcting rust concerns	Repairs were completed
Tyson	Schedule more frequent removal of Grease	Completed

Lift Station	Project name	Year	Improvements	Costs
23rd Street	23rd Street Gravity Sewer Improvements	2014	Abandoned lift station and reroute south to South Frankfort Lift Station with gravity sewer.	\$276,640.70
International Paper	Old Post & IP Lift Station Improvements	2016	Full rebuild and rehabilitation of sewer lift station	\$420,908.00
Old Post	Old Post & IP Lift Station Improvements	2016	Full rebuild and rehabilitation of sewer lift station	\$230,364.64
Lost Corner	Lost Corner Lift Station Rehabilitation	2017	Rehabilitation of wet well and installation of bypass connection and pumping hardware	\$171,338.49
Main Street	Main Street Lift Station Improvements	2019	Full rebuild and rehabilitation of sewer lift station	\$736,156.16

3.6 Capacity Improvements

The following are Capacity Improvement projects that were recommended during the Phase I SSES study and corresponding hydraulic modeling effort.

Project Name	Improvements	Cost
10 th Street FM	5,436 LF / 28 Services / 9 Manholes	\$957,565.55
Prairie Creek FM	Awaiting Funding/Hold	Awaiting Funding/Hold
Hydraulic Capacity Improvements	5,623 LF / 31 Services / 15 Manholes	\$924,331.45
East 2nd Street Wastewater Improvements	8,555 LF / 61 Services / 35 Manholes	\$1,803,617.38
City Mall Wastewater Improvements	6,734 LF / 57 Services / 34 Manholes	\$1,792,459.40
ATU North/South	10,886 LF / 48 Manholes	\$3,434,044.45

3.7 Right of Way Clearing

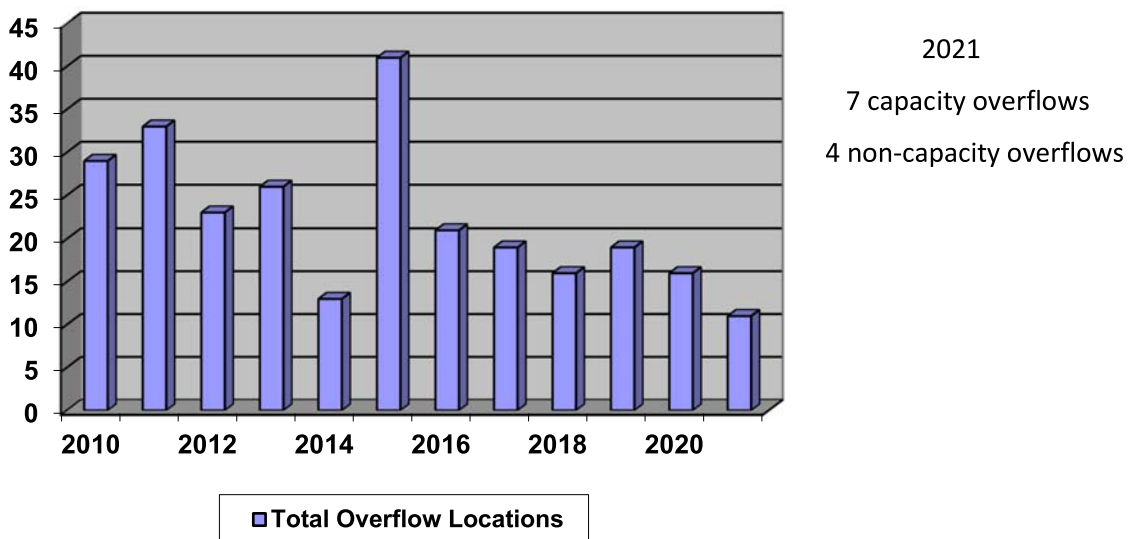
City Corporation implemented a right of way clearing program to gain access and improve maintenance operations in the collection system. A total of 34 acres of sanitary sewer and waterline right-of-way was cleared for a total cost of \$194,117. The right of ways are being maintained with an annual brush control program through the C & D department.

3.8 C & D

In 2018, the Engineering Department determined there was a need for a dedicated department whose sole responsibility was preventative maintenance on the sewer collection system. This department kicked off in 2019 and consists of 4 crew members, a combination hydro-vacuum truck, camera truck, acoustic inspection tools, and a manhole inspector. The collection system is made up of approximately 218 miles of sewer pipe. The C&D Department goal is to annually acoustic inspect 100% of the sewer collection system and clean and televise 100% on a 4-year cycle.

4. Overflows

City Corporation has seen incredible progress in the fight against sanitary sewer overflows. City Corp has proactively tracked and documented overflows since the execution of the CAO. Immediate success was seen in the elimination of dry weather overflows through increased maintenance and cleaning and lift station improvements. The wet weather overflows have also decreased dramatically over the past decade. Overflow locations have went from a high of over 40 in 2015 to only 7 rainfall overflow locations in 2021. A 75% reduction in overflow locations. The following graphs and charts show the progress. City Corporation currently has only 7 active overflow locations and almost all of these occur only in events greater than a 2-year storm. City Corp is also monitoring 8 overflow locations from recent rehab projects to remove them from the list (listed as pending). The utility has removed 191 overflow locations through rehab, monitoring, and maintenance activities over the past 10+ years.



No.	Status	Manhole	Year of Last Overflow	Action
1	Active	1336	2021	Monitoring
2	Active	1494	2021	Downtown project
3	Active	1783	2019	Monitoring
4	Active	3187	2020	Mh Rehab
5	Active	3191	2021	Mh Rehab
6	Active	6478	2021	WWTP
7	Active	8048	2021	WWTP

No.	Status	Manhole	Year of Last Overflow
8	Pending	2024	2021
9	Pending	2036	2021
10	Pending	1315	2020
11	Pending	1333	2020
12	Pending	1334	2020
13	Pending	2043	2020
14	Pending	2050	2020
15	Pending	4008	2019

No.	Status	Manhole	Year of Last Overflow
16	Removed	1041	2019
17	Removed	1323	2015
18	Removed	1728	2019
19	Removed	1976	2018
20	Removed	2033	2019
21	Removed	2035	2021
22	Removed	3059	2017
23	Removed	3075	2017
24	Removed	4017	2018
25	Removed	4142	2018
26	Removed	4216	2017
27	Removed	5123	2018
28	Removed	6341	2018
29	Removed	1465	2019
30	Removed	1466	2016
31	Removed	1990	2020
32	Removed	2048	2020
33	Removed	2815	2019
34	Removed	2816	2017
35	Removed	2817	2016
36	Removed	3273	2019
37	Removed	4078	2020
38	Removed	4127	2017
39	Removed	1341	2013
40	Removed	1387	2016
41	Removed	1399	2016
42	Removed	1486	2015
43	Removed	1567	2011
44	Removed	2092	2016
45	Removed	3193	2018
46	Removed	5024	2016
47	Removed	5140	2018
48	Removed	1136	2019
49	Removed	1200	2015
50	Removed	1724	2015
51	Removed	1750	2015
52	Removed	1780	2017
53	Removed	1850	2017
54	Removed	2146	2017
55	Removed	3077	2021

No.	Status	Manhole	Year of Last Overflow
56	Removed	4009	2015
57	Removed	4019	2018
58	Removed	4020	2013
59	Removed	4021	2015
60	Removed	4182	2018
61	Removed	5032	2017
62	Removed	5121	2015
63	Removed	8534	2021
64	Removed	1030	2010
65	Removed	1043	2011
66	Removed	1062	2015
67	Removed	1106	2016
68	Removed	1108	2016
69	Removed	1112	2018
70	Removed	1219	2013
71	Removed	1228	2010
72	Removed	1234	2010
73	Removed	1242	2010
74	Removed	1253	2020
75	Removed	1270	2016
76	Removed	1273	2016
77	Removed	1290	2016
78	Removed	1295	2012
79	Removed	1324	2010
80	Removed	1325	2010
81	Removed	1326	2010
82	Removed	1327	2010
83	Removed	1338	2020
84	Removed	1377	2010
85	Removed	1401	2010
86	Removed	1468	2013
87	Removed	1472	2017
88	Removed	1487	2013
89	Removed	1496	2010
90	Removed	1510	2007
91	Removed	1513	2012
92	Removed	1517	2010
93	Removed	1529	2010
94	Removed	1532	2010
95	Removed	1568	2011

No.	Status	Manhole	Year of Last Overflow
96	Removed	1582	2010
97	Removed	1593	2011
98	Removed	1600	2010
99	Removed	1608	2011
100	Removed	1621	2010
101	Removed	1624	2006
102	Removed	1626	2010
103	Removed	1628	2015
104	Removed	1672	2010
105	Removed	1675	2006
106	Removed	1704	2012
107	Removed	1705	2013
108	Removed	1706	2011
109	Removed	1709	2014
110	Removed	1711	2012
111	Removed	1725	2015
112	Removed	1735	2007
113	Removed	1757	2010
114	Removed	1761	2010
115	Removed	1763	2010
116	Removed	1823	2011
117	Removed	1825	2015
118	Removed	1848	2007
119	Removed	1852	2013
120	Removed	1981	2010
121	Removed	1996	2011
122	Removed	1997	2010
123	Removed	1998	2010
124	Removed	2023	2010
125	Removed	2028	2009
126	Removed	2032	2009
127	Removed	2040	2011
128	Removed	2042	2013
129	Removed	2046	2012
130	Removed	2155	2010
131	Removed	2276	2011
132	Removed	2355	2017
133	Removed	2482	2010
134	Removed	2601	2020

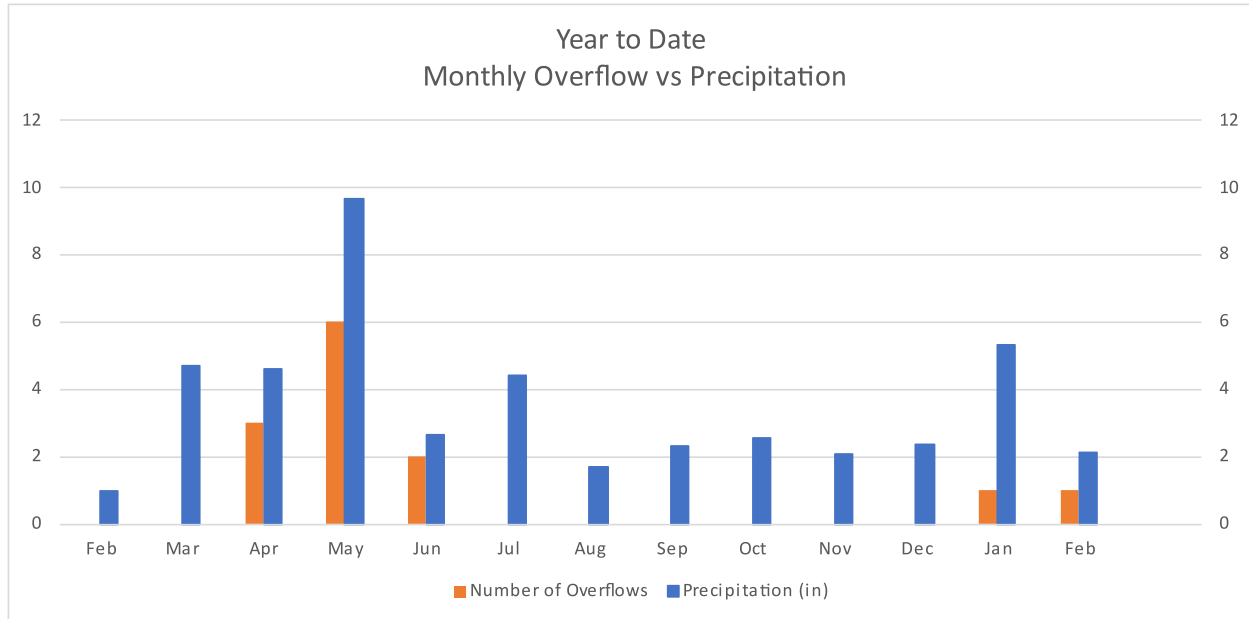
No.	Status	Manhole	Year of Last Overflow
135	Removed	2808	2012
136	Removed	2814	2013
137	Removed	2859	2006
138	Removed	2874	2014
139	Removed	3010	2010
140	Removed	3026	2011
141	Removed	3027	2010
142	Removed	3034	2014
143	Removed	3043	2015
144	Removed	3046	2016
145	Removed	3052	2010
146	Removed	3089	2010
147	Removed	3093	2014
148	Removed	3094	2010
149	Removed	3114	2006
150	Removed	3122	2010
151	Removed	3124	2010
152	Removed	3131	2010
153	Removed	3133	2013
154	Removed	3203	2010
155	Removed	3224	2010
156	Removed	3283	2013
157	Removed	4015	2006
158	Removed	4022	2014
159	Removed	4023	2006
160	Removed	4043	2009
161	Removed	4058	2013
162	Removed	4060	2010
163	Removed	4061	2010
164	Removed	4080	2010
165	Removed	4081	2010
166	Removed	4082	2010
167	Removed	4090	2014
168	Removed	4107	2010
169	Removed	4116	2006
170	Removed	4117	2015
171	Removed	4138	2010
172	Removed	4187	2020
173	Removed	4213	2014

No.	Status	Manhole	Year of Last Overflow
174	Removed	4214	2013
175	Removed	4395	2010
176	Removed	5005	2012
177	Removed	5018	2011
178	Removed	5034	2010
179	Removed	5035	2010
180	Removed	5043	2012
181	Removed	5046	2010
182	Removed	5054	2010
183	Removed	5102	2013
184	Removed	5104	2010
185	Removed	5115	2010
186	Removed	5116	2010
187	Removed	5120	2007
188	Removed	5136	2006
189	Removed	5164	2011
190	Removed	5668	2007
191	Removed	6029	2015
192	Removed	6035	2013
193	Removed	6085	2012
194	Removed	6088	2007
195	Removed	6108	2013
196	Removed	6231	2006
197	Removed	6399	2015
198	Removed	6415	2006
199	Removed	7017	2007
200	Removed	7035	2013
201	Removed	7053	2006
202	Removed	8046	2009
203	Removed	9016	2012
204	Removed	Old Post	2015
205	Removed	PS -C	2016
206	Removed	PCW	2017

Total Manholes Removed from list-191

Total Manholes Pending-8

Total Manholes Active-7



- In the last 12 months, City Corp has had thirteen overflows in five locations. All overflows are being addressed in current or future improvements.
- Two being located in the PCW (PCW Improvements, 2022), one being a hydraulic low point in the sewer system (Manhole Rehab, 2022), and the remaining two have overflowed only once since January of 2018 (Manhole Rehab/Downtown WW Improvements, 2022).
- Eleven of these overflows were during a two-year storm event and the remaining two were at the PCW 48 hours after a two-year storm event.