Library Reference 4.3.10

Summary of combined sewer overflow (CSO) Facility Reports, 2009.

Facility

Comments from reports

Newell St. Regional Treatment Facility (RTF)

Designed for 90% storm event (23 cfs). Presently in service as a vortex separator for CSO #067; will be taken out of service when Midland is complete. 18-inch underdrain to creek is monitored for flow.

2009 Discharges to Onondaga Creek:

Quarter	# Events	Average Volume (gal)	Notes
01/01 – 03/31	6	10,793	pump problems
04/01 – 06/30	16	302,284	See note below
07/01 – 09/30	8	35,011	no problems
10/01 – 12/31	2	5,609	no problems

03/09 to 03/12: The underflow pump was down due to pump plugging.

04/11: The Midland Avenue Trunk Sewer at West Corning Avenue was undermined by a water line break and collapsed. The collapse was discovered by County personnel on 04/14 when elevated flow was observed at the Newell Street Vortex Regulator. During restoration of the Midland Avenue trunk sewer, flow from the Midland sewer shed was routed into the Newell sewer shed and discharged at CSO 067. A temporary sodium hypochlorite feed was staged at the facility to provide limited disinfection of flow.

04/17 to 04/20: Contractors worked to remove blockage and install bypass pump.

Burnet floatables control facility (FCF)

Uses bags to capture solids. Operators change bags at approximately 30%-40% capacity or as needed. Considered effective in reducing solids load during wet-weather flows.

2009 Discharges to Onondaga Creek (total captured = 9.76 tons):

Quarter	# Events	Average Volume (mgal)	Captured (tons)	Notes
01/01 – 03/31	14	1.32	2.50	2 net bag changeouts
04/01 – 06/30	14	3.32	2.27	2 changeouts
07/01 – 09/30	21	2.40	3.37	4 changeouts
10/01 – 12/31	15	1.61	1.62	2 changeouts

Teall Brook FCF

No permanent flow monitoring device installed at the facility; operational information is an hour meter reading which indicates the number of hours the bar screens have operated. The Copa bar screen is fully automatic, activating the raking mechanism when water levels rise. Considered effective in reducing solids load during wet-weather flows.

2009 Report Results

Quarter	# Events	Hours of Operation	Station Cleaning	Notes
01/01 – 03/31	13	19.2	4 times	none
04/01 – 06/30	23	28.1	3 times	hose replaced.
07/01 – 09/30	16	25.7	7 times	none
10/01 – 12/31	16	19.5	3 times	hose and hydraulic oil replaced

06/26: A hydraulic hose was replaced.
11/21: Hose changed; filled hydraulic fluid
11/25: Replaced hydraulic oil (5 gallons vegetable oil)
12/17: New hose; added 4 gallons hydraulic oil.

Summary of combined sewer overflow (CSO) Facility Reports, 2009 (continued).

Facility | **Comments from reports**

Butternut FCF

Uses bags to capture solids. Operators change bags at approximately 30%-40% capacity or as needed. Considered effective in reducing solids load during wet-weather flows.

2009 Discharges to Onondaga Creek (total captured = 12.25 tons):

Quarter	# Events	Average Volume (mgal)	Captured (tons)	Notes
01/01 – 03/31	16	1.42	2.55	2 net bag changeouts
04/01 – 06/30	23	3.26	3.03	2 changeouts
07/01 – 09/30	18	3.78	4.50	4 changeouts
10/01 – 12/31	20	2.93	2.17	2 changeouts

The facility operated as designed, although the Trident Sluice Gate controlling the flow through the facility must occasionally be reset manually following an activation event. This issue is being investigated to identify and address the problem.

Maltbie St. FCF

Uses bags to capture floating solids. Operators change bags at approximately 30%-40% capacity or as needed. Considered effective in reducing solids load during wet-weather flows.

2009 Discharges to Onondaga Creek (total captured = 4.145 tons):

Quarter	# Events	Average Volume (gal)	Captured (tons)	Notes
01/01 – 03/31	13	408,121	0.503	One net bag changeout
04/01 – 06/30	27	231,969	1.14	2 changeouts
07/01 – 09/30	16	272,588	1.69	4 changeouts
10/01 – 12/31	16	123,003	0.812	2 changeouts

Third quarter: During one inspection, OCDWEP personnel discovered overflow through the FCF during dry weather conditions. The regulator line had grit creating an overflow condition. Also during this period, an area velocity sensor was dislodged for the period 08/02 through 08/12.

Fourth quarter: Batteries in the flow meter failed; no flow data available for period 10/10 to 11/03.

Summary of combined sewer overflow (CSO) Facility Reports, 2009 (continued).

Facility | **Comments from reports**

Harbor Brook FCF

Uses bags to capture floating solids. Operators change bags at approximately 40%-50% capacity or as needed. Considered effective in reducing solids load during wet-weather flows. The Harbor Brook FCF was removed from service on 12/18/2008 for repairs resulting from erosion on the banks around the FCF. OCDWEP personnel clean the trash racks daily.

2009 Discharges to Harbor Brook:

Quarter	# Changeouts	Captured (tons)	Notes
01/01 – 03/31	--	--	removed from service
04/01 – 06/30	--	--	removed from service
07/01 – 09/30	--	--	removed from service
10/01 – 12/31	--	--	removed from service

Work on the revised design for the existing facility is proceeding.
12/26/08: Contract awarded to C&S Companies to evaluate remedial alternatives and recommend design revisions and O&M Procedure changes.
03/20/09: The consulting engineer completed a facility inspection.
04/28/09: C&S Companies submitted the draft condition assessment report to OCDWEP.
06/22/09: As recommended by C&S Companies, OCDWEP personnel placed rip-rap stone in the existing erosion scars on the west bank of the brook to direct overflows away from these unstable areas.
07/28/09: C&S Companies submitted the final condition assessment report to OCDWEP.
08/27/09: OCDWEP requested approval from NYSDEC for re-installation of the pontoon structure
09/23/09: Approval from NYSDEC was granted.
12/1/09: The pontoon structure was re-installed by C&S Companies.

Erie Blvd Storage System (EBSS)

This system has a capacity of 5.5 mg; designed to retain discharge for a 90th percentile storm from 9 CSOs, and bleed back to Metro. In the event the maximum capacity of the EBSS and Main Intercepting Sewer was reached, further incoming CSO flows were discharged to Onondaga Creek to prevent flooding.

2009 Discharges to Onondaga Creek:

Quarter	Date	Overflow (mgal)	%CSO ; %SW	Notes
01/01 – 03/31	--	--	--	no releases
04/01 – 06/30	06/11	0.13	38% ; 62%	one release (2.39 inches rain; see below)
07/01 – 09/30	08/09	0.21	60% ; 40%	two releases (2.48 inches rain; see below)
	08/10	0.47	68% ; 32%	
10/01 – 12/31	--	--	--	no releases

% CSO ; %SW – estimated percent contribution of volume originating from Combined Sewer Overflows and urban stormwater. During periods of no releases, CSO contribution is less than 20%.
An event approaching a statistical 5-year/12 hour recurrence interval storm (2.5 inches of rainfall in a 12-hour period[1]) occurred on 06/11 and 06/12, accounting for approximately 2.39 inches of rainfall. The highest daily rainfall recorded was 1.60 inches on 06/11.
An event approaching a statistical 1-year/6 hour recurrence interval storm (1.42 inches of rainfall in a 6-hour period[2]) occurred on 08/09 and 08/10. In addition, three (3) other rainfall events occurred on 08/10 reaching a maximum of 0.66 inches of rainfall in a l-hour period. The total precipitation for 08/09 and 08/10 was 2.48 inches. The highest daily rainfall recorded was 1.35 inches on 08/09.

[1] as determined by the Northeast Regional Climate Center
[2] as determined by the Northeast Regional Climate Center

Summary of combined sewer overflow (CSO) Facility Reports, 2009 (continued).

Facility | **Comments from reports**

Hiawatha RTF

Facility consists of Swirl Concentrator (SC), Storage Tank (ST) and Disinfection Tank (DT) process units, which are activated during rain events. Overflows discharged to Ley Creek Outfall.

2009 Discharges to Ley Creek:

Quarter	# Overflows	Volume (gal)	Time (hours)	Units Activated
01/01 – 03/31	0	--	--	SC, ST
04/01 – 06/30	0	--	--	SC, ST
07/01 – 09/30	0	--	--	SC, ST, DT
10/01 – 12/31	0	--	--	SC

Routine inspection of the Hiawatha Facility showed no equipment problems except for the automated chemical feed system, which is out of service because the carrier pipes have settled and separated. Due to the location of this piping system, the capital expenditure to repair/replace the existing piping system is prohibitive. It would be difficult to justify this expenditure based on the infrequency of events at the facility that necessitate use of the automated chemical feed system. A back-up chemical feed system is used for disinfection, if needed.

Midland Avenue RTF

Construction of the Midland Avenue Regional Treatment Facility was completed in 2008. The general contractor was responsible for a year performance period from 5/08-5/09. As of 5/15/09, OCDWEP personnel have been responsible for operating and maintaining the facility.

The Midland Avenue RTF is routinely checked by OCDWEP personnel during both dry and wet-weather periods. OCDWEP personnel clean all unit processes following rain events (or as otherwise needed) and pump all associated flows back to the Metropolitan Syracuse Wastewater Treatment Plant for treatment. Facility consists of Storage Tank (ST), Influent Pumps (IP), Vortex Separator (VS) and Disinfection Tank (DT) process units, which are activated during rain events. Overflows discharged to Onondaga Creek Outfall.

2009 Discharges to Onondaga Creek:

Quarter	# Rain Events	# Overflows	Volume (mgal)	Units Activated
01/01 – 03/31	--	--	--	not available
04/01 – 06/30	5	1	17.8	ST, IP, VS, DT
07/01 – 09/30	10	3	16.6	ST, IP, VS, DT
10/01 – 12/31	9	1	6.8	ST, IP, VS, DT

Equipment malfunctions occurred on 8/2 and 8/9, resulting in 6 million gallons being released through the emergency overflow structure. In both instances, the problem was disabled influent pumps which were enabled or reset once the problem was discovered. These equipment malfunctions have been addressed to prevent future occurrences by: (1) adding an alarm point to the SCADA system to ensure that the influent pumps cannot be disabled remotely without generating an alarm; and (2) modifying the wiring in one of the influent pumps to allow the pump to reset itself if there is any power interruption once power has been restored.