



# COUNTY OF ERIE

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COUNTY EXECUTIVE  
DEPARTMENT OF ENVIRONMENT & PLANNING

MARIA R. WHYTE  
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April 30, 2015

Jeffrey A. Konsella, P.E.  
New York State Department of Environmental Conservation (NYSDEC)  
Regional Water Engineer, Region 9  
270 Michigan Avenue  
Buffalo, NY 14203-2999

RE: Erie County Sewer District No. 2 (ECSD 2)  
2014 Annual I&I Report  
SPDES NY 002-2543  
DEC 9-1444-00005/00001-0

Dear Mr. Konsella:

In accordance with the SPDES permit schedule of compliance for ECSD 2, please find enclosed the 2014 Annual Report for the **Sewer System Assessment, Monitoring, Correction and Maintenance Plan for Infiltration and Inflow (I&I) Abatement**. The report includes summary tables and a map of the District showing all mini systems and the associated work.

If you have any questions please contact me at [matt.salah@erie.gov](mailto:matt.salah@erie.gov) or 858-6990.

Very truly yours,

Matt A. Salah, P.E.  
Senior Coordinator Sewer Construction Projects

Encl.

cc: R. Rink (w/encl.)  
ECSD 2 Board of Managers  
J. Fiegl / 2.2.3.SPDES San (w/encl.)  
G. Absolom (w/encl.)  
W. Strzeszynski / P. Breier / C. Militello (w/encl.)  
A. Horton / C. Fiume / 2.2.2.I&I (w/encl.)

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**Erie County Division of Sewerage Management  
Erie County Sewer District No. 2 (ECSD 2)  
Sewer System Assessment, Monitoring, Correction and Maintenance Plan  
for Infiltration and Inflow (I&I) Abatement  
2014 Annual Report**

This annual report for the 2014 calendar year is submitted in accordance with the ECSD 2 SPDES Permit NY 002-2543 compliance action schedule for the collection system. The 'Sewer System Assessment, Monitoring, Correction and Maintenance Plan for Infiltration and Inflow (I&I) Abatement' was approved on 9/30/2004.

In addition to the focus on MS 9 evaluations, various other MS had collection system work completed in 2014. A summary of the tasks completed along with totals and the estimated I&I contribution that was removed (where applicable) in gallons per minute (gpm) is attached as *Exhibit A*. The tasks that were completed in 2014 are as follows:

- Manhole Inspections
- Manhole Repairs (*Exhibit B*)
- Sewerline Flushing and Cleaning
- Sewerline Internal Televising (*Exhibit C*)
- Sewerline Repairs (*Exhibit D*)
- Private Property Inspections
- Private Property Violations Corrected (*Exhibit E*)
- Private Property Lateral Repairs (*Exhibit F*)
- Flow Monitoring
- Smoke Testing

In 2014, an evaluation in MS 9, the Town of Eden was completed. In addition, a District wide evaluation of asbestos cement pipe (ACP) downstream of pumping stations was started. Due to ACP failures in various sewer districts, this project was important to evaluate the manholes and sewerlines for rehabilitation or replacement prior to a failure. Though other MS's shown above were not originally scheduled to begin until the years ahead, or they have already had some evaluations completed, assessment and repairs have been completed in these areas due to increased concern with the age and condition of the sewers, or based on trouble calls.

In August, roughly 7 miles of sanitary sewer was smoke tested in MS 9, Town of Eden to try and identify I&I sources, with the exception of the streets where there was a high traffic volume. Results of the smoke testing identified private property violations, manhole repairs, and sewerlines to be dye tested and televised. Please see the various exhibits for repair work completed.

Flow monitoring studies were conducted in MS 9, the Town of Eden, from September through December. Three Sigma flow meters with submerged area/velocity sensors were utilized. During rain events, the meter picking up the southeast portion of the MS showed the greatest increase in flow of up to seven times the dry weather flow rate. Graphs indicate the flow increase is primarily due to inflow with flows quickly returning to normal after an event. The two other locations monitored exhibited a slight increase in flow of up to four times the dry weather flow rate during rain events.

During January through December, flow monitoring studies were conducted in MS 4 and MS 5 tributary to the Lake Street PS service area. Four Sigma meters with submerged area/velocity sensors were utilized to identify the primary source of wet weather I&I to the pumping station. Both immediate

inflow and infiltration for days following a rain event were observed with primary contributions coming from the southern half of the Village of Angola.

Flow monitoring studies were also conducted in MS 1, in the Wide Beach PS service area, from March through July. Two Sigma meters with submerged area/velocity sensors were utilized. During rain events, both meters exhibited an increase in flow of up to ten times the dry weather flow rate. Graphs indicate primarily inflow with flows returning to normal shortly following a rain event.

The DSM has an annual cured in place pipe (CIPP) lining contract that began in ECSD 2 in 2013 and is on-going. The budget for this contract is taken from the operations budget and is seen as a perpetual program. In 2014, ECSD 2 increased their budget from \$50,000 in 2013 to \$200,000 for 2014. Due to contractor scheduling and weather delays, only 990 feet of 8 inch and 10 inch diameter sewerline was completed in the 2014 calendar year, costing an estimated \$40,100. The remaining 2014 budget has been encumbered and will be utilized in the 2015 calendar year.

From the repair tasks listed above, a total of approximately 919 gpm in I&I was removed from the ECSD 2 sanitary sewer system. The estimate is based on the NYSDEC approved Table for General I&I Contribution Removal Values By Source. For your convenience, a GIS map detailing the evaluation and repair work is enclosed. Note that the map does not include flushing or private property inspections and violations.

The annual average flow of the ECSD 2 Big Sister Creek Wastewater Treatment Plant (WWTP) for 2008, 2009, 2010, 2011, 2012, 2013, and 2014 were 6.245, 6.014, 4.851, 5.717, 4.810, 5.463, and 5.754 MGD, respectively. While there are many factors that influence the flow to the WWTP, the downward trend is a good indicator that I&I remedial work is showing reduction in the average annual flows treated at the WWTP. It is also recognized that 2010 and 2012 exhibited a dry summer, thus the lower flows, while 2011, 2013 and 2014 exhibited higher precipitation amounts.

#### Sweetland Pumping Station (PS) Summary

A new flow meter was installed on the forcemain of the Sweetland PS in December 2011 and was calibrated in January 2012. Flows from 2013-2014 from this meter are attached in **Exhibit G**.

As requested, the summary of wet weather events for 2014 is attached as **Exhibit H**. The data includes the date, time and duration of the event, comments, and estimated overflows.

#### Task Schedules

The tasks listed in this report fulfill the requirement under action code 04339 for Collection System Monitoring and Maintenance, Action 1. The Division of Sewerage Management's review of the work under this plan finds ECSD 2 is in compliance with its SPDES permit schedule for the 2014 calendar year, in accordance with the approved plan.

MS 10 (Lake Bay Grove), further evaluation into the Village of Angola MS 5 (Lake Street PS issues), and the completion of District wide asbestos cement pipe (ACP) evaluations are scheduled to be evaluated in 2015. Various work planned to address 2014 findings will be documented in next year's report.

ECSD 2 Infiltration and Inflow (I&I) Analysis and Sanitary Sewer Evaluation Survey (SSES) - Annual Report 2014

MS	MH Inspections	MH Repairs	MH Repairs (gpm)	Televised Length (ft)	Sewerline Flushing (ft)	Sewerline Repairs (gpm)	Smoke Testing (ft)	Flow Monitoring Locations	Private Properties Inspected	Private Properties Dye Tested	Private Property Violations Corrected	Private Property Lateral Repairs	Private Property Repairs (gpm)	Total I&I removed (gpm)
1	11			6,778	4,981			2	119		1			
2	4	1	5	379								1	2.0	7.0
3		3	8			51.6			3			1	30.0	89.6
4		5	18	348	6,981	1			3			4	36.0	55.0
5	2	18	75	138	7,481			4	4		2		2.0	77.0
6	1				1,896									
7					1,057							1	2.0	2.0
8	4	8	20.5	3,529	29,542				5		4	4	38.1	58.6
9	84	6	24	43,063	51,630	7	35,821	3	621	3	37	3	97.5	128.5
10		1	4		17,206							1	30.0	34.0
11	14	7	27	825	61,208	2					1	1	2.1	31.1
12	10	9	15	4,031	66,180	2						5	38.0	55.1
13		59	207	77	485	34.4			8		6	3	66.4	307.8
14	2	1	3	2,673							2	2	32.2	35.2
15													0.0	0.0
16		1	5		31,463				4		1	2	33.1	38.1
	132	119	411.5	61,841	280,110	98	35,821	9	767	3	54	28	409.4	919