



# City of NAPOLEON, Ohio

## Waste Water Treatment Plant

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## 2025 Annual Report Combined Sewer Overflow & Sanitary Sewer Overflows

### Back Ground

The City of Napoleon is served by a partial combined sewer system (CSS) constructed in the downtown area in the early 1900's. The Wastewater Treatment Plant (WWTP) was built in 1958 along the Maumee River. As the City has grown the collection system evolved by expanding outward with separated sewers and pump stations. Multiple surface load separations were completed in the City from the 1970's through the 1990's. The WWTP was expanded in 1982, 1997, 2010, and 2021 with several new processes to improve effluent quality and increase capacity. At present, the WWTP is rated at 2.5 million gallons per day (MGD) capacity with the ability to continuously treat 4.5 MGD and has an instantaneous peak hydraulic capacity of 7.5 MGD. The 2.5 MG Equalization Basin (EQ basin) at the head of the WWTP was constructed in 2010 as part of Long Term Control Plan (LTCP) Project No. 14 and can store wet weather flows at a peak rate of 44 MGD. In total, the WWTP and EQ basin can handle flow rates reaching 50 MGD for a short time period during wet weather periods.

The Napoleon CSS consists of the following sewer sheds: East Riverview, East Washington, Front, Haley, Oberhaus, South Side, Shelby, VanHyning, and West Riverview. The City has made a continuous effort throughout the LTCP to improve the collection system including interceptor improvements, pump station upgrades, CSO control improvements and SSO closures. Prior to the LTCP the City had identified six (6) CSO and ten (10) SSO outfall locations throughout the City. At the end of 2026, two (2) CSO and ten (10) SSO locations have been closed because of the improvements made to the collection system. The remaining four (4) CSOs that are active in the system are summarized below.

NPDES ID	Name	Location Description
CSO #003	Central CSO	Parking lot NW of Scott Street and West Riverview Avenue, Discharges to the Maumee River.
CSO #004	Monroe CSO	Monroe Street and East Riverview Avenue, Discharges to the Maumee River.
CSO #010	Dodd CSO	Dodd Street and Yeager Street, Discharges to Oberhaus Creek
CSO #011	WWTP 011 Outfall	WWTP Facility, Discharges to the Maumee River.

### Current Conditions

The criterion limits CSO events to a maximum of four (4) overflows in a typical year to provide an adequate level of control to meet the water quality-based requirements of the Clean Water Act (CWA).

The CSO Control Policy defines “criterion” as the elimination or capture for treatment of no less than 85 percent by volume of the combined sewage collected in the CSS during precipitation events on a system-wide, annual average basis.

*“On a nationwide basis, the number of overflows not receiving primary treatment and corresponding to 85 percent capture for treatment, ranged from four to six depending on location. In practice, a CSO control facility that captures for treatment 85 percent of the combined sewage collected in the system may experience more than six overflows on an annual average basis, although a significant deviation from this range of overflows would not be expected. In cases where a significant deviation due to local conditions is encountered, the permit writer’s judgment should be used to determine whether use of the 85 percent capture criterion is appropriate.”*

The Napoleon CSS is operating well above 85 percent capture even though the model predictions show the City’s collection system captures more than 99 percent of wet weather flows during the typical year, with nine (9) overflow events predicted at the Central and Monroe CSO’s.

### **Rainfall Data**

The City has installed a permanent tipping bucket rain gauge at the WWTP so that rainfall data can be continuously recorded in five (5) minute increments and matched to overflow events as recorded by the level sensors.

Various rainfall statistics (e.g., volume, duration, intensity, and return period) will be calculated for each event coinciding with an overflow event at any of the CSOs or SSOs to assist in the comparison of overflow volumes and monitored recorded data. This data will be collected by City staff and recorded.

### **Level Sensors**

The Solinst Levellogger Edge level sensors were installed in July 2015 at CSOs 002, 004, 006, and 010, and SSOs 302 and 303. The sensors are suspended in the structure of each of the CSOs and SSOs to provide an accurate level measurement. The sensors record both temperature and level.

The sensors are downloaded monthly, at a minimum, and after a wet weather event. The City previously had used the block method to record CSO/SSO events. The blocks have been left in place in the structures as a visual reference to determine if a CSO event has occurred and if the level sensor data needs to be downloaded for the required reporting.

The data obtained from the level sensors must be processed to ultimately provide an estimated overflow volume. Initially, the level sensor data is automatically corrected by the Solinst software in conjunction with a barometric sensor, located at the WWTP, to provide a level reading. The corrected output from the level sensor software is copied into an Excel spreadsheet that was developed to convert the level readings into an overflow volume using standard equations, such as Manning’s Equation, weir equations and orifice equations, to provide an estimated overflow volume (in gallons).

### **Visual Inspection of CSOs and SSOs**

Visual inspections of any storm water outfalls required by the current NPDES Permit will be visually inspected. The visual inspections will follow the procedures of any flow that is observed during the dry weather inspections will be tested for wastewater indicators including, but not limited to E. coli and ammonia.

### **Summary of Events**

#### **CSO 003 Central School Discharge Maumee River:**

<b><u>Date</u></b>	<b><u># of Events</u></b>	<b><u>Total Discharged</u></b>	<b><u>Cause of Event</u></b>	<b><u>Time of Event</u></b>
4/02/2025	1	0.0818 MG	Excessive Rain (2.61”)	10am-12pm

4/03/2025	1	0.2160 MG	Excessive Rain (2.61")	12am-5am
4/25/2025	1	0.0811 MG	Excessive Rain (1.35")	3pm-5pm
5/15/2025	1	0.0225 MG	Excessive Rain (1.04")	3am-4am
6/14/2025	1	0.0456 MG	Excessive Rain (1.72")	5am-7am
6/26/2025	1	0.0420 MG	Excessive Rain (1.15")	3pm-4pm
7/19/2025	1	0.0007 MG	Excessive Rain (1.13")	7pm-9pm

**CSO 004 Monroe Street Discharge Maumee River:**

<u>Date</u>	<u># of Events</u>	<u>Total Discharged</u>	<u>Cause of Event</u>	<u>Time of Event</u>
4/02/2025	1	0.0014 MG	Excessive Rain (2.61")	10am-12pm
4/03/2025	1	0.0575 MG	Excessive Rain (2.61")	12am-5am
4/19/2025	1	0.0003 MG	Excessive Rain (0.83")	7am-8am
4/25/2025	1	0.1069 MG	Excessive Rain (1.35")	3pm-5pm
5/15/2025	1	0.0494 MG	Excessive Rain (1.04")	3am-4am
5/21/2025	1	0.0322 MG	Excessive Rain (1.23")	5pm-7pm
6/14/2025	1	0.0007 MG	Excessive Rain (1.72")	5am-7am
6/26/2025	1	0.0189 MG	Excessive Rain (1.15")	3pm-4pm
7/19/2025	1	0.0431 MG	Excessive Rain (1.13")	7pm-9pm

**CSO 010 Dodd & Yeager Discharge Oberhaus Creek:**

<u>Date</u>	<u># of Events</u>	<u>Total Discharged</u>	<u>Cause of Event</u>	<u>Time of Event</u>
4/03/2025	1	0.0009 MG	Excessive Rain (2.61")	12am-5am

**CSO 011 WWTP Plant Bypass Discharge Maumee River:**

<u>Date</u>	<u># of Events</u>	<u>Total Discharged</u>	<u>Cause of Event</u>	<u>Time of Event</u>
4/02/2025	1	0.0100 MG	Excessive Rain (2.61")	10am-12pm
4/03/2025	1	1.0000 MG	Excessive Rain (2.61")	12am-5am

**SSO 300 All City Wide Manholes Depending on Location:**

<u>Date</u>	<u># of Events</u>	<u>Total Discharged</u>	<u>Cause of Event</u>	<u>Time of Event</u>
	0			

**SSO 303 Glenwood Discharge Maumee River:**

<u>Date</u>	<u># of Events</u>	<u>Total Discharged</u>	<u>Cause of Event</u>	<u>Time of Event</u>
4/02/2025	1	0.0173 MG	Excessive Rain (2.61")	10am-12pm
4/03/2025	1	0.5023 MG	Excessive Rain (2.61")	12am-5am

**Nine Minimum Control Inspection Summaries**

1. Proper operation & regular maintenance program for sewer system and CSO's.

City staff operates and maintains the wastewater treatment plant (WWTP) and the collection system. The city employs private contractors to televise and clean sewers, with the goal of inspecting the full collection system at least once every ten years, though known problem and high importance areas are inspected more frequently. Pump stations are inspected twice a week, overflow regulators are inspected monthly and overflow outfalls are inspected during precipitation events that activate the EQ basin screw pumps.

2. Maximum use of the collection system for storage.

By Cleaning and televising the collection system on a regular basis the city achieves the maximum storage in the collection system.

3. Review and modification of pretreatment requirements to assure CSO impacts are minimized.

The City does not have an Ohio EPA approved pretreatment program.

4. Maximize flow at the WWTP for treatment.

The WWTP is a trickling filter facility designed to treat an average daily flow of 2.5 million gallons per day (MGD). The WWTP is capable of handling sustained peak flows up to 6 MGD.

5. Prohibition of CSOs during dry weather.

The City visually inspects its outfall regulators monthly during dry weather and no dry weather overflows have been observed.

6. Control of solids and floatable materials in CSO's.

Catch basins are cleaned at known problem areas frequently.

7. Pollution Prevention.

The City preforms street sweeping weekly and operates a curbside leaf pick-up program in the fall.

8. Public Notification to ensure the public receives adequate notification of CSO occurrences and impacts.

The City implements the Great Lakes Basin CSO Public Notification Plan, approved by Ohio EPA. Along with signs posted at all outfalls.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Each overflow regulator is equipped with tipping blocks to indicate an overflow event. City staff inspects the regulators for overflows during precipitation events that activate the EQ basin screw pumps. Additionally, the City has installed level sensors at each regulator that record overflow volumes. The data is downloaded each month to support discharge volume.

## **NPDES Compliance Projects**

### **Wet Weather Improvement Plan**

## 1. Wet Weather Improvement Plan Implementation

The permittee submitted a Wet Weather Improvement Plan (WWIP) on June 20, 2018 to serve as an update to the permittee's Long Term Control Plan. The WWIP was amended on March 20, 2019 and approved by Ohio EPA on May 27, 2019. The WWIP proposes to attain a level of control of five CSO events or fewer per typical year. The permittee shall implement the WWIP as expeditiously as possible, but not later than the dates developed in accordance with the following schedule.

### a. East Washington Interceptor Improvements (Completed September 4, 2025)

i. No later than January 1, 2027, the permittee shall begin design of the East Washington Interceptor Improvements. The permittee shall notify Ohio EPA within fourteen days of completing this item. (Event Code 01499)

ii. No later than January 1, 2028, the permittee shall begin construction of the East Washington Interceptor Improvements. The permittee shall notify Ohio EPA within fourteen days of completing this item. (Event Code 03099)

iii. No later than January 1, 2030, the permittee shall complete construction of the East Washington Interceptor Improvements. The permittee shall notify Ohio EPA within fourteen days of completing this item. (Event Code 04599)

### b. Annual Reports

The permittee shall submit to Ohio EPA annual progress reports on implementation of Wet Weather Improvement Projects required above, as well as any other activities that may affect CSO activity or control. These annual reports may be combined with the CSO Public Notification Annual Report required by Part II, Item U. The annual progress reports shall be submitted on or before the following dates:

i. May 1, 2026 (Event code 03599)

ii. May 1, 2027 (Event code 03699)

iii. May 1, 2028 (Event code 03799)

iv. May 1, 2029 (Event code 03899)

## 2. Wet Weather Improvement Plan Post-Construction Compliance Monitoring

a. No later than January 1, 2029, the permittee shall submit for acceptance a Post-Construction Compliance Monitoring (PCCM) Plan. PCCM is necessary to demonstrate the effectiveness of the CSO controls and assess compliance with water quality standards. At a minimum, the plan shall include details regarding how CSOs and receiving streams will be monitored to assess whether the WWIP level of control (five events per typical year) has been attained and water quality standards are met. (Event Code 22099)

b. No later than January 1, 2030, the permittee shall initiate implementation of the accepted PCCM Plan. The permittee shall notify Ohio EPA within fourteen days of completing this item. (Event Code 25599)

c. No later than January 31, 2031, the permittee shall submit a report on the progress of PCCM. (Event Code 30499)

d. No later than January 1, 2032, the permittee shall conclude PCCM. The permittee shall notify Ohio EPA within fourteen days of completing this item.

## 3. Long-Term Control Plan Completion Evaluation Report

No later than July 1, 2032, the permittee shall submit for acceptance a WWIP Completion Evaluation Report. This report shall be adequate to determine whether the goals for WWIP have been met, to

evaluate the performance of each project in the LTCP separately, and to evaluate whether the goals of the WWIP have been achieved. At a minimum, the report shall include:

- a. A list of all of the original CSO locations and a description of the current state of those outfalls (eliminated, open, storm water outfall, etc.);
- b. A summary of the CSO control projects that were constructed and their completion dates;
- c. For the CSO locations that have been eliminated, provide dates and evidence of elimination (photograph, detailed drawings, etc);
- d. Characterization of CSO discharges during PCCM and a discussion of whether the WWIP level of control (five CSO events per typical year) has been attained, including:
  - i. A summary of any collection system hydraulic model revision, calibration, or validation efforts completed since the WWIP was approved;  
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2PD00000\*TD
  - ii. Hydraulic model projections using the typical year rainfall data;
  - iii. A comparison of model projections using rainfall data from the PCCM period to monitoring data from the PCCM period;
- e. Characterization of water quality in the receiving streams and a discussion of whether water quality standards are met;
- f. Discussion of any combined sewer areas that remain in the collection system or other significant inflow and infiltration sources that may be tied into the system;
- g. A final summary assessment of whether the goals of the WWIP have been met five CSO events per typical year and attainment of water quality standards).

4. This Schedule of Compliance includes items that extend beyond the expiration date of this permit, 2PD00000\*TD. The requirements of Schedule of Compliance will be included in permit 2PD00000 when it is renewed.

For further information, contact the Napoleon Wastewater Plant at 419-592-3936

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