

**2018 Combined Sewer Overflow (CSO) Annual Notice
For the City of South Bend NPDES Permit No. IN0024520**

The City of South Bend has a combined sewer which means storm water and sewage travel in the same pipes. Rain events often cause the pipes to become overwhelmed which causes a combined sewer overflow (CSO). Nearly all CSO discharges are caused by precipitation or wet weather. The representative precipitation data causing the overflow is included on the monthly reports of operation (MROs) in total inches, to the nearest tenth of an inch (0.1”). The date, location, approximate duration, measured or estimated volume and cause of each wet weather CSO discharge that occurred in 2018 can also be found in the MROs. See MROs listed on website for the calendar year 2018. Treatment is not provided for these discharges and monitoring data is not available.

One dry weather overflow occurred in 2018. It occurred on July 1 for five hours and approximately 2,000 gallons was discharged. It was caused by debris in line. It is included in the July MRO.

The following public access areas are potentially impacted by CSO discharges in South Bend:

- Riverside Boat Launch
- East Race Waterway
- Veterans Memorial Boat Ramp
- Notre Dame Crew Team Boat House
- South Bend Boat House
- Keller Boat Launch

The following are descriptions of the location and receiving water for each CSO discharge point:

<u>Outfall</u>	<u>Location</u>	<u>Receiving Water</u>
001	Oakwood Blvd. & Riverside Drive	St. Joseph River
002	Sherman & Riverside Drive	St. Joseph River
003	Sherman & McCartney	St. Joseph River
004	West End Angela Bridge	St. Joseph River
006	Riverside & LeLand Ave.	St. Joseph River
007	Lafayette St. & Park Lane	St. Joseph River
008	Park Lane & Main Street	St. Joseph River
010	Bartlett St. & Riverside Drive	St. Joseph River
11A	LaSalle & Michigan	St. Joseph River
11B	LaSalle & Michigan	St. Joseph River
014	Monroe & Lincolnway East	St. Joseph River
018	Bowman Creek	St. Joseph River
019	Miami & Lincolnway East	St. Joseph River
021	Lincolnway & Twyckenham	St. Joseph River
022	East End Trunk Sewer	St. Joseph River
025	Lafayette & Northshore	St. Joseph River
026	Leeper Avenue	St. Joseph River
027	Niles & Sorin	St. Joseph River
028	Niles & Sorin	St. Joseph River
029	Colfax & Sycamore	St. Joseph River
031	Cooper Bridge	St. Joseph River

<u>Outfall</u>	<u>Location</u>	<u>Receiving Water</u>
033	Emerson & North Side Blvd	St. Joseph River
035	Clover Street & North Side Blvd.	St. Joseph River
036	Twyckenham & North Shore Blvd.	St. Joseph River
037	21 st & Pleasant St.	St. Joseph River
038	North Side Blvd. & 26 th	St. Joseph River
039	27 th Street Lift Station	St. Joseph River
040	Alley-31-32-North Side Blvd.	St. Joseph River
041	North Side Blvd. & 36 th Street	St. Joseph River
042	North side Blvd. & Logan	St. Joseph River
044	Northview & Riverside	St. Joseph River
045	Main Plant CSO	St. Joseph River
048	Siphon River Crossing #1	St. Joseph River
049	Siphon River Crossing #2	St. Joseph River
060	North Side Blvd. (Between Roberts St and Emerson Ave.)	St. Joseph River

The following is a concise summary of the implementation of the nine minimum controls established by the EPA’s National CSO Policy for controlling discharges into the nation’s waters:

1.1. Proper Operation and Maintenance Programs

The City has a “Streets and Sewer Department” that sits within Public Works. On the Sewers side of that department there are over thirty staff members that work on sewer maintenance and construction. Additionally there is a three person CSO operations crew that are dedicated exclusively to overseeing the maintenance and proper functioning of the CSO outfalls. The City also has a dedicated long-term control plan Director that oversees the implementation of the LTCP and compliance with the CSO Consent Decree. These personnel, along with senior and executive leadership, ensure the proper operation and the application of regular maintenance programs for the sewer system and CSO outfalls.

The overriding purpose of South Bend’s sewer operation and maintenance program is to reduce the magnitude, frequency and duration of CSOs. Specific programs include those focused on street cleaning, catch basin and inlet cleaning, sewer line televising, sewer lining and rehabilitation, CSO outfall inspection and cleaning.

The City also operates the following programs that involve the wider community in action:

- Basement valve program: a co-pay for residences to install an anti-backwater sewer valve.
- Downspout disconnection program: City municipal ordinance specifies that all downspouts be disconnected; the City offered free disconnects to all homeowners.

1.2. Maximum Use of Collection System for Storage

Maximizing the storage capacity of the collection system reduces the volume, frequency and duration of CSO overflows. Therefore South Bend has taken several steps to maximize the use of

the collection system for storage. The CSOnet, smart sewer system that has successfully been developed and deployed in South Bend has been massively influential in enabling South Bend to maximize its use of the collection system.

South Bend continues to line sewers that are identified by sewer inspections as having high infiltration and inflow (I/I) contributions to maximize the capacity of the collection system.

South Bend has modified CSO diversion structures by raising weirs or adding throttle pipe capacity, to provide additional in-system storage and additional hydraulic capacity when feasible.

Additionally South Bend uses the following non-capital intensive programs to optimize the existing collection system:

Street cleaning, Catch basin and inlet cleaning, Regulator/river crossing inspection/cleaning, Lift station maintenance, Pretreatment program, Use of control valves to slow excess flow in upstream portions of system, Sewer inspection (CCTV), CSO inspection, Sewer cleaning, Sewer lining, Sewer lateral insurance, Root control program, Sewer/manhole/catch basin repair, Illegal dumping control, Leaf and yard waste collection, Hazardous waste collection, Recycling program, and, Erosion control

1.3. Review and Modification of Pretreatment Requirements

South Bend has a pretreatment program to protect the St Joseph River, the WWTP, and our citizens from harmful pollutants by requiring industries to reduce pollution in their discharge *before* it reaches the WWTP.

The pretreatment program employs the equivalent of 2.5 full-time employees and includes the following:

- Industrial discharge permitting,
- Inspecting industries annually,
- Monitoring industries by sampling,
- Receiving and reviewing self-monitoring reports from permitted industries,
- Evaluating industrial discharge permits annually, and
- Initiating enforcement actions against industries in non-compliance.

The City prepares Pretreatment Annual Reports which include any limit violations and descriptions of action taken to improve the quality of the industrial discharges.

1.4. Maximization of flow to the WWTP for Treatment

Flow maximization through the wastewater treatment plant is an important element of South Bend's CSO LTCP. Hydraulically, the WWTP can pass approximately 77 mgd through the primary and secondary treatment facilities. South Bend desires to maximize flow through its WWTP to fully treat additional wet weather flow. As such, and as is required by the CSO Consent Decree, the City has been heavily investing in WWTP upgrades many of which are completed or are near

completion. The City will finalize a WTP stress test in the spring of 2019 to assess the wet weather limits of the plant due to these recent improvements.

Additionally the CSOnet smart sewer system is fundamentally designed to maximize flow to the treatment plant in a manner that significantly reduces the potential for CSOs.

1.5. Elimination of CSOs during Dry Weather

Through operation of its smart sewer system, South Bend has virtually eliminated dry weather CSOs. Dry weather CSOs can result from clogged throttle pipes, river water intrusions through leaky backwater gates or sediment deposits in sewers. South Bend's operation and maintenance program, discussed in MC1: Proper Operation and Maintenance, is designed to prevent dry weather overflows by regularly cleaning sewers and inspecting throttle pipes and backwater gates. Throttle lines are more likely to get plugged after a rain event because of the debris transported through the sewers during a storm. Sewers that historically have had a history of failure or plugging are inspected daily at a minimum. On average, fifteen sewer locations are inspected each week day.

South Bend also eliminated throttle lines under 8-inches to minimize pipe blockages by replacing the throttle or adding an additional larger diameter throttle pipe.

Smart sewer sensors communicate with the SCADA system to alert personnel to the potential for a dry weather overflow. Sensor data is updated every five minutes. If the sensor measures water level of 70% (distance from zero flow to overflow), an alarm is activated to SCADA and WWTP personnel notify the CSO Operations Manager. If the water level increases to 90% a second alarm is activated. If the water level increases to the overflow level a third alarm is activated. All alarms are recorded on the SCADA alarm screen at the WWTP.

1.6. Control of Solid and Floatable Materials &

1.7. Pollution Prevention Programs to Reduce Contaminants

South Bend has the following programs that address minimum controls 6 and 7 in tandem.

- Street cleaning,
- Illegal dumping control,
- Special leaf and yard waste collection program,
- Hazardous waste collection program,
- Recycling program,
- Catch basin and riverside signs,
- Erosion control.

1.8. Public Notification of CSO Occurrences and Impacts

South Bend ensures that the public receives information regarding CSOs. Steps taken include:

South Bend complies with 40 CFR 122.38, Great Lakes Basin Enhanced Public Notification. South Bend submitted a Public Notification Plan which has been approved by Indiana Department of Environmental Management (IDEM). The plan includes initial and supplemental notification to local health departments and other potentially impacted entities and the public. These notifications include estimated timing and volume of CSO discharges. The notification includes CSO discharge locations along with identification of public access areas. Additionally, the plan includes signage requirements.

Each March a notice is placed in the South Bend Tribune newspaper to explain the nature of the potential health effects of CSO discharges and details steps that affected persons can take to avoid exposure. The notice also informs media sources and other affected or interested parties of how to request CSO notifications. The City's website provides information on CSOs and allows citizens to sign up for notifications of overflow events. Public notices include a phone number for residents to contact if they have questions or wish to report an unusual discharge.

CSO notification signs have been placed at each CSO outfall also.

1.9. Monitoring to Characterize CSO Impacts and Controls

Smart sewer network: This system consists of 191 sensors at 129 locations.

River water sampling is conducted as frequently as weather permits. South Bend's goal is to sample on a weekly basis during the recreation season for E. coli, dissolved oxygen, total suspended solids and temperature.

Biology: Every year an aquatic biologist undertakes a detailed study of the St. Joseph River on behalf of the City of South Bend.

As required by federal regulation, the City is upgrading its sewer system to reduce CSOs, this is known as the LTCP (Long Term Control Plan).

Key milestones remaining to complete the implementation of the LTCP:

South Bend entered a Consent Decree for CSO remediation in May 2012. It has two phases. Phase one was recently completed and consisted of mostly neighborhood sewer separation projects. Phase two (now commenced) is focused on the building of CSO storage facilities. While Phase two has begun, the City is pursuing an opportunity to adapt the existing Phase two so as to capitalize on the data that it has obtained from the smart sewer system which enables a better Plan to be implemented.

Average annual number of CSO discharges anticipated after implementation of the LTCP.

It is not possible, correct, or rational to compare CSO events with one another in this context. Some may have volumes in the thousands of gallons, others in the hundreds of millions. South Bend will capture over 90% of annual CSO volume post LTCP- far exceeding the CSO National Policy requirements. This will equate to approximately 11 overflow events for a typical year.