



CSO

2018 ANNUAL REPORT

Requirement: The City of Fremont was required to develop a public notification plan that describes how it will ensure that the public receives adequate notification of Combined Sewer Overflow (CSO) occurrences and impacts. The plan is on the City website. Also on the website are all notifications and the Annual Report.

Identification of locations:

The City of Fremont has 14 permitted CSO locations. All of which have signs indicating the possibility that a CSO could occur at that location. Four of the locations (5, 9, 12, 13 as indicated in Table 1 and Figure 1) are pumped CSOs and have beacons that turn on when a CSO is occurring at that location and have signage indicating as such. There is no treatment at any of the locations.

Location on Map (Figure 1)	Station Code (Latitude, Longitude)	Description
1	2PD00007004 (41N 20' 35" 83W 06' 31")	<u>Oxbow Pond (Middle)</u> – Gravity outfall to Sandusky River. Manually operated sluice gate. Flap gate on river side.
2	2PD00007005 (41N 20' 40" 83W 06' 35")	<u>Oxbow Pond (North)</u> – Gravity outfall to Sandusky River. Manually operated sluice gate. Flap gate on river side.
3	2PD00007006 (41N 20' 52" 83W 06' 42")	<u>Howland Street</u> - Gravity outfall to Sandusky River. Manually operated sluice gate. Flap gate on river side.
4	2PD00007007 (41N 21' 02" 83W 06' 33")	<u>Pine Street (gravity)</u> - Gravity outfall to Sandusky River. Manually operated sluice gate. Flap gate on river side.
5	2PD00007008 (41N 21' 03" 83W 06' 02")	<u>Pine Street (pumped)</u> – Pumped overflow to Sandusky River. Mercury switch float level control activated. Three 12,000 gpm Johnston vertical turbine pumps.
6	2PD00007009 (41N 21' 06" 83W 06' 23")	<u>Chestnut Street</u> – This CSO is no longer active and has been bricked shut. Previously gravity to Sandusky River.
7	2PD00007010 (41N 21' 21" 83W 06' 58")	<u>Walnut Street Siphon</u> - This CSO is no longer active and has been bricked shut. Previously gravity to Sandusky River.
8	2PD00007011 (41N 20' 29" 83W 06' 36")	<u>Birchard Street (gravity)</u> - Gravity outfall to Sandusky River. Two manually operated sluice gates. Flap gates on river side.
9	2PD00007012 (41N 20' 28" 83W 06' 37")	<u>Birchard Street (pumped)</u> – Pumped overflow to Sandusky River. Drexelbrook level control activated. Two 6000 gpm Johnston vertical turbine pumps.
10	2PD00007013 (41N 21' 04" 83W 06' 45")	<u>Bull Run</u> - Gravity outfall to Sandusky River. Two manually operated sluice gates. Flap gates on river side.
11	2PD00007015 (41N 21' 14" 83W 06' 37")	<u>Liberty Street (gravity)</u> - Gravity outfall to Sandusky River. Two manually operated sluice gates. Flap gates on river side.
12	2PD00007016 (41N 21' 13" 83W 06' 38")	<u>Liberty Street (pumped)</u> - Pumped overflow to Sandusky River. Drexelbrook level control activated. Three 6000 gpm Johnston vertical turbine pumps.
13	2PD00007017 (41N 21' 31" 83W 06' 17")	<u>Sand Road Pond</u> - Gravity outfall to Sandusky River. Manually operated sluice gate. Flap gate on river side.
14	2PD00007018 (41N 21' 07" 83W 06' 45")	<u>Fulton Street</u> - Gravity outfall to Sandusky River. Manually operated sluice gate.

Table 1

* All CSOs discharge to the Sandusky River

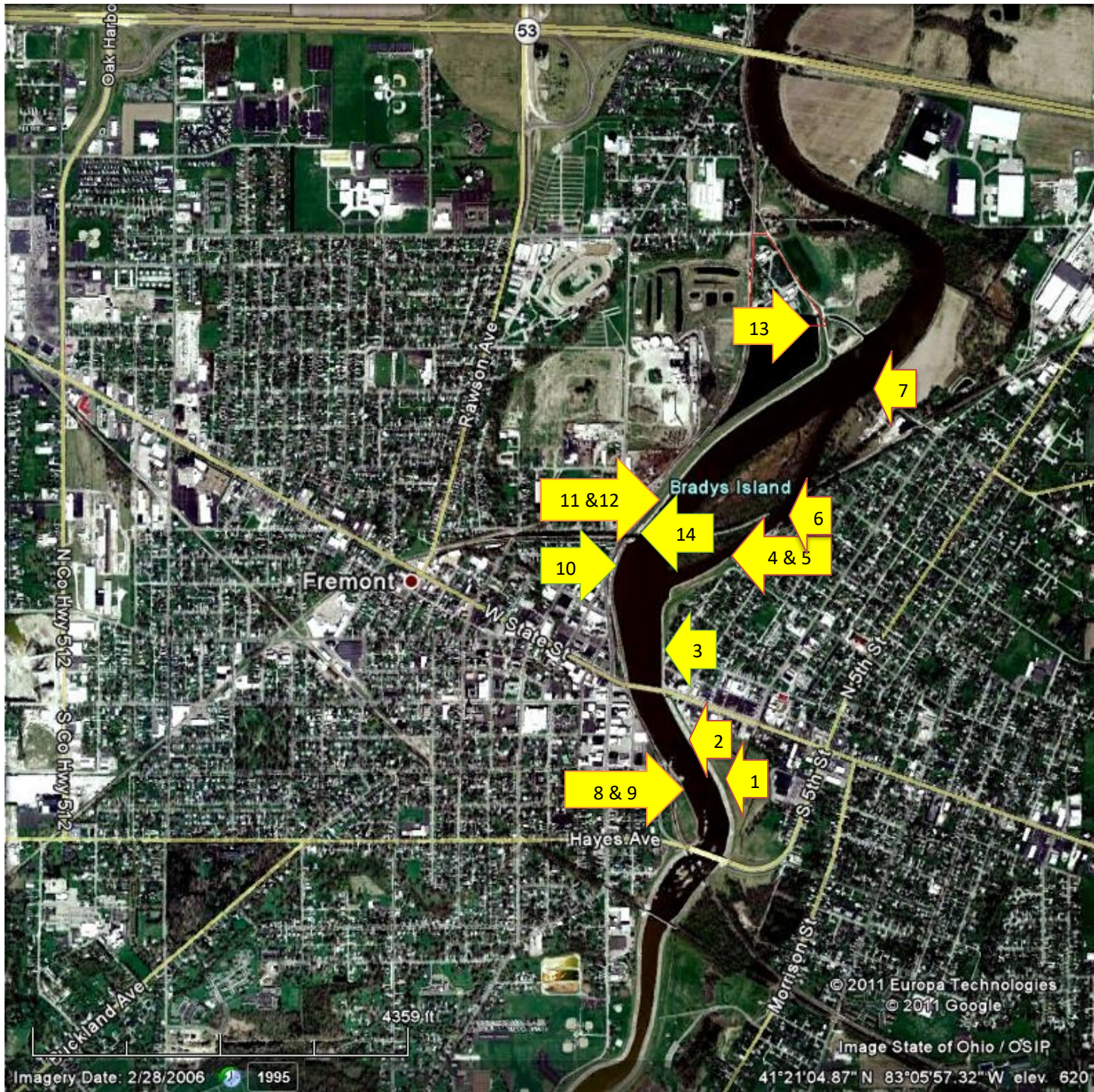


Figure 1 – CSO locations

2018 Wet Weather CSO Information

Date	Location (Table 1)	Precipitation (inches)	Approximate Duration (Hours)	Estimated Volume (MG)	TSS (mg/l)	BOD (mg/l)
1/8/18	14	0.2	Unknown	0.591		
1/11/18	14	2.2	Unknown	2.237		
1/16/18	14	0.9	Unknown	0.257		
1/22/18	14	0.1	Unknown	1.492		
1/23/18	12	0.6	0.8	0.334		
1/28/18	14	0.1	Unknown	0.257		
1/30/18	14	0.2	Unknown	0.514		
2/5/18	14	0.4	Unknown	1.106		
2/8/18	14	0.2	Unknown	0.591		
2/12/18	14	0.1	Unknown	0.077		
2/15/18	14	0.4	Unknown	1.157		
2/18/18	14	1.8	Unknown	4.549		
3/1/18	14	2.1	Unknown	5.451		
3/2/2018	5	2.0	0.4	0.452		
3/2/2018	9	2.0	76.5	3.374	9	8
3/2/2018	12	2.0	63.7	16.892	15	20
3/14/2018	14	0.2	Unknown	0.386		
3/27/2018	14	1.7	Unknown	4.267		
4/1/2018	14	0.1	Unknown	0.026		
4/3/2018	14	0.8	Unknown	2.057		
4/6/2018	14	0.1	Unknown	0.077		
4/12/2018	14	0.1	Unknown	0.129		
4/15/2018	14	1.4	1.8	0.751		
4/15/2018	14	2.1	Unknown	5.503		
4/19/2018	14	0.1	Unknown	0.360		
4/25/2018	14	0.3	Unknown	0.771		
4/28/2018	14	0.4	Unknown	1.029		
5/3/2018	12	0.7	0.7	0.695		
5/3/2018	14	0.7	Unknown	1.723		
5/7/2018	14	0.1	Unknown	0.231		
5/10/2018	14	0.2	Unknown	0.396		
5/13/2018	12	1.1	3.1	3.294		
5/13/2018	14	1.7	Unknown	4.320		
5/15/2018	5	0.6	0.3	0.307		
5/19/2018	14	0.1	Unknown	0.231		
5/22/2018	12	0.5	1	0.697		
5/22/2018	14	0.5	Unknown	1.286		
5/31/2018	14	0.1	Unknown	0.103		

Date	Location (Table 1)	Precipitation (inches)	Approximate Duration (Hours)	Estimated Volume (MG)	TSS (mg/l)	BOD (mg/l)
6/1/2018	9	0.9	3.3	0.353	86	25
6/1/2018	12	0.9	1.3	1.467	178	36
6/1/2018	14	0.9	Unknown	2.237		
6/9/2018	14	1	Unknown	2.648		
6/11/2018	5	1	0.4	0.384		
6/11/2018	12	1	1.2	1.305		
6/13/2018	5	1	0.2	0.155		
6/13/2018	9	1	9.5	0.807		
6/13/2018	12	1	1.8	1.877		
6/13/2018	14	1	Unknown	2.571		
6/18/2018	14	0.5	Unknown	1.389		
6/23/2018	14	0.3	Unknown	0.771		
6/27/2018	14	0.9	Unknown	2.288		
6/28/2018	12	1	1.8	2.157		
7/6/2018	14	0.3	Unknown	0.668		
7/11/2018	14	0.2	Unknown	0.643		
7/21/2018	14	0.5	Unknown	1.183		
7/27/2018	14	0.1	Unknown	0.077		
8/1/2018	14	0.2	Unknown	0.514		
8/7/2018	14	0.9	Unknown	2.314		
8/10/2018	5	1.2	0.8	0.694		
8/10/2018	9	1.2	12	0.934	160	28
8/10/2018	12	1.2	3.4	3.947	170	28
8/11/2018	14	1.3	Unknown	3.445		
8/16/2018	14	1.1	Unknown	2.726		
8/17/2018	12	1.1	1	1.058		
8/21/2018	14	1.4	Unknown	3.471		
8/22/2018	12	1.4	2.2	2.317		
8/26/2018	12	1	0.8	0.854		
8/26/2018	14	1	Unknown	2.571		
9/3/2018	14	0.1	Unknown	0.257		
9/6/2018	14	0.1	Unknown	0.128		
9/8/2018	14	1	Unknown	2.623		
9/19/2018	14	0.1	Unknown	0.231		
9/25/2018	5	1.6	0.6	0.524		
9/25/2018	9	1.6	18.1	0.742	34	8
9/25/2018	12	1.6	3	2.441		
9/25/2018	14	1.6	Unknown	4.063		

Date	Location (Table 1)	Precipitation (inches)	Approximate Duration (Hours)	Estimated Volume (MG)	TSS (mg/l)	BOD (mg/l)
10/4/2018	14	0.1	Unknown	0.231		
10/6/2018	12	1.5	1.8	1.535		
10/6/2018	14	1.6	Unknown	4.037		
10/13/2018	14	0.3	Unknown	0.694		
10/21/2018	14	0.2	Unknown	0.411		
10/27/2018	14	1	Unknown	2.494		
10/28/2018	12	1	0.4	0.169		
10/31/2018	14	0.1	Unknown	0.129		
11/1/2018	14	2.6	Unknown	6.556		
11/2/2018	5	2.5	0.1	0.074		
11/2/2018	9	2.5	25.6	1.745	12	7
11/2/2018	12	2.5	6	5.535		
11/5/2018	14	0.3	Unknown	0.771		
11/9/2018	14	0.2	Unknown	0.540		
11/15/2018	14	0.8	Unknown	2.031		
11/24/2018	14	0.3	Unknown	0.746		
11/26/2018	14	0.8	Unknown	1.929		
12/1/2018	14	0.4	Unknown	1.080		
12/15/2018	14	0.2	Unknown	0.004		
12/20/2018	14	0.8	Unknown	2.004		
12/26/2018	14	0.1	Unknown	0.206		
12/30/2018	14	0.1	Unknown	2.366		

Notes: Location 14 is a passive overflow and there is minimal monitoring equipment at the location that cannot always accurately indicate volume and duration. Therefore, it is presumed that a CSO occurs whenever there is a precipitation event of any magnitude and the volumes are estimated based on historical data and rainfall. In reality there may not always be a CSO during each reported CSO event but verification and sampling are hindered due to the fact that the access point is in the middle of an intersection with limited visibility and poses a safety risk. The City is currently finishing a sewer model study with its consultant, Stantec, and based on this study will be devising a plan to eliminate this CSO location ASAP.

2018 Dry Weather CSO Information

The City is aware of no dry weather CSO events in 2018.

Public Access Areas Potentially Impacted by CSOs

Darr-Root Fishing Access Area is a State owned public access area that is managed by the Ohio Department of Natural Resources. It is located at 201 Walnut Street which is directly across the Sandusky River from the Fremont WRC and downstream of all of the City's CSO discharges.

Summary of the Implementation of The Nine Minimum Controls

1. Proper Operation and Regular Maintenance Program for the Sewer System

The City's Water & Sewer Maintenance Department currently cleans a quarter of the City's sewers and catch basins every year if inspections indicate it necessary. The sewers are cleaned through a contract with a local company. The catch basins are done with City staff. Other areas of the City's sewer system and catch basins are cleaned as needed by City staff. Records of these activities are kept and this program is the responsibility of the Water & Sewer Department Superintendent.

2. Maximization of Storage in the Collection System

With the exception of locations 7 & 14 (figure 1) all CSO locations are either gated or pumped. Location 7 has been bricked and there have not been any CSOs at that location since it was bricked. Location 14 consists of a storm sewer that has two locations where a sanitary sewer intersects the sewer and weir structures allow sewage to mix with the storm flow under significant precipitation events. The City has a flood control structure that all CSOs must either pass through when the gates are open or be pumped into the Sandusky River. Only three locations are pumped, 5, 9 and 12 as indicated in figure 1. Except under extreme flood conditions all gates are kept shut. The three pumped locations have had the pump control devices configured to maximize storage in the system before they will activate and initiate a CSO. Therefore, by controlling the pumps and keeping the gates closed the storage in the system is maximized. The City also has two storage ponds that hold excess flow during extreme events and when flow subsides in the system drain back to the system for full treatment at the wastewater treatment facility.

3. Review and Modification of Pretreatment Requirements

The City of Fremont has an approved Pretreatment program as required by 40 CFR 403.8. The City has developed technically based local limits and has incorporated them into the program as well as individual Industrial User's permits. These local limits are reviewed at a minimum at every permit renewal or every five years and are adjusted as necessary. Currently the City has nine permitted Industrial Users. The City also has a fats, oil and grease control program that applies to all sewer users including industrial and commercial (restaurants). The City is up to date with all requirements of the pretreatment program.

4. Maximization of Flow to the POTW for Treatment

The City finished a major upgrade to its POTW in 2016 which increased the maximum flow capacity from approximately 7 MGD to 24 MGD. This upgrade was completed in large part to help reduce the number and volume of CSOs from the collection system. To date this has been very successful and the new facility has been able to treat flows approaching 30 MGD for short periods of time and flows between 24-25 MGD for several consecutive days while meeting all NPDES permit requirements. Upon start-up of the new facility the City discovered that the main interceptor sewer had large accumulations of grit that were causing the new grit removal system to fail. This resulted in having to limit the flow coming into the new facility. In late 2017 and early 2018 the City hired a contractor to clean the interceptor sewer and since then the facility has been able to experience the higher flows mentioned earlier. As a result

the City is experiencing an approximately 89% reduction in the CSO volume compared to the time period before the new facility was put into operation.

5. Elimination of CSOs During Dry Weather

The City is not aware of any dry weather CSO events. As stated earlier, all CSO are either gated or pumped with the exception of locations 7 & 14. Inspections of locations 7 & 14 during dry weather have never indicated that a dry weather CSO has occurred.

6. Control of Solid and Floatable Materials to CSOs

The City catches first flush during a precipitation event by maximizing flow to the POTW and diverting flow to the two storage ponds. This reduces the amount of solid and floatable waste that reaches the Sandusky River. The City also has a garbage and recycling program and a street sweeping protocol that also reduces the waste that reaches the river.

7. Pollution Prevention Programs to Reduce Contaminates in CSOs

The City of Fremont's Pollution Prevention activities include educational programs through the schools and at the wastewater facility, street sweeping program, garbage and recycling collection and household hazardous waste collection through the solid waste district.

8. Public Notification

The City is required to notify the public when a CSO event occurs. The following protocol is followed:

The Liberty Street CSO that is pumped (Station Code 2PD00007016) has a monitoring and call out system that alerts facility personnel when a CSO occurs. Historically this is the first CSO to activate and if another CSO activates this one does also. When personnel are notified by the system that a CSO is occurring the appropriate public entities and other interested parties that are on the notification list will be contacted by email within four hours. Either the Operator on duty or the Fremont WRC Superintendent or Assistant Superintendent will issue the initial notification. Supplemental notifications will be issued by the Fremont WRC Superintendent.

*The City is currently investigating installing the same or similar monitoring systems that call out in the remaining two pumped CSO locations (Birchard 2PD00007012 and Pine 2PD00007008) and the passive Fulton Street CSO location (2PD00007018). These installations should be completed by the end of June 2019. All other CSO locations require manual opening of gates and therefore City personnel are aware when those locations discharge.

The initial notification email will have the following information:

1. The water body that received the discharge: Sandusky River

2. The location(s) of the discharge(s): Downtown Fremont to discharge channel of Fremont WRC. The only public access area that would be potentially impacted is the Darr-Root Fishing Access Area.
3. The Date and Time the CSO commenced or when Fremont WRC personnel became aware of the CSO event.
4. Indicate whether at the time of the notification if the discharge is still occurring and if not the approximate time it ended.
5. Point of contact: jslamson@fremontohio.org Phone 419-334-3876 or 419-680-5217

The supplemental notification will be provided to the public and other interested parties within seven days of an event and will have the following information:

1. The measured or estimated volume of the discharge.
2. The approximate time that the CSO discharge ended.

9. Monitoring to Characterize CSO Impacts and the Efficiency of CSO Controls

Our NPDES permit requires the City to monitor flow and duration of CSOs and also sample and analyze discharges for Carbonaceous Biochemical Oxygen Demand and Total Suspended Solids once per month. This information is reported on the monthly data monitoring reports that are submitted to Ohio EPA. Some CSOs either occur at times when plant staff are unavailable to collect a sample or are of too short a duration to allow collection of a sample. The information that is available for 2018 is listed in the above table.

Status of the Implementation of the Long Term Control Plan (LTCP)

The City finished a major upgrade to its POTW in 2016 which increased the maximum flow capacity from approximately 7 MGD to 24 MGD. This upgrade was completed in large part to help reduce the number and volume of CSOs from the collection system. To date this has been very successful and the new facility has been able to treat flows approaching 30 MGD for short periods of time and flows between 24-25 MGD for several consecutive days while meeting all NPDES permit requirements. As a result the City is experiencing an approximately 89% reduction in the CSO volume compared to the time period before the new facility was put into operation.

The City is currently finishing a sewer model study that will allow the City to determine what the next step should be in meeting the goals of the LTCP. An engineering report is due by January 1, 2021 detailing the remaining overflows, costs of the remaining projects and expected benefits of the remaining projects. The report shall also evaluate the feasibility, costs and benefits of further expansion of secondary treatment capacity at the wastewater treatment facility. It is anticipated the City will experience four or less CSOs based on a typical year after full implementation of the LTCP which currently has a completion date of December 31, 2028.