

Wet Weather Issues in Michigan

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Wet Weather

Types of wet weather discharges

- Industrial storm water
- Municipal separate storm sewer system discharges (MS4)
- Construction storm water runoff
- Nonpoint Source (NPS) runoff
- Wet Weather discharges and impacts on WWTPs and their collection systems.

Wet Weather

WWTPs and their collection systems

- CSOs – untreated discharges from combined sewer collection systems
- RTBs – treated discharges from retention & treatment basins/facilities (designed to correct CSOs)
- SSOs – untreated discharges from sanitary sewer collection systems
- And other types of discharges:
 - Bypasses
 - Blending

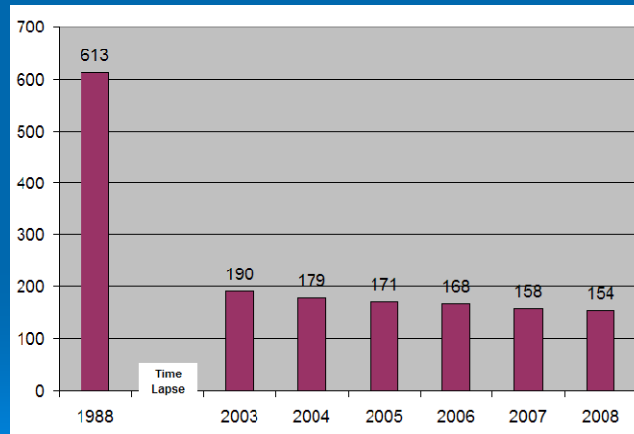
Wet Weather

- **Combined Sewer Overflows**
 - CSOs are untreated discharges (our newly refined definition)
 - In Michigan, all municipalities with CSOs have approved long-term control plans (LTCPs)
 - Generally addressed by separating and/or construction of retention & treatment basins (RTBs)
 - Michigan now has less than 160 CSOs (was over 600 in 1988)
- **Retention and Treatment Basin (RTBs)**
 - are a final solution to CSOs if they provide for adequate treatment to meet water quality standards (WQS) at times of discharge
- **CSOs and RTB discharges must be reported**

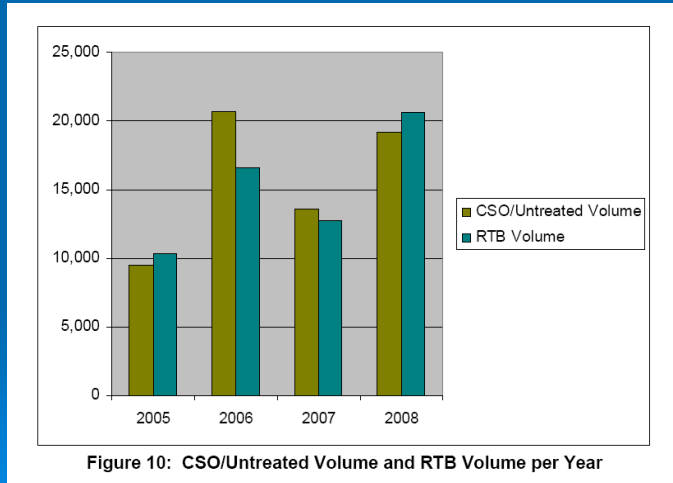
CSO Control

EPA	DEQ
no more than 4 annual average overflows/year from systems that do not meet primary clarification, or	retention for transportation and treatment at the WWTP of combined sewage flows generated during storm events up to the 1-year, 1-hour storm (about 1"), and
eliminate for capture and primary clarification 85% of annual wet weather flow in system.	primary treatment of combined sewage flows generated during storm events up to the 10-year, 1-hour storm (about 1.8") (thirty minutes detention or equivalent for settling, skimming, and disinfection), and
also, must meet state WQS (i.e. MI WQS that require disinfection under Part 4 rule 62, etc.)	control alternatives not meeting the presumptive criteria, but demonstrated to provide adequate treatment to meet MI WQS at times of discharge.

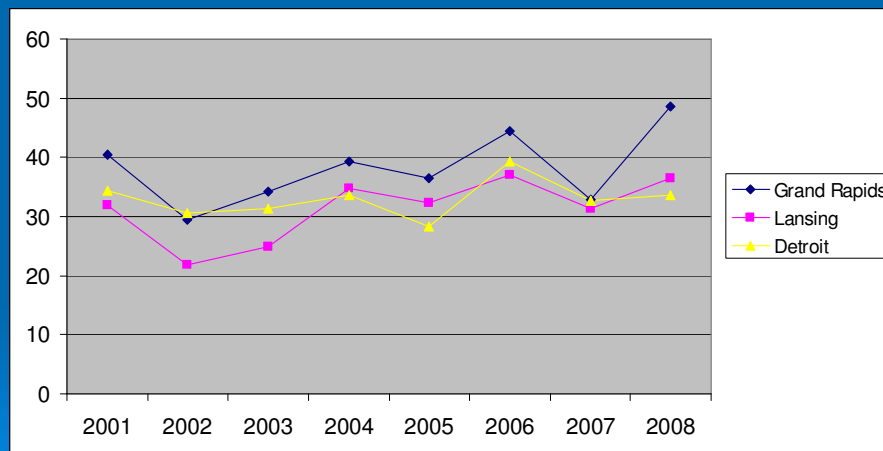
Michigan Statewide Untreated CS Outfalls Summary



CSO/RTB Volume Discharged



Annual Precipitation



Wet Weather

Sanitary Sewer Overflows (SSOs)

- SSOs are untreated discharges from the sanitary sewer (collection) system (our newly refined definition)
- SSOs are illegal
- When they occur they must be reported
- We expect that collection systems will not discharge at the 25-year 24-hour storm event under normal soil moisture and growth conditions (~ 4 inch rain storm)
- If you have system capacity issues or chronic SSOs due to maintenance issues, we'll expect to address corrective action programs in an Administrative Consent Order

SSO Volume Discharged

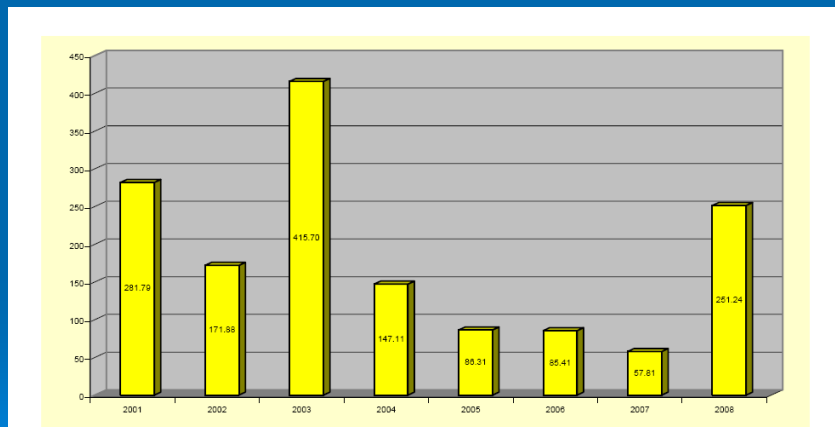


Figure 12: SSO Total Volume/Year (in Millions of Gallons)

Wet Weather

WWTP – Blending

- Blending is the act of bypassing part of the wastewater flow around a treatment unit because of wet-weather flow capacity issues
- In Michigan, there are less than 5 WWTPs authorized to blend under their NPDES permit
- DEQ uses the term “blending” only in response to wet weather events at these 5 permitted WWTPs
- These NPDES permits include requirements that move the WWTP to provide full treatment of all wastewater flows up to the 25-yr 24-hr storm

Wet Weather

WWTP - Bypassing

- Sometimes in response to storm events (excessive I&I)
- Sometimes due to mechanical failure and lack of adequate backup
- Bypass Prohibition - Bypass is prohibited unless:
 - bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - there were no feasible alternatives to the bypass, such as
 - the permittee submitted notices as required

Wet Weather

SSO and CSO/RTB Information on-line:

- <http://www.michigan.gov/deq>
 - on the left side, click “water”
 - under water, click “surface water”
 - in the middle of the page, click “Sanitary and Combined Sewer Overflow”
- http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3715---,00.html