

Advocates for a Clean Lake Erie  
February 20, 2019 Meeting

# Protecting Our Waterways

Julie Cousino

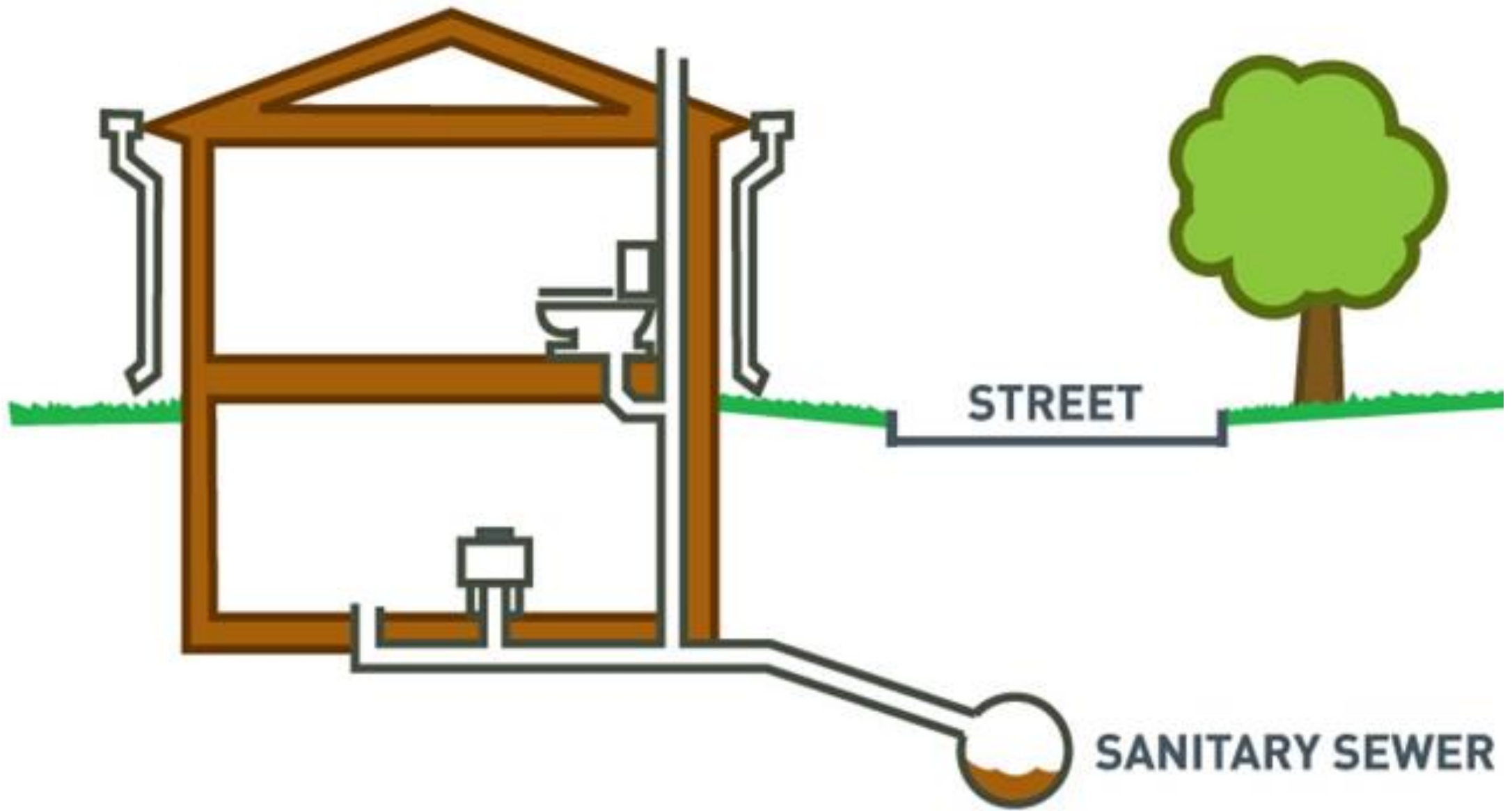
Mike Schreidah

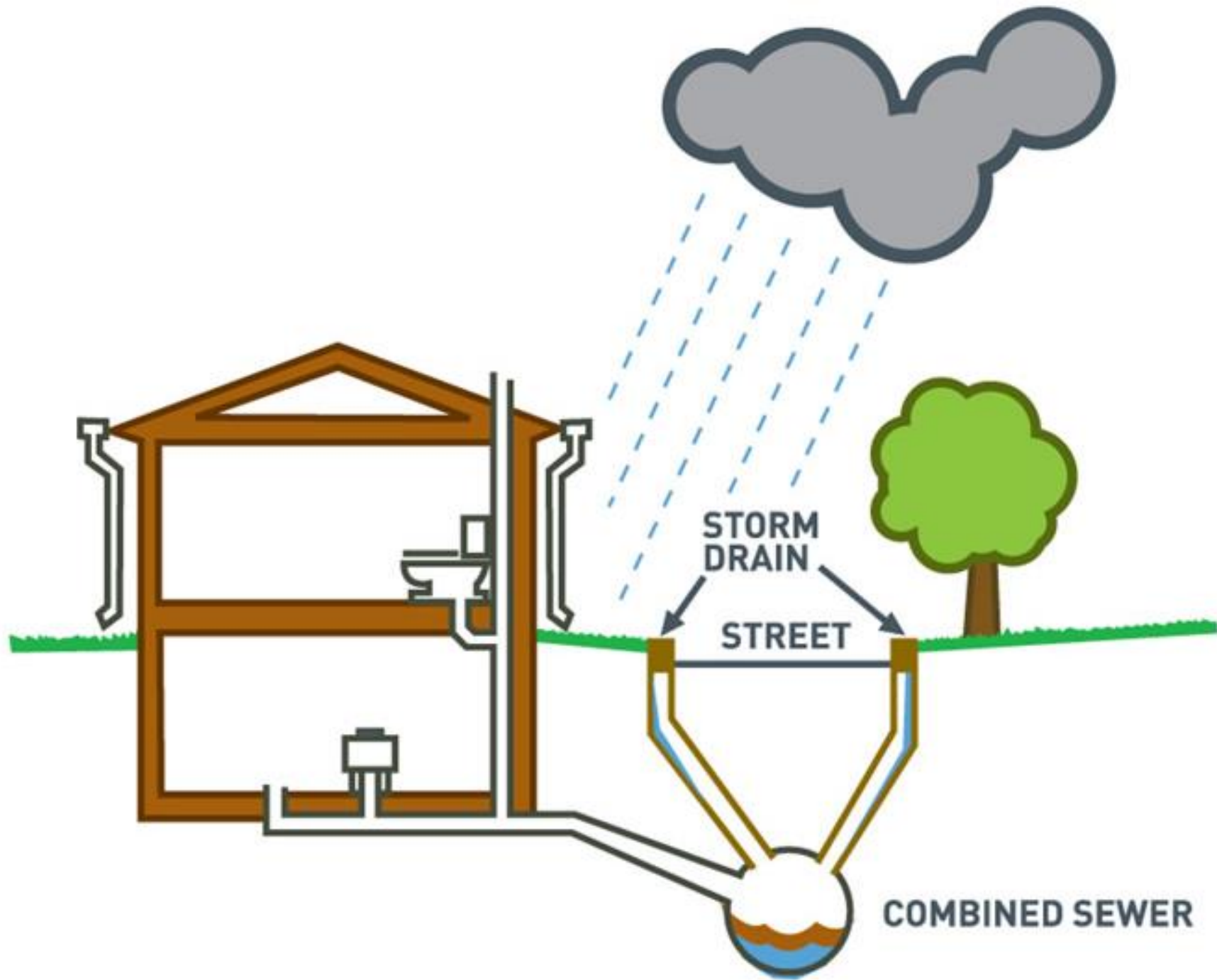
Chris McGibbeny



# Background Information

- **Sanitary Sewer System:** The City's sanitary sewer system collects wastewater from homes and businesses, and transports this water to the Bay View Water Reclamation Plant, where it is filtered and processed to remove bacteria and other contaminants before being returned to the Maumee River
- **Storm Water System:** The City's storm water system collects water from rain events, melting snow, and roadway run-off and returns this water to creeks, rivers, and Lake Erie through a series of ditches and piping





# Combined Sewer Overflows

- During heavy rain events, combined sewers can become completely filled with rainwater, with the water flowing into Swan Creek, Ottawa River and the Maumee River through relief points designed to prevent interceptor surcharges and to reduce basement flooding. These relief points are called Combined Sewer Overflows or CSOs.

# Toledo Waterways Initiative

The City of Toledo is spending \$527 million to improve public health and recreation by improving quality of rivers and streams:

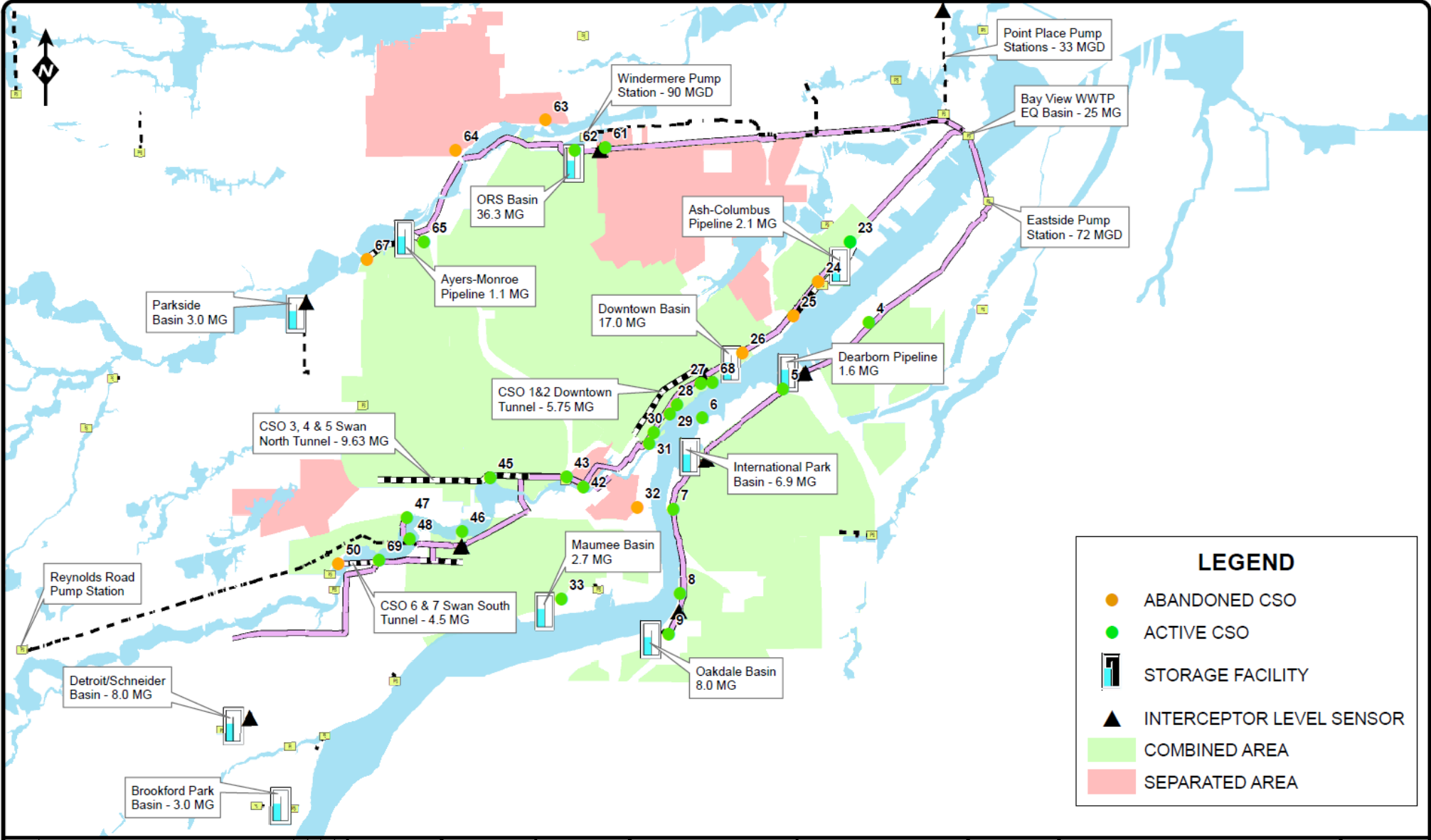
- Improvements at Bay View Water Reclamation Plant \$135 M - DONE
- Elimination of Sanitary Sewer Discharges (SSDs) \$71 M - DONE
- Reduction of Combined Sewer Overflows (CSOs) \$321 M - Under Construction (to be completed May 2020)
- Funded through sewer charges

# Bay View Wet Weather Facility

- Completed \$135 Million of improvements at the Bay View Water Reclamation Plant in 2006
- Increased treatment capacity of the Plant from 200 mgd to 400 mgd during wet weather events
- Zero untreated bypasses at the Plant since 2006
- Eliminated 144 million gallons/year on average of untreated overflows



# TWI CSO Storage Facilities



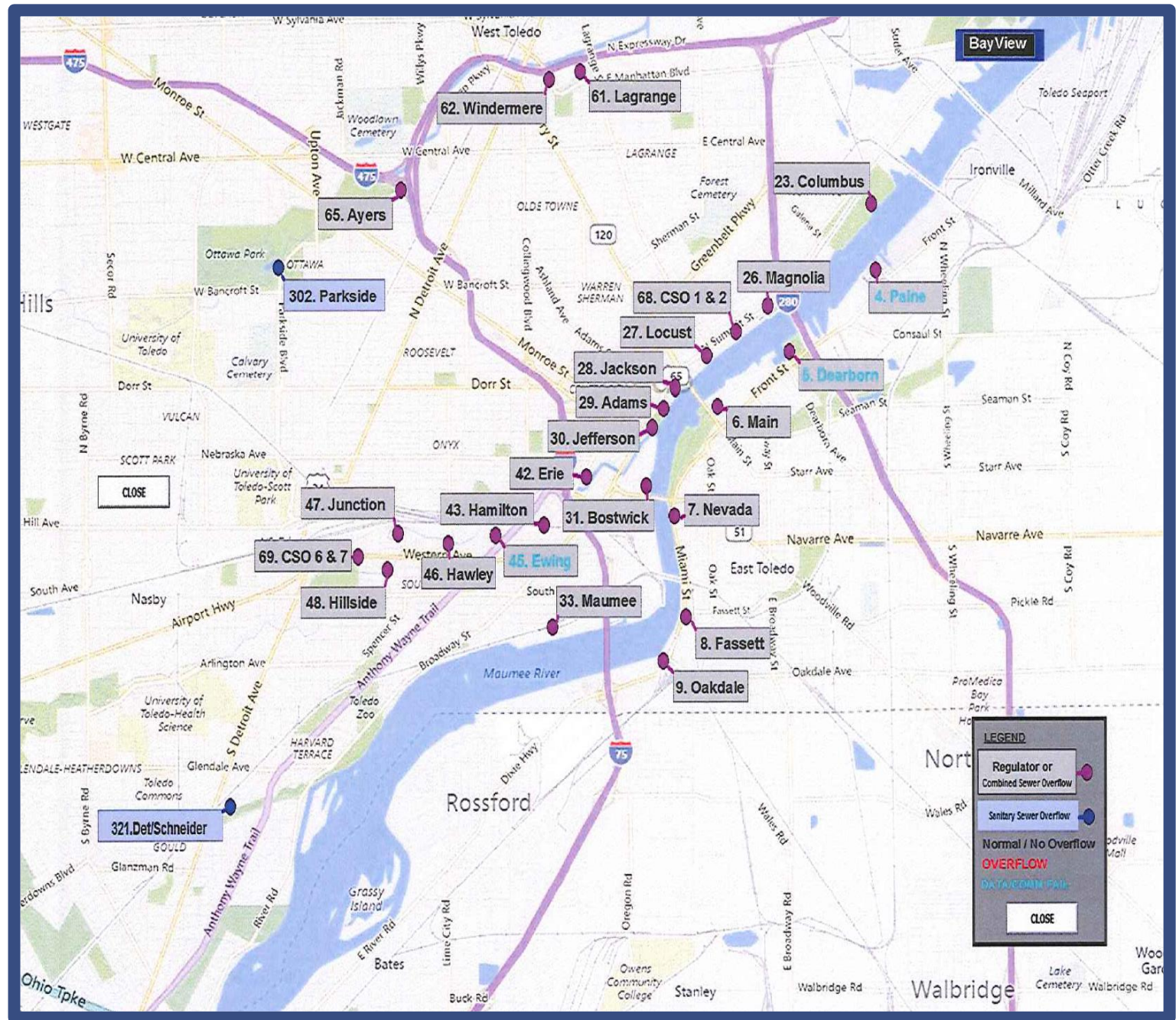


# Toledo is Reducing CSO Discharges

- The number of discharge events per location will be reduced on average from 34 to 3 times annually
- Seven (7) CSO locations have already been eliminated through the \$527 million Toledo Waterways Initiative (TWI) - A total of 8 CSOs will be eliminated when the program is complete in 2020

# CSO Data 2010 - 2018

	Number of outfalls reporting	Overflow per year	Annual Volume, MG	MG/occurrence	Annual rainfall, inches	Overflows MG/ per inch rain	Occurrence/ per inch rain
<b>2010</b>	31	860	626.8	0.73	34.60	18.1	24.9
<b>2011</b>	33	932	1,717.4	1.84	48.96	35.1	19.0
<b>2012</b>	30	426	378.3	0.89	24.62	15.4	17.3
<b>2013</b>	29	678	624.0	0.92	39.13	15.9	17.3
<b>2014</b>	26	340	311.1	0.92	31.70	9.8	10.7
<b>2015</b>	26	414	606.8	1.47	35.80	16.9	11.6
<b>2016</b>	26	287	110.4	0.38	33.81	3.3	8.5
<b>2017</b>	26	307	320.6	1.04	37.27	8.6	8.2
<b>2018</b>	26	284	324.5	1.14	41.95	7.7	6.8



# Combined Sewer Overflow Locations

Locations are also listed on the website

# CSOs from the Waterway Perspective

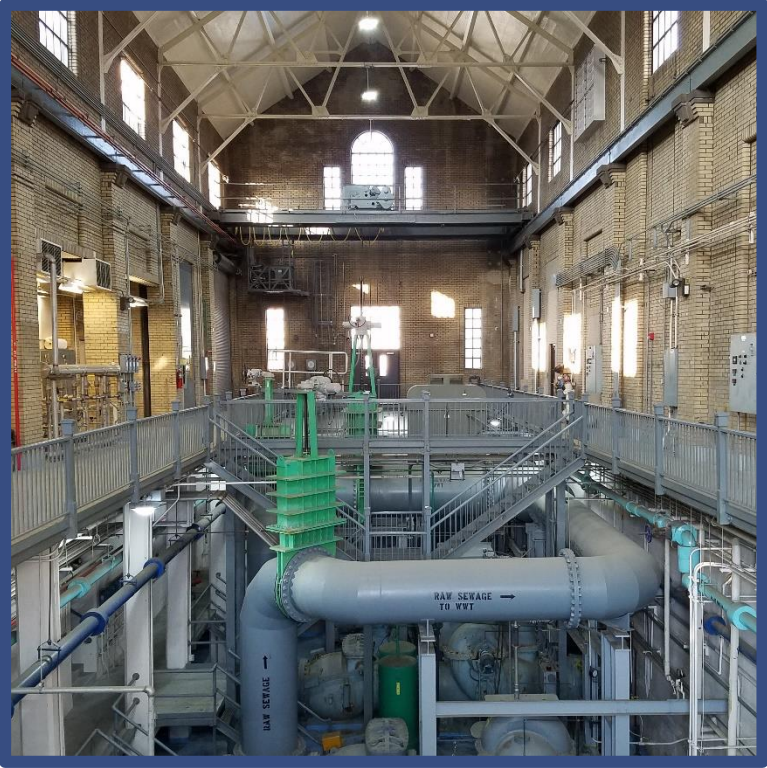


Not all pipes into the watershed are CSOs. In the photo above, a storm outfall on the left returns rain water to the watershed, and a CSO is on the right. Signage is used to identify CSO locations.

# More Information on the CSO Webpage

- Frequently Asked Questions
- Link to “How Our Sewer System Works”  
<https://www.youtube.com/watch?v=-va72Doe4nA>
- Link to [www.toledowaterwaysinitiative.com](http://www.toledowaterwaysinitiative.com) for more about Combined Sewer Overflows and the Toledo Waterways Initiative
- Link to [www.lakeerie.clearchoicescleanwater.org](http://www.lakeerie.clearchoicescleanwater.org) for information about what the public can do to reduce water pollution
- Contact Tab: Option for individuals to email questions or comments to the City of Toledo for a response or request a public presentation

# Bay View Water Reclamation Plant



# Bay View Water Reclamation Plant

- Serves a service area of 100 square miles of which 84 square miles are located in Toledo
- Serves a population of 350,000 people in Toledo, Ottawa Hills, Rossford, Walbridge, Northwood, and portions of Lucas and Wood Counties
- Has a maximum treatment capacity of 200 million gallons per day (MGD) during dry weather
- Has a maximum treatment capacity of 400 million gallons per day (MGD) during wet weather
- Has a standby electrical generator capacity of 13.65 megawatts. Generators can burn diesel fuel, natural gas, or digester gas produced by the Plant

## Staffing

Water Reclamation currently has a staff of 90 employees working in Administration, Engineering, Maintenance, Operations, Process Control and Systems & Data Communications

# Bay View Water Reclamation Plant

## Sanitary Collection System

- Sanitary Pump Stations (32)
- Storm Pump Stations (12)
- Eastside Interceptor
- Westside Interceptor
- Ten Mile Creek Interceptor

## Major Pump Stations

- |                              |         |
|------------------------------|---------|
| • East Side Pump Station     | 70 MGD  |
| • Reynolds Area Pump Station | 20 MGD  |
| • Windermere Pump Station    | 90 MGD  |
| • Bayview Pump Station       | 300 MGD |



# Bay View Water Reclamation Plant

## CSO Storage Tunnels

- CSO 1 & 2 Storage Tunnel 5.8 MG
- CSO 3 & 4 & 5 Storage Tunnel 9.6 MG
- CSO 6 & 7 Storage Tunnel 4.2 MG
- Dearborn Storage Tunnel 1.6 MG
- Ash-Columbus Storage Tunnel 2.1 MG
- Ayers-Monroe Storage Tunnel 1.1 MG

Total Capacity 24.4 MG

# Bay View Water Reclamation Plant

## CSO Storage Basins

- Bayview EQ Storage Basin 25 MG
- Oakdale Storage Basin 8 MG
- International Park Storage Basin 6.9 MG
- Downtown Storage Basin 17 MG
- Maumee Storage Basin 2.7 MG
- Ottawa River Storage Basin 36 MG

## Sanitary Sewer Storage Basins

- Parkside Storage Basin 3 MG
- Detroit-Schneider Storage Basin 8 MG
- Brookford Storage Basin 3 MG

Total Capacity 109.6 MG

# Bay View Water Reclamation Plant

## Preliminary Treatment

- Fine Bar Screens
- Raw Sewage Pumps
- Aerated Grit Removal Tanks
- Oil & Grease Skimming Tanks



# Bay View Water Reclamation Plant

## Primary Treatment

- Primary Clarifiers

## Secondary Treatment

- Aeration Tanks
- Secondary Clarifiers
- Chlorination
- De-Chlorination



# Bay View Water Reclamation Plant

## Solids Handling

- Gravity Thickeners
- Dissolved Air Flootation
- Anaerobic Digestion
- Belt Filter Presses
- Methane Gas Spheres



## Biosolids Disposal

- Land Application
- Landfilling



# Bay View Water Reclamation Plant

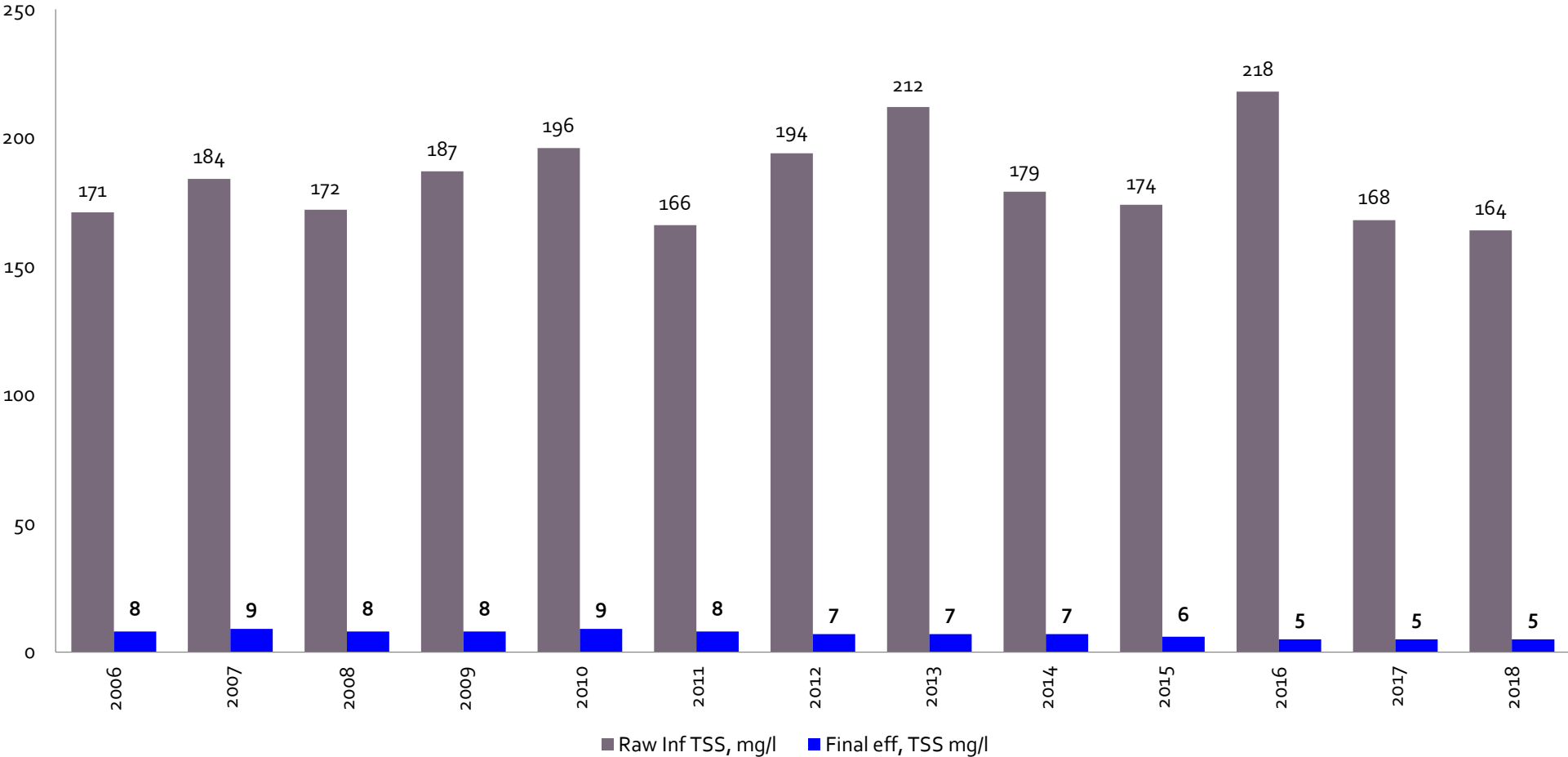
## Wet Weather Treatment Facility

- Wet Weather Grit Removal
- Wet Weather Ballasted Flocculation
- Wet Weather Chlorination
- Wet Weather De-Chlorination
- Wet Weather Equalization Basin
- Final Effluent Pump Station



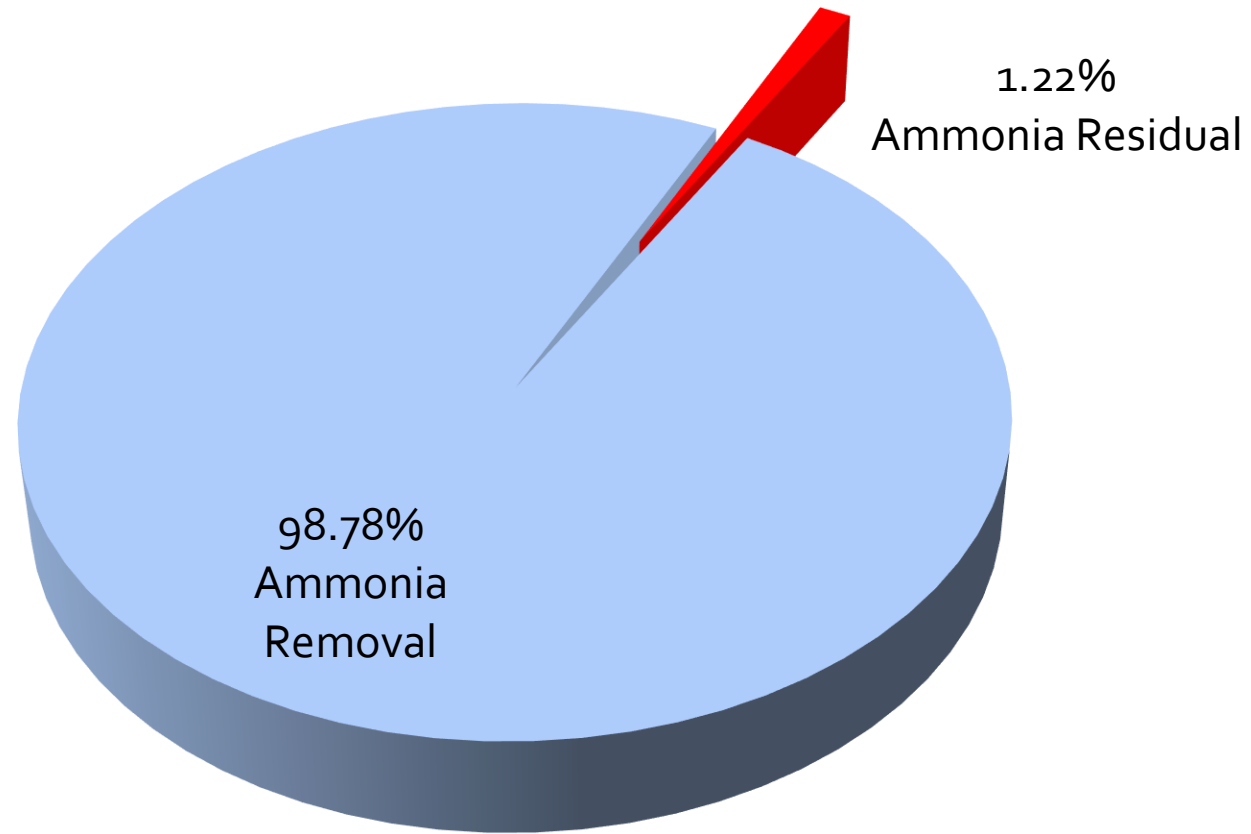
# Bay View Waste Water Treatment Plant

Total Solids: average raw and final effluent mg per liter 2006 - 2018



# Bay View Waste Water Treatment Plant

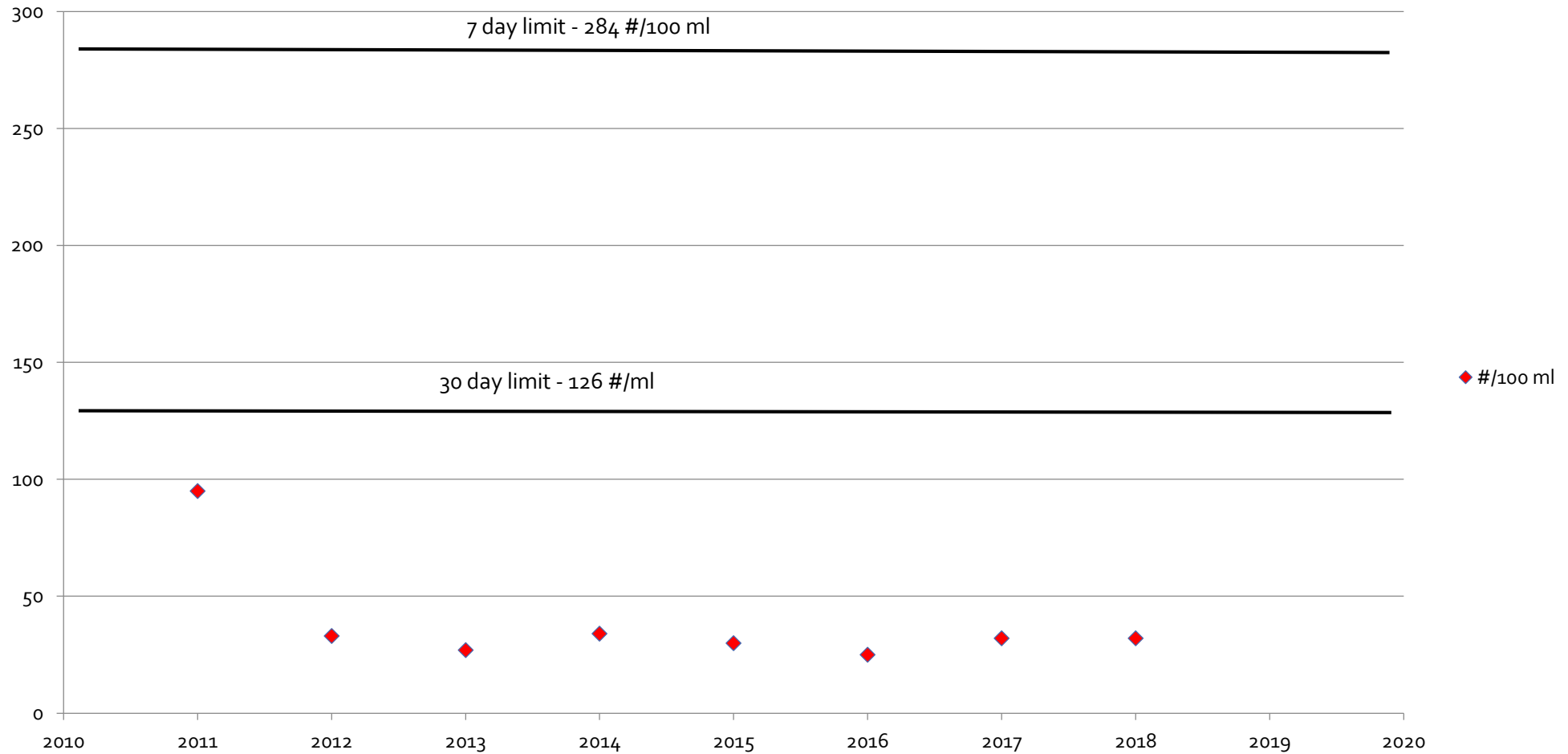
Ammonia: average residual mg per liter 2006 - 2018





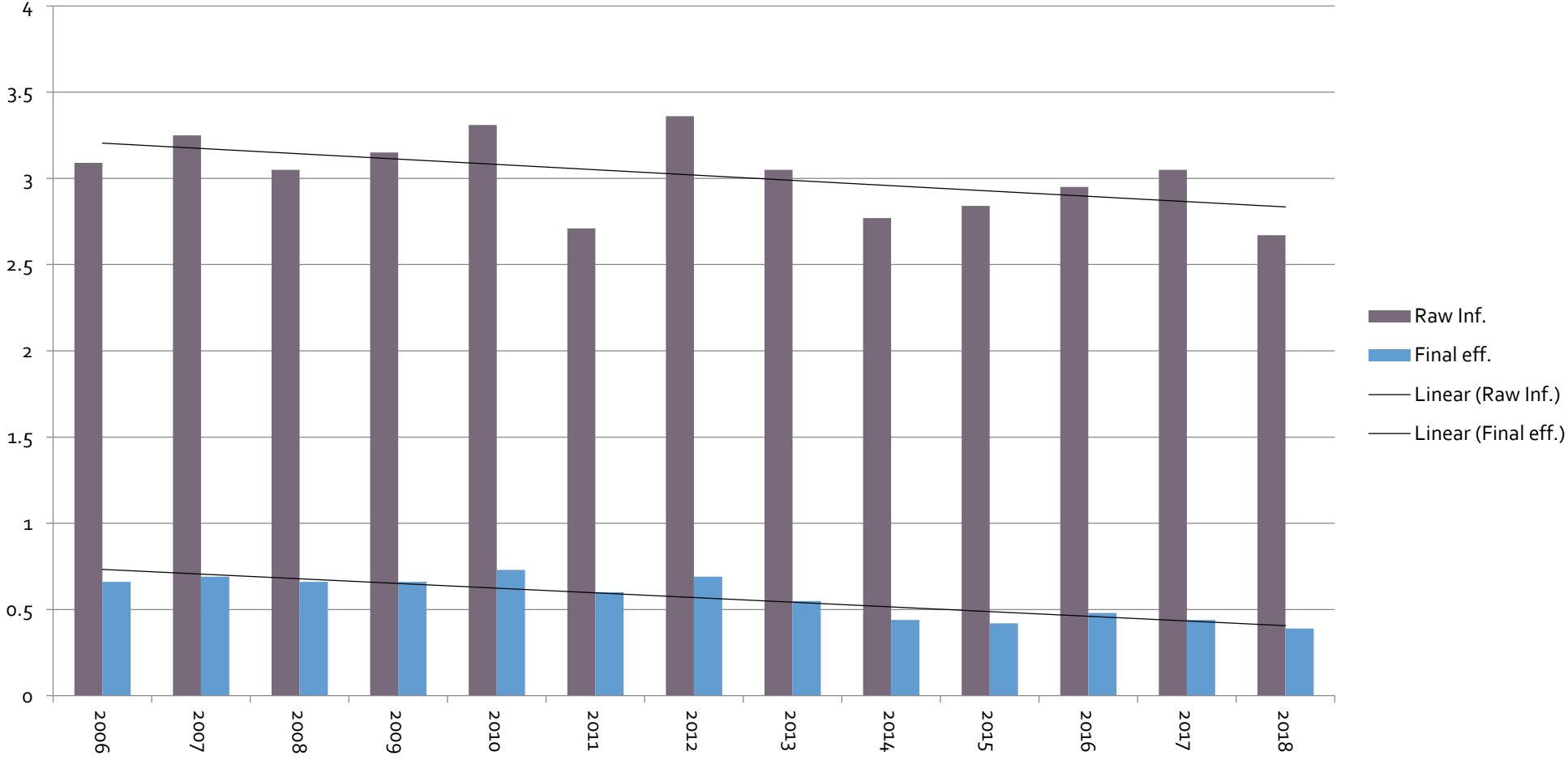
# Bay View Waste Water Treatment Plant

E. Coli: average # per 100 ml 2011- 2018



# Bay View Waste Water Treatment Plant

Phosphorous: average raw and final effluent mg per liter 2006 - 2013



# More Pollution Reducing Strategies

- Public Engagement and Education - Lake Erie Clear Choices Clean Water  
*(TMACOG Stormwater Coalition)*
- Industrial Pretreatment Program *(Environmental Services)*– Requires industries to pre-treat wastewater to safe, permitted levels before it is discharged
- Division of Streets, Bridges, & Harbor – Street sweeps, leaf collection, etc.
- Green Infrastructure Projects (e.g. Cullen Park, bioswales) to reduce urban runoff, increase natural filtration
- Toledo Storm Water *(Environmental Services)* – Illicit Detection and Elimination Program, Construction Site Runoff Control and Post-Construction Storm Water Management, Monitoring Requirements
- Nutrient Source Inventory—a mapping tool that identifies causes of impairment and potential pollutant sources that need to be controlled to achieve desired nutrient load reductions. *(City of Toledo In partnership with the Toledo-Lucas County Sustainability Commission)*

# Some of our Regional Partners

- Toledo Metropolitan Council of Governments (TMACOG) Environmental Planning Department
- Toledo Lucas County Rain Garden Initiative (RGI)
- Toledo Lucas County Sustainability Commission
- LEPC (Local Emergency Planning Committee)
- Lucas Soil & Water Conservation District
- Maumee Area of Concern (AOC) Advisory Committee
- Metro Parks of The Toledo Area
- National Oceanic and Atmospheric Administration (NOAA)
- Coastal Services Center
- NOMMAD (Northwestern Ohio and Michigan Mutual Aid District)
- Partners for Clean Streams (PCS)



Thank you for listening--

