

BASICS OF THE CLEAN WATER ACT: PART 3

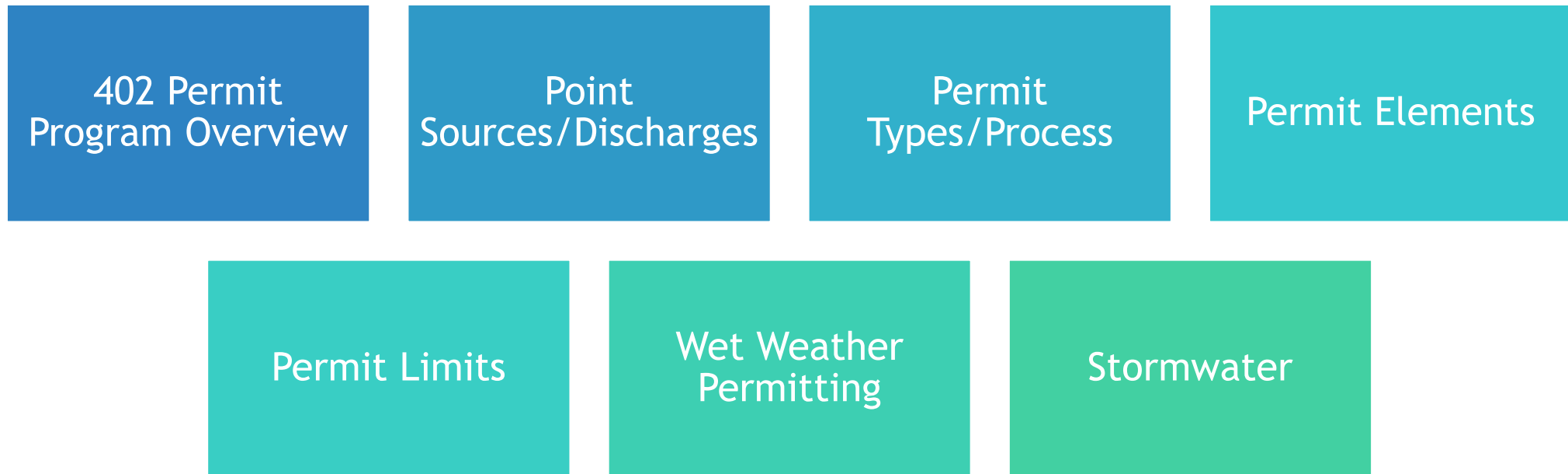
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Summer School 2019

Regulation of Point Sources: National Pollutant Discharge Elimination System (NPDES) Program



CWA 402 National Pollutant Discharge Elimination System (NPDES) Permit Program

Need a Permit for
“Discharge of pollutant”

any
addition
of

any
pollutant

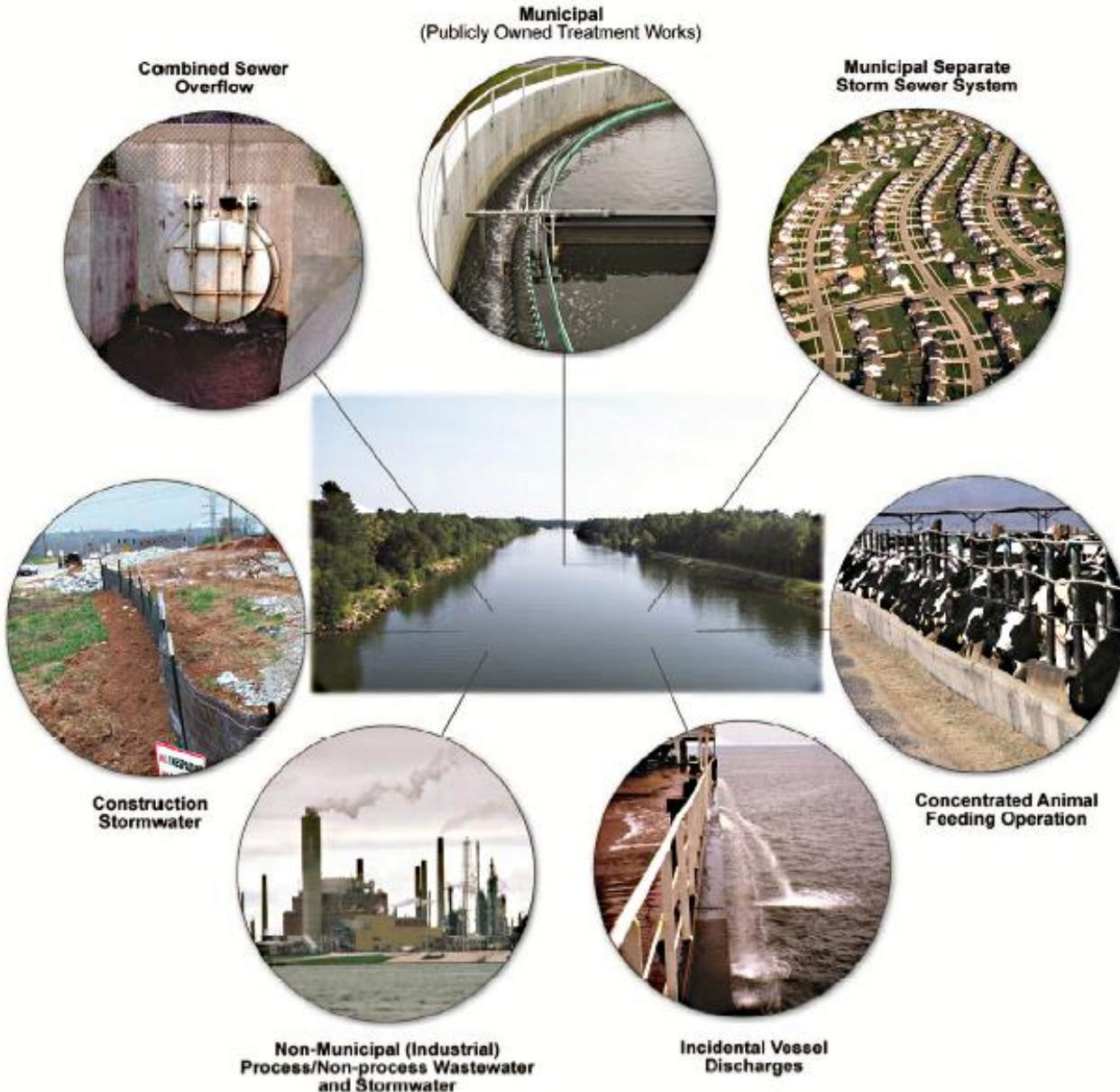
to
waters
of the US

from any
point
source

Pollutant - CWA 502(6)

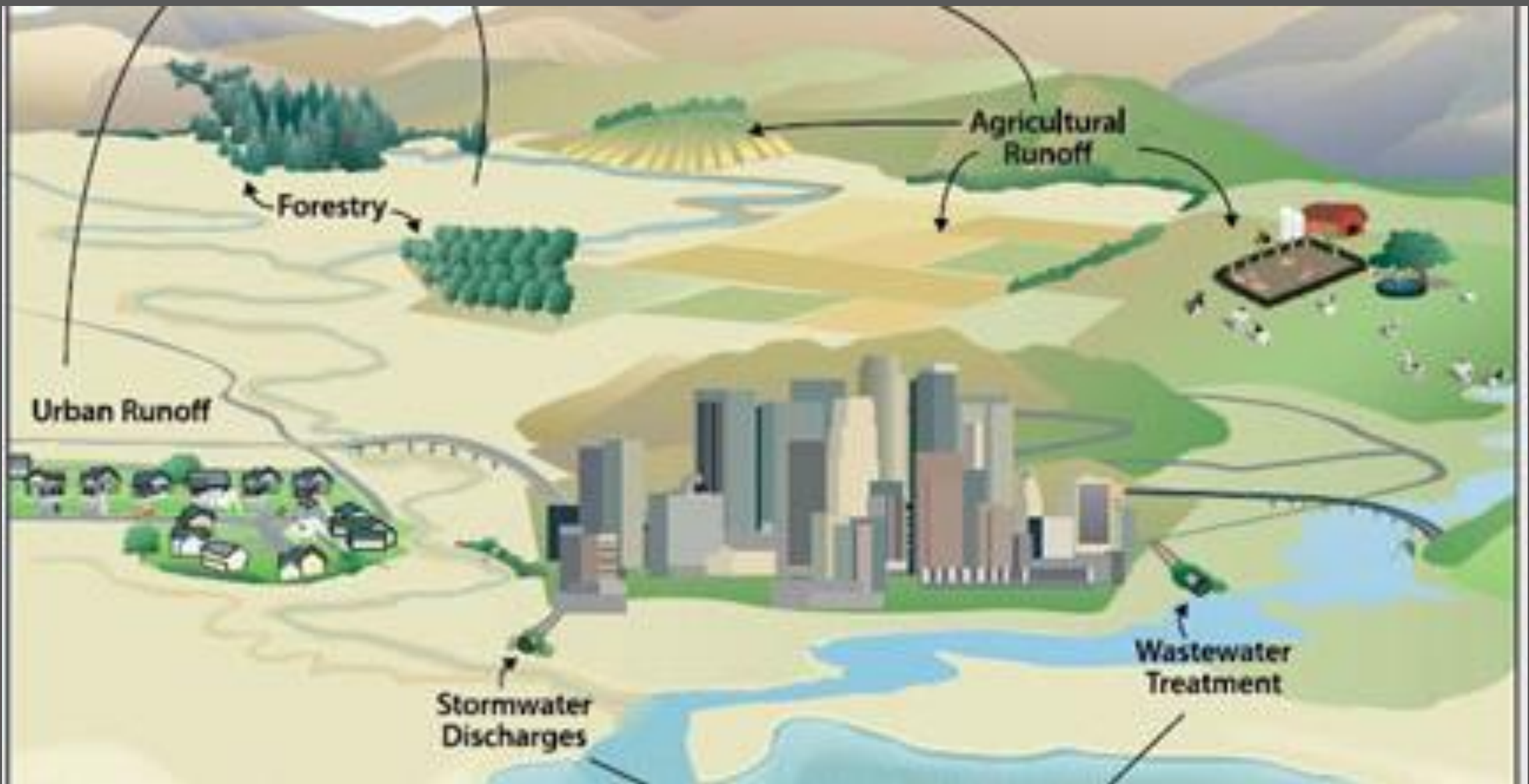
- ▶ Conventional Pollutants
 - ▶ CWA 304(a)(4) and §401.16
 - ▶ BOD5, TSS, fecal coliform, pH, and oil and grease)
- ▶ Toxic (priority) Pollutants
 - ▶ CWA 307(a)(1) (listed in § 401.15 & Appendix A of Part 423)
 - ▶ 126 metals and manmade organic compounds
- ▶ Nonconventional Pollutants
 - ▶ do not fall under either of the above categories
 - ▶ include parameters such as chlorine, ammonia, nitrogen, phosphorus, chemical oxygen demand (COD), and whole effluent toxicity (WET)

Exhibit 1-2 Common point source discharges of pollutants to waters of the United States



Point Sources

Any discernible, confined, and discrete conveyance



Discharges

Stormwater discharges

- Defined as “storm water runoff, snow melt runoff, and surface runoff and drainage”

Indirect discharges

- A source introducing pollutants into a POTW
- Pretreatment program

Nonpoint source discharges

- Cooperative Federalism: state implementation
- Requires assessment of waters
- State management programs

Groundwater - Indirect Discharge?

- ▶ Groundwater ≠ WOTUS
- ▶ Pollutants originate from a point source but are conveyed to navigable waters by a nonpoint source - groundwater
 - ▶ NPDES Permit Required?
- ▶ US Supreme Court - oral argument October 2019 term
 - ▶ Circuit Split
- ▶ EPA Interpretive Statement: CWA NPDES Does Not Regulate Point Source Discharges to GW
- ▶ Federal/State Laws - Groundwater

NPDES Permit Types/ Process

Individual &
General
Permits

Issued by
Permitting
Authority

Notice &
Comment

Permit term
not to exceed
5 years

NPDES Permit Elements

Effluent Limits

Best Management Practices

Monitoring & Reporting
Requirements

Determining Limitations

Technology Based (TBELs)

Water Quality Based
(WQBELs)

Total Maximum Daily Load
(TMDL)

Effluent Limits - TBELs

- ▶ Effluent Limitation Guidelines (ELGs) for industrial categories and classes
- ▶ Apply to Categorical Industrial Users (CIUs)
- ▶ POTWs: Secondary Treatment Standards
 - ▶ pH 6-9
 - ▶ BOD₅ and SS 45 mg/L and 30 mg/L
 - ▶ 85% removal of BOD₅ and SS
- ▶ Backsliding prohibited

Effluent Limits - WQBELs

Applicable when TBELs not sufficient to protect the designated use



Water Quality Standards

Designated uses

Water quality criteria

- Numeric
- Narrative

Antidegradation policy

Effluent Limits - WQBELs: TMDLs

TBELs are not sufficient to maintain water quality criteria established to support designated uses → impaired waters

States evaluate and list impaired waters

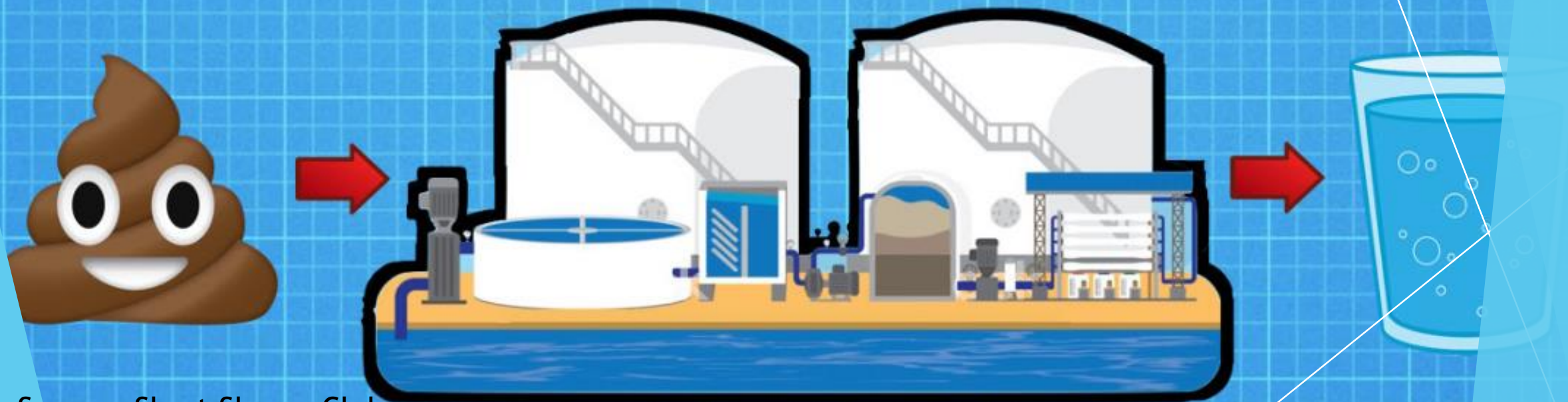
Develop TMDLs to address impairments

Implement TMDLs in permits

Municipal Wastewater Management/Treatment

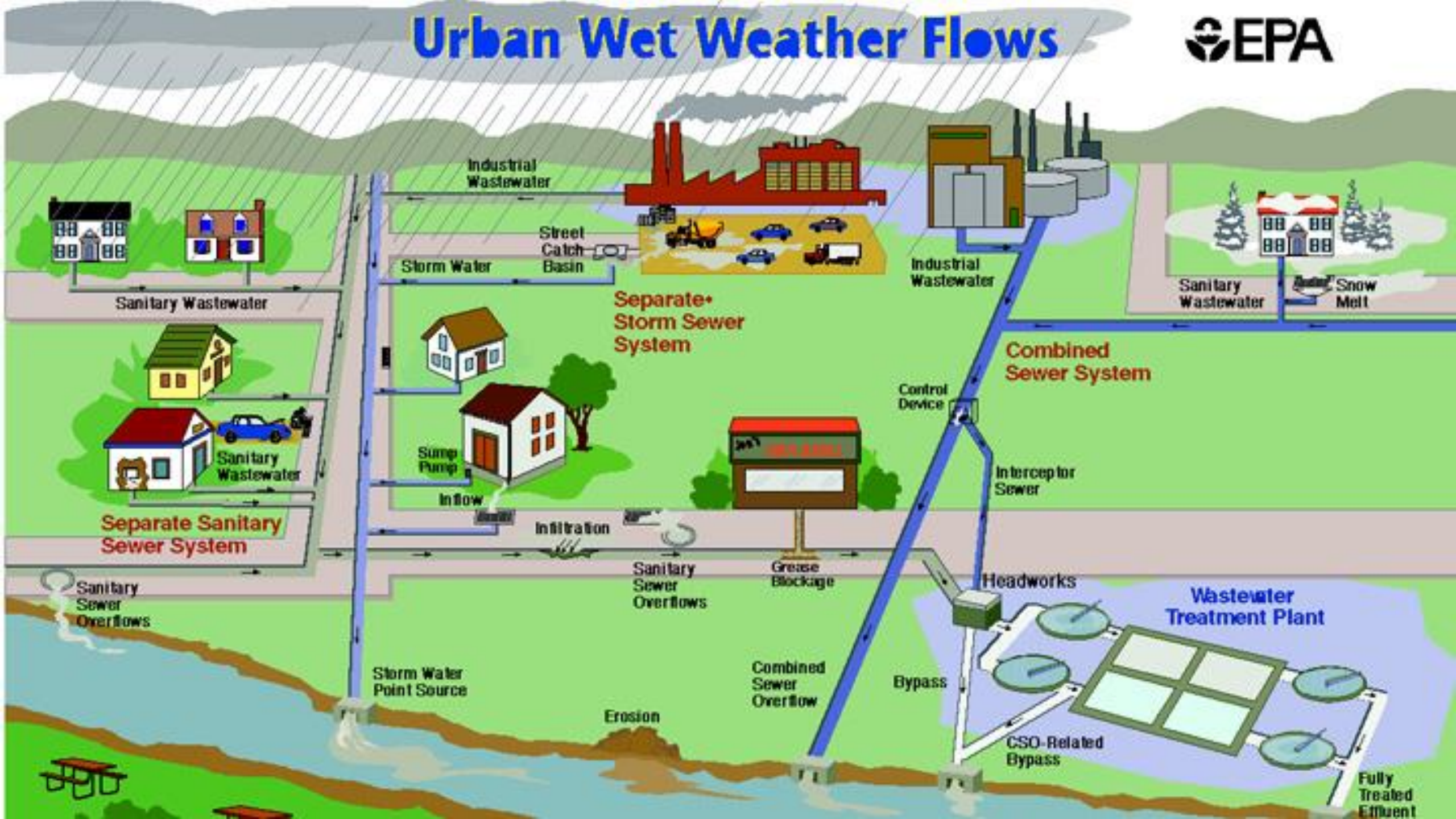
- ▶ Treatment Processes
- ▶ Combined Sewer Overflows
- ▶ Sanitary Sewer Overflows
- ▶ Peak Wet Weather Flow Management
- ▶ Integrated Planning
- ▶ National Pretreatment Program

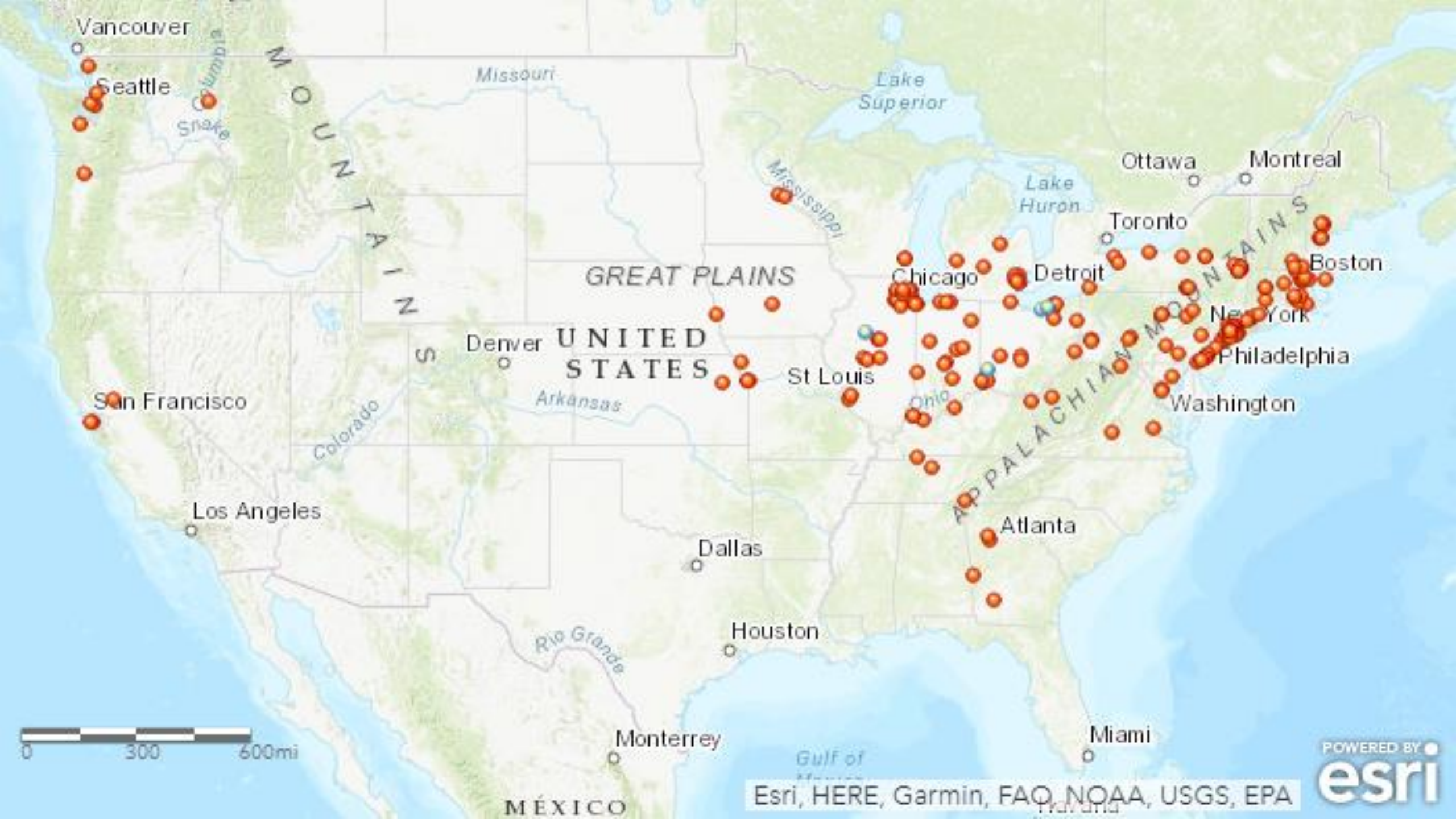
WASTEWATER TREATMENT



Source: Short Sleeve Club

Urban Wet Weather Flows





Vancouver

Seattle

Spokane

Columbia

Missouri

Lake Superior

Lake Huron

Ottawa

Montreal

Toronto

GREAT PLAINS

Chicago

Detroit

Boston

Denver

UNITED STATES

St Louis

New York

Philadelphia

San Francisco

Colorado

Arkansas

Ohio

Washington

Los Angeles

Atlanta

Dallas

Houston

Rio Grande

Miami

Monterrey

Gulf of Mexico

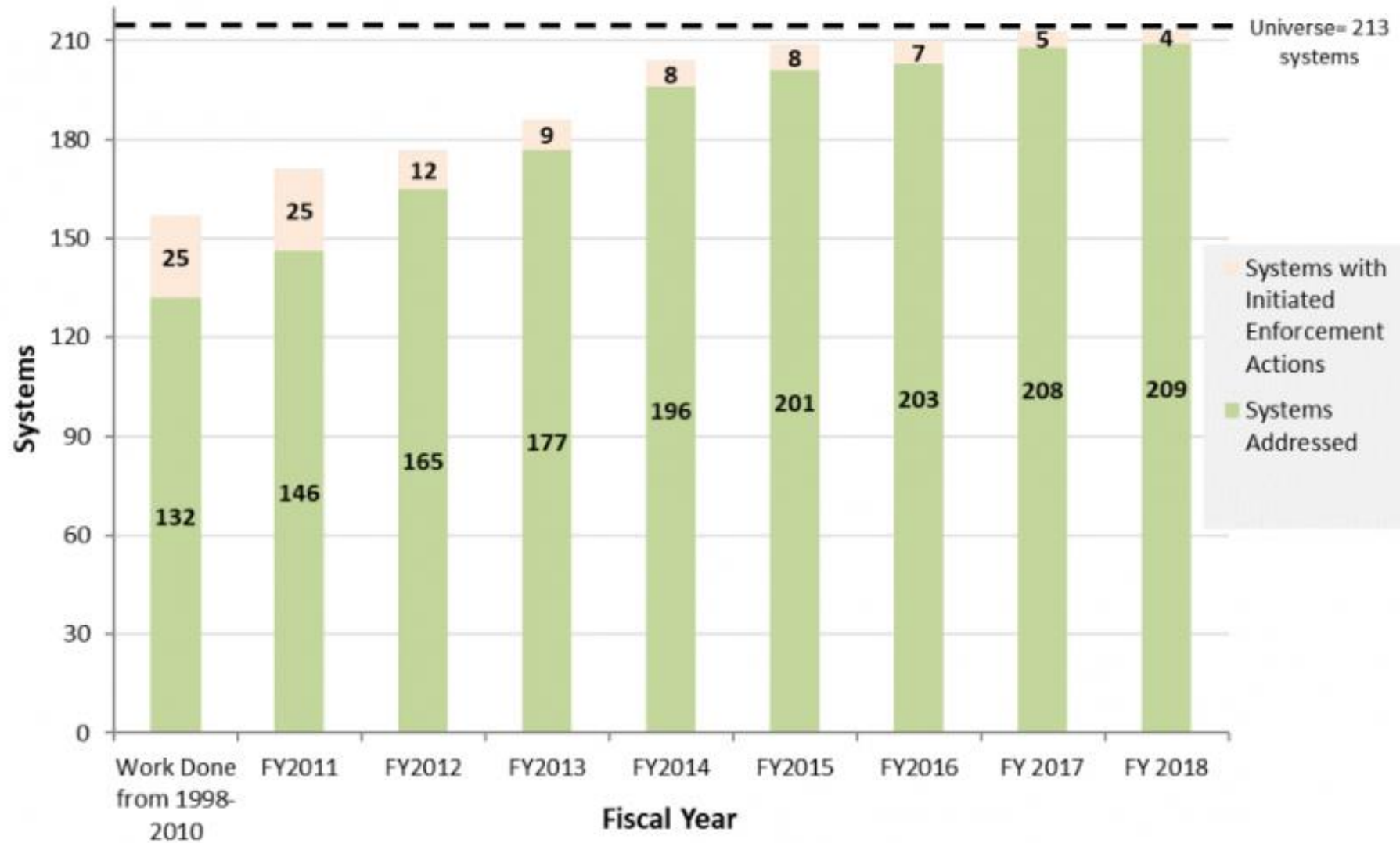
MEXICO



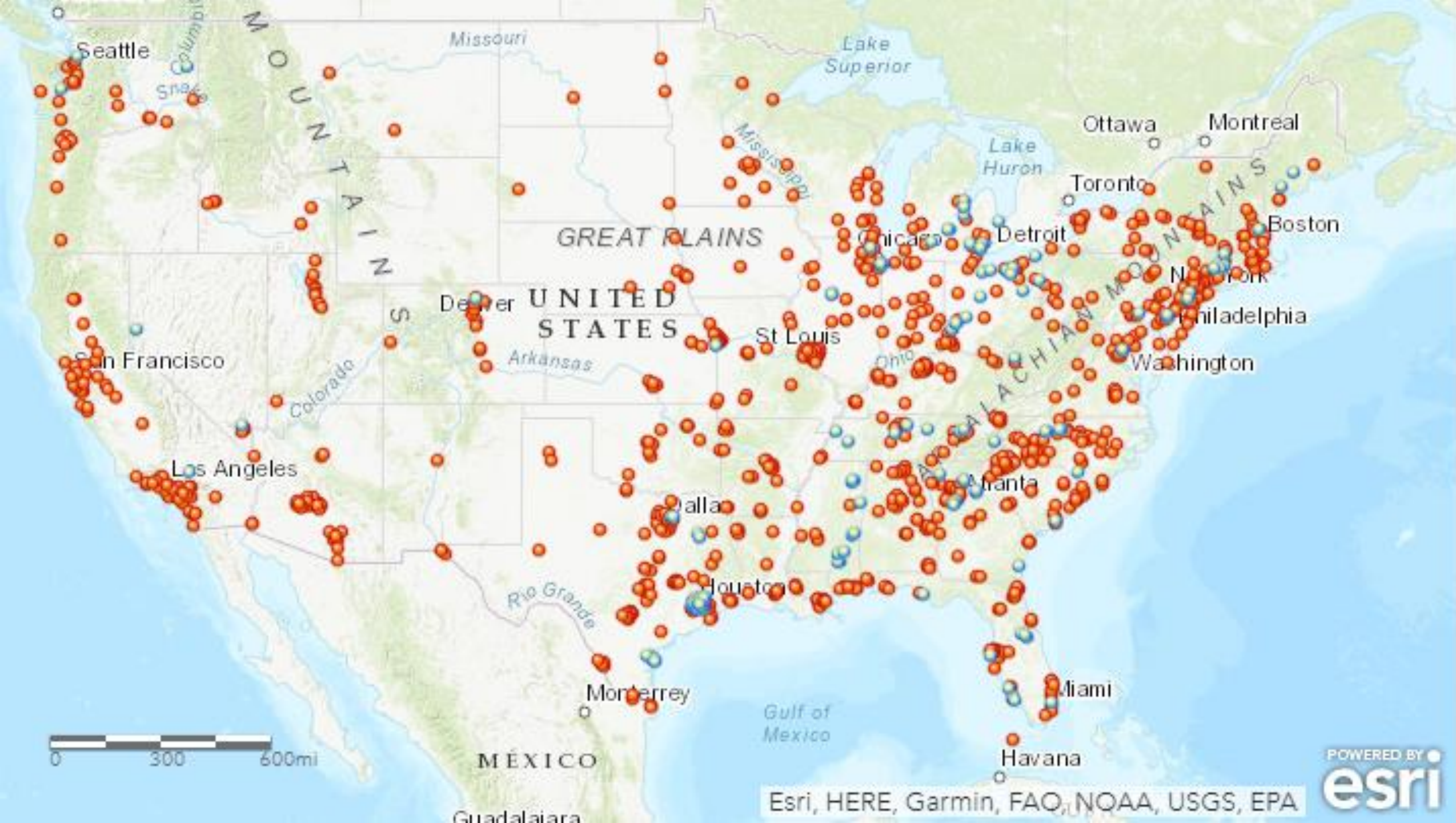
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA



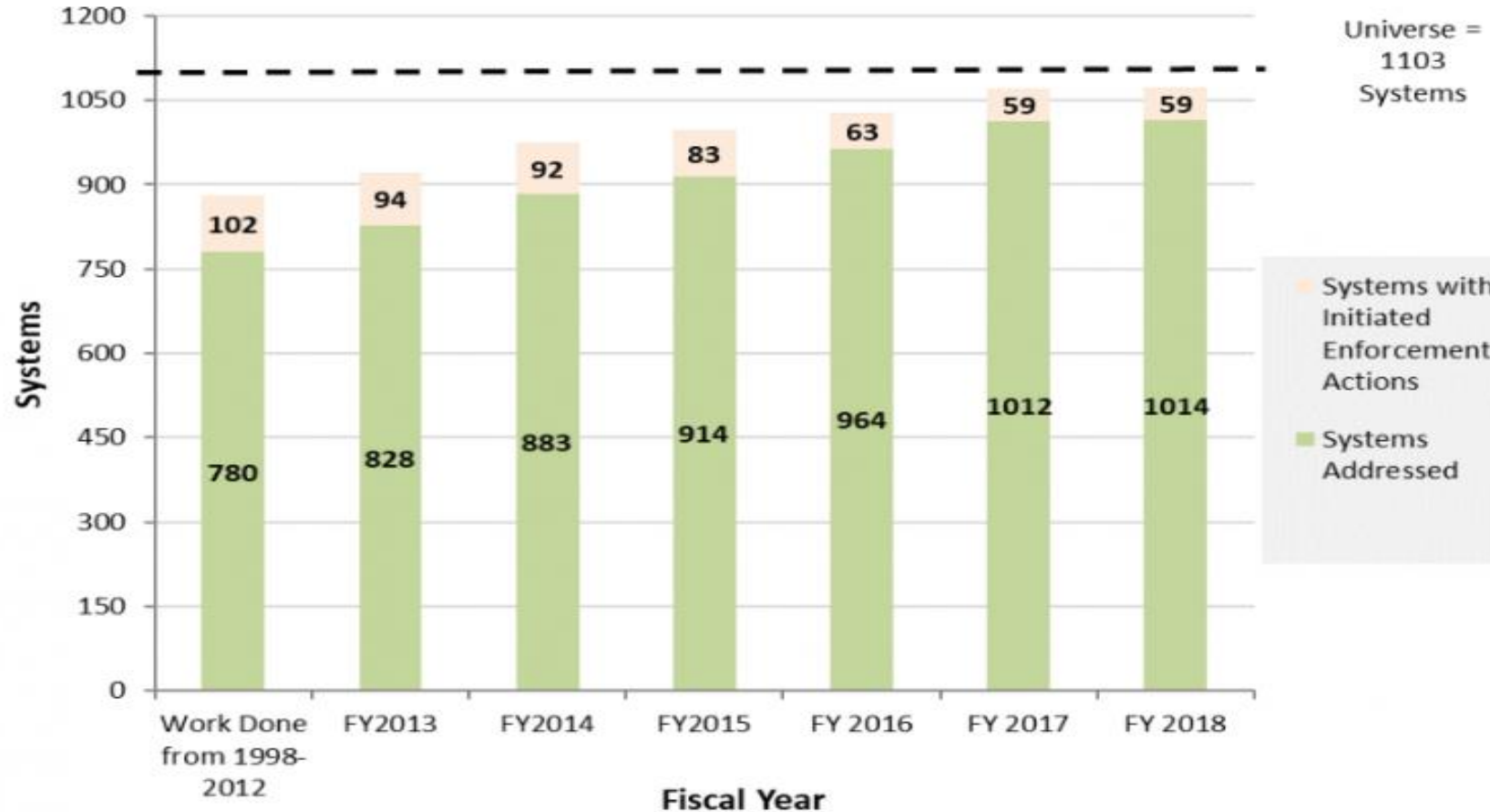
Cumulative Progress Toward Addressing Large Combined Sewer Systems with Untreated Sewage Overflows



*Large municipal combined sewer systems are those serving a population > 50,000 people.
 *Addressed means the system has been assessed and, where appropriate, is subject to a civil judicial complaint, an enforceable federal or state enforcement order, or permit requirements that address the noncompliance.
 *Initiated enforcement actions are defined as formal EPA or state actions in progress, or referrals under development or finalized (signed and dated) in each fiscal year.



Cumulative Progress Toward Addressing Large Sanitary Sewer Systems with Untreated Sewage Overflows



*This initiative focuses on large municipalities whose sanitary sewer systems produce > 10 million gallons per day (mgd) of wastewater.

*Addressed means the system has been assessed and, where appropriate, is subject to a civil judicial complaint, an enforceable federal or state enforcement order, or permit requirements that address the noncompliance.

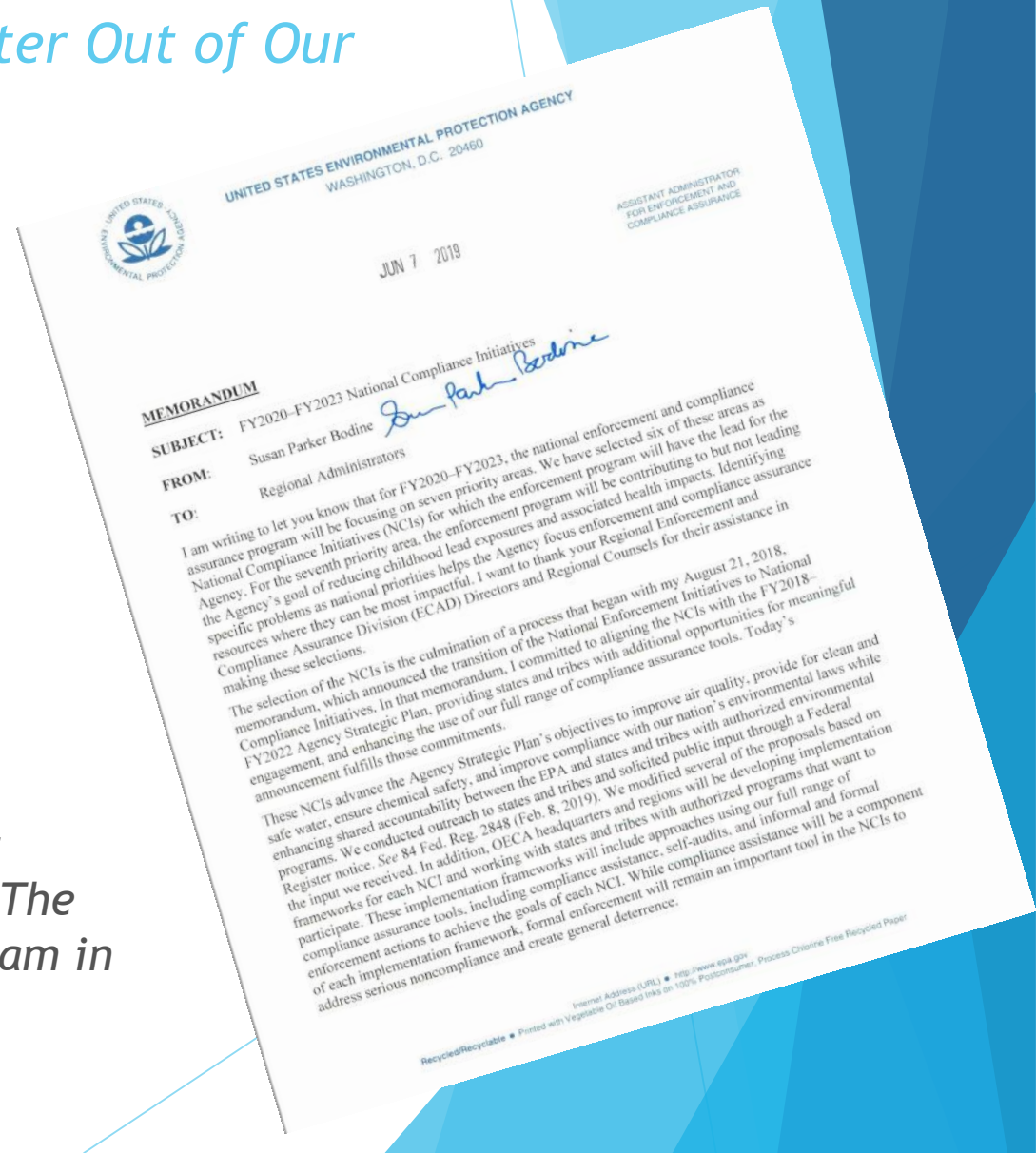
*Initiated enforcement actions are defined as formal EPA or state civil judicial enforcement referrals requesting filing of a complaint.

EPA National Compliance Initiatives

Keeping Raw Sewage and Contaminated Stormwater Out of Our Nation's Waters

- ▶ Every 3 years
- ▶ Raw Sewage NCI began in 2000
- ▶ Proposed for removal for Fiscal Years 2020 - 2023
- ▶ EPA has addressed:
 - ▶ 97% of large combined sewer systems
 - ▶ 92% of large sanitary sewer systems
 - ▶ 79 % of Phase 1 municipal separate stormwater systems

“Agency believes that this NCI no longer presents a significant opportunity to correct water quality impairment nationwide. The EPA has proposed to return work in this area to the core program in FY2020.”



Peak Flow Management

- ▶ High peak influent flows during periods of wet weather exceed the treatment capacity of existing biological or advanced treatment units
- ▶ Divert a portion of the flow around biological or advanced treatment units
- Rulemaking
 - April 2018 - EPA announced intent to begin rulemaking
 - October 2018 - EPA Stakeholder Roundtable and public meetings
 - October 31, 2018 - Public comment period ended
 - Proposal expected Fall 2019
 - Final rule expected in 2020

Integrated Planning: Water Infrastructure Improvement Act



Passed House 351-10; Senate on Unanimous Consent;
Signed by President January 14



Codifies Integrated Planning into the CWA



What does it do?



Allows prioritization and sequencing



Based on specific local infrastructure, environmental
factors, and affordability



Establishes an office of Municipal Ombudsman within EPA

NPDES Stormwater Program



Stormwater Discharges from Construction Activities



Stormwater Discharges from Industrial Activities



Stormwater Discharges from Municipal Sources



Stormwater Discharges from Transportation Sources



Oil and Gas Stormwater Permitting



EPA's Residual Designation Authority



Only Rain Down the Storm Drain!

Runoff from hard surfaces like roofs, driveways, and streets picks up pollutants like:

- Pet waste
- Litter
- Fertilizer
- Motor oils
- Chemicals

Polluted stormwater runoff flows directly into our local streams, the Potomac River, and eventually the Chesapeake Bay.



CWA 402(p) - Phase I Rule Covering Industry & Large/Med MS4s

(p) Municipal and industrial stormwater discharges

(1) General

Prior to October 1, 1994, the Administrator or the State ...shall not require a permit under this section for discharges composed entirely of stormwater.

(2) Exceptions

Paragraph (1) shall not apply with respect to the following stormwater discharges: ...

(B) A discharge associated with industrial activity.

(C) A discharge from a [MS4] serving a pop. of 250,000 or more.

(D) A discharge from a [MS4] serving a pop. of 100,000 [to] 250,000....



CWA 402(p) – Basis for Phase 2 Small MS4s & Small Construction

(p) Municipal and industrial stormwater discharges

(5) Studies

[EPA required to identify more classes of discharges not regulated under (1) and (2), determine nature / extent of pollutants, and issue a report by 10/88]

(6) Regulations

[EPA shall issue regs, based on study results, designating more stormwater discharges to be regulated “to protect water quality” and EPA “shall establish a comprehensive program to regulate” such designated sources]



CWA 402(p)- Industrial & MS4-Specific Compliance Standards

(3) Permit requirements

(A) Industrial discharges

Permits for discharges associated with industrial activity shall meet all applicable provisions of this section and section 1311 of this title.

(B) Municipal discharge

Permits for discharges from municipal storm sewers—

(i) may be issued on a system- or jurisdiction-wide basis;

(ii) shall ... effectively prohibit non-[SW] discharges into [MS4]; and

(iii) shall require controls to reduce the discharge of pollutants to the **maximum extent practicable**, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants....

Municipal NPDES

6 Minimum Control Measures



1. Public Education



3. Best Discharge Detection and Elimination



4. Construction Site Discharge Control



5. Best Construction Controls for New Development



6. Good Housekeeping and Pollution Prevention

Minimum Control Measure #2: Public Participation/Involvement



Figure 4: The public participating in a rain barrel workshop in Westmoreland County

Active Outreach	Passive Outreach
Active outreach engages the public in learning and is therefore a more effective tool in educating the public. It may be difficult to prove the effectiveness of passive distribution methods.	
Examples	Examples
<ul style="list-style-type: none"> Community clean-ups Tours Workshops Storm drain stenciling Interactive public meetings 	<ul style="list-style-type: none"> Publication of fact sheets, pamphlets, newsletters, etc. Social media websites Educational signage
Pros	Pros
<ul style="list-style-type: none"> Creates interactive dialogue Increases critical thinking of participants Provides an engaged process and requires a conscious effort to make sense of the information 	<ul style="list-style-type: none"> There is a lot of information and requires a smaller effort to organize it Very organized and controlled distribution to the public
Cons	Cons
<ul style="list-style-type: none"> Time and effort to organize It can take some time to catch on as an activity 	<ul style="list-style-type: none"> No opportunity to clarify the information immediately No direct engagement with the public

The goal of the Public Participation/Involvement is to involve the public in stormwater activities. It should facilitate the successful implementation of your Stormwater Management Program (SWMP) through garnering public support; utilizing expertise and local knowledge; shortening implementation schedules; and, building partnerships with other community and government programs. It goes hand-in-hand with MCM 1.

BMP #1 – Develop, implement, and maintain a written **Public Involvement and Participation Program (PIPP)**. A written plan must be developed for each program. It can be combined with the Public Education and Outreach Program (PEOP) discussed under MCM 1 BMP #1.

The PIPP should describe various types of participation activities, methods of encouraging involvement and getting input from the public. It should include:

- Opportunities for public participation in decision-making processes associated with the development, implementation and update of programs and activities associated with the permit.
- How you communicate with and update groups in or near your MS4, such as watershed associations, environmental organizations and others.
- Your method of making your MS4 reports available to the public on your website, at municipal offices, or by mail upon request.

BMP #2 – Provide adequate public notice and opportunities for the public to review a stormwater ordinance and provide their input and feedback prior to adopting any sort of ordinance. You should advertise any proposed MS4 stormwater ordinance, accept public comments, and document how you received and responded to them.

BMP #3 – Regularly solicit public involvement and participation from target audience groups. One public meeting per year is required, either as a stand-alone MS4 meeting or as part of another public meeting. At these meetings, you should summarize the ongoing implementation of your SWMP, including activities and accomplishments, and allow time and opportunities for public feedback and input.

Residual Designation Authority

- ▶ “A discharge for which the Administrator ... determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.” CWA 402(p)(2)(E)
- EPA: “The designation authority can be applied within different geographic areas to any single discharge (i.e., a specific facility), or category of discharges... The added term ‘within a geographic area’ allows ‘State-wide’ or ‘watershed-wide’ designation within the meaning of the terms.” 64 Fed. Reg. 68,722, 68,781 (Dec. 8, 1999).
- Any person may petition the agency to require a NPDES permit for a discharge which is composed entirely of stormwater which contributes to a violation of a water quality standard. 40 C.F.R. § 122.26(f)(2).

Exempt Activities - 402(l)

▶ Oil, Gas & Mining Operations

- ▶ Stormwater must be uncontaminated by overburden, byproducts, etc.
- ▶ Exempt activities may include:
 - ▶ Active mines
 - ▶ Oil & gas drilling & production well sites
 - ▶ Oil & gas pipelines
 - ▶ Scope of exclusion uncertain

▶ Silviculture Activities

- ▶ Covered activities include reforestation, forest thinning, prescribed burning, timber harvesting, & access road construction
- ▶ Exemption (§402(l)(3)) added to CWA in 2014