

Clean Water Act 101

Friday, February 11, 2011



NACWA
A Clear Commitment to America's Waters

What is NACWA?

- The National Association of Clean Water Agencies (NACWA) represents the interests of nearly 300 public agencies and organizations charged with collecting and treating wastewater and stormwater.
- Our Members are true environmentalists who work every day to clean our waters and meet the goals of the Clean Water Act.



Today's Presentation

- Clean Water Act 101
- Wet Weather Issues
- Other Regulatory Challenges
- Financial Needs

Clean Water Act 101

- Nathan Gardner -Andrews, General Counsel, NACWA



Introduction
to the
Clean Water Act

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Clean Water Act – Purpose/Goals

- Purpose: Maintain chemical, physical, and biological integrity of the Nation's waters
- Goals:
 - Eliminate discharge of pollutants to surface waters
 - “Fishable/Swimmable” where attainable
 - Protection and propagation of fish, shellfish, and wildlife
 - Recreation in and on the water

Clean Water Act 101

- There are two primary components of the Clean Water Act.
 - Title II- Authorized the Construction Grants Program- federal financial assistance for municipal sewage treatment plant construction.
 - Title III & Title IV- Authorized the regulatory requirements of the act that apply to municipal and industrial dischargers.

Clean Water Act - Title II/Funding

- Title II expanded previous authorities and authorized the Construction Grants Program (CGP). CGP provided funding grants to plan, design and construct municipal sewage treatment facilities.
- The 1987 amendments to the CWA eliminated the CGP and replaced it with the Clean Water State Revolving Fund (CWSRF), which is supported by federal and state investments.



Clean Water Act- Titles III & IV

Standards & Regulations

- Discharges of pollutants from point sources to jurisdictional waters are prohibited except in compliance with a discharge permit
 - Point vs. Non-point
 - Point Source = discrete conveyance (think end of pipe)
 - Non-point Source=diffuse runoff (think runoff from field)
 - Jurisdictional = “navigable waters of the United States”
 - Discharge Permit: Requirements outlined in CWA § 402
- Discharge permit have 2 kinds of limits:
 - Technology-Based Limits
 - Water Quality-Based Limits

Clean Water Act Permits

- Discharger must apply for permit
- Permit will contain:
 - Effluent limitations, monitoring requirements, reporting requirements
 - Standard conditions and or/special conditions
- Typical length – 5 years
- Compliance with permit shields discharger from liability

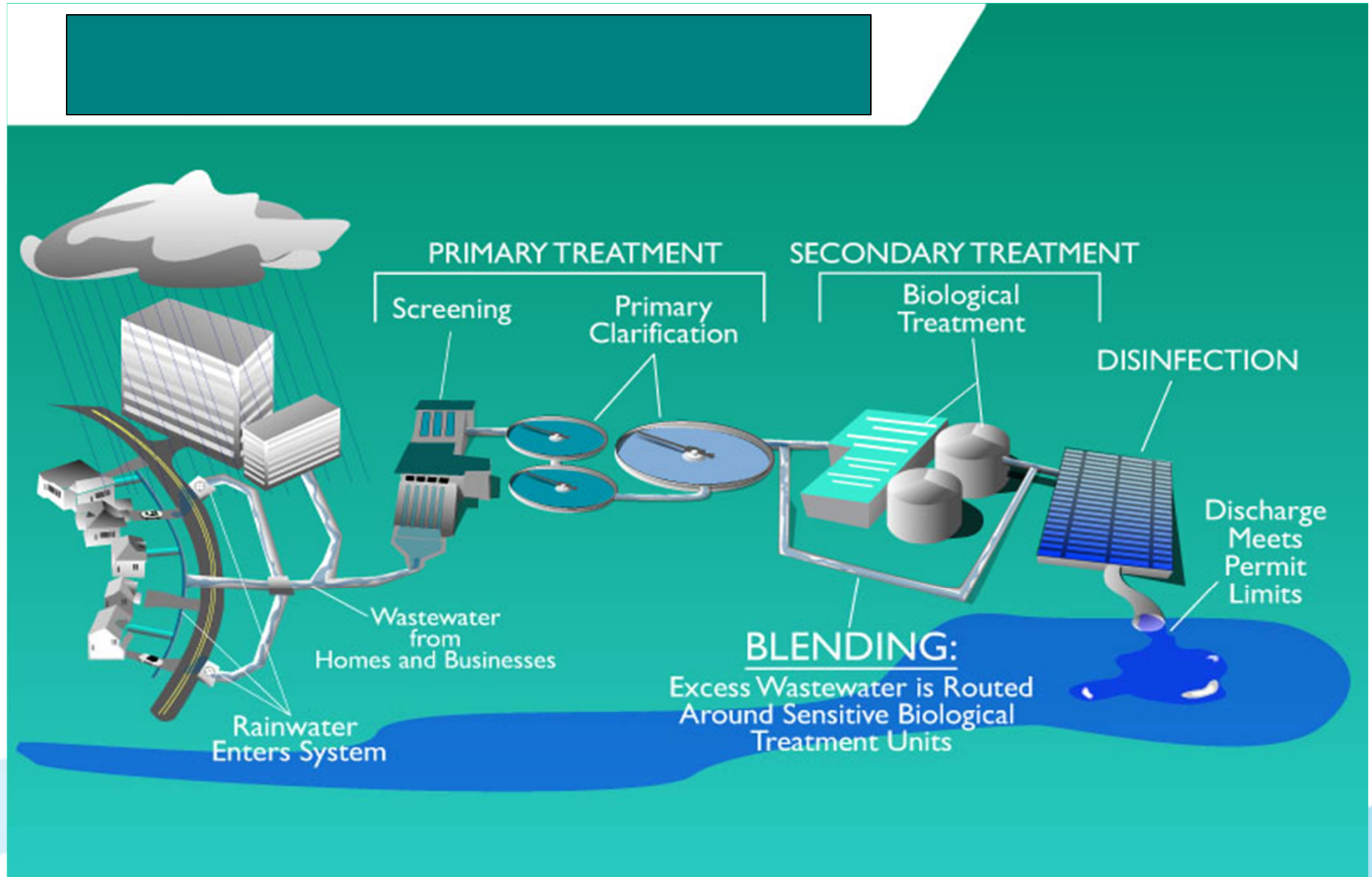
Clean Water Act Enforcement

- Penalties for noncompliance – can be criminal and/or civil penalties
- Enforcement can come from state or EPA
- Citizen suits
- Consent decrees/enforcement orders

Clean Water Act & Federalism

- EPA responsible for implementing requirements of CWA
- Under principles of federalism, states can apply to carry out implementation, including permitting/enforcement
- 46 states have delegation authority – ID, MA, NH, NM & DC not delegated
- Once approved, states carry out implementation with EPA oversight

Publicly Owned Treatment Works (POTW)



Wet Weather Issues

Lisa Hollander

Special Liaison for Legislative & Regulatory Affairs

Northeast Ohio Regional

Sewer District



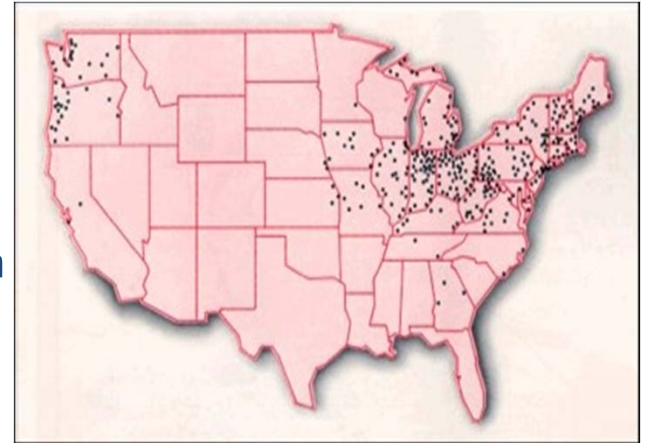
"Hey mom, I'm going over Tommy's. Their cellar is flooded again!"

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Sewer Types & Challenges

Combined Sewers (CS)

- o One pipe for both storm & sanitary wastewater
- o Located in approx. 800 US cities in NE, SE, NW(40 million people)
- o Overflow points designed to activate when system capacity exceeded (CSO)



Separate Sewers (SS)

- o Separate pipes for storm & sanitary wastewater
- o Sanitary wastewater treated at POTW
- o Stormwater addressed with “best management practices”(see CWA 402(p))
- o Overflow points designed to activate when system capacity exceeded (SSO)

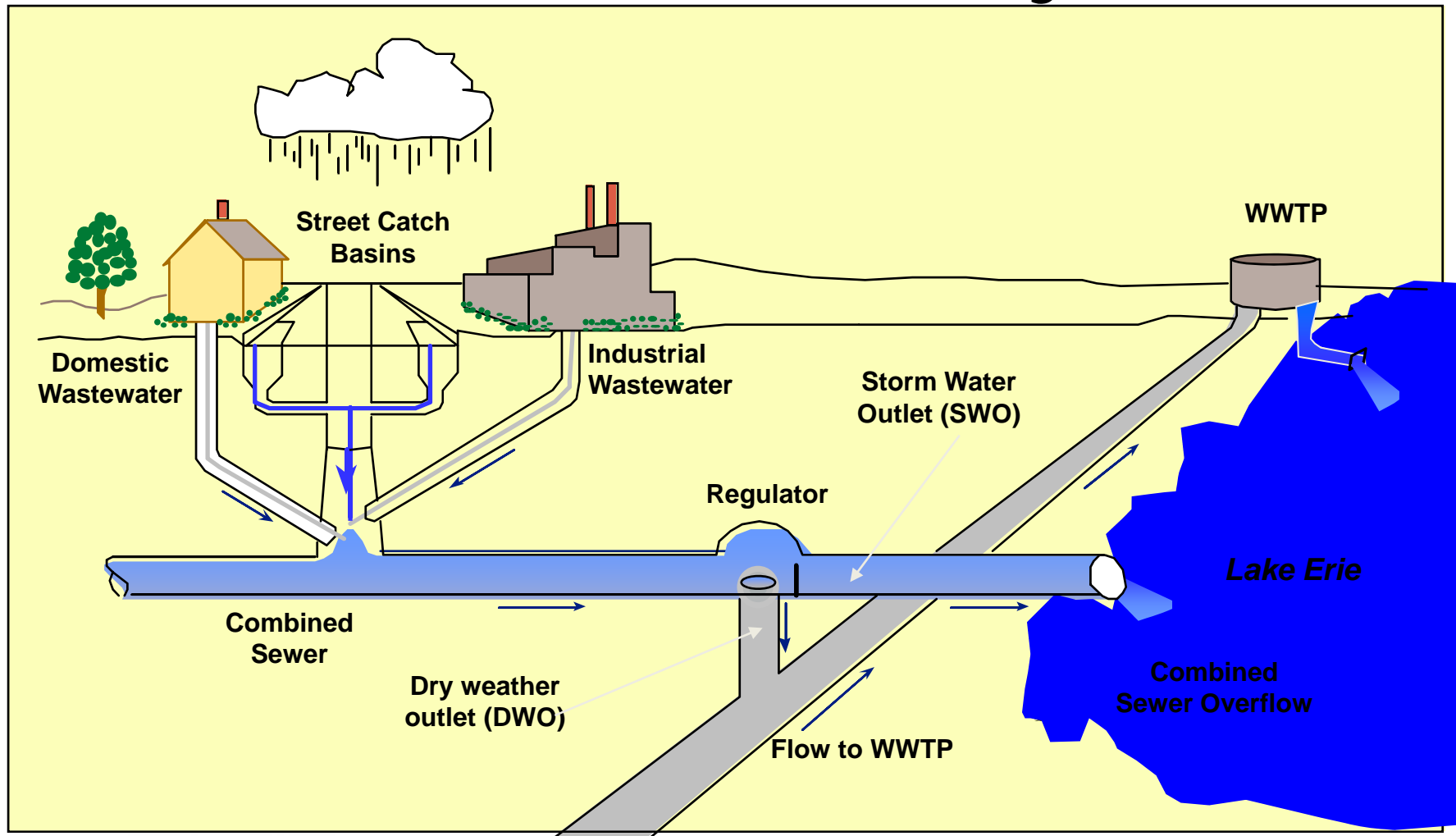


Causes of Sewer Overflows

- o Inflow & Infiltration
- o Blockages (roots, oil)
- o Illicit connections
- o System age
- o Wet weather (rain, melting snow)



Combined Sewer System

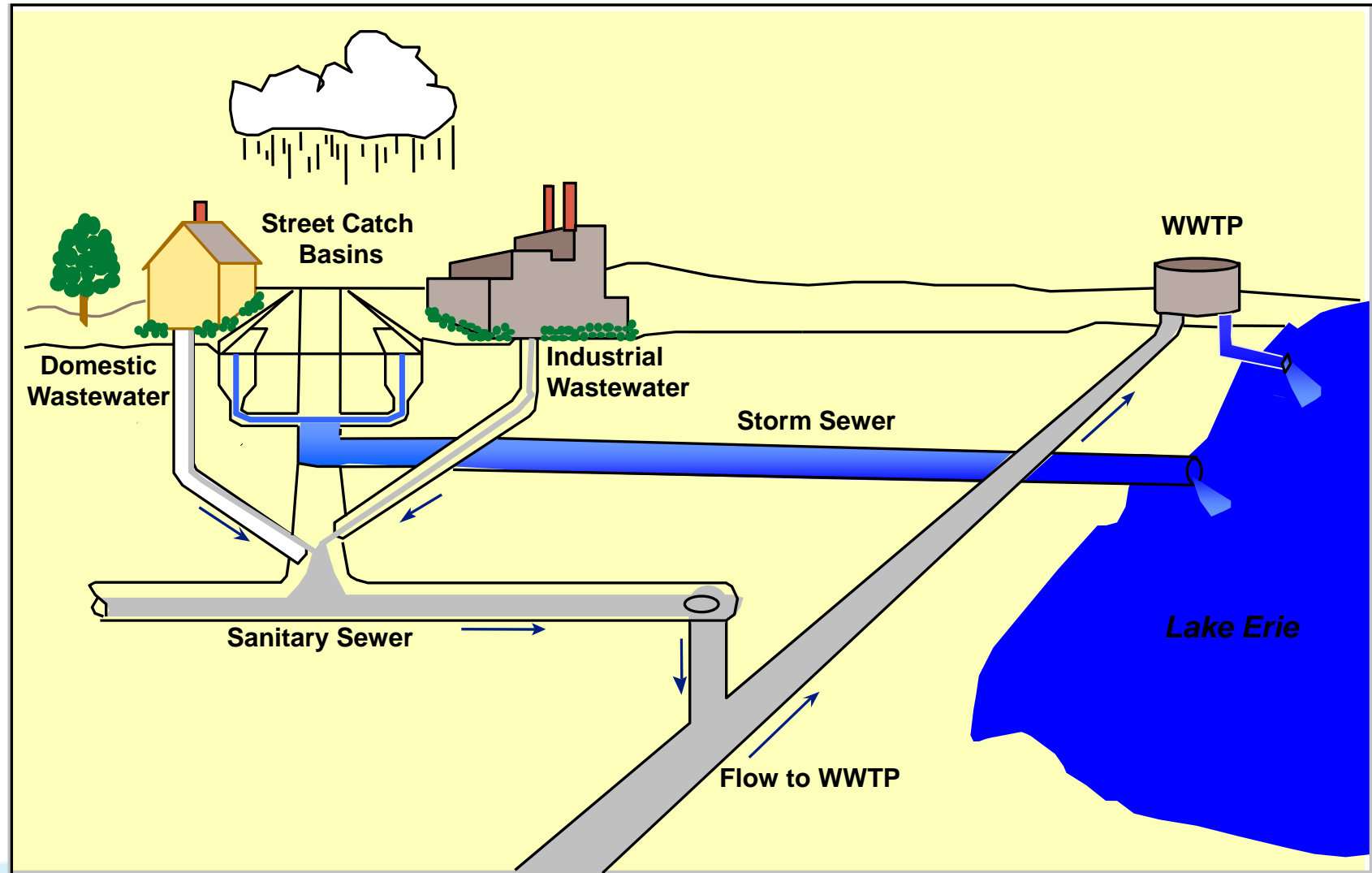


CSO Law & Regulation

- o 1994 CSO Policy
 - o CSO outfalls are “point sources” & require NPDES permits under CWA § 402
 - o CSOs must meet “9 Minimum Controls” (e.g., # 8–Public Notification)
 - o CSO cities to develop long term control plans to achieve water quality standards
- o CSO Policy codified (§ 402(q)) (2001)
- o Many CSO guidance documents (<http://cfpub.epa.gov/npdes/cso/guidedocs.cfm>)
- o EPA Enforcement priority for the past decade. Multiple cities have made billion dollar investments



Separate Sewer System

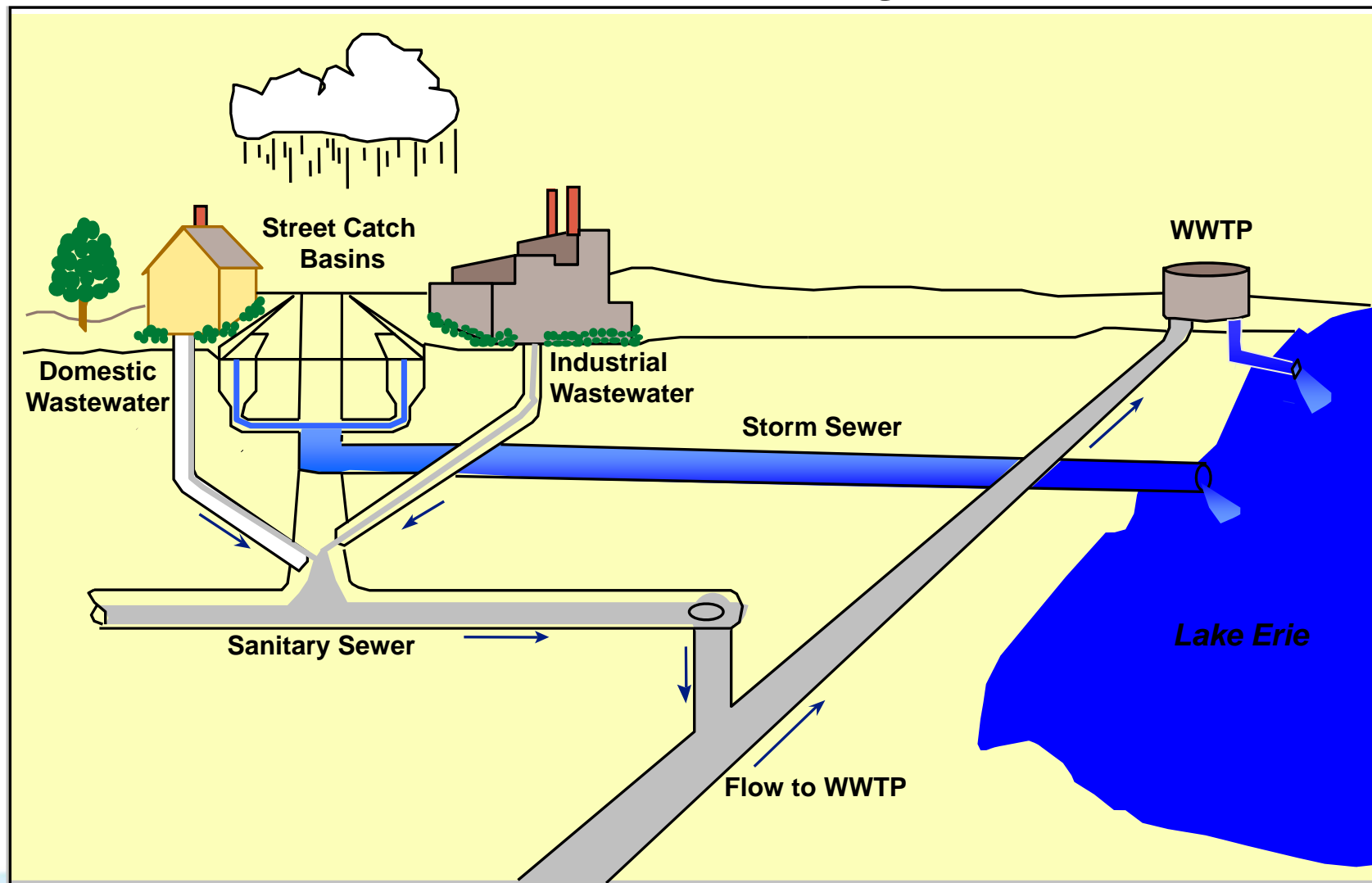


SSO Law & Regulation

- o EPA believes it cannot permit overflows, so SSOs are considered illegal
- o 1994-1999: FACA attempts to reach consensus on a federal program
- o 1/3/01: Outgoing Administrator Browner signs SSO Proposal
- o 1/24/01: Incoming Administration halts last minute regulatory actions
- o Still no SSO proposal, NACWA is pressing the EPA to issue a comprehensive rule to provide certainty and allow for capital planning.



Storm Sewer System





Stormwater Law and Regulation

- CWA § 402(p) governs industrial & municipal stormwater discharges
- Industrial stormwater discharges required to meet technology-based limits
- Municipal stormwater dischargers have unique requirement to control pollutants to “maximum extent practicable” (MEP)

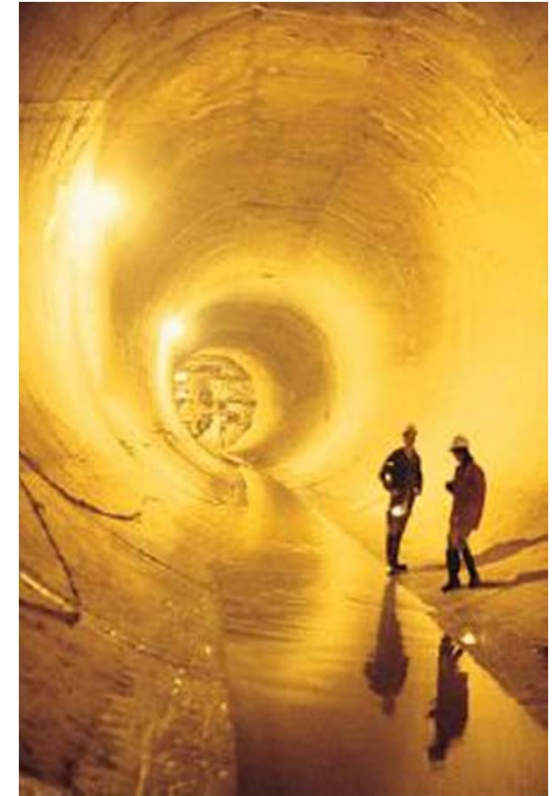


New Stormwater Rule

- EPA working on developing new national stormwater rule for municipalities
- Proposed rule by September 2011; final by November 2010
- Three main components:
 - Expanding area subject to federal municipal stormwater requirements
 - New requirements for new development/redevelop projects to encourage on-site retention
 - Retrofit requirements to replace existing stormwater controls

Wet Weather Impacts

- o CSO volume has dropped from over 1 trillion gal/yr to 850 billion gal/yr since 1994 (issuance of CSO Policy);
- o \$6 billion spent by cities on CSO control since 2002;
- o Estimated total SSO volume of 3-10 billion gal/yr; and
- o Estimated that over the next 20 years, \$88 billion needed to control SSOs, \$50.6 billion to control CSOs
- o http://cfpub.epa.gov/npdes/cso/cpolicy_report2004.cfm (EPA's 2004 Report)



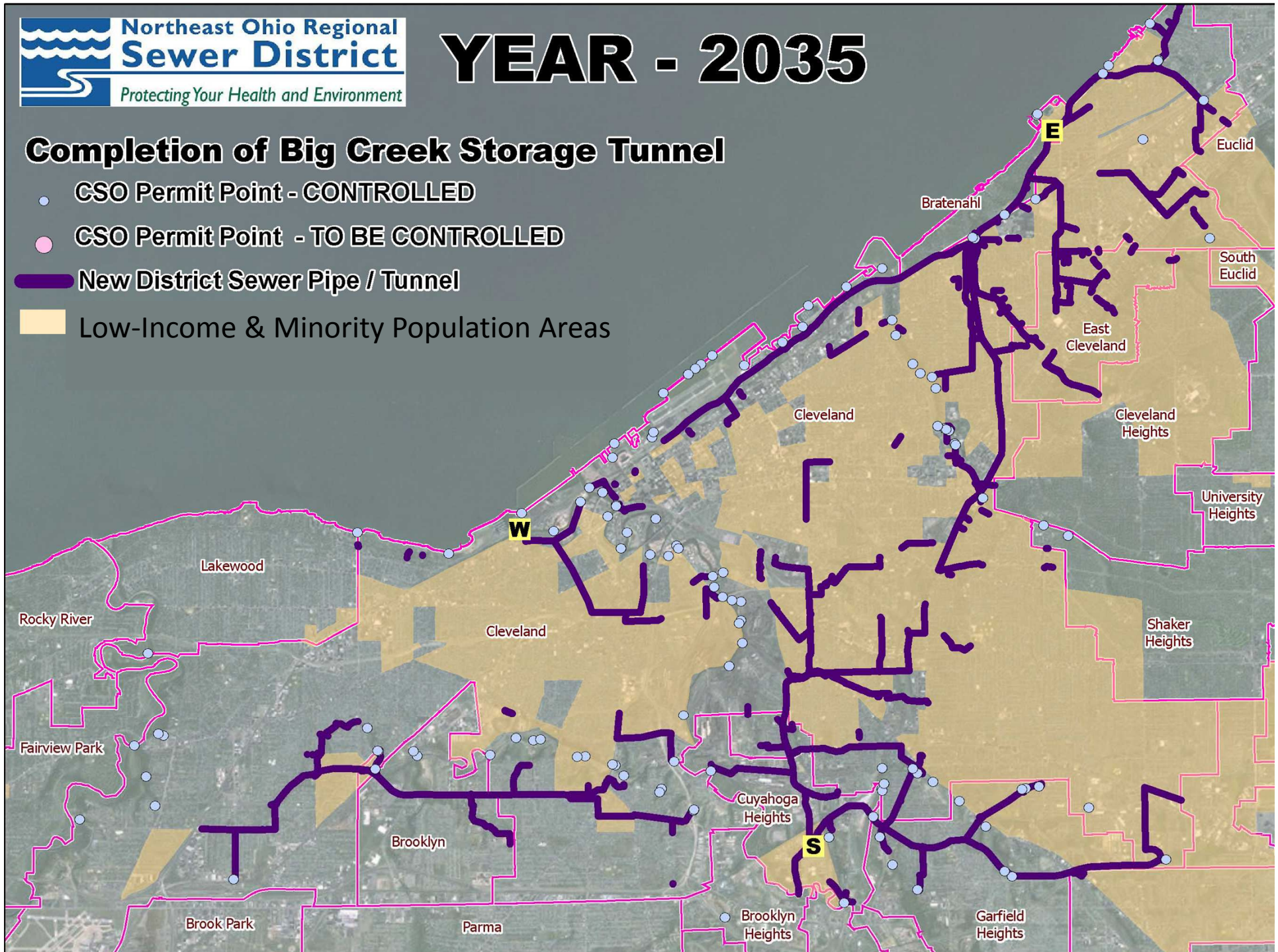
Consent Decrees

- Utilities with water quality problems due to CSO/SSO can be sued by federal govt. for violations of CWA
- Utilities/Gov't often reach settlement agreements or consent decrees (CD) to resolve issues and set schedule
- CDs can last 20 or more years and involve billions of dollars in infrastructure investments to reduce overflows
- CDs paid for through higher utility rates

YEAR - 2035

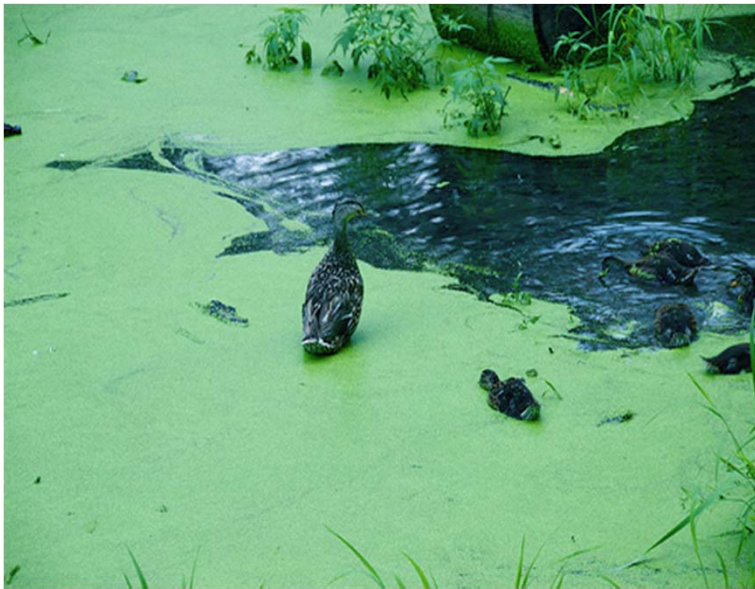
Completion of Big Creek Storage Tunnel

- CSO Permit Point - CONTROLLED
- CSO Permit Point - TO BE CONTROLLED
- New District Sewer Pipe / Tunnel
- Low-Income & Minority Population Areas



Other Regulatory Obligations

- Jeff Theerman, Executive Director, Metropolitan St. Louis Sewer District



Continuing Water Quality Challenges

- Tremendous progress has been made through use of the CWA's technology-based controls
- Water quality problems persist – more than 40,000 impaired waters
- Remaining challenges are complex, require more sophisticated approaches
- Nutrient over-enrichment (e.g., Chesapeake Bay, Gulf of Mexico) is a major cause of current impairments

Controlling Nutrients

- Sources of nutrients
 - POTWs are the primary point source contributor of nutrients
 - Nonpoint sources, including agriculture (fertilizers), are major sources of nutrients
- POTWs were not designed to remove nutrients – addition of advanced treatment is an option
- Best management practices can be used to reduce fertilizer use and runoff from agriculture operations
- Current CWA regulatory approach focused entirely on point sources

Efforts Underway to Address Nutrients

- Using current CWA authority, development of nutrient criteria at the state level – leading to water quality based effluent limits and TMDLs
- Farm Bill programs provide limited funding for conservation measures to address Ag-related nutrient discharges
- POTWs often pushed to limits of technology to further reduce nutrient discharges
- Stakeholders pursuing more holistic approaches to more cost-effectively address all sources of nutrients

Biosolids Management

- POTWs also manage the sewage sludge or biosolids produced during the treatment process
- Three main management options:
 - Land application – 50-60%; Landfilling – 20%; Incineration – 20%
- Proposed EPA regulations for incinerators
 - Emissions currently regulated under CWA
 - POTW cost approximately \$2-3 billion

Money Matters

- What Money Matters Is Not!
- Another federal funding effort like the trust fund
- An effort to dodge CWA requirements and/or stifle the shared objectives of the CWA
- An effort to avoid rate increases
- A wet weather effort



Money Matters

- Clearly CWA regulatory requirements and the costs to comply with them are expanding
- NACWA's Money Matters — Smarter Investment to Advance Clean Water campaign seeks to bring reason to the issue of CWA compliance affordability:
 - Address 2% MHI
 - Rethink 20 year timeframes, etc.

Money Matters

- Rethink the regulators' view that financial issues/cost should not be considered under the CWA
- Build coalitions with key groups (US Conference of Mayors, etc.)
- Confront competing water quality requirements and ensure a system in which they can be prioritized based on greatest water quality benefit
- Effort will demand legislative action to demand that EPA develop new approaches that meet the new economic realities

Money Matters- St. Louis Case Study

- Stormwater and Wastewater utility with large reg. needs
- \$4 B estimated costs for CSO and SSO compliance
- When treatment plant, asset management, and stormwater are included the number is \$6 B without further regulations
- Nutrients
- Biosolids/Incineration (national cost \$200M vs. our cost of \$250M)
- New stormwater regs; Climate change; Emerging contaminants

Money Matters

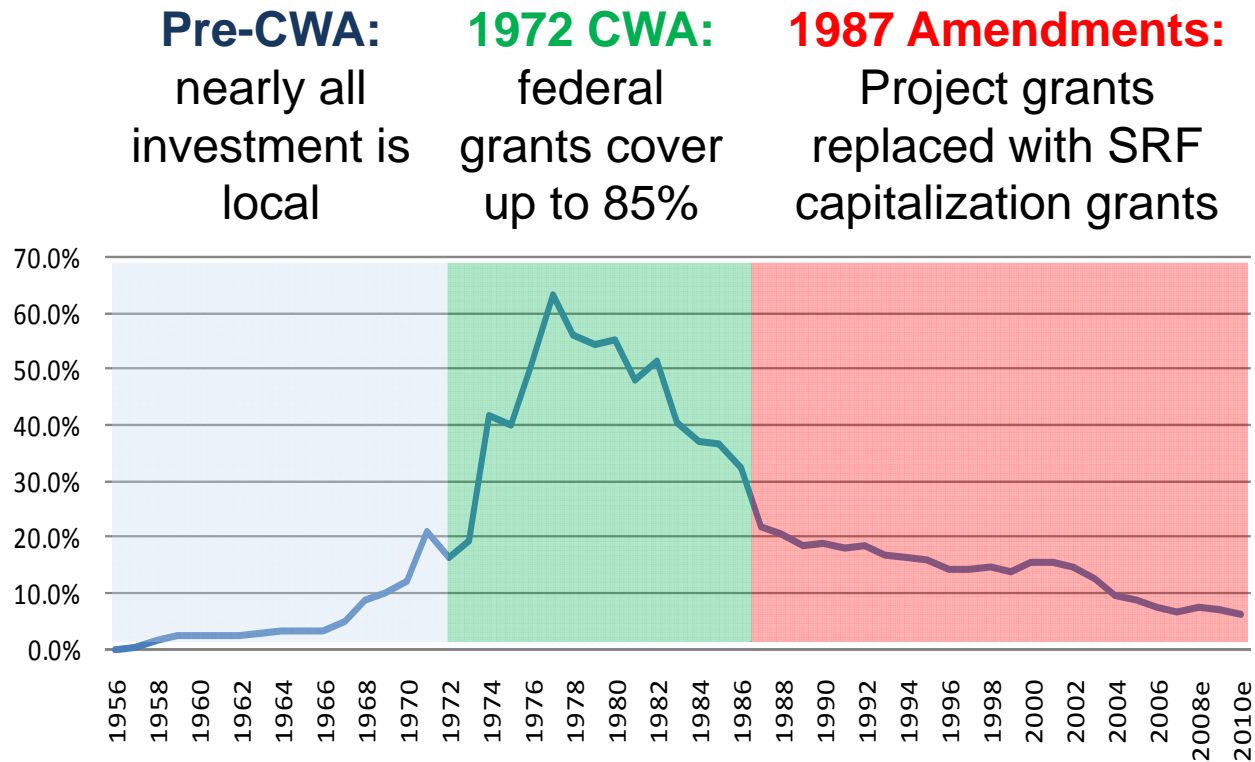
- No matter where you are in the country, no matter what type of sewer system or treatment plant you operate, the issue of prioritizing scarce resources to achieve the highest water quality benefits is important. Forty years after passage of the CWA we need to fundamentally rethink how it is implemented.

Financial Needs

- Ken Rubin, Managing Director, Rubin-Mallows Worldwide

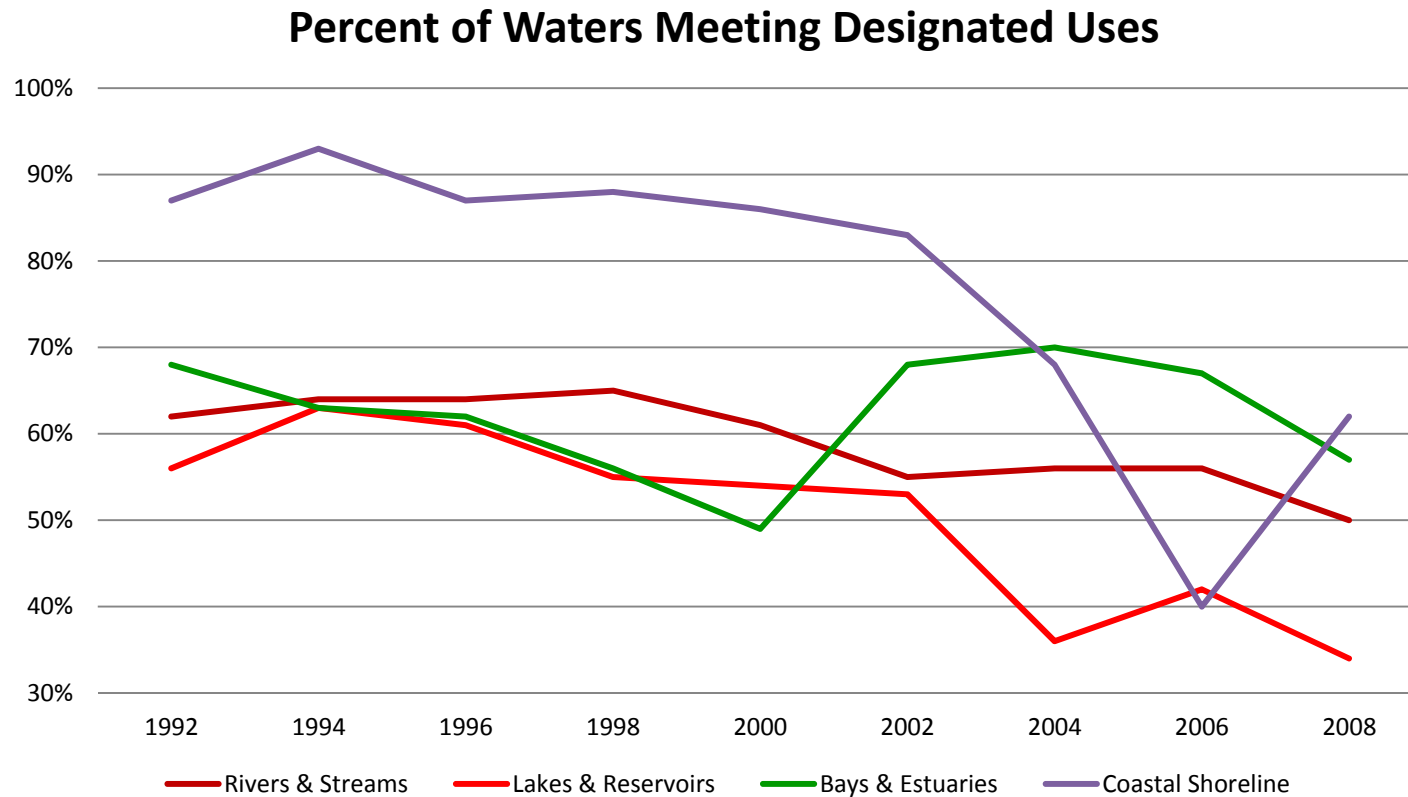


An Historical Perspective: Funding

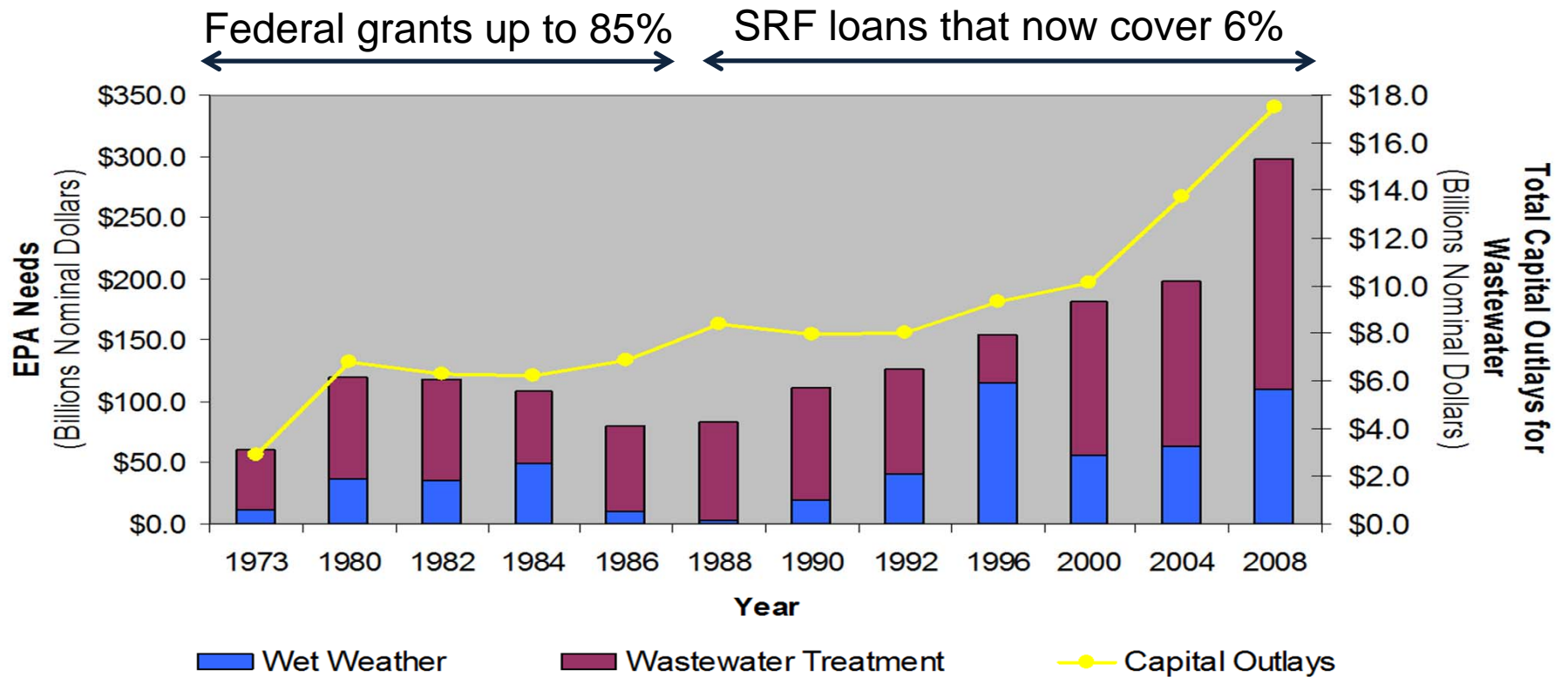


— Federal Share

An Historical Perspective: Water Quality

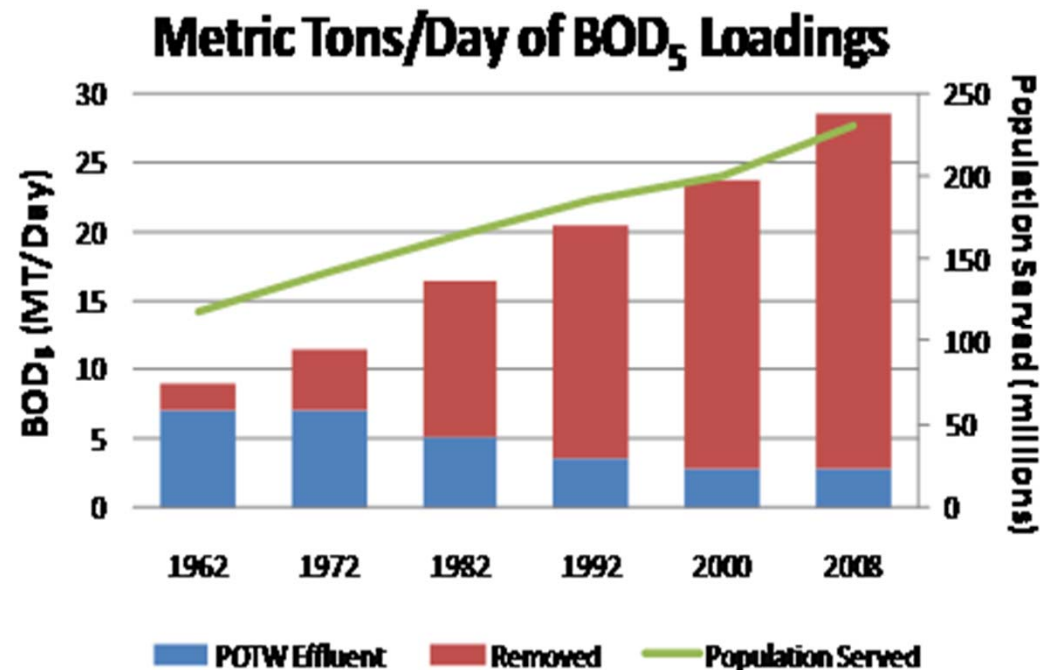


An Historical Perspective: “Needs”



An Historical Perspective: Benefits

- \$600 billion (\$2010) to build, repair, and replace wastewater infrastructure
- Prevented nearly 30,000 tons of organic pollutants a day from reaching America's waters
- Progress each decade, despite growth in population served, until the last decade
- Well documented benefits: ecological, fisheries, recreation, land values, industrial productivity, GDP



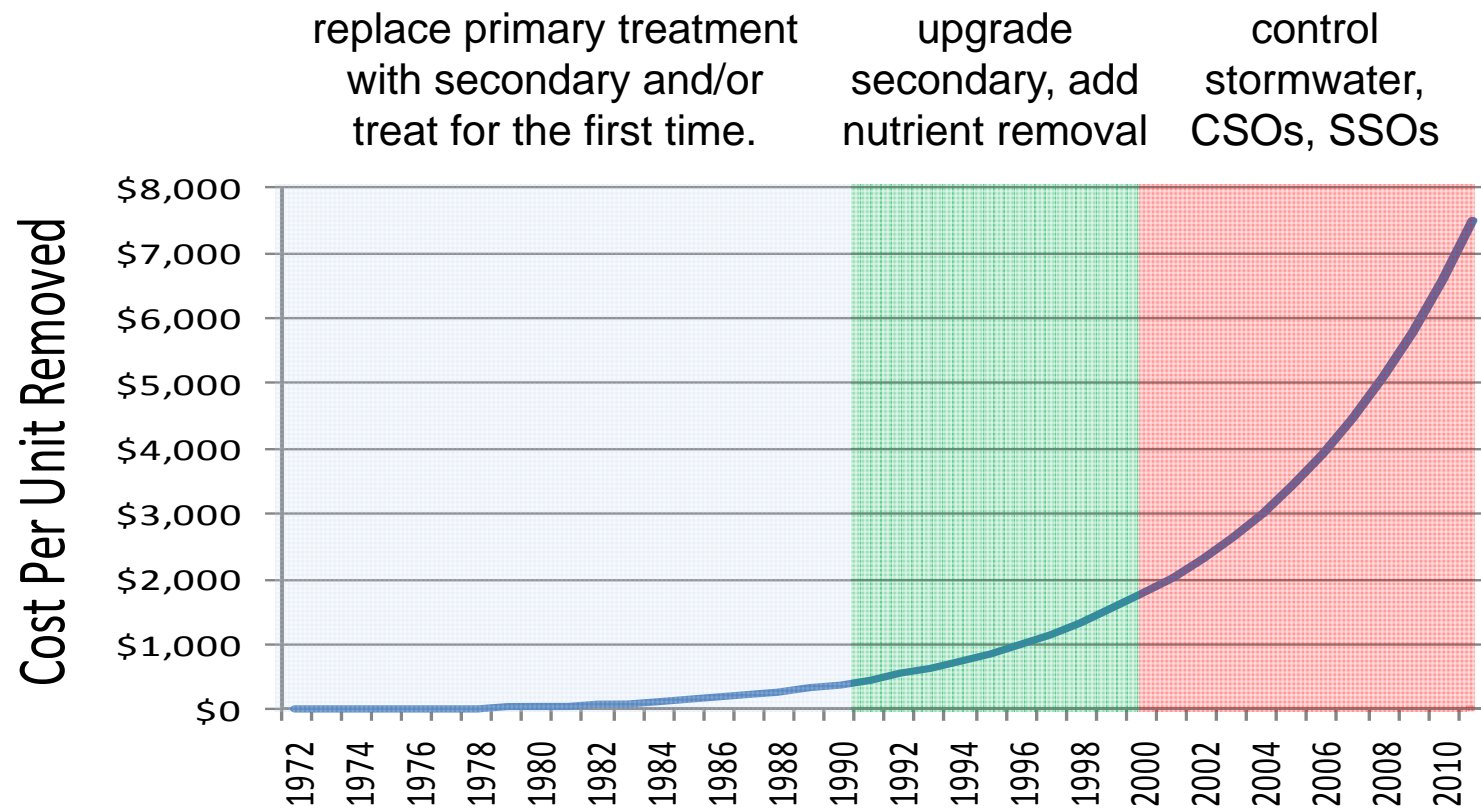
An Historical Perspective: Let's Review

- Pre 1972 CWA: local governments make investment decisions, water quality declines, needs unknown
- 1972-1987: federal project grants cover 50-60% to target highest needs, water quality improves dramatically, needs stable, benefits mount
- 1988-Present: federal SRF capitalization grants that cover 6%, states set investment priorities based on local inputs, water quality declines steadily, needs increase steadily, benefits flat.

Why?

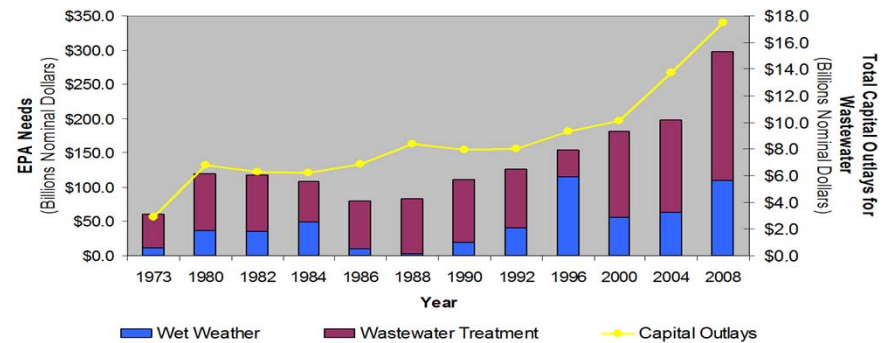
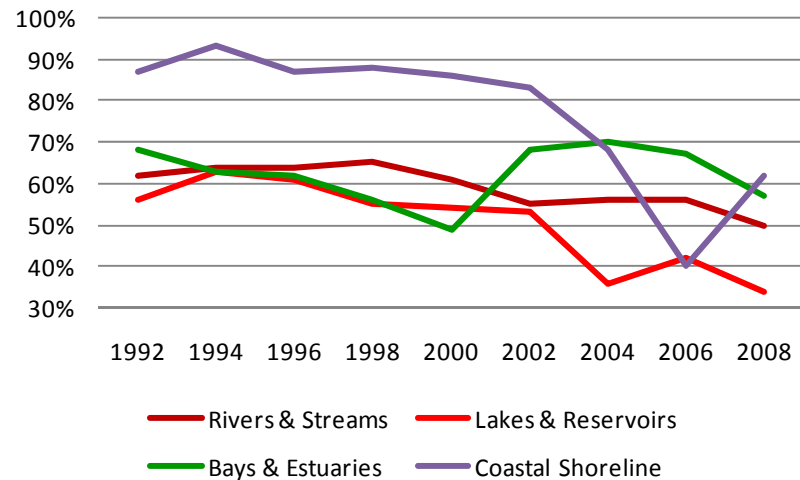
- We've harvested the low-hanging fruit
- From society's perspective, we're under-investing and have been for some time
- Local ability to pay has limited overall investment, and local priorities tend toward customer needs over regional or national priorities, where they compete.
- To a certain extent, we've been investing in the wrong things

Low Hanging Fruit and the Unit Removal Curve



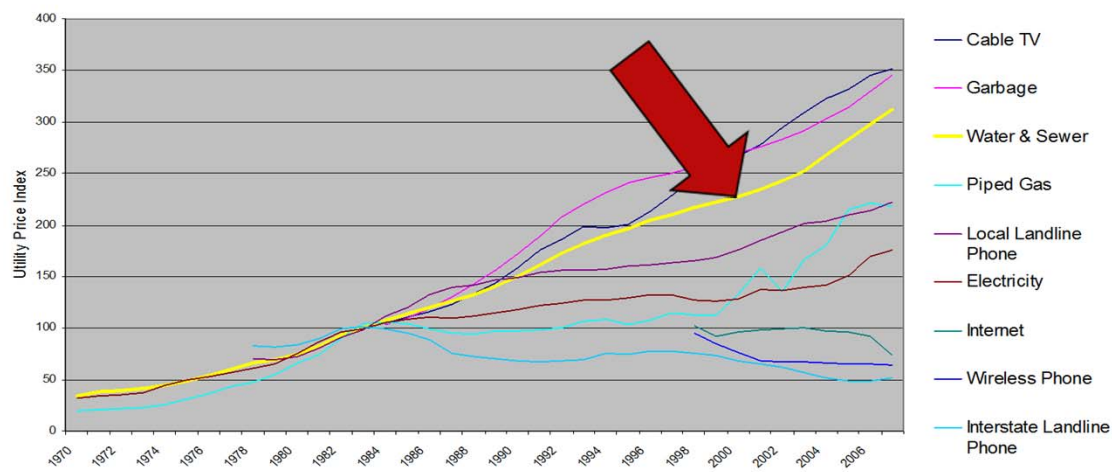
Chronic Under-Investment

- Water quality goes down in rivers, lakes, estuaries, and coastal waters
- Investment needs to meet Clean Water Act objectives go up, despite increases in investment in all periods
- Because clean water benefits flow downstream, communities that pay 100% of the costs of clean water will tend to choose less water quality than society as a whole would choose

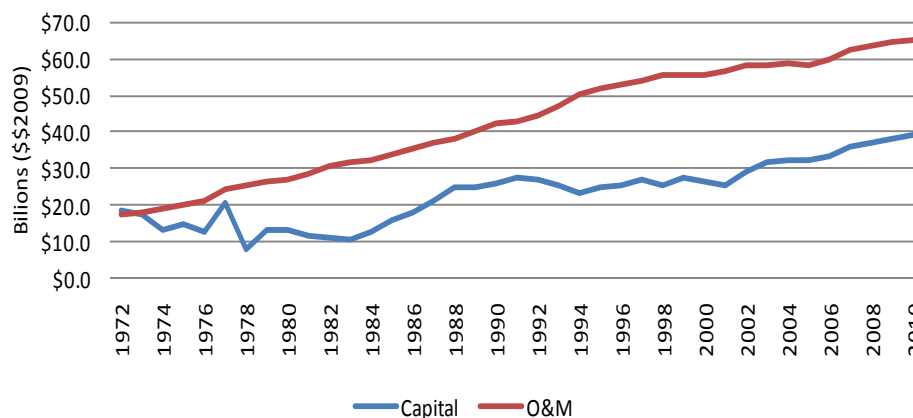


Where they Compete, O&M Can Crowd out Capital Investment

- Local water and sewer rates are increasing faster than rates in nearly any other network service – 3% a year above inflation
- Local O&M is roughly twice local capital investment, so O&M crowds out capital, especially in revenue limited communities



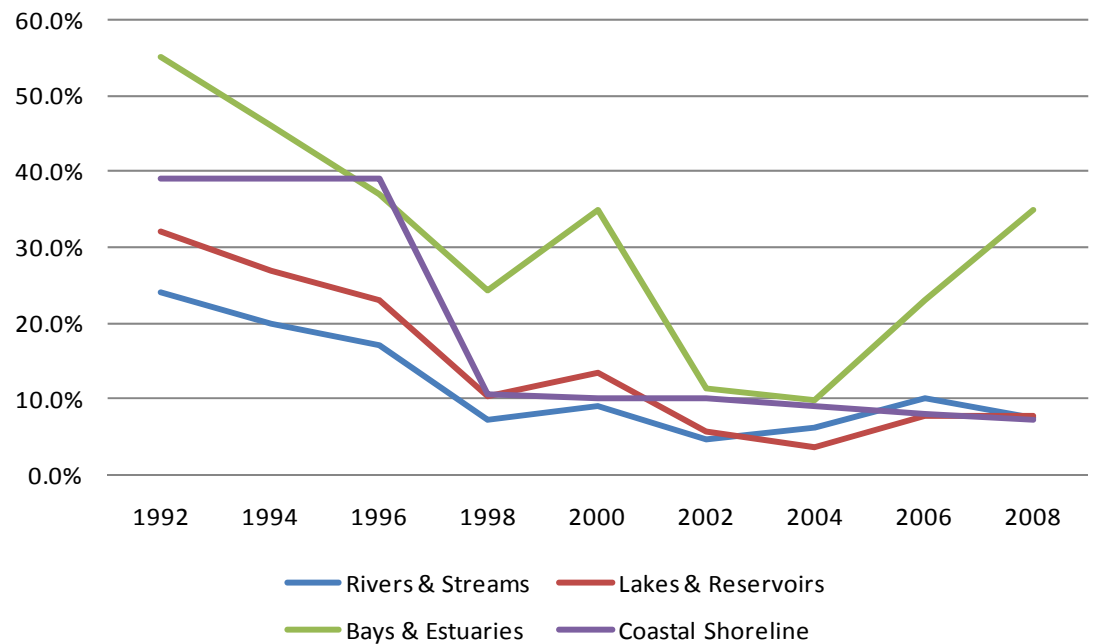
**Total Local Government Spending on Water and Wastewater
(2009 dollars)**



Controlling Agricultural Runoff Will Deliver Greater Water Quality Gains Per Dollar Invested

- State data are clear that POTWs contribute small proportions of remaining impairment in rivers, lakes, and coastal shoreline.
- Agricultural runoff and airborne deposition are the largest contributors to impairment today.

Remaining Water Quality Impairment Due to Municipal Point Sources & Storm Water



Many Communities Struggle to meet Customer Service Requirements and Comply with Environmental Rules

Akron, Ohio – Public Utilities Bureau

RISING COSTS

25% increase in 2010 rates alone

OUTDATED & OVERBURDENED

System designed in 1916 to serve 85,000 now serving 350,000

Atlanta, Georgia – Department of Watershed Management

RISING COSTS

Rates expected to jump 300% from 2003-2010

ECONOMIC REALITY

10% unemployment, 24% of all residents at or below poverty line

BUDGET CRISIS

43% of annual budget used to service compliance debt burden

Washington, D.C. – DC Water, Blue Plains

RISING COSTS

A 40% rate increase over 4 years for District residents

ECONOMIC REALITY

2 out of 3 District residents live at or below the federal poverty line. One fifth of all employed DC residents make less than \$11.00 an hour

BUDGET CRISIS

15 years ago there was a 75% Federal investment in water infrastructure, today it is less than 5%

Can We Meet the Goals of the Clean Water Act?

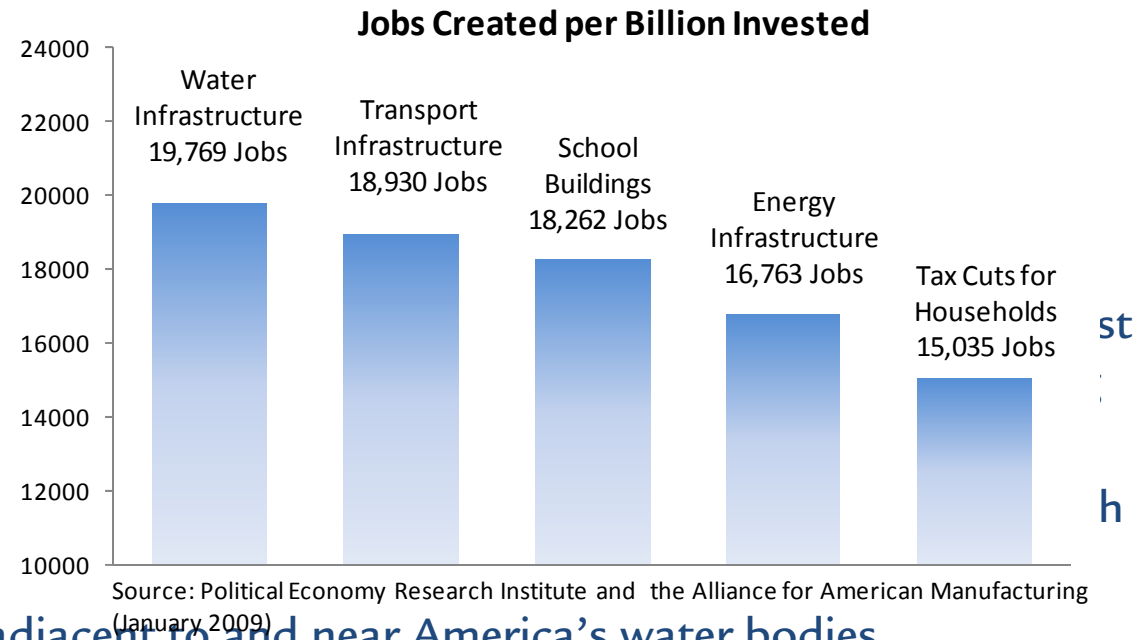
- Yes, if we maximize water quality returns for every dollar invested; reduce unit costs through innovation, technology, and operating efficiencies; and allow flexibility in local decisions.
- These approaches will take time, but even if implemented right away and they were 100% successful, they will not be enough – the backlog of needs is too high, funds are too short, and many communities are already at their tipping points.
- We simply need to invest more now.

How Can Increase Investment in Today's Budget Climate?

- New revenue streams on the order of \$5 billion a year dedicated to high-priority clean water investments.
- With State match, reasonable leverage, and continued local investment at current rates, this would increase total capital investment in wastewater infrastructure by 50%.
- Administer the program through existing SRFs, but promote wider mix of financial instruments, based on affordability criteria.
- Provide incentives for technology innovation and operational efficiency.
- Enable states to fund enforceable non-point source controls where effective and efficient

Benefits of a 50% Increase in Investment in Wastewater Infrastructure

- Cleaner water
- Enhanced fisheries
- Enhanced recreation with household expenditures
- 200,000 new jobs in unemployment and it
- More productive agriculture and m public dollar invested in water infr
- Higher land and real estate values adjacent to and near America's water bodies



Questions?

Visit us on the web at www.nacwa.org
or contact our staff with any questions
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