INTERNATIONAL MUNICIPAL LAWYERS ASSOCIATION
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Muni Tech 101 : Wastewater Issues

When EPA Comes Knocking…

Sanitary Sewer Overflows, Combined Sewer Overflows and Consent Decrees

What *YOU* Need to Know

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WSSC
Where Water Matters

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Washington Suburban Sanitary Commission

- WSSC is a public utility providing water and wastewater services to 1.8 million customers in Washington DC suburbs
  - 1,000 square mile service area
  - 6 Wastewater Treatment Plants
  - 5,300 miles of sewer mains
  - 41 wastewater pump stations

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Wastewater Infrastructure Needs

- About 9,739 WW systems in US, with 750,000 miles of public sewer mains. In 2002, **98%** of these were municipally owned.
- ASCE estimates WW infrastructure will need **$298 Billion** over next 20 years
  - 75% of that amount is needed for pipes to address SSOs and CSOs

Since 2007, EPA has required cities to invest more than **$15B** to eliminate CSOs and SSOs.

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Source: 2013 ASCE Report Card, www.infrastructurereportcard.org

Sanitary Sewer System

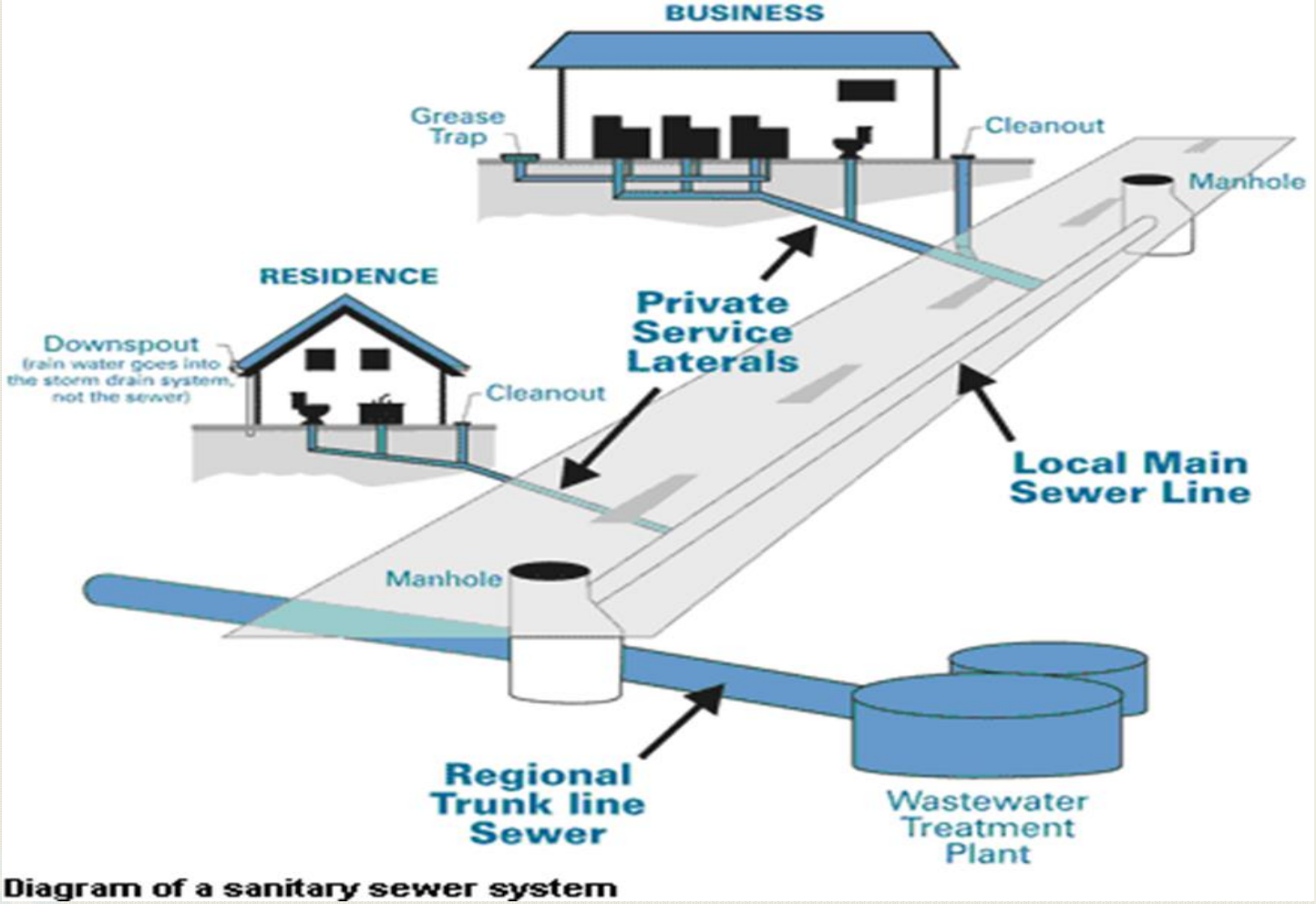

Diagram of a sanitary sewer system

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Sanitary Sewer Overflow (SSO)



SSOs occur when untreated sewage is discharged into the environment prior to treatment

Typical Causes –

- Infiltration or inflow of stormwater
- Sewer main break or backup
- Pumping station malfunction or power failure
- Operator error at treatment plant

EPA estimates over **40,000** SSOs occur each year with several **billion** gallons discharged

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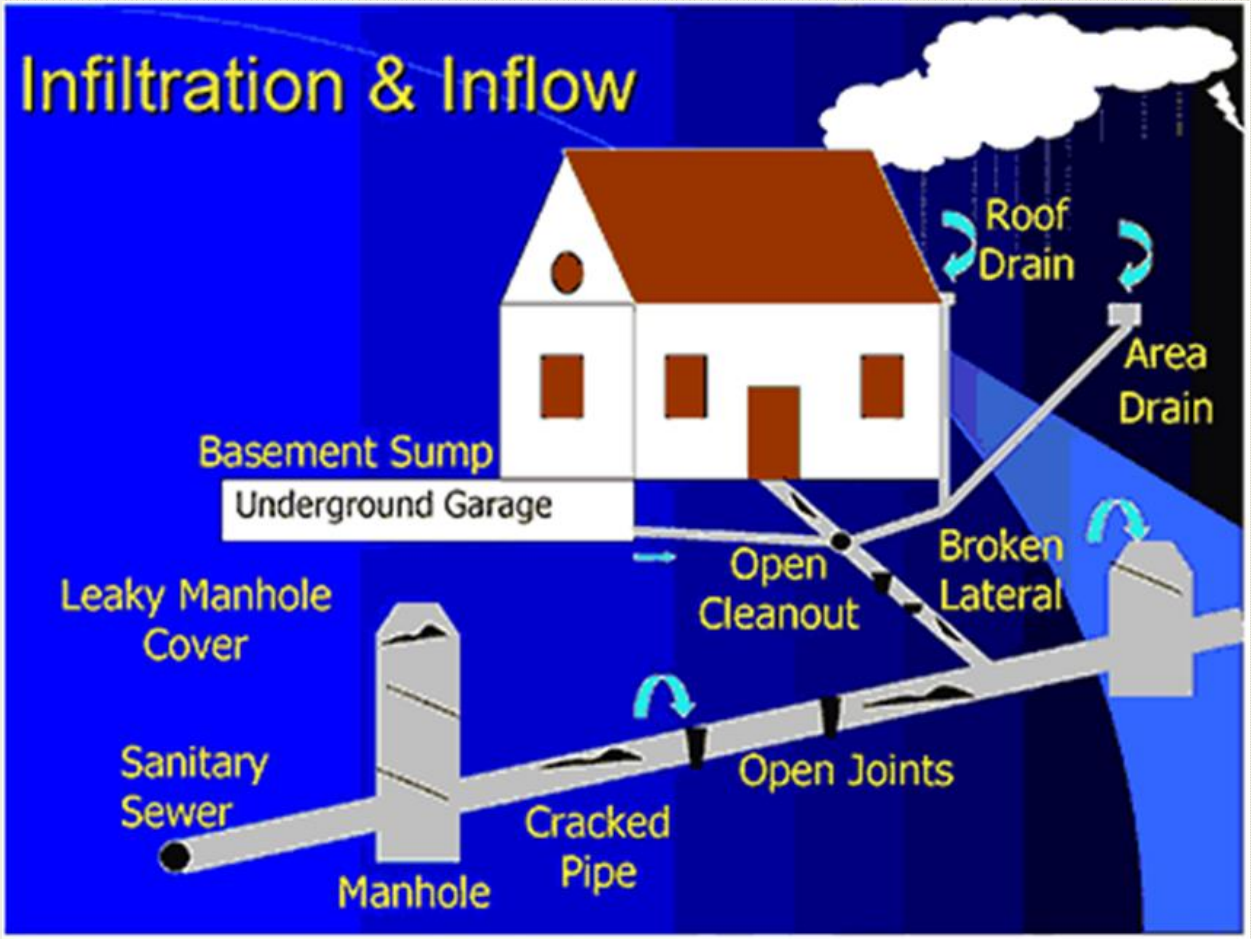
Infiltration and inflow (I&I)



SSOs may be caused by Inflow & Infiltration from various sources

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Sewer main breaks or backups

Typical Causes -

- Excessive Fats, Oils and Grease
  - Sticks to walls of sewer mains and decrease diameter of pipe
  - FOG programs require pretreatment by commercial customers, but caused by residential customers as well
- Rubbish, Roots or Foreign Objects introduced to the Sewer System
  - Tree roots can crack pipes over time
  - Disposable Wipes big problem

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Combined Sewer Overflow (CSO)



Some states and municipalities have sewer systems that also collect stormwater

During major rain events, the volume of wastewater collected in the system exceeds treatment capacity, and is designed to overflow into nearby streams or rivers

These discharges include untreated human and industrial waste

CSOs affect more than 700 US cities and towns per ASCE

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WSSC Consent Decree

- Negotiated judgment against WSSC in settlement of lawsuit brought by EPA, MDE, and various environmental groups - entered 12/2005
  - Suit alleged violations of the federal Clean Water Act and analogous state law provisions in connection with SSOs from the WSSC sewage system.
- In addition to penalties, WSSC agreed to implement a series of remedial measures

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WSSC Consent Decree



Years 1-8

Sanitary Sewer Evaluation Survey (SSES)
Closed Circuit Television (CCTV)
Trunk Walk (Lines > 15")
Sewer Cleaning
Fats, Oils, & Grease Program (FOG)
Collection System Modeling
Pump Stations

Years 1- 10

Years 11-12

Number of SSOs
Number of basement backups
Reduction in Inflow/Infiltration (I/I)
Effectiveness of Preventive Maintenance

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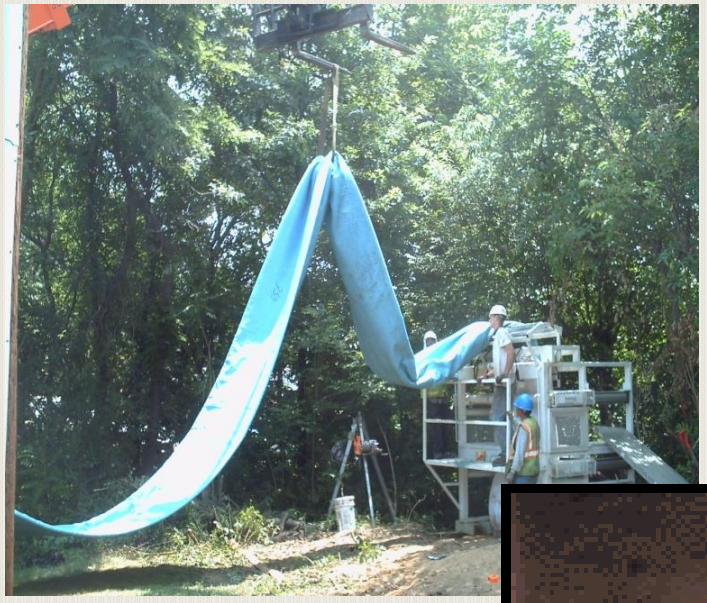
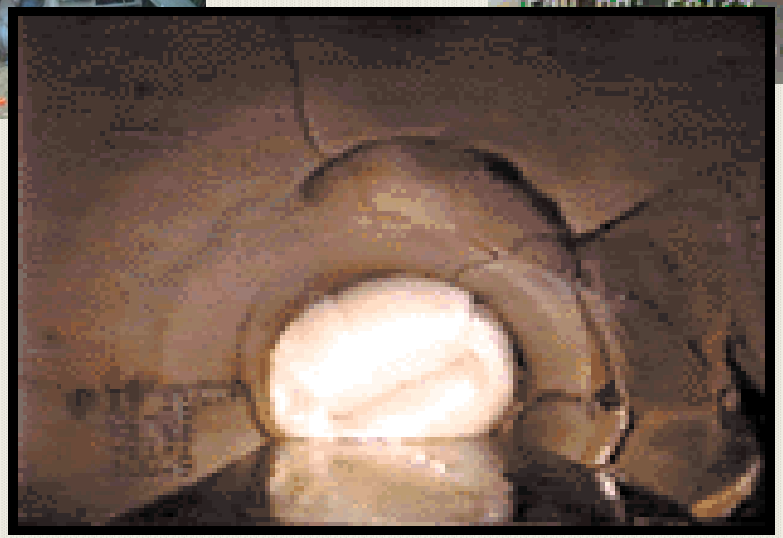
Rehabilitation Techniques
Sewer Lining



Lining ready
for installation.



After lining is
cured in place.



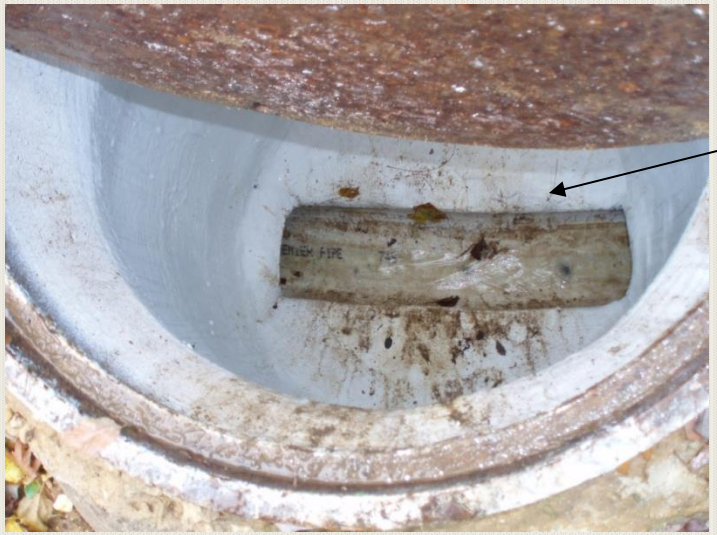
Lining being
inverted in pipe

Manhole Rehabilitation Techniques



Manhole
Chimney Seal





Manhole
Lining

WSSC Consent Decree Total Costs

Description	Projected Total Cost to Date	Actual Cost to Date
Consent Decree (All Articles)	**$1,433,285,410.70**	**$748,380,239.44**
Article 06	$994,655,514.01	$545,884,584.88
All other Articles Total Cost	***$436,484,221.69***	***$200,469,559.69***
General Cost	$59,588,425.00	$16,554,282.00
Article 02	$85,252,082.00	$51,046,198.00
Article 03	$41,656,161.69	$21,130,438.69
Article 04	$32,287,866.00	$14,472,157.00
Article 05	$2,708,764.00	$2,708,764.00
Article 07	$6,050,000.00	$0.00
Article 10	$169,869,633.00	$66,257,519.00
Article 11	$34,028,193.00	$23,257,104.00
Supplemental Environmental Projects	$5,043,097.00	$5,043,097.00
Stipulated Penalties	$2,145,675.00	$2,026,094.87

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WSSC Statistical Data

Not a huge decrease given the amount of resources expended –

Note that the volume varies significantly and doesn't correlate to the # of events

Calendar Year	# of SSOs	SSO Volume (thousand gallons)
2006	204	14,400
2007	134	9,200
2008	185	56,800
2009	181	690.9
2010	127	581.9
2011	173	34,800
FY 2015	**119**	

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WSSC Consent Decree Issues and Concerns

- Joint Permits
  - Maryland Department of Environment
  - United States Army Corps of Engineers
- Rights of Entry
- National Park Service
- Stream Stabilization Permits
- Contractor Capacity Limitations
- Modifications to approved permits
- Time Constraints

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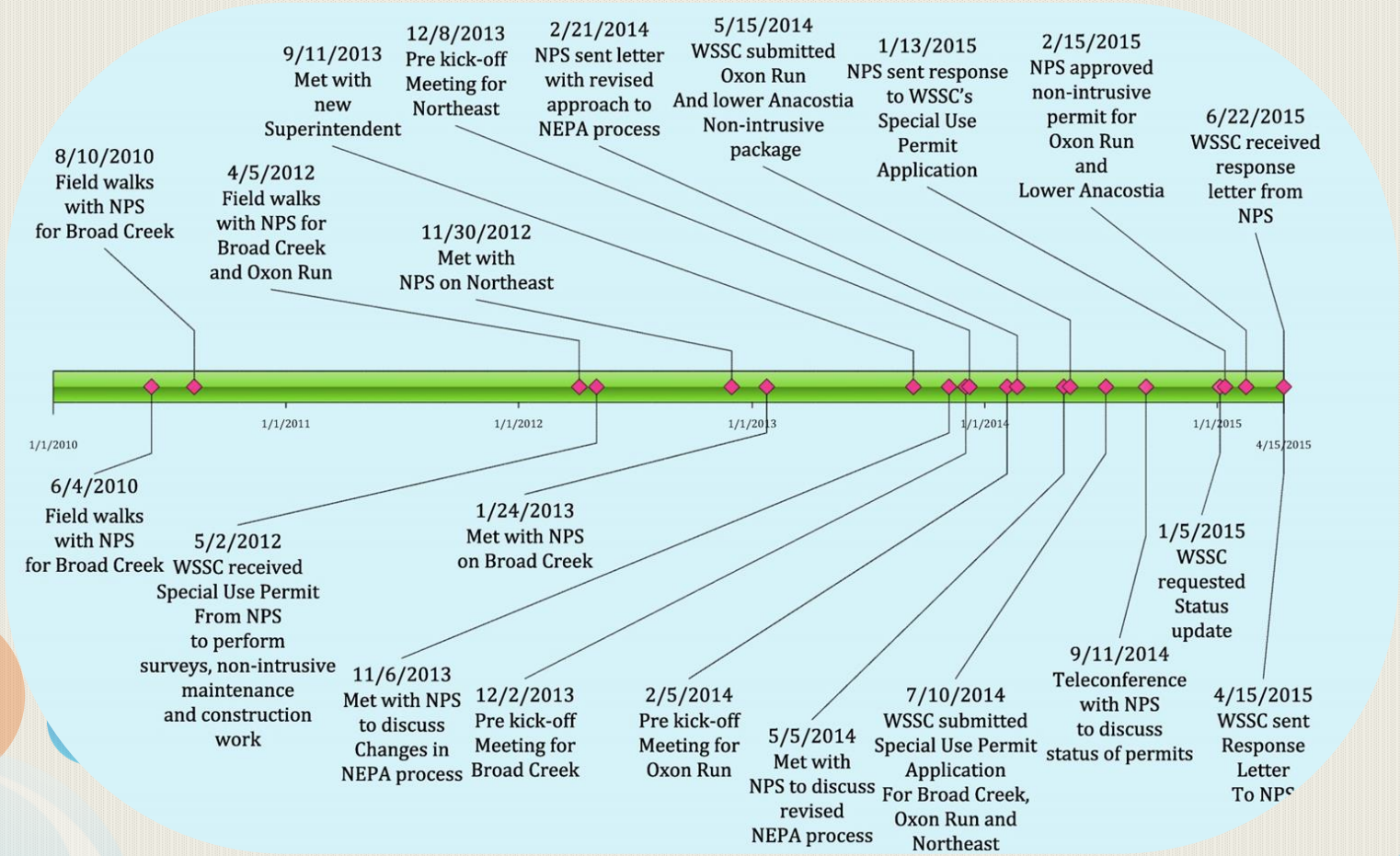
National Park Service Permit Problems



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Silver Lining?

- Consent Decree requires Line Blockage Analysis after every basement backup
  - Requires CCTV of main and analysis of cause
  - Preventative measures identified and scheduled
  - Team of qualified specialists

Assists in defense of negligence suits!

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Recent Consent Decrees

- **9/15/2015 - Puerto Rico Aqueduct & Sewer Authority**
  - NPDES violations - failing to report and eliminate SSOs
  - Projected Value of work - **$1.5 Billion**
  - No Civil Penalties in recognition of economic hardship
- **8/17/2015 - Delaware County Regional Water Quality Control Authority**
  - Overflow Control Plan for CSOs
  - Civil Penalties - **$1.375 Million**
  - Projected Value of work - **$200 Million** over 20 years
- **7/28/2014 - East Bay Municipal Utilities District**
  - Repair and upgrade 1500 miles of sewers to reduce SSOs
  - Value of work - **$1.5 Billion**
  - Civil Penalties - **$1.5 Million**

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Green Infrastructure

- EPA has recognized Green Infrastructure as significant component of effective program

http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm

- DC Water – was allowed to extend timeframe for completion of its Consent Decree Requirements
  - modified plan includes Green Infrastructure that may reduce or eliminate need for major tunnel
- GI incorporated into most recent Consent Decrees

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Key Terms and Resources

- National Pollutant Discharge Elimination System (NPDES) permitting program
  http://water.epa.gov/polwaste/npdes/index.cfm
- Combined Sewer Overflow Control Policy
  http://water.epa.gov/polwaste/npdes/cso/CSO-Control-Policy.cfm
- SSO Regulations
  http://water.epa.gov/polwaste/npdes/sso/Sanitary-Sewer-Overflows-and-Peak-Flows-Regulations.cfm
- SSO FAQs
  http://water.epa.gov/polwaste/npdes/sso/SSO-FAQs.cfm
- SSO Analysis and Planning Toolbox
  http://www2.epa.gov/water-research/sanitary-sewer-overflow-analysis-and-planning-ssoap-toolbox

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QUESTIONS?

Feel free to call or email me

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