

Urban Stormwater and MS4 Compliance: What EPA looks for in Municipal Audits

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Stormwater is a leading cause of water quality impairment and its impact is growing

- Urban stormwater is a leading source of impairment
- Fast growing water quality concern
 - Approximately 800,000 acres being developed every year, growing to over 1.0 million acres by 2039
- Development increases the amount of impervious cover in the landscape
- Small increase in impervious cover leads to big impacts in receiving waters
- Development upstream can cause downstream impacts in communities
- Local governments face growing wet weather-related costs



EPA's National Enforcement Initiatives

- ▶ <http://www.epa.gov/compliance/data/planning/initiatives/initiatives.html>
 - ▶ **Keeping Raw Sewage and Contaminated Stormwater Out of our Nation's Waters**
 - “This National Enforcement Initiative will focus on reducing discharges from combined sewer overflows (“CSOs”), sanitary sewer overflows (“SSOs”), and municipal separate storm sewer systems (“MS4s”) in FY2011–13...”
 - Must inspect and address ALL Phase I MS4s by 2016
 - Inspecting and addressing Phase IIs encouraged
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EPA Region III Objectives

- ▶ **Assess and enforce compliance with MS4 permits**
 - Are permittees complying with MS4 permits and being protective of aquatic resources?
- ▶ **Assess permit quality**
 - Are current permits protective, enforceable, meaningful?
- ▶ **Assess state program effectiveness**
 - Are states' administering effective programs?
 - Are they monitoring and inspecting MS4s?
- ▶ **Compel change in all areas**
 - General program effectiveness and Chesapeake Bay protection
- ▶ **Cross-training**
 - Permit writers participating in inspections
 - Inspectors reviewing permits
 - Information sharing



EPA Region III MS4 Initiative

- ▶ Began in earnest in FY2009
- ▶ Total inspections to date:

	Phase I	Phase II
◦ FY09	3	0
◦ FY10	6	6
◦ FY11	4	2
◦ FY12	4	6
◦ FY13	7	1
◦ FY14	1	7 (plus 16 more planned)

- ▶ Phase II Annual Report reviews also being conducted.



The Good



- ▶ A few examples based on what we've seen, but by no means an exhaustive list. Communication amongst MS4s is great.
- ▶ Watershed evaluations – Fairfax Co, Pr. William Co, Charlottesville, Carroll Co, Frederick Co
- ▶ Construction/PCSM – Chesapeake
- ▶ Innovative BMPs and Retrofits – Charlottesville, Carroll Co, Lancaster, Fort Lee, Baltimore Co
- ▶ IDDE and System Assessments – Richmond, York, Norfolk, Baltimore, Fairfax Co, Montgomery Co, Arlington, Rockville

What makes a GOOD permit?

- ▶ Clearly defined goals
 - Tells the permittee what they must do, doesn't leave it up to them to interpret
- ▶ Measurable targets
 - Specific dates
 - Specific quantities
- ▶ Enforceable language
 - Use of shall vs. may
 - Exclude phrases such as “at a minimum”, “where necessary” and “to the extent practicable”



Sample Permit Language...the good stuff

- 1) The permittee shall continue to implement its street sweeping program and shall sweep a minimum of 25,000 lane miles during this permit cycle.

****From Arlington County 2013 permit**

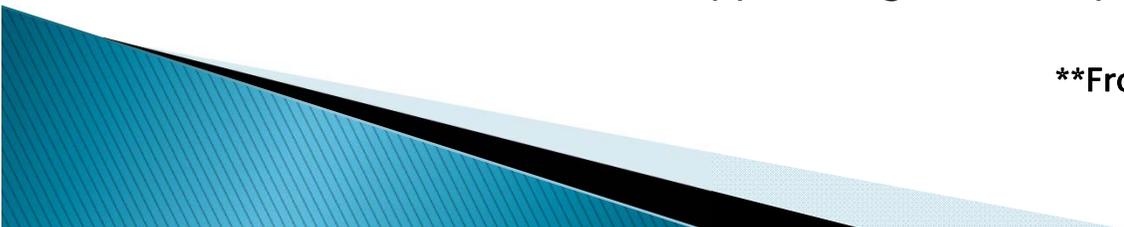
- b. The education and outreach program shall include at least two public workshops each year and shall ensure that a minimum of 250,000 impressions per year are made on the general public about storm water quality via print, local TV access, local radio, internet, or other appropriate media.

****From New Castle Co 2013 permit**

4.1.7.2 The permittee shall install at a minimum 350,000 square feet of green roofs on District properties during the term of the permit (including schools and school administration buildings).

4.1.6.2 The permittee shall achieve a minimum net annual tree planting rate of 4,150 plantings annually within the District MS4 area, with the objective of a District-wide urban tree canopy coverage of 40% by 2035.

****From District of Columbia 2012 permit**



Retrofit Language – more good stuff

Water Quality Improvement Plans will include a consideration of all available BMP options, and will propose at least a 3% decrease in untreated Effective Impervious Area (EIA) as defined within this permit. This shall be done through development and redevelopment in conjunction with revitalizing or retrofitting existing BMPs in need of repair and the introduction of new Green Technology BMPs. ****From NCC permit**

4.1.5.4 The DC Retrofit Program shall implement retrofits for stormwater discharges from a minimum of 18,000,000 square feet of impervious surfaces during the permit term. A minimum of 1,500,000 square feet of this objective must be in transportation rights-of-way. ****From DC permit**

- c) ***Retrofitting on Prior Developed Lands*** No later than 12-months after the effective date of this permit, the permittee shall identify at least seven (7) retrofit projects from its watershed retrofit plans that will be implemented within the County right-of-way or on specific County properties no later than 60-months after the effective date of this permit. The permittee shall submit a summary of the projects and the schedule for implementation to the Department. The permittee may substitute alternative retrofit projects if opportunity exists provided that similar screening is applied to the substituted project as that in the watershed retrofit plans.

**** From Arlington permit**



The Good Programs have:

- Many excellent, innovative program elements
- Innovative and motivated people
- Reliable funding
- High level political and administrative support
- Cross departmental engagement
- Informed and engaged communities
- Open communication and lesson sharing between jurisdictions
- Learned from past experiences
- Desire to improve



The Bad



- ▶ Don't worry – no names here (but inspection reports and enforcement actions are public documents)
- ▶ Municipal Facilities – lack of: NPDES permits, SWPPPs, good housekeeping practices, employee training and awareness
- ▶ Construction sites – lack of: NPDES permits and compliance at municipally owned projects
- ▶ IDDE – lack of: system awareness, sampling, follow-up, and enforcement
- ▶ PCSM – lack of: awareness and maintenance of BMPs, no identification of retrofit opportunities



Sample Permit Language... not as good

The permittee shall maintain the existing programs designed to reduce impacts on receiving waters from the operation and maintenance of public streets, roads and highways.

6. Road Maintenance

The County shall continue to implement a program to reduce pollutants associated with road maintenance activities. The road maintenance program shall include:

- a. Street sweeping;
- b. Inlet cleaning;
- c. Reducing the use of pesticides, herbicides, fertilizers, and other pollutants associated with roadside vegetation management through increased use of integrated pest management; and
- d. Reducing to the MEP the use of winter weather deicing materials through continual testing and improvement of materials, equipment calibration, employee training, and effective decision-making.



More vague language examples...

To the maximum extent practicable, the permittee shall contain spills and prevent spills from reaching, and subsequently discharging from, the municipal separate storm sewer system.

3.2.1 The permittee must maintain an up-to-date and accurate storm sewer system map.

During the first year of permit coverage, develop and implement a written O&M program. Review the O&M program annually, edit as necessary, and continue to implement every year of permit coverage.



The Bad MS4 Programs

- Many lack entire program elements
- Lack of interdepartmental program coordination
- Desire to do only the bare minimum (sometimes less)
- EPA enforcement actions necessary
- Lack of documentation
- Inadequate resources



The Ugly



The Ugly permit truth

- ▶ 26 Phase I MS4 permits in Region III
 - Only 7 are currently active (not administratively extended)
- ▶ Almost 1,500 Phase II MS4s in Region III
 - Covered under General Permits
 - MD administratively extended since 2008
 - Many DE permits expired in 2008
 - PA & VA recently reissued in 2013
 - WV expires in 2014
 - All anticipated for reissuance in 2014
- ▶ Number of regulated MS4s expected to increase as a result of 2010 census



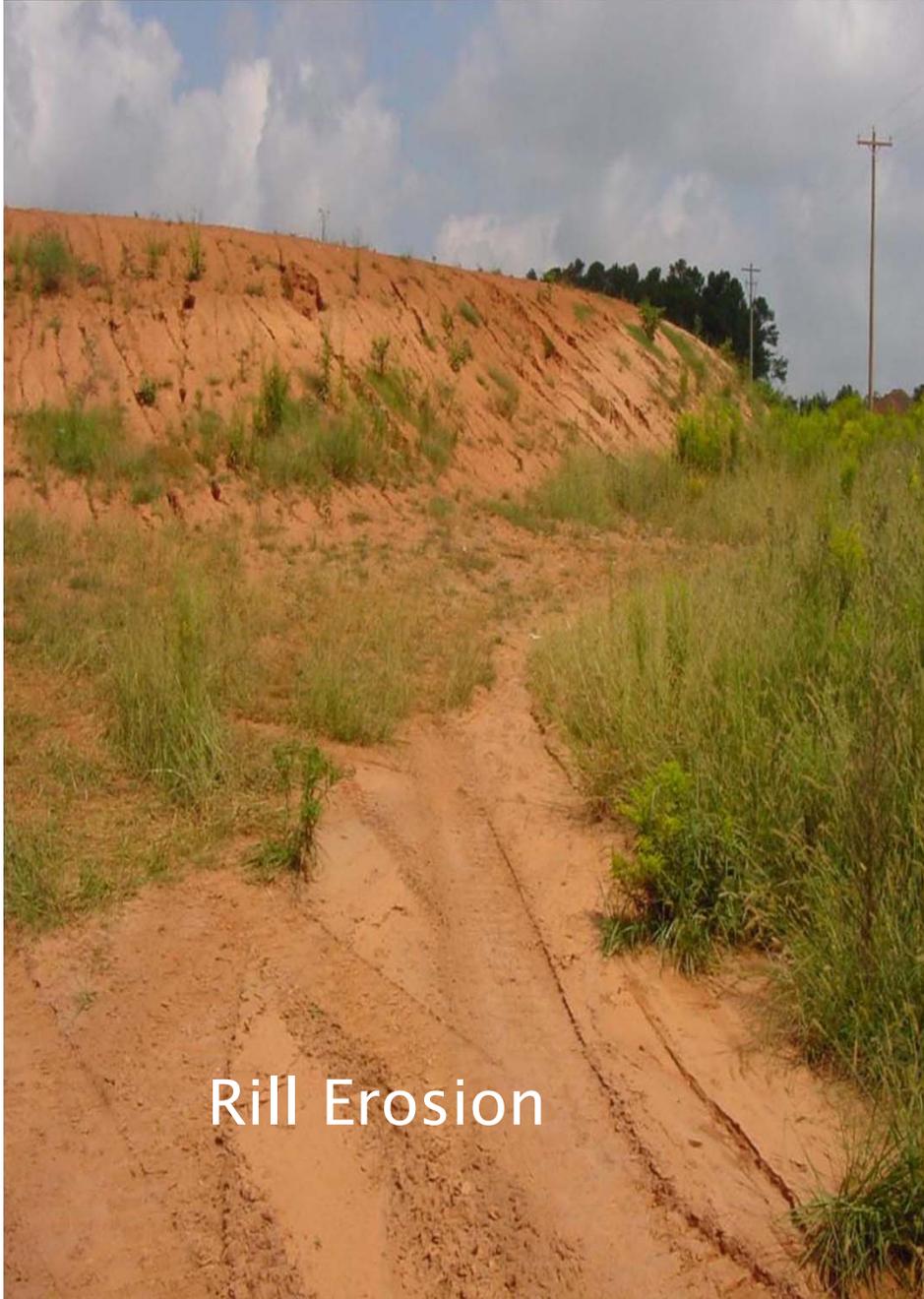
Construction Sites



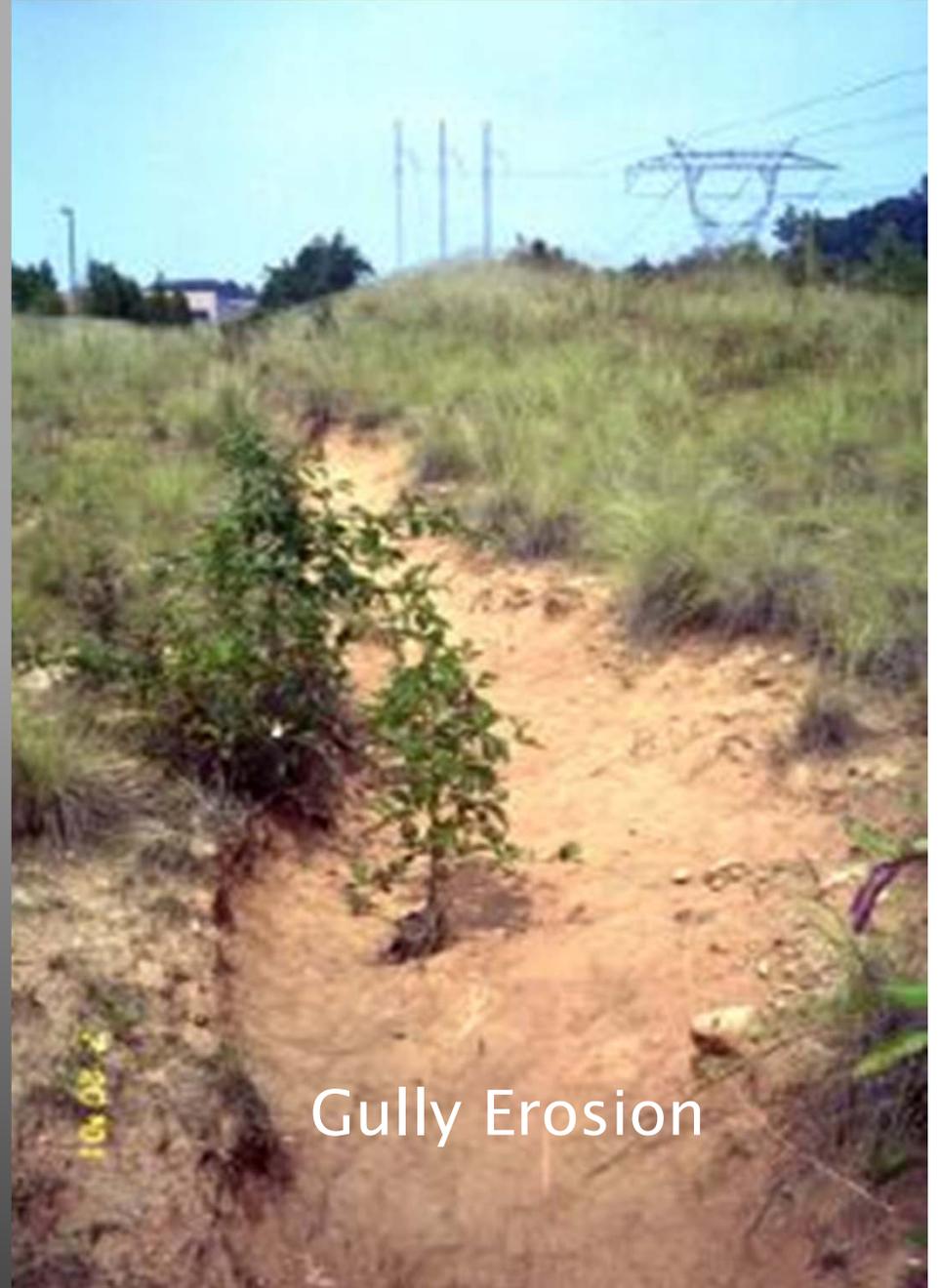
Inadequate Construction Entrance



Inadequate Inlet Protection



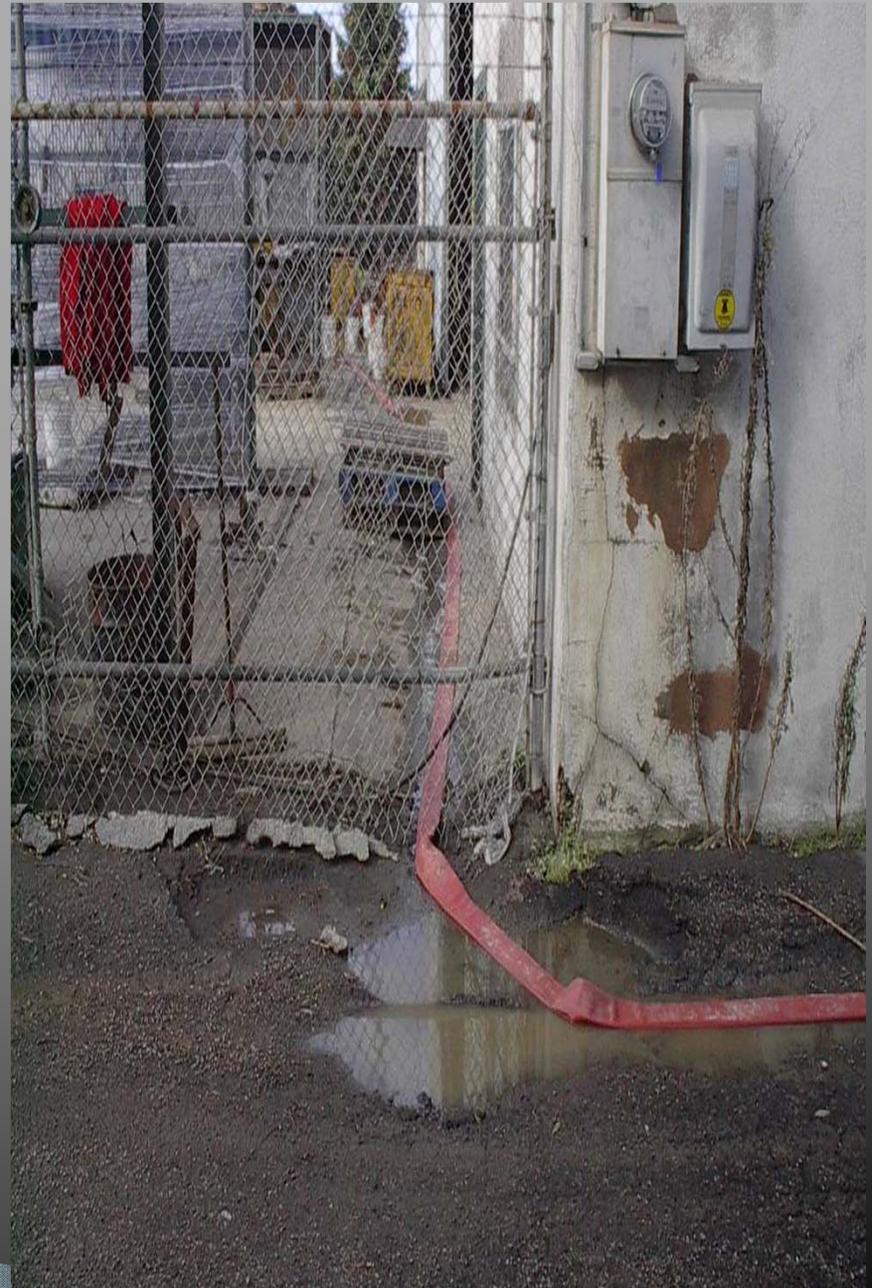
Rill Erosion



Gully Erosion



Commercial/Industrial Sites





Municipal Sites





Inspections – What to expect

- ▶ Conference calls prior to inspection
- ▶ 2 days, multiple program elements
 - Varies by permittee/permit
- ▶ Staff interviews
 - SOPs, Training, Coordination
- ▶ Document review
 - Completeness, Enforcement
- ▶ Field inspections
 - Quality, Training
- ▶ Inspection Report
- ▶ Recommendations

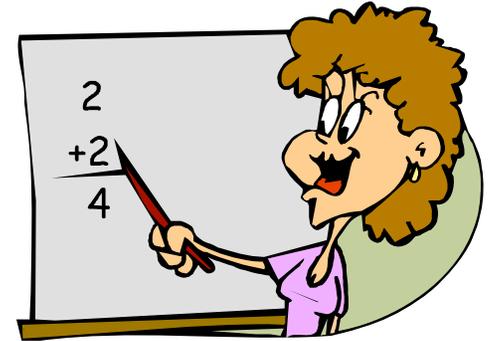


Tips for a Better Inspection

- ▶ Be prepared
 - Have documentation ready
 - Have people available
- ▶ Be proud of your program
 - Show off a little
 - Brag
- ▶ Tell us about your next steps
- ▶ Ask questions and seek advice
- ▶ Show us you care



Lessons Learned



- ▶ Communications strategy is critical
 - Political interest has been strong in some areas
 - EPA and states with similar messages
- ▶ State Programs and Permits need to be strengthened
 - State stormwater programs need improvements
 - Regulations, inspections, enforcement, and staffing
 - Some improvements already under way
 - Many MCMs and conditions lacking or written too broadly
 - Vague conditions found
 - Informing the permit writers/reviewers is critical
- ▶ MS4 Compliance evaluations must continue
 - Annual Report reviews, Inspections
 - EPA and state cooperation, including workload sharing

But wait...



There's more!!!

Positive Items and Suggestions

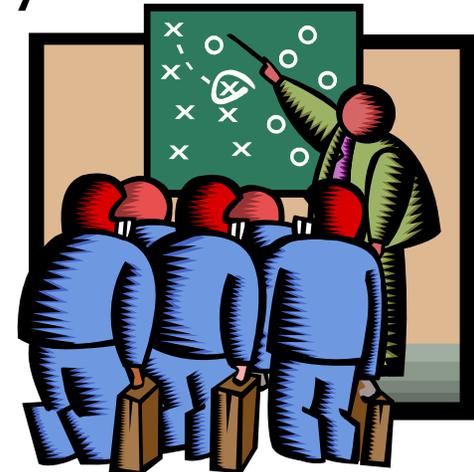
- ▶ Many, very positive programs and elements have been observed during inspections
- ▶ EPA shares many of these positive elements during inspections and will often point one MS4 to another where they might benefit (or collaborate)
- ▶ There have been many great examples of effective BMPs within each MCM.



Public Education and Outreach

- ▶ Good website that is user-friendly

- Contact information
- Hotlines
- Permit, SWMP, Annual Reports, etc
- System map
- Planning and Meetings
- Events

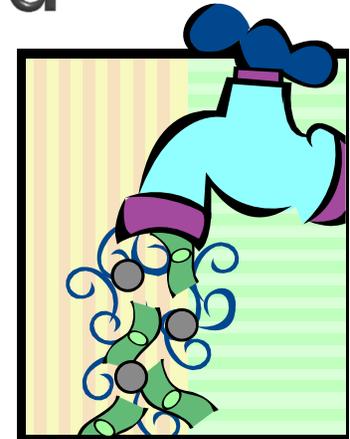


- ▶ Collaboration with Watershed, Environmental, and Citizen Groups



Illicit Discharge Detection and Elimination

- ▶ Good system inventory and mapping
 - GIS is recommended
 - Data elements may contain:
 - Outfalls, Inlets, Connections
 - PCSM BMPs
 - Sewersheds
 - Other infrastructure
 - System details such:
 - Pipe material, Age and Condition, Inverts and other measurements
- ▶ Good ordinance
- ▶ Land Use Assessment relative to system
 - Risk factors – e.g. Industrial vs Residential

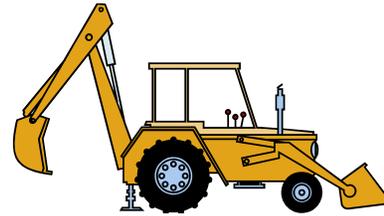


IDDE, Cont.

- ▶ Hotline for complaints and problems
 - ▶ Schedule for dry weather screening of outfalls
 - Varied by time of year, season, etc.
 - ▶ Procedures for documentation of screenings and inspections
 - Checklists, forms, photos, samples, etc.
 - ▶ Inspector Training
 - Collaboration with other departments, such as Fire Marshall, Pre-Treatment, etc
 - ▶ Methodology and Procedures for Sampling
 - ▶ Procedures and documentation of follow-up
 - Elimination, Enforcement, Referral
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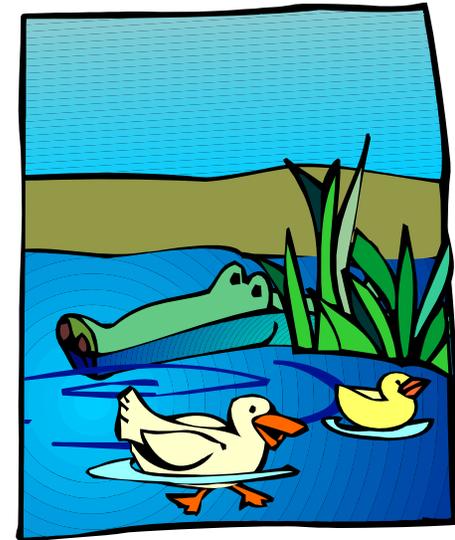
Construction

- ▶ Good ordinance
- ▶ Procedures and processes for plan review, modification, and approval
 - Cross check for SW Construction permit coverage
- ▶ Tracking system
- ▶ Inspections
- ▶ Compliance
- ▶ Ensuring that Municipal facilities are getting permits and following the same standards
- ▶ Hotline for complaints
- ▶ Education of Builders, Contractors, and Citizens



Post-Construction (PCSM)

- ▶ Good ordinance
- ▶ Procedures and processes for plan review, modification, and approval
- ▶ Tracking system
- ▶ Maintenance agreements
- ▶ Schedule for Inspections
- ▶ Inspector Training
 - New BMP Technologies



PCSM, cont.

- ▶ Timely Maintenance Notices and Compliance
- ▶ Ensuring that Municipal facilities are meeting the same standards
- ▶ Hotline for complaints
- ▶ Education of BMP Owners
 - Commercial, Industrial, Residential, and Municipal



Municipal PP&GH



- ▶ Inventory and Understanding of all facilities
 - Locations and operations
 - Potential pollutant sources
 - Sanitary vs Stormwater discharges
- ▶ Industrial Permit Coverage where required
 - SWPPP created and followed
 - Sampling and recordkeeping
- ▶ Regular Inspections by facility personnel and oversight
- ▶ Employee Training
- ▶ Good Housekeeping and Spill Response
- ▶ Good communication between departments



Industrial/Commercial



- ▶ For Phase Is
 - Phase IIs could incorporate into their IDDE program
- ▶ Inventory of Facilities
 - Locations, operations, pollutant sources
 - Facility contact information
 - Need for industrial permit coverage
- ▶ Ranking of Facilities
- ▶ Inspection of Facilities
 - For compliance with local ordinances and IDDE requirements
- ▶ Good relationship with permitting authority



Intangibles

- ▶ Support for Program
 - Political and Management
 - Staffing
- ▶ SW Utilities and Funding
- ▶ Interdepartmental or Intergovernmental Cooperation
- ▶ Collaboration with other MS4s
- ▶ System interconnections
 - One MS4 drains to another
 - DOTs and Municipalities





Help is Available

- ▶ EPA NPDES MS4 Webpage
<http://cfpub.epa.gov/npdes/stormwater/munic.cfm>
for MS4 Program Evaluation Guidance, EPA Watershed Academy webinar training, Detailed Control Measure Resources
- ▶ State resources
- ▶ Non-profit and Professional Associations, e.g., IECA, WEF, Environmental Finance Centers, Center for Watershed Protection

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