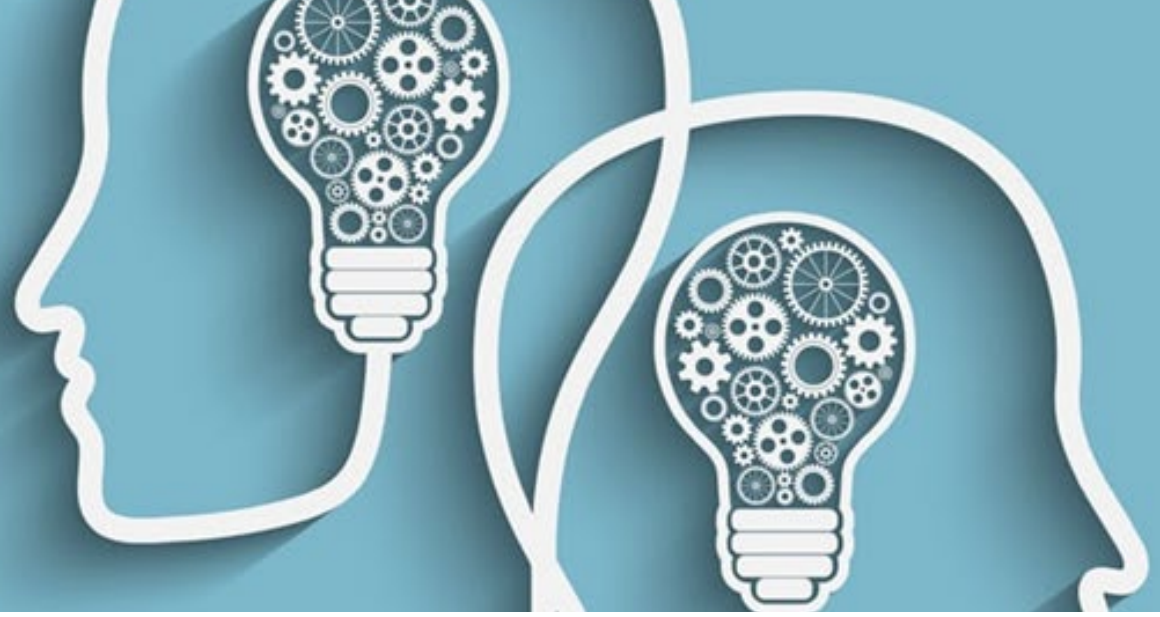




# **Elected Officials' Role in Stormwater Management Leadership**

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3/9/2023



## Learning Objectives

- Elected officials' roles in our communities
- Municipal stormwater management
- Highlighting state requirements
- Local ordinances
- Funding sources
- Importance of elected officials' actions

# Stormwater Management

## The Elected Official's Role



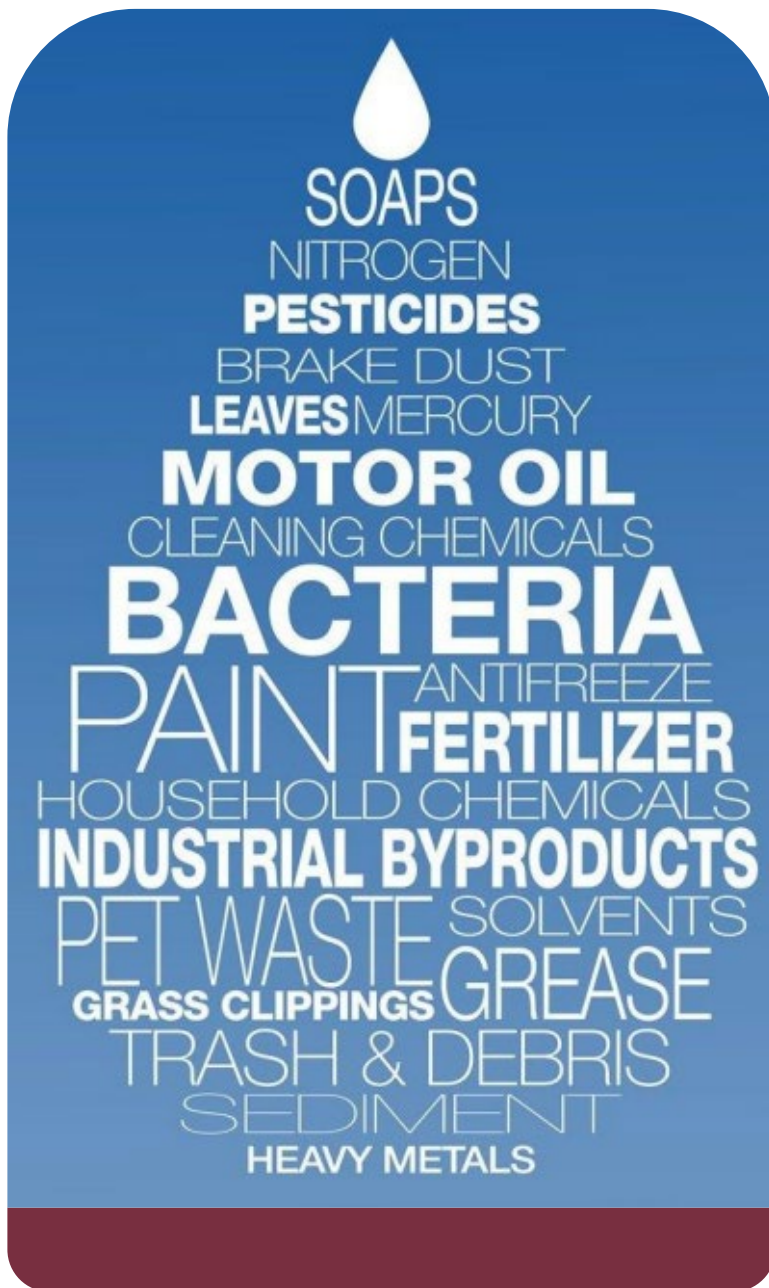
### DO

- Understand the process
- Support your staff
- Set the vision
- Hold water, wastewater and stormwater management as equals
- Consider One Water approach
- Be proactive - go beyond the minimum
- Consider green infrastructure



### DON'T

- Sacrifice standards for the sake of economic development
- Treat stormwater management as subordinate
- Be complacent
- Underfund
- Defer maintenance
- Make decisions today that harm the future



# Municipal Stormwater Management

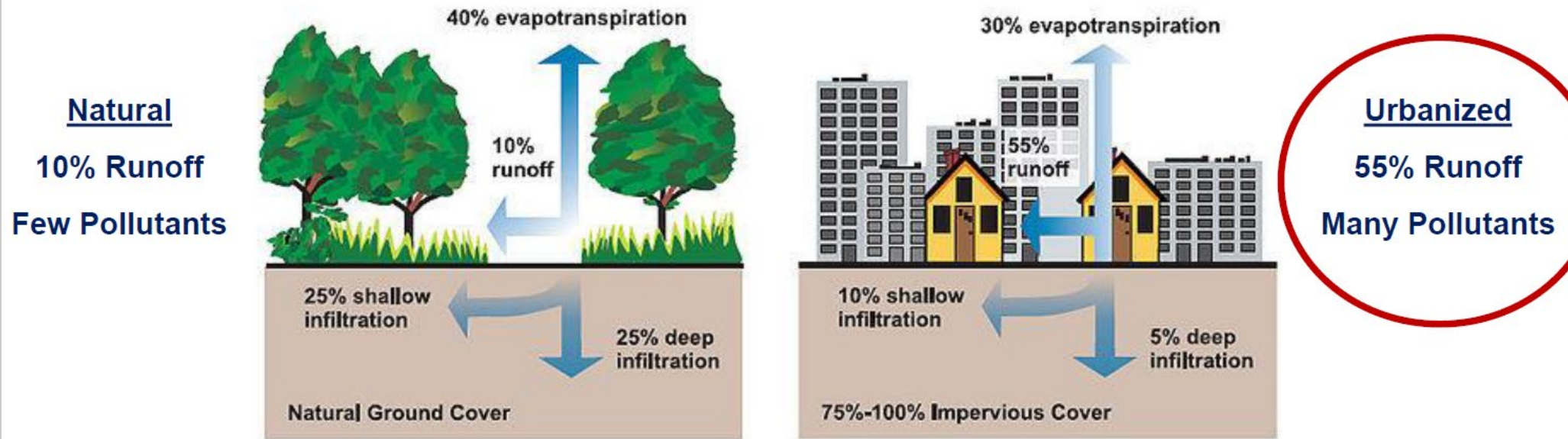
## The Basics

- **Polluted stormwater runoff is the #1 source of surface water pollution.**
- Regulation targets urbanized areas where stormwater pollutants are the most concentrated.
- Regulated stormwater systems encompass:
  - Roughly 4% of the US land area
  - Over 80% of the US population

# What is a MS4?

- The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Program is mandated under the federal Clean Water Act.
- A MS4 is a conveyance or system of conveyances that is:
  - Owned by a state, city, town, village, or other public entity that discharges to waters of the U.S. (WOTUS)
  - Designed or used to collect or convey stormwater (e.g., storm drains, pipes, ditches),
  - Not a combined sewer, and
  - Not part of a sewage treatment plant, or publicly owned treatment works (POTW).
- MS4s are everywhere, but only regulated MS4s must get a permit.

# Why are MS4s Regulated?

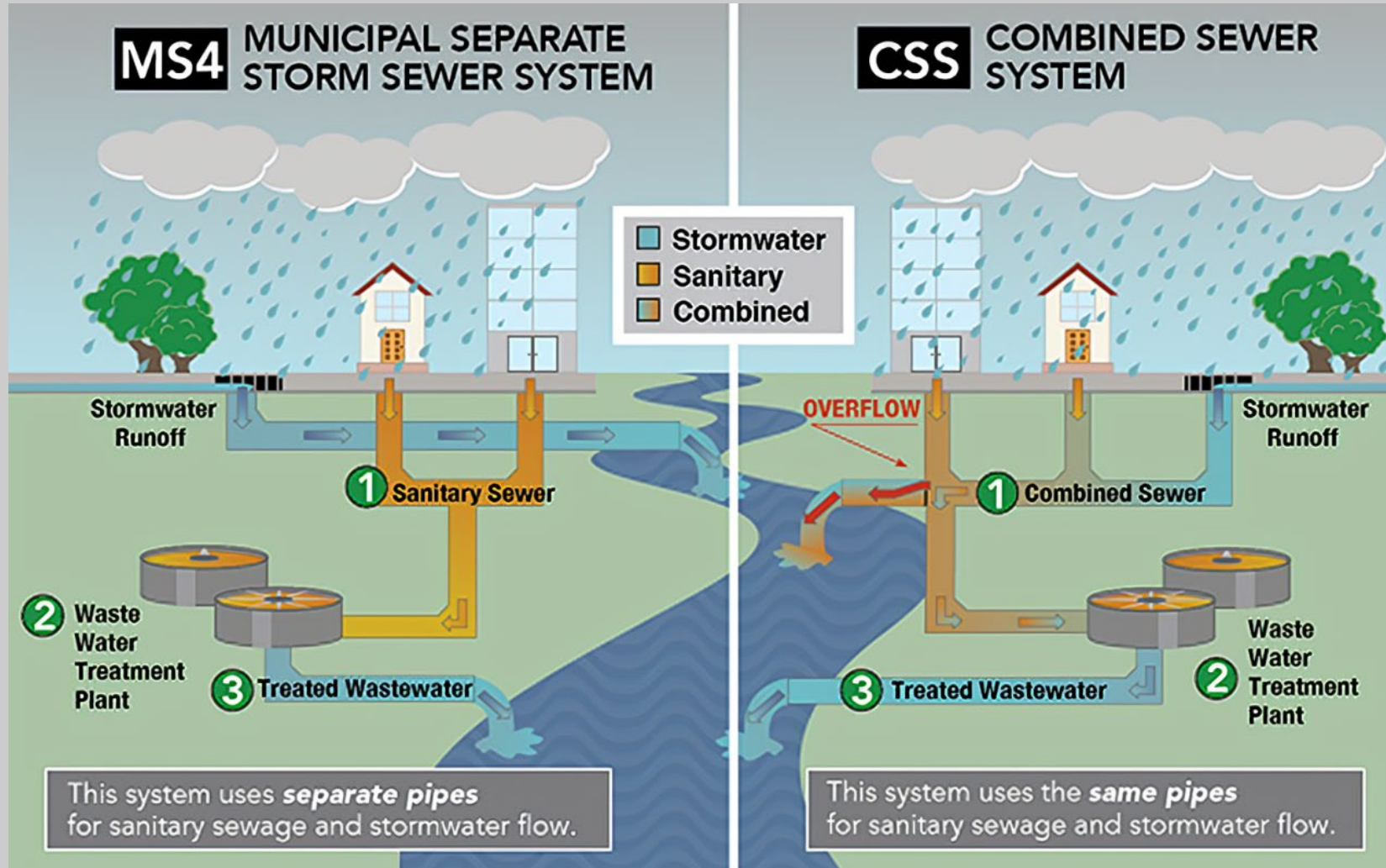


Runoff flushes pollutants on the ground into surface waters.

Urbanized areas have high concentrations of runoff and pollutants.

*Image courtesy of NCDEQ*

# What Do MS4s Look Like?



# Regulation

## Meeting the Basic Requirements

- NCDEQ is NC's EPA-delegated MS4 Program implementation authority.
- Two agencies can designate an MS4 as a regulated entity.



EPA Region 4  
(managed from  
Atlanta, GA)



- NPDES MS4 Permitting expands with each U.S. Census.
  - 1990's: 6 Large Phase I MS4 permittees + NCDOT
  - 2000's: 115 Phase II Small MS4 permittees added
  - 2020: U.S. Census performed
  - 2023 *ish*: 2020 Census MS4 Designations



# The Evolution of US Stormwater Regulation

## Clean Water Act Regulatory Timeline

### Point Sources

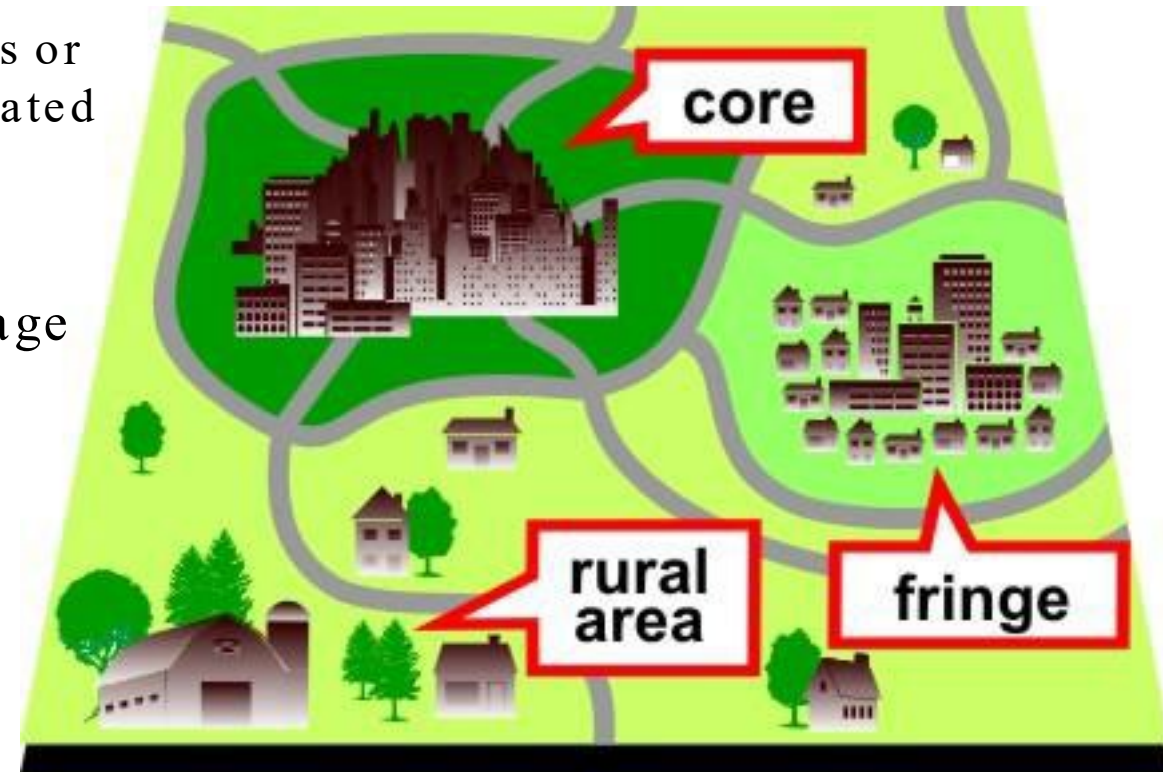


### Stormwater CWA amended (1987)



# Who Gets Regulated?

- A public entity that owns or operates an MS4 may be designated as a “regulated entity”.
  - NPDES MS4 permit is required for MS4 owners or operators within a U.S. Census Bureau-designated “Urbanized Area”.
  - This program expands with each new Census.
- Other entities must also obtain permit coverage per state rules (e.g., large industries)
- Census-designated “Urbanized Area”
  - Population >50,000 (core)
  - Cluster of 2,500 –50,000 (fringe)
- Example:
  - Core = Asheville
  - Fringe = Canton & Waynesville



# State Designation of Regulated Entities

- NDEQ will identify a public entity as a candidate for designation as a regulated entity if the MS4 has:
  1. Potential for adverse impact on water quality, or
  2. **Concentrated population**, or
  3. Petitioned to be regulated, or
  4. Total Maximum Daily Load (TMDL) implementation plan specifically listing the MS4.

**Concentrated Population =  
Concentrated Development =  
Concentrated Pollutants**

# State Designation for Candidate MS4s

## *The Population Equation*

### Concentrated Population

>10,000 population and > 1,000 people/sq. mile density

>4,000 housing units and > 400 housing units/sq. mile

A candidate public entity is a regulated entity if it is determined that any of the following apply:

Actual population growth rate > 1.3x previous 10-yr State rate.

Projected pop. growth rate > 1.3x projected 10-yr State rate.

Population increased > 15% in the two years prior to publication of the candidate entities list.

Stormwater discharges have adverse water quality impacts.

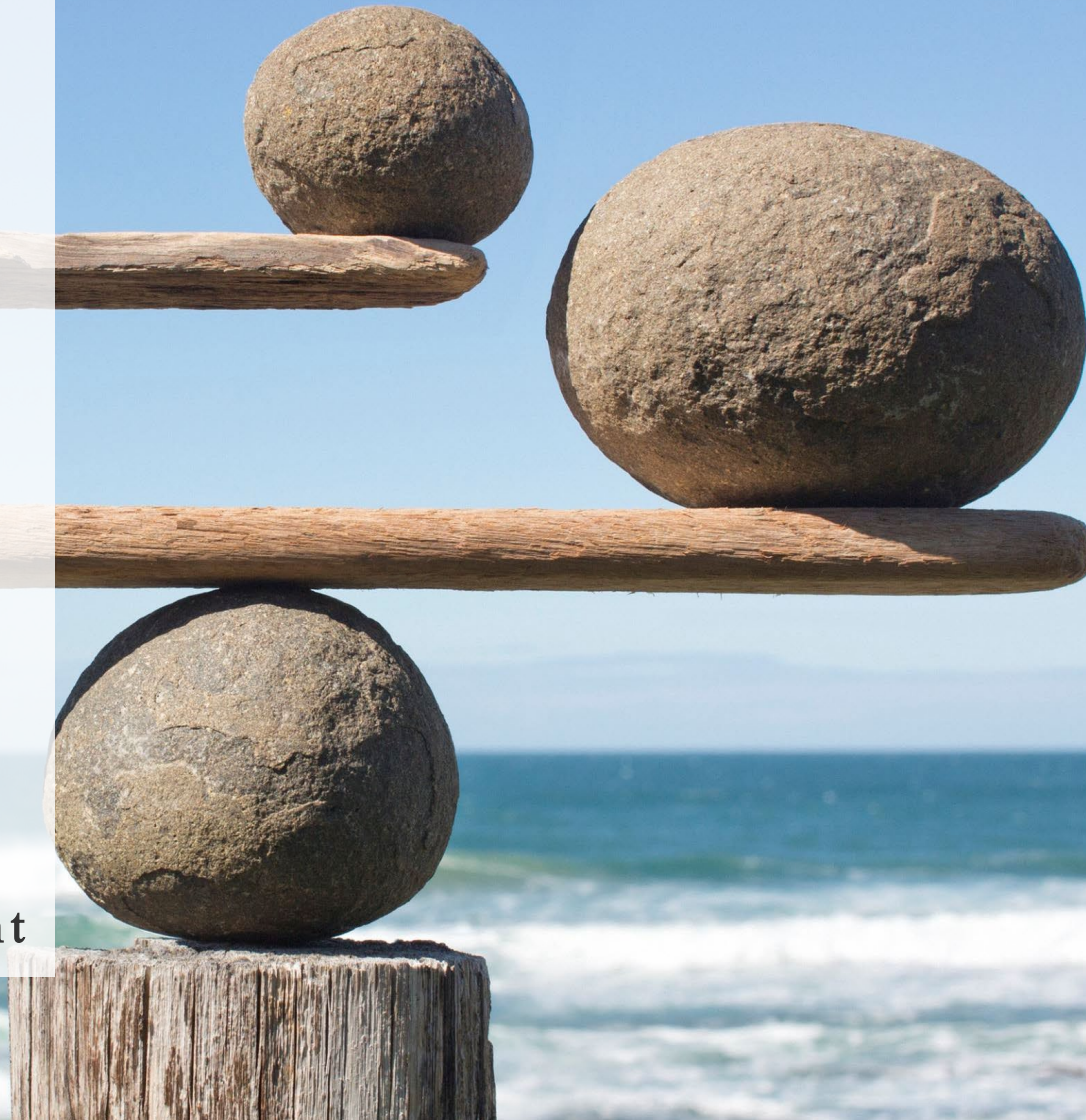
Discharges result in significant contribution of pollutants to receiving waters.

# Who's In and Who's Out?

- **The permitting authority may waive permit coverage if:**
  - Urbanized Area <1,000 people
    - Not contributing pollutant loadings to a regulated MS4
    - No Waste Load Allocation (WLA) under a TMDL
  - Small MS4 <10,000 people
    - NCDEQ has evaluated all the MS4s receiving waters
    - No WLA under a TMDL
    - No potential for significant water quality impacts
- NCDEQ currently expects that the 2020 Census list of public entity candidates for designation as a regulated MS4 entity may occur in 2023.

# Local Ordinances Going the Extra Mile

- You can..and should..have local storm water management ordinances
- Local ordinances cannot be < state requirements
- Local ordinances can be > state requirements
- Examples:
  - Buffers
  - SCMs
  - Pre-construction/post-construction
  - Max. impervious surface areas
  - Erosion and sediment control
- It's a balancing act:  
    Promoting  
        Responsible  
            Development



# A Tale of Two Cities?

## Regulated MS4 Community

- Storm water utility with dedicated staff
- Storm water fees
- SWMP
- Ongoing education & outreach
- Asset inventory & monitoring
- Condition assessment



## Non-Regulated MS4 Community

- Limited asset inventory
- Limited funding mechanisms
- No dedicated staff
- Limited internal knowledge
- Limited outreach
- Limited monitoring
- Reactive approach (fix when broken)

# Funding

## Putting Our Money Where Our Mouth Is

- Enterprise fund vs. General fund
- Stormwater utility fund
- Bond programs
- Grants
  - State & Federal

### Takeaway:

Where there's a will, there's a way!





# Show Me the Money!

## *Stormwater Funding Sources*

### FEDERAL

- US Treasury American Rescue Plan Act (ARPA) (administered at state-level)
- EPA Water Infrastructure Finance and Innovation Act (WIFIA) Program
- EPA Clean Water Act Nonpoint Source Grant (Section 319 Grants)
- EPA Clean Water State Revolving Fund (CWSRF)
- FEMA Building Resilient Infrastructure and Communities (BRIC) Program
- FEMA Hazard Mitigation Grant Program

### STATE

- Local Assistance for Stormwater Infrastructure Investments Program (LASII)
- Asset Inventory and Assessment Grant Program

# Thinking Outside the Pipe: Green Infrastructure

- Impacts of stormwater runoff
  - Trash
  - Bacteria
  - Heavy metals
  - Flooding
- Traditional stormwater management = gray infrastructure
  - Gutters, inlets, pipes, culverts
  - Aging assets & decreasing capacity
  - Increasing capital and O&M costs



- The alternative = green infrastructure
  - Bolsters stormwater management capacity
  - Improves resilience
  - Environmental, social and economic benefits
  - Mimics natural environment
  - Filters & absorbs stormwater where it falls
- 2019 Water Infrastructure Improvement Act:
  - "the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters."

# Green Infrastructure Examples



**Permeable pavements** infiltrate, treat, and/or store rainwater where it falls.



**Green streets and alleys** are created by integrating green infrastructure elements into their design to store and filter stormwater.



**Green parking lots** are a good place to install green infrastructure that can capture stormwater that would usually flow into the sewer system.



**Bioswales** are rain gardens placed in long narrow spaces such as the space between the sidewalk and curb.



**Urban Tree Canopy**  
City trees, or tree canopy, soak up stormwater, provide cooling shade and help to slow traffic.



**Land conservation** can address water quality and flooding impacts of urban stormwater by protecting open spaces and sensitive natural areas.

# But it Costs More!!!

## Or Does It?

- Project 1:
  - Gray Infrastructure = pipes, inlets, curb and gutter, culverts, etc.
- Project 2:
  - Aesthetic Improvements = streetscape, greenspace, parks, etc.
- Green Infrastructure
  - One project: Resilient Infrastructure + Aesthetic Improvements

### The Result:

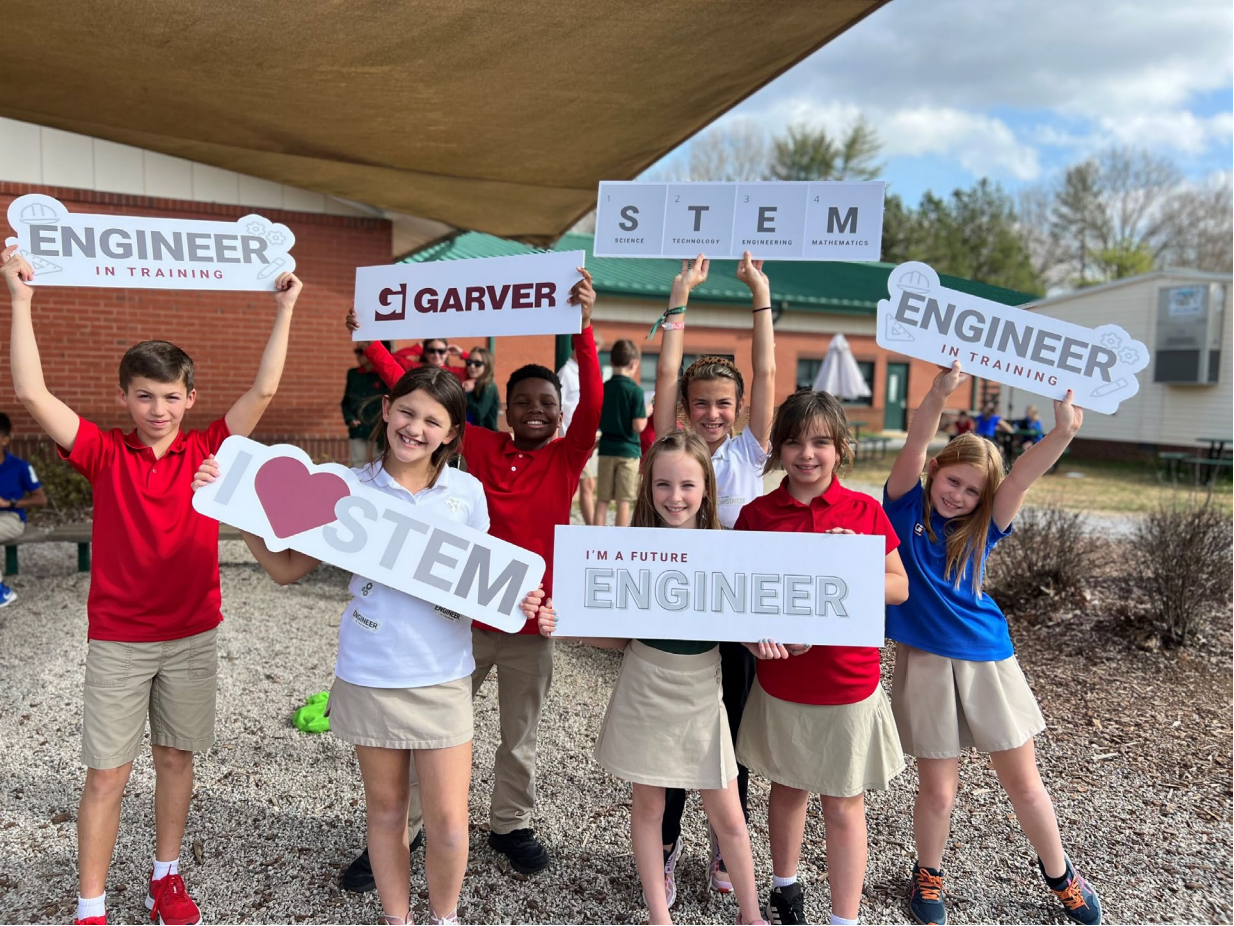
Cost: Green Infrastructure < Gray Infrastructure + Aesthetic Improvements

Benefit: Green Infrastructure > Gray Infrastructure + Aesthetic Improvements

Cost Benefit Ratio: Green Infrastructure >> Gray Infrastructure + Aesthetic Improvements

# The Importance of Our Actions

## Our Children are Watching





# Our Big Green Deal

Yadkin River Park trailhead

Stanback Educational Forest expansion & dam rehabilitation

Town Center Park

EB 5861 greenway/bikeway project

Community garden

Environmental arts center

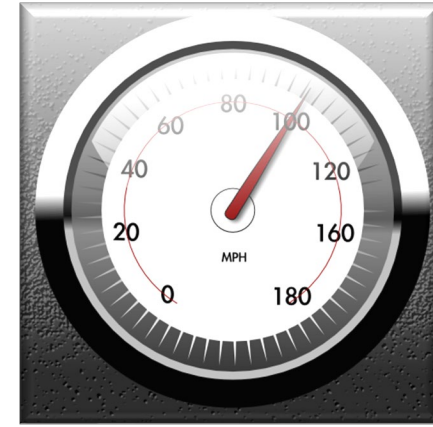
17<sup>th</sup> St. Drainage Improvements

STRAP Grant (Stream flow rehabilitation)

Rowan Creek Week



# Moving the Needle Steps Towards Resilience



- Collaborate.
- Be visionary.
- Think outside the pipe.
- Evaluate life-cycle cost & community benefit.
- Implement strategies because you should, not because regulation requires it.
- Consider natural solutions, and remember...
  - **Nature knows how to manage itself.**  
**We humans have a propensity for confusing it.**