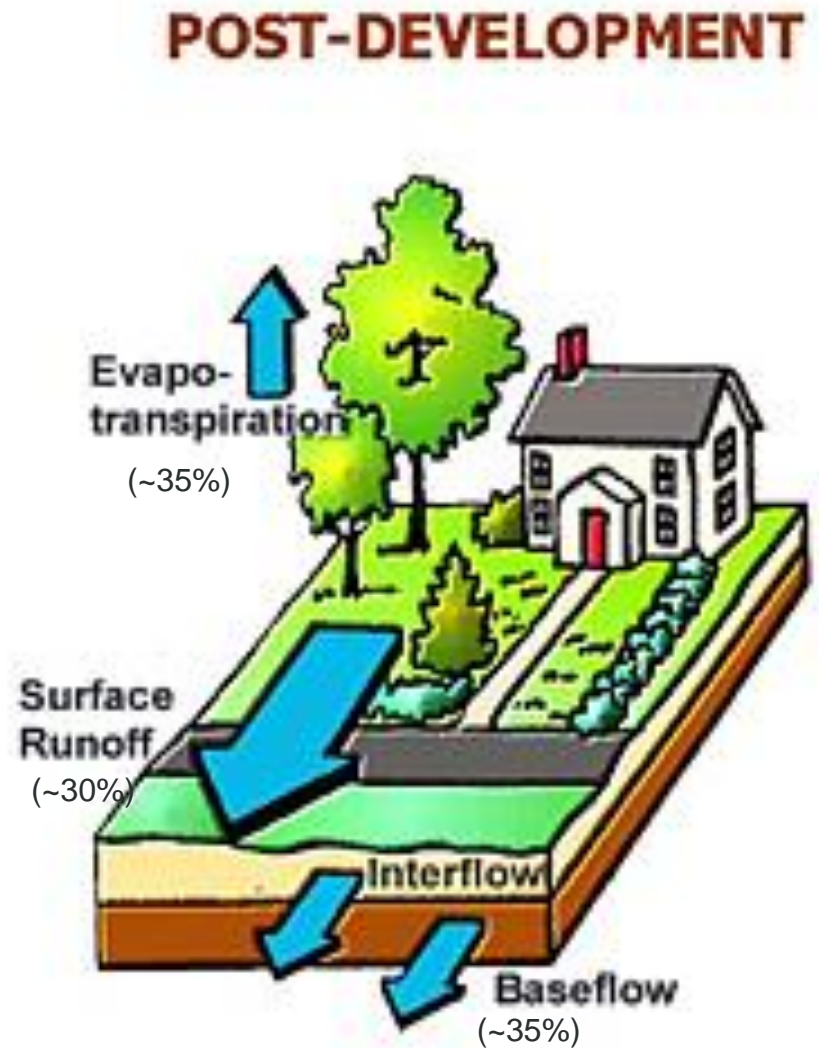
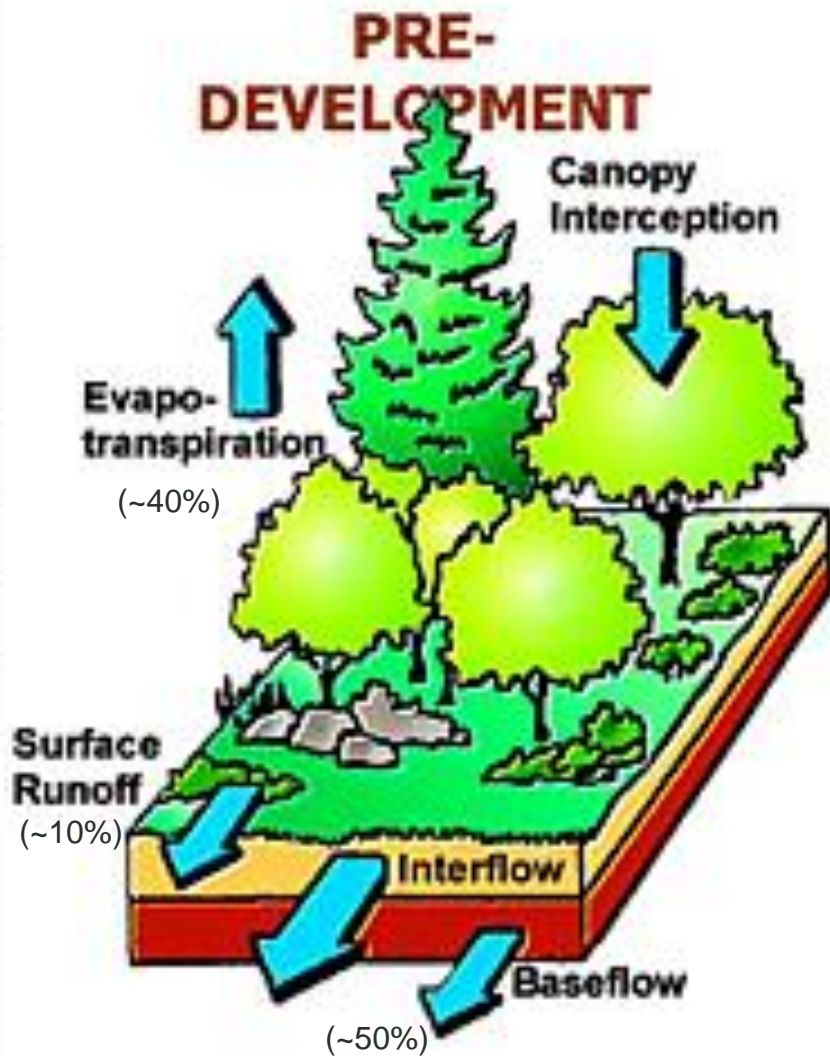


# UMD's Municipal Separate Storm Sewer System (MS4) Permit



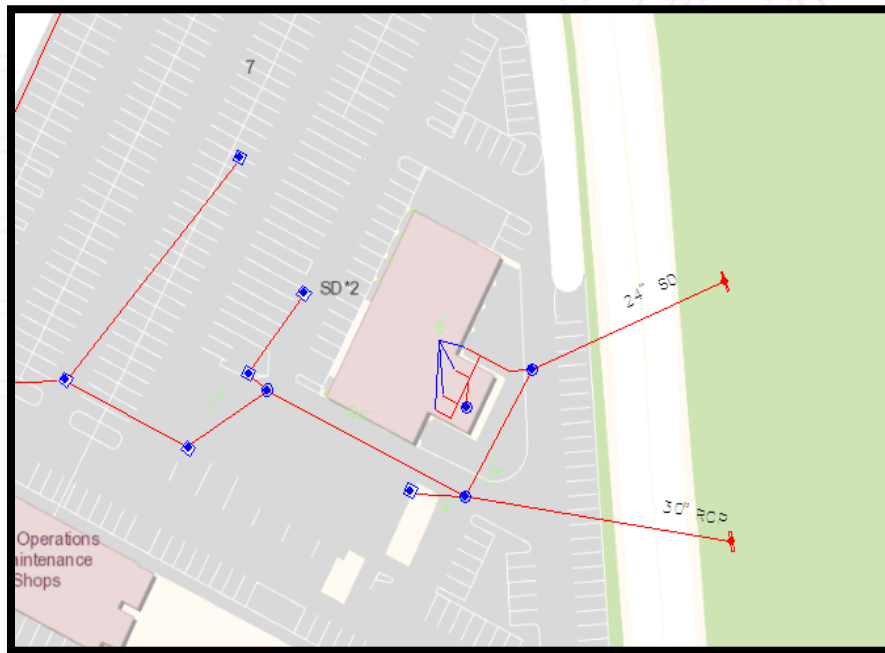
Stephen Reid  
UMD P&C Environmental Planner

# Why so much stormwater?

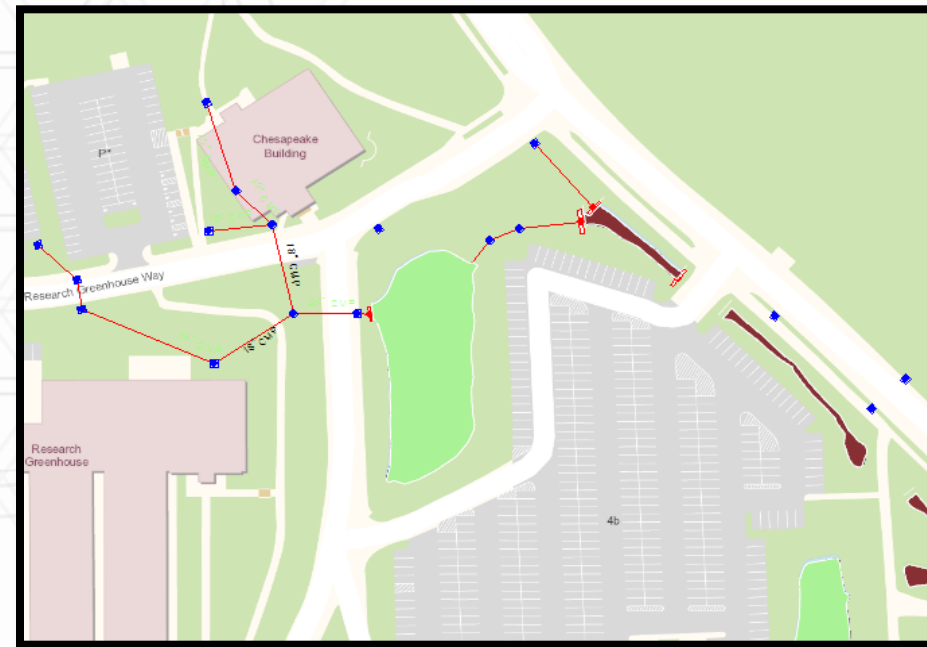


# Storm Drain System

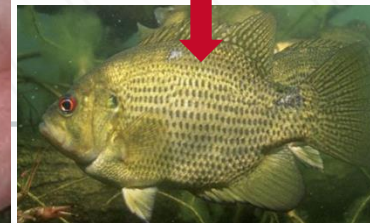
Series of inlets, pipes, and outfalls to collect and efficiently convey stormwater away for buildings, streets, parking lots, etc. On UMD, outfalls end at a waterbody, sometimes without any treatment.



Untreated Runoff



Treated Runoff



# Watershed Approach



# Stormwater

- Quality

- Road oil, grit, fertilizers (N&P), pesticides
  - River that caught fire (Cuyahoga River)
  - Fish kills
  - Drinking water advisories



- Quantity

- Too much too fast
  - Urban flooding
  - Urban stream blowout
  - Localized erosion due to poor vegetation cover

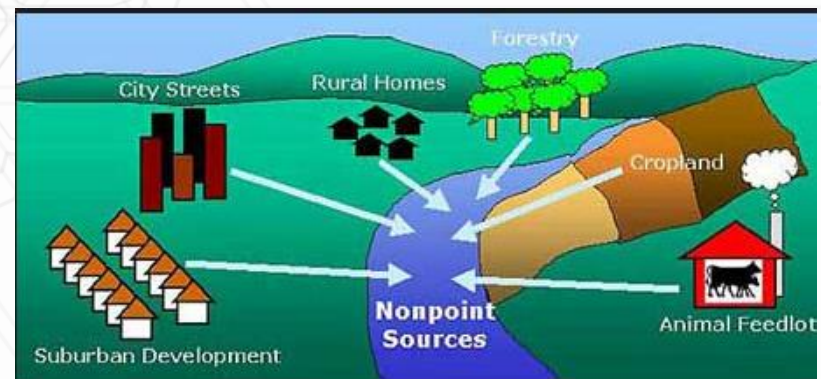


# Stormwater Sources

- Point Source Pollution
  - A single, identifiable source of pollution from which pollutants (including stormwater) is discharged
    - Pipe, ditch, etc.



- Nonpoint Source Pollution
  - Pollution from diffuse sources
    - Overland runoff



# How do we control and treat it?

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- Best Management Practices (BMPs)
  - **Physical devices** or **processes** designed to treat runoff.
  - **Physical Devices**: Stormwater management facilities

**Processes**: Street sweeping, maintaining forested buffers, proper turf maintenance



# Stormwater Management

## Physical Devices:

- Sand Filters
- Bioretention and rain gardens
- SW Ponds



# ESD vs Conventional SWM



# ESD vs Conventional SWM

## ESD

- Small treatment areas (<0.5 ac)
- Relies on natural treatment processes—mimics nature
- More aesthetically pleasing
- Good water quality treatment (N & P)
- More landscape maintenance

## Conventional SWM

- Large treatment areas
- Don't usually provide adequate treatment
- Doesn't blend well into the landscape
- Poor water quality treatment (N & P)
- More structural maintenance

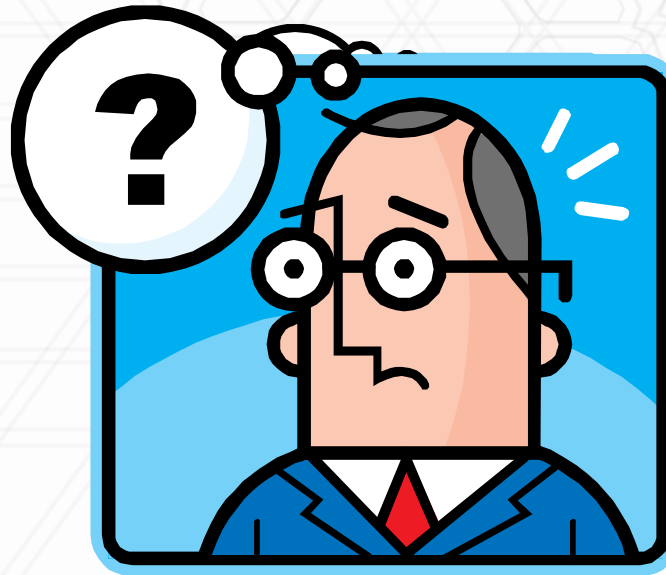
# Regulatory Framework

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NDPES

Industrial Permit

TMDL



CWA

MS4

Retrofits

Permits

WIP

WLA

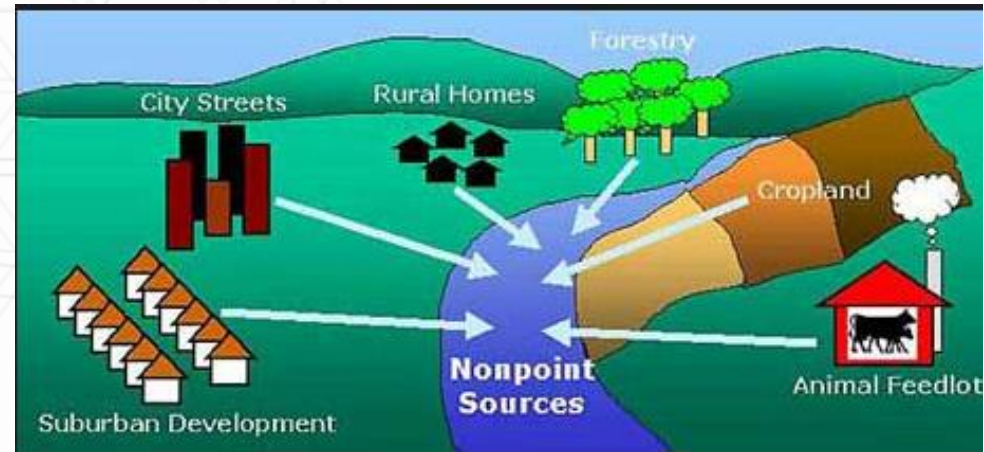
# Which is easier to regulate?

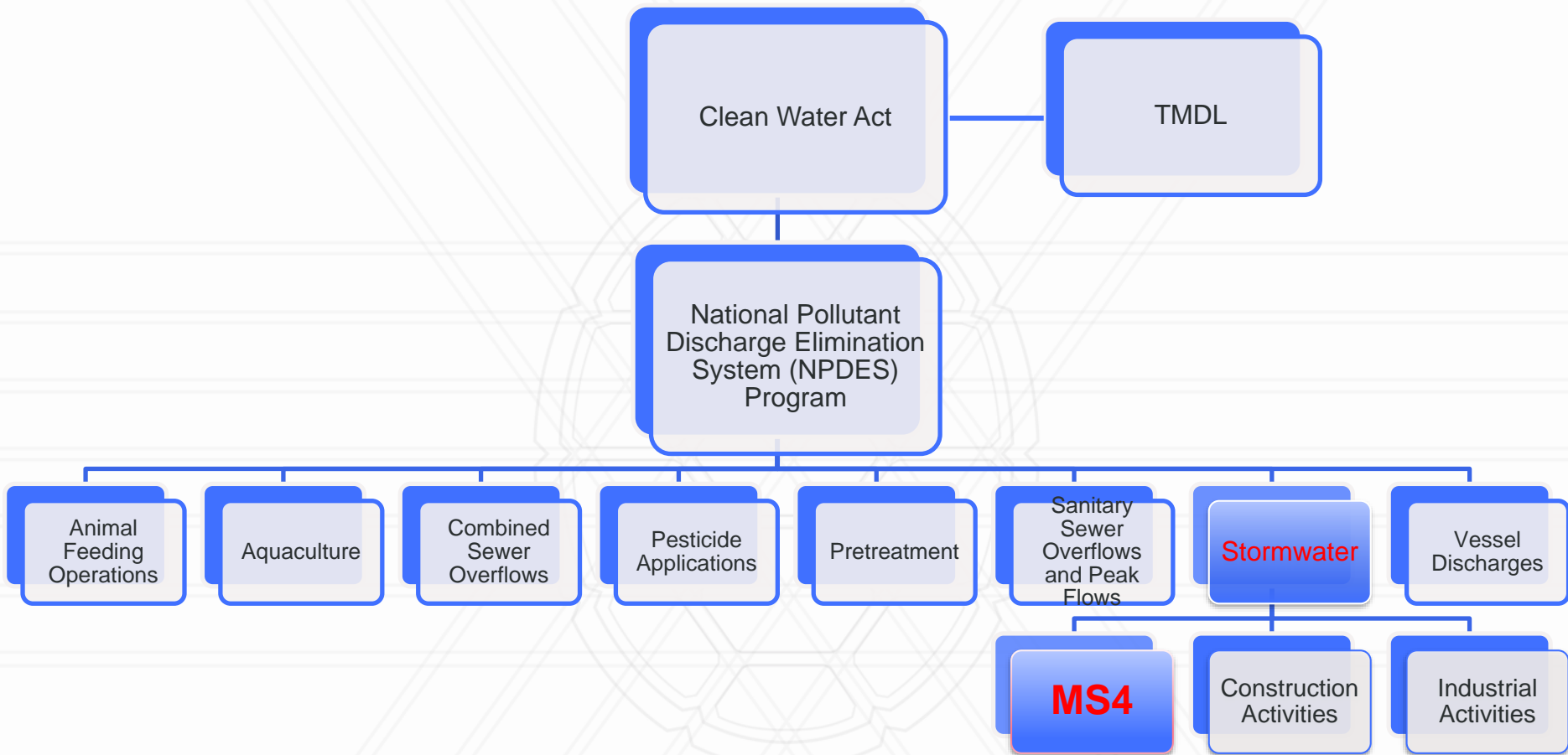
Point Source Pollution



OR

Nonpoint Source Pollution





# MS4 Permit

## (Municipal Separate Storm Sewer System)

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- Phase I MS4 Permit: Population over 100,000
  - Montgomery County, Prince Georges County
- Phase II MS4 Permit
  - Small Municipalities
  - State and Federal Agencies (e.g., USM Institutions)

# MS4 Permit

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- MS4 Six Minimum Control Measures (MCMs)
  - Personnel Education and Outreach
  - Public Involvement and Participation
  - Illicit Discharge Detection and Elimination Program
  - Construction Site Stormwater Runoff Control
  - Post Construction Stormwater Management
  - Pollution Prevention and Good Housekeeping

In addition, there is a **20%** impervious area retrofit requirement.



# Personnel Education and Outreach

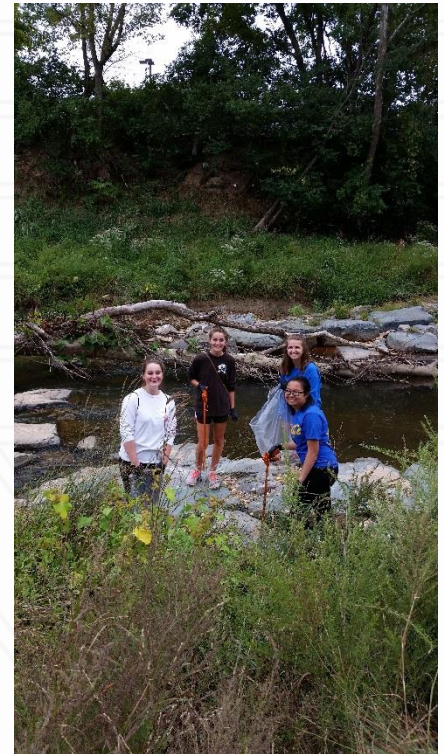
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- Develop and distribute education materials
- Develop a hotline for public to report water quality complaints
- Develop annual employee training programs
  
- Quantify and report results
  - # of fliers handed out
  - # of people that attended/completed training
  - # of reported incidents

# Public Involvement and Participation

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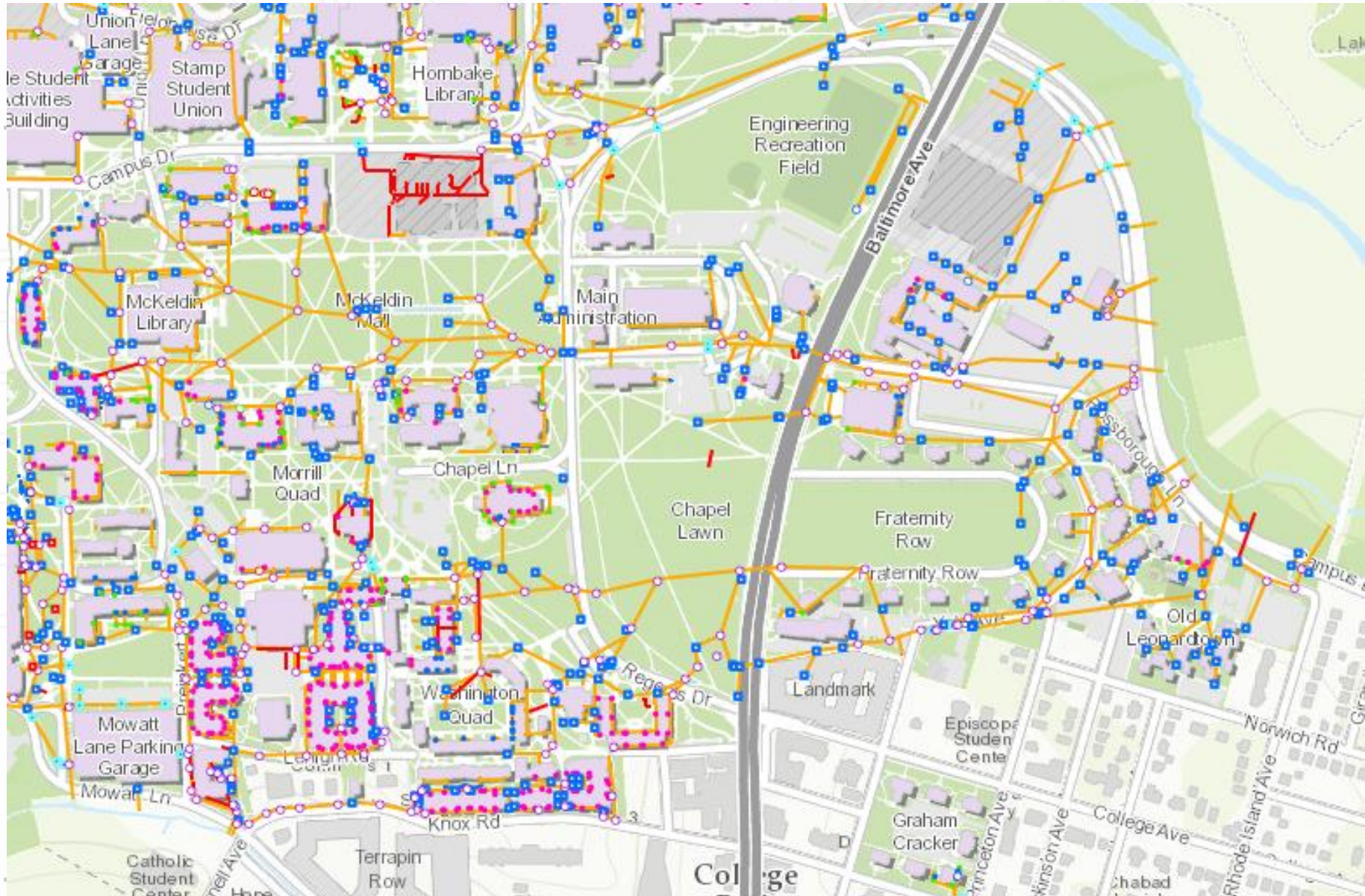
- Conduct public participation events
  - Tree plantings, stream cleanups, storm drain stenciling, and Earth Day
  - Events must be quantified and reported
- Provide public access to all progress reports
  
- Quantify and report results
  - # of events held
  - # of people at each event



# Illicit Discharge Detection and Elimination (IDDE) Program

- Establish a policy or directive that prohibits illicit discharges
- Develop a map of ALL storm drain infrastructure
- Establish procedures to monitor/screen outfalls
  - At least 50% of all outfalls must be screened each year (depending on campus size)
- Develop a hotline/reporting mechanism for public to report illicit discharges
- Coordinate with adjacent MS4 jurisdictions if MS4 connect
- Quantify and report results





# Construction Site Stormwater Runoff Control

- Construction projects shall comply with MDE E&SC guidelines
  - Usually addressed through the construction permitting process
  - MDE usually already has authority
- Develop process to receive & investigate construction runoff complaints
- Ensure appropriate staff are trained
- Quantify and report results



# Post Construction Stormwater Management

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- All new projects must comply with the MDE SWM manual
- Ensure staff are properly trained on design and maintenance
- Develop a GIS-based Urban BMP database
- Quantify and report results
  - # of facilities planned or built
  - Summary of maintenance actions performed with detailed records to support
  - Submit Urban BMP database

# Pollution Prevention and Good Housekeeping

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- Develop pollution prevention plans/measures aimed at reducing pollution
  - Look at maintenance yards, fleet operations, building operations, spill control, parking lots, etc.
  - Reduce pesticide/fertilizer use
  - Winter road (salt/sand) treatment practices
- Mandatory annual training
- Ensure facilities as proper coverage under other NPDES permits if necessary
  - E.g., 12-SW permit for Industrial Activities
- Quantify and report results

# Restoration Retrofit Requirements

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- Must retrofit **20%** of untreated impervious areas—projected completion by 2025
- Conduct a baseline assessment in the coming year to determine “treated” vs “untreated” areas
- Restoration credits can be obtained by building new SWM facilities or implementing alternative practices



# Restoration Retrofit Goals

- Alternate Methods for Getting Retrofit Credits
  - Tree Planting (especially over ex. impervious areas)
  - Street Sweeping
  - Stream Restoration
  - Catch Basin Cleaning/Storm Drain Vacuuming
  - Outfall Stabilization



Refer to: Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated (MDE, 2014)



# Major MS4 Permit Requirements and Due Dates

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Fall 2018: Responsible Person sign and submit Notice of Intent (NOI)

Fall 2019: Complete baseline assessment *and* Urban BMP Database

Fall 2020: Complete 20% restoration plan

Fall 2023: Submit final 20% restoration plan

2025: Projected completion of 20% restoration

# MS4 Permit “Responsible Person”

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- The NOI, all annual reports, and other significant findings must be submitted to MDE by the “Responsible Person”
- Per COMAR 26.08.04.01-1 and 40CFR 122.22, signatories shall be:
  - Principal executive officer, ranking elected official, or other duly authorized employee
- “Responsible Person” vs. “Technical Contact”
  - Overall program responsibility vs. day-to-day lead

# MS4 Permit Penalties

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- MS4 program is authorized under the Clean Water Act (CWA) as well as various Federal and State policies and guidelines
- Permittee can be subject to concurrent penalties under the CWA and MD's Environmental Articles
  - Civil and criminal penalties including up to \$50,000 per violation and two years of imprisonment
- University-wide failure to implement can result in penalties and fines
  - For example, Montgomery County just entered into a Consent Decree with MDE for failure to fully implement their permit

# What should I be doing now?

- Figure out who the “Responsible Person” is
- Start you FY19 Required MS4 Activities!
  - Map storm drain system
  - BMP inspections and inventory
- Start having those budget conversations
  - Immediate funding for FY19 activities
  - Future budgeting for retrofit implementation
- Figure out your team/partners
  - Internal team
  - External partners





Conservation is a  
state of harmony  
between men and  
land.

Aldo Leopold

Questions?