

CONSTRUCTION AND POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM)



OUR TEAM FOR TODAY'S PRESENTATION



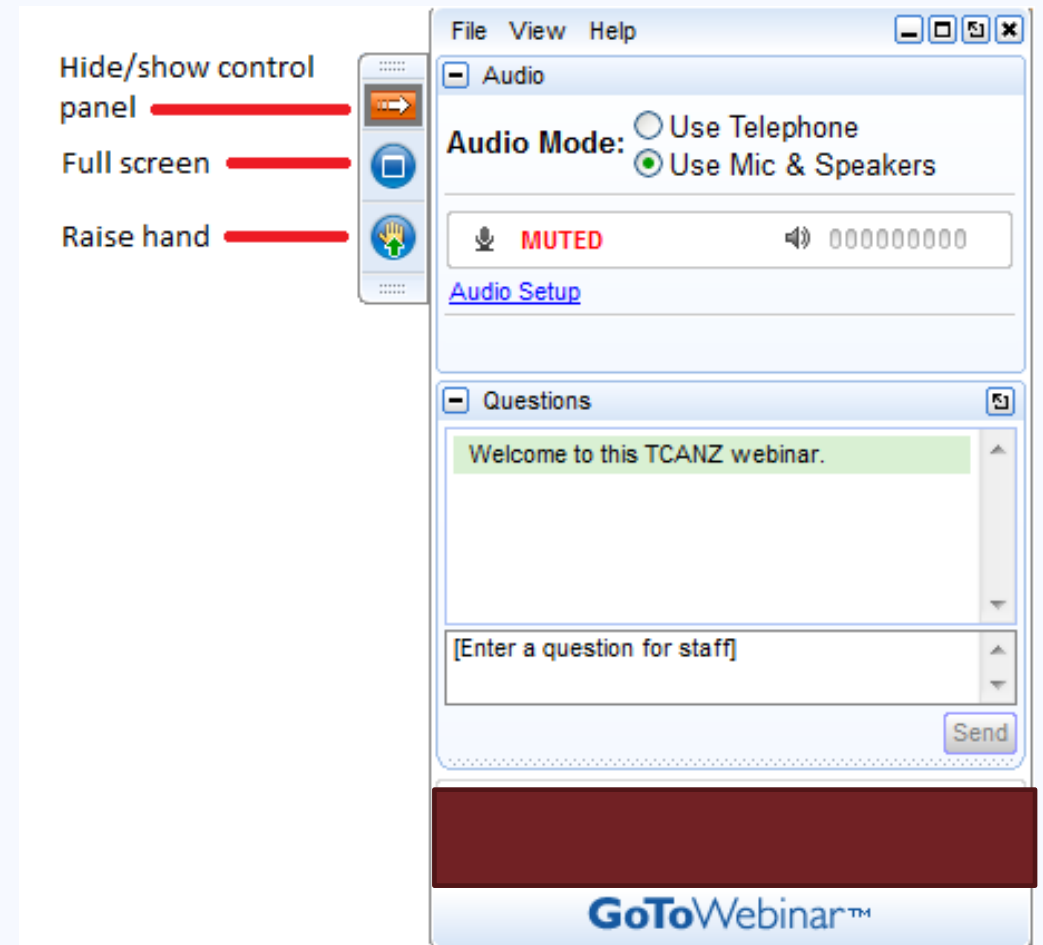
PHILIP MANISCALCO
PROJECT MANAGER,
ENVIRONMENTAL SERVICES



KRISTIAN WITT
VICE PRESIDENT,
ENVIRONMENTAL SERVICES

HOUSEKEEPING

- This presentation is being recorded and will be shared.
- Everyone will be muted to prevent background noise.
- Use the question button to log your question.



HOW DID WE GET HERE?



Clean Water Act 1972

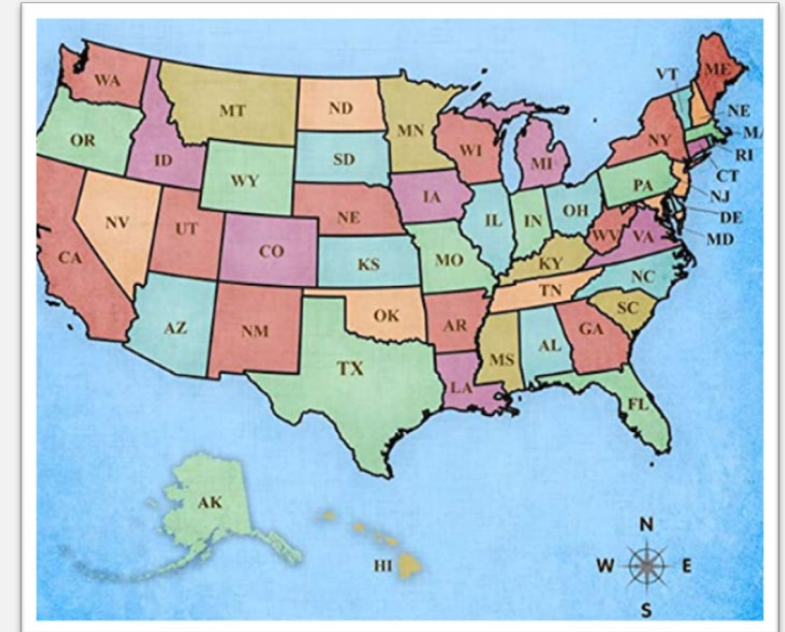
CWA 1987 Amendment

- Phase I MS4
- Phase I Permitting

1999 Phase II
Regulations Expand

WHO ADMINISTERS THE PROGRAM?

- Local Authorities – Municipalities will have their own requirements or be involved with permitting
- Many States have been given authority by USEPA
- USEPA Administers the program for some states
 - MA, NH, D.C., NM, CO, WA
 - ID was granted authority in 2021
 - American Samoa, Guam, Johnston Atoll, Midway and Wake Islands, Northern Mariana Islands, and Puerto Rico



DO I NEED A PERMIT AND WHAT TYPE



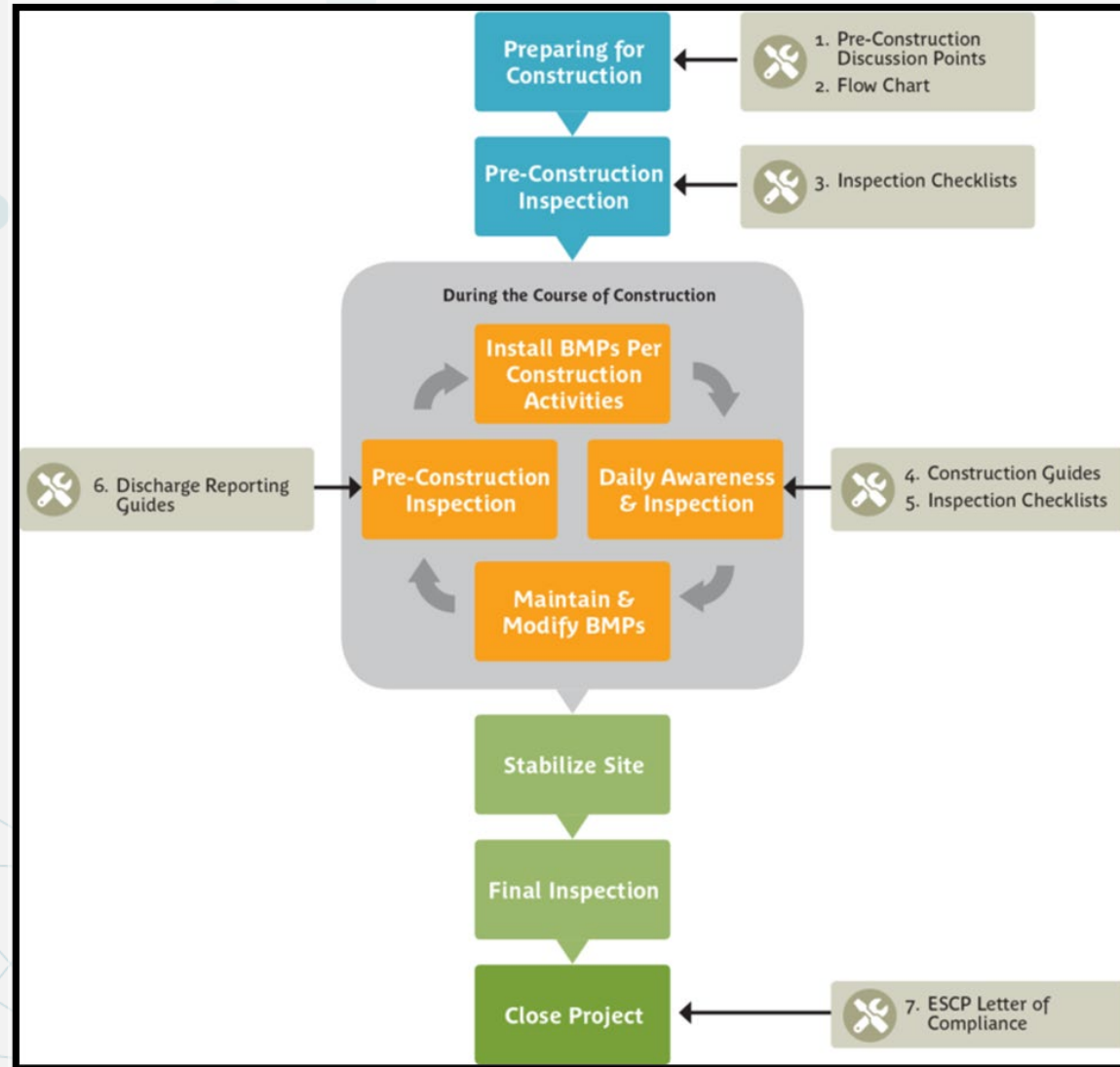
A permit is required:

- land disturbance of equal to or greater than one acre and less than five acres; or
- result in disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres.

Types of Permits:

- General Permit (New Permit in 2022)
- Individual Permit

WHAT'S IN A PERMIT?



WHAT'S IN A PERMIT



Erosion and Sediment Controls

Soil Stabilization Requirements

Stormwater Pollution Prevention Plan

Dewatering Requirements

Identify Permit Changes

Turbidity Benchmark Monitoring

Training

Inspections – Qualified Person – EPA Training Course


- Routine Weekly, Post-Storm Event Inspections, Corrective Action Inspections

Reporting – Immediate, 24-hour, Written Follow-up

POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM)



CONTENTS:

- 
- What is PCSM?
 - Terminology and Acronyms
 - Policies and Guidance
 - 2023 Updates
 - Elements of a Stormwater Inspection
 - Reporting

TERMS/ ACRONYMS

- SWMP- Stormwater Management Program
- SCM- Stormwater Control Measures
- BMP- Best Management Practices
- NPDES- National Pollutant Discharge Elimination System
- MS4- municipal separate storm sewer system

WHAT IS PCSM?

- Post-Construction Stormwater Management- a combination of regulatory and engineering controls to improve stormwater quality discharged to local waterways.
- Governing Authorities
 - National Legislation by Clean Water Act
 - All 50 States have Stormwater Control Programs
 - Local Municipalities and Counties

Example: Pennsylvania

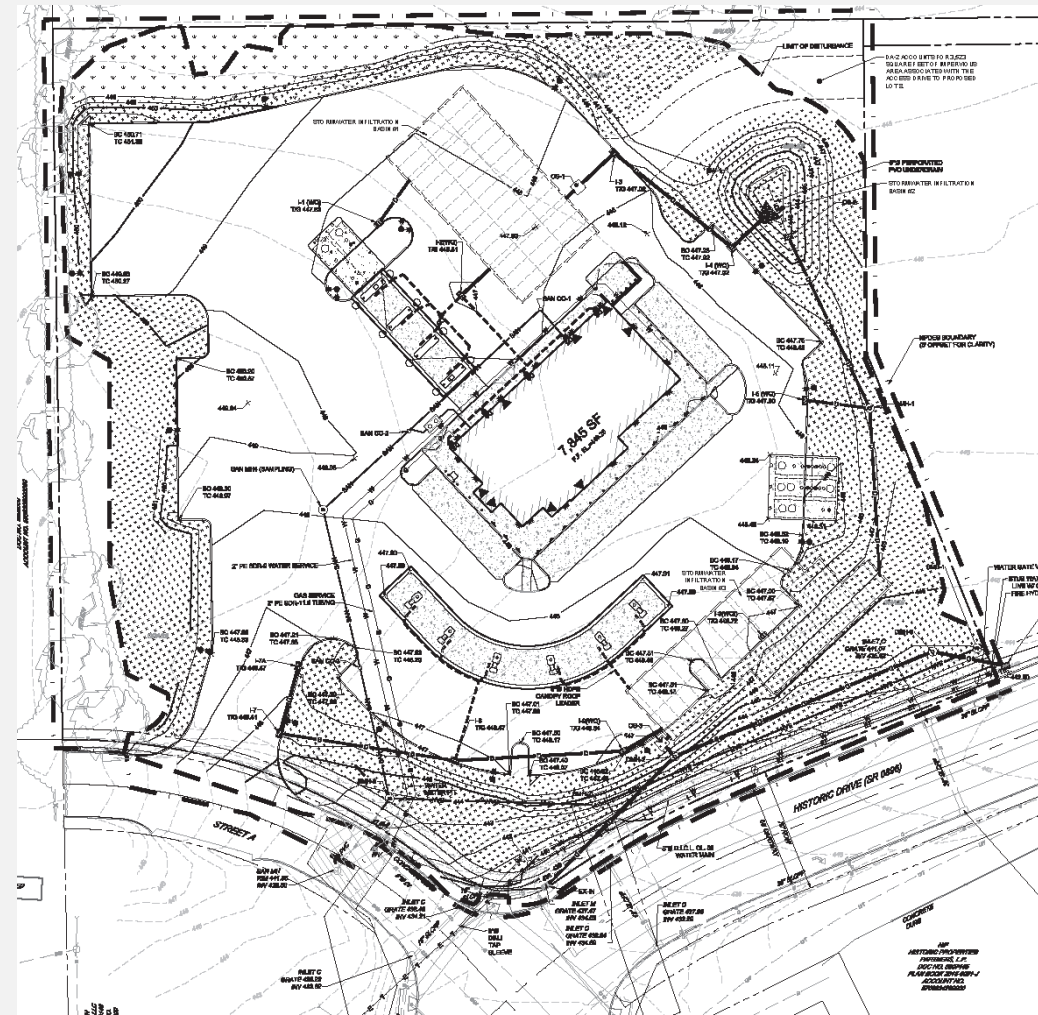
Policy: Owners and operators of earth disturbance projects that require a stormwater discharge permit must manage post-construction stormwater.

Purpose: This guidance establishes standards for the management of stormwater through the implementation of Stormwater Control Measures (SCMs) and other measures to comply with the regulatory requirements.

DEFINITION: STORMWATER MANAGEMENT PLAN

A **Stormwater Management Plan** provides a mechanism for municipalities within the watershed to plan for and manage increased runoff associated with future development and land use changes.

The Pennsylvania Stormwater Management act of 1978 (Act 167) requires that **each county** must prepare and adopt a watershed stormwater management plan for **each watershed** located within the county as designated by DEP



DEFINITION: STORMWATER CONTROL MEASURE

Stormwater Control Measures (SCMs) are defined as:

- Physical, structural, and/or managerial measures that, when used singly or in combination, reduce the downstream quality and quantity impacts of stormwater.
- A permit condition used in place of or in conjunction with effluent limitations.



DEFINITION: BEST MANAGEMENT PRACTICES

Stormwater BMPs are **devices, practices, or methods that are used to manage stormwater runoff by controlling peak runoff rate, improving water quality, and managing runoff volume.**

Important considerations when selecting BMPs include but are not limited to:

- 1) site conditions (slope and soil types)
- 2) existing and surrounding land uses
- 3) priority stormwater management goals (e.g. water quality regulations)
- 4) additional site development or redevelopment goals (e.g. recreational opportunities)



MS4- MUNICIPAL SEPARATE STORM SEWER SESTEM

Stormwater runoff is commonly transported through municipal separate storm sewer systems (MS4s), and then often **discharged, untreated, into local water bodies.**

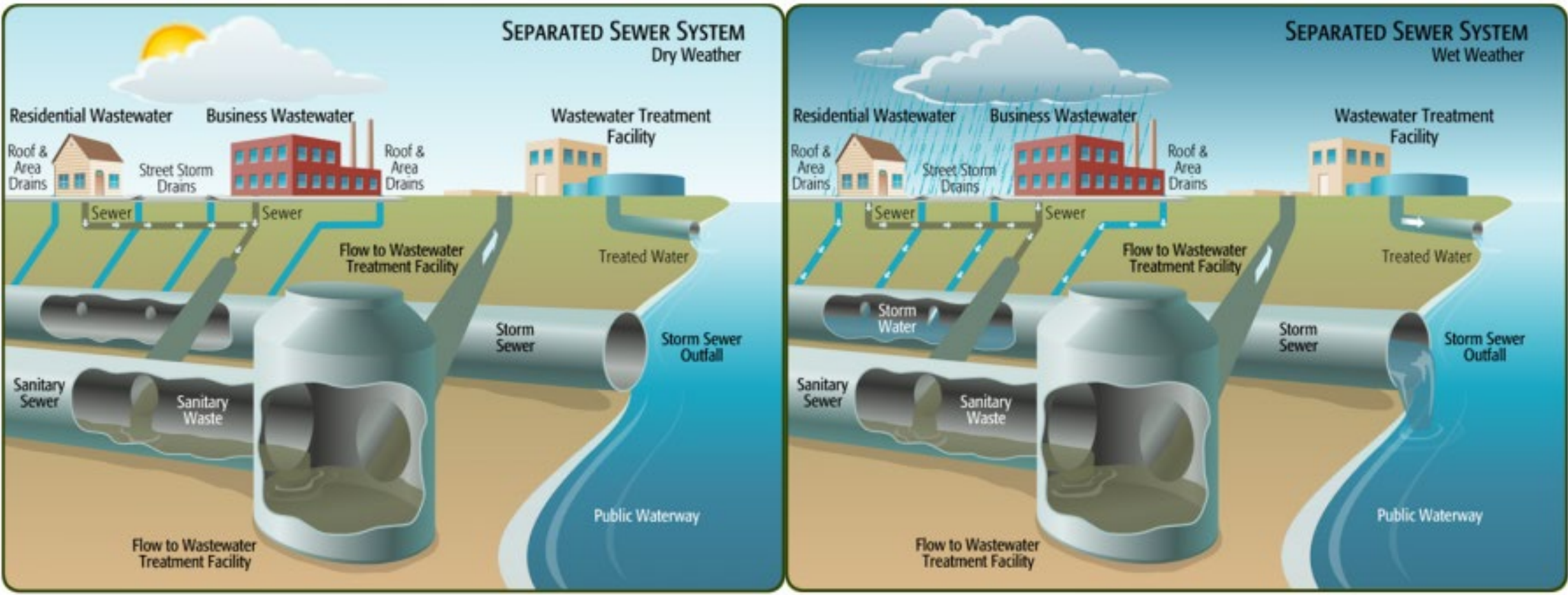
An MS4 is a conveyance or system of conveyances that is:

- owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.
- 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).

To prevent harmful pollutants from being washed or dumped into MS4s, certain operators are required to obtain **NPDES permits** and develop **stormwater management programs (SWMPs)**. The SWMP describes the stormwater control practices that will be implemented consistent with permit requirements to minimize the discharge of pollutants from the sewer system.



MS4- MUNICIPAL SEPARATE STORM SEWER SYSTEM



MS4

Phase I MS4s

The 1990 Phase I regulation requires medium and large cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges.

There are approximately 855 Phase I MS4s covered by 250 Individual Permits

Phase II MS4s

The 1999 Phase II regulation requires small MS4s in U.S. Census Bureau defined urbanized areas, as well as MS4s designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges. Phase II also includes non-traditional MS4s such as public universities, departments of transportation, hospitals and prisons.

Most of the Phase II MS4s are covered by statewide General Permits, however some states use individual permits.

MS4

National Map of Regulated MS4s



LOCAL SW BMP PROGRAMS

- Municipality or County
- State
- National: EPA NPDES
 - National Menu of BMPs for Stormwater-Post-Construction



STATE PCSM PROGRAMS

Post-construction standards for stormwater discharges from newly developed and redeveloped sites exist for all 50 states and District of Columbia.

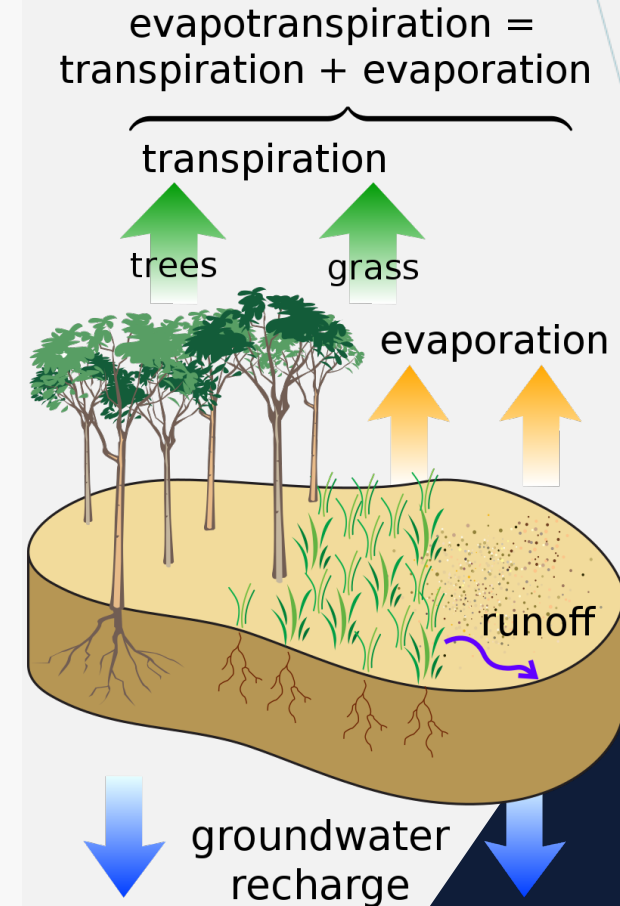
https://www3.epa.gov/npdes/pubs/sw_state_summary_standards.pdf



PA Stormwater Manual Updates Summarized

- **Infiltration** SCMs will continue to play an important role in stormwater management, and the updated Manual utilizes PADEP's latest understanding of soil physics to improve SCM design.
- A more thorough accounting of volume reduction through **evapotranspiration** (ET) processes and the use of SCMs that are designed to release stormwater in a manner that mimics natural subsurface flows to surface waters.
- A methodology to consider **changing rainfall patterns** through a continuous simulation approach and use of more recent precipitation records.

Ultimately, the objective of the updated PCSM Manual is the same as the 2006 Stormwater BMP Manual: **to protect, maintain, reclaim and restore water quality and the existing and designated uses of waters of the Commonwealth.**



CMI SERVICES

- CMI offers a unique, specialized service for our clients to maintain compliance with Stormwater Permitting and Post-Construction Stormwater Management (PCSM) regulations.
- CMI services for PCSM include:
 - Inspection schedule tracking
 - Onsite inspections by qualified professionals including photographic documentation and interviews with store management.
 - Concise reporting highlighting inspection findings and BMPs as well as recommendations to client for maintenance improved stormwater system conditions.

EXAMPLE SITE INSPECTION

Stormwater Inlets Inspection Instructions:

- 1) Date:
- 2) Review drawings.
- 3) Proceed to #
- 4) Document weather conditions:
- 5) Go inside and ask for manager. Identify yourself and tell them you are doing the planned stormwater inlet inspection. You will be taking some photos and measurements on site.
- 6) What is managers name:
- 7) Ask manager: When it rains does the water run off site properly?
- 8) Ask manager: Are there any other conditions affection the stormwater sewer system that they would like to report?
- 9) Go outside and walk site. Take photo's of the site. See previous report to be sure you get all of the photos. Note any conditions that could affect stormwater sewer system.

- 10) Inlet # _____
 - a. Is there Water in the inlet? YES/NO
 - b. Is there blockage on top of the inlet? YES/NO
 - c. Are there floatables present in the inlet? YES/NO
 - d. What are the floatables? Trash/Leaves/etc.
 - e. Is there an Oily Sheen within the inlet? YES/NO
 - f. Is there any internal damage to the inlet? YES/NO
 - g. What is the sediment level within the inlet?

EXAMPLE: GAS STATION

- Convenience Store
- Parking Area
- Fuel Dispensers
- UST Field
- Air Pump
- Light Ballasts/ Utilities
- Electrical Transformer
- Trash Storage Area
- Vehicular Entrances

- Stormwater Inlets
- Jellyfish Units



EXAMPLE SW INSPECTION

- Report Weather Conditions
- Interview with Store Manager
- Inspection of Stormwater Inlets
 - Is there water in the Inlet?
 - Is the top of Inlet blocked?
 - Are there “floatables” present?
 - Description of Floatables: Trash/Leaves/Other
 - Is there an oily sheen in the inlet?
 - Is there any internal damage?
 - What is the sediment measurement?
- Jellyfish Filters
- Landscape Features, Stormwater Basins
- Photo Log



ELEMENTS OF A REPORT

- Presents findings from onsite **inspection forms and photo log**.
 - Details interview findings, inlet grating blockages, sediment level, and overall site conditions.
- Offers **recommendations for management** to maintain optimal function and BMPs of stormwater collection system.
 - **Example:** If an inlet is more than 50% full of sediment or debris, a sump cleanout is recommended to the client.



REFERENCES

- **EPA SW State Summary Standards:**
https://www3.epa.gov/npdes/pubs/sw_state_summary_standards.pdf
- **National Menu of Best Management Practices (BMPs) for Stormwater-Post-Construction-** <https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater-post-construction>
- **MS4 Information:** [epa.gov/npdes/stormwater-discharges-municipal-sources](https://www.epa.gov/npdes/stormwater-discharges-municipal-sources)
- **Stormwater Management Plan/ PA Act 167**
<https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Pages/Act-167.aspx>
 - 2023 Draft PA PCSM Manual (updated)
 - 2006 PA Stormwater BMP Manual

THANK YOU FOR ATTENDING

Questions?