NPDES MS4 Permits

Path to Compliance

Agenda

- What is an MS4 Outfall
- NPDES Background
- The Basics: Understanding MS4 Permits and PAG -13
- The First Level: Maintaining Compliance with the Minimum Control Measures (MCMs)
- The Next Level: Total Maximum Daily Loads (TMDLs)
- Inspections
- Mapping


What is an MS4 Outfall?

What is an MS4 Outfall?

- The point where an MS4 discharges stormwater to other surface waters
- Point sources are not just pipes but include any discernible, confined and discrete conveyance including but not limited to ditches and channels as defined in 25 Pa. Code 92a.2

MS4 Outfall Quiz

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1. SWM pond discharge to stream

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2. Municipal road discharge to stream

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3. MS4 swale discharge to a SWM Pond

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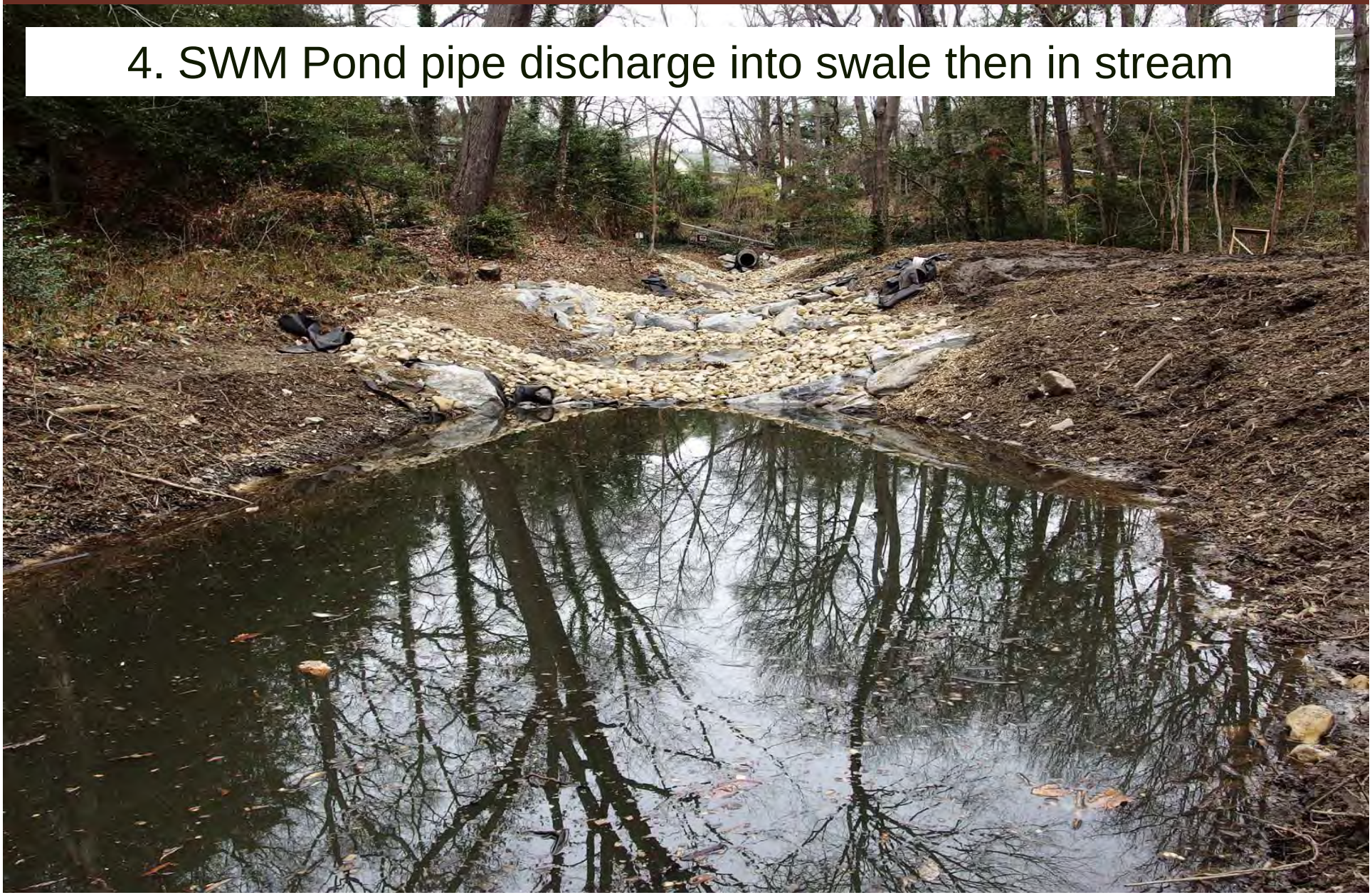
4. SWM Pond pipe discharge into swale then in stream



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5. Municipal road discharge to concrete swale then to stream

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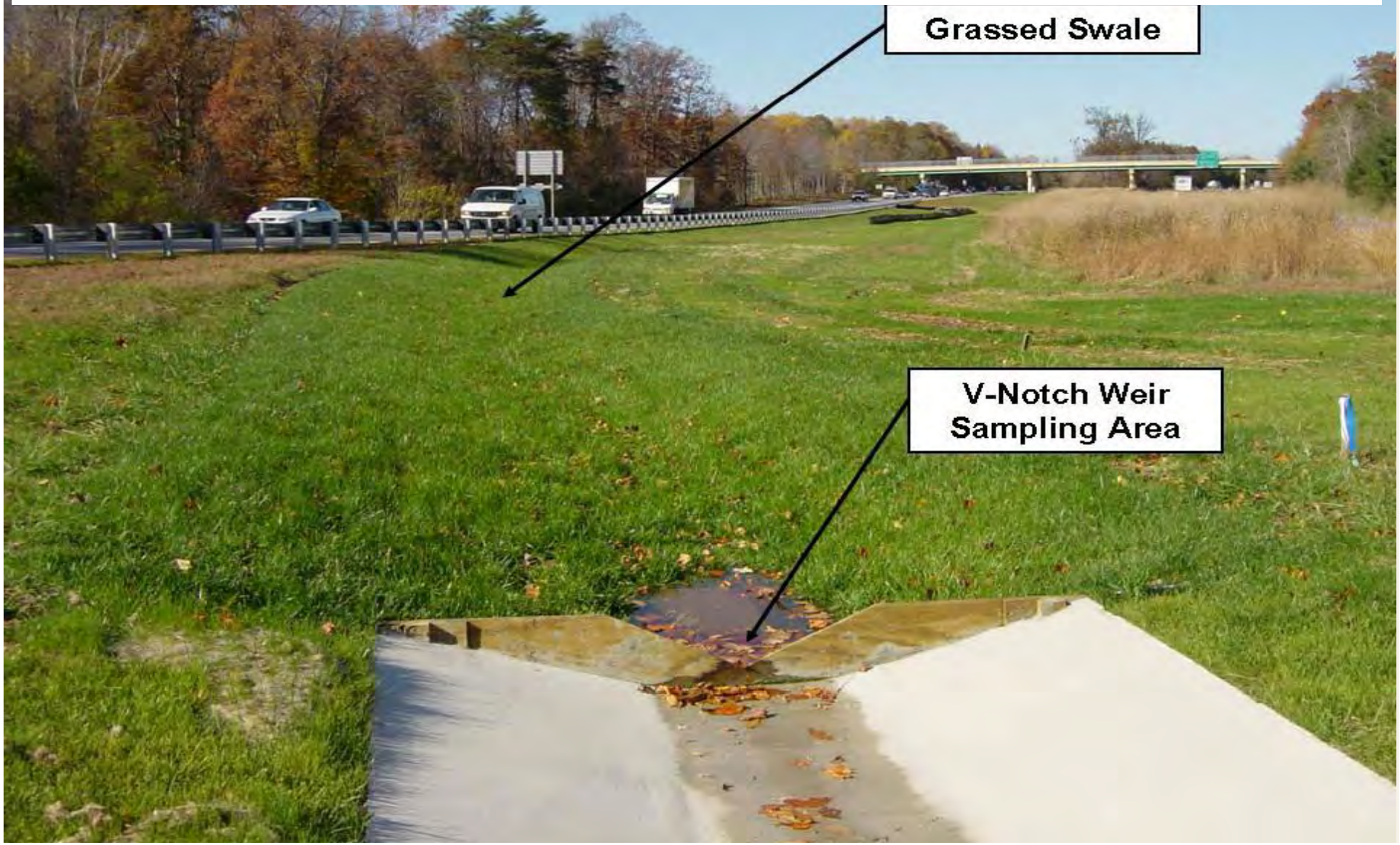
6. Road swale discharge to concrete channel then to stream



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7. Exclusively private property pipe to stream

Answer Key

1. Yes, pipe is outfall
2. Yes, swale is outfall
3. No, outfall is where basin discharges to stream
4. Yes, pipe is outfall
5. Yes, concrete swale is outfall
6. Yes, concrete swale is outfall (not grassed swale)
7. No, this drains exclusively private property

Background

- EPA NPDES Stormwater Program
- The National Pollutant Discharge Elimination System (NPDES) Stormwater Program regulates stormwater discharges from three potential sources:
  - municipal separate storm sewer systems (MS4s),
  - construction activities, and
  - industrial activities.

MS4s

- Phase I, issued in 1990, 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 750 Phase I MS4s.

- Phase II, issued in 1999, requires regulated small MS4s in urbanized areas, as well as small MS4s outside the urbanized areas that are designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges. There are approximately 6,700 Phase II MS4s.

MS4s in Pennsylvania

- PA authorized to implement the NPDES Stormwater Program and administer their own stormwater permitting programs
- Each regulated MS4 is required to develop and implement a stormwater management program (SWMP) to reduce the contamination of stormwater runoff and prohibit illicit discharges.

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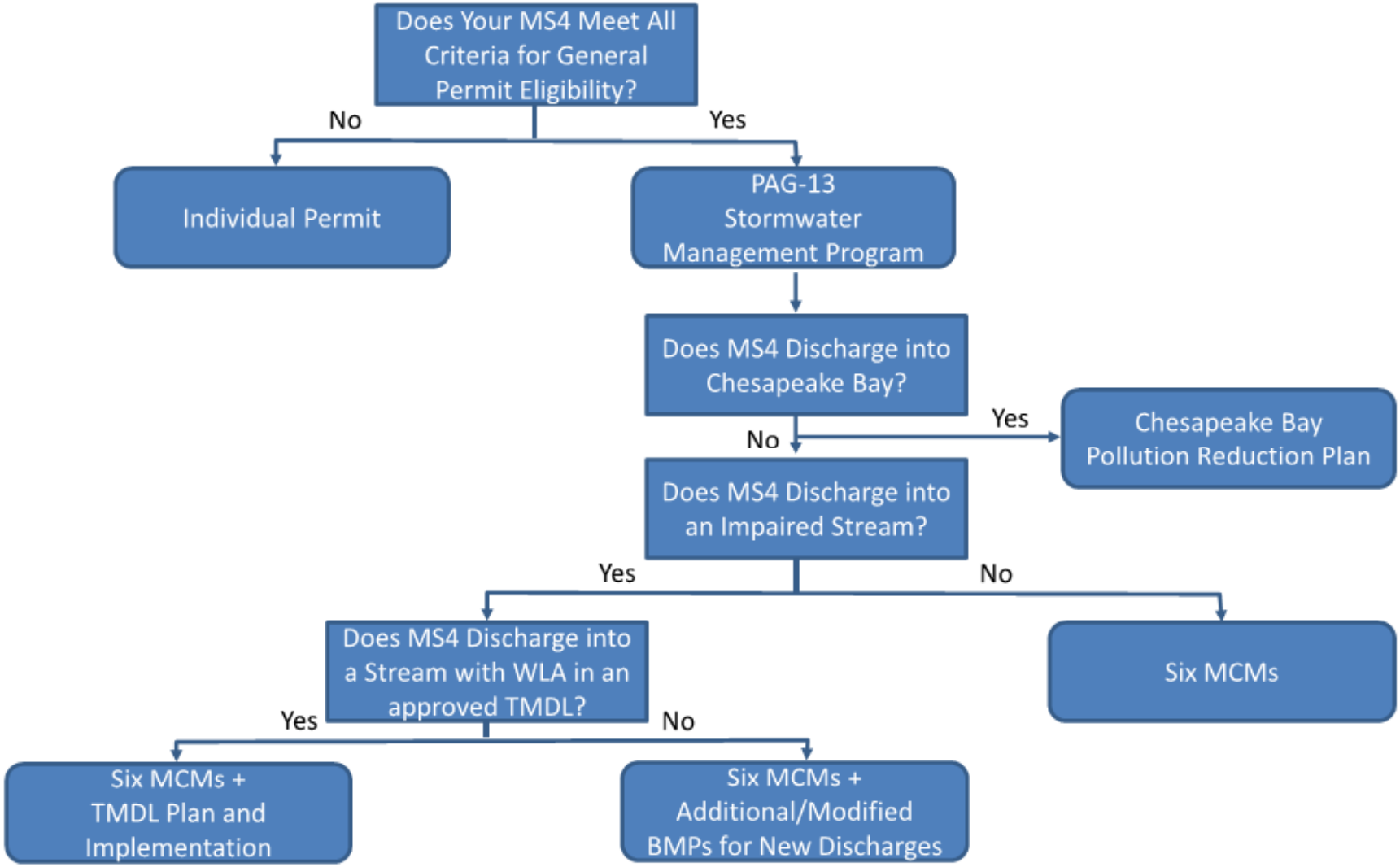


What is an MS4 Outfall?

- The point where an MS4 discharges stormwater to other surface waters …
- … Not just pipes

The Basics:

Understanding MS4 Permits and PAG -13

Set a Course for MS4 Compliance

The Basics:

Understanding MS4 Permits and PAG -13

- MS4 – Municipal Separate Storm Sewer System
- "separate storm sewer system" includes ditches, curbs, gutters, storm sewers, and similar means of collecting or conveying runoff that do not connect with a wastewater collection system or treatment plant.
- "municipal separate storm sewer system" (MS4), the system must be owned or operated by a public agency—for example:
  - a city or town
  - a municipal utility district, flood control district, or other special district
  - a county
  - a state or federal agency

The Basics:

Understanding MS4 Permits and PAG -13

- Federal regulations require municipalities designated by federal regulations or DEP (MS4s) to obtain permits and to develop and implement a Stormwater Management Program (SWMP)
- **General Permit PAG-13** provides a streamlined process to meet the federal requirements.
- In some cases, such as a municipality that is not eligible for general permit coverage because it discharges to a “Special Protection” watershed, an Individual NPDES MS4 Permit is needed
- A municipal stormwater management program must be fully implemented in the first permit term and it must be continued and improved during subsequent permit terms

The Basics:

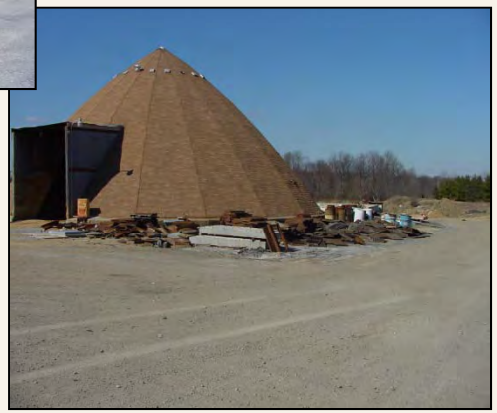
Understanding MS4 Permits and PAG -13

- If your regulated small MS4 discharges stormwater into any receiving waters with approved TMDLs, you must develop, submit to DEP for approval, and ensure implementation of an MS4 TMDL Plan that is consistent with the applicable TMDLs and that achieves the required pollutant load reductions in the applicable wasteload allocations (WLAs) of the TMDLs

- Your MS4 TMDL Plan must be submitted with your Notice of Intent to use PAG-13 or your application for an Individual MS4 Permit.

The First Level:

Maintaining Compliance with the Minimum Control Measures (MCMs)



MS4: Path to Compliance

Federal regulations require municipalities designated to obtain a **National Pollutant Discharge Elimination System (NPDES) permit (Municipal Separate Storm Sewer System (MS4) Permit)** to develop and implement a **Stormwater Management Program (SWMP)** addressing **six (6) Minimum Control Measures (MCMs):**

1. Public education and outreach
2. Public participation / involvement
3. Illicit discharge detection and elimination
4. Construction site runoff control
5. Post-construction runoff control
6. Pollution prevention / good housekeeping

MCM #1: Public Education & Outreach (PEOP)

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MCM #1: Public Education & Outreach (PEOP)

Relative to **Public Education & Outreach (PEOP)** and the corresponding Municipal SWMP

- Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of stormwater discharges on local waterbodies and the steps that can be taken to reduce stormwater pollution; and

- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness.

PAG-13 requires implementation and facilitation of four (4) BMPs under MCM #1 for the municipal SMWP

MS4: Path to Compliance

MCM #1: Public Education & Outreach

- **BMP #1**
  - Develop, implement, and mai
    Education & Outreach Progra
  - Measurable Goals
    1. Re-evaluate each permit y
       needed
    2. Achieve measurable impr
       audience's understanding
       impacts of stormwater pol
       can take to prevent it.

- **BMP #2**
  - Develop and maintain lists of target audience groups that are present within the areas served by your regulated small MS4s.
  - Measurable Goal:
    1. Review and update list(s) annually

Write it Down!

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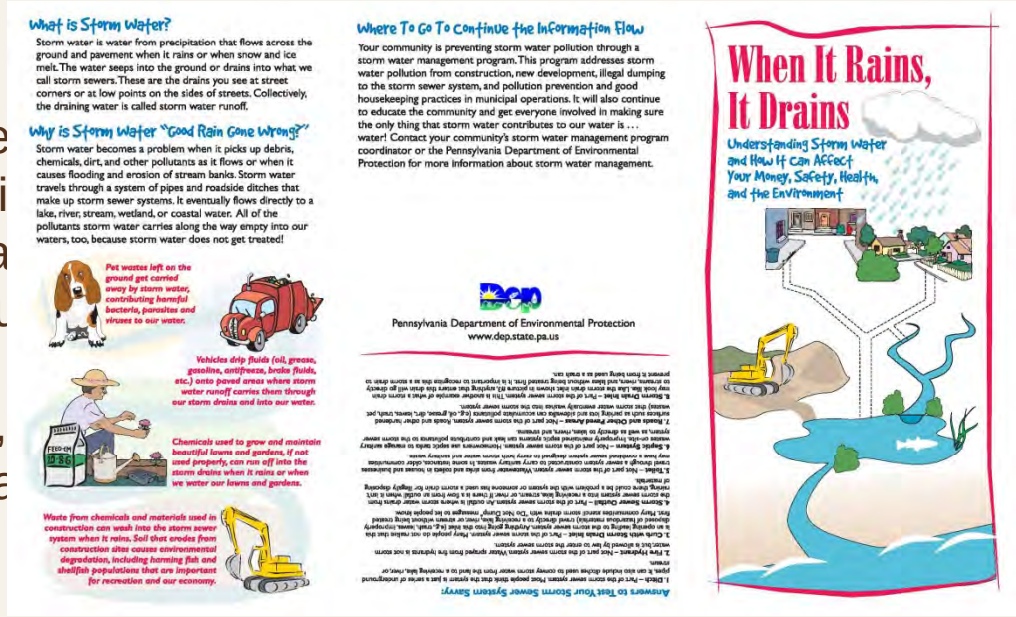
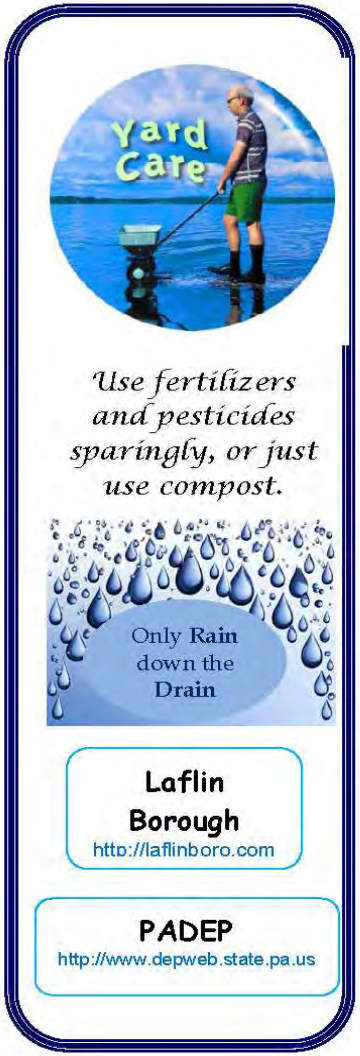
MCM #1: Public Education & Outreach

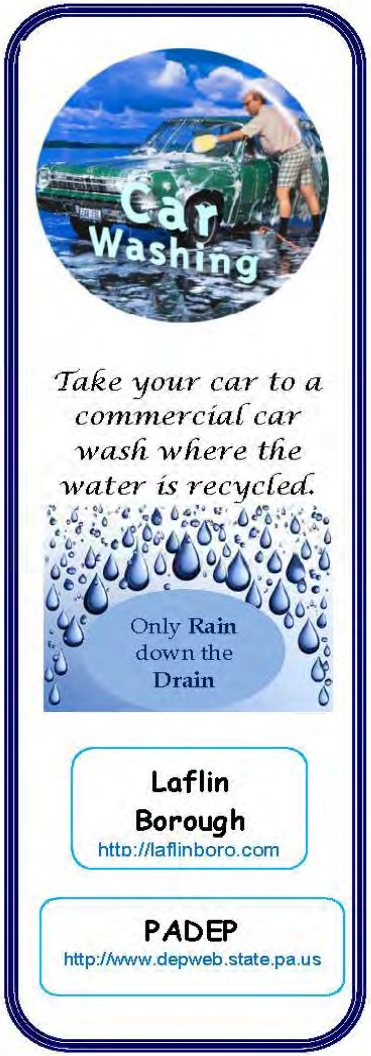
- **BMP #3**
  - Annually publish at le
    flyer, or website that i
    information, a genera
    information about you
  - Measurable Goal
    1. Review, update,
       published annua

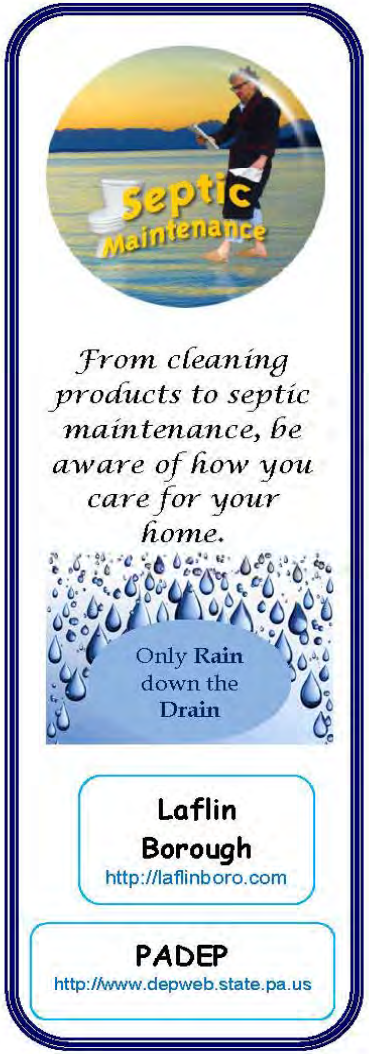


- **BMP #4**
  - Distribute stormwater educational materials and/or information to the target audiences using a variety of distribution methods including, but not limited to: displays, posters, pamphlets, local cable TV, bill stuffers, meetings, fact sheets, etc.
  - Measurable Goal:
    1. Select and utilize at least two (2) distribution methods each permit year (in addition to the provisions of BMP #3)

MS4: Path to Compliance







Write it Down!

Questions

MCM #2: Public Involvement & Participation (PIPP)

MS4: Path to Compliance

MCM #2: Public Involvement & Participation (PIPP)

Relative to **Public Involvement & Participation (PIPP)** and the corresponding Municipal SWMP

- Comply with applicable State, Tribal, and local public notice requirements; and
- Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure

PAG-13 requires implementation and facilitation of three (3) BMPs under MCM #2 for the municipal SMWP

MCM #2: Public Involvement & Participation Program (PIPP)

- **BMP #1**
  - Develop, implement, and maintain a *written* Public Involvement & Participation Program (PIPP)
  - Measurable Goals
    1. Re-evaluate each permit year and revise as needed
    2. Your PIPP shall include, but not limited to: a) opportunities for the public to participate in the decision-making processes associated with your SWMP and MS4 Permit, b) Methods of routine communication to various groups such as watershed associations, environmental organizations, and so on; and c) Making your periodic (or annual) reports available to the public

MS4: Path to Compliance

MCM #2: Public Involvement & Participation Program (PIPP)

- **BMP #2**
  - Provide public notice and opportunities for public review and feedback prior to adoption of any ordinance required by the MS4 Permit
  - Measurable Goals
    1. Ordinance advertisement
    2. Document public input and feedback by the municipality

MCM #2: Public Involvement & Participation Program (PIPP)

- **BMP #3**
  - Regularly solicit public involvement and participation from the target audience groups. Assist the public in their efforts to help implement your SWMP. Conduct public meetings to discuss the on-going implementation of your SWMP
  - Measurable Goals
    1. Conduct at least one (1) public meeting per year to solicit public involvement and participation from target audience groups
    2. Document and report instances of cooperation and participation in your activities
    3. Document and report activities in which members of the public assisted or participated in your meetings and the implementation of your SWMP

Write it Down!

Questions

MCM #3: Illicit Discharge Detection & Elimination (IDDE)

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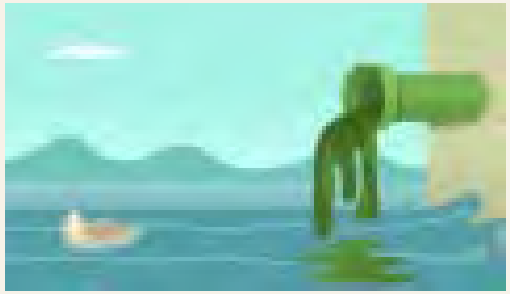
MCM #3: Illicit Discharge Detection & Elimination (IDDE)

Relative to **Illicit Discharge Detection & Elimination (IDDE)** and the corresponding Municipal SWMP

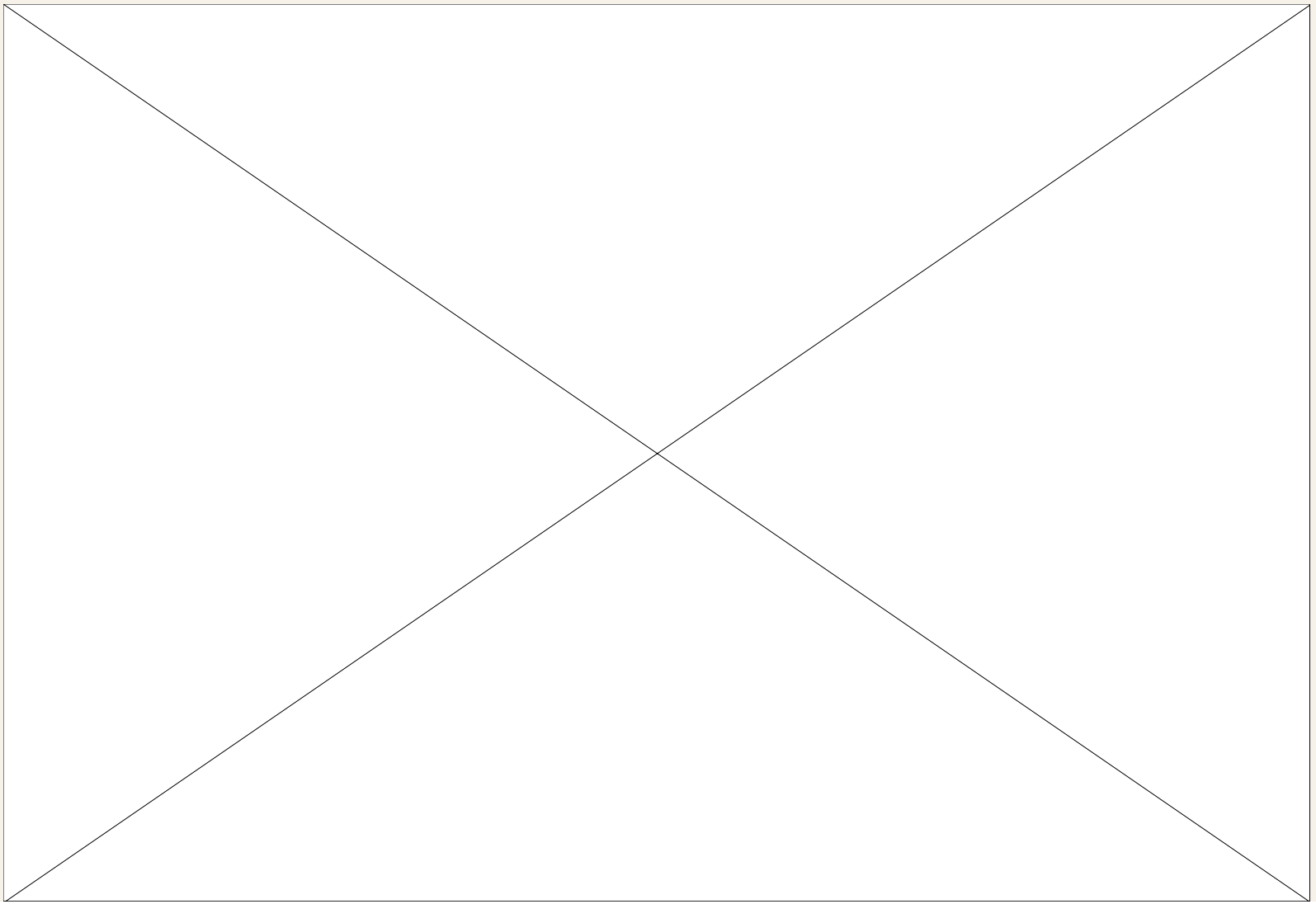


- Develop program
- Map MS4 (entire system)
- Conduct screening; identify and remove sources
- Enact ordinance
- Do educational outreach on IDDE

PAG-13 requires implementation and facilitation of six (6) BMPs under MCM #3 for the municipal SMWP

MS4: Path to Compliance

Thanks to the City of Greenville, South Carolina



MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #1**
  - Develop and implement a *written* program for the detection, elimination, and prevention of illicit discharges into your regulated MS4s

  - The program shall include the following:
    1. Procedures for identifying priority areas.
    2. Procedures for screening outfalls
    3. Procedures for identifying the source of an illicit discharge
    4. Procedures for eliminating an illicit discharge
    5. Procedures for assessing the potential for illicit discharges caused by the interaction of sewage disposal systems with storm drain systems
    6. Mechanisms for gaining access to private property to inspect outfalls (e.g., land easements, consent agreements)
    7. Procedures for program documentation, evaluation and assessment

MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #1**
  - Measurable Goals
    1. Re-evaluate each permit year and revise as needed
    2. Record all outfall inspections, flows observed, results of field screening and testing, and other follow-up investigation and corrective action work performed under this program

MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #2**
  - Develop and maintain a map of your regulated MS4. Map must show the location of all outfalls and the locations and names of all surface waters that receive discharges from those outfalls
  - Measurable Goals
    1. Update map each permit year and revise as needed
- **BMP #3**
  - In conjunction with the map(s) created under BMP #2, include roads, inlets, piping, swales, catch basins, channels, basins, and other features
  - Measurable Goals
    1. Update map each permit year and revise as needed

MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #4**
  - Conduct outfall field screening (pursuant to BMP #1) identify the source of any illicit discharges, and remove or correct any illicit discharges

  - Measurable Goals
    1. In each permit coverage year, at least forty percent of the total number of outfalls should be screened
    2. Keep records in accord with plan

Write it Down!

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MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #5**
  - Enact IDDE Ordinance. Generally one stormwater ordinance (for IDDE, Construction, BMP maintenance and Act 167). Required content described in DEP “model ordinance”

  - Measurable Goals
    1. update existing ordinance each permit year, if necessary,

MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #6**
  - Provide educational outreach to public employees, business owners and employees, property owners, the general public and elected officials

  - Educational outreach should include:
    - Distribution of brochures and guidance for target audiences including schools;
    - Programs to encourage and facilitate public reporting of illicit discharges;
    - Organizing volunteers to locate and visually inspect outfalls and to stencil storm drains; and
    - Implement and encourage recycling programs for common wastes such as motor oil, antifreeze and pesticides.

MCM #3: Illicit Discharge Detection & Elimination (IDDE)

- **BMP #6**
  - Provide educational outreach to public employees, business owners and employees, property owners, the general public and elected officials
  - Measurable Goals
    - Set up and promote a stormwater pollution reporting mechanism (e.g., a complaint line with message recording)
    - Respond to all complaints in a timely and appropriate manner
    - Document all responses

Questions

MCM #4: Construction Site Stormwater Runoff Control

MCM #4: Construction Site Stormwater Runoff Control

- **Goal**
  - To Implement Erosion and Sediment Control BMPs During Construction

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MCM #4: Construction Site Stormwater Runoff Control

Construction Site Stormwater Runoff Control Quiz

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MCM #4: Construction Site Stormwater Runoff Control

Relative to **Construction Site Stormwater Runoff Control** and the corresponding Municipal SWMP

- Develop, implement, and enforce a program
- Develop and implement an ordinance or other regulatory mechanism
- Develop requirements for construction site operators
- Develop procedures for receipt and consideration of public input

PAG-13 requires implementation and facilitation of four (4) BMPs under MCM #4 for the municipal SMWP

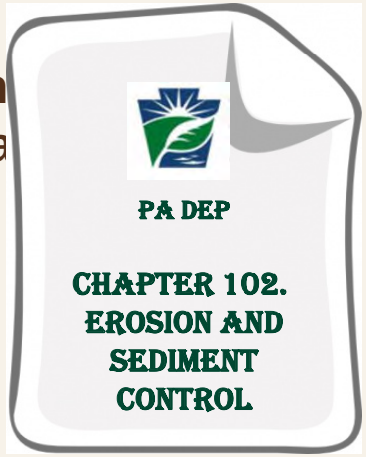
or

Implement MCM #4 through DEP's Chapter 102 Program

MCM #4: Construction Site Stormwater Runoff Control

- **Chapter 102 Program**
  EROSION AND SEDIMENT CONTROL AND POST CONSTRUCTION STORMWATER MANAGEMENT BMPs

  - Requires NPDES permits for stormwater discharges associated with construction activities for all earth disturbance > 1 acre
  - DEP's Chapter 102 Program is a **Qualified Local Program (QLP)**
  - At NOI or permit application for NPDES MS4 permit, permitees have to choose to follow a DEP QLP or develop your own program
  - **Almost all applican to implement MCM #4 using the Chapter 102 Progra**



MCM #4: Construction Site Stormwater Runoff Control

- **Chapter 102 Program**
  - **If QLP chosen, all BMPs required under MCM #4 are automatically satisfied**
  - County Conservation Districts (CCD) play a major role in implementing the Chapter 102 Program
  - MS4 Permittees encouraged to establish an MOU with CCD to oversee SWM requirements for construction

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MCM #4: Construction Site Stormwater Runoff Control

- **If permitte chooses not to participate in a QLP**
- **Must implement and facilitate of four (4) BMPs**

MCM #4: Construction Site Stormwater Runoff Control

- **BMP #1**
  - Development, implementation and maintenance of a written program for Construction Site Stormwater Runoff Control
  - Written plan will establish clear roles for implementation of MCM #4 requirements
  - Measurable Goals:
    1. For new [illegible]rogram developed during the first year
    2. For all pe[illegible]wed and updated during each year

MCM #4: Construction Site Stormwater Runoff Control

- **BMP #1**

MCM #4: Construction Site Stormwater Runoff Control

- **BMP #2**
  - Enact, Implement and Enforce a Construction Stormwater Management Program Ordinance
  - Include sanctions to insure compliance
  - Meas
    1. I

MCM #4: Construction Site Stormwater Runoff Control

- **BMP #3**
  - Develop Requirements for Construction Site Operators
  - To control waste at the site that may cause adverse impacts to water quality
  - Water quality controls include the following goals
    1. Minimize disturbance to floodplains and woods
    2. Maintain or expand riparian buffers
    3. Avoid erosive conditions
    4. Minimize thermal impacts
    5. Disconnect impervious surfaces
  - Implemented through written public ordinance provisions, standard notes on site plans

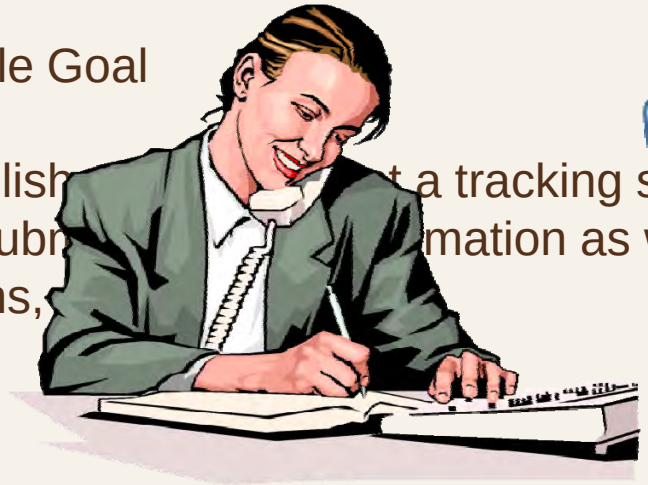
MCM #4: Construction Site Stormwater Runoff Control

- **BMP #3**
  - Measurable Goals
    1. Establish construction site operator requirements to address this BMP by the end of the first year
    2. Provide training and certification

Write it Down!

MCM #4: Construction Site Stormwater Runoff Control

- **BMP #4**
  - Develop Procedures for Receipt and Consideration of Public Input for Local Construction Activities
    1. Establish and implement a tracking system
    2. Record of submitted public information
    3. Record response, action and results
  - Measurable Goal



MS4: Path to Compliance

MCM #4: Construction Site Stormwater Runoff Control

- **You have the option to regulate disturbance < 1 Acre**
- **You may find this necessary if you have Total Maximum Daily Load (TMDL) responsibilities and want to take credit for BMPs at smaller construction projects**

Write it Down!

Questions

MCM #5: Post-Construction Stormwater Management (PCSM) in New Development and ReDevelopment Activities

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

Relative to **Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities** and the corresponding Municipal SWMP

- Develop a written procedure
- Implementation of a combination of structural and/or non-structural BMPs that are appropriate to the local community, that minimize water quality impacts, and that are designed to maintain pre-development runoff conditions
- Ensure that controls are installed to prevent or minimize water quality impacts
- Enact, implement, and enforce an ordinance – PCSM
- Develop and implement measures to encourage and expand the use of Low Impact Development (LID)
- Ensure adequate operation and maintenance of all post-construction stormwater management BMPs

PAG-13 requires implementation and facilitation of six (6) BMPs under MCM #5 for the municipal SMWP

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

Relative to **Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities** and the corresponding Municipal SWMP

- Develop a written procedure
- Implementation of a combination of structural and/or non-structural BMPs that are appropriate to the local community, that minimize water quality impacts, and that are designed to maintain pre-development runoff conditions
- Ensure that controls are installed to prevent or minimize water quality impacts

  - **BMP 1, 2 and 3 can be satisfied under a DEP QLP**

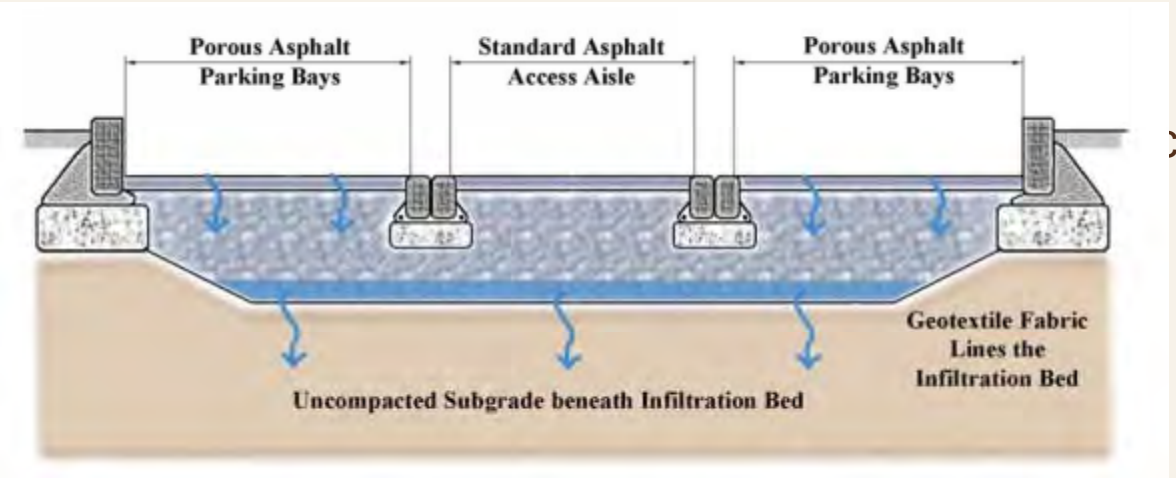
MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

- **BMP #1**
  - Develop a written procedure
    1. Minimum BMP requirements Development/Redevelopment Plans
    2. BMP Criteria and Standards
    3. Inspection Program to insure BMPs are properly installed
  - Measurable Goal
    - During first year
    - Review and update every year

Pennsylvania Stormwater Best Management Practices Manual

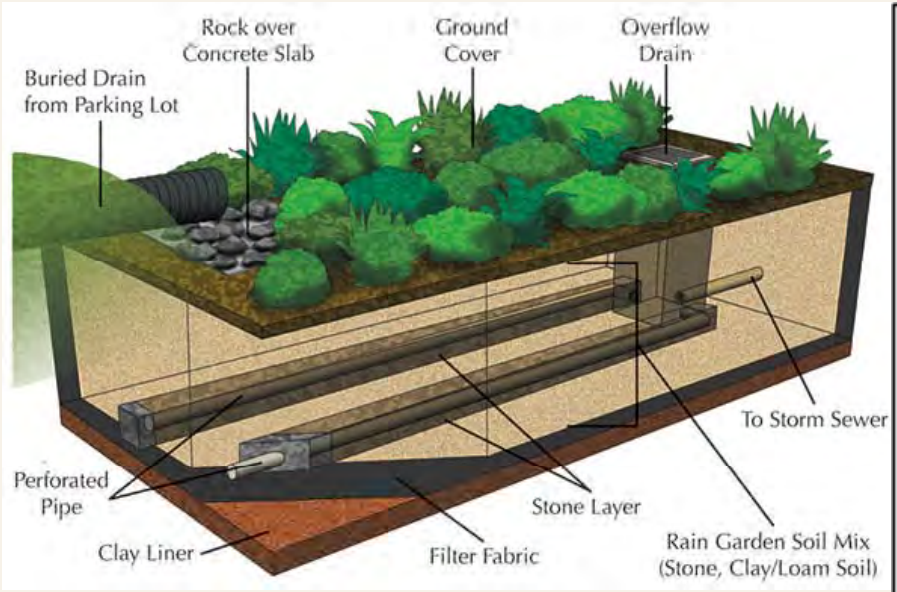
MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

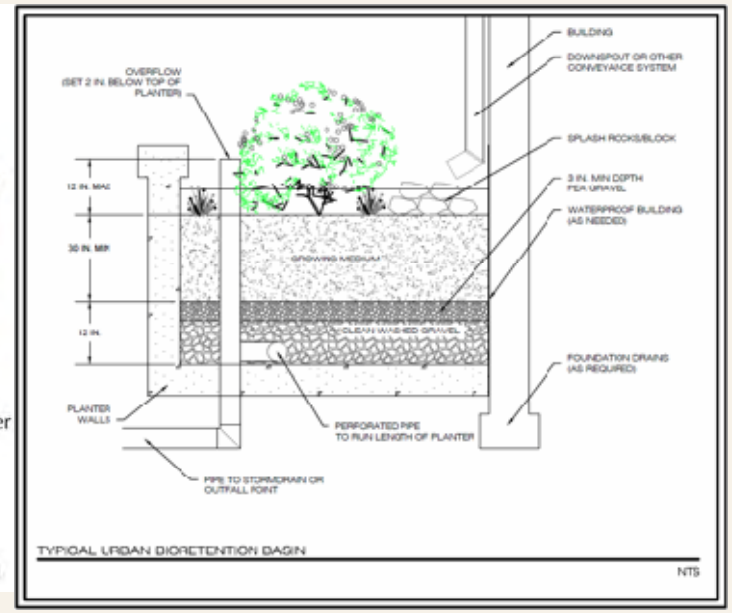
- **BMP #2**
  - Implementation of a combination of structural and/or non-structural BMPs that minimize water quality impacts, and that are designed to maintain pre-development runoff conditions
  - Measurable Goal



MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

- **BMP #3**
  - Ensure that controls are installed to prevent or minimize water quality impacts





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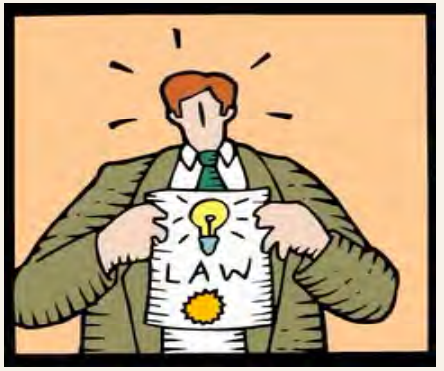
MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

Relative to **Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities** and the corresponding Municipal SWMP

- **BMPs 4, 5 and 6 must be implemented by all MS4 Permitees**
- **Even if under DEP's QLP**

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

- **BMP #4**
  - Enact, Implement, and Enforce a Post Construction Stormwater Runoff Ordinance
  - Addresses runoff from development and redevelopment projects
  - Must include sanctions and penalties for noncompliance
  - PCSM controls apply to sites > 1 acre
  - Measurable Goals
    - Enact ordinance during first year
    - Review and update every year
    - Letter from Municipal Official, Municipal Engineer or Municipal Solicitor certifying enactment of ordinance



MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

- **BMP #4**

POST-CONSTRUCTION MANAGEMENT PLAN APPROVAL

- Review and Approval of SWM Plans
- Maintenance Agreement Requirements
- Easements and Dedications allowing access
- Engineering and administrative fees
- Notice of BMP Discharge to Municipality's MS4
- As-Built Certification

POST-CONSTRUCTION MANAGEMENT PLAN COMPLIANCE

- Inspection Program
- Submittal of inspection results to DEP
- Annual Report

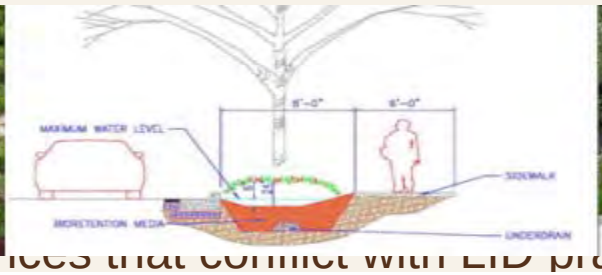
ENFORCEMENT

- Notice of Violation
- Penalties/Fines

MS4: Path to Compliance

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

- **BMP #5**
  - Develop and implement measures to encourage and expand the use of Low Impact Development (LID) / Conservation Design / Environmental Site Design
    1. Protect Sensitive and Special Value Features
    2. Cluster and Concentrate
    3. Minimize Disturbance
    4. Reduce Impervious Cover
    5. Disconnect/Distribute/Decentralize
    6. Source Control



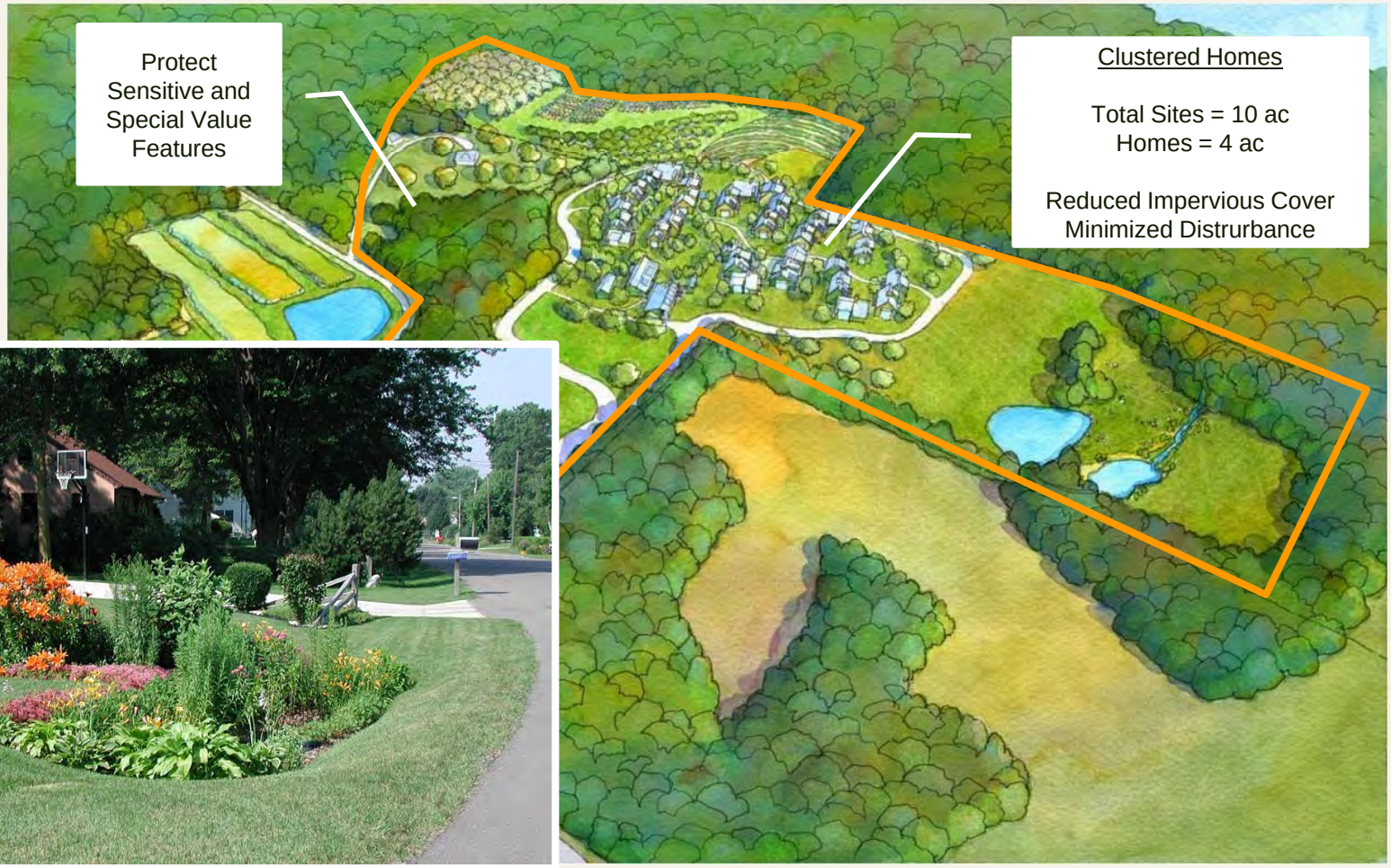
sections

of ordinances that conflict with LID practices

MS4: Path to Compliance

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

BMP #5
LID



MS4: Path to Compliance

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

RAIN GARDENS & INFILTRATION BASINS

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

PLANTERS & BUMPOUTS

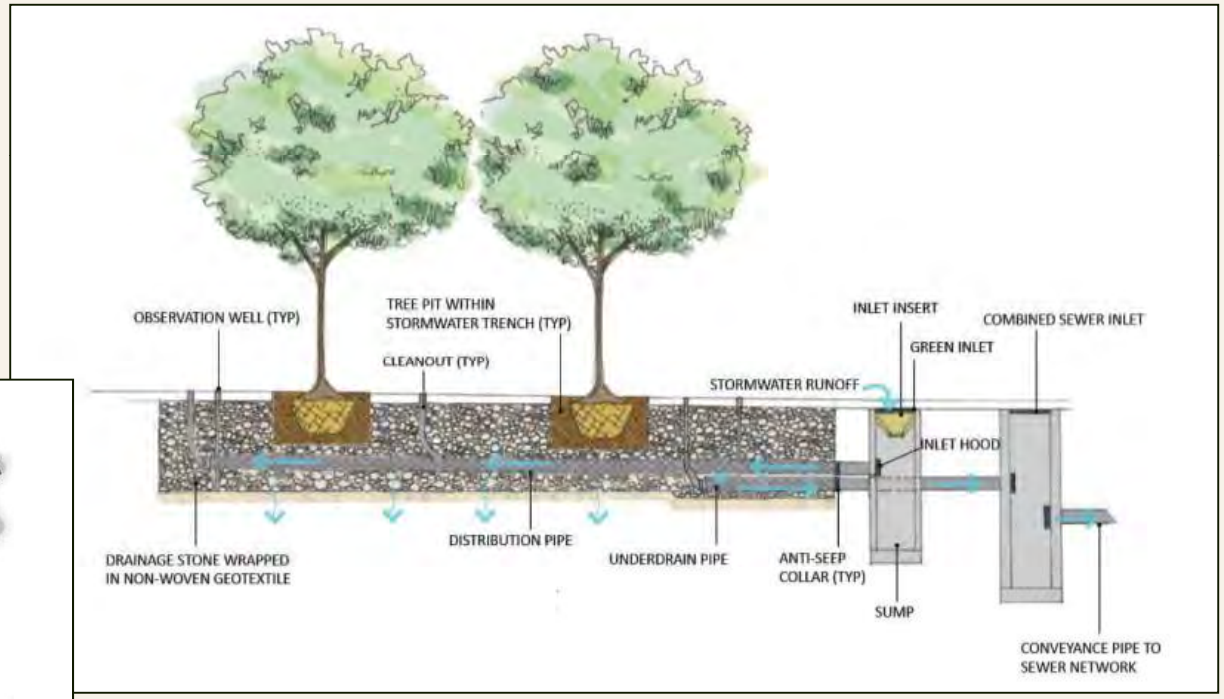
MS4: Path to Compliance

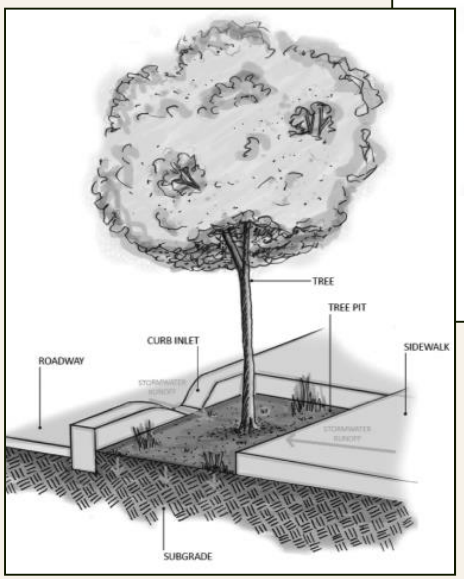
MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

TREE & INFILTRATION TRENCHES & STORMWATER TREES

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

TREE & INFILTRATION TRENCHES & STORMWATER TREES





MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

POROUS PAVEMENT

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

POROUS PAVEMENT

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

- **BMP #6**
  - Ensure adequate operation and maintenance of PCSM BMPs
    1. Written inspection program
    2. PCSM BMP inventory
  - Measurable Goal
    - Enact within first year
    - Update annually

MS4: Path to Compliance

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

Owner's BMP Inspection Form

This would be the base form that the Engineer would use to add the specific items per the BMP Inspection lists for the Owner's maintenance personnel to fill out. All BMP's would have the BMP's in General section.

Stormwater BMP Owner Inspection Form

Address: <Engineer to insert address> Owner: <Engineer to insert owner name>

Legal: <Engineer to insert legal description (Plat/Lot)>

Date: _____ Engineer: _____ Phone #: (___) ___-____

I. REASON FOR INSPECTION

☐ Routine ☐ Response to Complaint ☐ Follow-up

☐ Water Quality Storm ☐ Initial ☐ Other: _____

II. BMP'S AND INSPECTION RESULTS

Item		Inspection Results*			BMP's in General
1	☐	Apparent problems	☐	No problems	BMP does not appear to be well maintained
2	☐	Design flaws	☐	No flaws	BMP observed to have significant design flaws which lessens its effectiveness.
3	☐	Unauthorized modifications	☐	No modifications	BMP has unauthorized modifications that reduce its effectiveness
4	☐	BMP removed	☐	BMP Present	BMP has been destroyed or removed from the property
5	☐	Trash	☐	No trash	Trash and debris has accumulated on/in BMP. Yard waste in BMP.
6	☐	Contaminated	☐	Uncontaminated	Evidence of oil, gasoline, contaminants or other pollutants.
7	☐	Smells	☐	Doesn't smell	Unpleasant odors from the BMP

Engineer to insert specific BMP inspection data below. An example for bioretention is shown.

Item		***Inspection Results***			***BMP: Bioretention***
1	☐	Clogged	☐	Not clogged	Flow spreader uneven or clogged so flows are not uniformly distributed across BMP.
2	☐	Sediment accumulated	☐	No accumulated sediment	Sediment depth exceeds 2 inches on more than 10% of the vegetated treatment area or interferes with BMP performance.
3	☐	Erosion or scouring	☐	No erosion or scouring	Eroded or scoured areas (including spillway) due to flow channelization, higher flows, wind or water.
4	☐	Poor vegetation	☐	Proper vegetation	Planted vegetation is sparse or bare or eroded patches occur in more than 10% of the BMP. Vegetation is not higher than ponding depth.
5	☐	Nuisance plants	☐	Proper vegetation	Planted vegetation is excessively tall; nuisance weeds, invasive or noxious vegetation are overgrown; vegetation reduces free movement of water through BMP.
6	☐	Brush/trees	☐	Proper vegetation	Growth of brush and trees does not allow for proper maintenance.
7	☐	Standing water	☐	No standing water	Water is observed within the BMP (between storms) and appears not to drain freely or soil is excessively soggy. Excessive ponding of water within vegetated swale or other BMP.
8	☐	Clogged	☐	Not clogged	Inlet/outlet clogged or obstructed with sediment and/or debris.
9	☐	Flow	☐	No flow	Small quantities of water flow through the BMP, even when it has been dry for weeks, and an eroded, muddy channel has formed in the bottom.

MCM #5: Post-Construction Stormwater Management (PCSM) in New and ReDevelopment Activities

Inventory

- Name/Location — E. Goshen Municipal Building
  Address
- Identifier/Location — EGT – 2 – 5 - 1
- Watershed/Receiving Water — Chester Creek
- Type — Permanent Pool Extended Detention
- Year Accepted
- GIS
  - Coordinates
  - Outline of Facility
  - Inlet(s)
  - Outfall

Questions

MCM #6: Pollution Prevention/Good Housekeeping

MCM #6: Pollution Prevention/Good Housekeeping

Relative to **Pollution Prevention/Good Housekeeping** and the corresponding Municipal SWMP

Minimize stormwater pollution from municipal operations

- Identify and document all facilities and activities that are owned or operated by the permittee and have the potential for generating stormwater runoff
- Develop, implement and maintain a written operation and maintenance (O&M) program for all municipal operations and facilities that could contribute to the discharge of pollutants from the regulated small MS4s, as identified under BMP #1
- Develop and implement an employee training program

PAG-13 requires implementation and facilitation of three (3) BMPs under MCM #5 for the municipal SMWP

MCM #6: Pollution Prevention/Good Housekeeping

- **BMP #1**
  - Identify and document all facilities and activities that are owned or operated by the permittee and have the potential for generating stormwater runoff
  - Map these facilities
  - Measurable Goal

Write it Down!

MCM #6: Pollution Prevention/Good Housekeeping

- **BMP #2**
  - Develop, implement and maintain a written operation and maintenance (O&M) program
  - O&M Plan should stress pollution prevention & good housekeeping
    1. Development of management practices, policies and procedures
    2. Maintenance activities and schedules
    3. Inspection procedures
    4. Pollution controls
    5. Proper waste disposal procedures
  - Measurable Goal
    - Enact within first year
    - Update annually

MCM #6: Pollution Prevention/Good Housekeeping

- **BMP #3**
  - Develop and Implement an Employee Training Program
  - Program should identify topics, methods and materials to be used
  - Training activities should be documented including dates, attendees, topics and the presenter
  - Measurable Goal
    - Implement within first year
    - Employee training shall occur at least annually

Write it Down!

Questions

The Next Level:
Total Maximum Daily Loads (TMDLs)

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Total Maximum Daily Loads (TMDLs)

- A Total Maximum Daily Load identifies the allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards.
- A Waste Load Allocation (WLA) is the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution.
- If your stream has a TMDL but no WLA specified for your MS4, there is no TMDL Plan required**.**

The Next Level:

Existing Permit

- TMDL Strategy due with NOI/Application
- TMDL Design Details due 1 year after permit issuance
- TMDL Plan required for all pollutants with applicable WLA
- MS4s eligible for General (non-special protection waters) or Individual Permit (special protection waters)
- Chesapeake Bay Pollution Reduction Plan (PRP) due within one year of permit effective date, if applicable
- Impaired waters – no PRP required

The Next Level:

2018 Permit Renewal

- TMDL Plans will only be required for nutrients and sediment
  - If there is an applicable WLA for nutrients and/or sediment, an *individual* permit will be required
- If there is a TMDL for other pollutants, the permittee will need to meet the requirements included in
  - Appendix A for Metals and/or pH (AMD)
  - Appendix B for Pathogens (e.g. fecal coliform)
  - Appendix C for Priority Organic Compounds (e.g. PCBs and pesticides)

The Next Level:

2018 Permit Renewal

- Both General and Individual Permits will need to provide the following Pollution Reduction Plans, if applicable:
  - Appendix D for Discharges to the Chesapeake Bay Watershed
  - Appendix E for waters *impaired* for Nutrients and/or Sediment
- As part of MCM#2, MS4s will need to show public participation for TMDL plans and PRPs before submission to DEP

The Next Level:

2018 Permit Renewal

- Drafts posted on DEP's Municipal Stormwater webpage
  - PAG-13 General Permit
  - MS4 Requirements Table
  - Guidelines for parsing WLAs from TMDLs

Questions

DEP MS4 Inspections

DEP MS4 Compliance Philosophy

- DEP takes MS4 permit compliance seriously – which means you should too
- DEP's focus at this time is on education and compliance assistance …
- … but for a limited time

Inspections

Administrative

Field

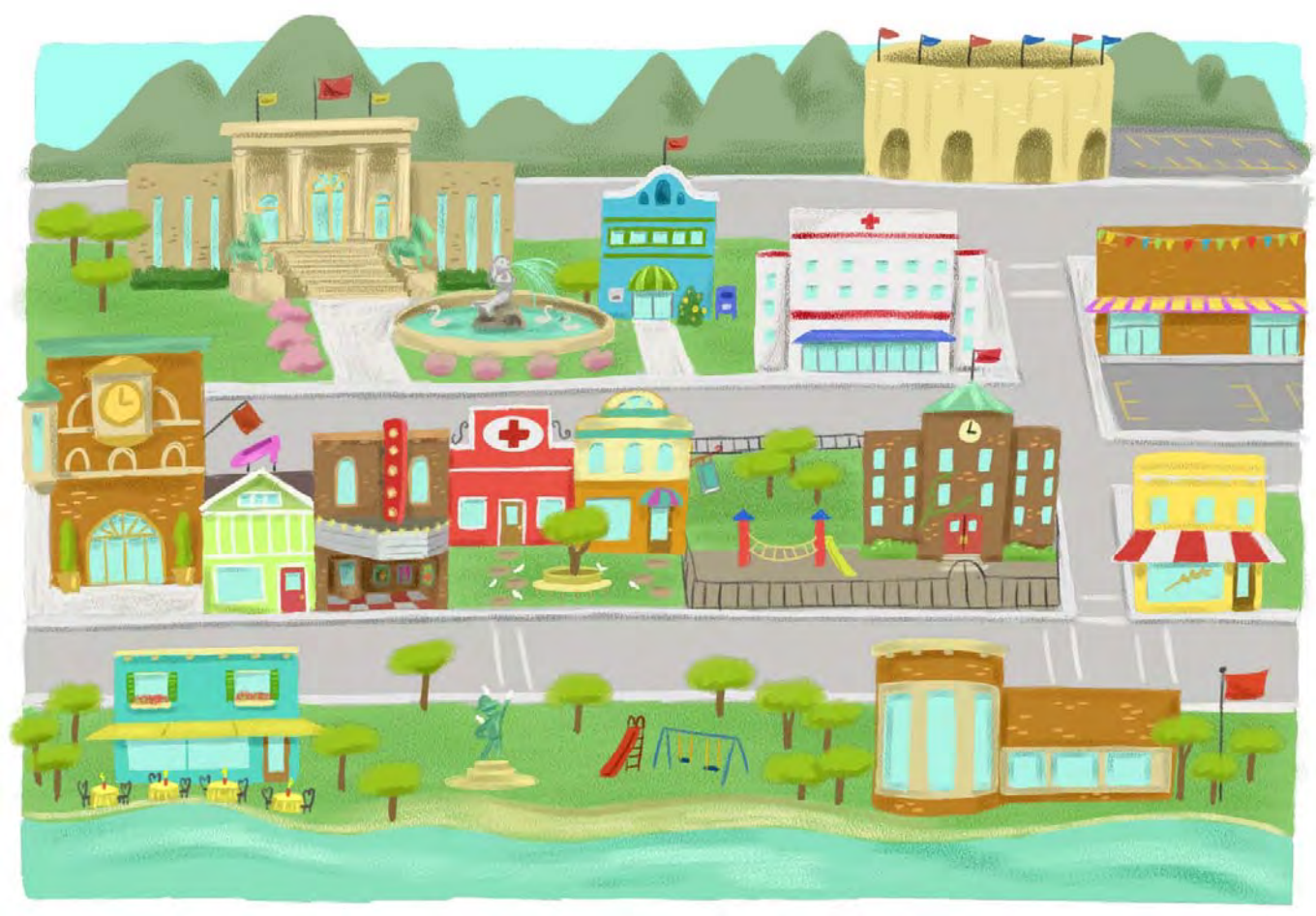
Administrative Inspections

- Full day inspections
- Provide work space
- Documentation/Records
- Staff availability
- 6 MCMs

Field Inspections

- DEP may inspect BMPs to verify functionality
- Other physical operations may be inspected, outfalls or vehicle maintenance yards

MS4 System Mapping



Why is Mapping Important?

- Use with BMP Inventory
- Mapping is an essential foundation for many requirements in the MS4 permit
- In recent MS4 inspections, mapping has been identified as needing improvement

Minimum Control Measure #3

Illicit Discharge, Detection and Elimination

- Mapping required in BMP #2
  - Develop and maintain a map of your regulated MS4. Map must show the location of all outfalls and the locations and names of all surface waters that receive discharges from those outfalls

- Mapping required in BMP #3
  - In conjunction with the map(s) created under BMP #2, include roads, inlets, piping, swales, catch basins, channels, basins, and other features

Minimum Control Measure #3

BMP #2 and BMP #3

- Roads
- Basins
- Inlets
- Piping
- Swales
- Catch Basins
- Channels
- Outfalls
- Watershed Boundaries
- Municipal Boundaries
- Other features of the MS4 system

MS4 Mapping

Example 1

Stream/Watercourse

Storm Sewer Inlet

Storm Sewer Inlet Number

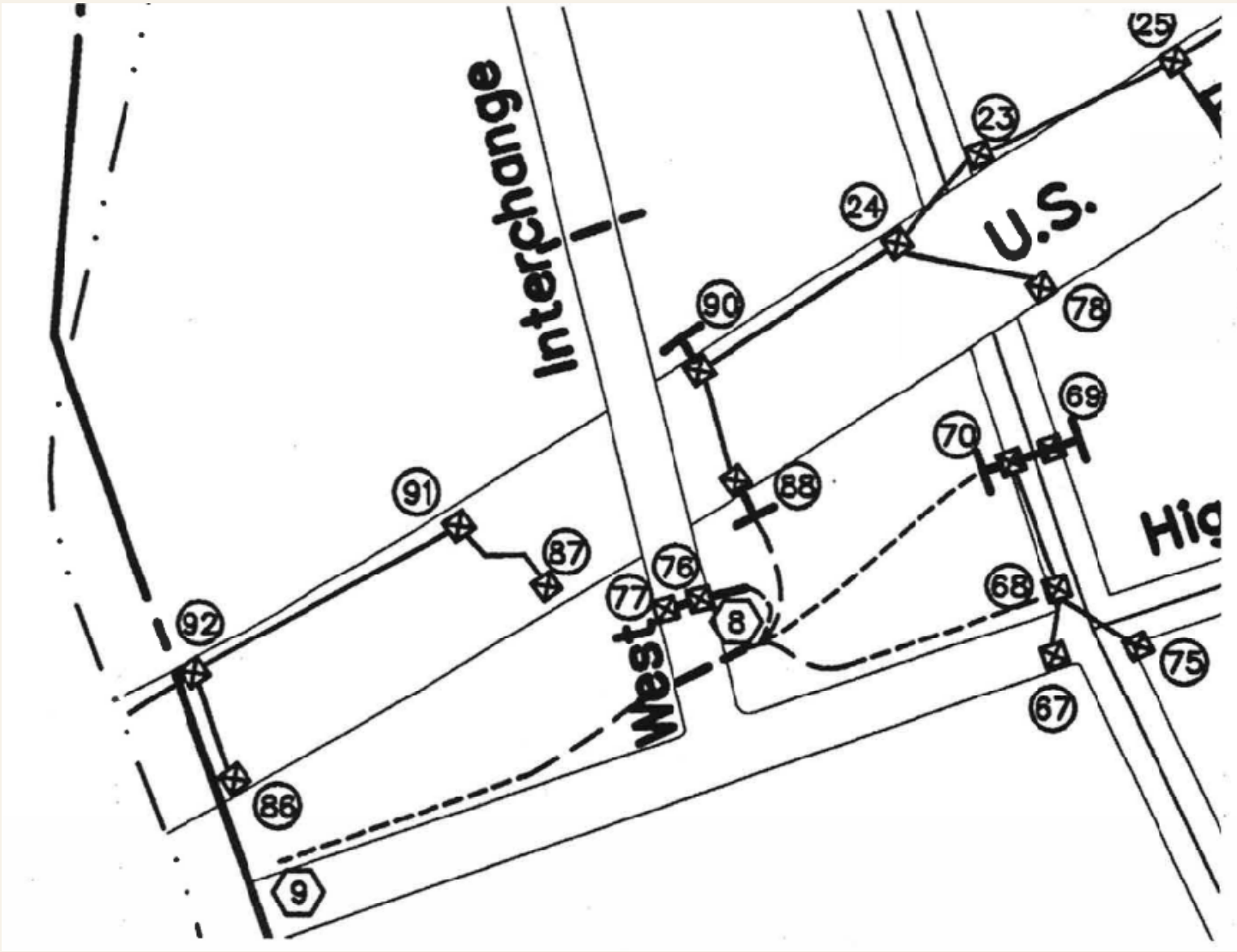
MS4 Outfall Number

Storm Sewer Culvert

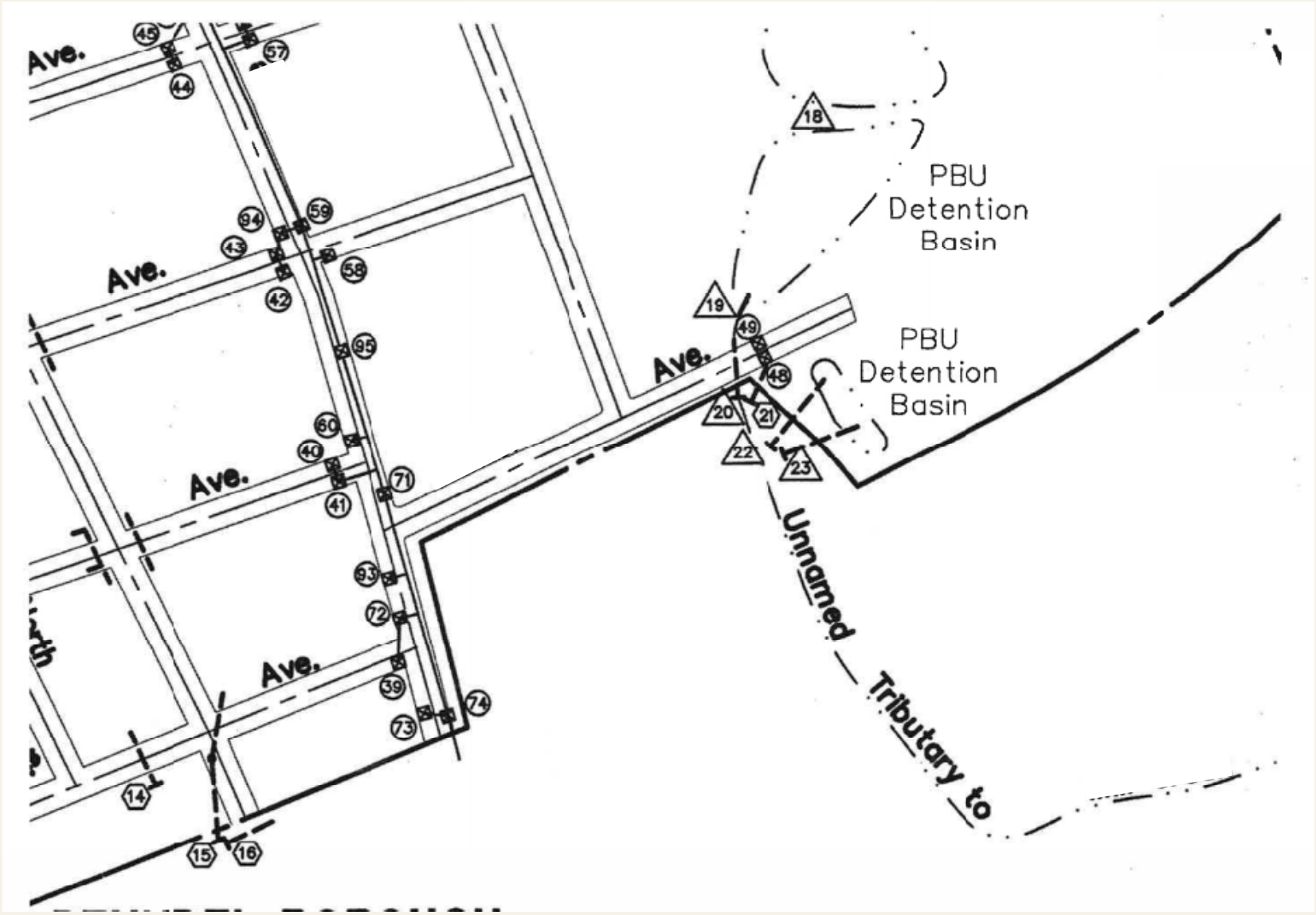
Storm Sewer Pipe

Swale

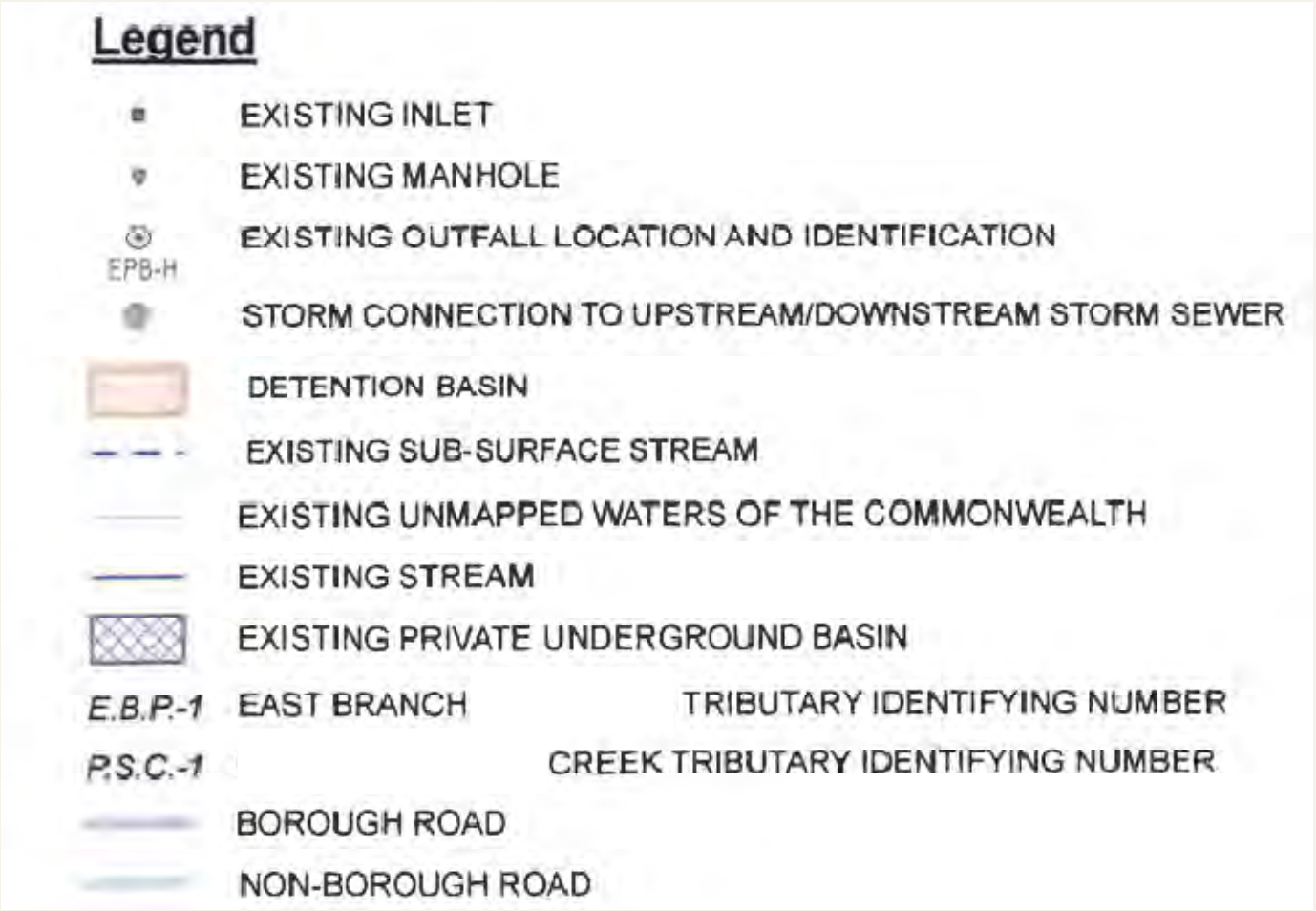
MS4: Path to Compliance



MS4: Path to Compliance



MS4: Path to Compliance



MS4: Path to Compliance

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Visit These Websites

- **EPA's Stormwater Management Website**
  www.epa.gov/oaintrnt/stormwater/index.htm

- **DEP's Stormwater Management Website**
  www.depweb.state.pa.us/MS4

  DEP Contact
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MS4: Path to Compliance

Well… that's it

Go out and conquer

Call if you feel overwhelmed !!