



# Public Education and Participation (MCMs 1 & 2)

## It's where your SWMP ends!

Southwest Pennsylvania Commission  
Community & Recreation Center at Boyce Mayview Park  
Upper St. Clair, PA  
March 31, 2016



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# Introduction - Agenda

Introduction and Background (15-20 minutes)

Primary compliance considerations (10-15 minutes)

Scenario Example (10-15 minutes)

Application Examples (20-30 minutes)

Workgroups (40-45 minutes)

Workgroup follow-up and Effectiveness considerations (20-30 minutes)

Final Thoughts and Discussion (15-20 minutes)





Land  
Studies



## Design

landscape architects (4)  
water resource engineers (4)  
environmental scientists (6)

## Build

construction managers (3)  
installation crews (2)  
maintenance crews (2)  
certified pesticide applicator (2)

*Creating Functional, Natural Landscapes*



# MS4 Permit Services

Stormwater Management Program (SWMP) development, facilitation & administration

Minimum Control Measure (MCM) development, facilitation & management

Watershed Planning - qualitative and quantitative

TMDL Plan, Pollutant Reduction Plan (PRPs), Impaired Waters Plans, etc.

Monitoring and Screening

Design-Build-Maintain Green Infrastructure and pollutant-reduction BMPs and facilities

# CMS4S Certification (CPMSM)\*



\*CPMSM – Certified Professional in  
Municipal Stormwater Management

The CMS4S™ certification recognizes individuals who are technically and ethically qualified to develop, implement, manage and coordinate a municipal Stormwater Management Program (SWMP) to achieve and maintain compliance in conformance with applicable NPDES MS4 regulations and permits. A person seeking to attain CMS4S certification must demonstrate proficiency in the management of and the coordination of an MS4 SWMP. This certification is intended to identify individuals with tested and documented skills in the regulation, administration, and management of municipal SWMPs.

\*Through the professional experience profile, references, and written exam, the applicant must demonstrate an ability to observe, evaluate, and synthesize information; to consider alternatives; and to propose appropriate recommendations in a clear, logical manner.

# Important regulatory and MS4 Permit language

## Authorization to Discharge

- “2013 PAG-13” – Limitations on Coverage (part 2.j)
- “2018 PAG-13 (draft)” – Discharges Not Authorized (item 6)

**“The discharge is not, or will not, result in compliance with an applicable effluent limitation or water quality standard.”**

The operator must, at a minimum, develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4:

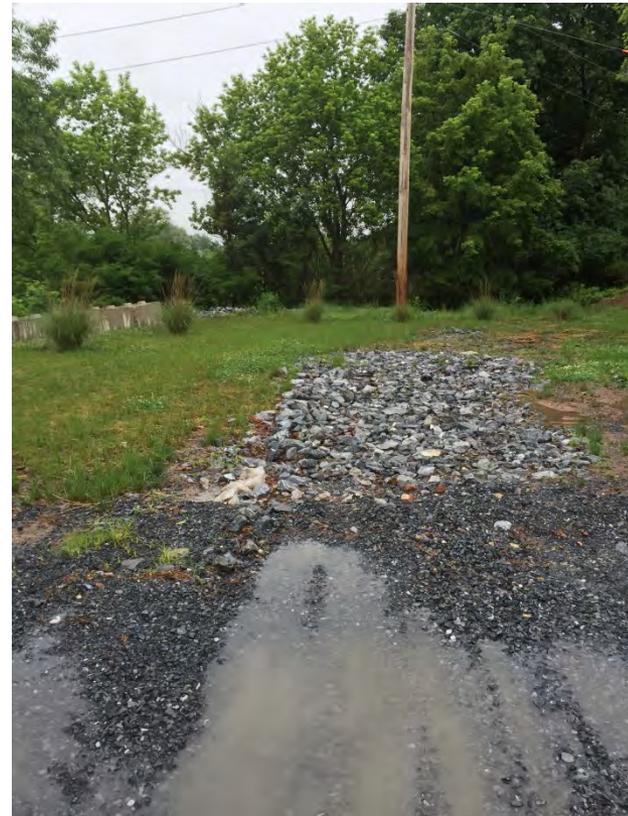
- to the maximum extent practicable (MEP),
- to protect water quality, and
- to satisfy the appropriate water quality requirements of the Clean Water Act. [40 CFR 122.34(a)]

# Overall Program Approach Consideration

## Quantified data provides the basis of choosing narrative “approaches”

EPA memorandum regarding “interim approach for water quality-based effluent limitations in storm water permits (such as an MS4 Permit):

**QUESTION 9:** The interim permitting approach states that permits should include monitoring programs to generate necessary information to determine the extent to which permits are providing for the attainment of water quality standards. What types of monitoring should be included and how much monitoring is necessary?



# Overall Program Approach Consideration

**ANSWER 9:** The amount and types of monitoring necessary will vary depending on the individual circumstances of each storm water discharge. EPA encourages dischargers and permitting authorities to carefully evaluate monitoring needs and storm water program objectives so as to select useful and cost-effective monitoring approaches. For most dischargers, storm water monitoring can be conducted for two basic reasons:

- 1) to identify if problems are present, either in the receiving water **or in the discharge**, and to characterize the cause(s) of such problems; and
- 2) to assess the effectiveness of storm water controls in reducing contaminants and making improvements in water quality.



# Outfall 201 (for MS4 Permits) – for monitoring

The point where a conveyance or system of conveyances that disposes stormwater that are owned or operated by a municipality; and is **designed or used for collecting or conveying storm water** to a defined and discernible point from which pollutants are or may be discharged—and that discharges to waters of the United States is an ***Outfall***.

**Outfall**



**Not an outfall**



**Not an outfall**



# USEPA Expectations for an MS4 Permit Program

Stormwater Management for Small MS4s...are the following addressed?

- Applicability
- Limitations on Coverage
- Discharges to Water Quality Impaired Waters
- Stormwater Management Program (SWMP)
- **Public Education and Outreach (MCM 1)**
- **Public Involvement/Participation (MCM 2)**
- Illicit Discharge Detection & Elimination (MCM 3)
- Construction Site Stormwater Runoff Control (MCM 4)
- Post-Construction Stormwater Management in New Development and Redevelopment (MCM 5)
- Pollution Prevention/Good Housekeeping for Municipal Operations (MCM 6)
- Sharing Responsibility
- Reviewing and Updating SWMPs
- Monitoring
- Recordkeeping
- Reporting



# SWMP Development – Step 1

STEP 1: Only consider the waterway and discharge point...**establish “pollutants of concern”**

Remember:

- The CWA is about protecting the beneficial uses of surface waters
- The CWA includes WQ Standards Requirements – that are about the stream
  - Designated Uses, WQ criteria, anti-degradation policy
- The NPDES is the mechanism in place to facilitate these requirements (MS4 Permit)

In turn, for SWMP development, a municipality needs to determine:

- “Is my MS4 discharging pollutants that are the same as the impairment of the waterway?”
  - Contributing to the impairment?
- “Is my MS4 discharging any pollutants that could impair the waterway?”

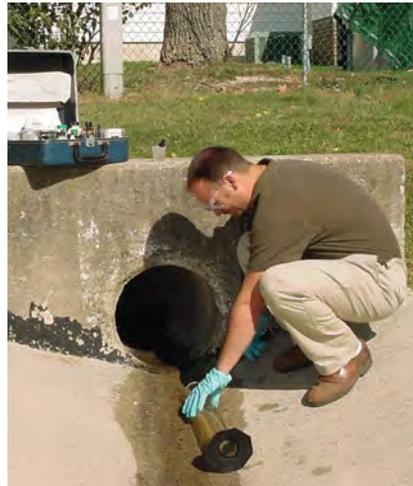
**Sample discharges ...understand health of the receiving waters**



# SWMP Development – MCMs

## Develop backwards

- MCM 6: Good Housekeeping
- MCM 5: Post-Construction SWM
- MCM 4: Construction Site Runoff Control
- MCM 3: Illicit Discharge & Detection
- MCM 2: Public Involvement & Participation
- MCM 1: Public Education & Outreach



# Compliance Considerations

EPA “Protocol” language regarding Public Education & Outreach (MCM 1) and Public Involvement & Participation (MCM 2)

## **Public Education & Outreach**

The operator must implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. [40 CFR 122.34(b)(1)]

## **Public Involvement & Participation**

The operator must, at a minimum, comply with state, tribal and local public notice requirements when implementing a public involvement/ participation program. [122.34(b)(2)]



# Public Education & Outreach (MCM 1)



Verify the SWMP **describes the decision process** for program development including:

- Plans to inform individuals/ households about reducing stormwater pollution
- Plans to inform individuals/groups about involvement with the stormwater program
- The target audiences and why they are selected
- The targeted pollutant sources
- The outreach strategy and methods that will be used to reach targeted audiences
- The number of people expected to be reached by the strategy in permit term
- Who is responsible for management and implementation of the program/BMPs
- How the success of the minimum measure will be evaluated
- How the measurable goals were selected

Verify the BMPs and measurable goals outlined in the plan have been met by the schedule in the SWMP.

# Public Involvement & Participation (MCM 2)

Verify the SWMP **describes the decision process** for program development including:

- How the public was involved in NOI submittal and SWMP development
- The plan for public involvement in program development and implementation
- The target audiences for the involvement program including ethnic and economic groups
- Person(s) responsible for the management and implementation of the program/elements
- The types of public involvement activities including, where appropriate:
  - Citizen representatives on a local stormwater management panel
  - Public hearings
  - Citizen volunteers to educate other individuals about the program
  - Volunteer monitoring
- How success of minimum measures are evaluated
- How measurable goals were selected

Verify the SWMP describes how the public involvement/ participation program complies with state, Tribal, and local public notice requirements.

Verify the BMPs and measurable goals outlined in the plan have been met by the schedule set forth in the SWMP



# SWMP – Program Management document

## **800-1 Introduction**

The Minimum Control Measures (MCMs) are elements of the SWMP for facilitation of the program and achievement of the purpose of the SWMP and corresponding goals. At a minimum, each MCM plan will include the following:

- Measureable goal(s) for each BMP listed in the plan
- Time required to undertake/implement a BMP (including frequency of action and interim milestones)
- Person(s) and/or entities responsible for implementing/coordinating a BMP
- Rationale for selection of a BMP and measurable goal(s)
- Assessment criteria for determining/measuring success of the BMP(s)

Each MCM Plan is a “stand-alone” plan. However, this section incorporates each MCM Plan into the SWMP and outlines primary considerations, decision criteria, processes, and

Assessment criteria and decision rationale to maintain, modify, change, or eliminate a component is based on:

- **MAINTAIN:** A component will be maintained if measurement (interim milestone, supporting data, or similar) associated with the established goal or processes is:
  - being met (within 10% of the numeric measurement), or
  - exceeded, or
  - anticipated will be met (rationale will be provided if it is anticipated an established goal or process will be met); and
  - the component supports an active goal(s) and Pollutants of Concern of the SWMP.
- **MODIFY:** A component will be modified if an interim measurement associated with the established goal provides an indication the established goal will:
  - not be fully met (short by 10%-33% of the numeric measurement) , or
  - significant progress towards meeting the goal is perceived as not occurring (rationale will be provided if it is perceived significant progress is not

# Process Described – Narrative for Pollutants

## 500-1 Pollutants of Concern

The primary purpose of the SWMP is to reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP), to protect and improve the quality of water bodies in West Cocalico Township (WCT) within the Cocalico Creek watershed, and adhere to the appropriate water quality standards requirements in the CWA (designated uses, water quality criteria for uses, and the anti-degradation policy).

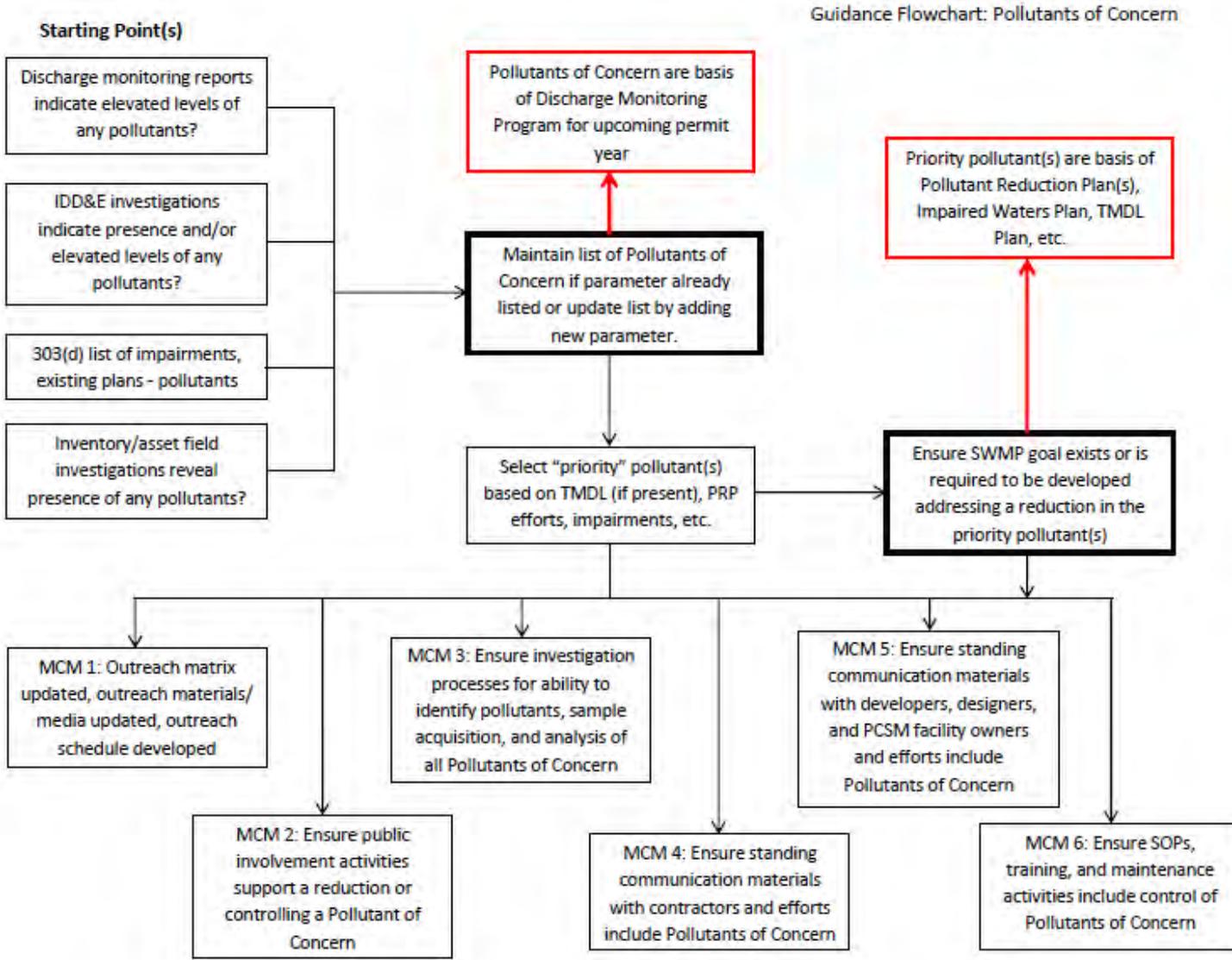
The Pollutants of Concern are identified based on the following:

- Included on the current 303(d) list.
- Included within data found on PADEP WAVE/emappa.
- Encountered through the SWMP Development exercise.
- Encountered through two or more monitoring cycles within the established Monitoring Program.
- Listed as a concern within the issued MS4 Permit by the permitting authority (PADEP).
- A parameter of consideration of the water quality criteria associated with the Designated Uses of receiving waterbodies within the Urbanized Area (UA) (or the regulated system drains to the receiving waterbody).
- Determined as a concern by WCT based on appropriate rationale.

The Pollutants of Concern for WCT and corresponding reasoning for listing are:

- Alkalinity
  - Parameter associated with WWF, TSF, and MF Designated Uses
- Ammonia-Nitrogen
  - Parameter associated with WWF, TSF, and MF Designated Uses

# Process Described – Visual for Pollutants



# MS4 Permit (PAG-13 Requirements) for MCM 1

## MCM #1: Public Education & Outreach on Stormwater Impacts

- BMP #1: Develop, implement, and maintain a written Public Education and Outreach Program (PEOP).
  - Measureable Goal (renewal permittees): *...shall be reviewed and revised as necessary...PEOP shall be designed to achieve measureable improvements in the target audience's understanding of the causes and impacts of stormwater pollution...*
- BMP #2: Develop and maintain lists of target audience groups (TAGs) that are present in areas served by your regulated small MS4s...
  - Measureable Goal: *...the lists shall continue to be reviewed and updated annually.*
- BMP #3: ...annually publish at least one issue of a newsletter, a pamphlet, a flyer, or a web site that includes general stormwater educational information, a general description of your SWMP, and/or information about your stormwater activities...
  - Measureable Goal: *...items shall be reviewed, updated, and maintained annually...*
- BMP #4: Distribute stormwater educational materials and/or information to the TAGs using a variety of distribution methods, including but not limited to: displays, posters, signs, pamphlets, booklets, local cable TV...
  - Measureable Goal: *...select and utilize at least two distribution methods in each permit year...*

# PEOP and MCM 1 Compliance Considerations

The MS4 Permit (PAG-13) has outlined the framework for a permittee to work within (communicate via these methods, write a plan, etc.)

The EPA has outlined expectations and requirements for a compliant program with a large focus on the permittee's SWMP **describes the decision processes.**

What is generally found missing in MS4 Programs



# “Right” documentation vs. “wrong” documentation

An important aspect to consider and note as a result of the audit is that you can document every minute detail, generate long and drawn-out processes and Standard Operating Procedures (SOPs), build large databases, use massive checklists to facilitate certain activities outlined in the permit, produce and attach a number of reports (e.g. lab analysis results) to documents, and so on. However, all this documentation will not compensate for the absence of appropriate rationale behind a program. The summary provides considerations for initial focus for establishing appropriate rationale. Generally, with established appropriate rationale, a permittee does not need to generate the extensive items noted above in this paragraph; or the rationale supports those items if a permittee desires to “over-document.”



# MS4 Permit (PAG-13 Requirements) for MCM 2

## MCM #2: Public Involvement/Participation

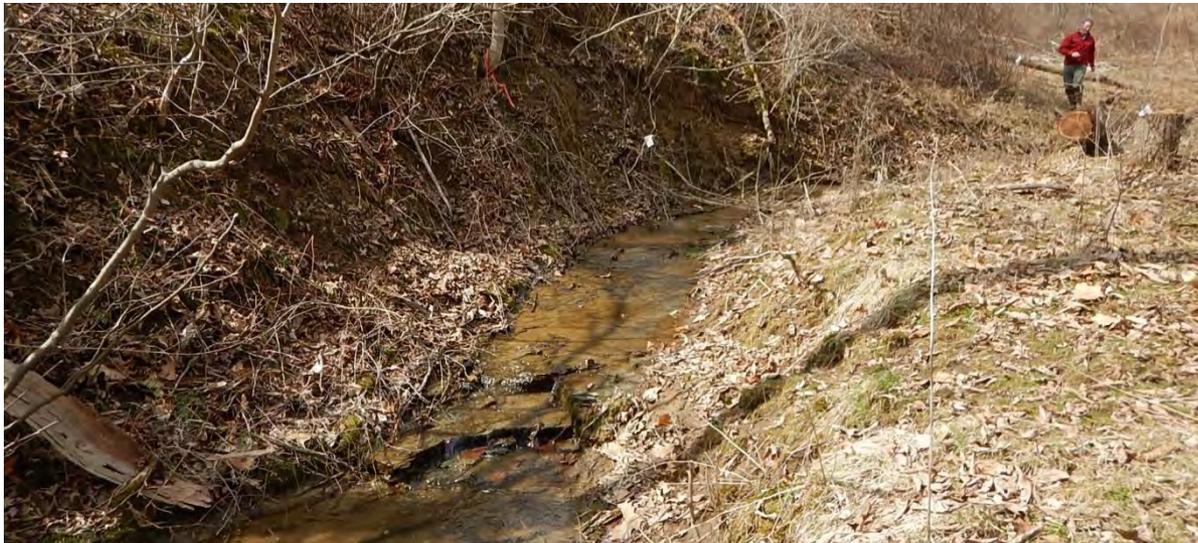
- BMP #1: Develop, implement, and maintain a written Public Involvement and Participation Program (PIPP) which describes various types of possible participation activities and describes methods of encouraging the public's involvement....
  - Measureable Goal (renewal permittees): *...shall re-evaluate the PIPP each permit year and revise as needed...*
- BMP #2: Prior to adoption of any ordinance required by this General Permit, provide adequate public notice and opportunities for public review, input, feedback.
  - Measureable Goal: *Advertise any proposed MS4 Stormwater Ordinance, provide opportunities for public comment, evaluate any public input and feedback...*
- BMP #3: Regularly solicit public involvement and participation from TAGs...Assist the public in their efforts to help implement your SWMP...
  - Measureable Goal: *Conduct at least one public meeting per year...*

# PIPP and MCM 2 Compliance Considerations

The MS4 Permit (PAG-13) has outlined the framework for a permittee to work within (conduct an annual meeting, write a plan, etc.)

The EPA has outlined expectations and requirements for a compliant program with a large focus on the permittee's SWMP **describes the decision processes.**

What is generally found missing in MS4 Programs





So what do we do?!?

# Scenario Example (MCM 1) – remember guiding “principles”

The entire purpose of your MS4 Permit is an Authorization to Discharge.

- The permit authorizes you to discharge stormwater comprised solely of unpolluted stormwater.
- “Is my MS4 discharging pollutants that are the same as the impairments on the receiving waterway?” (303(d) listed impairment?)
- “Is my MS4 discharging any pollutants that could cause an impairment?”

Based on these guiding principles...we could reasonably determine initial program focus.

The scenario example is a “real life” example.



# Scenario Example (MCM 1) – background

- Mostly residential (low and medium density) development across municipality...pockets of industrial/commercial office “campuses” across the municipality as well.
- All Waters of the U.S. within the permittee’s jurisdiction have 303(d) listed impairments: sediment and pathogens.
- Municipality “claims” they have over 300 outfalls...objective of this statement is to express the municipality is large and has a large MS4.
  - During my review of the MS4 program...“eye-balled” approximately 50-60 Municipal Separate Storm Sewersheds (MS3s)



# Scenario Example (MCM 1) – details

- A summary of an MS4 permittee's MCM 1 efforts for a recent permit year (reported):
- BMP 1 (written PEOP)
    - Program essentially re-iterates the language in PAG-13
    - A few bullet points in the plan that specifically call out the brochures (and similar) that will be distributed, etc.
    - Document an annual “review”
  - BMP 2 (list of TAGs)
    - Current list is homeowners, business owners, schools, and municipal employees
  - BMP 3 (annual publish or website)
    - Maintains a website that includes “general stormwater educational information,” description of the municipal program, IDD&E information (with a link to a form to report an illicit discharge), links to PADEP's and EPA's websites, and a copy of the latest MS4 annual report.
  - BMP 4 (distribute 2 outreach materials)
    - Mailed a brochure to all municipal residents entitled “The Homeowner's Guide to Stormwater.”
    - Displayed a poster in public areas entitled “When You're Fertilizing the Lawn.”

**What is missing?**

# EPA View – “mock audit” (of scenario example)

## **\*\*Potential Permit Violation: Measurable improvements of the PEOP (PAG-13, Appendix A, Stormwater Management Program, MCM #1, BMP #1)**

The PEOP fails to outline performance criteria and effectiveness considerations to “achieve measurable improvements in the target audience’s understanding...” An essential aspect of a SWMP is assessing program (including individual elements (e.g. MCMs) of the SMWP) effectiveness based on measurable goals. While publishing a newsletter (or similar) and documenting the newsletter was published can be considered a measurable goal, it fails as a measurable goal that could indicate the effectiveness of the newsletter distribution.

## **\*\*Significant Concern: PEOP rationale**

The PEOP fails to describe or outline decision processes and/or rationale for:

- Why target audience groups are selected
- Targeted pollutant sources

Essentially, there is no rationale or relationship for the primary educational efforts and what should be a primary focal point of the SWMP (303(d) listed impairments). The primary impairments associated with urban/suburban causes include siltation (or sediment) and pathogens. However, the primary piece of educational efforts focuses on nutrients (Nitrogen and Phosphorus). No reasonable rationale could be provided for selecting the educational materials. Additionally, the PEOP fails to support or coordinate with the other MCMs.

# Scenario Example - Summary

At a minimum, educational outreach should have had a focus on sediment and/or pathogens.

The permittee completely failed to measure effectiveness (or outline how they would measure effectiveness) for outreach efforts.

Permittee has no idea if they are causing and/or contributing to the impairment(s).

“Cheat Sheet” review for additional considerations.

# Application Examples - Introduction

Despite the probable find of non-compliance with other permittee's reviewed, and just like the scenario example, most have made good efforts under MCM 1 and MCM 2.

**In this section, we will look at several examples and outline how to build upon them to achieve compliance.**



# Application Example #1 – MS4 Display (MCM 1)

Built this “float” several years ago and move it around the municipality for display.

There is a crank on the side, and if you crank it fast enough it will produce “rain” and run-off.

Includes the brochure “The Homeowner’s Guide to Stormwater” for the general public to take.

The permittee was periodically tracking how many pamphlets were taken.



# Application Example #1 – Permittee's Written PEOP

BMP #1: continually seek out opportunities to develop and maintain partnerships both within and outside the municipality to provide education and materials to the TAGs listed under BMP #2 via any number of delivery methods: web site, notices, newspaper & other publications, speaking engagements, membership participation, emails, demonstrations, displays, posters, and facility tours highlighting stormwater management and its importance.

## BMP #2: Target Audience Plan (RECORD & TRACK)

- General public – environmental news articles in one or several publications of general circulation, the website, office, and library (“When it Rains it Drains!”).
- Borough staff – same as general public
- School – tour of WWTP plus discussions regarding stormwater
- Public Officials – discussions during committee meetings
- Neighboring municipalities – email communications, brainstorm meetings to educate and share ideas
- Chamber of Commerce – website link and other communication
- Developers/Remodelers – zoning office distributes info, stormwater requirements packets

# Application Example #1 – Written PEOP cont'd

BMP #3: Annually publish...

- In a publication, **web site** or bill stuffer **general stormwater educational information**, a general description of the MS4 Program & Activities **including links** to additional information **reviewed & updated annually**. Republication is acceptable.

BMP #4: Select at least **two different distribution methods each year** for educational information **in addition to those performed in BMP #1 and #3** (displays, posters, signs, pamphlets....fact sheets, giveaways, etc.)



# Application Example #1 – Other Considerations

Reported in the annual report the display was set-up at five locations (borough hall, PW yard, library, local newspaper office, and a park) over the course of the permit year (listed locations and dates). As of last permit year, indicated 95 pamphlets have been taken through the year.

Conducted a survey approximately 1 ½ years ago at the library regarding “do you know where stormwater goes?” Only 11% answered correctly.



# Application Example #1 – Revising Approach for Compliance

There are a number of items that need to be addressed per the “cheat sheet” (e.g. written processes, supporting rationale, etc.), but we want to focus on measuring effectiveness for this example.

The display is fantastic, and will be used even more as a component of outreach efforts.

Permittee has a “baseline” established with the previous survey regarding general stormwater knowledge.

Permittee is “creating” a drawing (amount to be determined) where the public can submit a postcard at the display that must be completed as well.



# Application Example #1 – Improving Effectiveness

Permittee will also revise (add) targeted locations to post the display based on rationale under development.

The primary TAG within the municipality are residents...which has led to the discussion of how to improve outreach to the primary TAG and locations for the display.



# Application Example #1 – Summary and compliance needs

## MCM #1, BMP #4 (stormwater educational materials): MS4 Display

### 1) Outreach Strategy

- The intent of the MS4 Display is to communicate general stormwater knowledge and basics – including conditions inherent to the municipality.
- The display will be rotated throughout the municipality in areas where the TAG generally congregates or visits.
- Permittee plans to conduct a drawing by having postcard-sized entry forms located on the moveable display.
  - A prize of \$XXXX from XXXXX will be awarded in November 2016 (bi-annual MS4 public meeting) by pulling a completed entry card from the submission box.
  - A completed entry card includes the individual's name and contact information (must be a municipal resident), along with correctly answering three multiple-choice questions on the card.
    - Do you know where stormwater run-off goes?
    - Which of the following can pollute stormwater run-off?
    - Which of the following could help you plan and implement BMPs on your property?
  - All information needed to answer the questions is located on the display.
  - Permittee believes the drawing will increase participation from the public that previous efforts have failed to do.

# Application Example #1 – Summary cont'd

- 2) Plans to inform individuals/groups about involvement with the stormwater program
  - The display will include the following information for involvement:
    - Date of the bi-annual MS4 public meetings
    - Date and location of the local watershed alliance annual stream clean-up event (display to be updated once information is known).
  - To build future involvement programs, this strategy will include with the postcard-sized entry form a request if the individual is interested in being involved in and with any of the following:
    - Stream clean-ups
    - GI demonstration projects
    - MS4 Committee participation
    - Education workshops
  
- 3) The target audiences and why they are selected.
  - The permittee has chosen the general public TAG for this effort.
  - A previous general knowledge survey revealed only 11% of the public correctly answered the general knowledge questions. The permittee will attempt to increase the knowledge of stormwater pollution to the general public overall. Additionally, the permittee believes specific focal points and efforts in the future will be easier to communicate and gain public support and involvement with an increased awareness of general stormwater principles.

# Application Example #1 – Summary cont'd

## 4) Plans to inform individuals/households about reducing stormwater pollution

- *This section describes the content of the MS4 Display along with dates and locations the display will be set-up*

## 5) The targeted pollutant sources

- Nutrients, sediment, and pathogens
- These pollutants were determined to be priority pollutants. All receiving waterways within the jurisdiction are 303(d) listed for impairments caused by the pollutants.

## 6) Measureable goals

- 50% of respondents correctly answer questions by November 2016 (interim goal)
- 75% of respondents correctly answer questions by November 2017 (final goal)
- The permittee feels these are reasonable goals due to the fact the information is located on the display to answer the questions.

## 7) Number of people expected to be reached

- 200 persons in 2016
- 400 persons in 2017
- The permittee believes these are reasonable values based on the number of days the display will be in place and locations. The 2016 value is double the value of pamphlets taken previously and tracked. Additionally, the Director of Public Works will announce the drawing on the local cable TV access channel during the St. Patrick's Day parade.

# Application Example #1 – Summary cont'd

## 8) Roles and responsibilities (Overall responsibility: Environmental Resource Manager)

- The MS4 Committee
  - Will confirm content of the display and entry form at the April 2016 committee meeting.
- Director of Public Works
  - Will create the entry forms and update the content of the display prior to the first set-up.
  - Will set-up the display and monitor condition of the display each day it is set-up.
- Elected Official(s)
  - Will pull a submitted card at a public meeting from the submission box. The Environmental Resource Manager will confirm if the questions are answered correctly. If the questions are not answered correctly, the elected official will pull another card until it is confirmed all 3 questions are correct.
- Environmental Resource Manager
  - Will log data from entries for review at the Annual SWMP Review & Assessment each year by the MS4 Committee and auditor.

## 9) Success evaluation

- Assessment criteria located in Section 800-1 of the SWMP will be used to gauge progress during the 2016 permit year Annual SWMP Review & Assessment; and determine whether to maintain, modify, change, or eliminate this endeavor.
- Assessment criteria located in Section 800-1 of the SWMP will be used to gauge if the final goal has been achieved during the 2017 permit year Annual SWMP Review & Assessment.

# Application Example #2 – Annual Watershed Day(MCM 2)

Regional effort with 3 municipalities and the school district covering the area.

Almost all of the fifth grade students in the school district participate in the annual event.

The group of permitted municipalities also conduct an annual stream clean-up event with the local watershed alliance (21<sup>st</sup> annual event recently held).

Municipalities spend approximately \$1,500 for the event to assist with permit compliance.



# MS4 Permit (PAG-13 Requirements) for MCM 2 revisited

## MCM #2: Public Involvement/Participation

- BMP #1: Develop, implement, and maintain a written Public Involvement and Participation Program (PIPP) which describes various types of possible participation activities and describes methods of encouraging the public's involvement....
  - Measureable Goal (renewal permittees): *...shall re-evaluate the PIPP each permit year and revise as needed...*
- BMP #2: Prior to adoption of any ordinance required by this General Permit, provide adequate public notice and opportunities for public review, input, feedback.
  - Measureable Goal: *Advertise any proposed MS4 Stormwater Ordinance, provide opportunities for public comment, evaluate any public input and feedback...*
- BMP #3: Regularly solicit public involvement and participation from TAGs...Assist the public in their efforts to help implement your SWMP...
  - Measureable Goal: *Conduct at least one public meeting per year...*

# Application Example #2 – Summary and compliance needs

## **MCM #2, BMP #3 (solicit public involvement): Annual Watershed Day**

- 1) Public involved in NOI submittal and SWMP development
  - Not applicable\*
  
- 2) Plan for public involvement in program development and implementation
  - Coordinate efforts with neighboring municipalities in the watershed, the local watershed alliance, and the school district serving all three municipalities.
  - Conduct in-the-field event (every year) with a focus on:
    - MS4 Permit requirements
    - Environmental awareness
    - Pollution prevention/protecting the health of our streams and water resources
    - Biology and chemistry considerations of local streams
    - Interaction between daily activities and streams
  
- 3) Target audiences for involvement
  - School students (fifth grade students from all elementary schools)

# Application Example #2 – Summary cont'd

- 4) Roles and responsibilities (overall responsibility: Assistant Township Manager)
  - Assistant Township Manager
    - Location(s) identification
    - Communications with school district for date and stations (based on SWMP focus and processes)
    - Coordination and communications with watershed alliance regarding station.
    - Field coordination for event
    - Document and analyze follow-up student discussions
  - School district
    - Bussing
    - Material handouts and agenda (including materials for stations)
    - Food
    - Communicate results of follow-up student/classroom discussions
  - Township Director of Public Works
    - Location prep (clean, etc.) and stations set-up
    - Run station regarding MS4 considerations and requirements
    - Stations break-down and clean up

# Application Example #2 – Summary cont'd

## 5) Types of public involvement activities

- *This section describes the actual stations and content of the watershed day event.*

## 6) Volunteer monitoring

- Not applicable, however:
  - Students learn how to appropriately grab samples during the event
  - Current volunteer monitoring results are communicated

## 7) Success of minimum measures evaluation

- A general indication of increased awareness and understanding by the TAG based on the results of follow-up discussions communicated by the school district will provide a success consideration.

## 8) Measureable goals

- Full (or nearly full) participation by the fifth grade classes (approximately 250-300 students per year).
- Communication of increased awareness in a general sense by the school district.
  - Permittees felt this was an appropriate measurement so as not to dictate to the school district testing (or similar) requirements.

# Additional Considerations – for program development

## Target Audience Groups (TAGs)

- Consider two levels: priority and general
- Priority TAGs are generally tied to Priority Areas (or repeat offenders)...General TAGs may be similar entities (and generally large groups)
- Example:
  - A specific commercial car wash may be identified for illicit discharges through field and IDD&E investigations. The MS3 becomes a Priority Area, and the car wash is listed within a Priority TAG
  - All other car washes become members of a General TAG to educate regarding stormwater pollution and illicit discharges with the intent to reduce the potential for a similar discharge to occur (“lessons learned approach”).
- IDD&E is always included in public education and outreach efforts (what it is, how your program works, how to report, etc.)
  - Ensure program is user-friendly
- Consider issues encountered by public works (MCM 6) with public outreach and/or involvement efforts



# Additional Considerations – for program development

MCM 1 and MCM 2 should operate “hand-in-hand.” Activities can be conducted that address multiple requirements at one time

- Example
  - Under MCM 1 – required to have Target Audience Groups (TAGs)
  - Under MCM 1 – need to have an outreach strategy to reach TAGs, and outline the number of persons to be reached by a strategy
  - Under MCM 2 – need to have public involvement activities (permit calls for an annual public meeting – which can also be annual public involvement with SWMP development)
  - Under MCM 2 – outline TAGs for the involvement program
  - ...directly invite Priority TAGs to the annual meeting.



# Key Considerations for Compliance

Measuring effectiveness is a key consideration for compliance. No matter what you choose to develop, implement, etc. – there should be a plan (in writing) for how you plan to measure effectiveness.

Use the permit requirements for the framework to work within (e.g. distribute two educational outreach materials). However, use the “cheat sheet” regarding EPA requirements/expectations to provide the background documentation for processes, analysis, and decision-making.

Coordinate with other MCMs and corollaries of the SWMP (Impaired Waters Plan, etc.). MCM 1 and MCM 2 should be a result of issues, focus, etc. from monitoring, stream health, municipal operations, and so on.





# Workgroups Session

# Workgroup Scenario #1 Review

## Little Big Borough

- “Counted the beans” until a few years ago, but initiated a stronger effort a few years ago.
- All waterways have impairments due to nutrients, siltation, and TDS.
- Baseline survey – 21%
- One outfall with phosphates
- Watershed group – good relationship



# Workgroup Scenario #2 Review

## Suburbia Township

- Comprehensive program with years of data and efforts
- Most waterways in good shape except for one with nutrients impairment
- Pathogens in recent sampling data...dog park identified as probable culprit
- Field investigations
- Increased pollutants (incl. foam)



# Workgroup Scenario #3 Review

## Booming Township

- “bean-counting” program
- Able to check the boxes off on the annual/progress reports
- Milky discharge
- Buried outfalls/discharge points
- Development is booming
- Impairments increasing



# Final Considerations & Summary

- MCMs 1 & 2 operate “hand-in-hand”...should compliment each other.
- Iterative process...measuring effectiveness and revising as needed is a crucial process for program compliance...requires a documented program outlining the rationale and steps.
- The MS4 Permit outlines the framework to work within (e.g. distribute 2 types of outreach materials)...the regulations (or EPA expectations/requirements) outlines how the program operates and for what purpose(s).
- An MS4 Program requires different types of “hats” depending on the focal area...engineering, hard sciences (chemistry, biology, etc.), the trades (public works), marketing/communications, and management/administration.



# Final Thoughts and Questions?

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Slides for visual purposes associated with questions, etc. if needed

# Why build the SWMP document in this fashion?

“Grid” explanation...

\$25,000

X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X

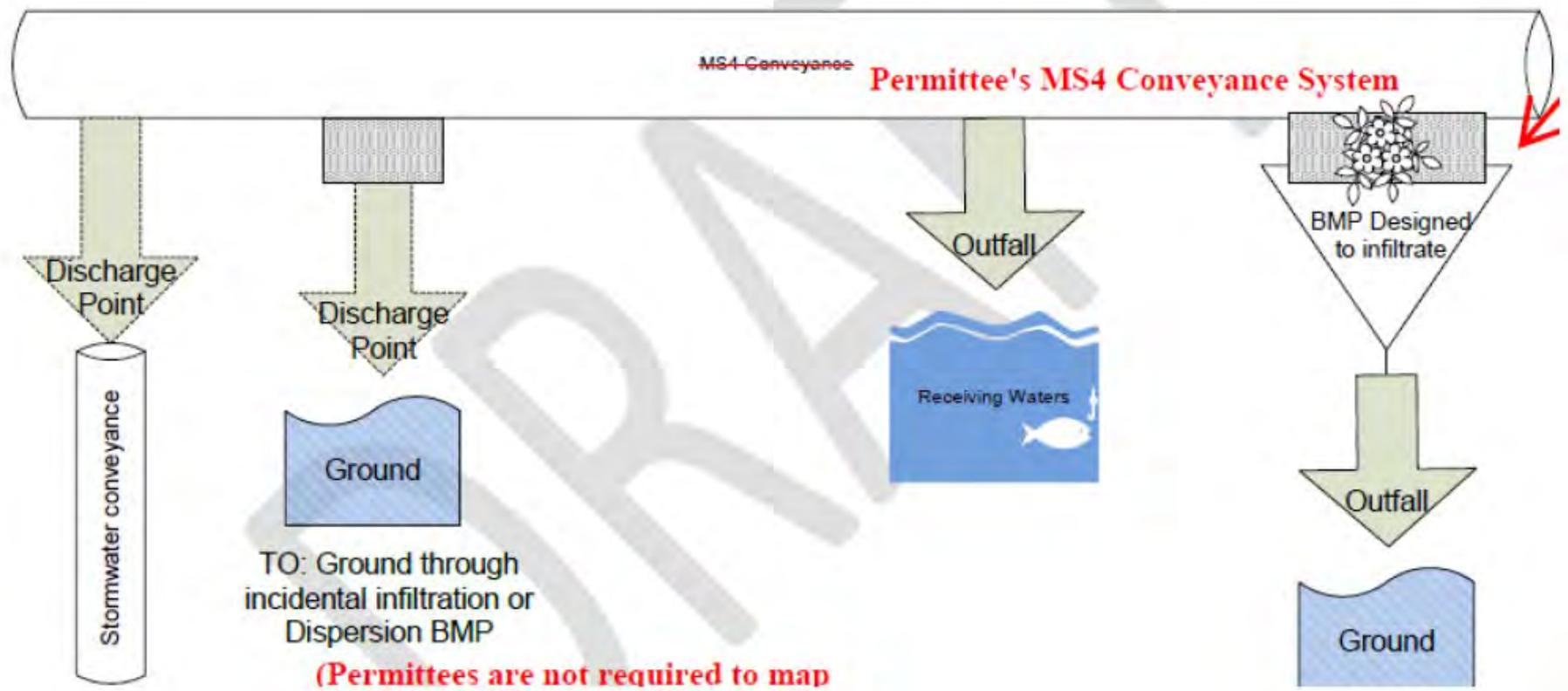
# Why build the SWMP document in this fashion?

“Grid” explanation...

Start with \$0.00

X						
		X	X			
				X		X
	X					
				X		

# Outfall vs. Discharge



**(Permittees are not required to map**

**\*Only where a "significant nexus" exists or meets "adjacent" criteria**

# Waters of the U.S. “Determination” – in the SWMP

## Waterbodies and Designated Uses

Approximately 27 miles of streams in the township are located within the UA (or there is a reasonable and probable discharge from the regulated system to these reaches). Based on the 02050306 identification code, a table of receiving waterbodies within the UA (or receives discharges from the regulated system) and corresponding appropriate information (e.g. identification code, impairments (if applicable,), uses, etc.) is found at the end of this section. Receiving waterbodies are those waterbodies with a defined reach code and/or common identifier, and found within the National Hydrography Dataset (NHD) and shown within the PADEP WAVE (or emappa) database. Per Pa. Code Ch. 93.9o, the following water uses are protected per each small watershed with referenced segments within the basin denoted:

# Receiving waterbodies – in the SWMP

ID	Reach Code	COMID	Geographic Reference	Length (Miles)	MS4 Key Map Page(s) Location	Protected Designated Uses	GNIS Name	303(d) categorization	Waste Load Allocation	Impaired?	Impairment(s) (use-source-cause)
15049	2050306004632	57463059	Headwater segment (~0.12 miles) at northwest area of borough crossing Graystone Road towards the quarry	0.785	B1	TSF, MF	UNT Little Conestoga Creek	5	No	Yes	Aquatic Life - Crop Related Ag - Nutrients; Aquatic Life - Erosion from Derelict Land - Unknown Aquatic Life - Grazing Related Ag - N/A Recreational - Unknown - Pathogens
66111	2050306000199	57463087	Periodic segments of reach at northeast end of the borough from Northfield Dr. area to just south of the Rt. 722 bridge	1.664	A5, B5, B6, B7, C7, C8	TSF, MF	Little Conestoga Creek	5	No	Yes	Aquatic Life - Grazing Related Ag - Nutrients, Siltation Aquatic Life - Urban Runoff/Storm Sewers - Unknown Recreational - Unknown - Pathogens
66111	20503060000198	57463301	Segments of reach at southeast end of the borough running parallel with Martin Dr. down to the Rt. 72 bridge	1.324	G7, H7, I6, J6	TSF, MF	Little Conestoga Creek	5	No	Yes	Aquatic Life - Grazing Related Ag - Nutrients, Siltation Aquatic Life - Urban Runoff/Storm Sewers - Unknown Recreational - Unknown - Pathogens
88999	20503060004657	57463295	Small segment of headwaters (~0.06 miles) at "The Meadows" down to the Rt. 72 crossing	0.907	G4, H4, H5, I5, J5	TSF, MF	UNT Little Conestoga Creek	5	No	Yes	Aquatic Life - Grazing Related Ag - Nutrients, Siltation Aquatic Life - Urban Runoff/Storm Sewers - Unknown Recreational - Unknown - Pathogens

# 303(d) list

## Lackawaxen River

HUC: 02040103

Aquatic Life (2428) - 0.9 miles

Industrial Point Source	Organic Enrichment/Low D.O.	2002	2015
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## Middle Creek Unnamed Of (ID:25941442)

HUC: 02040103

Aquatic Life (4770) - 0.9 miles

Land Development	Siltation	2004	2017
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## Wallenpaupack Creek Unnamed To (ID:25930548)

HUC: 02040103

Aquatic Life (16580) - 0.56 miles

Package Plants	Organic Enrichment/Low D.O.	2012	2025
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Upstream Impoundment		2012	2025
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## West Branch Wallenpaupack Creek Unnamed To (ID:25928208)

HUC: 02040103

Aquatic Life (16577) - 1.53 miles

Urban Runoff/Storm Sewers	Siltation	2004	2017
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# EPA "Protocol"

<b>11.0 Discharges to Water Quality Impaired Waters (MS4 - 3.1)</b>		
<p>The operator must comply with any more stringent effluent limitations in the permit, including permit requirements that modify, or are in addition to, the minimum control measures based on an approved total maximum daily load (TMDL) or equivalent analysis. [40 CFR 122.34(e)(1)]</p>	<p>Determine if a waterbody to which the MS4 discharges has been designated as a 303(d) listed water or a TMDL has been developed for the waterbody.</p> <p>If discharging to an impaired water, verify the SWMP discusses:</p> <ul style="list-style-type: none"><li>• How discharges of pollutants of concern will be controlled</li><li>• How the operator will ensure discharges will not cause or contribute to exceedances of water quality standards</li><li>• Measures and BMPs that will control these discharges</li></ul> <p>If a TMDL has been developed for</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

