DESIGN BEST MANAGEMENT PRACTICES FOR POST CONSTRUCTION STORMWATER MANAGEMENT

PennDOT District 8-0
Michael Lapano
mlapano@pa.gov
(717) 787-7482

pennsylvania
DEPARTMENT OF TRANSPORTATION

Introduction

I. Background
II. District Stormwater Committee
III. Design Best Management Practices
IV. What's Downstream

Background

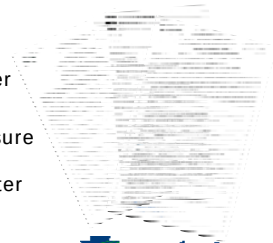
Regulatory

- 2010 NPDES Permit Regulations
  - Post Construction Stormwater Management (PCSM) Plan
  - A long-term operation and maintenance schedule for Stormwater Control Measures (SCM)
  - Documentation of SCM inspections, repairs, replacements, or other routine maintenance.

Background

– Municipal Separate Storm Sewer System (MS4) Permit

- PennDOT has an MS4 permit to own and maintain its stormwater systems
- Minimum Control Measure (MCM) #5 – Post Construction Stormwater Management



Background

- Since 2010 the EPA is requiring documentation from DOT and Turnpike on
  - Proper Permitting,
  - Inspection and Maintenance of PCSM Facilities.
  - District 8-0 has 438 SCMs in 2015
  - Estimated to increase to 1533 by 2020

Background

EPA Request for Information (June 2015)

Project Information
- Lat. & Long. Location
- Date of Permit Approval
- Date of Construction

Permit Documentation
- Notice of Intent (NOI)
- NPDES Permit
- Notice of Termination (NOT)
- Notice of Violations (NOV)

SCM Inspection and Maintenance Documentation

Background

District

- SOL 493-14-12 (Sept. 5, 2014)
  - Identify all projects that are covered by the new PCSM regulation
  - Create and Maintain an Inventory of the SCMs
  - Inspect SCMs and provide documentation via an Inspection and Maintenance Log
- Performed First Inspections (Dec. 2014)
- Stewardship of PCSM Facilities to reside with Maintenance.

Background

Dry Extended Detention Basin

Background

Infiltration Basin

Vegetated Swale

Background

Inspections and EPA Request Revealed some District Wide Opportunities

- Need for better record keeping regarding Notice of Intent (NOI), NPDES permit, Notice of Termination (NOT), and inspection records.
- Need for an improved process for projects with PCSM Plans
- Improvements to the Design and Construction of individual SCMs

District Stormwater Committee

To ensure that District 8-0 satisfies:

- all MS4 and NPDES permit requirements,
- CO SOL 493-14-12,
- Future SCM Maintenance Needs

District Stormwater Committee

- Creation of a District 8-0 Stormwater Committee
  - Consists of Member from Design, Construction, and Maintenance
  - Formed to comply with CO directive to meet all Federal, State, and Department requests, requirements and commitments related to Post Construction Stormwater.
  - Committee will serve as an open forum to establish Best Management Practices for the Design, Construction, and Maintenance of Department owned stormwater facilities within District 8-0.

District Stormwater Committee

Members

- Design
  - Senior Project Manager Michael Lapano
  - Project Manager Brandon Dean
  - Environmental Manager Sharon Okin
  - Project Manager, Bridges, Lisa Myers P.E.
- Construction
  - Construction Services Engineer Kevin Keefe P.E.
- Maintenance
  - District Maintenance Manager Kris Feldmeyer(Chairman)
- Consultant
  - Skelly and Loy

District Stormwater Committee

Stormwater Committee Reviews

– For projects with NPDES Permits

Who attends a Stormwater Committee Review?

- Design Consultant
- Design Project Manager
- Committee Members
- Assistant Construction Manager/ Engineer
- County Maintenance Manager (if necessary)

District Stormwater Committee

What is the focus of the Stormwater Committee Review?

Maintainability & Constructability

- Provide guidance, not technical arbitration.
- Review the types of proposed SCMs
- Discuss any limitations on design, right of way, construction and maintenance of the proposed SCMs.
- Identify and standardize the long term operations and maintenance obligations for those SCMs

Design Best Management Practices

Design Best Management Practices

PCSM Design Goals

- Develop consistent PCSM Plans
- Design maintainable and constructable SCMs
- Need for better NPDES permit record keeping

Design Best Management Practices

1. The Design Process
2. Thinking about Post Construction Stormwater Management early in the Design Phase
3. Documentation
4. Post Design Service

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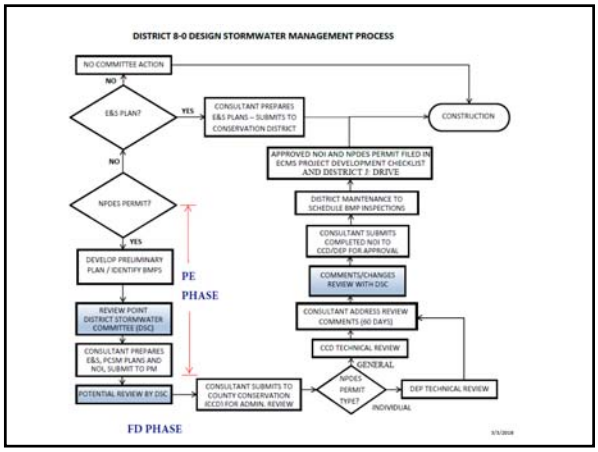
Design Best Management Practices

The Design Process

- Refer to DM2, Chapter 13 for latest Department Policy on E&S and PCSM.
- Ensure the stormwater process is incorporated into the overall project schedule.
- Stormwater Committee Review Meetings



Design Best Management Practices

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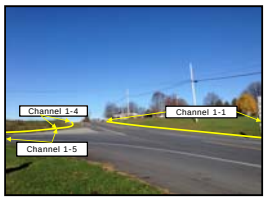
Design Best Management Practices

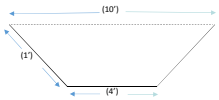
During Preliminary Design

1. What level of control?
2. Where will SCMs be placed?
   - based on existing drainage and low areas in the terrain.
3. What types of SCMs are applicable?



Design Best Management Practices

4. What are your limitations?
   - right of way constraints,
   - construction and maintenance
   - avoidance of highly sensitive resources (wetlands, historic properties, waste areas, geologic features, etc)



Design Best Management Practices

5. How will we maintain SCMs?

Design Best Management Practices

6. Submit application to the County Conservation Districts as early as possible.

- Administrative and Technical Reviews by County Conservation District and/or DEP require time
- Permit site stabilization requirements may require adjustment of construction completion date, consider milestone in schedule and RULDs.

Design Best Management Practices

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Design Best Management Practices

Provide to the Project Manager

- Notice of Intent (NOI), NPDES permit, and supporting documents
- Third Party Agreements that document any PCSM responsibilities.
- Notice of Termination (NOT)

Design Best Management Practices

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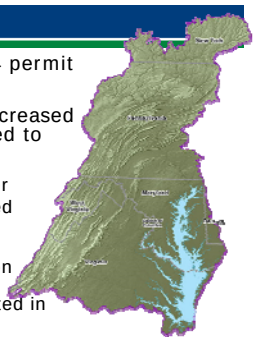
Design Best Management Practices

- Anticipate one meeting for discussion of stormwater control features prior to construction. On-site cam be expected.
- Input in construction of SCM's may be requested.
- Completed Notice of Termination (NOT) to closeout the NPDES permit.

Design Best Management Practices

What's Downstream?

- Department's current MS4 permit expires July 14, 2016
- It is anticipated that an increased design effort will be needed to comply with next permit
  - Chesapeake Bay and other sediment/nutrient impaired watersheds
  - Municipal MS4 coordination
  - Stormwater features located in GIS.



What's Downstream?

- More policy guidance from Central Office
- Standardization of PCSM plans, naming, maintenance cycles etc.
- Refinement of the District Process.

Summary

- Regulations regarding Post Construction Stormwater Management
- District Stormwater Committee
- Design Best Management Practices