



PennDOT's Stormwater Management Compliance from Design through Maintenance

Technical Session for Delaware Valley ASHE

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Agenda

- Stormwater regulations affecting PennDOT
- Recent changes to 25 PA Code 102 that affect PennDOT
- NPDES permits – exemptions and applicability to PennDOT
- EPA Stormwater Rule on effluent discharge limitations
- PennDOT's MS4 permit status
- Current state of DEP's Act 167 program and its implications on future projects

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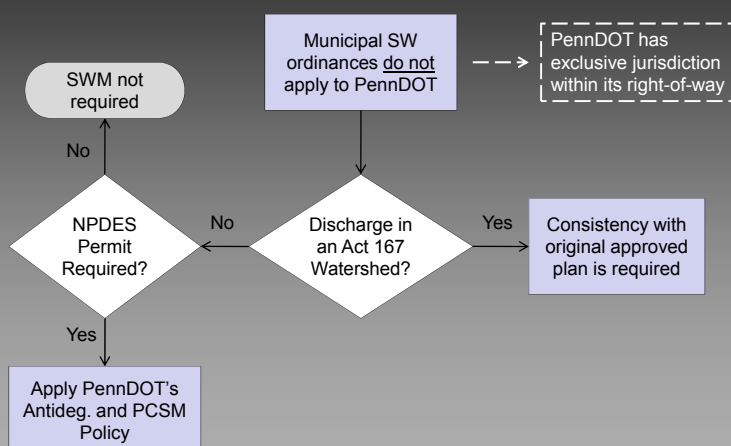
Stormwater Regulations Affecting PennDOT

- National Pollutant Discharge Elimination System (NPDES)
- PA SW Management Act (Act 167)
- [PA Code, Title 25 – Env. Protection]
 - Chapter 93 – Water Quality Standards (specifically 93.4a – Antidegradation)
 - Chapter 102 – Erosion & Sediment Control & Stormwater Management

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Stormwater Regulations Affecting PennDOT



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Stormwater Regulations Affecting PennDOT

- EPA delegates NPDES permitting authority to Pennsylvania → PADEP
- Pennsylvania NPDES General Permit (PAG-2) for Stormwater Discharges Associated with Construction Activities
 - Earth disturbances between 1 and 5 acres with a point source discharge to surface waters of the Commonwealth
(this provision changes on Nov. 19)



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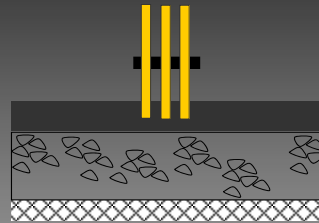
Stormwater Regulations Affecting PennDOT

- PAG-2 expires Dec. 7, 2011
- Permit coverage for 2 years from the date of approval of coverage issued to the permittee
- Permittee responsible for complying with the final, renewed, reissued general permit
- Individual NPDES Permit required if discharging to...
 - HQ/EV streams or EV wetlands
 - Surface waters identified as impaired where proposed discharge will result in a net change (pre to post) in volume or rate or water quality of the stormwater

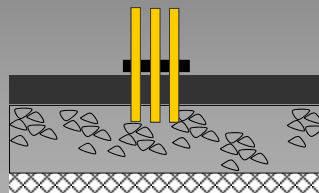
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Stormwater Regulations Affecting PennDOT



Partial Depth
is not earth
disturbance



Full Depth
is earth
disturbance

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Stormwater Regulations Affecting PennDOT

- No NPDES permit means...
 - No plans submitted to outside agencies
 - Internal review of PCSM designed consistent with Act 167 plan, if applicable
 - Internal review of E&SPC plan adequacy ★

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PennDOT's Antidegradation and PCSM Policy

- Comprehensive policy addressing rate, volume, and water quality
- Outlines stormwater discharge targets for various PennDOT activities/projects
- Developed (in part) in response to PA SW BMP Manual
- Cooperative effort between PennDOT and PA DEP
- Issued via SOL on Dec. 27, 2007
 - DM-2 (Pub. 13M) Ch. 13
 - PDM (Pub. 584) Ch. 14

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PennDOT's Antidegradation and PCSM Policy



Factors include the amount of disturbance, sensitivity of receiving waters, concentration of pollutants, etc.

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PennDOT's Antidegradation and PCSM Policy

Level 4



T&S Species/Habitat, CSO, Impaired, HQ/EV Streams, EV Wetlands

Level 3



New Construction

Widening Project

Level 2

Betterment Project

Level 1



Bridges



Highway Restoration

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PennDOT's Antidegradation and PCSM Policy

PCSM Level	Stormwater Discharge Targets
1	none
2	1" from new imperv.; 2" contrib.
3	post ≤ pre for:
4	2, 10, 25, 50, 100-year peak rate (at POIs) 2-year, 24-hr volume (watershed)

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PA Code Title 25 Ch. 102 Background

- Chapter 102 – Erosion and Sediment Control
- Currently addresses the requirements for E&S plans (*DEP's E&S checklist is based on the contents of this chapter*)

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Proposed Changes to Ch. 102

- Revisions to E&S requirements
- New section for PCSM requirements
- New section for riparian buffer requirements
- PennDOT commented
- Published final version Aug. 21
- Final-form rulemaking goes into effect Nov. 19

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Proposed Changes to Ch. 102

- Elimination of “point source discharge”
 - Currently, projects disturbing between 1 and 5 acres must also have a point source discharge to a surface water to require a permit
 - Ch. 102 revisions will eliminate this stipulation
 - **All projects disturbing > 1 ac. will need an NPDES permit***



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Proposed Changes to Ch. 102

- Road Maintenance Activities redefined
 - Certain PennDOT projects are exempted from the 1 ac. of disturbance condition for NPDES permits
 - Disturbance up to 25 ac. allowed for “road maintenance activities”

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Proposed Changes to Ch. 102

Earth disturbance activities within the existing road cross-section...including:

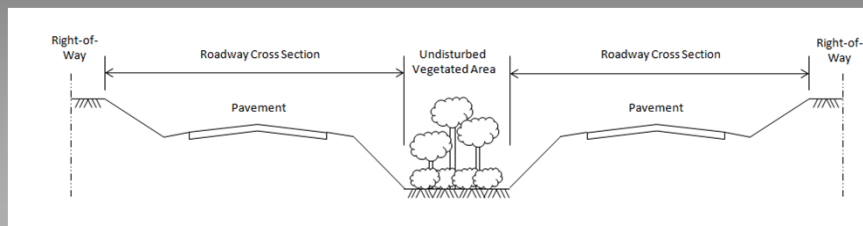
- Shaping or re-stabilizing unpaved roads
- Shoulder grading
- Slope stabilization
- Cutting of existing cut slopes
- Inlet and endwall cleaning
- Reshaping and cleaning drainage ditches and swales
- Pipe cleaning
- Pipe replacement
- Support activities incidental to resurfacing...such as minor vertical adjustment to meet grade of resurfaced area
- Other similar activities (e.g., full-depth reconstruction)

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Proposed Changes to Ch. 102

- Guidance document being developed to clarify intent
- Define the roadway cross section

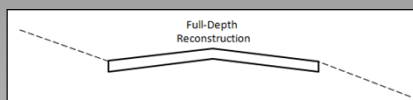
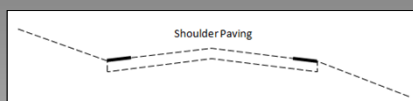
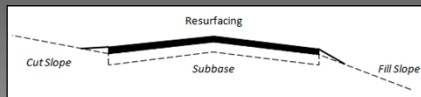
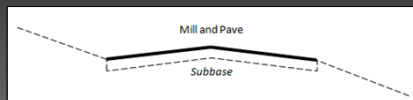


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Proposed Changes to Ch. 102

- Common maintenance activities
- Examples



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Proposed Changes to Ch. 102

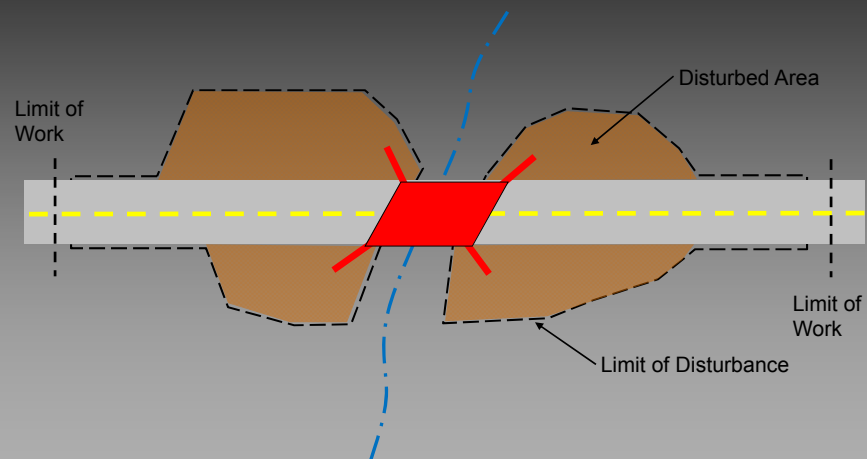
[provision for bridge/culvert projects]

A person proposing or conducting an earth disturbance activity associated with discharging dredged or fill material to waters of the US which is required to obtain a permit or coverage under a permit under section 404 of the Clean Water Act...need not obtain an additional E&S Permit or NPDES Permit...for the area of disturbance covered by the Clean Water Act section 404 permit.

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Proposed Changes to Ch. 102



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Proposed Changes to Ch. 102

- Control guidelines (CG-1) from the DEP Stormwater BMP Manual is now the minimum standard for PCSM
 - 2-year 24-hour volume
 - Ex. pervious area = meadow
 - 20% of ex. impervious = meadow
 - 2-, 10-, 50-, 100-year peak rate
 - Many “exceptions” for roadway and rail projects included ★

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Proposed Changes to Ch. 102

When the existing site contains impervious area and the existing site conditions have public health, safety or environmental limitations...may demonstrate...that it is not practicable (to meet the 20% meadow condition)

Analysis other than that required by (the volume control requirement) may be proposed...when the applicant demonstrates...that the alternative will maintain and protect existing water quality and existing and designated uses

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Proposed Changes to Ch. 102

- Other changes...
 - E&S BMPs must be inspected on a weekly basis and after each [~~measurable rainfall~~] stormwater event
 - Identify potential thermal impacts and BMPs to avoid, minimize, or mitigate them
 - Special BMP requirements in Special Protection watersheds
 - Sediment basins
 - Channels

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Proposed Changes to Ch. 102

- Other changes...
 - Preconstruction meeting may be required
 - Preparedness, Prevention and Contingency (PPC) Plan required for all sites storing, using, or transporting certain materials (e.g., fertilizers, lime, wash water)
 - Must maintain a log of inspection, repair, and maintenance activities of BMPs in the PCSM plan

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Proposed Changes to Ch. 102

- Other changes...
 - Predevelopment site characterization and assessment of soil and geology including appropriate infiltration and geotechnical studies that identify location and depths of test sites and methods used
 - Record (as-built) drawings must be submitted with the Notice of Termination (NOT) with a certification statement from a licensed professional

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Proposed Changes to Ch. 102

- Other changes...
 - Riparian buffers
 - Does not apply to road maintenance activities so long as any existing riparian buffer is undisturbed to the extent practicable
 - DEP may grant a waiver for linear projects if it is demonstrated that...any existing riparian buffer is undisturbed to the extent practicable and the activity will otherwise meet the requirements of Chapter 102

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EPA Rule

United States Environmental Protection Agency Office of Water 4303T EPA 821-F-09-004 November 2009

EPA Fact Sheet

Final Rule: Effluent Guidelines for Discharges from the Construction and Development Industry

www.epa.gov/waterscience/guide/construction/

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EPA Rule

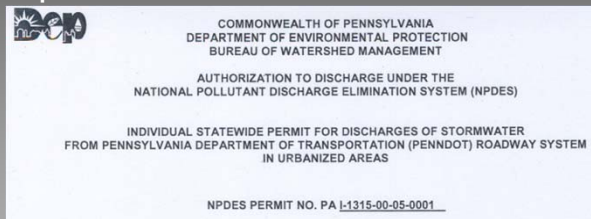
- Effluent limitations reflecting the best practicable technology currently available (BPT) – Qualitative
- Effluent limitations reflecting the best available technology economically achievable (BAT) – Quantitative
 - Effluent limit of 280 NTUs (measure of turbidity) for a 2-year 24-hour storm
 - **Vacated for at least 18 months**
- Passive Treatment Systems (PTS)
 - Ex: Jute-lined ditch impregnated with polyacrylamide (PAM)
- Sediment basins and other impoundments must be dewatered from the surface

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MS4 Permit

- Municipal Separate Storm Sewer System
- Administered by the Bureau of Maintenance and Operations



PENNDOT MS4 System– PENNDOT's conveyance systems owned and/or operated by PENNDOT which are designated or used for collecting or conveying stormwater associated with PENNDOT roads, highways, bridges, and related structures. This term does not include separate storm sewers in very discrete areas, such as individual buildings.

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MS4 Permit

PENNDOT'S POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAM

PENNDOT targets three areas of facilities related pollution and prevention. They are: (1) PENNDOT stormwater facilities; (2) PENNDOT vehicle maintenance and operations facilities and (3) the training of employees involved with pollution prevention control related to vehicle maintenance operations.

For this program PennDOT will focus on fueling practices and the dispensing of liquid fuels: Creating impermeable pads for refueling, posted PPC plans, visual warnings against "topping off" fuel tanks and cleaning of the fuel area.

PennDOT will focus on the pollution prevention of the maintenance operations of vehicles through: proper recycling of used oil and oil filters, plugging of floor drains that do not have proper sewer connections, place leaking vehicles on impervious pads or place drip pans under leaking vehicles and having guidelines and protocols for spill cleanup.

PennDOT will review the practices for washing vehicles in stock pile areas by: creating designated washing areas, reviewing the use of commercial washing stalls, reviewing washing detergents for phosphates.

PennDOT will develop and implement an inspection schedule for stormwater facilities. This inspection will evaluate the need for additional maintenance concerns to the stormwater structure and map the locations. In addition, stormwater facilities will be patrolled for litter annually and excess debris removed for the proper operation of the facility. Catch basins will be monitored semi annually for debris/sedimentation build up.

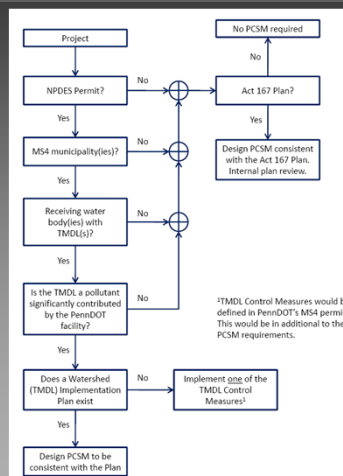
In addition, PennDOT will develop and inspect anti-icing programs for the following items: covering salt and deicing materials when not in use with secured tarps and/or hard shelters, applying de-icing materials at the proper established rates dependent on the nature of the de-icing event, clean the area immediately after anti-icing operations have ceased around the material dispensing area to prevent runoff, and establish and implement containment practices for liquid de-icing containers.

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MS4 Permit

- MS4 will be submitted in Nov. 2010
- Will need to implement BMPs in addition to those required per policy/Act 167/Chapter 102 for watersheds with TMDLs



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Act 167 SWM Plans

- PA Stormwater Management Act (Act 167)
 - Requires counties to prepare and adopt watershed-based SWM plans
 - Requires municipalities to adopt and implement ordinances to regulate development consistent with these plans
- DEP provides technical, administrative and financial assistance to counties in preparing SWM plans and pays for 75% of the costs counties incur in preparing plans

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Act 167 SWM Plans

- After adoption and approval of a watershed storm water plan in accordance with this act, the location, design and construction within the watershed of...highways and transportation facilities...and facilities owned or financed in whole or in part by funds from the Commonwealth shall be conducted in a manner **consistent with the watershed storm water plan.**

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Act 167 SWM Plans

Watershed-based
Act 167 Plans
in District 6-o

County	Approved	Watershed(s)
Bucks	8/11/2004	East Branch Perkiomen Creek
	1/16/2002	Tohickon Creek
	5/18/1992	Neshaminy Creek
	1/16/2002	Delaware River North
	8/11/2004	Delaware River South
	10/23/1996	Little Neshaminy Creek
Chester	9/18/1991	Saucon Creek
	3/31/2003	Chester Creek
	10/24/2005	Darby Creek
Delaware	10/24/2005	Conestoga River
	10/24/2005	Darby Creek
	3/28/2003	Chester Creek
	9/20/1988	Ridley Creek
Montgomery	10/24/2005	Cobbs Creek
	1/29/1992	Stony Creek (Sawmill Run)
	8/31/2004	East Branch Perkiomen Creek
	5/14/1993	Neshaminy Creek
	12/12/1996	Little Neshaminy Creek
	1/24/2007	Swamp Creek
Philadelphia	10/24/2005	Cobbs Creek
	10/29/1998	Lower Merion
	10/24/2005	Cobbs Creek

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Act 167 SWM Plans

County-wide Act
167 Plans
in District 5-o

County-wide Act
167 Plans
in District 6-o

County	Act 167 Plan Status
Berks	Under way
Carbon	Under way
Lehigh	Nearly complete
Monroe	No activity
Northampton	Nearly complete
Schuylkill	Under way
Bucks	Under way
Chester	Under way
Delaware	No activity
Montgomery	Under way
Philadelphia	Under way

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Act 167 SWM Plans

- PennDOT and the PA Turnpike are coordinating with DEP's Central Office
- Recommended standards for public roadway projects
- Goal is to include language in each county-wide Act 167 plan that refers to PennDOT's policy for design standards
- Special provisions for those watersheds that are impaired or HQ/EV

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Training

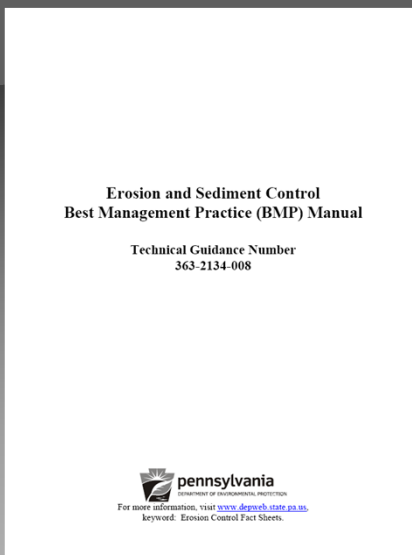
- Technical training offered by PennDOT
 - Erosion and Sediment Pollution Control Design
 - Feb. 15-17, Indiana, PA
 - Stormwater Design and NPDES Permits
 - March 1-4, King of Prussia, PA

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DEP E&S Manual

- Draft version available on DEP's eLibrary
- Final version due end of Nov. 2010
- '00 version = 180 p
- '10 version = 568 p!

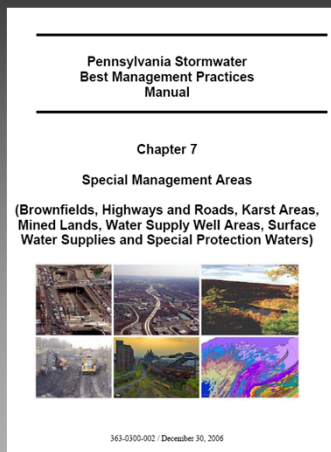


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PSTWG and the DEP SW BMP Manual

- Pennsylvania Stormwater Technical Work Group (PSTWG)
- Primary goal is to develop and present recommended changes to the DEP SW BMP Manual



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PSTWG and the DEP SW BMP Manual

- Section 7.3
 - Roadway runoff quality issues
 - BMP considerations for roadways
 - Specific BMP considerations
 - Dirt and gravel roads

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PSTWG and the DEP SW BMP Manual

- Group comprised of technical experts in SW design/etc.
- Linear projects sub-group

Subgroup	Topic	Team Leader
A	CGs	Robert Traver
B	Methods	Michele Adams
C	Vegetated Systems	Mark Bowen
D	Capture & Reuse	Bud Newton
E	WQ	Frank Browne
F	Infiltration	Russ Losco
G	Redevelopment	Gary Kribbs
H	Highways & Linear	Jeff MacKay
I	Inspections, O&M	Al Brulo

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