

MS4 REFERENCES AND RESOURCES

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Note: Many of the sites listed in this document are not under the management or control of the Commonwealth of Pennsylvania and are not governed by the privacy or security policies of the Commonwealth. The following links are being provided because they have information or features that may be of benefit to MS4 permittees or other interested entities. The Commonwealth of Pennsylvania does not necessarily endorse the views expressed or the facts presented on the sites. The Commonwealth does not endorse any commercial products that may be advertised or available on the sites.

PADEP MS4 & STORM WATER WEBSITES

Begin at the general DEP website: www.depweb.state.pa.us

From the list of DEP Keywords, choose “Water Topics”; then the following subjects can be selected from the drop down list:

1. Select “[Stormwater Management](#)” to access information on the [Pennsylvania Stormwater Best Management Practices \(BMP\) Manual](#) and related training info.
Under “[announcements](#)”, there is information on NPDES General Permits and the revised Pennsylvania Stormwater Model Ordinance.
Under “[general information](#)”, there is various storm water related information.
Under “[technical information](#)”, there is information on Act 167, Post-Construction Storm Water Management, and various other storm water topics.
Under “[general permits](#)”, there is NPDES permit information, the MS4 resource CD, the MS4 annual report form and Protocol (and also the Notice of Intent form and the request for waiver form), and Urbanized Area maps.
2. Select “[Water Management](#)”, then “[Bureau of Watershed Management](#)” to access information on County Conservation Districts, Growing Greener, Watersheds, TMDLs, and other various water related topics.
3. Select “[Water Quality](#)” to access information related to existing surface water uses, stream re-designation, 303d impaired waters, TMDLs, and fish consumption advisories, as well as other various water related topics.

For information on the [PA Bulletin](#), [PA Codes](#), and other public participation topics, click [here](#)

The website for the [DEP Southeast Regional Office](#) also has useful storm water information, resources and links.

The current [DEP MS4 Protocol \(3900-PM-WM0100h\)](#)

The current [DEP General MS4 Permit \(PAG-13\) \(3900-PM-WM0100e\)](#)

The current [MS4 Annual Report form](#)

[Pennsylvania’s 2008 Integrated Water Quality Monitoring and Assessment Report](#)

US EPA MS4 & STORM WATER WEBSITES

The EPA MS4 regulations can be viewed at [40 CFR Part 122: EPA Administered Permit Programs: The National Pollutant Discharge Elimination System \(start at 122.26; small MS4 info at 122.34\)](#)

For an explanation of the Phase II Storm Water Regulations found at 40 CFR Part 122, including the history and rationale behind the MS4 regulations, go to the [December 8, 1999 Federal Register](#) and select vol. 64, then enter page number 68722 and hit “submit”. It is informative and recommended reading for MS4 permittees.

For further EPA MS4/SW information and resources, begin at the [general EPA website](#)

Under the “Quick Finder” section, select “[Water](#)”; this will bring you to various EPA water subtopics, or, you can select “[Surf Your Watershed](#)” to locate your watershed. The left hand column of this site lists “[Adopt Your Watershed](#)” and this site has educational, volunteer and other watershed information.

Under “Browse these EPA Water subtopics”, some useful sites include:

1. Select “[Stormwater](#)”, then select
 - a. “[NPDES: Storm Water Program](#)” for useful storm water information and links, including:

[Storm Water Outreach Materials and Reference Documents](#);
[National Menu of Storm Water Best Management Practices \(BMPs\)](#);
[Storm Water Case Studies](#);
[Illicit Discharge Detection and Elimination Guidance Manual](#);
[Measurable Goals Guidance for Small MS4s](#)
 - b. “[NPDES](#)” for an overview of the [NPDES Permit Program](#), for information on [Urban BMPs](#) and [Stormwater Retrofit Practices](#), and to access [Storm Water Webcasts](#) (archived & future). Under “[Stormwater Qualifying Local Programs](#)”, there is information on numerous topics, including:
“Economic Analysis of the Final Phase II SW Rule (by chapter & appendix)”
“Guidance for Municipal Stormwater Funding”
2. Select “[Water Pollution](#)”, then “[Non-point Sources](#)”, then “[Polluted Runoff \(Non-point Source Pollution\)](#)” for lots of useful information, including:
 - [Educational information for students/educators](#)
 - [Outreach materials and toolbox](#)
 - [A kid’s page](#)
 - [Funding opportunities](#)
 - [Publications and information resources](#)

For environmental education resources, click [here](#)

For environmental finance programs, click [here](#)

For EPA MS4 Fact Sheets, click [here](#)

Examples of specific EPA storm water educational materials (some in Spanish also) available at [Storm Water Outreach Materials and Reference Documents](#):

- “[After the Storm](#)”
- “[Make Your Home the Solution to Storm Water Pollution](#)”
- “[Stormwater and the Construction Industry Poster](#)” (refer to [Storm Water Outreach Materials and Reference Documents](#) for more options with this poster)
- “[Clean Water is Everybody’s Business](#)”
- “[Storm Water Pollution Found in Your Area!](#)” (door hanger)
- “[Kids Storm Water Stickers](#)”
- “[10 Things That You Can Do to Prevent Storm Water Runoff Pollution](#)” (bookmark)
- “[Take the Storm Water Runoff Challenge](#)” (placemat)
- “[Stormwater Management: An Overview for Auto Recyclers](#)”
- “[Stormwater Management: A Guide for Auto Recycler Owners and Operators](#)”

Examples of specific EPA storm water information available at [National Menu of Storm Water Best Management Practices \(BMPs\)](#):

- [Developing an Outreach Strategy](#)
- [Classroom Education on Stormwater](#)
- [Storm Water Outreach for Commercial Businesses](#)
- [Using the Media](#)
- [Educational Displays, Pamphlets, Booklets, and Bill Inserts](#)
- [Promotional Giveaways](#)
- [Stormwater Outreach Materials](#)
- [Landscaping and Lawn Care](#)
- [Pest Control, Pet Waste Management](#)
- [Residential Car Washing](#)
- [Water Conservation Practices for Homeowners](#)
- [Automobile Maintenance](#)
- [Pollution Prevention for Businesses](#)
- [Promoting Low Impact Development](#)
- [Adopt-A-Stream Programs](#)
- [Storm Drain Marking](#)
- [Stream Cleanup and Monitoring, Volunteer Monitoring](#)
- [Attitude Surveys](#)
- [Trash Management](#)
- [Preventing Septic System Failure](#)
- [Community Hotlines](#)
- [Municipal Construction Inspection Program](#)
- [Post-construction Plan Review](#)
- [BMP Inspection and Maintenance](#)
- [Low Impact Development and Other Green Design Strategies](#)
- [Municipal Employee Education and Training](#)
- [Spill Response and Prevention](#)
- [Municipal Facilities Management](#)
- [Storm Drain System Cleaning, Parking Lot and Street Cleaning, Municipal Vehicle Fueling](#)
- [Road Salt Application and Storage, Municipal Vehicle and Equipment Maintenance and Washing](#)

OTHER POTENTIALLY USEFUL MS4 & STORM WATER SITES

The [Center for Watershed Protection](#) has an IDD&E Manual and many other educational resources and links, including “[The Storm Water Manager’s Resource Center](#)”.

The [Pennsylvania Organization for Watersheds and Rivers](#) has information on funding sources for watershed groups, finding a local watershed group, and other watershed information.

Access to online environmental resources is available [here](#).

[The Environmental Directory](#) calls itself the earth’s biggest environmental search engine.

This [National Resources Defense Council site](#) documents some of the most effective strategies being employed by communities around the country to control urban runoff pollution.

The [Pennsylvania Environmental Council](#) has general information, resources, and links for storm water issues.

The [Pennsylvania Resources Council](#) is a citizen action environmental organization and has information on rain barrels.

The [Villanova Urban Stormwater Partnership](#) has information on storm water BMPs, education, databases, references, outreach, and the 2007 Pennsylvania Storm Water Management Symposium.

[Advanced Stormwater Information Systems](#) has storm water management software products and tools for MS4s.

The [Stroud Water Research Center](#) conducts water research and provides educational opportunities and information.

The [Local Government Environmental Assistance Network](#) is a public non-profit organization that provides technical, financial, informational, and research services to local governments, including a toolbox and a resource organizations database.

The [Environmental Management Assistance Program](#) provides free and confidential environmental assistance to small businesses (500 employees or less) dealing with environmental compliance, pollution prevention, waste minimization, water conservation, and energy efficiency issues.

A study of regionalization efforts for controlling storm water pollution in Maine may be of benefit to MS4s.



EPA's Office of Wetlands, Oceans, and Watersheds recently released a new version of its watershed handbook to help communities, watershed organizations, and local, state, tribal, and federal environmental agencies develop and implement watershed plans to meet water quality standards and protect water resources. The [Handbook for Developing Watershed Plans to Restore and Protect Our Waters](#) is designed to help anyone undertaking a watershed planning effort, but should be particularly useful to communities working with waters that are impaired or threatened.

Information on stormwater program funding:

The [National Association of Flood & Storm Water Management Agencies](#) has produced a guidance document for municipal storm water funding.

The University of Maryland, [Environmental Finance Center](#).

An internet guide to financing stormwater management is available [here](#).

Natural Resources Defense Council. [Funding and Gaining Support for Stormwater Programs](#).

Florida Stormwater Association, [Establishing a Stormwater Utility in Florida](#).

Kasperson, J. 2000. [The Stormwater Utility, Will it Work in Your Community? Stormwater 1\(1\)](#).

EPA information is available [here](#) and [here](#).

EPA's Watershed Academy has added a new [online training module](#) on Developing a Sustainable Finance Plan. The training module is designed to help watershed organizations develop and implement sustainable funding plans. Case studies are included throughout the module to provide real examples of finance strategies employed by nonprofit watershed organizations in the U.S.

Local grant opportunities and contacts to help property owners and municipalities develop a financing strategy for storm water management and infrastructure improvements, including retrofit and demonstration projects:

The [National Fish & Wildlife Foundation](#) provides special grant programs, Delaware Estuary Grants and Five Star Restoration Grants; phone = 202-857-0166.

US Dept. of Agriculture, [Natural Resource Conservation Service](#); phone = 717-237-2215

The [PA Infrastructure Investment Authority \(PennVest\)](#) implements a construction loan program and provides low interest loans and supplemental grants for infrastructure projects (including storm water).

The [PA Coastal Zone Management Program \(CZM\)](#) provides federal funds for projects in PA's coastal areas.

The League of Woman Voters' [Water Resources Education Network \(WREN\)](#) provides information on resources and grants.

[TreeVitalize](#) (A partnership to restore tree cover in Southeast PA).

Planning Commissions can be viewed for Act 167 Plan and other useful information:

[Bucks County Planning Commission](#)
[Chester County Planning Commission](#)
[Chester County Water Resources Authority](#)
[Delaware County Planning Department](#)
[Montgomery County Planning Commission](#)
[Delaware Valley Regional Planning Commission](#)

MCMs 1 & 2 – Public Education, Outreach, Involvement and Participation:

The [PADEP MS4 information resource CD](#)

EPA resources: Fact sheets for [MCMs #1](#) and [#2](#); a Toolbox with a variety of resources to help develop an effective and targeted outreach campaign is available [here](#); an educational resource for kids, students, high school and teachers is available [here](#); overviews of [MCM #1](#) and [MCM #2](#); info on [attitude surveys](#)

Click [here](#) for a guide to help government officials communicate clearly to the public.

[Water Environment Federation](#) educational materials for students, educators and the public.

[The Pennsylvania Center for Environmental Education](#) provides environmental education materials, resources and programs.

[The Pennsylvania Association of Environmental Educators](#) has information for environmental educators, including many links.

The Pennsylvania Department of Education, [Environment and Ecology Section](#), describes current educational standards for Pennsylvania.

The [Pennsylvania Fish & Boat Commission](#) has a learning center and educational information.

The [National Association of Flood and Storm Water Management Agencies](#) has storm water education and guidance for municipal storm water funding.

[The Partnership for the Delaware Estuary](#) provides educational and outreach resources, including information for children, teachers, communities and volunteers.

The Philadelphia Water Department, Office of Watersheds, has developed a useful “Homeowner’s Guide to Storm Water Management” which is available [here](#).

[Pennsylvania Cleanways](#) provides information and education on stream/litter cleanup programs.

Storm drain stenciling resources (in English and Spanish) are available from [C&R Stencils](#); storm drain markers are available from [das Manufacturing](#) and [Almetek Industries](#); the [Southeastern PA Resource Conservation & Development Council](#) also has resources available, including stream signage resources.

The [Air & Waste Management Association's Environmental Education Council](#) has classroom lesson plans for non-point source pollution prevention for K-12.

Green Treks provides watershed and educational resources [here](#); Environmental Advisory Council information, resources and links [here](#); and videos on storm water Best Management Practices [here](#).

The California Stormwater Quality Association has developed an [Industrial and Commercial Handbook](#) that provides general guidance for selecting and implementing BMPs to reduce the discharge of pollutants in runoff from industrial facilities and selected commercial businesses.

The New Hampshire Department of Environmental Services has extensive guidance for creating a [Pet Waste Outreach Campaign](#).

Local watershed groups can be a valuable resource for public education and participation:

- The [Brandywine Valley Association](#)
- The [White Clay Creek Watershed Association](#)
- The [White Clay Creek Watershed Management Committee](#)
- The [Chester, Ridley, Crum Watersheds Association](#)
- The [Darby Creek Valley Association](#)
- The [Green Valleys Association](#)
- The [Perkiomen Watershed Conservancy](#)
- The [Wissahickon Valley Watershed Association](#)

MCM 3 – Illicit Discharge Detection & Elimination:

EPA's [fact sheet](#) and an [overview](#) for MCM #3.

The Center for Watershed Protection [Illicit Discharge Detection and Elimination Guidance Manual](#), chapter by chapter, including the appendices.

EPA has developed a new [Impaired Waters/TMDL homepage](#). The new Web page features an overview of the Clean Water Act section 303(d) program activities, highlights new resources, and provides easier access to program resources, such as EPA's new Water Quality Assessment and TMDL Information (ATTAINS) Web site. The site also features a new TMDL Stormwater Resources page that hosts several stormwater-source TMDLs and case studies highlighting the innovative approaches states are using to address stormwater.

Virginia Tech's Center for Total Maximum Daily Load (TMDL) and Watershed Studies has developed an [online database](#) to house selected TMDL-related information and documents in one central location. The searchable clearinghouse contains three types of resources: TMDL guidance documents, reviews and summaries of TMDL-related technical and trade literature, and state-by-

state summaries of TMDL programs across the nation. State summaries are updated regularly for all 50 states and include the approach and methodology used to develop TMDLs in that state. In total, about 500 documents are available within this database.

MCMs 4 & 5 - Erosion & Sediment Control and Post-Construction SW Management:

EPA's fact sheets for [MCM #4](#) and [MCM #5](#); an [overview](#) of MCM #4 and an [overview](#) of MCM #5; [Low Impact Development](#) information; [Smart Growth](#) information, [Green Infrastructure](#) information.

EPA has created a new [web-based tool](#) to provide stormwater professionals with easy access to approximately 220 studies assessing the performance of over 275 stormwater BMPs. The Tool provides access to studies covering a variety of traditional and low impact BMP types, including retention and detention ponds, biofilters, grassed filter strips, porous pavement, wetlands, and others. Users will also find a series of essays aimed at improving understanding of BMP performance and the importance of volume reduction/infiltration in these assessments.

The [Pennsylvania Stormwater Best Management Practices \(BMP\) Manual](#).

The Center for Watershed Protection offers MS4 communities a lot of [storm water management resources and information](#), especially for MCM #5 issues. Their 2007 *Urban Sub-watershed Restoration Manual No. 3: Urban Stormwater Retrofit Practices* is a free download and focuses on retrofit practices that capture and treat stormwater runoff before it is delivered to a water body. It describes both off-site and on-site retrofit techniques that can be used to remove pollutants, minimize channel erosion, and help restore stream hydrology. Their 2000 *National Pollutant Removal Performance Database for Stormwater Treatment Practices* contains summaries of more than 135 urban pollutant removal monitoring studies. Their 1997 report on *The Economics of Stormwater BMPs in the Mid-Atlantic Region* presents cost data for urban stormwater practices, updates BMP cost prediction equations, and assesses the cost effectiveness of the BMPs most commonly used in the Mid-Atlantic region.

The Center also has numerous resources available addressing [Better Site Design](#).

The Center for Watershed Protection's Stormwater Manager's Resource Center, [Environmental Indicator Profile Sheet: BMP Performance Monitoring](#).

The Center for Neighborhood Technology (CNT) has developed a [Green Values stormwater calculator](#) that estimates savings from conventional versus green development for several scenarios.

The University of New Hampshire Stormwater Center and NEMO (Nonpoint Education for Municipal Officials) have launched the [Innovative Stormwater Inventory](#) web site. This searchable and amendable inventory is designed to highlight innovative BMP strategies implemented throughout New England.

The California Stormwater Quality Association has developed a [New Development and Redevelopment](#) handbook that provides general guidance for selecting and implementing BMPs to reduce pollutants in stormwater runoff. The handbook contains general information on planning

and design concepts, source control and treatment control BMPs, and information on long-term maintenance of BMPs.

The [Northern Virginia Regional Commission](#) has developed a [guidebook](#) for private owners and operators of storm water BMPs. This publication is designed for individual property owners, homeowner's association representatives, and residential/commercial property managers. The guidebook outlines basic maintenance and planning tasks to keep Stormwater Best Management Practices (BMPs) functioning properly, including information on types of BMPs, general maintenance needs, who should carry out maintenance, inspections, and planning for BMP maintenance costs. The guide also contains a sample inspection checklist, a BMP maintenance costs planning sheet, and a local government resource guide. 2007; 38 pages.

The [Pennsylvania Association of Conservation Districts](#) provides E&S, BMP, and educational resources.

The [Construction Industry Compliance Assistance Center](#) has information on low impact development, a storm water construction industry poster, and SW BMP information and research.

The [Low Impact Development Center](#) provides information on low impact development, including [urban design tools](#) for retrofits and new/re-development.

The [International Stormwater BMP Database](#) provides information on the design, selection and performance of SW BMPs.

Storm water management information is available from [The Stormwater Authority](#).

The [International Erosion Control Association](#) provides educational and resource information.

The [National Resources Defense Council](#) provides information and case studies on green infrastructure alternatives to traditional hardscape solutions to wet weather discharge problems.

The [Water Environment Research Federation](#) recently unveiled a new [Web site](#) that gives landscape architects, designers, engineers, stormwater managers, elected officials and the public creative new ideas on sustainable stormwater practices. The site provides practical tools, frameworks for implementation and planning aids that can be adapted to any community or project.

[The University of New Hampshire Stormwater Center 2007 Annual Report](#) is now available online. Produced in partnership with the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), this publication contains performance data on the ability of stormwater treatment systems to treat water quality and manage water quantity.

[The Planner's Guide to Wetland Buffers for Local Governments](#), from the [Environmental Law Institute](#) (ELI), identifies both the state-of-the-art and the range of current practice in protection of wetland buffers by local governments. The guide book presents ELI's detailed examination of more than 50 enacted wetland buffer ordinances around the nation and nine model ordinances, as well as several hundred scientific studies and analyses of buffer performance. The Guide provides to local governments considering enacting or amending a wetland buffer ordinance what they need to know to manage land use and development in these important areas.

MCM 6 – Pollution Prevention & Good Housekeeping for Municipal Operations:

EPA's [fact sheet](#) and [overview](#) for MCM #6.

The Local Government Environmental Assistance Network provides a useful [storm water toolbox](#) describing operation and maintenance practices from Oregon that can be applied to MS4s in any location. The site contains guidelines and checklists.

The California Stormwater Quality Association has developed a [Municipal Handbook](#) that provides general guidance for selecting and implementing BMPs to reduce pollutants in runoff from municipal operations.

The Center for Watershed Protection has information and resources for [Municipal Housekeeping](#).

For guidance on the environmental management of road salt used for control of snow and ice, go [here](#) or [here](#).