

Commonwealth of Pennsylvania MS4 Annual Report

March 16, 2017 to June 30, 2018

Prepared For

WEST HEMPFIELD
Township

West Hempfield Township, Lancaster County



MCM #1 Appendix

- **MCM #1 Project Plan**
- **BMP 1.4 Attachments**
 - Reduce your Stormwater bookmark.PDF
 - Plant Native! bookmark.PDF
 - Conservation Landscaping and Green Infrastructure trifold outside.PDF
 - Conservation Landscaping and Green Infrastructure trifold inside.PDF

MCM #1 Project Plan

- BMP 1.1

Description:

Develop, implement and maintain a written Public Education and Outreach Program

Measurable Goal:

1. For new permittees, a written Public Education and Outreach Program (PEOP) shall be developed and implemented within one year following approval of coverage under this General Permit, and shall be re-evaluated each year thereafter and revised as needed.
2. For existing permittees, the existing PEOP shall be reviewed annually and revised as necessary.

The permittee's PEOP shall be designed to achieve measurable improvements in the target audience's understanding of the causes and impacts of stormwater pollution and the steps they can take to prevent it.

Action Plan:

None Specified

- BMP 1.2

Description:

Develop and maintain lists of target audience groups present within the areas served by your MS4

Measurable Goal:

1. For new permittees, the lists shall be developed within one year following approval of coverage under this General Permit, and reviewed and updated as necessary every year thereafter.
2. For existing permittees, the lists shall continue to be reviewed and updated annually.

Action Plan:

None Specified

- BMP 1.3

Description:

Annually publish at least one educational item on your Stormwater Management Program

Measurable Goal:

1. For new permittees, stormwater educational and informational items shall be produced and published in print and/or on the Internet within the first year of permit coverage.
2. In subsequent years, and for existing permittees, the list of items published and the content in these items shall be reviewed, updated, and maintained annually.

The permittee's publications shall contain stormwater educational information that addresses one or more of the six MCMs.

Action Plan:

None Specified

- BMP 1.4

Description:

Distribute stormwater educational materials to target audiences

Measurable Goal:

All permittees shall select and utilize at least two distribution methods annually. These are in addition to BMP #3, above.

Action Plan:

None Specified



Reduce your stormwater stormwater.allianceforthebay.org



The new Reduce Your Stormwater website guides citizens and businesses with steps they can take to eliminate runoff and potential pollution from their property. The information is easy to use and targeted to homeowners. Each action includes helpful technical specifications, illustrations, videos and other resources.



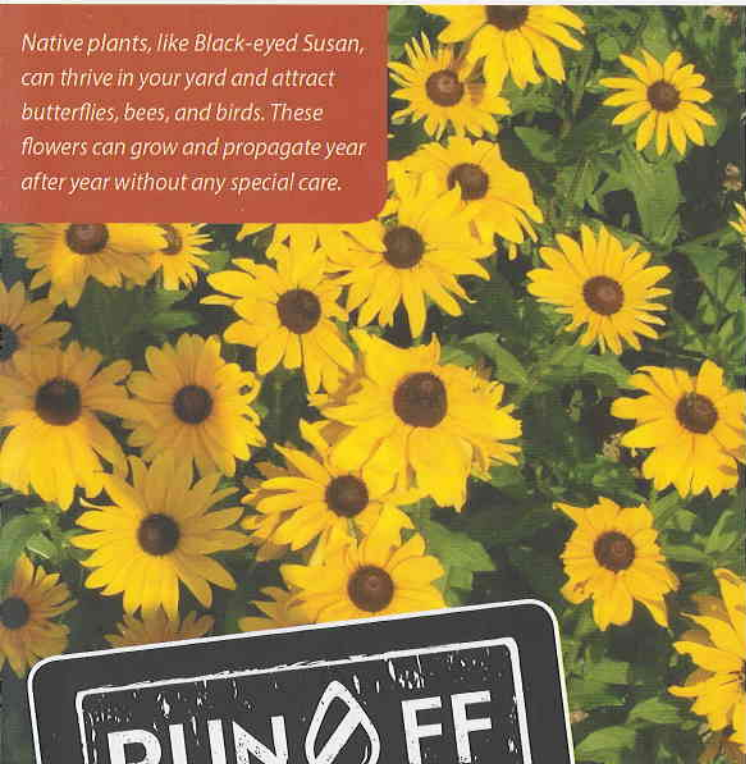
Reduce your stormwater runoff
stormwater.allianceforthebay.org



PLANT NATIVE!

TIPS FOR PLANTING AND ENJOYING PLANTS NATIVE TO THE CHESAPEAKE BAY REGION IN YOUR YARD.

Native plants, like Black-eyed Susan, can thrive in your yard and attract butterflies, bees, and birds. These flowers can grow and propagate year after year without any special care.



#PlantNative #ChesBay



Landscaping with native plants creates a more environmentally-friendly yard. Plants native to our region thrive without additional watering, fertilizers, pesticides, or special maintenance and their deeper roots improve soil health, prevent erosion, and help reduce runoff pollution. Pollinators and other wildlife depend on these plants for survival.

Make your yard more naturally beautiful and easier to maintain by planting native! Save money on water and lawn chemicals while reducing the associated impact on the environment. Planting native helps you, your local wildlife, local streams, and the Chesapeake Bay.

Celebrate your native plantings with the community. Post pics of your own yard to Facebook, Twitter or Instagram and use #RunoffBusters, #PlantNative and #ChesBay

NINE NATIVES TO LOOK FOR



Virginia willow



Blue flag iris



Bee balm



Purple coneflower



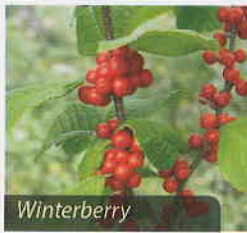
Black-eyed Susan



Switchgrass



Butterfly milkweed



Winterberry



Oakleaf hydrangea

Visit www.runoffbusters.org to learn more about native landscaping in the Chesapeake Bay watershed and to watch the complete Runoff Busters video series.

Photo credits: SB Johnny, Chhe, Derek Ramsey, D. Gordon E. Robertson, Eric in SF, Diego Delso, The Elvish Farmer, KorlAn, Ragesoss

Stormwater runoff

**What is it? Why is it a problem?
What can you do to help?**

Rainfall, snowmelt, or irrigation water that runs off hard surfaces and across land or into pipes flows into streams and local waterways. This runoff can carry pollution that impacts stream quality and can increase flooding. In nature, water is usually absorbed into soil, soaked up by plants, and cleaned before entering waterways or recharging groundwater.



In urban and suburban areas, there are large amounts of **impermeous surfaces** such as asphalt, concrete, rooftops, and compacted soils that prevent water from being absorbed by soil. As a result, water runs off rapidly into local waterways, leading to high flows and erosion. Litter, pet waste, fertilizers, pesticides, and oils are often carried to streams and left untreated.

These factors lead to unhealthy streams that are polluted, subject to flash flooding, are less valuable for recreation activities like swimming and fishing, and may be harmful to wildlife and people alike.

Green infrastructure and conservation landscaping aim to reintroduce natural processes into urban and suburban environments, using nature to improve water quality and reduce harmful flooding. Home and business owners can use these techniques to bring natural beauty to their property while being part of the solution to stormwater pollution.



Solutions to community runoff issues require the support and expertise of local planning officials. Addressing stormwater on your property is the first step, but a comprehensive approach is ideal. By learning about stormwater, you can help promote green infrastructure in your community. Contact your local municipality to encourage environmentally-friendly stormwater practices on public land.

Additional Resources

Native Plants Lists and Information

Alliance & US Fish and Wildlife Service Native Plant Center
www.nativeplantcenter.net/

PA Dept. of Conservation and Natural Resources iConserve
www.iconservepa.org/plantsmart/index.htm

PA Flora Project, University of Pennsylvania Morris Arboretum
www.pafloora.org/

Lady Bird Johnson Wildflower Center Native Plants Database
www.wildflower.org/plants/

Green Infrastructure Information

More on stormwater and the bay: The Chesapeake Bay Program
www.chesapeakebay.net/issues/issue/stormwater_runoff

Information and more resources on stormwater and BMPs
www.rainscaping.org/

Rain barrel info and do-it-yourself: The City of Rockville, Maryland
www.rockvillemd.gov/environment/watersheds/rainbarrels.html

Rain Garden info and design: Low Impact Development Center
www.lowimpactdevelopment.org/raingarden_design/whatisraingarden.htm

Turf-to-Trees Information: TreeVitalize (PA DCNR)
www.treevitalize.net and www.dcnr.state.pa.us

Chesapeake Stormwater Network, Homeowner's Guides/Resources
www.chesapeakestormwater.net/

For more information on stormwater and the Chesapeake Bay, visit us online at:

www.allianceforthebay.org

All images provided by the Chesapeake Bay Program or The Alliance for the Chesapeake Bay. Support provided by:



Foundation for Pennsylvania Watersheds

Conservation Landscaping and Green Infrastructure A BayScapes Guide for Homeowners



This guide is designed to introduce you to landscaping practices that help clean up water quality in local streams, the Susquehanna River, and ultimately the Chesapeake Bay.



Pennsylvania Office
3310 Market St. Suite A
Camp Hill, PA 17011
717-737-8622
allianceforthebay.org

Green Infrastructure

What is it? What does it do? What practices can be used?

Green infrastructure uses plants and processes found in nature to clean up manage stormwater runoff. Green infrastructure:

- Enhances recreational areas along waterways
- Provides habitat for local and migratory animals
- Improves water quality, reduces flooding/drainage issues
- Reduces the need for chemical pesticides and herbicides
- Offers greater visual interest and aesthetic quality than lawns
- Reduces the time and expense of mowing, watering, fertilizing

Green infrastructure practices are frequently referred to as stormwater Best Management Practices (BMPs) and include:

- Turf to trees:** Trees cut home heating and cooling costs, clean air pollution, absorb water, slow runoff, and reduce erosion.
- Rain gardens:** Depressed gardens that intercept runoff and soak it into soil, where it is filtered and cleaned by native plants.
- PerVIOUS pavement:** Pavers used on patios, driveways, and pathways that allow water to soak into the ground.
- Rain barrels:** Stormwater from rooftops can be diverted for storage. These slow runoff and allow for landscape irrigation.
- Vegetated swales:** An alternative to curb-and-gutter systems, vegetated swales reduce runoff velocity and allow infiltration.
- Riparian buffers:** Planting natives around streams reduce flooding and stabilize banks to prevent sediment erosion.
- Native meadows:** "No-Mow" areas that are home to native grasses and hold significant habitat value and water retention.
- Green roofs:** Specially designed rooftops that hold soil and plants, water is absorbed and later evaporotranspirated.
- Downspout disconnection:** Diverting gutters from discharging directly into drain systems allow water to be retained on-site.
- Conservation landscaping:** Utilizing native plants in combination with other BMPs in the landscape.

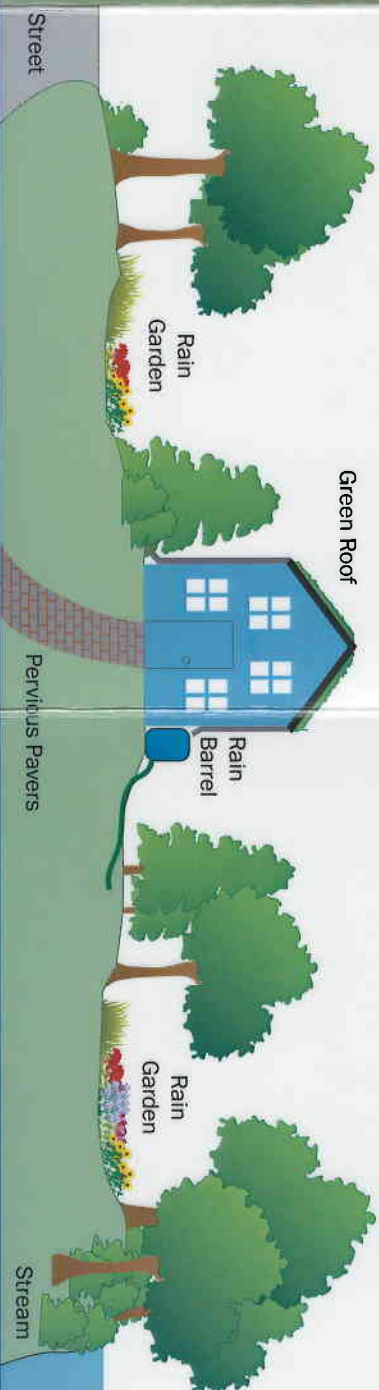


12 Native Perennials to Plant in your Yard

Beautiful and beneficial for habitat and stormwater

- Wild columbine (*Aquilegia canadensis*)
- Whorled milkweed (*Asclepias verticillata*)
- Butterfly weed (*Asclepias tuberosa*)
- New England Aster (*Aster novae-angliae*)
- Goldstar (*Chrysogonum virginianum*)
- Pink turtlehead (*Chelone lyonii*)
- Mistflower (*Eupatorium colestinum*)
- Joe-Pye-Weed (*Eupatorium fistulosum*)
- Gayfeather (*Liatris spicata*)
- Black-Eyed Susan (*Rudbeckia fulgida*)
- Showy goldenrod (*Solidago speciosa*)
- New York Ironweed (*Vernonia noveboracensis*)

*Box color corresponds to bloom color. There are several other beneficial native species; please see below.



Conservation Landscaping

What are BayScapes? How do they benefit me? Where do I begin?

BayScaping (also known as conservation landscaping) is landscaping for the benefit of people, wildlife, local streams, the Susquehanna River, and the Chesapeake Bay. A BayScape uses native grasses, perennials, shrubs, and trees that:

- Create beautiful and colorful landscapes
- Are highly functional for both habitat and stormwater
- Have deep root systems that hold soil in place (prevent erosion)
- Are adapted to the local climate and soil types, which in turn, reduce maintenance time and associated costs

BayScaping principles can be adopted by any landowner, no matter what size his or her property may be. Creating a BayScape on your property can be as simple using native potted plants or as complex as replacing portions of your existing lawn or landscaped beds with native plants and stormwater BMPs.

Please consult the resources found on the bottom of this page and on the back cover for more information!

Green Infrastructure and Your Property

Riparian Buffer

"BayScaping" is a term developed by the Alliance for the Chesapeake Bay and the US Fish and Wildlife Service to identify Chesapeake Bay Watershed-specific conservation landscaping practices. For more info: <http://www.fws.gov/chesapeakebay/bayscapes.htm> <https://allianceforthebay.org/library/publications/bayscapes/>

MCM #2 Appendix

- MCM #2 Project Plan

MCM #2 Project Plan

- BMP 2.1

Description:

Develop, implement and maintain a written Public Involvement and Participation Program (PIPP)

Measurable Goal:

The PIPP for new permittees shall be developed and implemented within one year following approval of coverage under this General Permit. All permittees shall reevaluate the PIPP annually and make revisions as necessary.

The PIPP shall include, at a minimum:

1. Opportunities for the public to participate in the decision-making processes associated with the development, implementation, and update of programs and activities related to this General Permit.
2. Methods of routine communication to groups such as watershed associations, environmental advisory committees, and other environmental organizations that operate within proximity to the permittee's regulated small MS4s or surface waters receiving the permittee's discharges.
3. Making Annual MS4 Status Reports and all other plans, programs, maps and reports required by this General Permit available to the public on the permittee's website, at the permittee's office(s), or by mail upon request.

Action Plan:

None Specified

- BMP 2.2

Description:

The permittee shall advertise to the public and solicit public input on the following documents prior to adoption or submission to DEP:

- Stormwater Management Ordinances (for municipalities)
- Standard Operating Procedures (SOPs) (for non-municipal entities)
- Pollutant Reduction Plans (PRPs), including modifications thereto

Measurable Goal:

1. For Ordinances and SOPs, the permittee shall provide notice to the public; provide opportunities for public comment; document and evaluate the public comments; and document the permittee's responses to the comments prior to finalizing the documents. The permittee shall provide this documentation to DEP upon request.
2. For PRPs, public participation requirements are specified in Appendices D and E of this General Permit.

Action Plan:

None Specified

- BMP 2.3

Description:

Regularly solicit public involvement and participation from the target audience groups using available distribution and outreach methods. This shall include an effort to solicit public reporting of suspected illicit discharges. Assist the public in their efforts to help implement the SWMP.

Measurable Goal:

1. The permittee shall solicit public involvement and participation from target audience groups on the implementation of the SWMP. The solicitation can take the form of public meetings or other events. The public shall be given notice in advance of each meeting or event. During the meetings or events, the permittee should present a summary of progress, activities, and accomplishments with implementation of the SWMP, and the permittee should provide opportunities for the public to provide feedback and input. The presentation can be made at specific MS4 events or during any other public meeting. Existing permittees shall conduct at least one public meeting that includes information on SWMP implementation by March 15, 2023; new permittees shall conduct at least one public meeting within 5 years following approval of General Permit coverage.
2. The permittee shall document and report instances of cooperation and participation in MS4 activities; presentations the permittee made to local watershed organizations and conservation organizations; and similar instances of participation or coordination with organizations in the community.
3. The permittee shall also document and report activities in which members of the public assisted or participated in the meetings and in the implementation of the SWMP, including education activities or organized implementation efforts such as cleanups, monitoring, storm drain stenciling, or others.

Action Plan:

None Specified