



Stormwater Partners Network News



Did You Know?



In Maryland we average 40.76 inches of rainfall annually.

Rainfall peaks in the Summer.

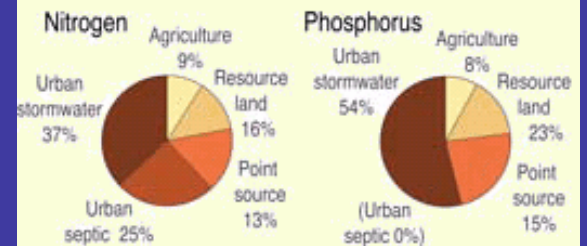
In July and August we average 1 thunderstorm every 5 days. [Source](#)

Stormwater dwarfs agriculture as the major source of nutrients in developing areas like Anne Arundel County, Maryland, according to Maryland Sea Grant. Increasing levels of stormwater will require enforcement of current regulations and more funding, probably through new fees. [Source](#)

That's why the citizens from Montgomery County spend time monitoring stormwater impacts in our watersheds. We attend meetings and talk to local officials about strengthening local and State water quality protection. We educate ourselves and each other about innovative ways to

turn rainfall that otherwise causes urban runoff and pollution into a natural resource that will improve the health of our aquatic ecosystems, nourish and beautify our neighborhoods and public spaces, and create environmentally-friendly cityscapes. Keep reading to learn how!

Nitrogen and Phosphorus Sources in Anne Arundel County Waters in 2002



Who's Who in the County?

Meet Pam Rowe!



Pamela Rowe is the new Department of Environmental RainScapes Coordinator. Pamela, a resident of the Upper Rock Creek watershed, will be working to encourage County residents to use RainScapes practices (rain gardens, green roofs, pervious pavements, rain barrels, down spout disconnect, etc.) at their homes. Last spring, the County

Council voted \$500,000 in funding for grants to incorporate RainScapes techniques on private property. Pamela has a wide experience which will serve DEP and County residents well. She worked previously for the Center for Watershed Protection, Park & Planning (Environmental Planner) and DEP several years ago when the Watershed Management Program was just getting started. Pam will be working with Doug Marshall who will be focusing on implementing RainScapes techniques on institutional properties.

The Problem:

How we build hurts the Bay

By

*Diane Cameron, Stormwater
Partners Coalition Coordinator*

Development has a huge impact on both water quality and water quantity. It removes natural protective filters. Prior to development, vegetation such as woods capture the water that runs through the site, slowing it down, absorbing the water, and filtering out pollutants. Development removes this beneficial vegetation and replaces it with turf grass lawns and impervious roofs, driveways, parking lots, and roads. Rooftops and parking lots speed rainwater away from the site and into sensitive rivers and creeks. Impervious areas transport storm runoff more quickly than the existing vegetation would. This makes the runoff move more quickly, causing downstream flooding and erosion problems and increasing the quantity of sediment and other pollutants in the waterways. This flooding also increases stream erosion and hurts aquatic organisms and stream habitats.

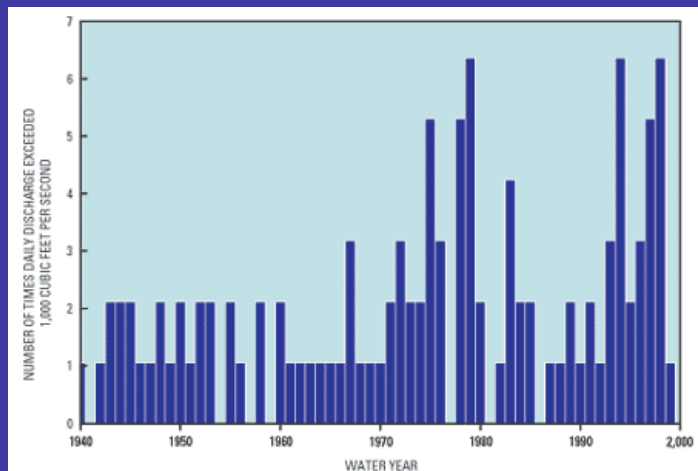
Development also creates a variety of pollutants that runoff carries into the water. Stormwater runoff carries a variety of pollutants from the atmosphere, fertilizers, animal wastes, and leakage and wear from vehicles. Common pollutants include nitrogen, phosphorous, sediment, bacteria, insecticides, herbicides, and metals such as copper, lead, and zinc.

Water Quality Monitoring Report

By
*Mike Smith, Water Quality
Committee*

The U.S. Geological Survey has been measuring the discharge of water in the Northeast Branch at its stream gage in Riverdale since July 1938. The graph below, produced by the U.S. Geologic Survey (USGS) shows that the number of days the daily discharge has exceeded 1000 cubic feet/second has been increasing over time.

Why is this happening? Urban development combined with a lack of stormwater controls has left the Northeast Branch with higher peak flows and increased risk of flooding.



Green Streets

During the summer our hot roads are coated with grease and oil, heavy metals, and many other pollutants. When it rains, a hot chemical stew is flushed into our streams. (How many gallons flush each year into the Chesapeake?). Our roads in the down county have the greatest effect on stormwater quality. Up to 30% of the land in urban areas are covered with hard surface roads. Most of our roads are designed to efficiently move traffic. Unfortunately, our roads are also efficient in moving pollutant laden stormwater runoff onto our County water bodies. Over time runoff from our roads have severely damaged our stream, especially in the down county. If we are ever going to restore our streams and watersheds, we are going to have to re-examine how we design our roads and streets.

One possible solution is using "green" street solutions.

What are green streets? A green street:

- Utilizes multi-functional landscaping
- Maximizes the use of street trees
- Retains and filters stormwater runoff at decentralized locations on the right-of-way.

The concept of green streets is part of a larger watershed approach to restoring to improve our streams' water quality. Green streets are designed not only to efficiently move traffic, but also to protect the natural hydrology in the watershed and protect of streams.

The "Road Code"

On December 12, 2006, Council member Nancy Floreen introduced Bill 48-06 "Streets and Roads - Comprehensive Revisions", often referred to as the "Road Code" bill. This bill is intended to create a more pedestrian-friendly street environment, promote sidewalks and hiker-biker ("shared-use") paths, enhance street trees, and make other changes. Missing from this otherwise comprehensive bill, however, were provisions to address stormwater runoff from our roads and streets.

On January 23, members of Stormwater Partners Network testified before the Council to include a "Green Streets" amendment to the bill. This amendment is critical, considering that our roads and streets are among the top generators of polluted stormwater, often funneling it directly into our streams without treatment. Until watershed-friendly Green Streets practices are widely implemented in our watershed, we will not see significant improvements in water quality in our degraded streams and declines in watersheds that are being developed.

*Our
Sustainable Schools
By Ed Murtagh, Stormwater
Committee*

*Newly planted green roof at Northwood
High School*

Local watershed groups and the Academy of Technology, Environmental and Systems Sciences at Northwood High School are partnering in developing and implementing a Sustainable Landscaping Plan on the Northwood High School property. This joint effort is intended to bring students, parents, faculty and staff, and community partners together. Working together as a team, they will create a showcase of on-site rain gardens and other multi-functional landscape



features on the Northwood High School grounds that infiltrate rainwater, decrease stormwater runoff pollution, and provide focal points of beauty and wildlife habitat. In addition to installing sustainable landscaping practice on the schoolyard, the partnership links environmental professionals in the community with the students. As these projects

will be student and teacher-led and community-supported, the partners hope that school landscaping will be integrated into the MCPS curriculum and provide educational and career training, and service opportunities for the students.

One of the primary goals of this partnership is to educate students, parents, and the community at large about the problems of stormwater runoff and about the benefits of Sustainable Landscaping (i.e. Bayscaping, Rainscaping) and other LID practices for both public and private facilities and back yards. Educational opportunities will include incorporating landscaping into the school curriculum, holding school and community work events, and installing educational signage. The Kick-Off Event was the October 14, 2006 Rain Garden workday. The Partners are hoping to continue this effort with a follow up rain garden installation

October 14, 2006 Rain Garden Workday



workday this spring.

The sustainable landscaping plan was part of a larger effort to manage stormwater at the site using LID practices. Other techniques include a pilot green roof, rain barrels, and pervious

pavement. For more information on Northwood High School and LID, see <http://www.fosc.org/AL-Northwood.htm>

What are TMDLs?

TMDLs are caps on water pollution. TMDL stands for "Total Maximum Daily Load." These caps are akin to putting a waterbody on a pollution reducing diet, where the TMDL is analogous to the total number of calories a day that a dieter can take in and still remain healthy -- TMDLs indicate how much of a given pollutant a waterbody can take in and still remain healthy. TMDLs were created under the Clean Water Act and, while they were created by federal law, the authority for implementing them has been delegated to the States in many instances.

The State of Maryland has published TMDLs for bacteria for the Anacostia River, Rock Creek, and Cabin John Creek. Maryland is also drafting sediment pollution caps for the Anacostia.

How can TMDLs help us Regain Healthy Rivers and Streams?



Just as *knowing* the total daily calorie limit isn't enough for a dieter to lose weight, the setting of a maximum daily pollutant limit isn't enough for the Anacostia River, the Chesapeake Bay, and our local streams that feed into them to be restored.

It takes action!

A set of actions, termed a "TMDL Implementation Plan," is needed to meet the pollutant limits, and can include everything from public education and enforcement of pet waste ordinances, to the installation of rooftop gardens and rain gardens to capture and treat stormwater on-site at schools, businesses, roadsides, and homes.

Without an enforcement mechanism, there is no guarantee that rapidly-growing and –urbanizing counties in Maryland will stick to this “diet plan” for healthy rivers and streams. Fortunately, such an enforcement mechanism is available.

The NPDES (National Pollution Discharge Elimination System) is intended to eliminate pollutant discharges from municipal stormwater into public waters. The NPDES Municipal Separate Storm Sewer System (MS4) permits that the Maryland Department of Environment (MDE) issues in five-year cycles to ten or so Maryland municipalities are *supposed* to serve as the means to legally enforce the implementation plan. Whereas MDE issues the permits, it is the responsibility of the Counties to develop stormwater management plans that reduce the pollutants for specific water bodies.

Unfortunately thus far, the current permit language for TMDLs in NPDES MS4 permits used by MDE is unenforceable. The existing MDE permit provision on TMDLs does nothing to hold municipalities accountable for establishing, implementing, and evolving programs designed to attain water quality standards-based pollution limits. NPDES MS4 permits, to be effective in governing the cleanup of our polluted waters, must contain the following ten TMDL elements:

1. **All relevant Waste Load Allocations (WLAs)** for the municipal stormwater portion of the pollutant(s) for which TMDLs have been approved;

2. **Best Management Practices (BMPs) selected by the municipality** for their appropriateness in reducing the targeted pollutant(s).



3. **Application levels for each BMP or BMP suite**, set on a watershed-by-watershed basis, and established based on their ability to meet the TMDL-WLA for the applicable pollutant and watershed. (for example, “Percent of acres or percent of properties in each of residential, commercial, institutional and industrial land use categories,” “number of educational messages delivered to a target audience,” etc.)

4. **Pollutant loading reduction benchmarks** based on the selections, performance efficiencies, and application levels for the BMPs;

5. **Monitoring for effectiveness in reaching the benchmarks and to provide accountability for BMP implementation actions.** The required monitoring should include both in-stream water quality monitoring, and also documentation of level of effort.

6. **An enforceable timetable with explicit milestones.**

7. **An iterative, adaptive management process for making mid-course corrections** in the implementation of the TMDL Implementation Plan based on the results of the monitoring.

8. **Timetable for the Implementation Plan** for each TMDL relevant to this stormwater permit: a one-year timetable for the submission, approval, and start of implementation for the TMDL implementation plans, and two years beyond that for the permittee to meet the TMDL-WLA through their Implementation Plans.

9. **Public Involvement and Participation Process.**

10. **Non-degradation of impaired waters:** Where waterbodies are already impaired by stormwater or the pollutants conveyed by stormwater, any and all new development must be considered new sources that must not be authorized unless they can be designed in such a manner so as not to add to that impairment.

Just as a person struggling with weight-loss might need the intervention of friends and loved-ones to see the problem, it seems that our local and State officials may need some friendly persuasion to address this problem and draft effective language that is enforceable within the NPDES MS4 permits for Montgomery County.

Stormwater Partners Network News is published quarterly as an information and outreach effort of the Stormwater Partners Network. Original articles in this publication may be reprinted without our permission, but please credit us as the source. Concerns? Questions? Comments? Ideas? Email StormwaterNetwork@yahoo.com. Sally Benjamin, Editor, is a resident of Silver Spring, MD.