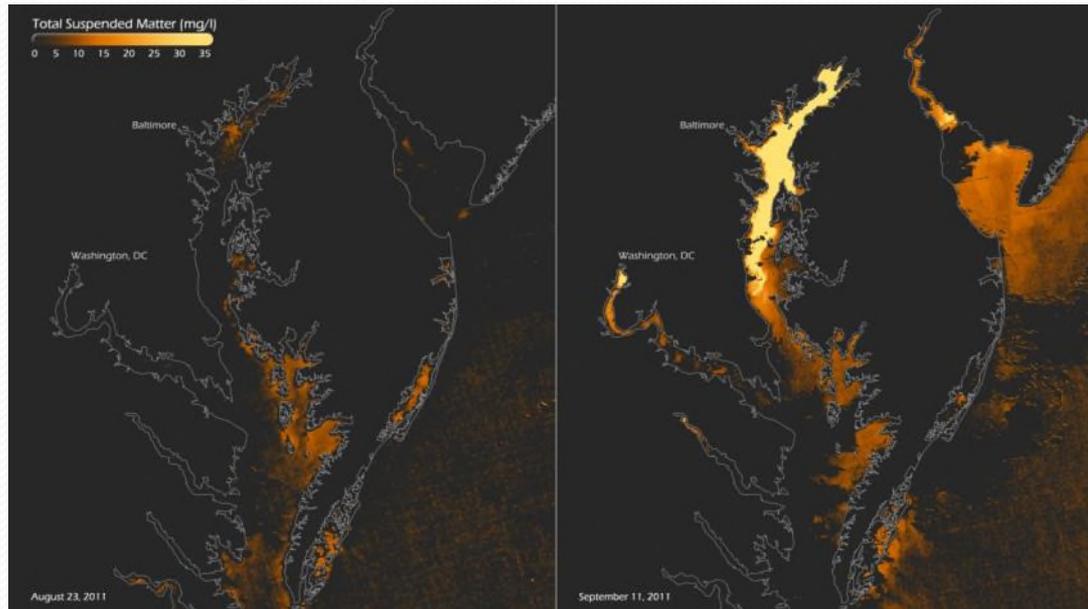


Utilizing Volunteer Monitoring to Meet Local Stormwater Program Objectives

James Beckley- Virginia DEQ/VWMC
Chris French- Filtterra Systems/VWMC

The Stormwater Problem

- Stormwater is the major vector for sediment, nutrients, fecal bacteria, and other pollutants to enter waterways
- Chesapeake Bay receives an average of 14,795 tones of sediment every day (e.g. ~120 train cars load)



8/23/2011

9/13/2011

Major Sources of Stormwater

- Impervious surfaces
- Poor stormwater management
- Poor Construction practices
- Poor Farming and livestock management
- Deforestation or removal of vegetative cover

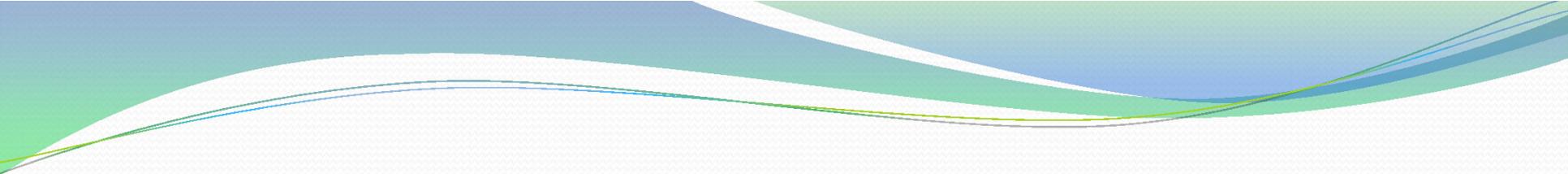


Virginia Stormwater program

- Program administered by DEQ starting in 2013
- Current and new stormwater systems will have to obtain discharge permit
- Permit will track stormwater discharge locations
- Permits will drive greater efficiencies in stormwater management

A Challenge for Localities

- Local governments will see increasing need to track and improve stormwater systems and construction activities.
 - For example, one urban Virginia county will have to start tracking over 20,000 stormwater outfalls.
- Many localities don't have the budget to hire enough inspectors to track existing and new permits



Benefits of Working With Volunteers

- Volunteers can provide the manpower for a minimal cost
- Volunteers are more approachable to the public than government officials
- Volunteers are very interested in protecting the environment

Some Ways Can Volunteers Help

- Identify stormwater outfalls
- Stream walks and visual observation
- Notify when finding poor E&S controls
- Finding cross and illicit stormwater connections
- Education and outreach



Finding Outfalls

- Many localities do not know the locations of old stormwater outfalls
- Volunteers can find them during streamwalks or cleanups
- Use GPS and digital camera to record outfall locations



Stream Walks

- Walk along the streambed and note conditions at regular intervals
 - Locations of storm drain or other pipe outfalls
 - Steepness of stream banks
 - Condition of stream bed
 - Width of riparian buffer zones
 - Blockages to flow
 - Unusual conditions



Example Stream Walk

- <http://www.youtube.com/watch?v=xcy32sUCqFQ>

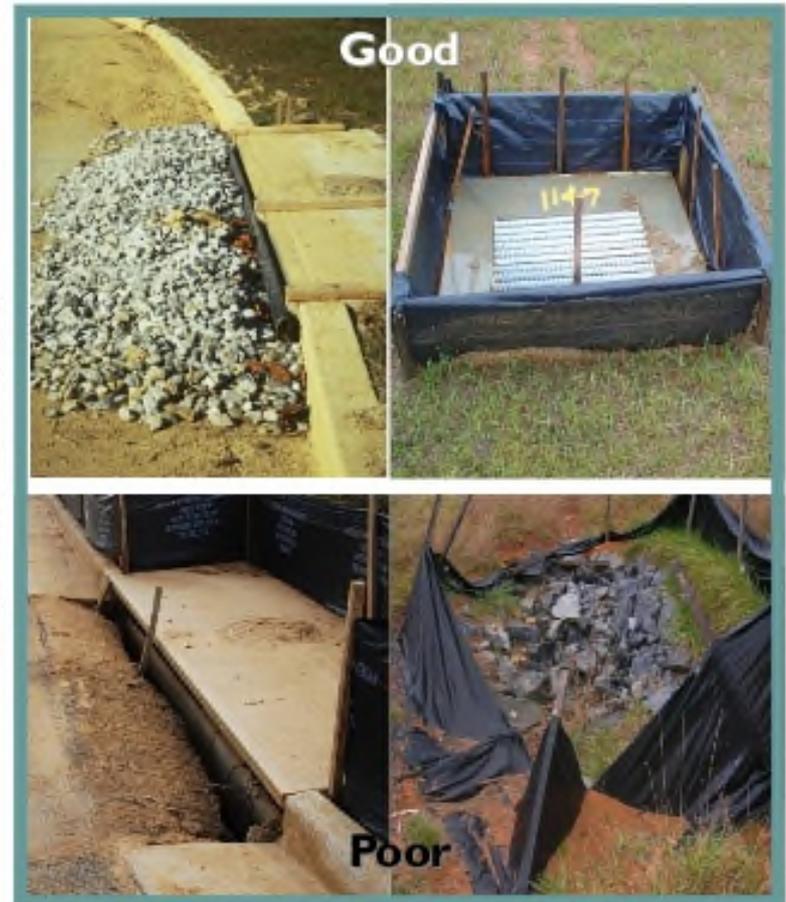
Chickahominy Swamp Rat Stream Walk

- Done on March 23, 2013
- Walk to identify storm and sewer drainages in creek due to high bacteria levels
- Walk discovered excessive erosion due to stormwater flow
- Found several storm drains discharging water when no rain fell in prior 72 hours

Finding Poor E&S Controls

- James River Association program
- Brochure developed is easy to use to train the public to find poor construction E&S controls
- Public can use this to contact local E&S officials to request inspections.
- Very inexpensive to implement and train volunteers

4. Inlet Protection



Finding Cross/Illicit Connections

- City of Richmond and Alliance for the Chesapeake Bay partnership
- Volunteers receive training and sample equipment
- Sample creeks flowing through the city
- City processes samples at their wastewater plant laboratory
- Project will identify broken sewer lines and illicit connections



Volunteers Help With Education and Outreach

- City of Richmond implemented a stormwater utility fee to cover stormwater management
- Fee based on the amount of impervious surface area a property has
- Offers credits for putting in LID stormwater practices
- Alliance volunteers trained to inspect properties to identify ways owners can put in cost effective LID
- Over 200 assessments have been completed
- Manual being creating for use in other localities

Chesapeake RiverWise Communities

Homeowner Property Assessments

Property Assessment

Name: Assessment #:

Address: Assessment Date:

Email: Phone:

Conducted by:

The following pages are the results of your Chesapeake RiverWise Communities Property Assessment. This report summarizes our observations and explains the recommendations for your property. We have suggested different stormwater Best Management Practices (BMPs), which are drainage techniques and site designs that will substantially reduce stormwater runoff and pollution. Please review this summary and let us know if you have any questions regarding the recommendations.

Recommendations

Rain barrel(s) [RB] (help collect water for later use and reduce runoff from the roof of your house)

Location:

Downspout disconnection [DD]

Location: See "Downspout" Section on pg. 2 for specific recommendations for each downspout.

Tree planting [TP] (the most effective stormwater BMP. Plant a native variety to provide habitat and food for wildlife.)

Location(s): Sun Exposure: Species:

Mature Size(s): Tall (60ft+) Med (40-60ft) Small (20-40ft)

Location(s): Sun Exposure: Species:

Mature Size(s): Tall (60ft+) Med (40-60ft) Small (20-40ft)

Rain garden [RG] (bowl shaped garden with deep loose soil and native plants that soak up water during rain events)

Location: Sun Exposure:

Pervious drainage (sq ft.): Impervious drainage (sq ft.): Total drainage area (sq ft.):

BayScape [B] (landscaping area that replaces lawn with native plants that help soak up water)

Location: Sun Exposure: Approx sq ft.:

Permeable pavers [PP] (alternative to impervious surfaces that allows water to seep through and soak into the ground underneath)

Location: Drainage area (sq ft): Approx. size (sq ft):

Impervious surface removal [IR] (removal of surfaces such as driveways and walkways)

Location: Approx. size (sq ft):

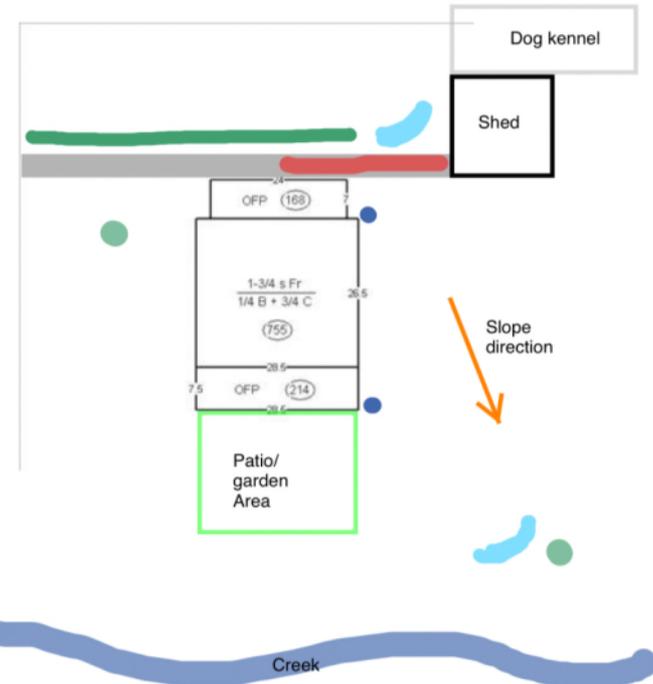
Your property contributes to stormwater: Significantly Somewhat Not at all

Property Sketch

Indicate existing features such as trees, landscaping, slopes (including direction of slope), impervious surfaces, bare soil, fences, utility locations, and existing BMPs. Denote North.

Label recommended practices:

- RB - rain barrel
- B - BayScape
- DD - downspout disconnect
- RG - rain garden
- T - tree planting
- PP - pervious pavers
- SU - Shrub/understory planting
- IR - impervious removal



Thank you for taking time to participate in the Chesapeake RiverWise Communities program.

We truly value your support of the Alliance for the Chesapeake Bay.

Chesapeake *RiverWise* Communities

Before



After



Thank you

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