



# Chesapeake Bay Stewardship Fund

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## Community Solutions to Stormwater Pollution in Blacks Run

**Organization:** Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation

**Project Partners:** Eastern Mennonite University, James Madison University, Shenandoah Valley Soil and Water Conservation District, City of Harrisonburg, Boxerwood Gardens, Harrisonburg Redevelopment and Housing Authority, Virginia Department of Environmental Quality

**Grant Award:** \$ 325,000.00

**Matching Funds:** \$ 460,339.00

**Project Description:** This project is designed to reduce stormwater pollution and enhance stormwater management on three scales in the Blacks Run Watershed, which is located in the City of Harrisonburg: 1) neighborhood/individual 2) institutional and 3) community/watershed scale. Project partners were identified based on their capacity to implement management practices at these different scales, and to work with large and small property owners to increase local capacity to continue to address stormwater management in the Blacks Run watershed.



Bioretention filter installation at James Madison University

This project will result in the installation of over 200 best management practices (BMPs) including a series of residential rain gardens, rain barrels and pet waste digesters, several larger bioretention facilities, a rainwater harvesting cistern, streambank stabilization and riparian buffer planting projects, and a small green roof. In addition, this project will provide training and capacity building for the community and landscaping professionals to use cost-effective methodologies for the design, installation and maintenance of stormwater practices that will continue to benefit the community and watershed after this NFWF project is complete. Collectively these actions will reduce pollution that may result in improved water quality conditions in Blacks Run.

## Goals and Outcomes:

- ❖ Installation of approximately 200 stormwater BMPs:
  - 170 rain barrels
  - 14 rain gardens
  - 8 bioretention/infiltration practices
  - 7 riparian buffers
  - 1650 ft of stream bank stabilized
  - 65 pet waste digesters,
  - Additional 8 acres of trees planted (3,250 trees)
  - One third of an acre of wetlands created
  - One green roof.
- ❖ Estimated reductions of 509 lbs/year of nitrogen, 78 lbs/year of phosphorous, and 19 tons/year of sediment
- ❖ Foster a stewardship ethic within a community through
- ❖ Cumulatively, practices will treat at least 124 acres within City of Harrisonburg in the Blacks Run watershed.



Preliminary streambank stabilization plans for Sibert Creek on the James Madison University Campus.

## **Status:**

- ❖ A request for proposals for the design and installation of seven residential rain gardens will be sent to participants at the Boxerwood Rain Garden workshop held in 2010 on May 3, 2011. Seven property owners have been selected to receive a rain garden. Preliminary site visits have been conducted to ensure site suitability. In addition, one property owner will also install a cistern that will be used to water a community garden on their property.
- ❖ A neighborhood stewardship group was formed and a series of 5 neighborhood meetings were held. Pet waste digesters, soil tests, composters and rain barrels were distributed to and installed by participants. Plans for a tree planting in partnership with the City of Harrisonburg are underway.
- ❖ James Madison University completed their biofilter project, which receives runoff from a 3.7 acre parking lot adjacent to a tributary of Blacks Run. A 750 square foot pervious concrete sidewalk was installed adjacent to the parking lot.
- ❖ Storm drain marking at James Madison University (JMU) is complete.
- ❖ JMU has decided to expand their commitment to rainwater harvesting, which originally included the installation of several rain barrels at the Arboretum. In addition, the University will now be installing a 10,000 gallon cistern on a new campus building.
- ❖ The City of Harrisonburg held their Annual Blacks Run Clean-Up event in April, 2011.
- ❖ The City of Harrisonburg has completed a Stream Buffer Maintenance Manual. Distribution will occur this summer.
- ❖ The City of Harrisonburg was unable to complete their three streambank stabilization projects due to a lack of personnel and issues locating suitable sites. As a result, two streambank stabilization sites were located at JMU. These projects will result in the restoration of approximately 3,000 linear feet of degraded stream. In addition, a 5 acre hillside of managed turf will be converted to native grasses and trees. Three classes are currently involved in the planning phase of this projects, and several students are conducting their senior projects around this effort.
- ❖ Eastern Mennonite University (EMU) completed the installation of a bioretention filter that treats 13,500 square feet of rooftop runoff. A filter strip was also planted along a 5,000 square foot parking lot to catch and treat runoff. A portion of paved parking lot at a campus apartment building was converted to grass to allow infiltration.
- ❖ EMU completed a small green roof (250 square feet) on the campus bike shed.
- ❖ Several preliminary planning meetings have been held to develop designs for a 10,000 gallon cistern at EMU. Students are assisting in the collection of information about cisterns.
- ❖ The Harrisonburg Redevelopment & Housing Authority (HRHA) has completed the installation 104 of rain barrels at the Franklin Heights Housing Project. Residents all received one-on-one training on how to use and maintain the rain barrels and a brochure developed with assistance from the City of Harrisonburg.

## **Challenges and Lessons Learned:**

- ❖ Finding suitable sites for raingardens can be challenging when working in neighborhoods with rock and small lots.
- ❖ Staffing has been an issue across all of the projects. Working with private property owners takes a considerable amount of time and requires staff retention.

## **Readiness for Scale Up:**

- ❖ The model that has been developed for a neighborhood “stormwater management network” has potential for widespread replication in urban/suburban watersheds throughout the Chesapeake Bay watershed. The series of stewardship workshops held in the Blacks Run neighborhood can be easily replicated.
- ❖ The rain garden design and installation training held for landscape professionals at Boxerwood Gardens greatly increased local capacity for enhanced stormwater management by providing contractors with the ability to offer homeowners a cost effective and attractive stormwater management feature
- ❖ Installation of cisterns to water athletic fields appears to be a growing trend at our universities. Mary Baldwin University in the City of Staunton requested contact information for partners at JMU and EMU this spring in order to learn more about the design and installation of cisterns.

## **For more information, contact:**

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