

# West Virginia's Stormwater Strategy for the Potomac Basin

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## Introduction

Polluted stormwater runoff is an increasingly visible outcome of the development spreading throughout the Potomac Basin, from large subdivisions in the Eastern Panhandle to sprawling rural developments in the Potomac Highlands. However, conventional stormwater management practices are typically insufficient to protect water quality and sustain drinking water supplies. Furthermore, the sensitive karst terrains of the Panhandle require unique management to protect their vulnerable drinking water supplies. Clearly, a new approach to stormwater management is required, one that respects the need for plentiful clean drinking water, preserves local water quality, and helps us meet our obligation to reduce nutrients and sediment delivered to the Chesapeake Bay.

Fortunately, a new stormwater management paradigm is emerging. Rather than regarding stormwater runoff as a liability that must be directed off site as quickly as possible, new thinking is regarding stormwater runoff as a resource. This new thinking emphasizes the environmental, economic, and social benefits of using green infrastructure to manage stormwater. As a result, stormwater is being treated and retained on site, and developers and homeowners are seeing substantial benefits. This practice is known by several names: *Low Impact Development*, *Environmental Site Design*, *Green Infrastructure*, and *Runoff Reduction*, among others. The common theme of these approaches is the principle of reducing the amount of runoff and pollutants from new development with conservation of natural areas, reduction of impervious surfaces, and distributed small-scale management practices. Implementing these new approaches will require a major effort to educate and engage everyone involved – state and local governments; developers; engineers and contractors; as well as homeowners.

West Virginia's Stormwater Strategy for the Potomac Basin seeks to outline effective strategies for stormwater management in support of water quality improvement. Key components of the strategy are:

- 1) Promoting enhanced practices needed to manage stormwater on karst terrain;
- 2) Identifying and removing barriers to implementation;
- 3) Increasing the primacy of stormwater in the land use planning and development process;
- 4) Targeting these efforts where they are most needed.

The purpose of this document is to provide guidance for the West Virginia Tributary Strategy Implementation Committee, the West Virginia Stormwater Network, and the Great Valley Stormwater Alliance for moving forward in their pursuits to reduce the impacts of stormwater produced by new development and re-development in the urban/suburban sector and large rural subdivisions of West Virginia's Potomac Basin. As the strategy unfolds in its implementation, we will track progress and refine the strategy using an adaptive management approach.

The strategy is composed of three focus areas: capacity building, management, and collaboration. *Capacity Building* will take the form of education, engagement, and demonstration. The *Management* focus is designed to facilitate adoption and implementation of Runoff Reduction practices while the *Collaboration* focus is designed to leverage existing efforts and make the best use of aligned efforts to further the goals of this strategy.

### *Capacity Building*

Building capacity in the stormwater community to meet environmental needs will require the creation and education of a network of interested stakeholders to help implement the strategy, share information, and collaborate. Through this network, the capacity for design, plan review, installation and oversight of Runoff Reduction practices will be enhanced. It is particularly important that county and municipal governments have the necessary framework in place to require these practices for new development. Furthermore, as West Virginia's Tributary Strategy prescribes the implementation of stormwater management in areas already developed, communities will be encouraged to undertake such efforts, especially for re-development projects.

Identifying and cultivating early adopters will be essential to the expansion of the network. Engaging stakeholders typically missing from the table, important to the success of this strategy, will require cultivation and education through demonstration projects and one-on-one meetings. To effectively leverage limited resources, areas of high growth or with vulnerable resources or having local champions will be targeted. As incentives are also a key to adoption it is important to recognize and promote the auxiliary benefits of green infrastructure practices such as ecosystem services that include nutrient and carbon credits as well as those of an economic nature.

### *Management*

Integrating Runoff Reduction practices into the land development process will require considerable changes in the entire realm of stormwater management from the regulatory down to on-the-ground implementation, as well as ensuring the sustainability of installed practices. To that end, improvements in inspection, monitoring, and enforcement of stormwater management practices will be advocated. Development of a state stormwater manual would serve to advance these goals and ensure consistency as well.

Comprehensive watershed-wide stormwater management will be advanced as a method for achieving watershed restoration goals. The development and dissemination of effective maintenance strategies is also a vital component of stormwater management. Achieving water quality goals through stormwater management will require the adoption of sediment and nutrient loading criteria that seek to achieve no net increase in pollutants from development. Flexibility in the implementation of stormwater management will be encouraged by promoting performance-based standards and an adaptive management approach.

In West Virginia's Potomac Basin, three jurisdictions are currently regulated under the municipal separate storm sewer system (MS4). It is likely that an additional three jurisdictions will be regulated as MS4's when the Small MS4 general permit is reissued in 2014. It is

anticipated that these newly established MS4's will require assistance in designing stormwater management programs to meet their permit requirements.

### *Collaboration*

Collaboration is necessary for successful implementation of the goals of this strategy and will serve to leverage the resources needed to facilitate the adoption of innovative stormwater management practices for the purposes of attaining local water quality goals as well as Chesapeake Bay restoration. Thus, a spirit of collaboration will be fostered between all parties involved in implementing innovative stormwater management practices – local jurisdictions, state agencies, private engineers, developers, contractors, and nonprofits. Other partnerships that share aligned interests with stormwater management, such as those that seek to protect drinking water, will be fostered as well.

## **Implementation Objectives**

### *Short-Term*

#### Capacity Building

- Target areas with either high growth, vulnerable resources, or local champions.
- Make special effort to engage stakeholders typically missing from the table.
- Host and promote workshops to train consulting engineers, local governmental stormwater staff, and others who are interested in the design of Runoff Reduction practices.
- Provide guidance to counties and municipalities for integrating water quality protection into stormwater management in the form of guidelines and supporting materials.
- Provide assistance to MS4 permittees to help build their capacity for permit compliance.
- Recognize and promote exceptional projects and local champions.
- Host and promote workshops to build the capacity of communities in the Eastern Panhandle to better manage stormwater and implement stormwater programs.
- Host and promote a forum for stakeholders to educate them about the importance of addressing stormwater in their community.
- Host a codes and ordinances workshop for elected officials for the purpose of enhancing their ability to reduce stormwater runoff and improve stormwater quality.
- Encourage and assist local jurisdictions in accessing grant funding for the purpose of building their capacity to manage stormwater.
- Maintain a presence at local and regional stormwater-related meetings.

#### Management

- Develop an effective Phase 2 MS4 Permit that emphasizes no net increase of pollutants and promotes Runoff Reduction and Green Infrastructure approaches.
- In collaboration with the Great Valley Stormwater Alliance and the Chesapeake Stormwater Network, develop guidelines for stormwater management in karst terrain.
- Develop a scope of work for a statewide stormwater manual that contains adaptations for the karst terrain.

- Identify and promote best applicable practices for Runoff Reduction and pollutant removal.

### Collaboration

- Collaborate with *Great Valley Stormwater Alliance*, *Chesapeake Stormwater Network*, and *Bay-wide Stormwater Partners* and other aligned efforts.
- Foster other partnerships with those parties that share aligned interests with stormwater management.

### *Long-Term*

#### Capacity Building

- Building on existing initiatives, implement Runoff Reduction practices in priority watersheds.
- Encourage state and local government entities to lead by example by incorporating Runoff Reduction practices into existing schools, new school construction projects, and other public lands and facilities.
- Provide guidance for the implementation of innovative stormwater management practices in the form of detailed educational media.
- Develop educational materials for targeted stakeholder groups as to why stormwater is a problem and how it can be controlled.
- Provide education, including scientific and economic justification, for Runoff Reduction practices.
- Target resources for technical assistance and accelerated implementation of innovative stormwater management practices in areas of high growth or with vulnerable resources.
- Provide incentives such as technical assistance and permit flexibility for early adopters of Runoff Reduction practices.
- Recognize and promote the auxiliary benefits of green infrastructure practices such as ecosystem services that include nutrient and carbon credits.
- Provide assistance to MS4 permittees to help build their capacity for permit compliance.
- Recognize and promote exceptional projects and local champions.
- Encourage communities to undertake such projects, especially in instances of re-development.

#### Management

- Develop a state stormwater manual that contains adaptations for the karst terrain.
- Promote comprehensive watershed-wide stormwater management and permitting.
- Promote enhanced criteria for stormwater management in sensitive and impaired waters.
- Encourage no net increase of pollutants for all new construction and explore the feasibility of offsets and offsite mitigation.
- Improve compliance at stormwater hotspots.
- Develop and disseminate effective maintenance strategies
- Explore the feasibility of stormwater utilities and endeavor to implement them if feasible.

- Track the implementation of innovative stormwater management projects to develop a record of practices and foster a dialogue to define “success” and identify future needs.
- Work with new MS4 permittees to design and implement their stormwater management programs as needed.

#### Collaboration

- Promote a collaborative approach to land use planning and stormwater management.
- Collaborate with efforts to enhance stormwater models and other engineering tools to meet the requirements for implementing innovative stormwater management practices.