



Regional Stormwater Management: Flood Control at Less Cost

Spotlight on Effective Practices

March 2019

A Growing Threat to Property

Amidst the array of crazy weather stories that frequent the daily news is one that you may have missed: 2018 was the wettest year on record for New Jersey. This surge in precipitation follows a long trend of rising precipitation levels that increased pressure on the state's aging and underfunded stormwater systems and worsened chronic flooding and water quality problems. Municipalities and utilities have struggled to keep pace, and while the fix is not likely to be cheap, one approach that is gaining favor in other states could help control the cost. Under the right conditions, regional stormwater management can protect the environment and property at a fraction of the cost of the traditional town-by-town approach. When considering solutions, municipalities and utilities may wish to consider the unique benefits of a regional approach.

Similar to many other environmental problems, stormwater runoff does not respect neighborhood, municipal, or even county borders. In a given watershed area, the independent, disjointed decisions of different municipalities can have a negative effect on downstream communities. For instance, while detention basins designed to control the rate of stormwater runoff during peak storm conditions make perfect sense for a given property, the combined effect of hundreds of such basins simultaneously releasing stormwater into a local system can increase flooding and erosion by extending the peak runoff period or increasing flow during non-peak periods. Site-by-site controls may not account adequately for incremental impacts on the larger watershed.

Multiple Benefits of Coordination Across Borders

In the case of stormwater, it is often more effective to reduce pollution or flooding at the source -- which may be in another municipality. Coordinating efforts across a region can be more effective at solving watershed problems than a fragmented approach where the methods used by one town may conflict

with those used in another. Most importantly, a regional approach changes the focus to emphasize projects that provide the greatest environmental cost/benefit for the entire watershed. Instead of relatively small municipal projects, regional plans yield a smaller number of larger projects.

In addition, a regional approach allows municipalities to share the cost of expensive data gathering (e.g., mapping, stream elevation) and feasibility studies, eliminate duplicative services (e.g., public outreach), minimize administrative costs and permit fees and, in some cases, surmount land constraints (e.g., a county's use of private property to implement high-value stormwater improvements).

Significant environmental benefits may also accrue, including a more comprehensive review of downstream impacts and more options to increase groundwater recharge, which is vital for sensitive aquifers.

In Pennsylvania, the Stormwater Management Act of 1978 (Act 167) requires counties to adopt a watershed stormwater management plan in consultation with affected municipalities, which in turn must adopt a local ordinance that regulates development in a manner that is consistent with the plan. In a formal regional approach, a group of local governments submit a single, shared stormwater plan to the state for approval. A county planning agency often serves as the common organization.

Case Study: Wyoming Valley Sanitary Authority

In 2016, the Wyoming Valley Sanitary Authority (WVSA) in Luzerne County, Pennsylvania, initiated a feasibility study to explore the benefits of serving as the regional coordinating body for its member municipalities, all of which faced increasingly stringent regulations to reduce pollutant loadings into surrounding waterways that drain to the Chesapeake Bay. A year later, after consulting with legislators, the state Department of Environmental Protection (PA

DEP), and the affected municipalities, the WVSA signed formal agreements with 32 municipalities.

Implementation will occur in three phases:

- **2017:** Beginning in 2017, the WVSA worked to develop new permit requirements, map municipal systems, design best management practices, provide public education, and enact a regional stormwater fee. Towns continued to budget for capital and operation/maintenance of assets not installed by the WVSA;
- **2023:** The WVSA will administer all Municipal Separate Stormwater System (MS4) permits and planning functions as system lessee and as co-permittee with towns, who will serve as lessor;
- **TBD:** The WVSA will assume the role of “stormwater system owner” while remaining a co-permittee with the affected towns.

Anticipated Benefits

The WVSA is projected to satisfy its assigned pollution reduction goal: to reduce the annual pollutant load on local streams by 10 percent in five years. Thanks to the regional approach, it will do this at a fraction of the cost.

Project Cost Savings

To satisfy the conditions of their state stormwater permits, the individual municipalities in the WVSA watershed had planned to implement 455 stormwater projects. Over a five-year period, that work would have cost \$69 million. Instead, the WVSA will realize the same environmental benefit through 65 larger-scale, regional projects costing only \$12 million over five years, a savings of \$57 million, or 82 percent.

Expanded Options for Project Siting

The most expensive part of constructing stormwater management facilities is acquiring the land on which to build them. When municipalities work individually, they are limited by their own borders, and most towns do not have much publicly owned land available for this purpose. By partnering regionally, towns can get credit for constructing facilities anywhere within the watershed. This flexibility makes it possible to choose projects that maximize pollutant reduction at the lowest cost, which often translates to fewer construction projects.

Administrative Cost Savings

Pennsylvania municipalities must submit Pollution Reduction Plans (PRPs) as a condition of their MS4 permits. As a result of the WVSA cooperative, the

number of separate PRPs submitted to the PA DEP for the Chesapeake Bay and individual watersheds was reduced from 64 to seven, with the WVSA submitting only one plan for the entire region and six PRPs for watersheds that are impaired. Since the typical cost of preparing a PRP can reach \$20,000, the towns realize considerable savings.

Implementation Issues

In Pennsylvania, a total of seven regional stormwater cooperatives of different types are under consideration, including the WVSA. In each case, the individual municipalities’ consideration of a small set of issues holds the key to success. They must be willing to:

- Pay part of the cost of a feasibility study to assess the proposal’s practicality for their communities
- View the stormwater problem as one that cuts across municipal boundaries
- Cede some control (e.g., zoning, fees) in order to secure regional benefits.

The WVSA’s experience shows that a cooperative, regional approach to stormwater management can protect the environment while saving money, thus benefiting the taxpayer.

Opportunities in New Jersey

New Jersey has authorized regional stormwater management plans since the adoption of its stormwater rule in 2004; however, none have been created to date. A key stumbling block had been that state law did not authorize municipalities and utilities to charge a dedicated fee based on the amount of stormwater runoff produced, a measure that would have provided resources to fund stormwater management projects. That obstacle was eliminated, however, with the enactment of legislation (S-1073) in March 2019 authorizing the creation of local stormwater utilities. Now is the perfect time for New Jersey towns to investigate a regional approach to stormwater management and decide if it’s the right solution for them.

Resources

Wyoming Valley Sanitary Authority website

<https://www.wvsa.org/stormwater-management/pages/regional-stormwater-management-program>

For more information, contact: Gary J. Brune, Policy Manager, gbrune@njfuture.org, 609-393-0008 x 119 or visit us online at njfuture.org.