pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

# Recommendations for Considering, Selecting and Financing Cost-Effective Urban Stormwater Best Management Practices (BMPs) to Achieve Pollutant Load Reductions

Many Pennsylvania municipalities and other entities with National Pollutant Discharge Elimination System (NPDES) permits for discharges from municipal separate storm sewer systems (MS4s) will be developing Pollutant Reduction Plans (PRPs) and/or TMDL Plans as part of their next notice of intent for general permit coverage or application for an individual permit. Following approval of those plans, actual pollutant load reductions will be expected over the next five years. The following suggestions are provided for consideration by MS4 permittees to help reduce capital expenses.

## Consider What Has Already Been Done

The calculation of your existing pollutant load for nutrients and/or sediment can reflect the load reductions achieved by structural BMPs implemented in the past, as long as they continue to function and are within the "planning area," i.e., the storm sewershed(s) of impaired stream(s). The estimated amount of the load reduction from these BMPs – regardless of whether or not they were installed under a Chapter 102 construction stormwater NPDES permit – can be used in calculating the overall existing loading from your planning area. While this does not provide "credit" toward load reduction obligations in the permit, it can reduce the amount of load you need to reduce.

For example, assume the existing loading of sediment from your planning area is estimated to be 100,000 lbs/year and you are required to reduce that total by 10%. Without consideration of any existing BMPs you would be required to install new BMPs that would remove 10,000 lbs/year. You are however aware of an existing BMP which reduces the current load by 10,000 lb/year, resulting in a current total load of 90,000 lb/year. Your 10% required sediment reduction would therefore be 10% of 90,000, or 9,000 lb/year.

## What Can Be Done in the Short Term?

Most jurisdictions with urbanized areas contain stormwater BMPs, such as dry retention ponds, which were designed in earlier decades for flood attenuation. Those features often provide little if any value in terms of stormwater pollution control, but may be readily adapted to improve pollutant reduction efficiency. Look for these opportunities. Many will be privately-owned. Discuss the issue with the owners and seek affordable agreements for necessary planning, design, construction and operation and maintenance (O&M).

Where there are no existing, readily-adaptable stormwater BMPs to retrofit, encourage existing private property owners to voluntarily install retrofits. Providing simplified designs and lists of experienced designers and contractors may help. Make a special effort to approach large businesses that may see value in contributing to this effort.

Think of every construction project as an opportunity to incorporate improved stormwater management. Projects with multiple purposes will frequently be more cost-effective than "stand-alone" stormwater projects.

For municipalities, consider changes to your stormwater ordinance (and/or zoning ordinance or SALDO) to require stormwater controls at construction sites that disturb less than one acre. The requirements can mirror Chapter 102 or be different, at the discretion of the municipality. The entire pollutant load that is reduced through this requirement can be used by the MS4 permittee toward meeting its pollutant reduction objectives.

## Collaboration Helps Identify Cost-Effective Options

Approach neighboring MS4 permittees about collaborating in the development and implementation of PRPs and TMDL Plans to pool resources and expand opportunities for BMPs, or participate in regional efforts already underway.

BMPs can be located anywhere in the jurisdictions of those participating permittees as long as the load reductions are within the overall planning area of the impaired waters. This can provide far more cost-effective choices than each permittee seeking to accomplish their entire load reduction obligation within their own jurisdiction.

Seek quality, low-cost technical support from county planning commissions, county conservation districts, universities, non-profits and others, and seek help from local groups that have experience in the planning, design, construction and O&M of BMPs, as well as skills needed to pursue funding.

## Consider Instituting a Fee System to Provide Resources

Fee systems typically support the repair, replacement, and maintenance of traditional stormwater infrastructure as well as stormwater pollution control.

Advantages of typical fee systems include:

- Revenue source not reliant upon tax-based general revenue.
- Equitable because typically based on "stormwater production" rather than property value.
- Charges all properties (including non-taxable properties).
- May allow credits for voluntary BMPs, encouraging property owners to do their share, benefiting the MS4 community.
- May include reduced property taxes.

Activities in the creation of a typical fee system include:

- Providing start-up funding for planning work in advance of fee availability.
- Calculating how much is currently being spent on stormwater issues (typically more than people realize).
- Identify the current gaps in stormwater management.

- Develop budget.
- Identify the typical impervious area for residential properties. Use GIS to calculate the impervious area of non-residential properties. Add to establish total impervious area.
- Develop fee structure.
- Public education.
- Legal work.

Take care in how you approach your public about fees[1]:

- What the fee is called matters.
- Clearly show ratepayers how the money will be invested.
- Present the fee as a solution to local problems and providing local benefits.
- Present the fee in its smallest increment (dollars per household per month).
- Affirm that the money will be used for its stated purpose.

**Consider Funding Sources, Like PENNVEST**

The Pennsylvania Infrastructure Investment Authority (PENNVEST) offers financing for stormwater BMPs. See the PENNVEST website at http://www.pennvest.pa.gov.

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[1] From Keystone Water Quality Manager, April/May/June 2015. Erik Eckl, Water Words that Work and Nathan Walker, AICP, AMEC Foster Wheeler.