September 2009

Susquehanna River Basin Commission
Information Sheet

DETERMINING TOTAL MAXIMUM DAILY LOADS IN THE SUSQUEHANNA RIVER BASIN

What is a total maximum daily load (TMDL)?

A total maximum daily load (TMDL) is the amount of a specific pollutant that a water body can receive and still maintain water quality standards. The allocation, or allowable amount, of a specific pollutant takes into account both point and nonpoint sources of that pollutant in a watershed.

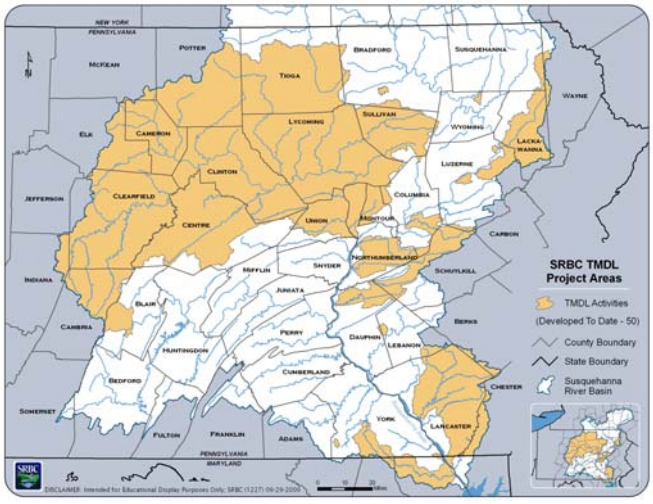
Point sources include discharges from sewage treatment plants and industrial wastewater facilities. Nonpoint sources are the pollutants that run off from the land. In the Susquehanna River Basin, the two leading causes of stream impairment from nonpoint sources are acid mine drainage and agricultural runoff.

TMDL Overview

The federal Clean Water Act and the U.S. Environmental Protection Agency's (USEPA) implementing regulations (40 CFR 130) require that states, territories, and authorized tribes list impaired and threatened waters and develop TMDLs.

Although all watersheds must be handled on a case-by-case basis when developing TMDLs, there are basic processes or steps that apply to all cases. They include:

1. Collect and summarize pre-existing data (watershed characterization, inventory contaminant sources, determination of pollutant loads, etc.);
2. Calculate TMDL for the waterbody using USEPA approved methods and computer models;
3. Allocate pollutant loads to various sources;
4. Determine critical and seasonal conditions;
5. Submit draft report for public review and comments; and
6. Obtain approval of the TMDL by USEPA.



SRBC support of state efforts

Since 2000, the Susquehanna River Basin Commission (SRBC) has been responsible for developing TMDLs for more than 50 named watersheds in the Pennsylvania portion of the Susquehanna basin. In 2006-2007, SRBC also assisted the Maryland Department of the Environment (MDE) with determining the source and cause for impairments in several interstate watersheds, potentially leading to TMDL development.

SRBC support ranges from initial data collection and problem identification, to document approval by USEPA.

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TMDL Sources Addressed

Sources of impairment addressed by TMDLs developed by SRBC staff cover the range of major issues for the basin. These sources include abandoned mine drainage (AMD), agricultural runoff, as well as point source discharges and runoff from developing areas.

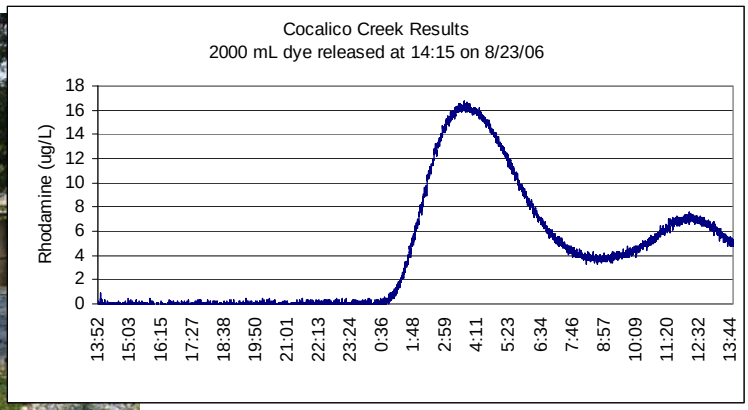
Large volume municipal point source discharge (right)

Nonpoint AMD pollution from sediment, low pH, and metals (below)

Nonpoint agricultural pollution from sediment and nutrients (above)

SRBC Activity Highlights

SRBC has used both pre-existing information and results from field investigations to provide the basis for problem identification and characterization. Data analyses used to determine TMDL target loads have included the use of watershed/water-quality models, as well as statistical methods.



Characterizing pollutant transport using dye releases (photo and graph showing data results).

Additionally, SRBC has strengthened state TMDL efforts through coordinating efforts with the many stakeholder groups interested in the outcome of TMDL determinations. These efforts have included educating the public on TMDL issues, providing technical support to citizen groups and local government for implementation, and encouraging information exchanges between member jurisdictions on analytical methods, as well as providing support for new TMDL method development.