TMDLs and Related Water Quality Planning Work In the Lower Grand River Watershed

What Will be Happening, and What are Implications for MS4 Communities

Ohio Environmental Protection Agency

Renewed water quality planning work is underway in the lower Grand River watersheds. The Grand River is an ecological and recreational resource that Ohio EPA and local units of government and the public wish to restore and protect. The lower Grand and its tributaries support coldwater, warmwater and exceptional warmwater habitat.

Some water quality concerns have been identified in the lower Grand watersheds. Ohio EPA has identified aquatic and recreational beneficial use impairments due to flow alteration, siltation, unknown pollutants, and bacteria. In addition, some of the high quality waters that should be protected could be at risk as land uses change and development occurs in the watershed. The planning work underway will address both restoration of impaired waters and protection of high quality waters. One key element of the planning work will be development of a TMDL report.

De-coding the acronyms. Ohio EPA has established water quality standards (WQS) for all the waters of the State. WQS include chemical, physical, and biological criteria that need to be met for a water body to support its designated uses (e.g., fishing, swimming). Monitoring is conducted by the State and partner organizations to determine if water bodies are meeting WQS. If the monitoring reveals WQS are not being met, the State lists the water body as being *impaired*.

When a water body is identified as impaired, the Clean Water Act requires that a Total Maximum Daily Load (TMDL) be developed. A TMDL defines the total amount of a pollutant that a waterbody can receive, from point and nonpoint source pollutant loadings, with the result that the water body would meet WQS. Over time actions are taken to meet the loading targets in the TMDL. The result should be that the WQS are then met, and the water is achieving its designated uses.

A TMDL for a waterbody is described by the following formula:

TMDL = WLA + LA + MOS

where the TMDL equals the sum of the wasteload allocation (WLA) given to point sources, load allocation (LA) for nonpoint sources, and margin of safety (MOS) that accounts for uncertainty in a water body's response to a pollutant load.

Water quality planning work in the lower Grand. The US EPA has provided funding to complete a TMDL study of nine subwatersheds in the lower Grand river. The water quality planning work will address: (1) waters currently identified as impaired; (2) waters that are not listed as impaired at this point in time, but where there are pollution concerns, and also (3) high quality waters where actions may be needed to protect these valuable resources. TMDLs will be prepared for impaired waters, and flow regime protection strategies will be prepared for streams that are not specifically identified as impaired but are within an impaired watershed.

The TMDL report will address aquatic community impairments and recreational use impairments. Given the unique geological conditions of the lower Grand watershed, and the suite of pollutants causing aquatic community impairments (sediment, unknown toxicity, siltation, flow alteration), the TMDL will be developed using a flow duration curve methodology. A nearby unimpaired reference stream will be used in the analysis. The TMDL will describe the hydrologic conditions that will achieve water quality standards and support designated uses in the lower Grand. To address recreational use impairments the TMDL report will identify LAs and WLAs for bacteria.

What are implications for MS4s? There are a number of sources contributing to the pollutant loadings and modified hydrology noted in the lower Grand subwatersheds, including discharges from permitted Municipal Separate Storm Sewer (MS4) communities. When the TMDL is completed it will include WLAs for the MS4 communities in the lower Grand watershed. As the State general permit for small MS4 communities is updated and reissued, MS4 communities will need to update their stormwater management programs to be consistent with the TMDL. [See Section I.C.6. of the State general permit for small MS4 communities.]

What is SUSTAIN and how will it be used in this planning work? It can be a challenge for communities to determine a cost-effective combination of Best Management Plans (BMPs) to meet a water quality goal, including a WLA in a TMDL. SUSTAIN (System for Urban Stormwater Treatment and Analysis INtegration) is a model that selects, models, and evaluates various combinations of potential BMPs, and presents the most cost effective combinations that will meet the water quality goals. U.S. EPA and Ohio EPA are working with local partners to pilot the use of SUSTAIN in the Chagrin and lower Grand watersheds. SUSTAIN may be a tool that communities can use in updating their stormwater management plans to be consistent with the TMDLs. For an overview of SUSTAIN visit:
http://www.epa.gov/ednnrmrl/models/sustain/index.html

How can I be involved in the watershed planning? Many opportunities exist for public involvement. Residents and stakeholders (including MS4 communities) are encouraged to learn about the TMDL process and attend public meetings and provide input/comments. It is anticipated there will be a public meeting on the lower Grand TMDL in early 2011. More information on the lower Grand TMDL/water quality planning work is available at:
http://www.epa.ohio.gov/dsw/tmdl/GrandRiverLowerTMDL.aspx

Note: This fact sheet was prepared in November 2010.