LOUISIANA'S

TMDL

Total Maximum Daily Load

FACTS

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Introduction

A TMDL (Total Maximum Daily Load) is a pollution budget for a specific waterbody (river, lake, stream, etc.). It is the maximum amount of a pollutant (sum of allowable pollutant loads from point and nonpoint sources) that can be released into a waterbody without causing the waterbody to become impaired and/or violate state water quality standards. A TMDL must include point source loads (wasteload allocations), nonpoint source loads (load allocations) and a margin of safety to account for any uncertainties in the scientific methods used to derive the TMDL. Such uncertainties may include modeling assumptions, statistical analysis, and a lack of knowledge concerning the relationship between effluent limitations and water quality among other things. TMDLs and associated activities should lead to improvements in water quality.

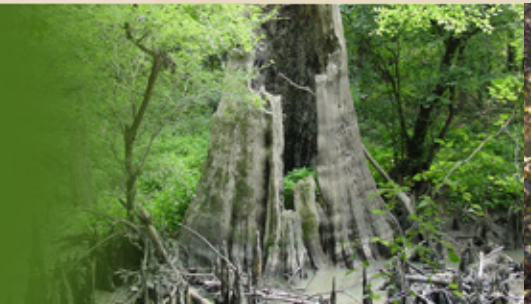
The Clean Water Act (CWA) of 1972 requires states to set water quality standards that are protective of the designated uses for each waterbody. Under Section 305(b) of the CWA, states must list all waterbodies being assessed. Under Section 303(d) of the CWA, all states must assess waterbodies against current standards every 2 years and develop a list of impaired waterbodies that require TMDL development. This list is referred to as the 303(d) list. Louisiana combines both the 305(b) and 303(d) listing into one document, commonly called the Integrated Report (IR). The CWA also requires that all states establish priority rankings for waters on the 303(d) list and develop TMDLs for these waters based on their individual priority ranking.

Components

Each TMDL contains key elements:

- Waterbody name and location
- Identification of the pollutant
- The water quality standard for the waterbody
- Amount of pollutant allowable to meet standards (pollution budget)
- Load reduction needed to meet standards
- Sources of the pollutant
- Wasteload allocation for point sources (including MS4s)
- Load allocation for runoff (nonpoint sources) and other sources of pollution
- Margin of safety
- Consideration of seasonal variation
- Public comment period

TMDL = Wasteload Allocation (WLA) + Load Allocation (LA) + Margin of Safety (MOS) + Future Growth (FG)



Point Sources

Point sources originate from a stationary location or fixed facility from which pollutants are discharged directly into a waterbody. Some examples of point sources include:

- Wastewater effluent, both municipal and industrial facilities
- Runoff and infiltration from confined animal feeding operations
- Runoff from active mine sites and oil fields
- Runoff and leachate from waste disposal sites
- Runoff from construction sites
- Runoff and discharges from Municipal Separate Stormwater Sewer Systems (MS4s)

Municipal and industrial wastewater treatment facilities, urban areas, business and industry and rural subdivisions are most often affected by TMDLs. The pollutants of concern may include nutrients and other oxygen demanding pollutants, bacteria, and metals. TMDL requirements are met through permit limits and/or Best Management Practices (BMPs). The TMDL may confirm existing permit limits or establish new or more stringent permit limits.

Urban areas contribute nonpoint source pollutant loads. However certain urban areas are classified as Municipal Separate Storm Water Sewer Systems (MS4s) according to regulations 40 CFR 120.26 b.4 and LAC 33:IX.2511.B.4 and B7. MS4s are permitted and regulated as point sources. Thus, their load contributions are included in the WLA portion of the TMDL. Urban stormwater may contain high loadings of many types of pollutants such as sediment, nutrients and other oxygen demanding pollutants, bacteria, and metals. In Louisiana, TMDL requirements for MS4s are typically met through BMPs designed to address the pollutant of concern. BMPs are activities designed to control the generation or delivery of pollutants from nonpoint sources to waterbodies of the state, thereby preventing degradation of surface and groundwater.

Non-Point Sources

Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet are considered nonpoint sources of pollution. Some examples of nonpoint sources are:

- Runoff from row-crop agriculture (including return flow from irrigated agriculture)
- Runoff from pasture and range
- Runoff from forested areas/silviculture activites
- Runoff from roads, highways and parking lots (for areas not regulated by an MS4)
- Runoff from urban stormwater (for areas not regulated by an MS4)
- Runoff from storm sewer surges (for areas not regulated by an MS4)
- Runoff from lawns and gardens (for areas not regulated by an MS4)
- Activities on the land that generate pollution, such as logging, wetland conversion for development and construction
- Natural sources, such as leaves, organic nutrients, wildlife waste

Most of the nonpoint loading in TMDLs has been focused on agriculture, forestry, and natural sources. TMDL requirements are typically met through the use of BMPs on a voluntary basis.

History of TMDL's

TMDLs were first required by the CWA of 1972. Initially, states and the United States Environmental Protection Agency (USEPA) focused on the point source part of the TMDL, called the wasteload allocation. Some TMDLs were developed, but until the late 1990's very little national emphasis was placed on developing the complex scientific tools necessary to produce credible TMDL assessments. Citizen organizations began bringing legal actions against the USEPA in the 1990's. The actions requested that USEPA complete the listings of impaired waters and development of TMDLs as required by the CWA. Forty legal actions were taken in 38 states, including Louisiana. Additionally, the CWA authorizes the states to develop TMDLs.

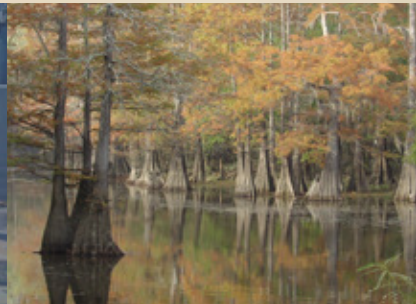
Federal regulations mandate that states list impaired waterbodies, as required under Section 303(d) of the CWA and develop TMDLs for those waterbodies. By law, USEPA must approve or disapprove state 303(d) lists. If a state submission is disapproved, USEPA must establish a new 303(d) list. USEPA must also approve TMDLs for impaired waterbodies. If a state declines to develop a new TMDL, USEPA must develop the TMDL.

As a result of a 1996 lawsuit against USEPA Region 6, USEPA signed a consent decree which established a timeline for the completion of TMDLs for Louisiana's impaired waters. USEPA and the Louisiana Department of Environmental Quality (LDEQ) agreed to share responsibility for the development of TMDLs. LDEQ focused on the development of TMDLs that address oxygen demanding substances, nutrients and metals. USEPA contractors developed TMDLs primarily for the other pollutants of concern, such as bacteria and sediment (Total Suspended Solids (TSS)). USEPA and Louisiana completed that consent decree on March 31st, 2012, with Louisiana completing its commitments on March 6th, 2012.

Water Quality Monitoring Cycle

LDEQ conducts routine water quality monitoring in waterbodies across the state to determine whether the state's water quality standards are being met and where water quality is impaired. Monitoring is conducted on a four-year cycle. The four-year cycle allows LDEQ to better manage resources and to monitor nearly all water quality subsegments, resulting in a more balanced schedule of water quality assessments for biennial reporting, as required by Sections 305(b) and 303(d) of the CWA.

Within each basin, all monitored subsegments will be sampled during each monitoring cycle. Water quality assessments conducted for the IR are based on the most recent four years of data.



Implementation

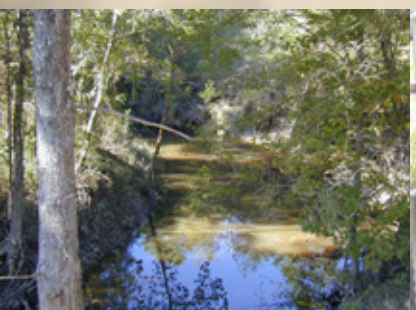
When a TMDL is established, the state must incorporate the TMDL into its water quality management plan and implement the wasteload allocations. For point sources including MS4s, these actions are done through Louisiana Pollutant Discharge and Elimination System (LPDES) permits. For nonpoint pollution sources, the state develops watershed implementation plans (WIPs), which describe the types of BMPs that are necessary to reduce nonpoint pollutant loads and available programs to ensure their implementation throughout the watershed.

Louisiana relies on the voluntary participation of agricultural producers, local organizations, and other stakeholders to ensure TMDLs can be successfully implemented. Nonpoint source stakeholder participation consists of efforts to demonstrate, promote, design and implement BMPs for water quality improvements. The forestry community and the Louisiana Forestry Association developed BMPs to reduce nonpoint source (NPS) pollutants and improve water quality in the forested watersheds of Louisiana.

Agricultural BMPs have been developed for each agricultural commodity in Louisiana. Agricultural BMPs focus on four main areas: nutrient management, pesticide management, soil and water management and general farm practices. Each BMP is a culmination of years of research and demonstrations conducted by agricultural research scientists and soil engineers. BMPs and accompanying standards and specifications are published by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in its Field Office Technical Guide. BMP manuals have been developed for rice, poultry, agronomic crops (cotton, corn, soybeans, grain sorghum), sugarcane, swine, sweet potatoes, aquaculture, dairy, beef cattle and commercial vegetables. BMP publications have been distributed to Louisiana agriculture and forestry producers and are also available at your parish's LSU AgCenter extension office and at www.lsuagcenter.com.

As a result of implementation of the CWA's TMDL provision, programs to help agriculture and forestry producers understand water quality standards and BMPs have been developed. The provision, although regulatory by nature, allows agricultural producers to utilize the best available technology they have to develop their own solutions on a voluntary basis. Therefore, the Louisiana Master Farmer program, which was modeled after the successful Louisiana Master Logger Program, was developed to address the environmental concerns related to production agriculture, as well as enhance resource management skills critical for the continued viability of Louisiana agriculture.

The voluntary efforts are a partnership between the agricultural commodity groups, the USDS NRCS, LDEQ, Louisiana Farm Bureau Federation (LFBF) Louisiana Department of Agriculture and Forestry (LDAF), Louisiana Department of Natural Resources (LDNR), USDA-Agricultural Research Service (ARS), Louisiana Forestry Association, local Soil and Water Conservation Districts, and the LSU AcCenter.



Next Steps

Current Federal regulations require that TMDLs be established for all waterbodies in the state according to the priority order and schedule of the 303(d) list. Additional USEPA policy outlines that TMDLs must be developed at a specified rate commonly called the TMDL Pace. The TMDL Pace is defined as the number of Waterbody Impairment Combinations (WIC) divided by 13 years.

TMDL Development Pace = WIC/13

However, EPA and the states have developed a new vision for the 303(d) listing and TMDL program. Work on this new vision and its associated measures of success began in 2011. The proposed vision would provide states with greater flexibility in prioritizing waterbodies for TMDL development. TMDLs may be developed for both impaired and healthy waterbodies (known as "protective TMDLs"). This should allow states to make better use of limited resources for obtaining improvements in water quality in impaired watersheds and maintaining water quality in healthy watersheds.

The current challenge before USEPA and the states is determining which metrics to use in measuring the success of the TMDL program under the proposed vision.

LDEQ will continue to develop and revise TMDLs in accordance with federal and state regulations. LPDES permits will continue to be issued to control point source pollutants. Point source dischargers may be required to implement new and innovative discharge reduction methods. For control of nonpoint source pollutants, BMPs will continue to be implemented through the current non-regulatory, cooperative program. LDEQ will monitor BMP implementation and provide advice and assistance in pursuing innovative methods in the control of nonpoint source pollutants. The success of this program largely resides with cooperation from the agricultural, silvicultural, and urban communities, along with other affected stakeholders. Without the cooperation from the stakeholders, TMDL implementation will not be successful.

There will be continued public education and outreach regarding TMDL implementation for both point and nonpoint sources. In addition, LDEQ provides assistance and guidance to stakeholders impacted by TMDLs.

The state will continue to monitor water quality following implementation of TMDLs to determine whether the additional pollution controls have resulted in improved water quality. If future water quality monitoring shows the waterbody is no longer impaired, no additional action should be needed to reduce pollution. However, if pollution levels are still unacceptable at the end of a reasonable time period following implementation of voluntary actions, LDEQ may be required to revise the TMDLs and pursue the implementation of additional and/or alternative control measures.

As a result of these combined efforts, all Louisiana stakeholders will be actively involved in the successful reduction of pollutant loads in impaired waterbodies and the restoration and protection of high quality waters in Louisiana.



LDEQ's TMDL Contact:

William C. Berger, Jr., P.E.
TMDL Technical Advisor
(225)219-3366
chuck.berger@la.gov

Link to the web page for our TMDL program:
http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/TotalMaximumDailyLoadTMDLProgram.aspx

Links to Standards and Assessments:
http://www.deq.louisiana.gov/portal/tabid/69/Default.aspx

Links to Watershed Implementation Plans:
http://nonpoint.deq.louisiana.gov/wqa/WaterShedPlanning.htm

Primary Authors:
Carrie Castille and William C. Berger, Jr.

Contributing Authors:
Jan Boydstun, Emelise Cormier, Rodney Hendricks, Al Hindrichs, Melanie Martin, Barbara Romanowsky, Dugan Sabins, and Fred Sanders

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