Total Maximum Daily Load (TMDL) "Tip" Sheet

Prepared for the

U.S. Poultry & Egg Association

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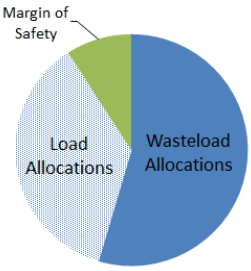
TMDL: a calculation which identifies the level of pollutants allowed that will attain water quality standards, with a margin of safety and seasonal variations. Point sources receive wasteload allocations (WLAs) and load allocations (LAs) are assigned to nonpoint sources and natural background loads.

The TMDL is the sum of the WLAs and LAs.

- Point source is defined in the Clean Water Act as any discernible, confined and discrete conveyance. The definition specifically includes concentrated animal feeding operations (CAFOs) and specifically excludes agricultural stormwater discharges and return flows from irrigated agriculture.
- The term nonpoint source is not defined but is treated by courts and EPA as a source of pollutants that does not meet the definition of point source. Nonpoint source pollutants generally are carried to water in diffuse runoff from the land surface.



EPA is not required to evaluate the costs of implementing the TMDL nor is EPA required to evaluate whether the targets for the TMDL are appropriate. Also, EPA regulations require that National Pollutant Permit Discharge Elimination System (NPDES) permits be consistent with the assumptions in the TMDL.

TMDL Tips: TMDLs include assumptions about how much pollutant load is being generated from various sources and how well sources are already controlling loads. The loads and their impact on a waterway are typically estimated using computer models. State regulatory procedures generally require that the public be notified that a TMDL is being developed and that the public be provided with an opportunity to comment on the TMDL.

If you are aware that a TMDL is or will be developed for your local waterway:

- Ask to review the data, computer models, and assumptions about different loading sources (particularly your own).
- Submit comments in writing throughout development of the TMDL.
- Ask for at least a 60-day comment period and make sure you comment on the TMDL.
- Review your state procedures to determine the process for legally challenging the TMDL at the state level if that becomes necessary. For TMDLs conducted by or approved by EPA, the public has 6 years to challenge a TMDL.

TMDLs start with establishing an in-stream "target" which is generally based on the water quality standards. If no standards exist, people developing TMDLs (EPA, States, contractors, or 3rd parties) can establish a "surrogate" to protect the beneficial use. For example:

- EPA used "conditional probability" to set TP targets for TMDLs in PA using a limited set of data. (USGS data later showed there was no relationship between TP levels and macroinvertebrates). This led to EPA's Science Advisory Board indicating that conditional probability needs to be accompanied by other information linking the cause (TP loads) to the effect (impaired macroinvertebrates).
- A draft TMDL was developed to address impairments associated with nutrients in Missouri. The TMDL developer selected USEPA's recommended ecoregional criteria for nutrients to establish the TMDL targets. In many instances, these ecoregional criteria have been found to be overly stringent.

Water Quality Standard (WQS): consists of a designated (or beneficial) use for the waterway such as fishing, swimming, agricultural water supply; narrative and numeric water quality criteria; and an anti-degradation policy. The Clean Water Act requires that states conduct a review of their water quality standards every three years. This is called the "triennial review". Water quality standards establish the target for TMDLs and NPDES permits. Therefore it is important that you:

- Get on the mailing list for your state's triennial review.
- Coordinate with other interested parties in reviewing the basis for the proposed changes to the standards.
- Make recommendations to the state about which standards you believe should be updated.

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Water | Environment | Scientists | Engineers

Adrienne Nemura, Ann Arbor, MI, (734) 332-1200, anemura@limno.com
Pat Bradley, Washington, DC, (202) 833-9140, pbradley@limno.com

State Nutrient Criteria Strategies:

EPA has notified the states that they expect each state to develop a strategy for developing numeric nutrient criteria. Some states have developed strategies and criteria, while others are lagging. This is mainly because nutrients are not typical "pollutants" (like toxics) where higher levels of the pollutant results in obvious impairment.

Many states (including Florida) recognize the value of a "weight of evidence" approach for nutrients and are adopting approaches that consider the biological response in the waterways. Vermont, Maine, Virginia, and Ohio all are moving on the path of using "weight of evidence" for applying their water quality standards. EPA staff have, at times, taken positions that this is unacceptable, and that the states must develop numeric criteria for both total nitrogen (TN) and TP. EPA staff have also insisted that these criteria be applied independently. In other words, states would have to declare a waterway in violation of the standards (based on the TN and TP criteria) even if no biological impairment existed.

This is a fast-moving initiative and sources should, if possible:

- Work with state associations and regulatory agencies to ensure that they are updated regarding changes to the state nutrient criteria strategies.
- Discuss providing data and other resources to the state to help inform development of strategies and criteria.
- Help ensure that regulatory agency staff and elected officials are educated about the technical and legal issues associated with "weight of evidence", "independent applicability", and "conditional probability."

303(d) Listings and TMDL Schedule:

The Clean Water Act requires states to assess waterways against the water quality standards and other procedures every two years and to place impaired waterways on the 303(d) list. States then establish schedules for conducting the TMDLs so that waterways can be restored and removed from the list. It's important that loading sources pay attention to the 303(d) listing process and the schedule to ensure that waterways are not listed improperly and that they participate in the TMDL (as discussed above).

Because TMDLs can be developed by EPA and 3rd parties, it is not always clear that state procedures regarding TMDLs will be followed. For example:

- EPA issued a request for proposal for development of TMDLs in a state where the state had changed their 303(d) listing. This could result in TMDLs being developed for waterways that were not impaired.
- EPA has recently (October 2010) awarded a contract to support development of nutrient criteria for states within the Mississippi Atchafalaya River Basin (MARB). This contract includes development of computer models of the Mississippi River mainstem and the Gulf of Mexico.

The 303(d) listing is the first notification that a TMDL will be developed. Sources should therefore:

- Track the 303(d) listing and ensure that the listing is appropriate.
- Monitor the schedule for TMDL development and ensure that resources are in place to review and comment on the TMDL.

TMDL Implementation Plans:

This is a relatively new development, even though the Western States insisted during the 2000 TMDL Rule development that implementation plans should accompany TMDLs. The primary issue is related to whether the implementation plan is actually "implementable". That is, if the TMDL cannot be reasonably attained with cost-effective controls on pollutant sources, should the water quality standard be changed? EPA and state regulatory agencies have generally been reluctant to tackle this issue. More recently the debate has shifted to whether TMDLs contain sufficient documentation and analyses to support that there is "reasonable assurance" that the TMDL will actually be implemented and will result in the restoration of the beneficial use. Recent high profile examples of implementation issues include:

- EPA threatening "federal consequences" if the six states in the Chesapeake Bay Watershed and the District of Columbia did not produce implementation plans that EPA believed would achieve the reductions needed for the Chesapeake Bay TMDL.
- EPA withdrawing it's 2002 approval of Vermont's portion of the Lake Champlain phosphorus TMDL, in part because of a perception of inadequate margin of safety and reasonable assurance.

Implementation is another emerging area for TMDLs. Sources should:

- Stay informed of national trends associated with TMDL implementation.
- Have regular discussions with state regulatory agency personnel about implementation issues.
- Be aggressive during local TMDL stakeholder discussion about the need for a cost-effective, implementation plan.