

MDE
Science Services Administration

Interpreting Your TMDL and Impairment Maps

What are impaired waters?

Impairments are natural drainage areas (watersheds) where required water quality standards are not met. There are numerous standards including dissolved oxygen, nutrients, sediments, bacteria, pH, metals, and other toxic contaminants, and biological criteria to meet the requirement to “support aquatic life.” The federal Clean Water Act requires that these impairments be addressed as part of a State water quality management program. The impaired waters list (also known as the Integrated Report) is reviewed and revised, with public comment every two years, on the even year.

What are 8-digit watersheds?

Small streams flow into successively larger streams. Each stream has its own drainage area or watershed. The watersheds of small streams are nested or contained in larger watersheds. Watersheds are assigned identification codes at various scales. “8-digit watershed” simply describes an average watershed draining about 90 square miles, although it may be considerably larger or smaller depending on the configuration of the streams and the elevation of the land. The higher the number of digits, the smaller the watershed.

What are TMDLs?

Total Maximum Daily Loads (TMDLs) are based on assessments that are required to be completed for impaired waters. TMDLs include estimates of pollution loads from all sources and provide allocations to those sources that will reduce pollution loads to the point at which the water quality standards are attained.

How are TMDLs different from Tributary Strategies?

TMDLs provide a quantitative assessment of allowable pollution loads from all sources for local river segments. Tributary Strategies provide for the actual nutrient reduction actions that will be taken to restore the Bay and local waters. In some cases pollution reduction for the Bay may be more stringent than what is required for local waters.

How do we achieve the pollution reductions in the TMDLs?

There are numerous programs that help achieve the reductions. Some are regulatory like the National Pollution Discharge Elimination System (NPDES) permits. The Bay Restoration Fund provides funding for sewage plant upgrades. Other programs are voluntary incentive programs, particularly for agriculture, like cover crops, manure transport, EQIP, and others. The part that has been missing for many years is appropriate planning and development guidelines to prevent new development from counteracting the pollution reduction achieved by existing programs and to contribute proportionately to pollution reduction. House Bill 1141, passed in the 2006 session of the General Assembly, adds a requirement to address sensitive areas, water supply and water quality issues in local comprehensive plans, and for MDE to provide technical assistance to their effort. This new planning requirement will help significantly in meeting water quality goals.

What are these listings and maps telling me?

- Water Quality Listings - Consistent with federal guidance, Maryland characterizes all waters of the State with respect to attainment of water quality standards in a biennial report to the U. S. Environmental Protection Agency. This document, known as the Integrated Report, is jointly prepared by MDE and DNR and addresses both Sections 305(b) and 303(d) of the Clean Water Act. The report includes waters that attain quality standards as well as those that do not attain standards for one or more reasons, consistent with the five Integrated Reporting categories described below:

Category 1 waters are water bodies that meet all water quality standards and no use is threatened;

Category 2 waters are water bodies meeting some water quality standards but with insufficient information to determine if other water quality standards are being met;

Category 3 waters are those where insufficient information are available to determine if any water quality standard is being attained.

Category 4 waters are those in which one or more water quality standard is impaired or threatened but a TMDL is not required or has already been developed. The following subcategories are included in category 4:

- **Subcategory 4a:** TMDL already approved or established by EPA;
- **Subcategory 4b:** Other pollution control requirements (*i.e.*, permits, consent decrees, etc.) are expected to attain water quality standards therefore a TMDL is not needed; and,
- **Subcategory 4c:** Impairment is not caused by a pollutant; therefore, a TMDL is not required.

Category 5 waters: Water body is impaired, does not attain the water quality standard, and a TMDL is required.

- Map Legend – For each pollutant, the maps are intended to highlight the following categories as applicable:
 - **Not Impaired** (Categories 1, 2, 3) - green-striped.
Water quality standards are generally viewed as being met in these areas which are reasonable candidates for careful development that minimizes water quality impacts. In some watersheds, insufficient data exists to fully assess water quality conditions. Consideration should be given to protecting high quality waters that provide amenities to your communities.
 - **Impaired** (Category 5) – red-striped
These are areas where pollution thresholds have been exceeded and no TMDL has yet been completed or other management solution identified. Any development that occurs in these areas should not only offset pollution loads generated by that development, but also reduce existing loads by some additional increment to help eventually achieve required water quality standards.

- ***Impaired/TMDL*** (Categories 4a, 4b) – blue cross-hatched
These are areas that are impaired for a given pollutant and for which: a) TMDL has been completed telling you what the allowable load is and providing a quantitative estimate of needed pollution reduction or b) a TMDL is not required because another solution has already been clearly identified and will be implemented within a specified time period (examples: fixing a known, leaky pipe; accomplishing a wastewater treatment plant upgrade).

How will this information help me plan and prioritize?

By indicating areas with the greatest (or least) limitations with respect to water quality, this information will help you focus your development and planning efforts to facilitate meeting water quality needs, limiting delays and complications related to water quality permitting and maximizing your development potential.

In planning for the intermediate term, it is also important to recognize that once the loads have been reduced sufficiently to achieve water quality standards, the loads cannot be allowed to increase again, or the water will again be impaired and the whole TMDL process will happen again.

Should I be aware of other water quality information that may come into play regarding planning for new development?

Anti-degradation – In addition to protecting existing uses and meeting the minimum water quality goals (sometimes referred to as “fishable and swimmable”), federal and State laws and regulations also require protection of waters that are of higher quality than the minimum standard. These waters are protected by what is known as “Tier II” designation as part of the State’s anti-degradation policy. The goal of MDE anti-degradation review for projects in watersheds containing Tier II waters is to ensure that water quality is not degraded beyond the capacity to maintain a high quality status. Applicants proposing activities that will potentially impact Tier II waters must undergo anti-degradation review before permits are approved or activities can be added to a county's water and sewer plan. The location of Tier II waters located within Maryland, along with additional information about State anti-degradation policy, are in COMAR at 26.02.08.04-1. Readers are encouraged to view the most current information on designated and pending Tier II waters on MDE’s website: <http://www.mde.state.md.us/ResearchCenter/Data/waterQualityStandards/Antidegradation/index.asp> or contact SSA for more information.