



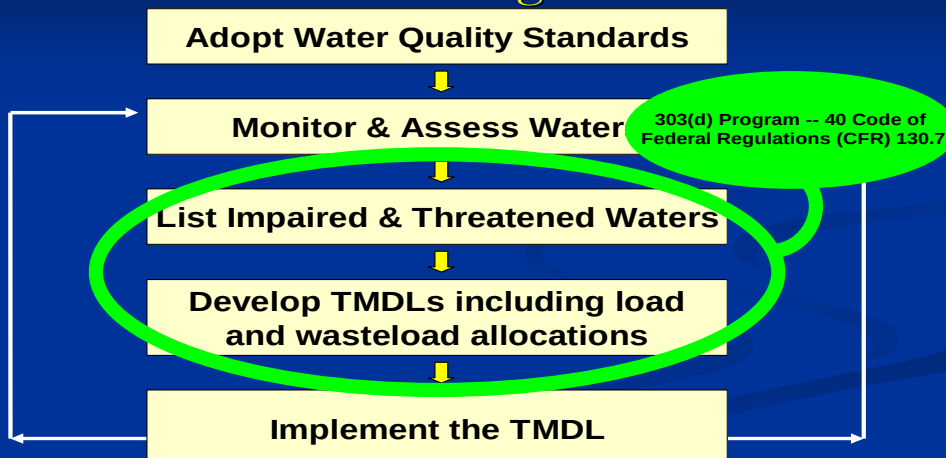
Fact Sheet: Total Maximum Daily Loads

TOTAL MAXIMUM DAILY LOAD (TMDL) and the CLEAN WATER ACT

The goal of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of our nation's waters. Under CWA section 303(d), states, territories, and authorized tribes are required to develop lists of waterbody segments impaired by a pollutant and needing a TMDL.

A TMDL is a technical calculation of the maximum load of a pollutant a waterbody can receive and still meet water quality standards. A TMDL addresses the sum of all point source loads ("waste load allocation") and loads associated with nonpoint sources ("load allocation"). Tens of thousands of TMDLs have been developed nationwide since 1995.

Clean Water Act Framework for Restoring Polluted Waters



$$\text{TMDL} = \text{WLA} + \text{LA} + \text{MOS}$$

WLA Waste Load Allocation
Amount of pollutant from existing point sources (e.g., sewage treatment plant; industrial facility; stormwater)

LA Load Allocation
Amount of pollutant from existing nonpoint sources and natural background (e.g., farm runoff; atmospheric mercury)

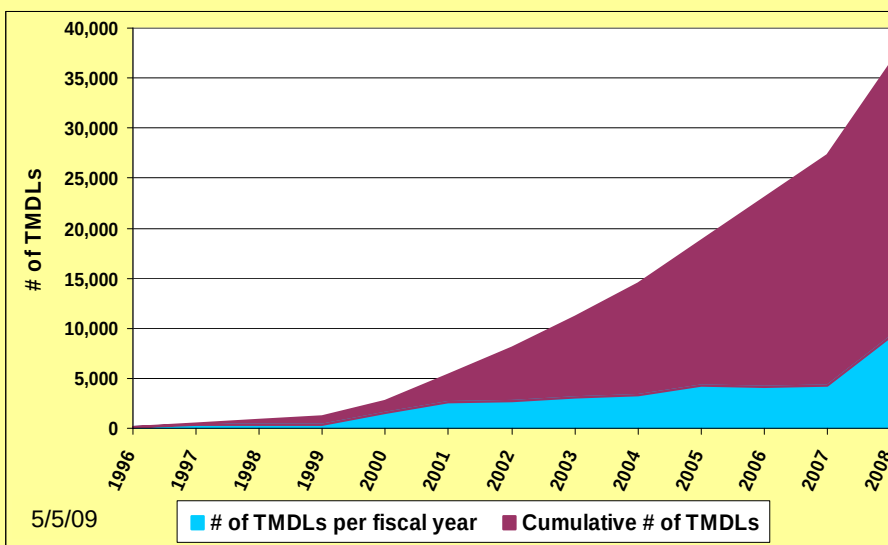
MOS Margin of Safety
Part of TMDL allocated to uncertainty in analysis

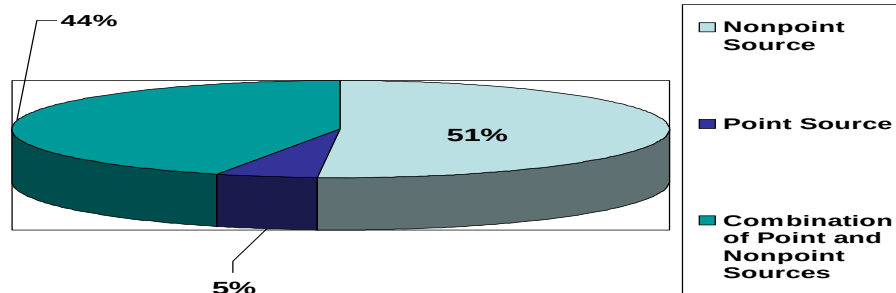
In general, the CWA requires states to establish water quality standards for waters within their borders by designating specific uses for their waters (designated uses) and establishing criteria by which to protect those uses, control pollutant sources, and monitor and assess water quality.

States are responsible for submitting biennial lists [section 303(d) lists of impaired waters] and water quality assessment reports [section 305(b) reports] to the Environmental Protection Agency (EPA).

States develop TMDLs for listed waters in accordance with priority ranking. EPA provides an 8 to 13 year time frame to complete the development of a TMDL once a waterbody is listed. These loading limits, when fully implemented, should ensure that the state's waters achieve the relevant water quality standards.

Over 37,000 TMDLs Completed



Nonpoint Source, Point Source, and Mixed TMDLs

TMDLs established for nonpoint sources far outnumber those completed for point sources. This trend mirrors nonpoint source causes of impairment dominating states' impaired waters lists. These nonpoint source TMDLs are especially challenging to implement, as the Clean Water Act is limited to voluntary controls (e.g., best management practices) on nonpoint sources.

A partial list of TMDLs by pollutant from the Assessment, TMDL Tracking and Implementation System (ATTAINS) appears below. For the full list, visit http://iaspub.epa.gov/waters10/attains_nation_cy.control?p_report_type=T.

National Cumulative TMDLs by Pollutant		
This chart includes TMDLs since October 1, 1995.		
Description of this table		
NOTE: Click on the underlined "Pollutant Group" value to see a detailed list of pollutants. Click on the underlined "Number of TMDLs" value to see a listing of those TMDLs for the pollutant Group.		
Pollutant Group	Number of TMDLs	Number of Causes of Impairment Addressed
Mercury	6,671	6,704
Pathogens	6,623	6,835
Metals (other than Mercury)	6,056	6,171
Nutrients	4,160	4,875
Sediment	2,886	3,357
Organic Enrichment/Oxygen Depletion	1,775	1,803
Temperature	1,515	1,521

Prolific TMDL development has occurred for some types of TMDLs, such as mercury and pathogen TMDLs, because of:

- numerous listings of specific causes of impairment on state impaired waters lists,
- templates created by EPA regions or states which greatly increase TMDL development efficiency, and
- EPA guidance issued regarding TMDL development for specific, common pollutants.

Mercury	Pathogens
• Ranks second nationally in causes of waterbody impairment • EPA approved the Northeast Regional Mercury TMDL – a multi-state effort -- in fiscal year 2008. This TMDL covers over 5,000 mercury-impaired waterbodies in New Hampshire as well as waterbodies in the remaining New England states and New York (http://www.epa.gov/owow/tmdl/examples/mercury.html, http://www.epa.gov/region1/eco/tmdl/approved.html) • Similarly, in MN, over 1,000 TMDLs were approved within a statewide mercury TMDL effort. • To assist other states, EPA has developed information on approaches to mercury: → <i>Listing Waters Impaired by Atmospheric Mercury Under Clean Water Act Section 303(d)</i> (http://www.epa.gov/owow/tmdl/mercury5m/) → <i>TMDLs Where Mercury Loadings are Predominantly from Air Deposition</i> TMDL checklist document (http://www.epa.gov/owow/tmdl/pdf/document_mercury_tmdl_elements.pdf)	• Rank first nationally in causes of waterbody impairment • Several EPA regions use an approval checklist, which compresses information from potentially lengthy decision rationales to simpler, briefer documents. Also, state-specific, general decision rationales applicable to all bacteria TMDLs in the state are utilized. • EPA has developed information on approaches to addressing pathogens in TMDLs: → <i>Options for Expressing Daily Loads in TMDLs</i> (http://www.epa.gov/owow/tmdl/draft_daily_loads_tech.pdf) → <i>Total Maximum Daily Loads with Stormwater Sources: A Summary of 17 TMDLs</i> (http://www.epa.gov/owow/tmdl/17_TMDLs_Stormwater_Sources.pdf) → <i>An Approach for Using Load Duration Curves in the Development of TMDLs</i> (http://www.epa.gov/owow/tmdl/duration_curve_guide_aug2007.pdf) → <i>Protocol for Developing Pathogen TMDLs</i> (http://www.epa.gov/owow/tmdl/pathogen_all.pdf)