



# Fact Sheet: Summary of EPA's '100 TMDLs Review'

## Why the need for a review of TMDLs?

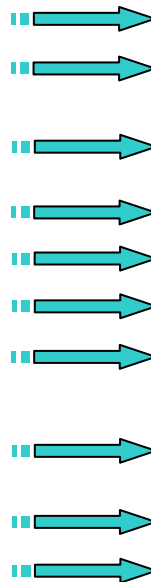
Total Maximum Daily Loads (TMDLs) are key elements of the Clean Water Act approach to restore and maintain impaired waters. In the past, many outside efforts have analyzed the status of the TMDL program. These included a 2001 report by the National Research Council (NRC) called "Assessing the TMDL Approach to Water Quality Management" as well as a review of 100 TMDL documents by the Water Environment Research Federation (WERF) in their 2003 report: "Navigating the TMDL Process: Evaluation and Improvements." The EPA conducted an internal review of 100 TMDL documents in 2005 to assess the status of the TMDL program and analyze the content and qualities of TMDLs being produced across the nation.

## Review methods

This national study selected ten TMDL reports from each of EPA's ten regional offices for a total of 100 documents for review. These documents encompassed 492 TMDLs from 47 states. In order to represent current practices as well as a comprehensive selection of EPA regions and states, the TMDLs were selected from those approved since January 1, 2004, except as necessary to include as many states as possible. The following elements of EPA's TMDL Checklist,<sup>1</sup> along with a few additional characteristics, provided the framework for the review and its findings summarized below:

### Elements Reviewed

Submittal Letter	Not reviewed
Identification of Waterbody, Pollutant of Concern	Reviewed
Applicable Water Quality Standards	Reviewed
Loading Capacity	Reviewed
Load Allocations (LAs)	Reviewed
Waste Load Allocations (WLAs)	Reviewed
Margin of Safety (MOS)	Reviewed
Consideration of Seasonal Variation	Reviewed
Reasonable Assurances for Point Sources/Nonpoint Sources	Reviewed
Public Participation	Reviewed
Technical Analysis	Not reviewed
EPA entry into the National TMDL Tracking System (NTTS)	Reviewed
Model Use	Reviewed
Follow-up Monitoring	Reviewed
Implementation Plan	Reviewed
Reduction Allocations	Reviewed
Developed under legal obligation?	Reviewed



### What we learned, at a glance...

Mixed PS/NPS TMDLs 57%; NPS-only 41%; PS-only 2%
76% of TMDLs were written to numeric standards and 24% to narrative standards
30% of TMDLs refined their LA into more than one category (on average 5 categories)
100% of TMDLs had an MOS: 58% explicit MOS: 32% implicit MOS
98% of all TMDLs considered seasonal variation
83% of all TMDLs, and 93% of PS/NPS TMDLs, addressed reasonable assurances
41% of TMDLs had more than one public meeting and/or opportunity for stakeholder involvement in TMDL development
95% of PS and PS/NPS TMDLs included permit #'s in either the TMDL document or in NTTS
79% mentioned follow-up monitoring specific to the watershed
66% of TMDLs included some form of an implementation plan; 34% of TMDLs included a plan with targets and milestones

<sup>1</sup> USEPA (1992) *Guidelines for Reviewing TMDLs under Existing Regulations*. Found at: <http://www.epa.gov/owow/tmdl/guidance/final52002.html>

### Comparison of Pollutants identified in the 100 TMDLs Review vs. the TMDL "Universe"

The 100 TMDLs review captured over 95% of the pollutant types for which TMDLs were developed as of 2005. The table below compares pollutants identified in the 100 TMDL Review versus pollutants represented in all TMDLs entered into EPA's National TMDL Tracking System (NTTS) as of the review date.

Pollutant	TMDL Review	Recent TMDLs
Pathogens	36%	25%
Nutrients/BOD/Dissolved Oxygen/Algal	20%	14%
Pesticides (incl. DDT)	11%	4%
Turbidity/Sediment/TSS	9%	9%
pH	6%	2.7%
Thermal modifications	5%	6%
Metals (not incl. Mercury)	4%	12%
PCBs	3%	1.0%
Mercury	3%	1.3%
Conductivity/TDS/Chlorides	<2%	6%
Chlorine	<1%	1.2%
Sulfates	<1%	12%
Unionized ammonia	<0.5%	2.5%
Noxious aquatic plants	<0.5%	0.1%

### Summary of Comparison

#### Over 95% of Impairment Causes were covered in the 100 TMDLs Review

#### Impairment Causes unrepresented in the 100 TMDLs Review (less than 5% of the total TMDLs in NTTS as of 2005):

- Unknown toxicity 0.2%; Biocriteria/ALU/General WQS (Benthic) 1.1%; Other inorganics 1.1%; Priority & nonpriority organics 0.8%; Habitat 0.8%; Total dissolved gas & volatile solids 0.6%; Radiation 0.2%; Taste & Odor 0.1%; Cyanide 0.02%

#### Underrepresented Impairment Causes:

- Metals, sulfates, conductivity/TDS/chlorides

#### Overrepresented Impairment Causes:

- Pathogens, nutrients, pesticides

### Comparison of Findings on Load Reduction Allocations:

Reductions allocations	100 TMDLs Review	WERF Review
Only PS TMDLs: PS reduced	2%*	8%
Only NPS TMDLs: NPS reduced	38%	26%
PS/NPS: NPS load reduced	15%**	16%
PS/NPS: PS loads reduced	1%	5%
PS/NPS: Both loads reduced	39%	23%
No allocations made; no load reductions required; or indeterminate	4%	22%

\*it is unclear whether the single PS only TMDLs in our study received reductions. They could potentially belong in the bottom category.

\*\*Half of this number are TMDLs that received reductions for NPS & Stormwater but not for non-stormwater point sources.

### Other Notable Observations...

- 79% incorporated critical conditions into the TMDL calculation
- 18% of TMDLs described as phased TMDLs
- 6% of TMDLs allocate for future growth
- 15 documents had allocations as concentrations
- 4 documents had only % reductions as load/wasteload allocation
- 89% of TMDLs appeared in documents containing more than 1 TMDL
- Model complexity: 43% low; 24% medium; and 22% high
- Significant stakeholder involvement found in 40% of TMDLs, most often in watershed TMDLs
- 78% of TMDLs calculated the existing load (86 documents)