

## BUREAU OF WATER QUALITY PLANNING

# Total Maximum Daily Loads (TMDLs)

### Overview

The Bureau of Water Quality Planning's (BWQP) total maximum daily load (TMDL) program works with stakeholders to improve water quality in polluted rivers, streams, and lakes throughout Nevada. TMDLs identify the maximum amount of a pollutant that can occur in a waterbody and still meet water quality standards. TMDLs determine pollutant budgets and are the starting point for restoring waterbodies to a healthy condition.

### Development

The federal Clean Water Act requires the BWQP to document all polluted waterbodies in Nevada on the 303(d) List of Impaired Waters and then develop a TMDL for each water body on the list according to their priority ranking. Nevada's 303(d) List of Impaired Waters and the priority ranking for developing TMDLs can be found in the Nevada Water Quality Integrated Report.

TMDLs point sources of pollution receive wasteload allocations (WLA) which are implemented through National Pollutant Discharge Elimination System (NPDES) permits. Nonpoint sources of pollution, including natural background sources are assigned load allocations (LA) which are implemented through voluntary measures in Nevada. BWQP's 319(h) Nonpoint Source Program provides grant funding to manage nonpoint sources of pollution and improve water quality.

Expressed mathematically, the TMDL equation is:

$$\frac{\text{TMDL}}{\text{Loading Capacity}} = \frac{\Sigma \text{WLA} + \Sigma \text{LA} + \text{MOS} + \text{RC}}{\text{Allocations}}$$

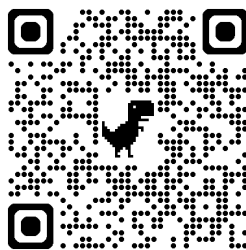
**Where:**

**WLA** = Wasteload Allocation (loading from point sources)

**LA** = Load Allocation  
(loading from nonpoint sources including natural background)

**MOS** = Margin of Safety

**RC** = Reserve capacity for future growth  
(optional, but recommended)



### Section 303(d) Long-Term Vision

In 2022, the USEPA published an updated Vision for the Section 303(d) Program which renewed the 2013 vision and goals. The 303(d) program strives to strategically plan and prioritize activities, engage partners, and analyze and utilize data to develop water quality assessments, plans, and implementation approaches to restore and protect the Nation's aquatic resources. The "2022 Vision" introduced four new focus areas for the Section 303(d) program: Environmental Justice, Climate Change, Tribal Water Quality and Program Development, and Program Capacity Building. **Please see the QR code for more information.**

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## Document Process

The minimum elements that should be present in a TMDL document include:

- Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking
- Description of Applicable Water Quality Standards and Numeric Water Quality Target(s)
- Loading Capacity- the maximum amount of a pollutant a water can receive without violating water quality standards.
- Load Allocations (LAs) and Wasteload Allocations (WLAs)
- Margin of Safety- accounts for assumptions or lack of knowledge about linking loading allocations with water quality impairment and can be either explicit or implicit.
- Consideration of Seasonal Variation
- Consideration of Critical Conditions
- Reasonable Assurance for point source/nonpoint sources - U.S. Environmental Protection Agency (USEPA) guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions for the TMDL to be approvable.
- Monitoring Plan to Track TMDL Effectiveness
- Public Participation - may include providing data and information to the BWQP as well as reviewing and commenting on Nevada's 303(d) List of Impaired Waters and draft TMDLs.
- Implementation Plan- describes how and when pollution prevention, control, or restoration actions will be accomplished and who is responsible for these actions.

## Effective Implementation

TMDL development and approval is only the beginning of the process that leads to waterbody restoration. TMDL implementation is a critical step in the waterbody recovery process and requires a concerted effort from all stakeholders. While TMDLs calculate numeric water quality target(s) for attainment of water quality standards, an implementation plan puts the TMDL into action by outlining the steps necessary to reduce pollutant loads through regulatory and voluntary activities. **Implementation plans are not required by the federal Clean Water Act but should be submitted as part of the TMDL document.**

Based on the numeric water quality target(s) in the TMDL document, watershed stakeholders develop an implementation plan to mitigate sources of pollution within the watershed and restore impaired uses. An implementation plan provides a framework for stakeholders to use to reach the goals established in the TMDL document. An implementation plan identifies stakeholders, provides details of actions needed to achieve pollutant load reductions, outlines a schedule of those actions, and specifies monitoring needed to document progress toward meeting water quality standards.



## Approval

According to the federal Clean Water Act, the USEPA reviews and either approves or disapproves a TMDL. If the USEPA disapproves of a Nevada TMDL, then it must develop a replacement TMDL.



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