OVERVIEW OF CLEAN WATER ACT SECTION 303(d) LISTINGS AND TOTAL MAXIMUM DAILY LOADS (TMDL)

ACWA November Nutrients Permitting Workshop

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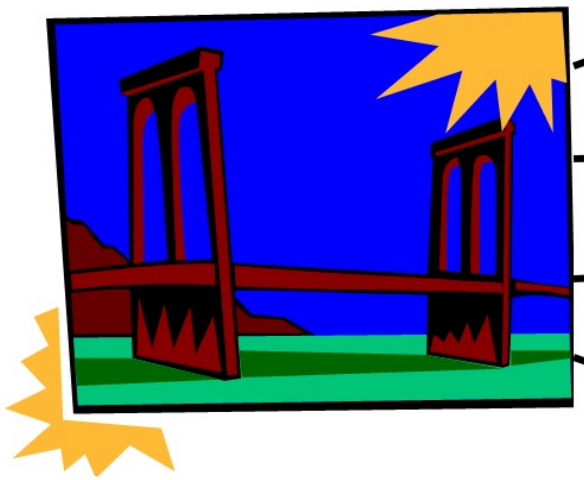
BRIDGING WATER QUALITY GOALS AND ACTIONS NEEDED FOR RESTORATION

Water Quality Data and Goals → 303(d) Program → Implementation

Standards and Criteria

Ambient Monitoring Data

Discharge Monitoring Data



Nonpoint Sources

Point Source Permits

Restoration Activities

Resource Management

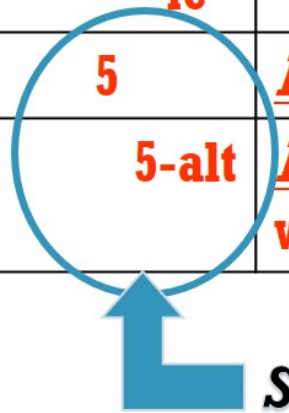
WHAT IS THE 303(d) LIST?

- Consists of waters that:
  - Do not meet WQS even after the implementation of technology-based limitations or other pollution control requirements, often referred to as "impaired waters."
  - Are not expected to attain WQS in the next listing cycle (2 years), referred to as "threatened waters."

Applicable Regulations: 40 CFR 130.7

FIVE INTEGRATED REPORT CATEGORIES

Category	Description
1	All designated uses (DU) met
2	Some, but not all, DUs met
3	Can not determine if any DUs met
4	*Impaired/threatened* –TMDL not needed
4a	TMDL completed
4b	TMDL alternative
4c	Non-pollutant causes
5	*Impaired/threatened* by pollutant –TMDL needed
5-alt	*Impaired/threatened*—TMDL needed but lower priority while alternative restoration approach is pursued



Section 303(d) List

INTEGRATED REPORTS AND DATA

- Refer to state/territory/tribe website for submitted Integrated Reports and information on comment periods.
- Go to Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS) site to access reported data at different scales.
- A redesigned ATTAINS was launched in early 2018.

https://www.epa.gov/waterdata/attains

https://ofmpub.epa.gov/waters10/attains_index.home

WHAT HAPPENS TO WATERS ON THE 303(d) LIST?

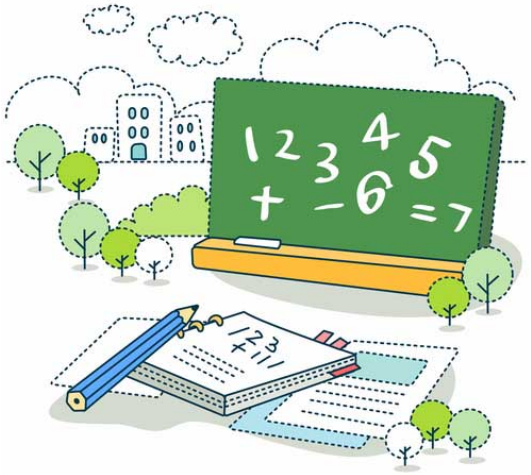
- For waters identified on the 303(d) list:
  - TMDLs are established for all **pollutants** preventing or expected to prevent attainment of WQS.
  - TMDLs are established at levels necessary to attain and maintain the **applicable narrative and numerical WQS**.

Applicable Regulations: 40 CFR 130.7

WHAT IS A TMDL?

- A calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

The TMDL provides
the math and the path
for waterbody restoration



TMDL CALCULATION

$$TMDL = \sum WLA_i + \sum LA_i + MOS$$

$\sum WLA_i$: Sum of waste load allocations (point sources)

$\sum LA_i$: Sum of load allocations (nonpoint sources)

MOS: Margin of Safety

Completed for each waterbody/pollutant combination

WASTE LOAD ALLOCATIONS FOR POINT SOURCES

Ditch/Conveyance

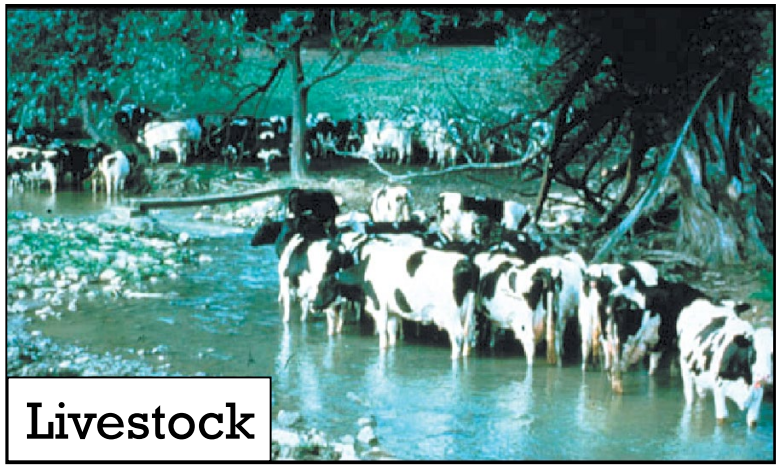
Concentrated Animal Feeding Operation (CAFO)

Pipe

Note: EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. §130.2(h) and (i)). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

LOAD ALLOCATIONS FOR NONPOINT SOURCES


Agricultural lands


Livestock

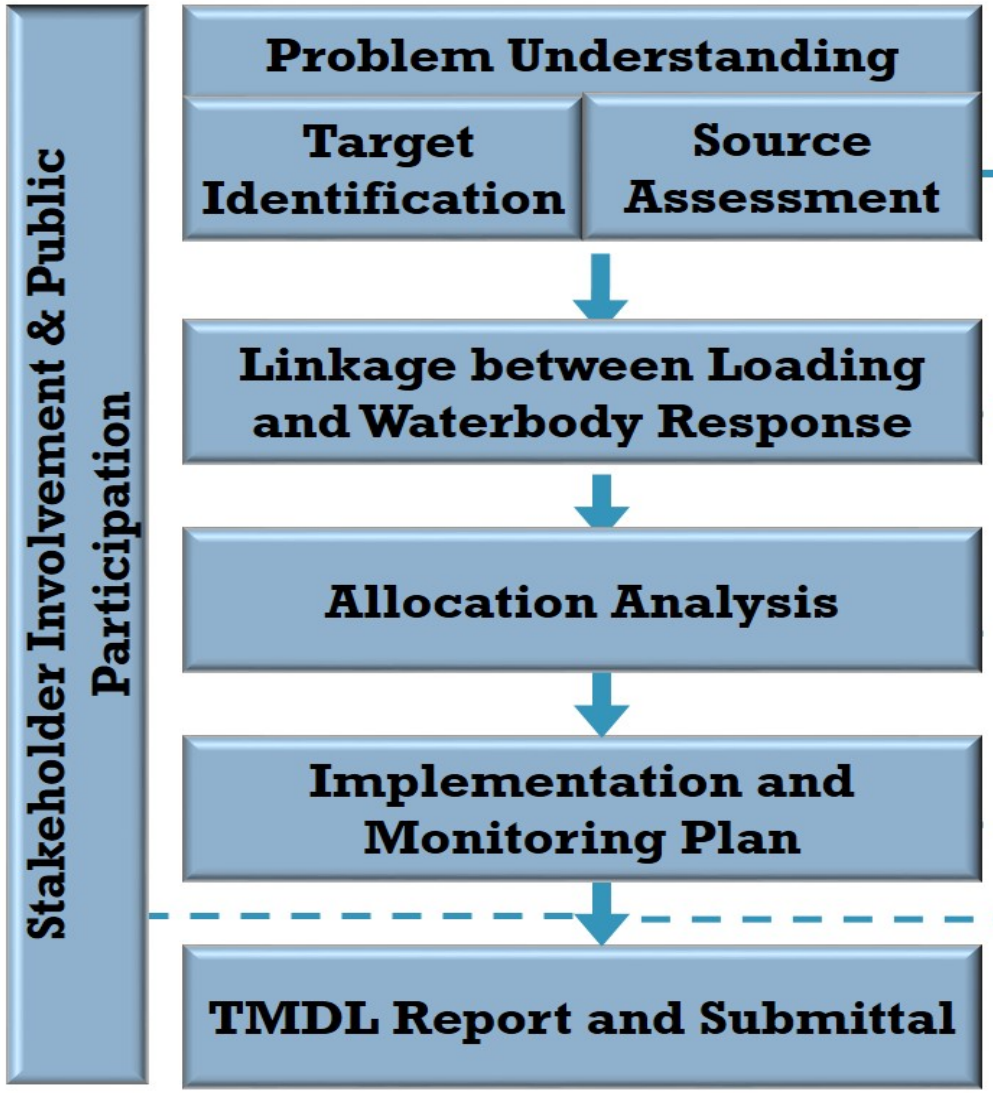

Forest land

Nonpoint sources are diffuse sources that do not need NPDES permits

MARGIN OF SAFETY

- The margin of safety:
  - Takes into account **lack of knowledge** concerning the relationship between effluent limitations and water quality (CWA §303(d)(1)(C), 40 C.F.R. §130.7(c)(1)).
  - Can be **explicit** (e.g., 10%) or **implicit** (conservative assumptions in modeling, etc.)

Elements in a TMDL Submittal



1. Description of waterbody, pollutant of concern, pollutant sources, and priority ranking
2. WQS and numeric WQ target
3. Loading Capacity (including critical conditions)
4. LAs
5. WLAs
6. MOS
7. Seasonal Variation
8. Reasonable Assurance
9. Monitoring Plan
10. Implementation Plan
11. Public Participation

From *Guidelines for Reviewing TMDLs under Existing Regulations issued in 1992* (May 20, 2002)

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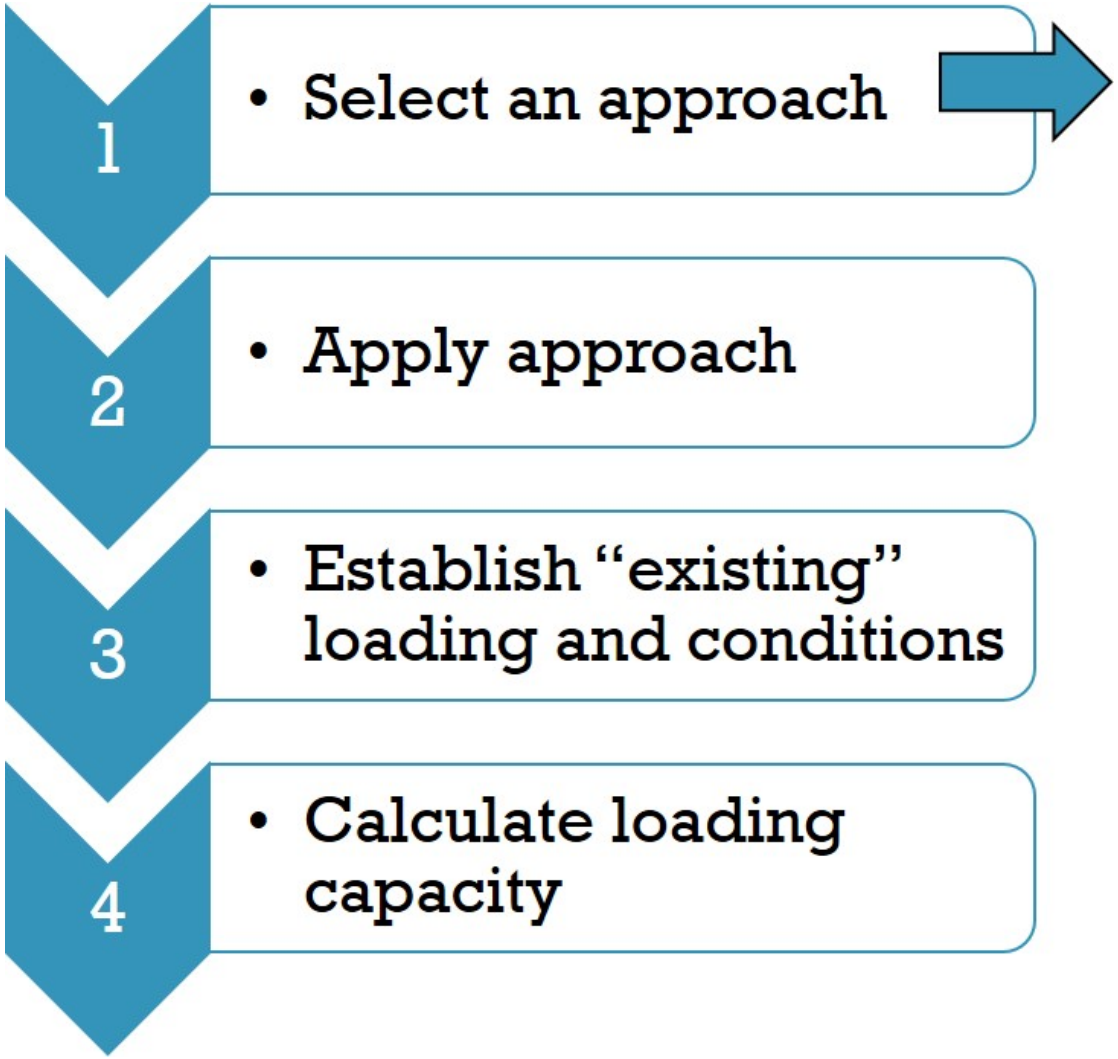
LINKAGE ANALYSIS



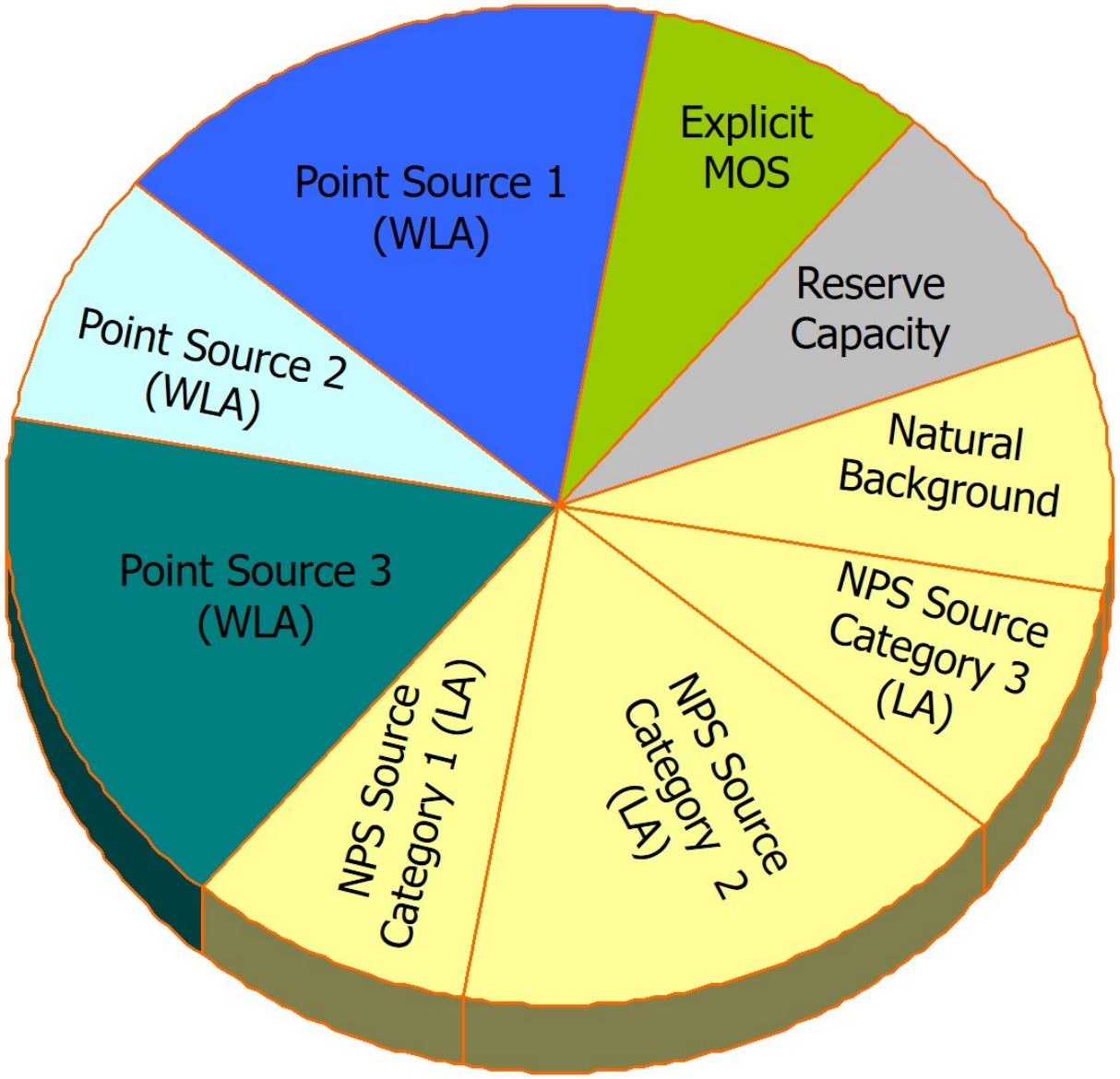
- Select an analytical/modeling approach based on:
  - Nature and complexity of the receiving water
  - Nature of pollutant – temporal & spatial considerations
  - Sources of pollutants
  - Expression of the Water Quality Criterion
  - Quantity and quality of data and information
  - Budget and available resources

WATER QUALITY MODELING TOOLS

- Typically used to recreate the dynamics of the pollutant in the waterbody and evaluate pollutant reduction scenarios that meet water quality standards.
- Models can vary widely in complexity, data requirements, and application. For instance, some may be more suitable for specific pollutants or waterbody types.
- Surface Water Quality Modeling Training – Series of webinars that provide a basic working understanding of frequently used models.
  - https://www.epa.gov/waterdata/surface-water-quality-modeling-training

LOAD ALLOCATIONS

- TMDLs are expressed as
  - Mass (e.g., pounds per day)
  - Toxicity (e.g., toxic units)
  - Energy (e.g., heat in temperature TMDLs)
  - Or "other appropriate measure" (CFR130.7)
- Emphasis on TMDLs expressed as daily loads



WHAT HAPPENS AFTER A TMDL IS DONE?

- TMDLs are not self implementing under 303(d).

- Point Sources:
  - Permit limits consistent with WLA are enforceable under CWA through National Pollutant Discharge Elimination System (NPDES)
  - Issued by EPA or states with delegated authority

- Nonpoint Sources:
  - No federal regulatory enforcement program
  - Primarily implemented through state/tribal/local NPS management programs (few with regulatory enforcement)

PUBLIC PARTICIPATION

- Public/stakeholders can engage at different stages of the listing and TMDL process
  - Provide data and information to the states
  - Review and comment on draft 303(d) list
  - Review and comment on draft TMDLs
  - Assist in the development of 3rd party TMDLs

RESOURCES

- Total Maximum Daily Load to NPDES Permits Training
  - https://www.epa.gov/npdes/npdes-training#tmdl
- EPA 303(d) Resources Page
  - https://www.epa.gov/tmdl/resources-tools-and-databases-about-impaired-waters-and-tmdls
- New Vision for Implementing the CWA 303(d) Impaired Waters Program Responsibilities
  - https://www.epa.gov/tmdl/new-vision-implementing-cwa-section-303d-impaired-waters-program-responsibilities

ALTERNATIVES UNDER THE 303(d) VISION

- A plan pursued in the near term that in its totality is designed to attain WQS
- Under certain or unique circumstances, may be more effective tool to achieve WQS than TMDLs
- States and EPA to work together to determine which is the more effective tool to pursue in near-term to achieve WQS
- Depending on the type of alternative plan, the waterbody may remain on the impaired waters list until standards are attained, or a TMDL is approved

QUESTIONS

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