

Clean Water Act Section 303(d) Listings and Total Maximum Daily Loads (TMDLs)

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Session Overview

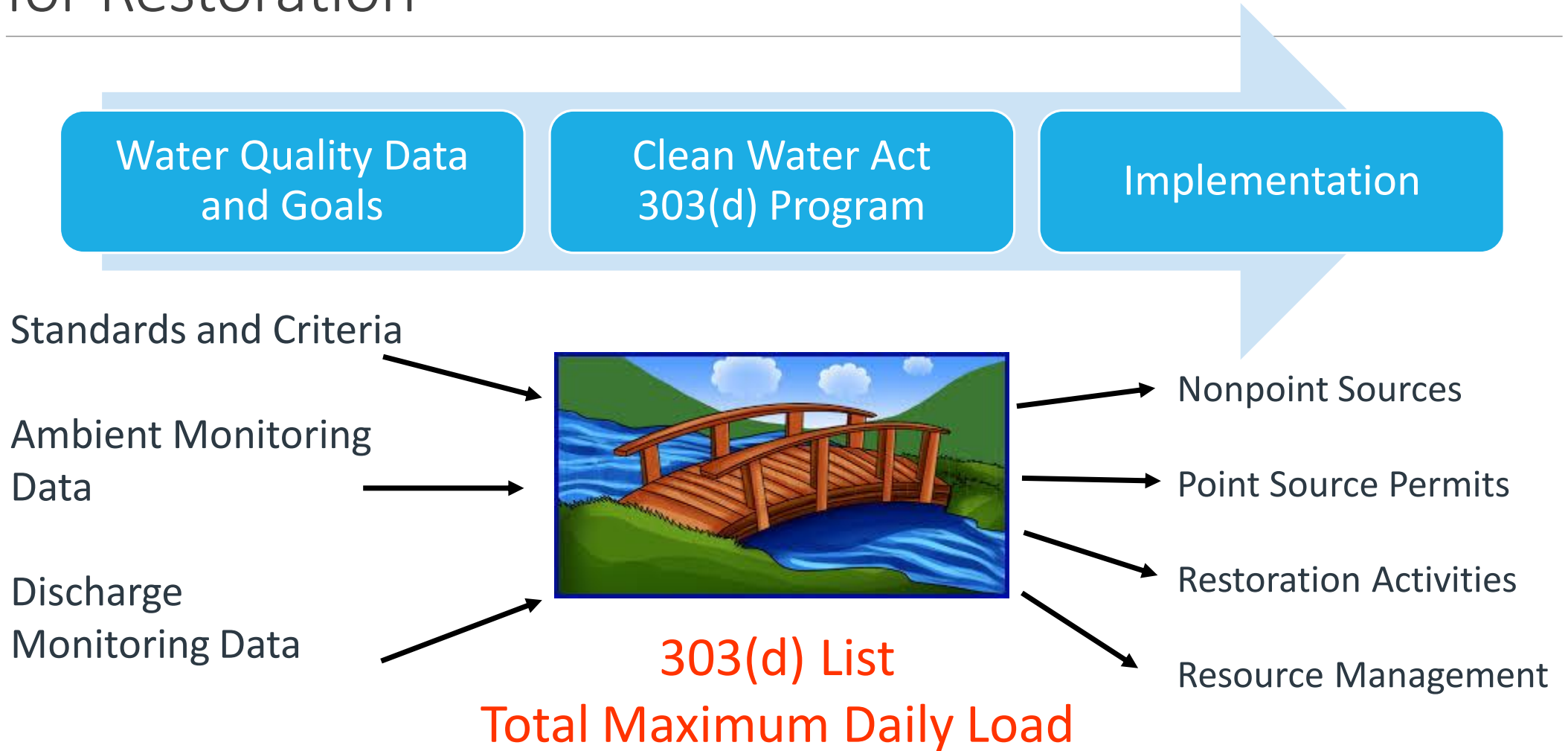
This session provides a brief introduction to the Clean Water Act (CWA) 303(d) Program and the CWA 303(d) Program Vision

Participants will learn about:

- Where the program fits in the CWA implementation framework
- What the regulatory background and requirements are for the program
- The process to developing Impaired Waters Lists & TMDLs
- Where to find reports and submissions
- History of the program and drivers for Vision
- Key components outlined in Vision Memo

Program Introduction

Bridging Water Quality Goals and the Actions needed for Restoration



What is the 303(d) List?

The 303(d) list consists of waters that:

- Do not meet water quality standards even after the implementation of technology-based limitations or other pollution control requirements, often referred to as “impaired waters.”
- Are not expected to attain water quality standards in the next listing cycle (2 years), referred to as “threatened waters.”

Applicable Regulations: 40 CFR 130.7

What are the 303(d) Listing Roles?

States, authorized tribes and territories:

- **Identify waters** not meeting WQS based on “all existing and readily available information”
- **Establish priorities** for TMDL development
- **Develop schedule** of TMDLs to be developed within 2 years
- **Request and Respond** to public comments on their draft 303(d) list
- **Submit** the final 303(d) to EPA on April 1st of each even year for review and action

EPA has 30 days to approve or disapprove a submitted 303(d) list

- If EPA disapproves a list, EPA has 30 days to develop list for the state, tribe, or territory

How are waters placed on a 303(d) List?

Monitoring

- Collect and evaluate monitoring data to determine condition of the waterbody.
- Assemble all readily available data and information.

Assessment

- Use assessment methodologies and procedures, consistent with their WQS, to determine whether waters are impaired.

Listing

- Develop a list of those impaired waters every two years with public participation and submit to EPA.

Integrated Reporting Categories

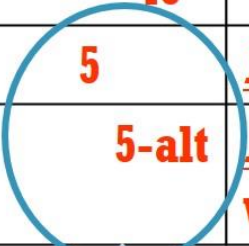
IMPAIRED, BUT DOES NOT REQUIRE A TMDL:

- **Category 4A:** A TMDL to address a specific segment/pollutant combination has been approved or established
- **Category 4B:** A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements
- **Category 4C:** A use is impaired, but the impairment is not caused by a pollutant

IMPAIRED, REQUIRES A TMDL (this is the 303(d) list)

- **Category 5/303(d) Listed Waters:** Available data and/or information indicate that at least one designated use is not being supported or is threatened, **and a TMDL is needed**

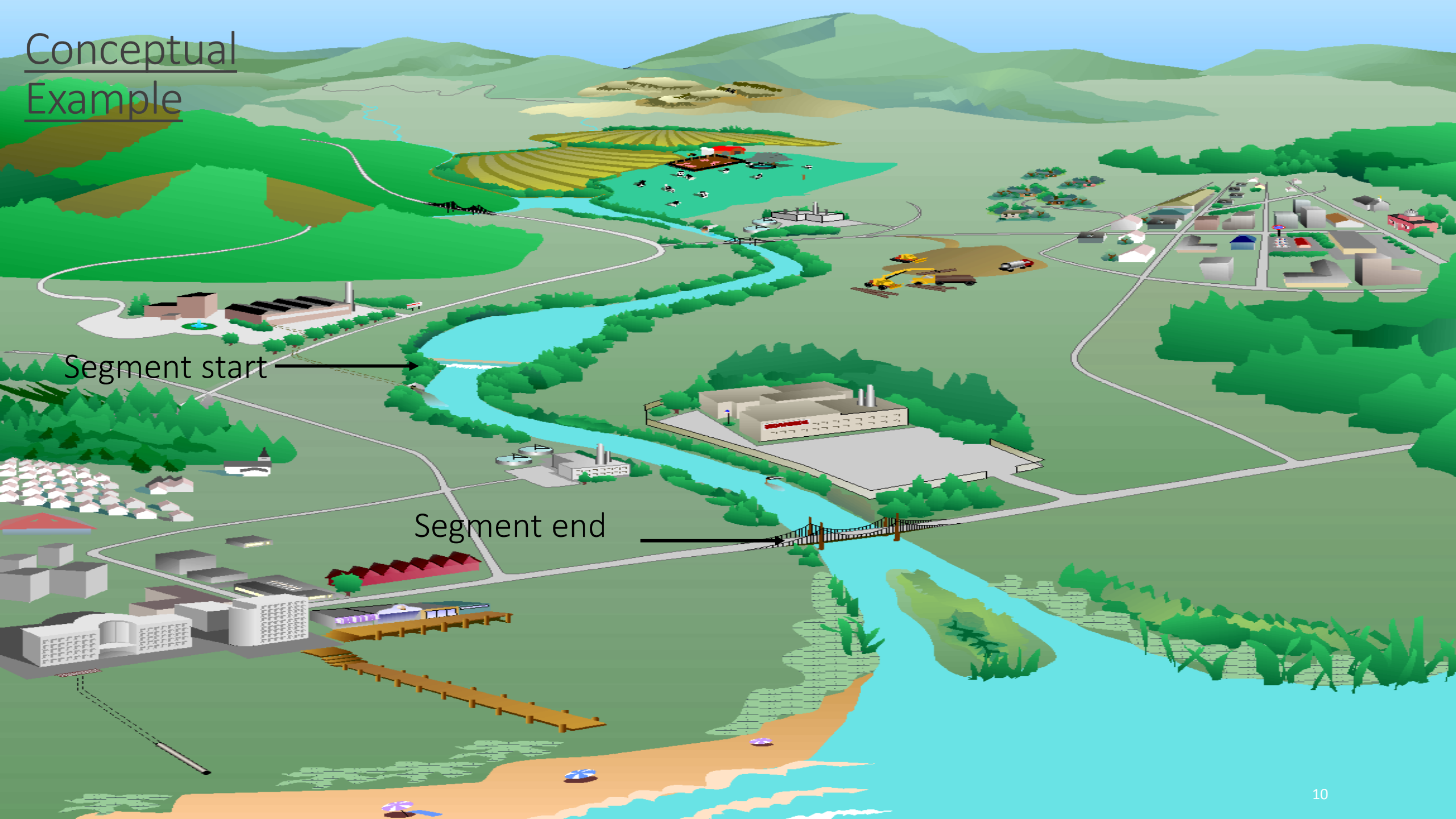
Category	Description
1	All designated uses (DU) met
2	Some, but not all, DUs met
3	Can not determine if any DUs met
4	<i>Impaired/threatened</i> –TMDL not needed
4a	TMDL completed
4b	TMDL alternative
4c	Non-pollutant causes
5	<i>Impaired/threatened</i> by pollutant –TMDL needed
5-alt	<i>Impaired/threatened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



Section 303(d) List

Five Integrated Report Categories

Conceptual Example



Segment start

Segment end

Access Reports and Data

Refer to state/territory/tribe website for 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.

- <https://www.epa.gov/waterdata/attains>

“How’s My Waterway” provides access to data for multiple water programs in a user-friendly format at the national, state and local level.

- <https://www.epa.gov/waterdata/how-s-my-waterway>

What happens to Waters on the 303(d) List?

For waters identified on the 303(d) list:

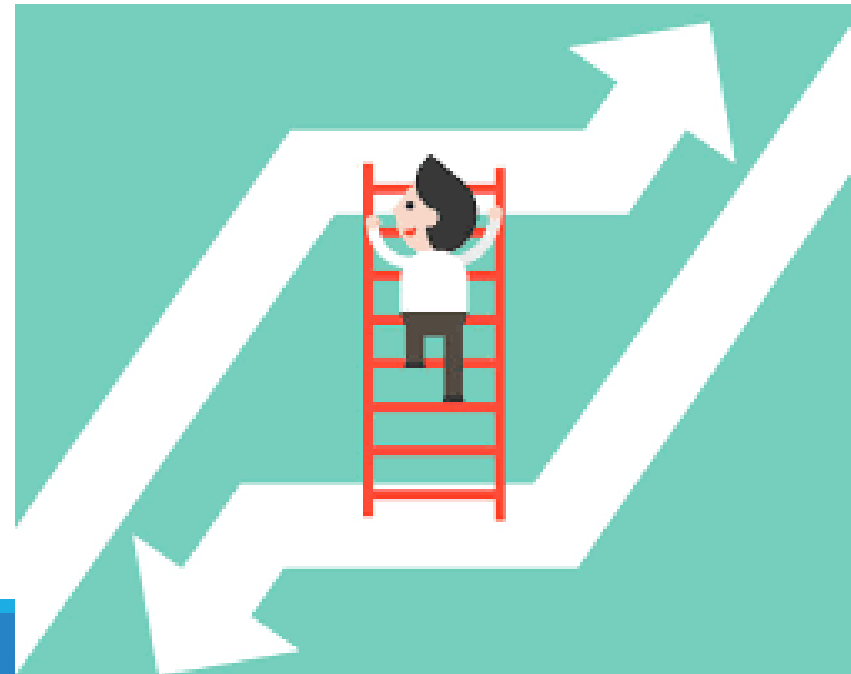
- TMDLs must be established for all **pollutants** preventing or expected to prevent attainment of WQS
- TMDLs must be established at levels necessary to attain and maintain the **applicable narrative and numerical WQS**

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

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

$\sum \text{WLA}_i$: Sum of waste load allocations (point sources)

$\sum \text{LA}_i$: Sum of load allocations (nonpoint sources and natural background)

MOS: Margin of Safety

This calculation is completed for each waterbody/pollutant combination

Waste Load Allocations for Point Sources



Pipe

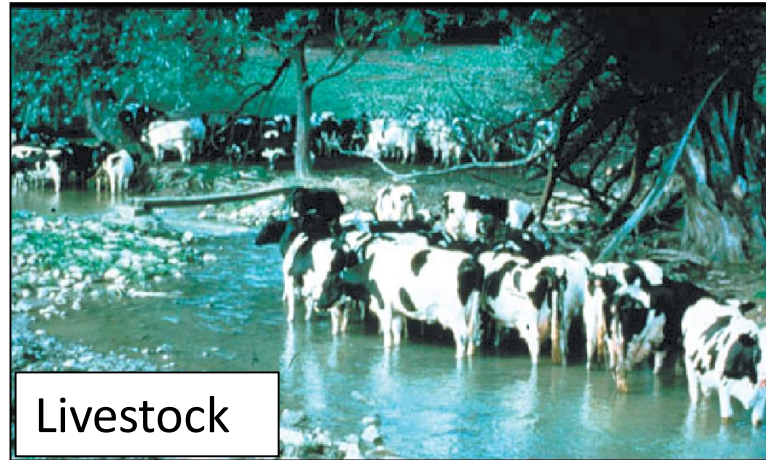


Concentrated Animal Feeding Operation (CAFO)



Stormwater

Load Allocations for Nonpoint Sources



Nonpoint sources are diffuse sources that do not need NPDES permits.

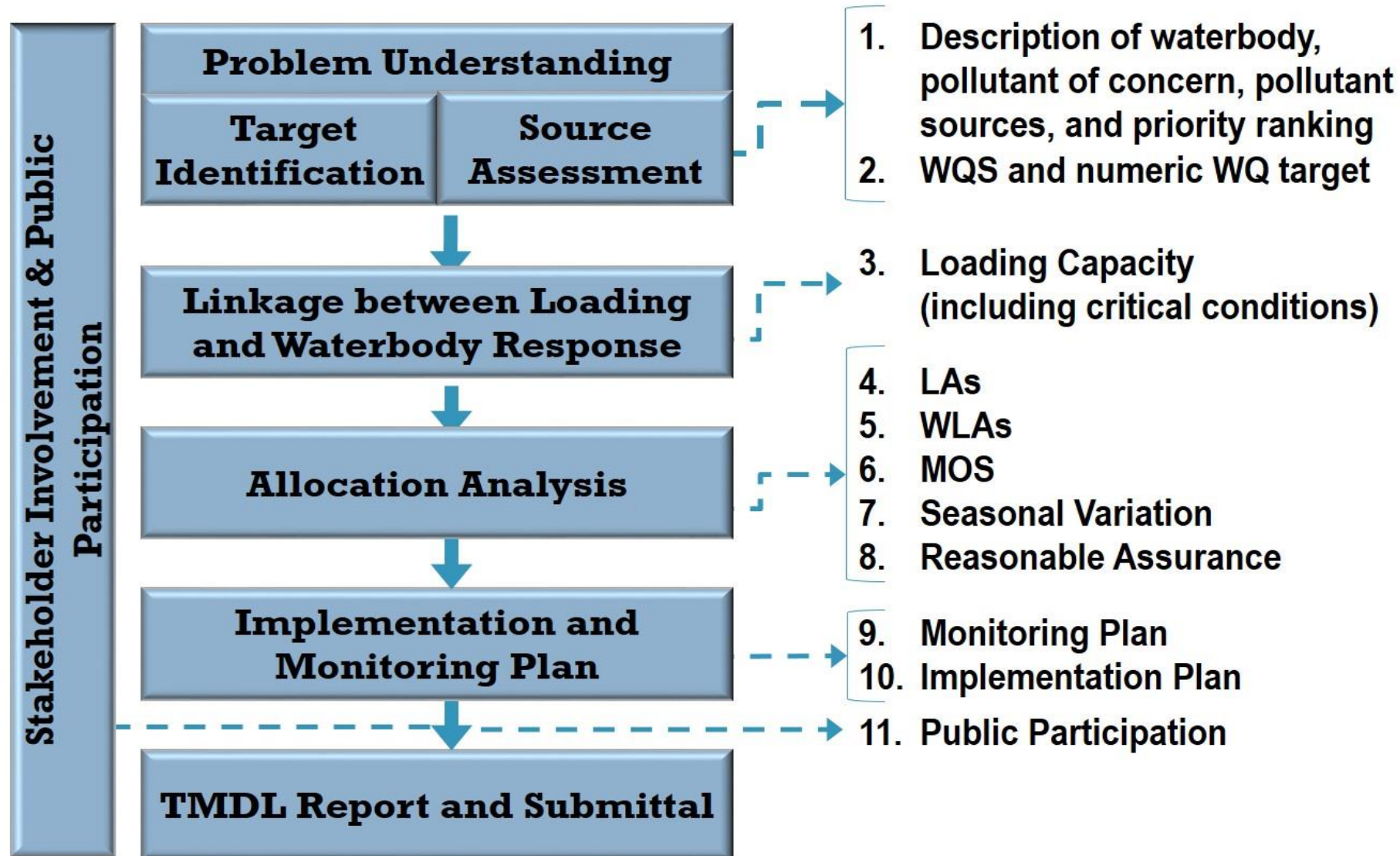


Margin of Safety

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



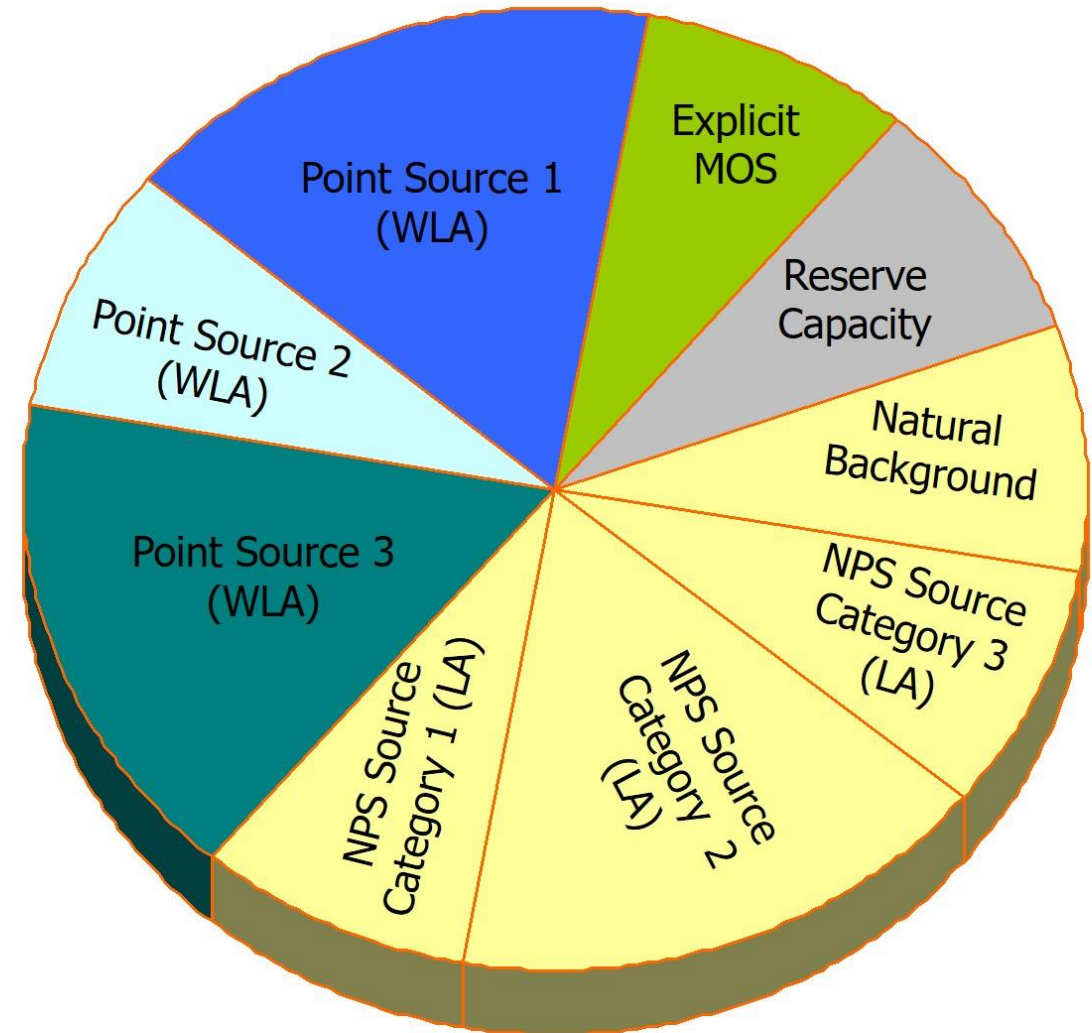
TMDL Process

TMDL Allocation

TMDLs are expressed as

- Mass (e.g., pounds per day)
- Toxicity (e.g., toxic units)
- Energy (e.g., heat in temperature TMD)
- Or “other appropriate measure” (CFR:

There is an emphasis on TMDLs to be 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

Building in time and attention to public participation can help in creating more comprehensive, robust, and defensible TMDLs

Water quality Modeling Resources

Upcoming Training – EPA/ACWA Water Quality Modeling Workshop (September 19-23, 2022; Chicago, IL)

- For more information, please contact Jasper Hobbs with ACWA (jhobbs@acwa-us.org) or EPA's Water Modeling Workgroup Water_Modeling_Workgroup@epa.gov.
- Additional workshop information at <https://www.acwa-us.org/event/2022-water-quality-modeling-workshop/>

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>



Questions

CWA 303(d) Program History and Vision



Connecticut Department of Energy and Environmental Protection

2011: Preliminary Discussions on 303(d) Improvements

Water Quality
Priorities

Flexible

Longer Time
Period

Adaptive
Approaches

Partnerships

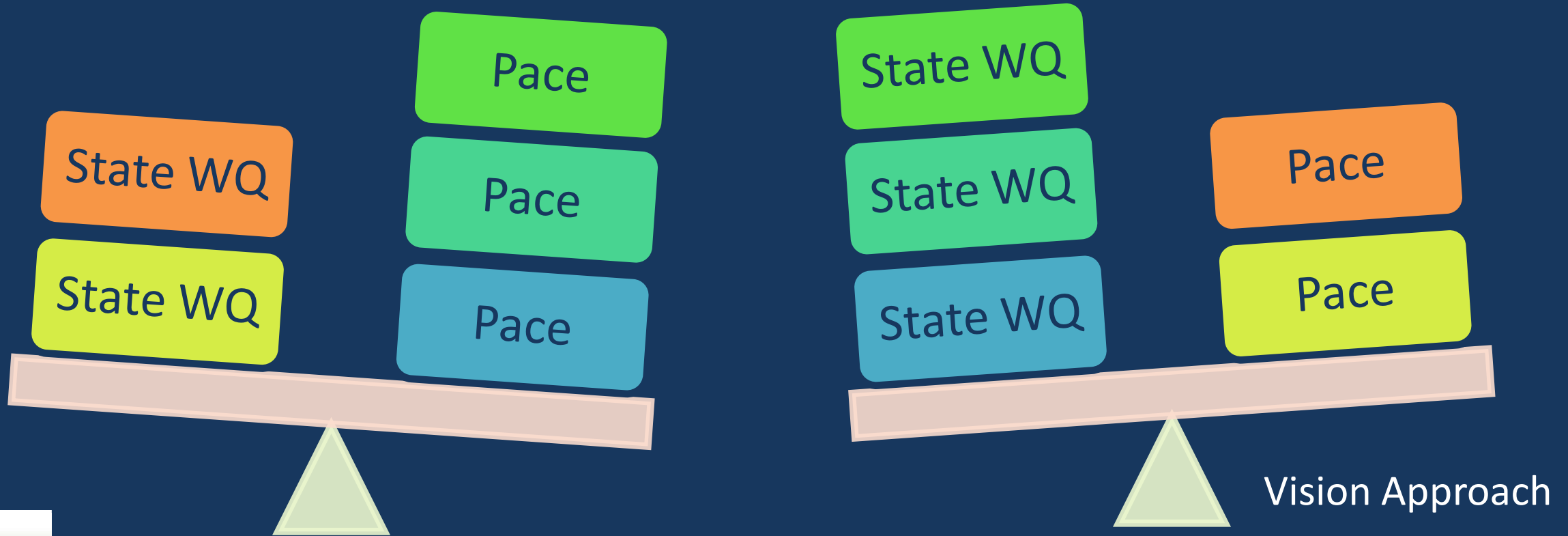
Integrated

Improve
Outcomes

- Collaboration between EPA and States
- A renewed approach to focusing existing programs to achieve WQ goals
- Works within existing regulatory frameworks



Setting Planning Priorities Under 303(d)



303d Vision Statement & Goals

- Effective integration of Implementation efforts
- Water quality restoration and protection
- Based on assessment information
- Planning objectives are evaluated and prioritized
- TMDLs and other approaches used to achieve WQ goals
- Improved collaboration between States, federal agencies, tribes, stakeholders, and the public



Prioritization



State systematically prioritizes watersheds or waters for restoration and protection



303d Vision: Prioritization

- Many options for how to set priorities

- Pollutant
- Water body
- Public or agency interest
- Administrative
- Implementation
- Other

- Key Concepts:

- Have a plan
- Be flexible to address changes over time
- Reserve capacity

Not a new concept, but a new focus

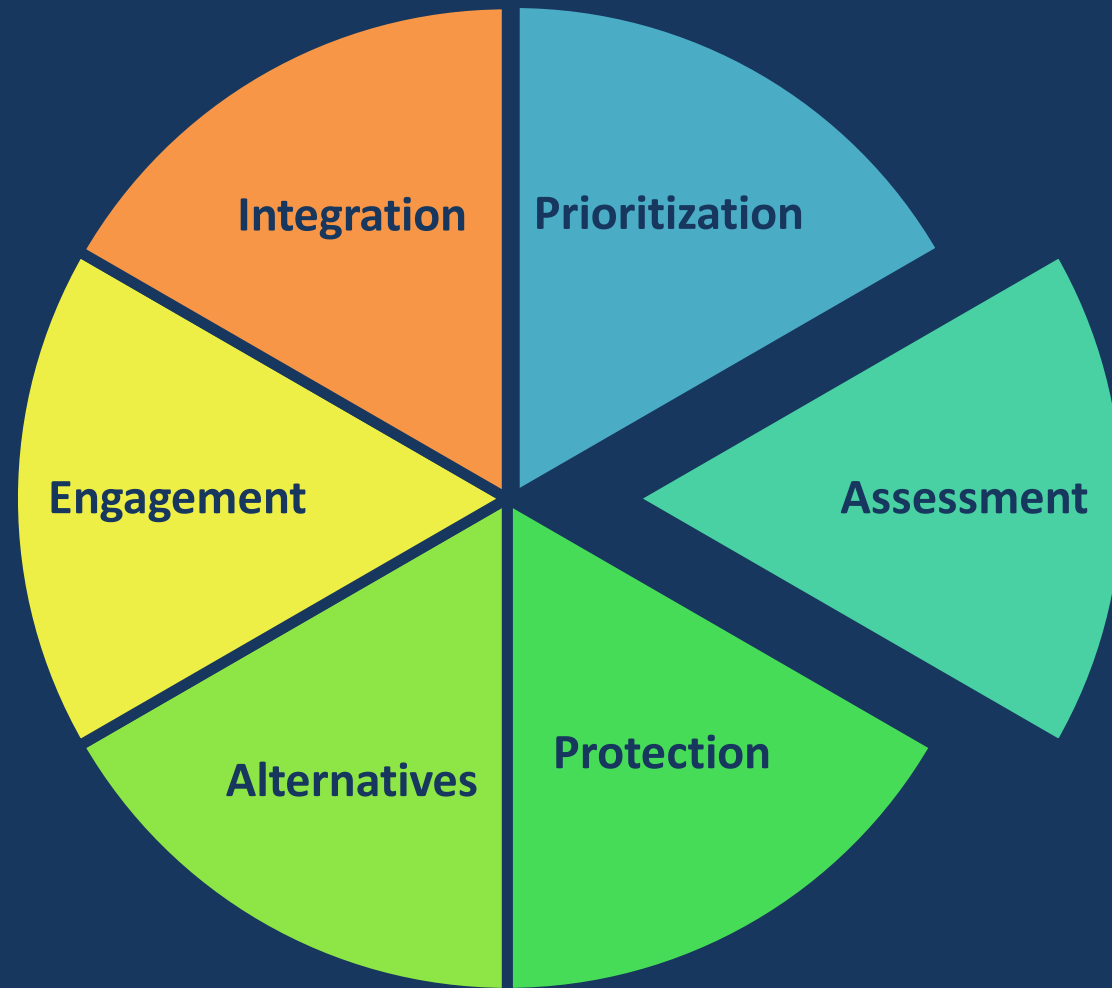


Example: CT Vision Priorities

Priorities set based on collaboration within CTDEEP, with other Agencies, Stakeholders and Public, including a public process



Assessment



States assess the quality of waters in state priority areas



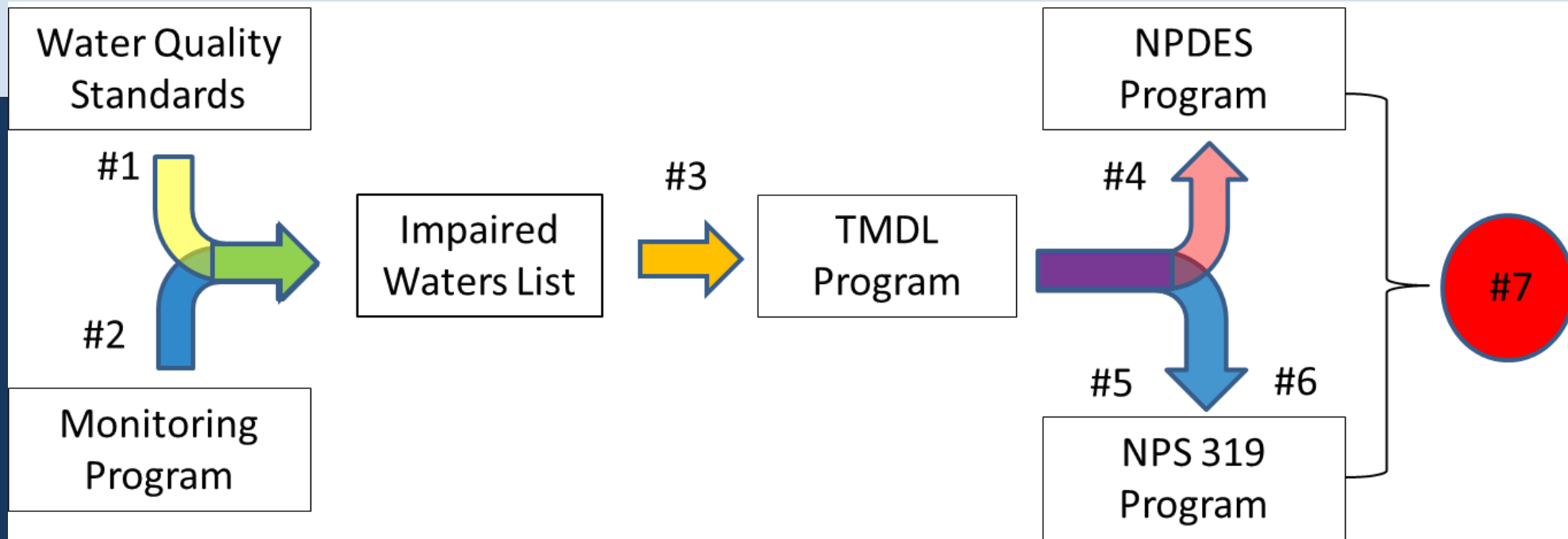
303d Vision: Assessment

- Vision priority projects to be supported by appropriate data and modeling
 - Assessment
 - TMDL or alternative development
 - Re-evaluation after implementation

- Key Concepts:
 - Use data to support project from start to finish

Not a new concept





1. Validation Monitoring – Used to validate water quality standards.
2. Baseline Monitoring – aka Ambient, Inventory, or Assessment monitoring, used to characterize existing WQ conditions to establish a database
3. TMDL Monitoring – Specific to fulfilling modeling needs for TMDL development
4. Compliance Monitoring – Conducted to determine if permit requirements are met
5. Implementation Monitoring – Presence / Absence of BMPs, no WQ data
6. Project Monitoring – Water Quality data assessment of BMPs
7. Effectiveness Monitoring - Assesses impact of collective work as an overall plan evaluation



Protection

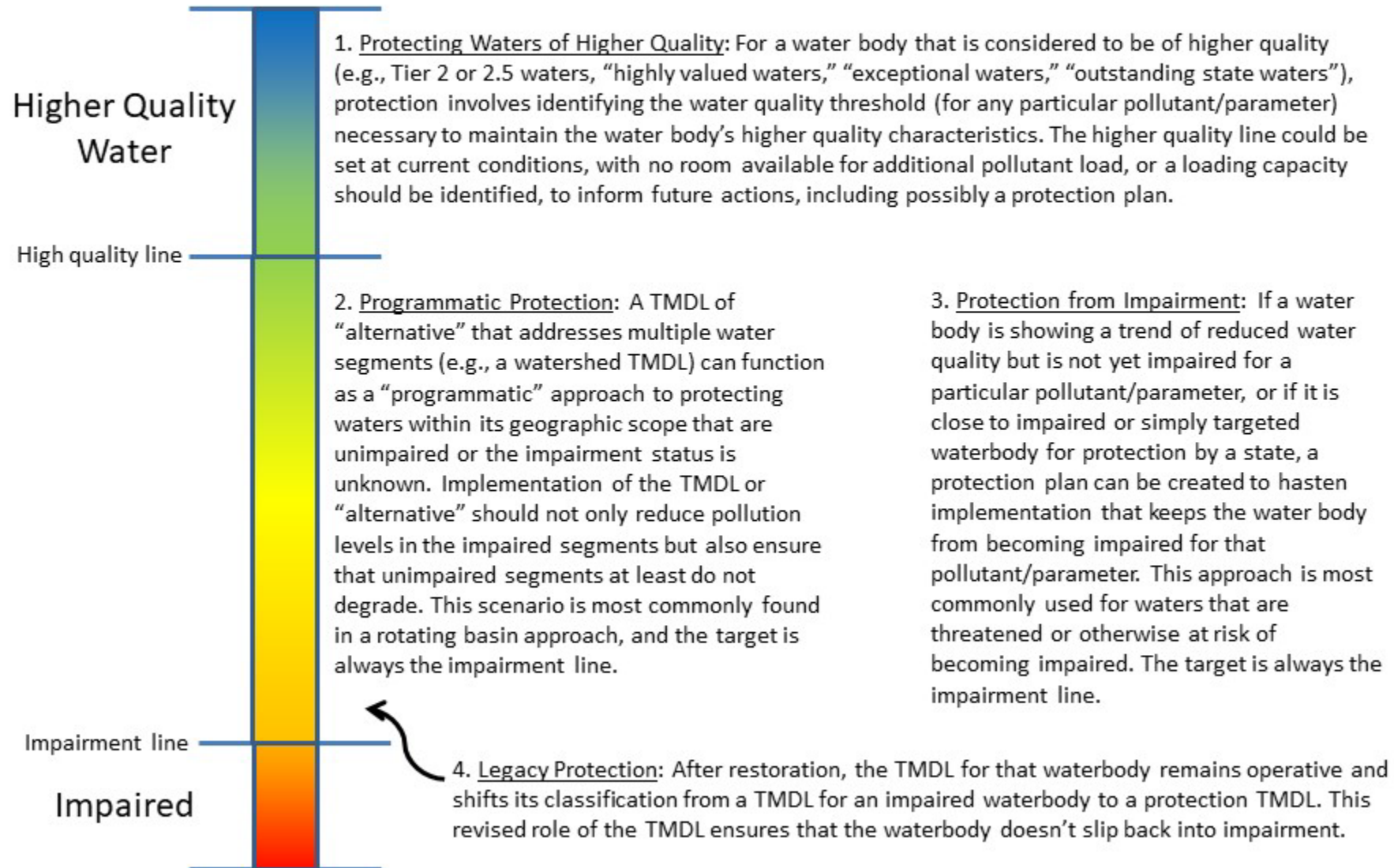


States may establish priorities based on both restoration of impaired WQ and protection of unimpaired waters



Four Types of Protection

Ways that CWA 303(d) Programs approach protection



303d Vision: Protection

- Vision formally endorses actions centered on protection in addition to restoration
 - Implementation of Antidegradation Policy
 - Protection of non-impaired waters

- Key Concepts:
 - Support CWA goals to restore and maintain
 - Prevent impairments
 - Consistent with watershed approach

Not a new concept, but a new focus if State chooses to include



Alternatives



Programs may use traditional TMDLs or use TMDL alternatives to address water quality priorities



303d Vision: Alternatives

- **The Right Tool for the Right Job**
- Potential options include:
 - Direct to Implementation
 - TMDL surrogates
 - Cooperative Agreements
 - Trading

- **Key Concepts:**
 - Adaptive management
 - Flexibility
 - Accountability
 - TMDLs if other options don't work
 - Relates to schedule to develop a TMDL

New Concept

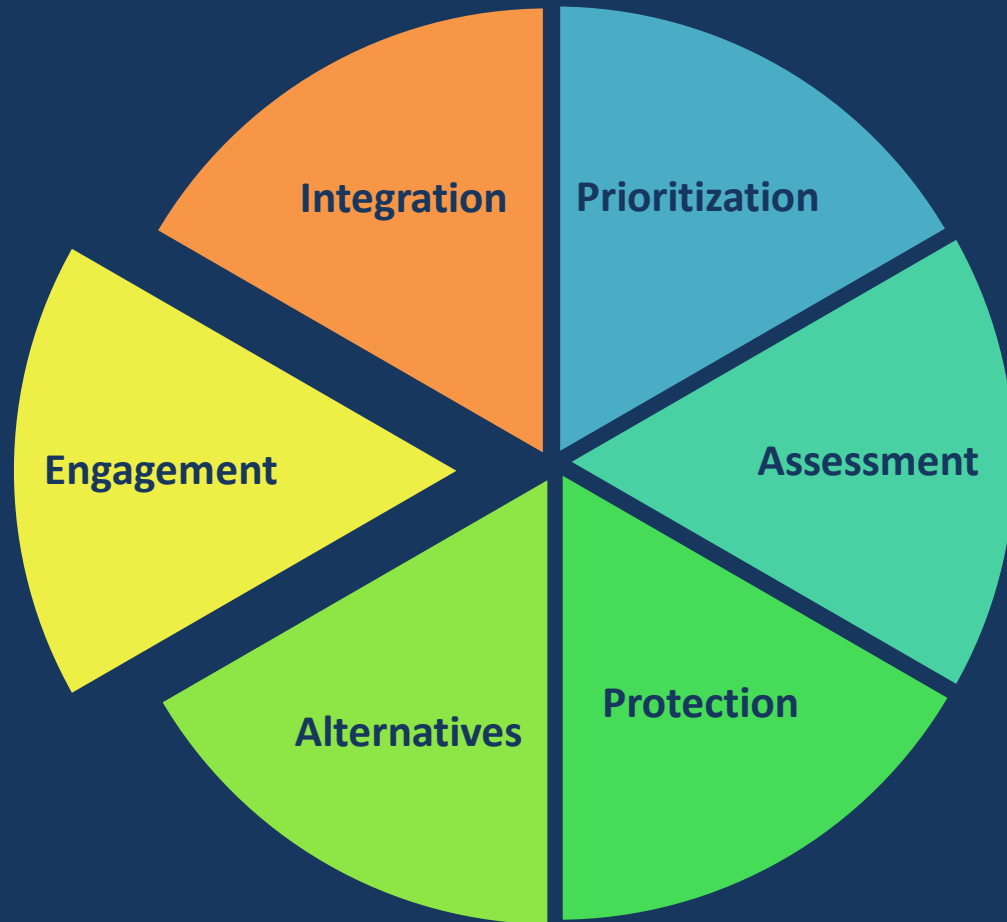


Alternatives: Examples

- Watershed-based plans
- Direct to implementation without a TMDL
- Cooperative agreements: Pollutant Types or Watershed
- Regulatory control: Regulations, Bans or Restrictions
- Direct to NPDES Permitting without a TMDL
- Contaminated Site Remediation Plans
- CSO Control Plans without a TMDL



Engagement



Engage the public and stakeholders in meaningful ways and communicate transparently to build an effective partnership for WQ priorities



303d Vision: Engagement

- Improve outreach, communication and involvement
 - State Environmental Agency
 - Other federal and state partners
 - Public
 - Stakeholders
 - Regulated Community

- Key Concepts:
 - Have a plan
 - Build partnerships
 - Improve outcomes

Not a new concept,
but a new focus



Integration



Coordinate across a broad range of state and federal programs to establish common implementation priorities in support of State's WQ goals



303d Vision: Integration

- Engage implementation programs to achieve Water Quality Goals
 - TMDLs not self-implementing
 - Other federal and state partners
 - 319 / NPS Programs
 - Other CWA Programs
 - Federal & State Programs
 - Non-government interests

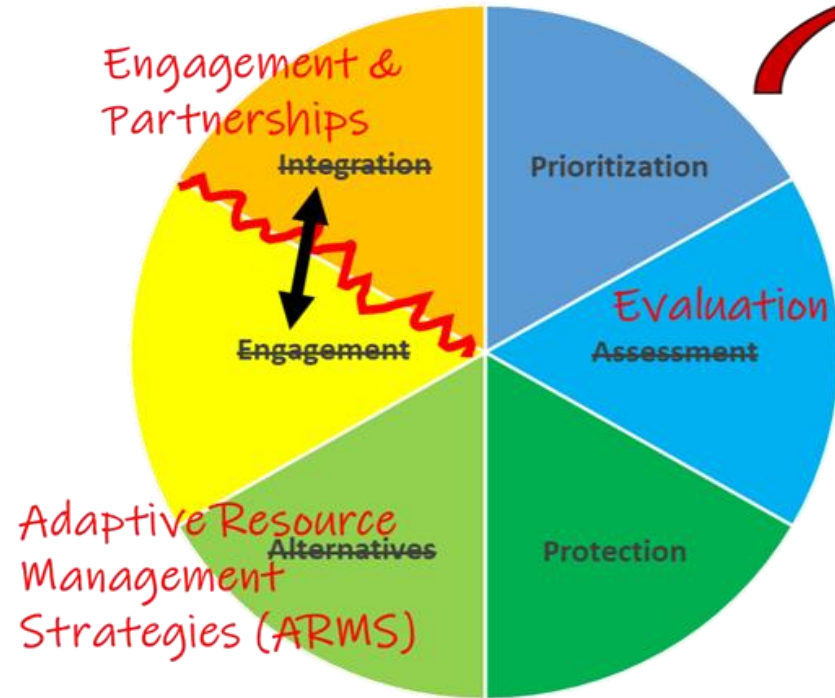
- Key Concepts:
 - Build partnerships
 - Improve outcomes
 - Follow a project through till WQ restoration or protection is achieved

Not a new concept,
but a renewed
collaborative effort



Revisiting Vision 1 to Draft Vision 2

Suggested Changes



Framework Elements 2022 & Beyond



2022-2032 CWA 303(d) Program Vision

The Clean Water Act Section 303(d) Program provides for effective integration of efforts to assess, restore, and protect the nation's aquatic resources



Vision Resources

- [Overview of Prioritization Frameworks](#) (ELI, 2016)
- Access to [accepted Alternative Restoration Plans](#)
- [Protection Frequently Asked Questions \(Draft\)](#)
- White papers outlining opportunities for funding protection projects through the:
 - [Clean Water State Revolving Fund](#)
 - [Drinking Water State Revolving Fund](#)
- Evaluating the Water Quality Effects of TMDL Implementation: How States Have Done It and the Lessons Learned (ELI Compendium, *coming soon*)

How's My Waterway? Protect Page (Community Level)

Let's get started!

22312 OR

Fairfax County, VA, VITA, Esri, HERE, Garmin, USGS, EPA, NPS | U.S. Geological Survey, Gap Analysis P... Powered by Esri

22312, Alexandria, Virginia
WATERSHED: Cameron Run (020700100302)

- Watershed Health
- Drinking Water
- Monitoring
- Identified Issues
- Restore
- Protect**

Protect

Show Text

You can help keep your water clean. Together we can protect water for future generations.

Watershed Health and Protection

Tips

Learn about watershed health scores in relation to your state, the location of designated Wild and Scenic Rivers and if there are any protection projects or protected areas in your watershed.

Expand All

- Watershed Health Scores** >
- Wild and Scenic Rivers** >
- Protected Areas** >

[How's My Waterway - Home \(epa.gov\)](https://www.epa.gov/how-my-waterway-home)



Protection: ↑ Compendium of State Approaches

• How State CWA 303(d) Programs Are Protecting Waters

• “Protection,” in the context of the Clean Water
Act (CWA), is action taken to maintain the
integrity of the Nation’s waters, to retain their
environmental and societal benefits.





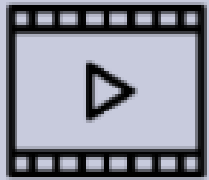
Websites



Maps



Story Maps &
Dashboards



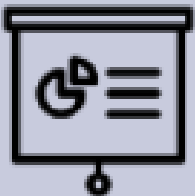
Videos



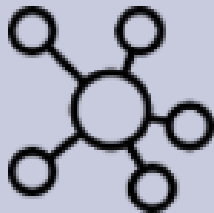
Report Cards
&
Newsletters



Signs &
Handouts



Presentations



Social Media



Scholastic
Programs

Approaches to Clean Water Communication

[Link to StoryMap](#)

[Link to Terminology Document](#)



Questions

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