

TMDL Fundamentals

Water Quality Standards

Overview



Clean Water Act



The Clean Water Act

- Objective: “restore and maintain the chemical, physical and biological integrity of the Nation’s waters” (CWA §101(a))
- Interim goal: “water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water”, wherever attainable (CWA §101(a)(2))

Clean Water Act: History

- Rivers and Harbors Act of 1899
 - Intent to protect navigable waterways from pollution
 - Concept of a permit
 - Minimal Enforcement
- Water Pollution Control Act of 1948
 - Technical assistance to states
- Water Pollution Control Act of 1956
 - Financial assistance to states for treatment plants

Clean Water Act: History(2)

- Water Quality Act of 1965
 - First federal water quality standards program, for interstate waters
- Clean Water Restoration Act of 1966
 - Limited to Interstate Waters
- 1969 Cuyahoga River Fire
 - Time Magazine Article attracts national attention
 - Caught on fire previously
- Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act)





Clean Water Act: Provisions

- Section 101 - Goals and Policy
- Section 301 - Technology Based Effluent Limits
- Section 302 - Water Quality Based Effluent Limits
- Section 303 - WQ Standards and Implementation
- Section 304 - Information and Guidelines
- Section 305 - Water Quality Inventory
- Section 306 - National Performance Standards
- Section 307 - Toxics and Pretreatment Standards
- Section 308 - Inspection, Monitoring and Entry
- Section 309 - Enforcement

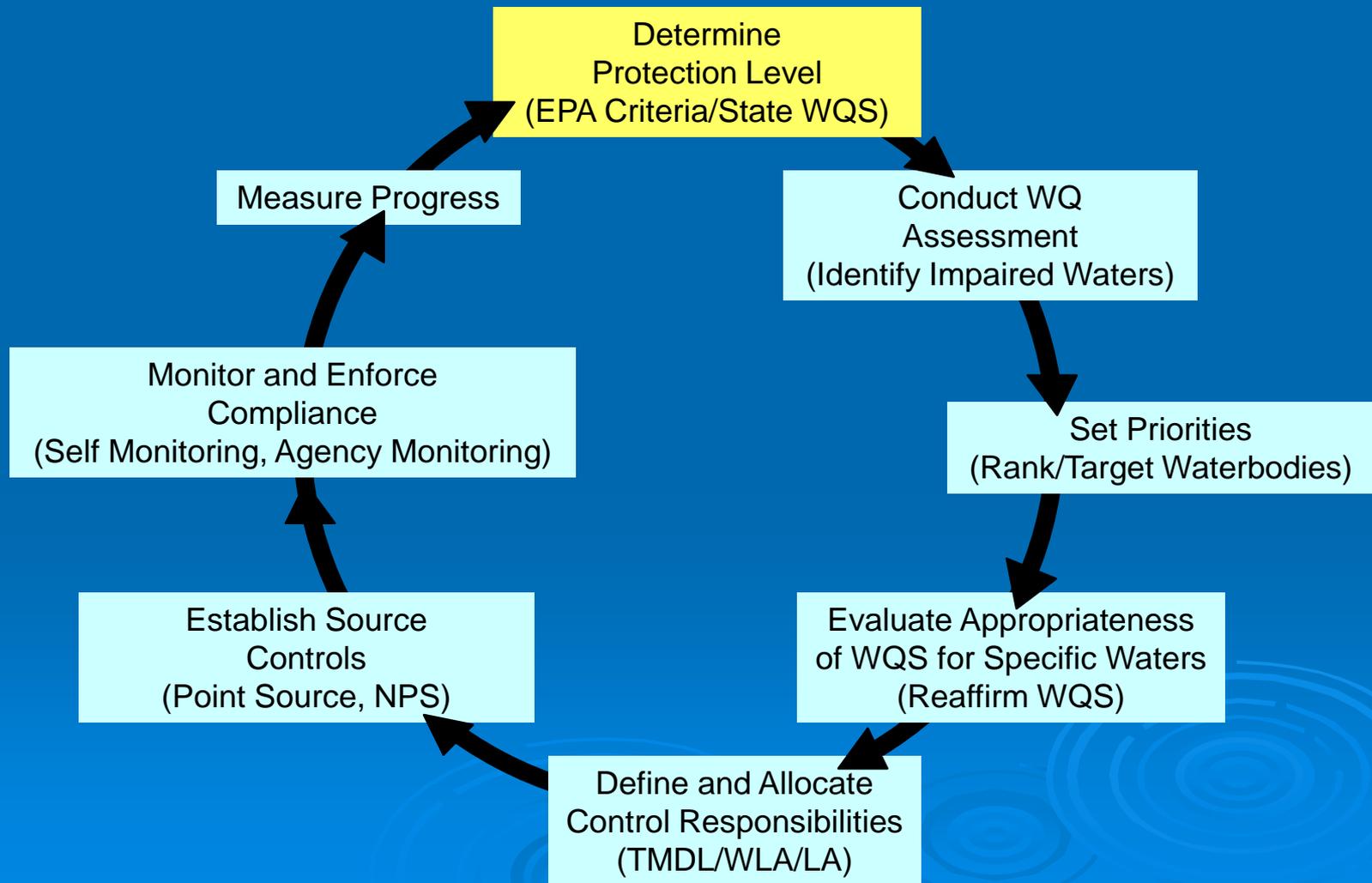
Clean Water Act: Provisions (cont.)

- Section 316 - Thermal Discharges
- Section 319 - Nonpoint Source Management
- Section 320 - National Estuary Program
- Section 401 - State/Tribal Certification
- Section 402 - Point Source Permitting (NPDES)
- Section 404 - Dredge and Fill Permitting
- Section 505 - Citizen Suits
- Section 510 - State/Tribal Authority
- Section 516 - Reports to Congress
- Section 518 - Indian Tribes

CWA: Technology Based Approach (Section 301)

- Effluent limits for industrial dischargers to surface waters and Publicly Owned Treatment Works (POTWs)
- Effluent Limits for Publicly Owned Treatment Works (“secondary treatment”)
- Based on performance of treatment and control technologies, not impacts to receiving waters

Water Quality Based Approach



What are Laws?

- Passed by Congress, signed by the President
- Published in the United States Code (U.S.C.) (<http://www.gpoaccess.gov/>)
- Clean Water Act is 33 U.S.C. 1251-1587

What are regulations? (1)

- Have the force and effect of law
- A “must”
- Involves “notice and comment” rulemaking
- May involve Office of Management & Budget (OMB)
- Agency develops rationale and proposed regulation and publishes it and requests comment in the Federal Register (FR):
<http://www.regulations.gov>

What are regulations? (2)

- Agency considers all comments, revises proposed regulation accordingly, and publishes final rule
- Once regulation is published in Federal register as a Final Rule, it is Codified by being published in the Code of Federal Regulations (CFR) (<http://www.gpoaccess.gov/>)

What are regulations? (3)

- 50 volumes in the Code of Federal Regulations, called Titles, each focused on a particular subject
- Almost all environmental regulations are at Title 40 “Protection of Environment”
- <http://www.gpoaccess.gov/>
- **Basis for disapproval of water quality standards**

What is Guidance or Policy?

- “should”
- notice and comment not required
- not binding on Agency or Public
- may involve OMB Review
- **not a basis for disapproval**
- Governed by section 553 of the Administrative Procedure Act: <http://www.archives.gov>
- example: <http://www.epa.gov/waterscience/standards/policy.htm>

Water Quality Standards

(see 40 CFR 131)

- Provisions of State/Tribal (or Federal) Law
 - Designated Uses
 - Criteria to protect those uses
 - Antidegradation policy

- Water Quality Standards are to:
 - Protect public health or welfare
 - Enhance the quality of the water
 - Serve the purposes of the Act

Water Quality Standards, cont'd

(see 40 CFR 131.3)

➤ Water Quality Standards

- Establish water quality goals for a waterbody
- Provide a regulatory basis for controls beyond technology-based limits

Water Quality Standards

- Designated Uses (40 CFR 131.10)
- Criteria to protect those uses (40 CFR 131.11)
- Antidegradation Policies +
Implementation Procedures (40 CFR 131.12)
- Implementation Policies (40 CFR 131.13)

Designated Uses (40 CFR 131.10)

- Protection and propagation of fish, shellfish and wildlife
- Recreation in and on the water
- Public water supply
- Agriculture
- Industry
- Navigation
- Others

Water Quality Criteria (40 CFR 131.3, 131.11)

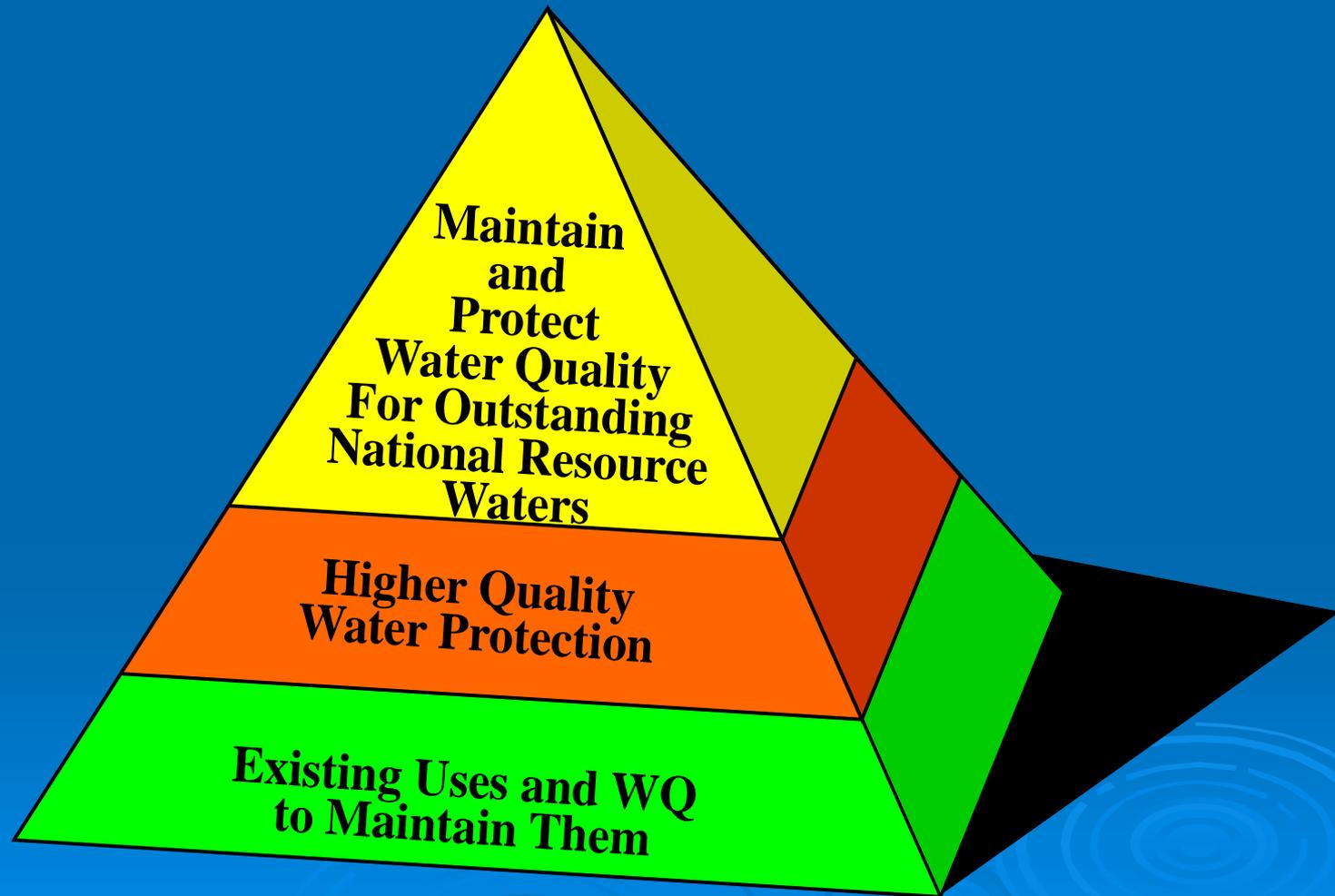
- Discussed in Sections 304(a) and 303(c) of the Act
- A concentration, level or narrative statement
- Represent a level of water quality that supports a particular use
- When criteria are met, water quality will protect the designated use

Water Quality Criteria

1 Word – 2 Meanings

- Scientifically defensible guidance developed and published by EPA per CWA § 304(a)
 - Basis for Federal promulgation when necessary
- Adopted part of State/Tribal WQS
 - Section 303(c)

Antidegradation Policies (40 CFR 131.12)



General policies (40 CFR 131.13)

- States and authorized tribes may include in their standards policies affecting application and implementation, such as:
 - Mixing zones
 - Low flows
 - Variances
- Subject to EPA review and approval

WQS: States and Authorized Tribes

- Have the primary authority to adopt, review and revise water quality standards (Section 303(c) of the CWA)
- May adopt standards more stringent than recommended by EPA (Section 510 of the CWA)
- May certify Federally licensed activities that result in discharge to waters of the US (Section 401 of the CWA)

State/Tribal Submittal Must Include:

(40 CFR 131.20(c))

- Use(s) for each waterbody
- Criteria sufficient to protect those uses
 - With methodologies for any site specific criteria
- An antidegradation policy and implementation methods consistent with 40 CFR 131.12
- Certification that the standards were duly adopted according to state or tribal law
- Other general supporting information

Federal Promulgations (40 CFR 131.22)

- If EPA disapproves AND
- If state or tribe does not adopt specified changes within 90 days...
- THEN the EPA Administrator must promptly propose and promulgate a replacement standard
- OR in any case where the Administrator determines new or revised standards are necessary to meet the requirements of the CWA

Waters of the U.S.

- Used or maybe susceptible for use in interstate or foreign commerce
- Interstate Waters
- Other waters, the use, degradation or destruction of which could affect such commerce
- Impoundments of waters so defined
- Tributaries of the above
- the Territorial Sea
- Wetlands adjacent to the above

Overview: Take Home Messages

- **States, Territories and Authorized Tribes have important and unique roles in developing, adopting, reviewing and approving water quality standards.**
- **The Clean Water Act features both Technology Based and Water Quality Based approaches to pollution control.**
- **The Act itself, and regulations developed by notice and comment rulemaking, are the basis for EPA's review and approval of adopted state and tribal water quality standards.**

Overview: Take Home Messages (2)

- **The Clean Water Act establishes a national goal of “water quality which provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water”, wherever attainable**

Overview: Take Home Messages (3)

- **State/Tribal Water Quality Standards:**
 - **Establish water quality goals and targets for a waterbody**
 - **Are used to determine attainment and non-attainment**
 - **Provide the regulatory basis for controls beyond technology-based limits.**