

# Water Quality Standards: What They Are, How They Work, and Why They Matter



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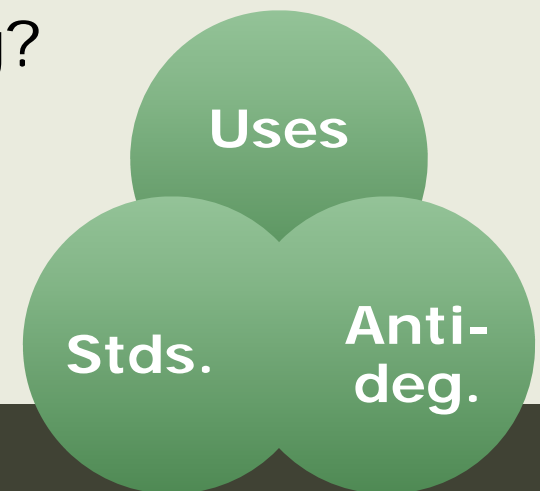
# Outline

- What are water quality standards?
  - ▣ Beneficial Uses
  - ▣ Standards
  - ▣ Antidegradation
- How are standards developed and used?
- Summary
- Q & A



# What Are WQ Standards?

- Fundamental tool of the Clean Water Act
- CWA objective:
  - ▣ “Restore and maintain the chemical, physical and biological integrity of the nation’s waters”
  - ▣ “Fishable and swimmable” interim goal
- Address three key questions:
  1. What and who are we protecting?
  2. What conditions are protective?
  3. How do we maintain high water quality?



# Who/What is Protected?

- Waters assigned beneficial uses
- Minnesota Statutes (Section 115.44, Subd. 3):
  - "...best usage in the interest of the public..."
- Clean Water Act (Section 303(c)(2)(A)):
  - "...use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agriculture, industrial, and other purposes, and also...use and value for navigation."



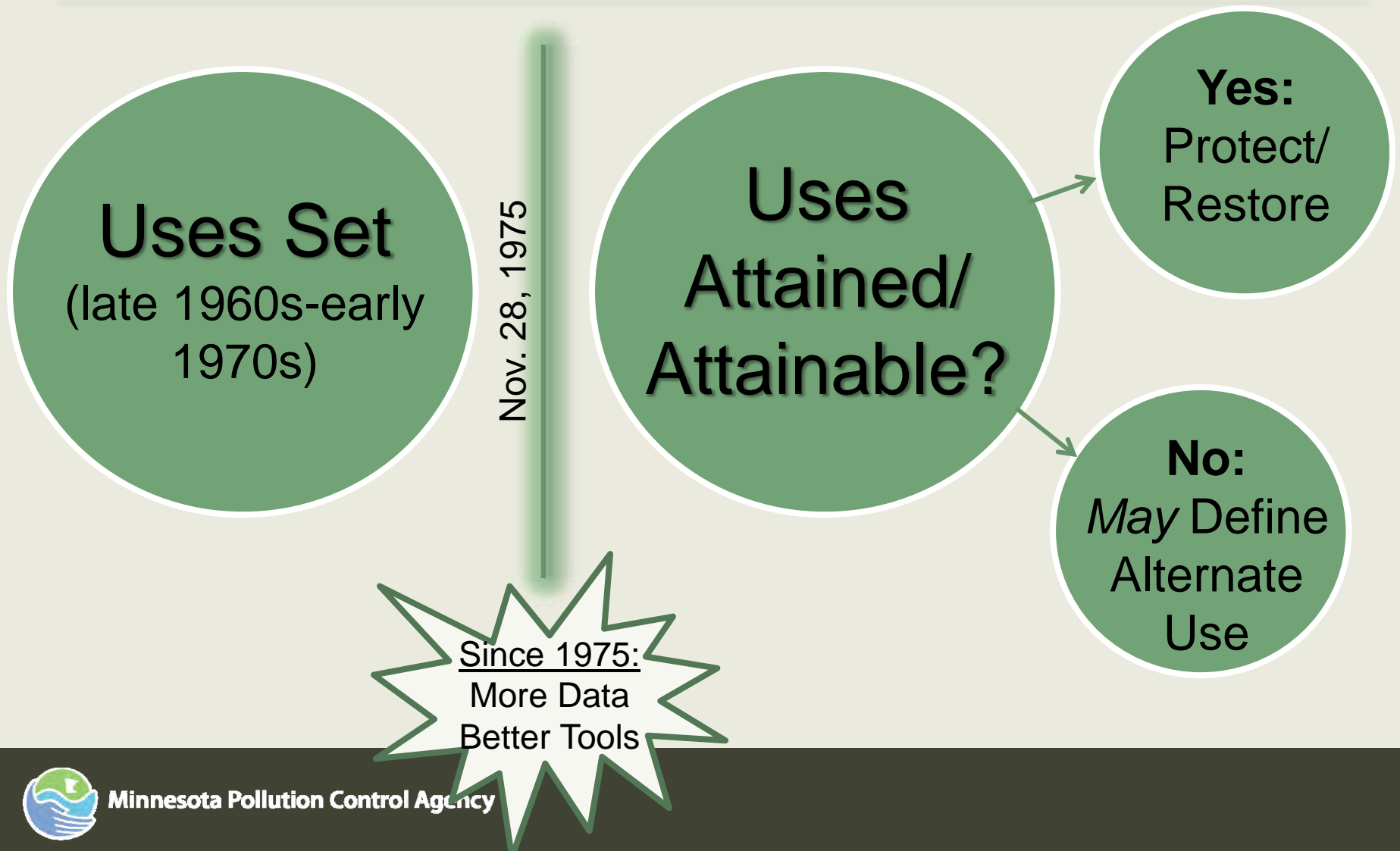
## Uses

# Beneficial Uses

- Seven classes in MN Rules:
  1. Drinking water
  2. Aquatic life and recreation
  3. Industrial use and cooling
  4. Agricultural and wildlife use
  5. Aesthetics and navigation
  6. Other uses
  7. Limited resource value
- Waters have multiple uses
- Existing, designated



# Can Beneficial Uses be Changed?





# What Conditions are Protective?

- Standards identify the conditions needed to support the beneficial use
- Generally statewide or region-specific
- Can be descriptive or numeric



## Aquatic Life & Recreation examples:

Standard	"...no material increase in undesirable slime growths or aquatic plants, including algae..."	6.9 ng/L total mercury in water (outside of Lake Superior Basin)	5.0 mg/L oxygen as a daily minimum, 50% of the days when receiving water flow equals the 7 day, 10-year low flow ( $7Q_{10}$ )
Protects for:	Aesthetics, swimming	People and wildlife eating fish	Fish survival







# How Is Good Water Quality Protected?

- Antidegradation is a key protection tool
- Different levels of protection:
  1. Maintain existing uses
  2. Protect high quality waters – only allow degradation if:
    - Avoid and minimize impacts
    - Demonstrate need for important social or economic development
    - Protect existing uses
  3. Maintain exceptional waters (ORVWs)



# Standards Development

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- Required by Clean Water Act and MN Statutes
- Relies on best available science
- Public review of standards at least every 3 years
  - ▣ Revise based on new information
  - ▣ Revisions follow state Administrative Procedures Act (public input)



# WQ Standards: Summary

- It all goes back to uses
- Required by Clean Water Act and MN Stat.
- Public review at least every 3 years
- Three components:

**1. Beneficial use classifications** for waterbodies

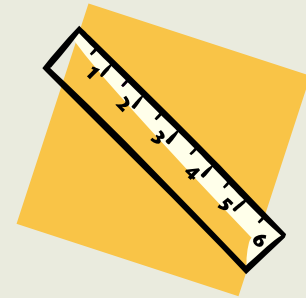
**2. Numeric and narrative criteria** that protect those beneficial uses

**3. Nondegradation requirements** to provide extra protection to high quality waters



# How Are Standards Used?

- Measures/benchmarks
  - ▣ Communication
  - ▣ Monitoring and Assessment
- Controls
  - ▣ Permitted Effluent Limits
  - ▣ Antidegradation review
  - ▣ TMDLs



# Standards & TMDLs

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- The standard sets the goal
  - ▣ The condition(s) needed to achieve the use
- The Implementation Plan lays out the response and timeframe
  - ▣ Timeline and approach can reflect long-term nature of the restoration effort
  - ▣ Tools include permits and best management practices



# What's the Bottom Line?

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- Standards are the foundation for protecting and restoring clean water
- ID conditions that are protective, based on what and who we are protecting
- Reflect scientific knowledge, public review



# Questions/Discussion

## Thank You!

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