Phosphorus Update

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Why do care about phosphorus?

• **IT’S ABOUT PLANT GROWTH**
  - Phosphorus is one of 17 key nutrients for growth
  - The two key nutrients are nitrogen and phosphorus
  - Plant growth is good
  - All fisheries need plants

• **TOO MUCH OF ANYTHING IS BAD**
  - Control phosphorus and you control plant growth
  - One pound of phosphorus = 500 pounds of algae
  - Excessive plant growth results in low DO and a impaired fishery
  - Excessive phosphorus results in B/G algal blooms and toxins
Significant Nutrient-related Water Quality Problems
How did we get here and can I go back the way I came?

**THE PATH TO HERE**
- Citizen Law suit filed under the CWA
- EPA agreed to over promulgate DNR permits using federal P standards
- DNR agree to new rules rather than face EPA direct regulations
- December 2011 NR 217 and NR106 became effective

**THE PATH BACK**
- DNR is a designated CWA agency
- EPA has adopted DNR P Standard
- EPA major initiative is to have every state adapt a nutrient reduction standard
- EPA will not agree to rescind NR 217
- If DNR rescinds EPA issues P limits in all Wisconsin permits (zero flexability)
It’s the other guy

• **IT’S AGRICULTURE**
  • Statewide 80% of the phosphorus comes from agriculture
  • A lot of agriculture runoff happens in non growing season

• **IT’S POINT SOURCES**
  • Statewide 20% of the phosphorus comes from point sources
  • Happens year round
  • Happens even during low flows when it can be 100% of the issue/
Objective One is Blue Water not Green Water

- Balanced point source - nonpoint source approach
Objective Two is implementation in a least cost and fair way.

• Reasonable compliance schedules and implementation options
  - Must be consistent with Clean Water Act
Point Source Phosphorus Control
Compliance Tools

• Extended Compliance
• Bricks and mortar
• Trading
• Adaptive Management
• Site Specific Phosphorus Standards
• TMDLs
• Variances
EPA/DNR agreed Compliance schedule

- New Permits issued in 2013 include a final WQB effluent limit
- The limit is final unless the permit notifies the DNR that they wish to pursue adaptive management or trading by month 59.
EPA/DNR agreed Compliance schedule for second permit

- I decide to do nothing
  - Brick and Mortar addition 2 to 4 years into the second term

- I decide to trade
  - Permit is revised to reflect proposed trade with expected implementation in 2 years

- I decide to pursue Adaptive management
  - Adjusted permit limit of 0.6 mg/l
Watershed Adaptive Management Option

- Nonpoint source dominated watersheds
- Up to three permit terms (10 to 15 years)
- Interim limit (e.g. 0.6 mg/L)
Watershed Adaptive Management Option (continued)

• Watershed project -- urban and rural sources

• Must demonstrate progress

• Water quality monitoring required

• Potentially higher effluent limit
WPDES Permits

• NR 217 and NR 106

• Guidance for water quality trading

• Guidance for the watershed adaptive management option
Approved TMDLs

• Generally less stringent limits

• Rock River Basin - approved

• Lower Fox/Lower Green Bay - very soon

• Wisconsin River Underway
Variances

- Other options not affordable

- “Widespread social and economic impact”
Nonpoint Source Phosphorus Control
NR 243 & NR 151
Phosphorus Index

• Performance standard for farmlands

• Maximum average of 6

• Based on crop rotations, slope and amount of phosphorus in soil

• Required to receive income tax credits
Closing

• Balanced point source - nonpoint source approach

• Reasonable compliance schedules and implementation options
  - To extent allowed under Clean Water Act

• Challenge -- affordability
Questions?
Rock River at Afton, WI

![Graph showing TP (mg/L) from 1960 to 2030]