Adaptive Management Planning for the City of Lodi

WISCONSIN GOVERNMENT AFFAIRS SEMINAR
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Background

» Lodi’s WWTF
  • Treats 310,000 gal/day
  • Design Flow of 546,000 gal/day
  • Currently meeting 1 mg/L phosphorus limit

» Lodi’s WPDES Permit
  • Reissued 01/01/2012
  • Identifies 2020 phosphorus limit as:
    ▪ 0.075 mg/L – annual average
    ▪ 0.22 mg/L – monthly average
Phosphorus Compliance Options

» WWTF treatment upgrades
  • “Point Source Reduction”
  • Microsand-ballasted clarification
  • Capital cost for upgrade: $3.36 million
  • Compliance by 2020

» Watershed improvements
  • “Non-Point Source Reduction”
  • Adaptive Management or
  • Water Quality Trading
Phosphorus Compliance Options

» Adaptive Management (AM)
  • Compliance by 2037
  • Focus on *stream* compliance
  • Eligibility requirements must be met

» Water Quality Trading (WQT)
  • Compliance by 2020
  • Focus is on offsetting WWTF’s mass of TP
  • “Credits” and “Trade Ratios”
  • No eligibility restrictions

Illustration of several vegetative buffer types (photo courtesy of USDA-NRCS).
Phosphorus Compliance Options

Adaptive Management (AM) selected

<table>
<thead>
<tr>
<th>Projected Preliminary Costs for WWTF Upgrades and Adaptive Management</th>
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<tbody>
<tr>
<td>WWTF Upgrade</td>
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<tr>
<td>Capital Cost</td>
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<td>Annual O&amp;M</td>
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<td>20-year Present Value</td>
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*Adaptive Management has a series of ‘rules and regulations’ that need to be followed. They are nuanced, and will not be discussed at length in this presentation. Come ask us with questions!*
Phosphorus Compliance Options

Adaptive Management (AM) selected

- WWTF is currently 10-15% of annual phosphorus load
- WWTF discharge limit: 0.5 mg/L
- Focus is on stream compliance by 2037 (20 years)
  - Spring Creek very close to limit (2011, 2012, 2015 data)
    - Currently 0.078 mg/L
    - Target of 0.075 mg/L
- P reductions needed
  - ~715 lbs/year @ projected effluent flow in 2035 and final AM term limit
  - ~920 lbs/year @ design flow and final AM term limit
Enabling people to positively impact the lives of others.
Preparation of Adaptive Management Plan

Critical Source Areas

» Urban
  • WinSLAMM modeling
  • Improving efficiency of existing ponds
  • Identifying new potential ponds
  • Currently finalizing recommendations

» Agricultural, Hard Practices
  • Barnyard Analysis
  • Columbia County assessed all of the barnyards in the watershed
  • Economic assessment for best projects

» Agricultural, Soft Practices
  • Identify fields where erosion is most likely to occur using EVAAL
  • Prioritize based on relatively index
Combined Hard & Soft Practice Priority Areas

- Landowners where both hard and soft practices may be feasible
- Reduce number of landowner agreements
- Reach P-reduction goals more efficiently
Questions?