IL Nutrient Loss Reduction Strategy
2021 Biennial Report:
Point Source Perspectives

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Reflections: Illinois Association of Wastewater Agencies (IAWA)

Highlights

Challenges

Lessons learned
Tracking Progress

1. **Resources**
   - Money
   - Staff

2. **Outreach**
   - Awareness/Engagement
   - Public & stakeholders

3. **Facilities**
   - Plant upgrades
   - New facilities

4. **Water**
   - Reductions in discharge
Cost of Biological P Removal (Bio-P)
  - Capital improvements
  - Other unplanned costs

Highlights

- Peoria - $11M
- Fox Metro - $98M
- Kishwaukee WRD - $50M
Backup chemical P removal systems

- MWRDGC Stickney WRP: in addition to Bio-P and nutrient recovery (Ostara Pearl)
- North Shore WRD: 2 facilities planned ~$4M
Watershed groups: Membership cost
Staffing for optimization, pilots, research, etc.

MWRDGC Calumet WRP: Bio-P Pilot
IL Assoc. of Wastewater Agencies (IAWA)
- P removal workshops
- Quarterly technical conferences
- Watershed groups

IL Water Environment Association
- Annual P Removal Conference

Collaboration with IL Farm Bureau
- Field days – Fulton Co. site

Highlights

Outreach

IWEA Nutrient Removal Conference
**Challenges**

- **Bio-P**
  - Fluctuating conditions
    - Flows (wide wet & dry variations): e.g. MWRDGC Stickney plant
    - P loads: e.g. North Shore WRD
  - Impact other processes: e.g.
    - Dewatering of solids
    - Decreased total solids in effluent
- **Bio-P**
  - Easier for smaller plants
  - Low influent carbon
  - Potential unintended consequences; e.g. nitrification/N removal

**Challenges**

**Big plant – Big problems**
❖ Bio-P

❖ Relatively new process: Learning curve for staff
❖ Learn to operate without chemical backup: e.g. Fox River WRD
❖ New facilities: Opportunities for flexibility/resiliency: e.g. Kishwaukee WRD
❖ Optimization plans: Some additional N removal as plans are implemented
P Discharge from Point Sources (million pounds)

- **Baseline**
  - 2011: 18.1
  - 2016: 16.5
  - 2018: 13.2
  - 2020: 15.2
- **All majors 1 mg/L**
  - Future: 4.8

**Highlights**

- 2025 – 25%
- Long-term – 45%
Looking Ahead

- As more plants implement Bio-P some additional N reduction
- More P reductions as permits are activated over the next 3 years esp. large plants
  - MWRDGC: O’Brien and Calumet WRPs
High capital and O&M costs, including unplanned costs

Outreach – significant via workshops and watershed groups

Bio-P challenging – no one size fits all; some need chemical P backup

Point source making significant progress on P reduction

Funding – Need more in SRF
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Thank You

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