POTW NUTRIENT REMOVAL IN ILLINOIS

Illinois Association of Wastewater Agencies 2003 Study Summary
Scope of Study

- 814 Treatment Plants
- 3,196 MGD
- 32 Million P.E.
- > 50% of Flow MWRDGC
- > 50% of Plants are Smaller Than 0.5 MGD (5000 P.E.)
2003 Technology Knowledge Base

- Empirical Capital Cost Data Based on 1994 Study
- Operating Cost Based on 1994 Study, $/gallon for Complete Treatment
- MWRDGC Developed Independent Capital Cost Estimates for 3 Largest Plants
- Data for P and N Removal to Technology Based Limit (0.5, 3), Not Separated
Cost Methodology

- Applied 1994 Empirical Cost Data to Illinois Plants in Different Size Categories
- Used Estimate of 50% Increase over 1994 Study Average $/gallon Cost
Overall Findings

- Capital Cost Increase Estimated at $5.3 Billion (1994 Dollars)
- O&M Cost Increase of $500 Million / Yr (1994 Dollars)
- Capital Cost Ranges from $74 - $5,500 per PE, Avg of $165 per PE
- O&M Cost Avg Increase of $15/year/PE
Current Technology Knowledge Base

- Chesapeake Bay Experience – 2007 Data to be Presented at WEFTEC 2008
- Capital Costs Projected to be 5-10 X Those Estimated in 2003 IAWA Study ($25 to $50 B)
- O&M Increase of 50% Estimated at $1.1 Billion/year (IAWA 2007 Survey Data)
- ENR CCI Up 50%, CPI Up 45% Since 1994
Current Cost Ranges

- For Small POTWs, >$75,000 per household in Capital Cost
- For Largest POTWs, >$2,500 per household in Capital Cost
- Average Cost >$5,500 per household
- Annual O&M cost increase of $70.00 per household
- ~$50/month per household