



CSWEA  
**Webinar**  
Series

**TUESDAY – JUNE 2, 2020**

**1:00 PM to 3:00 PM**

**Topic: Advanced Biological Nutrient Removal**

1:00 pm **Introduction – Synthia Parveen Mallick | Marquette University**

1:05 pm **“MBBR and IFAS Biological Treatment Explained”**  
Somnath Basu | *Headworks International*

Biological wastewater treatment facilities are upgraded or expanded to accommodate increased flows or wastewater strengths. MBBR and IFAS (moving bed biofilm reactor & integrated fixed-film activated sludge) processes are options for improving treatment without increasing footprint. Both processes will be explained. Case studies & examples will be presented.

2:00 pm **“Ntensify Biological Nutrient Removal for Reduced Energy and Nutrient Discharges”**  
Don Esping | *Brown and Caldwell*

The most elusive biological nutrient removal (BNR) goal is to reliably and sustainably perform combined biological nitrogen and phosphorus removal. Ntensify™ BNR combines two intensification processes: 1) advanced aeration controls to maintain the proper dissolved oxygen levels needed to promote simultaneous nutrient removal while reducing the energy demands and 2) hydrocyclone-based wasting combined with a metabolic selector to promote sludge densification and improved nutrient removal. Full-scale data from the Pueblo CO Ntensify BNR system will be presented along with a planning level analysis showing a 30 percent reduction in capital costs, energy usage, and life cycle cost compared traditional BNR flow schemes.

3:00 pm Adjourn

**CONTINUING EDUCATION**

**2.0 CEUs** for Operators in Illinois, Wisconsin & Minnesota.  
Operator ID/Quiz required for webinar.

**2.4 PDHs** for all Professional Engineers



IEPA Course #15269

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