

# Wastewater Aeration System Improvements



Baxter & Woodman, Inc.  
Downers Grove Sanitary District

ACEC  
Illinois

## 2009 ENGINEERING EXCELLENCE Special Achievement Award

### PROJECT HIGHLIGHTS

Downers Grove Sanitary District ("District") decided to implement the following energy efficiency improvements to the activated sludge aeration system at the District's 11 MGD Wastewater Treatment Center:

- Replacement of medium-bubble diffusers and turbine aeration equipment with fine-bubble diffusers
- Addition of a single-stage centrifugal blower
- Removal of several shallow aeration tanks from service and conversion of a deeper tank to an aeration tank
- Addition of automatic controls for dissolved oxygen in the mixed liquor

The design was completed in June 2007, and construction in July 2008. Unique features of this project include:

- First high-efficiency single-stage centrifugal blower of its kind in Illinois and its first hybrid installation with traditional blowers in the entire U.S.
- Whole-plant electric usage data indicate electric loads decreased over 33% - a payback period of five years is expected.



Fine-bubble diffusers