For immediate release
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MWRD’s Egan Water Reclamation Plant celebrates 40 years of service and innovation in enhancing water quality and pioneering technology

The John E. Egan Water Reclamation Plant (WRP) in Schaumburg turns 40 this month, and its history of improving local water while setting groundbreaking trends in resource recovery projects make it an asset to the Metropolitan Water Reclamation District of Greater Chicago (MWRD) and residents of the northwest suburbs.

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Today, the Egan WRP is recovering more than water. Besides the myriads of initiatives the plant has developed in establishing renewable energy resources, the Egan WRP has also developed a way to lessen the impact of phosphorus and nitrogen on waterways by removing ammonia in the treatment process.

“We are proud of 40 years of commitment to transforming and protecting our water quality at the Egan Water Reclamation Plant,” said MWRD President Mariyana Spyropoulos. “Every day, our 75 staff members at Egan work hard to meet the demands of treating tens of millions of gallons of water in a most environmentally and efficient way that allows us to reduce our energy usage and create new opportunities through resources collected in the treatment process.”

The National Association of Clean Water Agencies awarded the Egan WRP earlier this year with a gold award for meeting 100 percent compliance with National Pollutant Discharge Elimination System (NPDES) permits for an entire calendar year.

At the Egan WRP, water is disinfected using chlorination and dechlorination, and there are tertiary filters made of dual media of sand and anthracite for further polishing of solids. The clean water is released from the Egan WRP into Upper Salt Creek. After only 7.8 hours, the Egan WRP can transform sewage to clean water.

To remove nitrogen and phosphorus during water treatment at the Egan WRP, the MWRD is installing the ANITA™ Mox process that is specially used for treatment of streams highly loaded in ammonia. These streams, also known as centrate, the water remaining at Egan after removal of solids, will be treated onsite at Egan WRP in an energy-efficient manner rather than having it diverted to the O’Brien WRP, roughly 15 miles away, exacerbating odor and corrosion (continued)
Egan WRP celebrates 40 years of service  

In the collection system, as it currently is. This process is being constructed using existing tanks at the Egan WRP.

Energy efficient nitrogen removal is the next step in the of water quality problems, and traditional removal of nitrogen from wastewa-
ter is energy intensive and costly. The ANITA™ Mox process is designed to achieve ammonia removal higher than 90 percent and total nitrogen removal in the range of 75 to 85 percent without external carbon addition and at a very low energy cost compared to conventional nitrification-denitrification. The project aims to reduce oxygen consumption by 60 percent, eliminate all chemical oxygen demand and decrease carbon dioxide emissions. If successful, this process will conservatively reduce energy usage by 40 percent, saving 120 million kilowatts per hour annually, the equivalent energy provided by 15 utility-scale wind turbines or enough energy for 4,500 homes. Following a successful cooperative pilot project at the Egan WRP in Schaumburg and in Denver, Colo., the MWRD is moving forward to install ANITA™ Mox.

In its pursuit of energy neutrality, the MWRD also installed a solar thermal project to convert solar heat into usable hot water at Egan. The MWRD has installed 45 solar panels, donated by the city of Chicago, through an intergovernmental agreement, and installed the panels with grant assistance from the Illinois Department of Commerce and Economic Opportunity. These panels generate 2,040 therms annually. The system provides preheated boiler make-up water and other hot water needs at the plant. As a result, the MWRD can lower natural and digester gas usage in the steam boiler system and saves non-renewable energy usage and cost; reduces emission of greenhouse gases and pollutants; and serves as a model technology for possible use in other applications.

As part of the water treatment process, the (continued)
Egan WRP celebrates 40 years of service (continued)

MWRD also upgraded a dewatering facility at the Egan WRP to provide increased storage capacity for biosolids, add a close conveyance system to address odors and improve the system's reliability.

In conjunction with the agency's goals of implementing green infrastructure to meet increasing demands for stormwater management, the MWRD is scheduled to replace the parking lot in 2016 at Egan WRP with new permeable pavement to provide several benefits. The new lot will improve water quality, ground water recharge and delayed discharge of stormwater to the receiving waterway.