

Stormwater reuse and retention projects help communities make better use of natural resources

RECYCLED

Rain

By Darlene Bremer

## Making Water Work in St. Anthony

WSB helped design a system that prevents potentially harmful stormwater runoff from seeping into the Mississippi River.

**PROJECT:**  
Stormwater Runoff and Filter Backwash Water Reuse Project, St. Anthony, Minn.

**FIRM:**  
WSB & Associates, Inc., Minneapolis

Concerned that a stream of pollutants and stormwater runoff from 13.5 acres of county roads, city streets and the St. Anthony City Hall were seeping into the Mississippi River and a local lake, city officials tapped engineering firm WSB & Associates, Inc., to help address potential water-quality issues.

Todd Hubmer, principal and project manager for WSB & Associates, says the city's mission was to reduce pollutants in surrounding waters; preserve the surrounding groundwater and valuable aquifers; turn stormwater and backwash into valuable resources; reduce the city's impact on the environment; and reduce the need to use groundwater and potable water for irrigation—all at a sustainable cost.

WSB worked with the city to set the project's environmental goals and developed a way to combine stormwater runoff and filter backwash water for storage and later reuse for irrigation. The company also assisted with securing funding for the project.

"We performed the final design of the project, including how to convey water from the roadways and treatment plant to the water storage facility, designed the water reuse tank and the system that conveys the water to 40 to 50 surrounding irrigation zones, the irrigation system's filtration system and the booster pumps," explains Hubmer.

The first challenge was financing. The \$1.5 million estimated cost represented a significant financial burden for the small community. In cooperation with the local city council, WSB presented potential benefits of the project to Hennepin County officials, the Rice Creek Watershed District and the Mississippi Watershed Management Organization. "The benefits were easy to show; stormwater runoff and backwash water is now used to irrigate a 20-acre site that includes a municipal park with several ball fields and the city hall campus," says Hubmer.

The site for the underground water storage tank was extremely narrow and fit between a county road and a few tennis courts. "The pit for the tank had to be deep, which presented slope and grade



Todd Hubmer

challenges for the contractor," Hubmer explains. WSB adjusted its design to narrow and lengthen the tank, facilitating construction.

The firm also coordinated activities between Hennepin County's general contractor and St. Anthony's construction contractor.

The innovative nature of the project now serves as a demonstration for future water-reuse projects in the region. Though similar projects are common in drier climates, few such reuse projects have been constructed in the Midwest, according to engineers, and this remains the only facility known to reuse backwash water from a treatment plant and stormwater runoff for irrigation. >>