Milwaukee Metropolitan Sewerage District
Conveyance Supervisory Control and Data Acquisition (SCADA) System
Project Summary

The Milwaukee Metropolitan Sewerage District (MMSD) is implementing improvements to its wastewater conveyance supervisory control and data acquisition (SCADA) system. The conveyance SCADA system collects field data, such as wastewater flow measurements, and controls field devices, such as gates, from a central location. Currently, central control is located at MMSD's South 13th Street Facility. Under the SCADA upgrade project, central control will be moved to the Jones Island Wastewater Treatment Plant, so that all MMSD facilities can be monitored and controlled from one location.

The conveyance SCADA upgrade project is one of several instrumentation and control improvement projects currently being implemented by MMSD at a total value of $30 million. The value of the conveyance SCADA improvements is $11 million and is scheduled to be functional December 2002. The overall SCADA project objectives are:

- Increase the reliability of flow measurements and data collection through the installation of new level sensors, which will be more accurate than existing level sensors, and a wireless communication system to collect "real time" data.

- Provide a more robust data collection system for handling future needs.

- Improve data communication by converting from leased phone line to wireless radio communication, which are expected to reduce annual O&M approximately $150,000 per year.

A key task associated with the communication system improvement is obtaining approval for the installation of antennas at MMSD's remote facilities. There are 286 remote sites located in 27 of the 28 local communities served by MMSD that require antenna installations. Field testing of signal strengths has determined the antenna size and height requirements for each site. Sites that recorded a strong signal can use a small dome antenna mounted on the existing telemetry box at the site. The remaining sites must use a directional antenna mounted on a pole 15 to 20 feet above the ground. The MMSD proposes to use existing street lights or power poles wherever possible. If a utility pole were not available, a new steel or wooden pole would be installed. The directional or yagi antennas range 22 inches to 32 inches in length. A few sites require a 42-inch yagi antenna in order to obtain the required signal strength.