OHIO DEPARTMENT OF TRANSPORTATION
WASTEWATER TREATMENT PLANT TELEMETRY MONITORING PILOT PROJECT
EXECUTIVE SUMMARY

One of the most appreciated amenities provided by the state for use by the motoring public are the little "comfort stops" along the highway. As the interstate highway systems became a reality the need for rest areas on these super highways became apparent. Today there are 146 roadside rest areas throughout Ohio. A total of forty-eight are located on interstates with the remainder on primary and secondary highways.

The Ohio Department of Transportation (ODOT) is responsible for the operation and maintenance of a network of water/wastewater treatment systems at rest areas throughout the State of Ohio. Presently, ODOT personnel must visit these sites on a daily basis due to permit requirements for maintaining system operation, process modifications, process information retrieval, and compliance to Ohio EPA regulatory requirements. With the geographic arrangement of the variousroad side rests, site visits have become expensive for ODOT in terms of personnel, scheduling, and routine maintenance activities. Environmental considerations including increased regulatory requirements by the Ohio EPA require a system solution that provides ODOT the ability to more closely control effluent discharge without large capital or manpower costs.

Present operations staff procedure requires that an individual visit the rest stop a minimum of four times per week. This is due to regulatory requirements associated with permit compliance. Contingent upon discussion and approval from the Ohio EPA our goal is have the daily site visits relaxed based upon implementation of a remote access, supervisory control system. This reduction of scheduled visits will allow ODOT increased flexibility with its manpower.

Operators of roadside rest stops are under increased scrutiny to maintain system operation within environmental regulatory requirements while maintaining low cost operations. The Ohio Department of Transportation in conjunction with the U. S. Department of Transportation, Federal Highway Administration, commissioned the implementation of a wastewater treatment plant telemetry monitoring pilot project. This project incorporated the implementation of a state-of-the-art supervisory control and data acquisition (SCADA) system providing ODOT operators and management the ability to remotely monitor and control operations of the Rt. 32 Rest Stop Wastewater Treatment Plant. This rest stop is located in Pike County approximately 100 miles south of Columbus, Ohio.

The system was retrofitted with new analog and discrete instrumentation tied to a local programmable controller. The programmable controller was designed with capability for ODOT personnel to access information and to operate the system remotely via phone modem.

The control scheme at the wastewater treatment plant was enhanced and modified to minimize ammonia discharge from the facility. This was accomplished by using the existing package treatment system and, through software logic in the programmable controller, modifying the operation of the treatment plant from a strictly timed operation into a sequencing batch reactor.

Ammonia control is the primary non-attainment concern in regards to permit requirements. The other areas monitored, carbonaceous biological oxygen demand (CBOD), dissolved oxygen (DO), and pH, were tracked during this study period. Data results show that the system has met the goals for maintaining system performance.

Sharp Technologies, Inc., 982 Crupper Ave., Columbus OH 43229, (614) 841-4650