

# Madison Metropolitan Sewerage District

Madison, Wisconsin



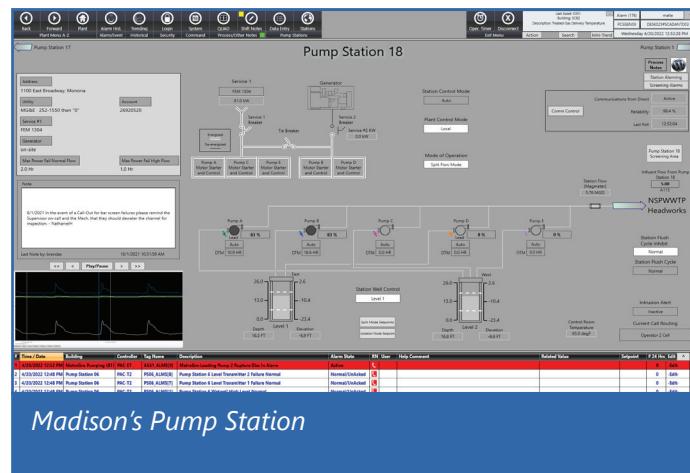
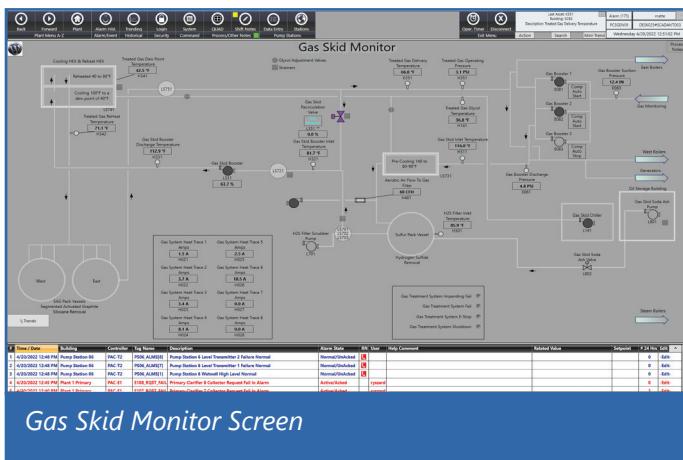
## About the Madison Metropolitan Sewerage District

Wastewater management in the Madison, Wisconsin area dates back to the late 1880's when the first sewage treatment plant was authorized in 1895 and went online in May 1898. The **Madison Metropolitan Sewerage District** (MMSD) was established in February 1930, making it one of the oldest regional sewer utilities in the United States. Today, the MMSD serves Madison and the surrounding communities comprising 111,000 customers and a population of approximately 380,000 people. The district processes an average of 43 million gallons of wastewater per day and is responsible for wastewater collection and treatment and resource recovery. Known for its innovative engineering and program development, conservation leadership, and recovery expertise, the MMSD has an experienced and passionate team of professionals that is committed to protecting the public health and

environment through responsible and conscientious wastewater collection and treatment.

## Project Summary

As a wastewater treatment facility, the Madison Metropolitan Sewerage District faces unique challenges. First, the cost of pumping is higher than most facilities due to its location and terrain. The facility's inability to rely on gravity like most plants means that all wastewater must be pumped both to the plant and away from the plant. Second, Wisconsin also has more stringent phosphorus limits than most states which means more infrastructure is needed to treat the water. Lastly, the MMSD takes care of approximately 40 pumping stations owned by other municipalities or sanitary districts, all of which are scattered throughout the greater Madison area over terrain that has no cellular or Internet connection. The district must



therefore rely on radio communication to get live data and information from those stations to monitor operations. When issues arise, the district needs to send crews out to confirm that the stations are operating correctly.

In the 1990's, the MMSD installed its first SCADA system which utilized serial communication with controllers. This SCADA system served the district well for twenty years but was becoming obsolete since both the hardware and software were reaching the end of their life cycles. Additionally, the MMSD needed the ability for its operators to access the system no matter their locations. In the early 2010's, the district started looking for a new system and had to decide between several SCADA platforms on the market. The challenge was to choose a new SCADA system that could not only integrate the old system into the new system, but also be the best fit for the MMSD operations and needs.

The Madison Metropolitan Sewerage District chose the ICONICS platform for several reasons. First, the ICONICS team gave an excellent demonstration of the platform showing the MMSD the ease and speed of its platform set up. In fact, the set up was faster than other competitors the district was considering. Second, besides having all the capabilities the district wanted, the MMSD saw that the platform's modular and open architecture would provide a high level of design flexibility which in turn would allow its team to be quite creative and flexible. Third, the price point was within the district's budget. All these factors led the MMSD to conclude that out of all the solutions considered, ICONICS was the best value and the best choice for its next generation SCADA system. Lastly, both Jim Sulzer with

Sulzer Consulting, LLC. and Russ Ropken with RSI Company - Automation Development and Consulting were instrumental in helping the District's team to quickly get on their feet with learning, implementing, and using the new software.

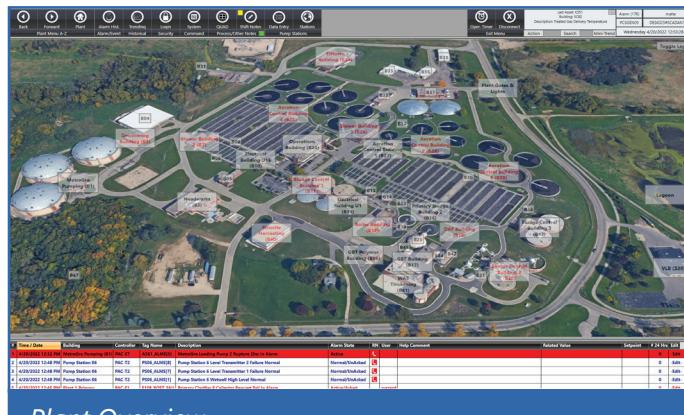
## ICONICS Solutions Deployed

- GENESIS64™ HMI SCADA Suite
- Hyper Historian™
- GraphWorX™64
- GridWorX™
- AlarmWorX™64
- AlarmWorX™<sub>mmx</sub>
- AlertWorX™
- CFSWorX™
- Asset Navigator

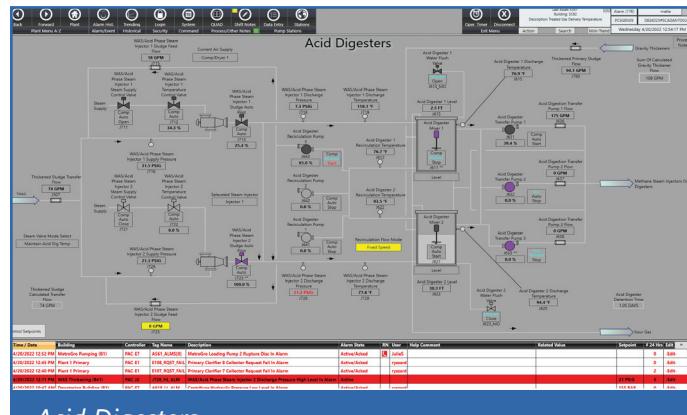
## Realized Benefits from ICONICS Software Upgrade

The Madison Metropolitan Sewerage District has greatly benefited from the ICONICS platform. The facility manages 5,000 assets with approximately 40,000 process tags, 6,000 alarms, and 5,000 historical points. Since the platform provides critical real-time information about operations, the facility's team can quickly react to solve problems and keep the facility running at the highest level possible. Furthermore, ICONICS software allows operators to access information like events, alarms, and records with operation and maintenance details, directly contributing to a more efficiently run facility.

With its advanced level of customization, GENESIS64 allows the MMSD team to easily add and modify features of the system as needed. And since the facility typically has one operator on duty 24/7, this rather large system can become overwhelming. However, GENESIS64 eases this situation with its capability to send different data streams



### Plant Overview



in different directions. The team utilizes this capability in many ways, for example, when maintenance workers are out in the field performing testing, they can access the relevant information to quickly resolve situations on the fly.

The MMSD has also increased operational efficiency by tying GENESIS64 to some external systems. The facility has a Computerized Maintenance Management System (CMMS) database that controls all work orders and work history. With ICONICS, operators can pull up a piece of equipment, look at its history, see what maintenance work has been done, who performed the work, if there are open jobs for it, and any other relevant information. This capability saves time and provides updated, complete records of the system.

In addition, the MMSD has profited from having secure remote access. The process control system is securely locked down with the combination of Citrix and the high level of security inherent within the ICONICS software. Operators can securely access the system from tablets, phones, thin clients, and computers, and supervisors can securely access the system from their homes to deal with issues more easily and efficiently. With the constant threat of cyber-attacks, this tight system security is critical for the MMSD's IT department and to the facility as a public utility.

## Conclusion

The Madison Metropolitan Sewerage District uses ICONICS GENESIS64 to serve its communities at the greatest level. ICONICS' agile platform with its flexible customization capabilities has been particularly helpful and convenient to the facility's team. Operators can more easily access information for quick action to resolve issues. Moreover, its engineering team can use the information obtained through ICONICS to plan for future upgrades. On top of this, the facility has secure remote access that provides better protection. To date, the MMSD has been running ICONICS for almost ten years and will continue to do so in the future.

**“**ICONICS GENESIS64 has been a successful replacement for our out-of-date SCADA system. With prior experience with other platforms, I found GENESIS64 intuitive and very powerful. Our move to GENESIS64 and Hyper Historian has improved our uptime, data reliability, and system accessibility. After almost ten years, we are still finding new ways to utilize the system to improve user experience. **”**

**Matt Erbs**

Process Controls System Programmer  
Madison Water Sewerage District

