Case Study: Safeguarding Waterways Through More Efficient HAB Monitoring



For utilities tasked with safeguarding source water, knowing when and where harmful algal blooms (HABs) are developing isn't a luxury but a daily operational necessity. At the city of Akron, Ohio, that responsibility falls to a team managing Lake Rockwell and its upstream reservoirs. Already equipped with a legacy buoy system and a proactive treatment strategy, the city needed a way to extend its monitoring coverage, reduce manual maintenance, and streamline how data informed its decision-making. AquaRealTime's AlgaeTracker delivered on all three fronts.

The challenge

Located in Kent, Ohio, Lake Rockwell is the primary source water reservoir for the city of Akron. Fed by the upper Cuyahoga River, it provides drinking water to more than 200,000 residents. Maintaining its quality is a top operational priority, especially with the ongoing threat of HABs.

The city's Watershed Division has long focused on source water protection, including active land management and reservoir monitoring. Their legacy monitoring program included a large, stationary real-time buoy that collected data near the upper portion of the lake. While this system helped monitor cyanobacteria and other water quality concerns, it had limitations. Deployment and retrieval required a three- to four-person crew, the buoy's sensors frequently fouled with zebra mussels and biofilm, and maintenance had to be performed nearly every week.

Despite those efforts, the majority of the lake remained unmonitored. With sensors installed only at the upper end and the intake, Akron's water quality team lacked insight into the spatial progression of blooms, especially those that might originate downstream. Failures or anomalies with the existing buoy left the city blind in critical areas of the reservoir.



Engagement

In 2023, a vendor familiar with Akron's monitoring challenges recommended exploring AquaRealTime's AlgaeTracker system. AquaRealTime offered a more affordable and lower-maintenance alternative that could fill coverage gaps without straining the city's field team.

The city initiated contact in the fall of 2023 and decided to trial three AlgaeTrackers. One unit was deployed alongside the original buoy for comparative purposes, while the other two were placed strategically downstream to monitor bloom migration toward the water intake.

Deployment was fast and efficient. Each AlgaeTracker was lightweight and required only one person and a small boat to deploy.

"The nice thing with the AquaRealTime buoys is that when they are deployed, it takes one person," explained Jessica Glowczewski, watershed superintendent for the city of Akron. "They're very small and lightweight. They're very easy to deploy. They're online instantly once they go out, and then they don't require a lot of maintenance either."

This ease of installation stood in sharp contrast to the city's existing buoy, which required multiple staff, considerable setup time, and regular in-season maintenance. The city's AquaRealTime plan included annual preventive maintenance that renews each unit to like-new condition at the start of every season.

Results

The introduction of AquaRealTime's AlgaeTrackers brought several improvements to the city's reservoir monitoring program:

- **Expanded coverage**: By deploying multiple AlgaeTrackers throughout Lake Rockwell, the city gained full-lake visibility. This allowed them to monitor how blooms develop and move, informing more accurate and timely algaecide applications.

- **Lower maintenance burden**: The city's legacy buoy needed cleaning weekly to remain operational. In contrast, the AlgaeTrackers required only two cleanings across the entire season. The self-cleaning features and durable sensor design minimized in-season maintenance demands.

- **Improved predictive capability**: With near real-time data every 30 minutes, the city could pinpoint the right time and location to collect samples for lab testing. This eliminated unnecessary travel to uninvolved sites and reduced laboratory expenses.

- **Simplified data communication**: The AquaRealTime dashboard provided clear and customizable data visualizations. Staff at the city's Watershed Division could easily interpret trends and share insights across internal teams and with non-technical stakeholders. The ability to skip the manual step of exporting, graphing, and explaining spreadsheet data streamlined both analysis and reporting.



Insights

With the AquaRealTime AlgaeTracker, the city of Akron gained the ability to act faster and more strategically, making treatment decisions based on actual bloom conditions rather than assumptions or historical averages. This kind of agility matters in source water protection, where early intervention can significantly reduce the severity and cost of HAB events.

From a technical standpoint, the city found the data quality to be consistent with its legacy systems, while the delivery format was far more accessible. Staff no longer had to translate raw sensor data into visualizations just to determine whether action was needed.

AquaRealTime also provided a streamlined customer experience. The company delivered prompt support, handled annual maintenance, and remained responsive throughout the onboarding and deployment process.

“The best part of working with AquaRealTime was the prompt customer service that we got whenever we had any concerns and the ease of deployment as far as getting the buoys out on the reservoir,” noted Charles Lacy, lab analyst III for the city of Akron. “I would definitely use them in the future.”

The city’s Watershed Division is now looking to expand its use of AlgaeTrackers to other supplemental reservoirs, adding trend data to areas previously monitored only through manual sampling. Their experience highlights why other municipalities, utilities, and watershed groups should consider the AlgaeTracker not just as a solution that works in theory but as a proven, field-tested tool that delivers actionable data.

To learn more about AquaRealTime’s AlgaeTracker and how it supports proactive water quality monitoring, visit AquaRealTime.com.