

WHITEPAPER

REVOLUTIONIZING LIFT STATION MONITORING

Watertown Municipality's Success with Rugged Connect and AssetIQ



In collaboration with


Velocity IoT

ORBCOMM

The Pressing Challenge in Municipal Water Infrastructure

Across North America, municipalities face an urgent mandate: modernize aging water and wastewater infrastructure in the face of tightening budgets, growing urbanization, and intensifying climate risks. The U.S. Environmental Protection Agency estimates over **\$271 billion** is needed over the next 20 years to maintain and upgrade America's wastewater systems. Persistent rainfall extremes, rising regulatory scrutiny, and expectations for transparency mean municipalities can't afford communication outages or legacy blind spots.

Lift stations, often overlooked but essential to wastewater networks, are especially vulnerable. Most were designed for a different era: basic radios, manual data retrieval, and minimal automation. Today, the consequences of this status quo are clear:

- Unplanned downtime and missed alarms causing overflows, fines, and reputational damage.
- Escalating operating costs from unnecessary site visits and reactive maintenance.
- Fragmented data impeding compliance with state and federal reporting.
- Cyber and resilience risks as extreme weather or equipment failure take systems offline.

Without a strategic shift to resilient, real-time, and integrated monitoring, cities risk falling further behind—exposing residents, the environment, and municipal budgets.

Executive Summary

The City of Watertown faced a familiar challenge—managing a growing network of lift stations with aging communication infrastructure, increasing costs, and fragmented data visibility.

By deploying Rugged Connect, an industrial-grade telemetry solution developed by Rugged Telemetry, the city transformed how it monitors, manages, and maintains its lift stations.

Using a **redundant communications architecture** that integrates **Velocity IoT multi-IMSI cellular SIMs** and **ORBCOMM satellite communication** for backup, Watertown now operates with a level of resilience and uptime rarely seen in municipal systems.

Combined with seamless integration into their Inductive Automation Ignition SCADA via **AssetIQ's powerful APIs**, the city now benefits from a **hybrid, cost-effective, and highly reliable telemetry solution**.



Rugged Connect Installed in Watertown Lift Stations



The Rugged Telemetry solution has performed as designed at our facility. Combining SCADA with AssetIQ has given us the reliability needed to stay informed about lift station performance.

– Angel French, Chief Operator, 4A, City of Watertown Pollution Control Facility

Background and Challenges

Lift stations are critical to wastewater infrastructure, moving sewage from lower to higher elevations. Prior to implementation, Watertown's lift station network faced:

- **Unreliable connectivity**, especially during storms or in remote areas.
- **Costly and complex installation processes** for legacy SCADA communication equipment.
- **Siloed data**, limiting real-time insights and historical analysis.
- **Limited integration** with their Ignition SCADA system.

These challenges led to inefficiencies, delayed maintenance, and unnecessary operational costs.



City of Watertown Lift Stations

Rugged Connect Solution

Rugged Connect is an industrial-grade remote telemetry and control solution designed specifically for harsh environments and critical infrastructure like lift stations. Watertown selected this platform due to its:

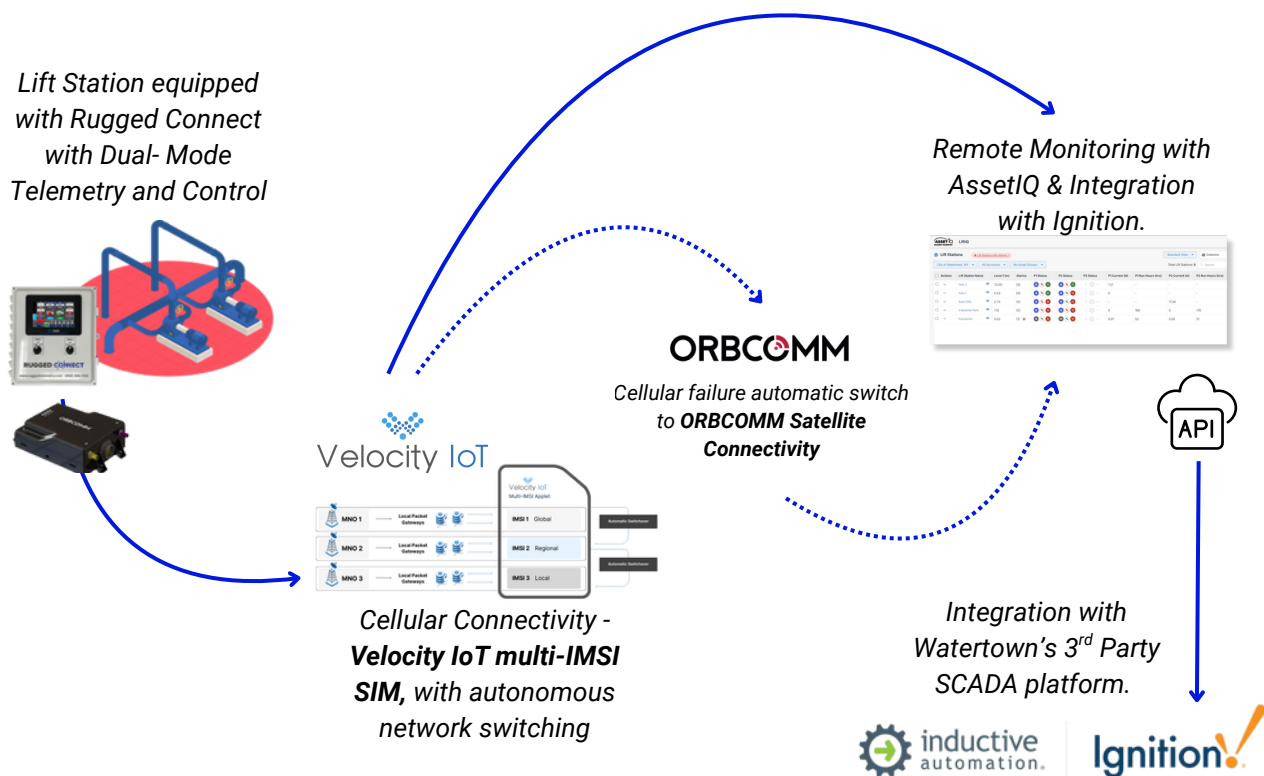
Plug-and-play deployment: Easy to install, with minimal on-site configuration.

Hybrid communications architecture: Cellular-first with automatic satellite fallback.

Built-in AssetIQ compatibility: Real-time monitoring, alerting, and reporting.

Open API framework: Enables deep integration with third-party platforms like Ignition.

System Diagram



Redundant, Reliable Communications

A key feature in Watertown's success was resilient communications, critical for 24/7 lift station monitoring. Rugged Connect offers:



Primary: Cellular with Velocity IoT Multi-Network SIMs

Velocity IoT's multi-IMSI SIMs ensure **seamless global connectivity** even in remote locations. They provide access to multiple carriers, including all four major U.S. networks, and automatically switch between them, **maintaining the strongest available connection** without manual intervention.

Key Features:

- Carrier and IMSI redundancy for improved uptime
- Lower latency via local packet gateways
- Secure OTA updates for future-proofing
- Real-time diagnostics for faster troubleshooting



Backup: ORBCOMM Satellite

- Automatic failover when cellular is unavailable.
- Maintains critical data flow during outages, storms, or carrier failures.

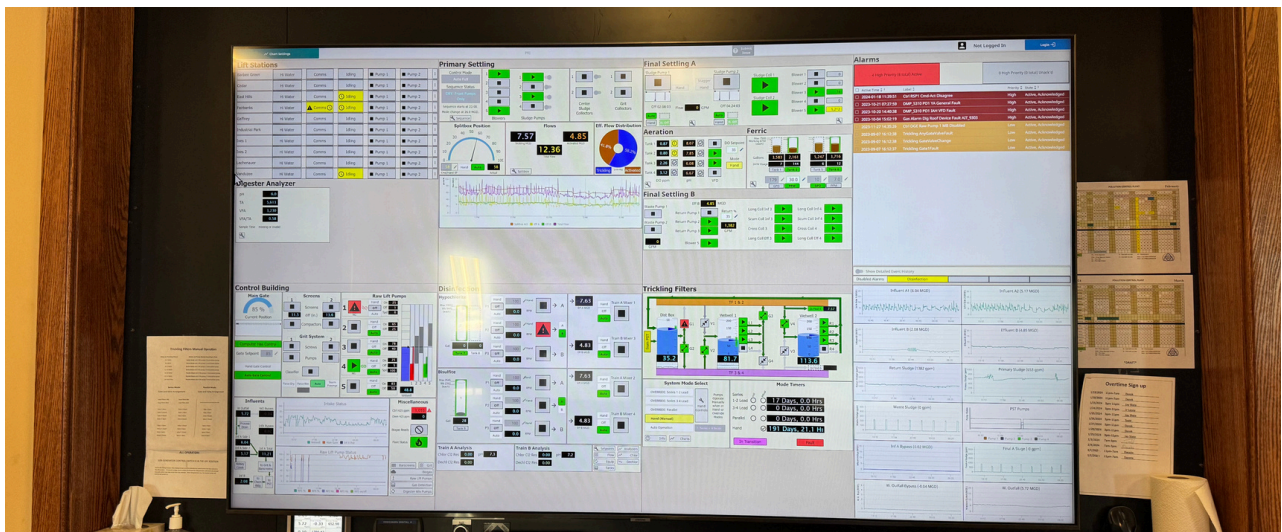
This dual-path architecture guarantees data continuity, even in the most challenging conditions

Seamless SCADA Integration via AssetIQ APIs

Watertown leveraged **AssetIQ**, Rugged Telemetry's cloud-based monitoring platform, as a central data hub. Through AssetIQ's **RESTful APIs**, the municipality integrated telemetry data directly into its existing **Ignition SCADA system**, allowing:

- Unified control and monitoring of lift stations within Ignition.
- Alarm and event handling through the familiar SCADA interface.
- Long-term data archiving and reporting using Ignition's analytics engine.

This **hybrid cloud-local architecture** provided the **best of both worlds**—resilience and cloud analytics via AssetIQ, with the operational visibility and control of their SCADA system.

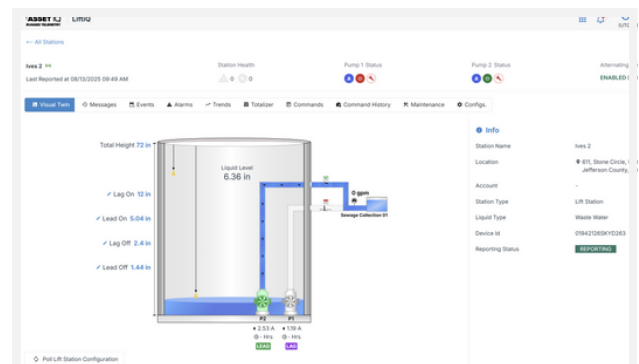


ASSETIQ LiftIQ

Lift Stations ▲ Lift Stations with Alarms: 1

City of Watertown, NY | All Accounts | No Asset Groups

Actions	Lift Station Name	Level 1 (in)	Alarms	P1 Status	P2 Status	P3 Status
<input type="checkbox"/>	Ives 2	72.00	[0]	A X	A X	-
<input type="checkbox"/>	Ives 1	5.23	[0]	A X	A X	-
<input type="checkbox"/>	East Hills	2.73	[0]	A X	A X	-
<input type="checkbox"/>	Industrial Park	1.10	[0]	A X	A X	-
<input type="checkbox"/>	Fairbanks	0.02	[1]	A X	A X	-



City of Watertown SCADA and AssetIQ Dashboard

Implementation Highlights



Rugged Connect Installation

Rapid Deployment: Each Rugged Connect enclosure was operational within hours

Minimal Configuration: Pre-configured communications and sensor mapping.

Low Training Overhead: Designed for ease of use by existing public works staff.

Cost Effective: No expensive hardwiring or trenching required; flexible data plans.

Field Service Ready: Deployed and maintained in real-world field operations with minimal additional setup.

Operational Benefits

99% Uptime: Thanks to dual communication paths

Faster Maintenance: Alerts and diagnostics allow quicker issue resolution

Reduced Call Outs: Remote data access cuts down site visits. reducing off hour costs and providing an RO.

Improved Compliance: Data logs meet EPA and state reporting standards.

Scalable Infrastructure: Supports Watertown's future growth without major redesign.



The City of Watertown has standardized lift station controls and communication, creating consistency while reducing costs and saving valuable time.

– Angel French, Chief Operator, 4A
City of Watertown Pollution Control Facility

Conclusion

Watertown's lift station modernization is a testament to what's possible with a smart, rugged, and integrated telemetry and control approach. **Rugged Connect has provided the municipality with a cost-effective, reliable, and easy-to-use solution** that's adaptable to their needs today and scalable for tomorrow.

Whether you are a municipality, utility, or industrial operator, Rugged Telemetry offers the tools to streamline your operations, reduce risk, and modernize critical infrastructure.



City of Watertown Lift Station

Solution & Connectivity Providers



Rugged Telemetry builds advanced monitoring and control systems for remote and industrial infrastructure. With a focus on reliability, integration, and ease-of-use, our products are deployed across water, wastewater, oil & gas, and agricultural sectors.

For more information, visit www.ruggedtelemetry.com
Or contact us at info@ruggedtelemetry.com



Velocity IoT helps businesses deploy and scale smart connectivity worldwide with a single SIM and vendor relationship. Our multi-network solutions use multi-IMSI and eUICC technologies to provide global reach, built-in redundancy, and reliable uptime. We support emerging standards such as Satellite NTN and SGP.32, ensuring future-proof connectivity for both startups and enterprises. Backed by a dedicated team, Velocity IoT delivers flexible, dependable solutions for long-term success.

For more information, visit www.velocityiot.io
Or contact us at info@velocityiot.com



ORBCOMM is a global leader in industrial IoT, providing satellite, cellular, and dual-mode connectivity solutions to track, monitor, and control assets anywhere in the world. Serving industries such as transportation, maritime, heavy equipment, oil & gas, and utilities, ORBCOMM delivers end-to-end solutions that combine reliable networks, rugged devices, and powerful applications—helping customers improve operational efficiency, safety, and compliance.

For more information, visit www.orbcomm.com
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