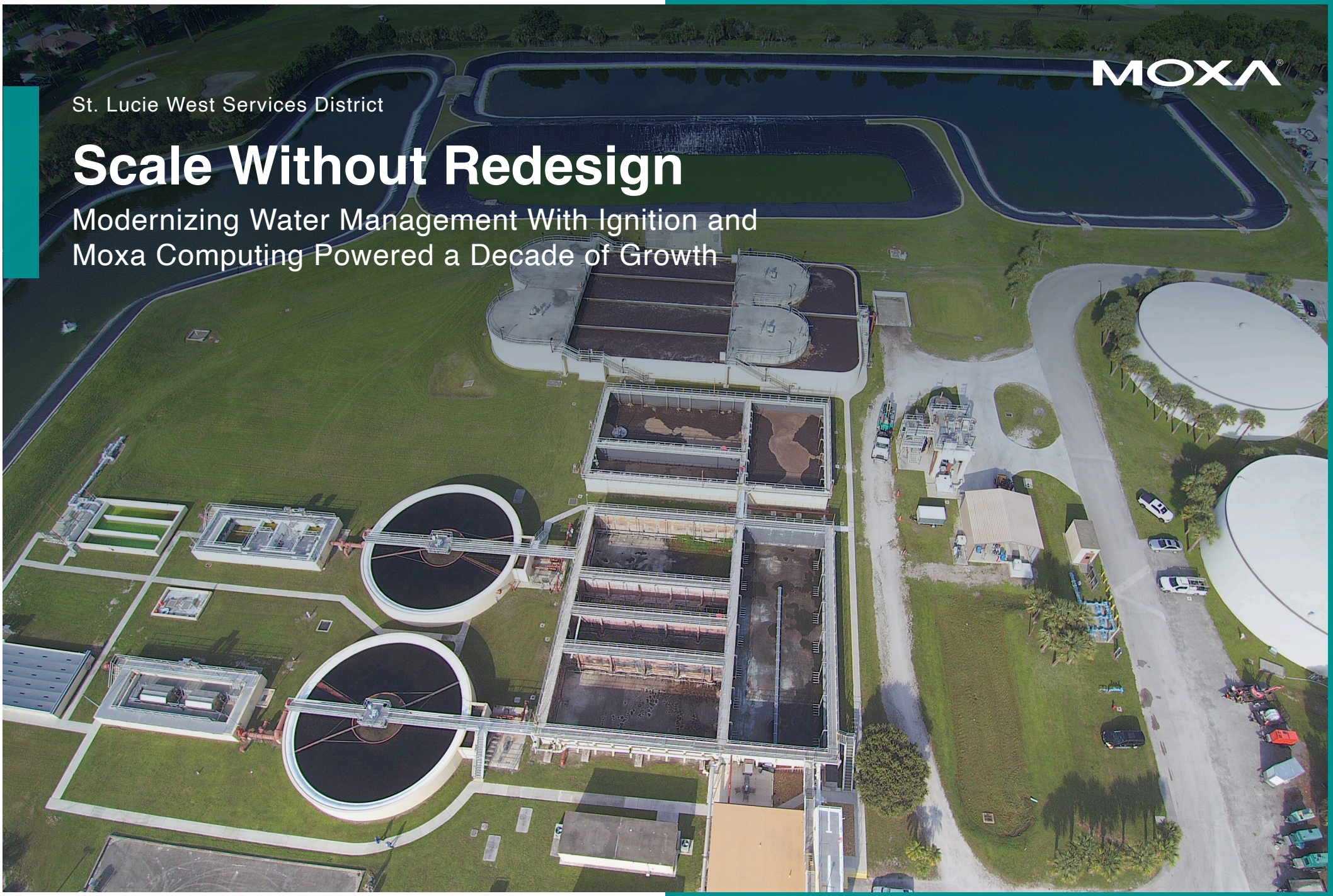


St. Lucie West Services District

# Scale Without Redesign

## Modernizing Water Management With Ignition and Moxa Computing Powered a Decade of Growth

# From Obsolete to Scalable

For many utilities, growth eventually forces difficult decisions. Legacy technologies become obsolete, licensing costs increase, communications infrastructure reaches its limits, and operators are asked to learn entirely new systems.

St. Lucie West Services District (SLWSD) has taken a different path. Over the past two decades, the Florida utility has made a series of deliberate architectural decisions that enabled them to minimize disruption while maximizing flexibility as their system expanded in scope and complexity. Those decisions included adopting Ignition as their SCADA platform, standardizing remote telemetry around Moxa industrial computers and Ignition Edge, and embracing modern LTE and MQTT-based communications rather than remaining dependent on proprietary radio networks.

Today, as the district expands its service territory, adds new lift stations, migrates to Ignition 8.1, and upgrades its fleet to Moxa's latest UC-2222A platform with Device Lifecycle Management (DLM), those earlier decisions are continuing to deliver value. Rather than rebuilding its automation infrastructure, St. Lucie West is extending an architecture already proven in the field.



| | |
|---|---|
| Organization | St. Lucie West Services District (SLWSD) |
| Location | Florida, United States |
| Industry | Water & Wastewater Utility |
| Website | www.slwsd.org |
| Key Technologies | Moxa UC-2222A / UC-8112A, Moxa DLM, Ignition Edge, MQTT, Cellular LTE |

**2013**
Ignition adopted as core SCADA platform with UC-8112A and DLM

**2018**
Migration from proprietary radio telemetry to LTE + MQTT

**2026**
Upgrading to Ignition 8.1 and UC-2222A, adding mobile SCADA access and DLM fleet management

**2027 and beyond**
Continuing growth through service territory expansion and additional lift stations

Since 2013, the St. Lucie West Services District has used Ignition as its core SCADA platform, along with Moxa UC computers and DLM services, to support its service territory expansion.

# Investing in a Scalable SCADA Foundation

SLWSD serves one of Florida's fastest-growing communities and is recognized as an award-winning utility focused on service quality, operational readiness, and long-term sustainability. As the district prepares to incorporate neighboring communities and expand critical infrastructure, earlier architectural decisions continue to provide the flexibility needed to grow without rebuilding.

Founded in the early 1990s, the utility expanded from a relatively small operation producing roughly 500,000 gallons of potable water per day into a utility producing approximately 3.6 million gallons per day, with additional expansion already planned. By 2013, St. Lucie West was operating successfully on a Wonderware-based SCADA system. Operators were familiar with the platform, and the system was functioning reliably. However, as system requirements continued to grow, district leadership found that the biggest risk wasn't performance.

## The challenge was scalability

During a planned plant expansion, SLWSD was faced with significant costs simply to add incremental capacity to an existing system due to licensing costs tied to increasing the number of tags and operator workstations. In response, the district conducted a comprehensive evaluation of available SCADA platforms based on more than initial purchase price. Leadership made a careful assessment of long-term sustainability, vendor commitment, integrator support, migration complexity, and the ability to preserve the operator experience that staff had already mastered. The district ultimately selected Ignition from Inductive Automation. The transition allowed St. Lucie West to maintain operational consistency while building a foundation capable of accommodating future growth, without being limited by per-device or per-tag licensing costs. More than a decade later, that decision continues to pay dividends. What began as a system supporting roughly 3,000 tags now supports approximately 50,000 tags while maintaining a consistent operator experience across water, wastewater, and remote operations.

# Communication System Hurdles

## Moving Beyond Legacy Radio Telemetry

As SLWSD expanded its network of lift stations, stormwater gates, and remote utility assets, the district faced another choice: replace aging radio infrastructure with another proprietary radio system or rethink the architecture entirely.

The legacy radio system relied on elevated antennas at remote sites, increasing both maintenance requirements and exposure to Florida lightning events. Maintaining communications also required continual attention and was becoming increasingly difficult and expensive to support as vendors began to exit the market.

Rather than replacing one proprietary radio system with another, SLWSD took the opportunity to modernize the architecture itself. Working with Integration Services, Inc. (ISI) and High Performance Automation & Controls (HIPAC), the district deployed a new telemetry platform built around Moxa industrial computers running Ignition Edge.

> *"A technical solution for process control is not built overnight. It takes years. We wanted a unified system instead of a quilt stitched together from different vendors and different approaches."*
>
> **— Brian Callahan, Integration Services, Inc.**

### Legacy System Limitations

- ⚠ High licensing costs per tag/workstation
- ⚠ Proprietary radio networks vulnerable to lightning
- ⚠ Manual on-site updates requiring laptop connection
- ⚠ Vendor exit from market causing support bottlenecks



Solution

# Modernizing Remote Telemetry with Modern Architecture

SLWSD, alongside ISI and HIPAC, developed a standard connectivity kit that combined LTE connectivity, MQTT communications, and Delta PLCs at remote sites that transformed how information moved throughout the utility. With Ignition Edge running on Moxa industrial computers, remote sites were able to publish changes immediately via MQTT rather than waiting for centralized polling cycles. Field events were now communicated in near real time, allowing staff to quickly see and respond to any issues in the field.

The move to LTE allowed the district to leverage commercial carrier networks designed for ongoing expansion and support, saving them the cost and effort of maintaining specialized communications infrastructure. Additionally, broad LTE coverage permitted smaller antennas, significantly reducing lightning strike vulnerability.

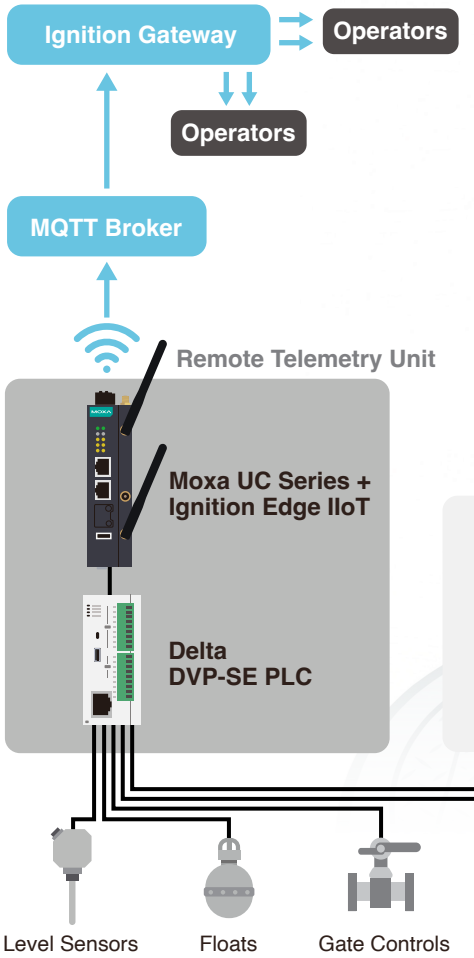
> *"The flexibility it gives our staff in the field is one of the biggest benefits. Instantaneous alarms help us respond quickly and manage the district more effectively."*
>
> **— Thomas J. Bayer, Assistant Utilities Director**

Today, Moxa industrial computers support communications for every lift station and stormwater gate in the district, with current expansion projects expected to bring the deployment to approximately 90 remote sites. Throughout over 10 years of service, the system has required minimal intervention while providing the connectivity needed to support field operation.

> *"What's really stood out is the length of time we've had it and the minimal issues we've experienced."*
>
> **— Joshua C. Miller, District Manager**

SLWSD deployed a standardized telemetry architecture across lift stations and stormwater control sites.

The architecture enables near real-time visibility while supporting scalable deployment and centralized management.




> *"The response became essentially real-time. When something changes in the field, the message is sent immediately rather than waiting for a polling cycle."*
>
> **— Brian Callahan, Integration Services, Inc.**

# One System, Endless Scale

## Streamlining Management for Future Expansion

Importantly, these upgrades are occurring without requiring a fundamental redesign of the telemetry architecture. Unlike many upgrade projects, the district's migration to UC-2222A is not being driven by performance issues in the field. Instead, it reflects SLWSD's long-term approach to lifecycle management and scalability.

The new platform provides compatibility with current and future Ignition Edge releases, expanded opportunities for remote administration, and a standardized foundation as the district continues to expand its telemetry footprint. Moxa's UC-2222A provides an exceptionally stable 64-bit ARM platform with operating system support extended to 2034.

In addition, Moxa's remote device management platform DLM enables district staff to be much more efficient at edge node maintenance. Historically, configuration updates, software maintenance, and device monitoring required technicians to travel to individual sites and handle updates via direct connection to a laptop. As the number of remote assets approaches 90 locations and continues to grow, this model becomes increasingly difficult to scale. By implementing Moxa DLM, the district is able to centralize visibility, simplify maintenance workflows, and reduce the effort required to manage an expanding fleet of edge devices.

*"As the number of remote assets continues to grow, centralized fleet management becomes increasingly important. DLM gives us a path to manage and maintain those devices more efficiently."*

**— Brian Callahan, Integration Services, Inc.**



**SLWSD is currently:**

- Expanding its service territory
- Adding approximately 16 additional lift stations
- Growing water production capacity
- Expanding the SCADA to mobile devices
- Upgrading remote assets from UC-8112A systems to Moxa UC-2222A industrial computers
- Introducing centralized fleet management using Moxa Device Lifecycle Management (DLM)

# Results

## The Payoff of Planning for Change

Many utilities face major disruptions when software platforms, communications technologies, or hardware generations reach end of life. SLWSD's experience has been different. Because the district prioritized scalable architectural decisions early, it has been able to navigate multiple technology transitions while maintaining operational continuity.

## Sustainable Utility Operations

As SLWSD prepares to add approximately 2,200–2,600 additional customers through the incorporation of neighboring communities, expand water treatment capacity, and modernize critical infrastructure, district leadership remains focused on the same goals that guided earlier technology investments: operational excellence, long-term sustainability, and reliable service for customers. The architectural decisions made more than a decade ago continue to support those goals today.

> *"The biggest payoff is that we're continuing to grow without having to redesign everything. The decisions we made years ago are still supporting where we're going next."*
>
> **— Joshua C. Miller, District Manager**

### SLWSD Key Outcomes

- **3.6 Million** Gallons Per Day
- **50,000** SCADA Tags
- **90** Remote Assets
- **2,200 to 2,600** New Customers Planned
- **10+ Years** of Telemetry Operation

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