



Rockwell  
Automation

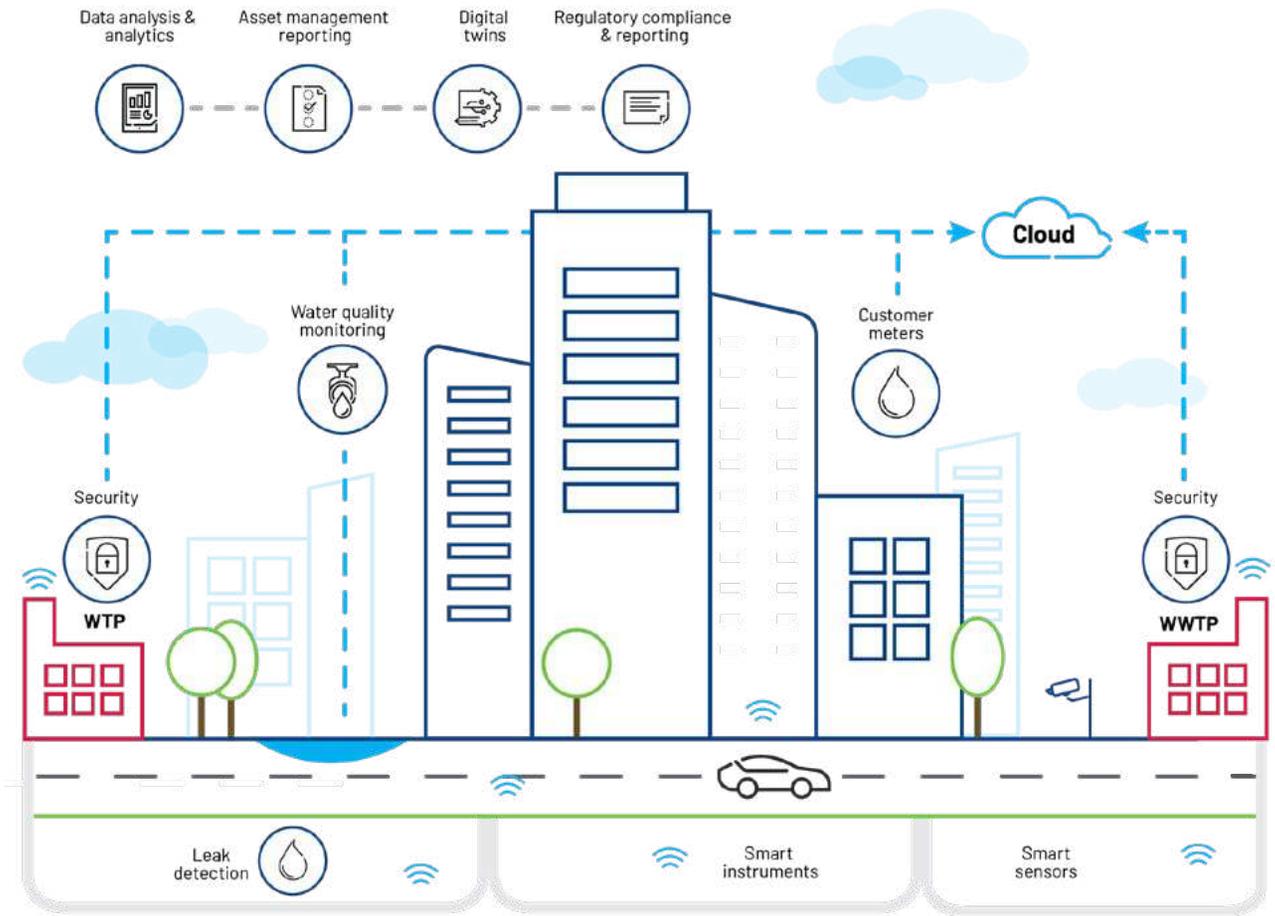
# DIGITAL SOLUTIONS FOR THE WATER INDUSTRY

Rockwell Automation brings its  
Connected Enterprise® to water utilities  
and organizations investing in **Smart Water**  
digital technologies and solutions

# The water industry is evolving.

Digital transformation in the water sector is increasing as plants become integrated into **Smart Cities**. This visionary approach puts data and digital technology to work to support the sustainable use of water, such as achieving net zero carbon status and improving the overall quality of life.

This aligns with industrial and municipal water & wastewater plant managers placing greater emphasis on sustainability and resource efficiency and are looking for solutions that provide digital plant optimization.



To accelerate the transformation to digital operations, Rockwell Automation assists water utilities with **Smart Water** solutions to help overcome their toughest challenges:

## POPULATION



Rising population is putting increasing demands on your utility's capacity limits.

## CLIMATE



Extreme weather tests the resilience and sustainability of your system.

## REGULATION



Regulatory pressures on water and wastewater system operators continue to mount.

## INFRASTRUCTURE



Aging infrastructure is outpacing the available capital necessary to modernize your facilities.

## WORKFORCE



Experienced employees are retiring, leaving a knowledge gap in the workforce.



# Attributes of a Smart Water plant

## OPERATIONAL INTELLIGENCE

Digital technology supports plant operations enabling more sustainable water utilization

- Improve operational decision making with real-time data
- Artificial Intelligence (AI) allows equipment to perform more efficiently & sustainably
- Efficient real-time decision making enhances labor productivity & enables consistent water quality

## WORKFORCE PRODUCTIVITY

Data-driven decision making & ability to support operations remotely

- Digital training records & standard operating procedures prevent loss of institutionalized operation knowledge
- Remote operations enables more productive workforce while also enhancing safety

## ASSET PERFORMANCE

Understand equipment performance & anticipate issues before they occur

- Intelligent equipment allows enhanced asset utilization & lifecycle management
- Reduce maintenance costs with effective asset management strategies
- Minimize energy usage through efficient equipment operation

## PLANT EFFICIENCY

Digital transformation demands robust, secure, and resilient digital network infrastructure.

- Compliant to regulatory requirements
- Protection of network infrastructure
- Protect the environment & constituents
- Build resiliency into operations

**“Water and Wastewater utilities are investing in technologies and software to improve network visibility and real-time control.”**

- Source: Bluefield Research

# Your digital transformation to Smart Water starts with:



## Digital operations

**Having the right information instantaneously to make critical decisions.**

- Eliminate manual data collection & IT staff to create reports from disparate data sources
- Leverage data to more efficiently operate plant i.e. lower chemical & power usage



## Reliability & predictive maintenance

**Reducing CAPEX needs through proper maintenance & equipment monitoring.**

- Decrease main and collection system breaks and loss due to leakage (Analytics & MPC)
- Maintain lower pressure particularly on older susceptible infrastructure with (Analytics & AI)



## Remote operations

**Water utilities need flexibility to control their operations securely from a remote location to accommodate safety of personnel and facilitate efficient operation.**

- Standardization for control & visualization across plant
- Enable a secure connected workforce



## Cybersecurity

**Water utilities face multiple cybersecurity risks as they move to Smart Water.**

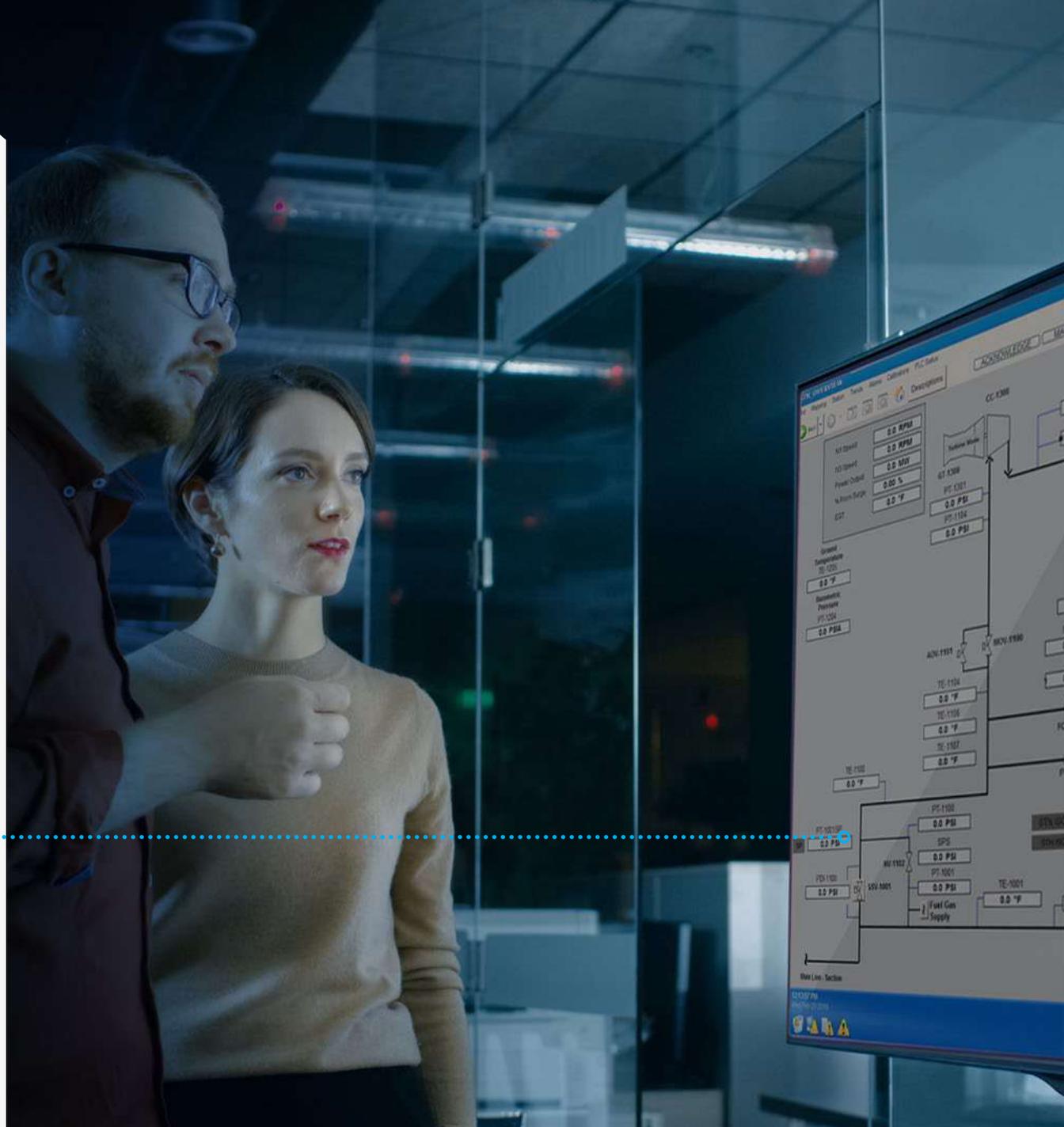
- Secure operations ensure operational continuity, increase reliability and future-proof your infrastructure
- The most effective strategies focus on People, Policy, and Processes

# Data driven decisions through digitization and dashboards

Capture & contextualize data to empower you to make intelligent decisions and deliver the right data to the right people at the right time

- Analyze and minimize chemical and energy usage
- Reduce maintenance cost of pressure-induced pipe breaks
- Increase water revenue through reduced water loss

Focus on the data that has the greatest impact. It is critical to understand which data is useful to optimize reliability and performance, enabling more proactive and informed decision-making.



# Reliability and predictive maintenance

Reducing capital improvement budgets through proper maintenance.

- Improved equipment reliability & efficiency
- System intelligence based on process conditions and analytics
- Operators empowered to take charge of troubleshooting & maintenance
- To address challenges resulting from aging infrastructure and need for remote operator support



# Remote operations rely on flexibility, security & efficiency

Rockwell Automation and partner CISCO have collaborated to produce network design & implementation guidelines titled; **Converged Plantwide Ethernet (CPwE)**.

**These guidelines offer best-in-class design for performance and security practices for the plant control system**

- Ability to control & monitor remote systems in a safe/hardened facility
  - Remote Operations Center > multiple facilities
  - SCADA > Remote Telemetry Units
- Maintain regulatory compliance & reporting



# Without a holistic approach to cybersecurity,

utilities are at risk of a cyberattack, compromising operations, public health and safety, and critical infrastructure

## TAKING A HOLISTIC APPROACH WILL ENABLE:

- Secure operations with resilient, well-defined segmented network architecture that connects all assets
- Address Cyber risk across an attack continuum by identifying connected assets and introducing protection countermeasures
- Implement a security policy that addresses network and asset monitoring, real-time threat detection, quick incident response and rapid recovery



# One of the largest purification plants in the world, US

One of the largest progressive design-builds in North America implemented state-of-the-art SCADA system for a brand new purification plant expansion (400 MGD total).

## BUSINESS OUTCOME

- Secure, robust network that supports plant connectivity while increasing reliability
- Ability for remote operations and monitoring
- Ability to integrate IoT networks
- Expansion of the water purification plant to provide fresh drinking water while reducing dependence on groundwater





# Ready to start your journey?

**Many utilities are at various stages of smart city adoption.**

Whether your plant is just beginning its digital transformation journey or further along, our solutions are flexible enough to meet your needs today and prepare you for the future.

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**As you plan, design and move through your journey toward creating a Smart Water Plant, keep some guiding principles in mind:**

## **THE BEST APPROACH IS OPEN**

Your Smart Water Plant solutions should support not only your main automation vendor's systems, but also the full range of third-party systems that you have in place or may someday use. Using open-architecture technologies is the best way to accomplish this.

## **SECURITY IS NON-NEGOTIABLE**

Be sure your entire digital approach – including the hardware and software you use, and the vendors you work with – supports a secure pathway from production data to actionable information.

## **THE RIGHT PARTNER IS PARAMOUNT**

Choose vendors with the right mix of insight, technology and industry experience to fit your needs.

**Accelerate your Smart Water journey with Rockwell Automation.**

[rok.auto/smart-water](http://rok.auto/smart-water)

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