

# Secure Water & Wastewater

## Radiflow Cyber Secure-Gateway for Water Systems

The productivity of nations and wellbeing of people worldwide depends on the availability of fresh and potable water. Yet, it is often the case that Supervisory Control and Data Acquisition (**SCADA**) solutions for water control are not granted adequate attention and resources. Consequently, many water infrastructure systems suffer from undetected leakage, inaccurate consumption metering, as well as unaccounted-for water (**UFW**) and financial losses.

Legacy water distribution control mostly relied on public networks and proprietary data communication protocols. Modern systems rely mainly on IP communication, over copper, fiber optic and wireless media. Data communication in water systems may utilize a range of industry-standard protocols such as MODBUS.

In recent years, critical infrastructure of all kinds have become a target for cyber-attacks by hostile organizations and governments. As water sites, most of which unmanned, are spread across wide geographical areas, they should be considered a prime target for cyber-attacks, committed either by an insider who had gained unauthorized access to a site, or from outside the site via the operational network.

The 3180 is optimized to serve in water remote sites with its variety of communication interfaces and the rich security feature-set, all contained in a compact ruggedized chassis.

For example, according to security experts one of the greatest vulnerability is happening during maintenance. The maintenance process requires access to specific part of the network, but many of the operators do not have the ability to enforce such limited access to specific part.

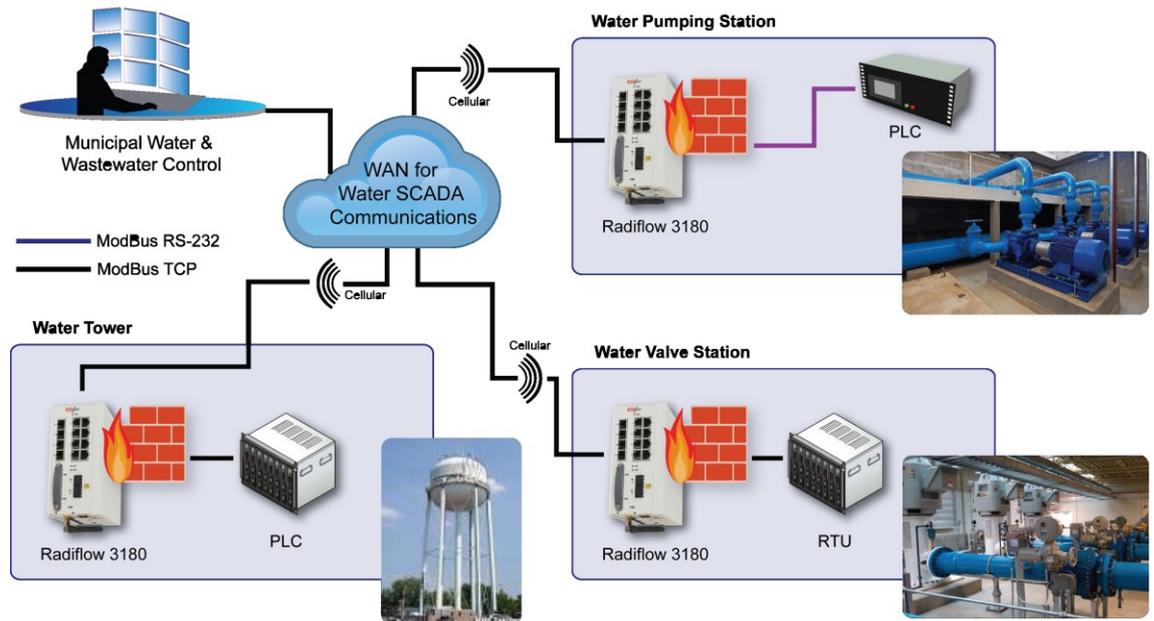
Radiflow 3180 gives the operator the ability to manage the complicated process called maintenance operation with Authentication Proxy Access (**APA**). The APA is enabling the operator to intuitively define work orders per technician for a specific device within one of the subnets and for a limited time-slot. The 3180 is using Deep Packet Inspection (**DPI**) firewall to filter the unauthorized traffic of the operational technology (**OT**) network. This way the operator is controlling the entire process and is able to reduce cyber threats and humans errors. At the end of the maintenance sessions, the APA is issuing an activity report.

Typical installations where Radiflow's 3180 is installed to remotely supervise site operation via secure channels include:

- Monitoring and control for pumping at wells and underground aquifers
- Fresh water reservoirs, pumping stations, pressure monitoring, valve control stations
- Fresh water treatment (fluoridation), water quality and safety monitoring
- Monitoring of water supply metering (bulk meter), leakage and UFW

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### Features

- **Authentication proxy access (APA)** provides preconfigured task-based access with full activities reports
- Validation of the SCADA process per user using a **per-port DPI firewall** to assure high immunity against a variety of cyber attack vectors.
- **Automatic learning of SCADA behavior** toward setting a baseline for DPI rules, for reliable detection of anomalous activity and assuring minimal false alerts.
- **End-to-end IPsec Layer-3 VPN** for secure inter-site connectivity between substations and Water management control centers.
- Support for **Ethernet** and **Serial** interfaces, for connecting modern and legacy devices, including protocol gateway functionality and PoE+ support for integrated video surveillance traffic
- Reliable WAN interface over **Ethernet** utilizing **copper and fiber**, as well as private wireless and **cellular (3G/4G)** connectivity as a backup link
- **Ruggedized security gateway** hardware compliant to the requirements of remote outdoor sites where the water systems are deployed