



FLOW & PRESSURE MONITORING

RELIABLE, EFFECTIVE MAINS NETWORK MANAGEMENT



BACKGROUND

Water Authority Fiji (WAF) has benefitted from more reliable and effective monitoring of its water mains network and the ability to bill commercial clients, since implementing a remote flow and pressure monitoring solution. Since 2017, **PACIFIC TECHNOLOGIES (NZ) LTD** in partnership with **Metasphere** and **KROHNE**, has supplied more than 2000 **Point Orange** remote telemetry units (RTUs) coupled with over 500 **KROHNE WATERFLUX 3070** battery-powered water meters to **WAF** as a remote flow and pressure monitoring solution. This solution has enabled pressure and flow data to be collected, primarily to allow water usage billing of major commercial water users such as hotels. With the higher accuracy of the flowmeters and the data integration, revenues have increased by 15%.

Additional benefits include the ability to better identify pipeline pressures, night flow patterns and reduction of non-revenue water, and to manage risks within the mains network. The data collected and information provided has allowed for greater predictive operation, maintenance and management.

Other Applications include:

- Critical Pressure Monitoring Points
- Pressure Reduction Valves
- Treated Water Quality Panels
- Bulk Mains Monitoring

STAKEHOLDER

Water Authority Fiji provides water and wastewater services throughout Fiji, an archipelago of more than 300 islands in the South Pacific. It serves over 144,000 customers in urban areas, and 700,000 people nationwide including rural areas. Its area of operation covers 18,274km², supplying about 116 million m³ of treated water to homes and businesses every year.

BUSINESS NEEDS

WAF, via **PACIFIC TECHNOLOGIES (NZ) LTD**, approached **Metasphere** to monitor and manage flow, pressure and temperature within their mains network and to develop a means of billing their commercial clients (hotels, breweries, restaurants etc.) for their water usage. The availability of the data has allowed **WAF** to make decisions which reduce pipe bursts, water loss, and operational expenditure.



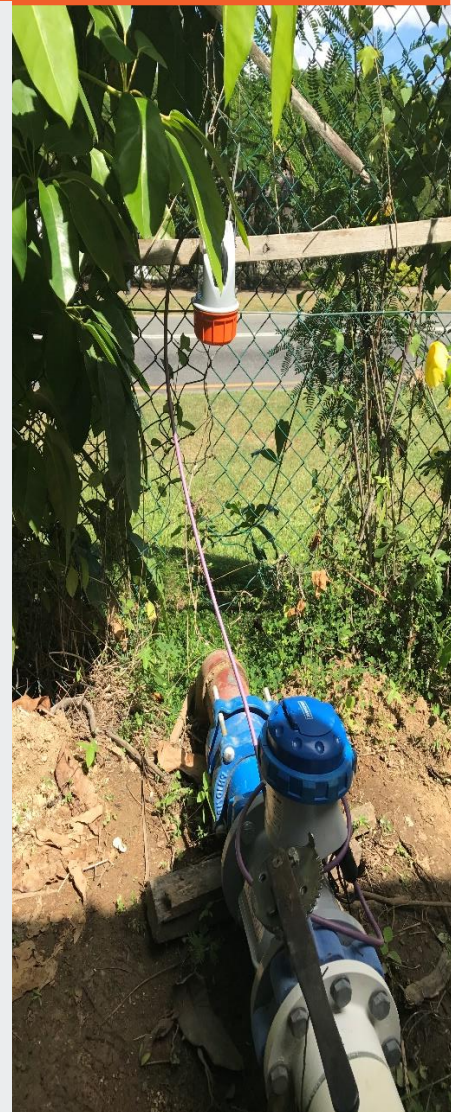
THE METASPHERE SOLUTION

The **Metasphere Flow Monitoring Solution** monitors pressure and flow points across the mains network, using equipment stationed at each monitoring point. This includes a **Point Orange** RTU coupled with the **KROHNE WATERFLUX 3070** battery-powered magnetic flowmeter. This flow meter was specifically selected as it measures flow, total, pressure and temperature. All data is transferred to the **Metasphere Point Orange RTU**, via a single serial cable connection.

Point Orange is a self-contained RTU with internal battery pack, IP68 unit enclosure, either a 4G (NB-IoT/ CaT-M1) or tri-band 3G modem, and quad band GSM/GPRS fallback, auto-switching internal and external antenna options, software configurable AI, CI, DI, Modbus and SDI-12 communication options, integrated submersion sensor, local diagnostic points and intelligent alarm reporting. It communicates with **Metasphere's** Master Control System, DNP3/ WITS DNP3 Masters or FTPS servers.

The flow and pressure values are sampled and stored with time-stamps at periodic intervals of 15 minutes. The **Point Orange** RTU is also configured to trend diagnostic information from internal points, such as temperature, battery voltage and signal strength.

The data collected is then communicated to **Palette**, **Metasphere's** data visualisation platform. **WAF** has an existing SCADA top-end system but for this project preferred to use **Palette** for near real-time data and alarm visualisation and management. A new 'flow totalising/ billing' function was developed in **Palette** by **Metasphere's** in-house development team to automatically generate data in a format that can be integrated into **WAF's** Customer Billing System.



BENEFITS

Proactive management of pressure and flow monitoring points across the mains network has proved highly beneficial for WAF: the data and events generated by the flow monitoring solution has produced a twofold outcome:

- i) Improved billing data from WAF's key commercial customer's which has improved revenue streams
- ii) Reduced operational costs due to data availability around the pipeline network

FIND OUT MORE!

If you would like to monitor pressure and flow, get in touch to find out how **Point Colour** RTUs transform your operation



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