



SmartCap

## Leakage reduction drive

Technology: SmartCap

Location: Southeastern city, US

Drinking water systems in the United States currently lose at least six billion gallons of water every day, according to figures from the American Society of Civil Engineers - which says the country lost an estimated \$7.6 billion of treated water in 2019 due to leaks.

Utilities are building their resilience, shifting from reactive to data-led proactive decision making and integrating smart water technologies into their drinking water infrastructure systems.

### THE PILOT

Orbis successfully supported a municipal utility client in its non-revenue water reduction drive, demonstrating the capability of its SmartCap real-time detection technology. The pilot, which began in early 2022 and was ongoing as of May 2022, in a major southeastern US city saw the installation of 20 of the innovative SmartCap devices as part of a proactive campaign to reduce leakage on the water network.

Orbis technicians installed the SmartCaps in a busy residential neighborhood over the course of a day and the client was set up on the Orbis cloud-based Streamline Portal. They were then able to regularly check the portal to identify warnings for potential leaks.

## CASE STUDY

LONG-RUNNING LEAK FOUND IN 3 DAYS



### SMARTCAP FEATURES:

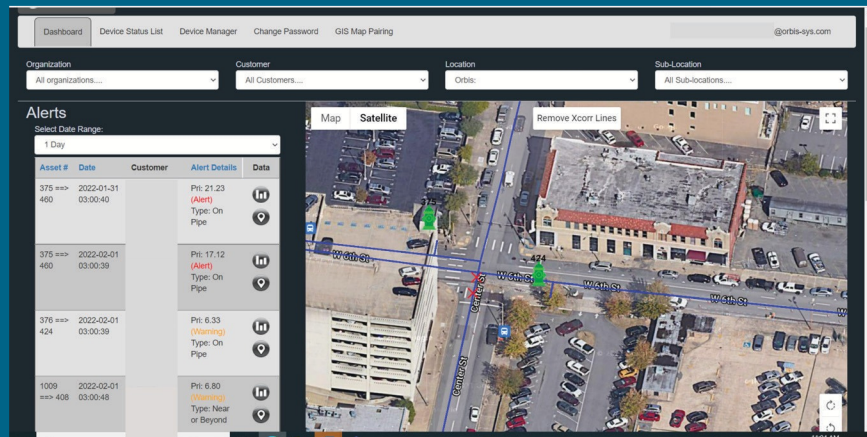
- Easy onsite deployment
- Auto-pairing feature
- Replaceable battery
- CAT M1 cellular connectivity
- Suitable for monitoring distribution pipes – 12" or less – from hydrants
- Above-ground installation eliminates signal concerns
- Suitable for wet and dry barrel hydrants
- Can upgrade legacy standpipes and hydrants



# THE OUTCOME

Within three days of deployment, the SmartCap technology alerted the utility to a hard-to-find leak that it had been trying to locate for more than 15 months. The SmartCap's pinpoint accuracy enabled the utility's repair teams to quickly locate the underground leak on a six-inch diameter water main and restore the pipe. Since 2019, the utility had dug in five separate locations but could not find the leak which had already cost approximately \$134,000.00 in lost water.

After the leak was repaired, the utility moved the SmartCaps to a different location to detect another leak. Within a few days, the original six-inch pipe broke again, just one block away from the first break, but was undetected for



several weeks. Had the technology remained in place after the first repair, it would have alerted the utility to the second leak in almost real time.

## THE TECHNOLOGY

The Orbis SmartCap is an intelligent fire hydrant and pipe monitoring device that enables remote leak detection by providing real-time data from a multi-sensor. Packaged into a fire hydrant cap, the device can convert any fire hydrant into a smart-enabled asset simply by replacing the pumper nozzle cap.

Data received by the sensor is automatically uploaded to Orbis's cloud-based, user-friendly Streamline Portal. The dedicated portal collates the array of pipe and flow conditions, along with GPS location information, and uses algorithmic models to create scheduled reports and alerts which can be accessed by operators.

This actionable intelligence enables utilities and municipalities to manage their water network efficiently.

## COST SAVINGS

Significant water and cost savings were achieved by alerting the utility to leaks which would otherwise have continued to run. Approximately \$134,000.00 worth of treated water had already been lost – this sum would have risen significantly. Additionally, most of the water that leaked from the main made its way into the sewer to be treated at a wastewater plant, adding to the unnecessary costs.

The SmartCap's remote monitoring capability meant no labor resource was required onsite to detect the leaks. However, the biggest savings undoubtedly came from the prevention of future water losses and by eliminating the risk of major infrastructure damage and the costly legal claims that can result from a water main break.

Orbis Intelligent Systems is committed to delivering smart technologies that support utilities and municipalities in the critical job of delivering safe and reliable water services.