

# Digital Water Solutions and Veitur



**Location:** Álftanes Peninsula, Iceland

**Population:** 2,600

**Purpose:** Network Monitoring

On the western Atlantic coast of Iceland, the beautiful Álftanes Peninsula is home to four thousand people, including Iceland's president. Residents of Álftanes receive water through a distribution network served by a single main pipeline. The pipeline is small in diameter and it is impossible to maintain constant pressure during periods of high demand. In addition, the pipeline is made of a variety of materials, including PVC. With no local water storage and operations overseen by a neighboring municipality, it is challenging for the water team in Álftanes to meet their operational goals.

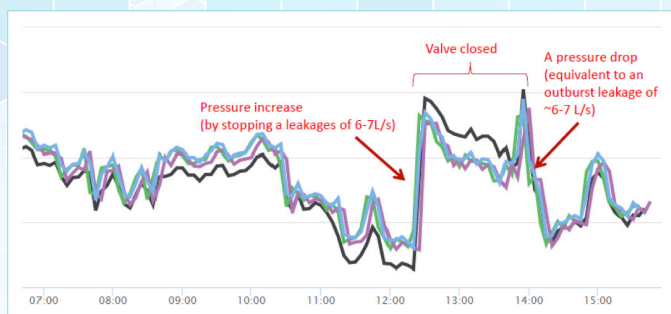
In a groundbreaking partnership, DWS and Veitur joined forces to maintain pressure and minimize fluctuations in the peninsula's water distribution system. This groundbreaking pilot monitored acoustics, pressure, transient pressure, and temperature to gain valuable insight into the water system.

## The Value of hydrant.AI

It was essential that any technology installed in Álftanes' hydrant system met two key criteria: the ability to work across pipe materials (including PVC) and the ability to be installed in a dry barrel non-interrupting configuration (which would allow hydrants to remain operational year-round).

Key Value Propositions identified:

- Locate small leaks before they become issues.
- Identify pressure drops and associated trends.
- Protect assets as pressure fluctuates to meet demand.
- Include multiple sensors in a single integrated solution.
- Allow year-round monitoring with a dry barrel non-interrupting configuration.



## The Experience

With DWS' hydrant.AI technology, all the pilot goals were met, many to a higher degree than originally expected.

Benchmarks met included:

- Identified small leaks as low as 2-2.5 l/s.
- Identified three leaks as average pressure increased to meet demand.
- Located an unexpected closed connection through interpretation of the data.
- Identified pressure drops and associated trends related to a larger user in the area.
- Observed both simulated and real-world leaks in acoustic and pressure data.

## Problems solved with hydrant.AI

For the Álftanes Peninsula, pressure spikes and leaks were a major issue.

- With hydrant.AI technology, both simulated and real leaks were detected. With advance detection, the water team had time to fix leaks before they became issues.
- In addition, data collected by hydrant.AI helped the team better understand pressure spikes and correlate causes ranging from operational to demand driven events.

Furthermore, Veitur was able to see the ways ambient temperature effected the stability of the pipes in their distribution network.

## Looking to the future

- With hydrant.AI any dry barrel above-ground hydrant can be used as a technologically advanced monitor for valuable key metrics.
- By better understanding real-time system dynamics, Veitur can fine-tune asset performance to drive operational and capital improvements more broadly.
- In the future, Veitur plans to experiment with this technology in other Icelandic regions. With the capability to monitor year-round, northern regions with colder climates can also be supported.
- DWS aims to expand this technology to include other hydrant types, such as below-ground hydrants.