

CASE STUDY

Redcliffe Water Mains Burst

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Solution

After receiving the alerts, Unitywater's 24/7 Control Room operators checked the sensor patterns and analysed data from the Takadu CEM. By analysing the data, Unitywater's System Loss engineers concluded this significant event was a water mains break. The team located the leak down to a specific DMA area within Unitywater's Smart Water Network by analysing signals from sensors and meters at the critical pressure points. An immediate request was made to Detection Services to survey the identified DMA.

Figure 1: Takadu data shows an abnormally high flow (blue) instead of predicted flow (green) indicating a leak or burst in the network



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Initially the break was thought to have occurred in a stormwater culvert, which would be difficult to locate in the DMA. However, after thorough investigation of the DMA, a large mains burst was located under the footpath which was discharging directly into a stormwater drain and running directly into the bay. This type of burst would have been easily missed without the Smart Water Network and CEM system.

Results

At its peak, the flow rate of the leak was 42 L/s (litres per second). This incident resulted in approximately 3.6 ML of lost potable water. If the leak had gone undetected by the CEM, it would have cost Unitywater \$4.1M over the course of a year, based on Seqwater bulk-water charge to Unitywater of \$3,122 per ML in F19-20.

Due to the timely detection from the Takadu CEM and efficient response protocols, Unitywater was able to significantly reduce:

1. Run time of this leak
2. Loss of clean treated drinking water
3. Loss of revenue
4. Risk of potential claims from public property damage

Conclusion

Water leak could occur under a creek or elsewhere underground, and never surface. This study is a perfect example of a break that would have gone unnoticed behind an empty building without Unitywater's Smart Water Network Program. The financial implications and the environmental impact of similar incidents that go unattended can be significant.