

Creating a more resilient, customer-focused water utility

Thames Water

The Challenge

- Respond rapidly to unplanned clean water outages

The Benefits

- Customer-focused responses during major incidents
- Faster restoration of water supplies for customers
- Greater readiness for future emergencies
- Improved collaboration with stakeholders



Extreme weather events and unexpected pipe bursts can occur anywhere, at any time, interrupting the supply of clean water for customers. Thames Water is now using ArcGIS to help it respond more quickly to these unforeseeable incidents, so that it can deliver a high standard of service for its ten million clean water customers and successfully deliver 2.7 billion litres of drinking water every day.

The Challenge

When the ‘Beast from the East’ stalked across Southern England in February 2018, this exceptionally cold and icy weather front had a significant impact on the water network in London and the Thames Valley region. Many homes and businesses experienced interruptions to their clean water supply, and heavy snowfall impeded Thames Water’s ability to make network repairs and deliver bottles or tanks of water to customers. While water outages on this scale occur very rarely, the event made Thames Water realise the importance of being able to visualise unfolding events. It wanted to have better access to real-time information, to help it deliver a faster and more customer-focused response.

The Solution

A long-term user of Esri’s ArcGIS Enterprise platform, Thames Water used the Esri Dashboard to build an Emergency Incident Management solution. Developed using an agile project methodology, the solution quickly evolved beyond the initial project scope and advanced in functionality to become a platform with three main components:

Incident Viewer – This interactive dashboard is currently displayed on three huge screens in the Thames Water control room, event coordination room and customer incident centre. When there have been six or more ‘red’ calls to the customer contact centre within any one half hour period in the same location, or a series of automated alerts from asset sensors, an incident is highlighted on the map.

Incident Manager – This solution allows managers to edit the map of an incident area to show the locations of temporary water standpipes, the proposed parking spots for water tankers and other interventions. The solution provides a detailed view of what is happening, improving communication between teams working on the ground and employees at head office.

Incident Reviewer – The third component of the solution enables Thames Water to look back at events that have occurred in the past, using a time-slider tool. Managers can rewind back to a specific date, see the number and location of calls during a defined window of time, assess the risks and actions taken and use this insight to learn from previous incidents.

Thames Water subsequently enhanced the core Emergency Incident Management solution with the addition of an ArcGIS mobile app, which enables employees working in the field to record changing water levels at water stations during emergency situations or report new leaks. As soon as data is recorded in the field, this up-to-the-minute information is instantly visible to managers on the Incident Viewer dashboard. “We are continuing to identify new opportunities to expand our ArcGIS Emergency Incident Management solution and deliver added value to the business,” says Jon Regan, Head of Digital and Innovation at Thames Water.

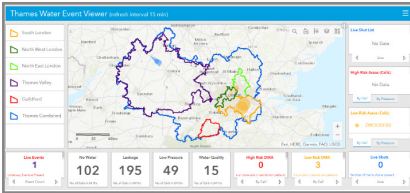
Esri UK | Millennium House
65 Walton Street | Aylesbury
Buckinghamshire HP21 7QG
T 01296 745500 | F 01296 745544
E info@esriuk.com | www.esriuk.com

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“ ArcGIS allows us to share information far more effectively with external stakeholders. The maps of incident areas bring the situation to life, so other organisations can easily understand what is going on and can support us. ”

Louise Bates, Platform Architect, Thames Water



Thames Water's Incident Viewer displays the evolving situation during a live event

The Benefits

Customer-focused responses during major incidents

The Incident Viewer enables Thames Water to identify potentially serious incidents, as soon as they occur, and focus on minimising their impact on customers. The organisation can, for example, proactively contact customers to let them know by text that there is an issue in their area, significantly improving customer service. In addition, when weather-related incidents occur in different locations at the same time, as happened during the Beast from the East, incident managers can use the Incident Viewer to look holistically across the whole region, better understand how different customers are being affected and tailor responses.

Faster restoration of water supplies for customers

Using the Incident Manager solution, managers at Thames Water can make more rapid decisions during serious incidents, plan interventions more effectively and allocate resources more appropriately. This ultimately improves the efficiency of the organisation's emergency response, enabling it to restore water supplies more quickly. Indeed, Thames Water is confident that its use of the new ArcGIS solution will help it to meet the tough new targets set by the water industry regulator Ofwat and restore customers' clean water services within 3 hours, rather than the previous target of 4 hours.

Greater readiness for future emergencies

The Incident Reviewer solution is particularly valuable as it provides Thames Water's managers with a simple but effective way to review past incidents and learn from them. "As part of any business resilience model, you must always be looking for ways to improve and change how things were done in the past," explains Chris Davis, Incident Manager at Thames Water. "The Incident Reviewer enables us to see in five minutes how the events of a 24 hour period unfolded and how they were managed. We can then learn a great deal about how to improve our response in the future to minimise or eliminate the impact of an unplanned event on our customers."

Improved collaboration with stakeholders

The new Emergency Incident Management platform not only helps different teams within Thames Water to work more effectively together; it also improves communication between Thames Water and other organisations, such as local councils. "After the Beast from the East, collaboration was identified an area for business improvement," says Louise Bates, Platform Architect at Thames Water. "ArcGIS allows us to share information far more effectively with external stakeholders. The maps of incident areas bring the situation to life, so other organisations can easily understand what is going on and can support us."