



Ensuring safe, sustainable water in an increasingly-stressed environment

Southern Water, Durrington, West Sussex, UK

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Dominic Hallett, operational control
manager, Southern Water

Southern Water is a utility serving southeast England, prioritizing "Water for Life" — accessibility to clean, safe, and affordable water. It also provides effective and efficient wastewater services focused on protecting the environment for future generations.

Committed to continual improvement and increased resiliency, Southern Water works to adapt to climate change and ensure sustainable operations management. To create long-term value for its customers and stakeholders, the organization takes a holistic approach to planning.

DTh^o



What they were up against.

A long-term DTN customer, Southern Water previously relied on the company's HydroMaster, which helped minimize the impact of precipitation on operations, assets, and infrastructure. It also used its HydroCast, a comprehensive rainfall forecast and analysis tool, and daily reports to support rainfall impact assessments.

In July 2021, Southern Water experienced heavy summer thunderstorms, brimming with electrical activity, in its operating area. Unfortunately, one of its most sensitive pumping stations was struck by lightning, losing power, resulting in significant environmental impacts.

The event highlighted the need for greater visibility into developing hyperlocal conditions and the importance of recording critical details about the kinds of weather that happened. Southern Water reached out to DTN to see what the company had to offer. It selected WeatherSentry®, the company's weather visualization solution, which delivers real-time weather mapping and risk management tools, plus highly accurate location-driven forecasts.

What we did to help.

The Southern Water team achieves greater situational awareness with WeatherSentry's numerous options for viewing and assessing current and future weather threats. This is particularly important with elevated risk factors, like lightning and high winds, for which WeatherSentry also provides customized automatic, location-specific alerts.

With the rise in extreme weather events driven by climate change, Southern Water must manage ever-increasing threats, and WeatherSentry has proven to be a valuable tool. They not only use the solution's layered maps to customize their view of conditions, but in working with DTN meteorologists, they also receive added clarity and guidance.

"The radar and layered map give me great visibility into many types of weather, and setting up my lightning watch and warning zones is easy. Their concentric circles provide a fantastic frame of reference."

Dominic Hallett

What the impact was.

In February 2022, WeatherSentry proved invaluable during Storm Eunice. Its map displayed color-coded risks, current precipitation, and recorded wind speeds and gusts, allowing the Southern Water team to monitor conditions more closely and in greater detail. They were on top of the threats before email alerts from the local meteorological office even hit their inboxes.

With the solution's accurate forecasts and real-time views, they can plan proactively and act more quickly. It also increases their decision-making confidence and situational awareness. Additional tools — like an executive summary, a slideshow view, and access to data from local weather monitoring stations — help provide a more robust, cohesive view of current and developing conditions.

"The slideshow animations allow me to build and shape my view of my operating area, and I can roll across my regions to see various weather alerts and observations, which provides a super informative quick view," said Dominic Hallett, operational control manager for Southern Water.

Hallett and his colleagues look after the control room 24/7, monitoring and responding to water and wastewater alarms. WeatherSentry has proven to be helpful. "It just gives us so many more opportunities to prepare, respond, and react," he explained.

During late February and early March 2018 — before they had WeatherSentry — the Southern Water team faced criticism following "the Beast from the East" — an intense cold wave driven by Anticyclone Hartmut. In the wake of the drastic freeze/thaw cycle, close to 10,000 customers lost access to water. The event and the overall rise in frequency and strength of extreme storms drove the organization to seek new ways to enhance its weather preparedness.

With the Beast from the East in mind, the Southern Water team was eager to compare how it performed during Storm Eunice with WeatherSentry's help.

Fewer than 300 customers lost service during Eunice thanks to Southern Water's increased preparedness. With WeatherSentry's sub-seasonal forecasts, the team knew up to four weeks in advance that they would face stronger than average winds for the time of year. Their confidence level in the outlook continued to increase as time went on and their operational triggers were met.

Based on advance warnings issued by DTN, Southern Water decided to stand up a weather impact assessment team five days before the storm. This team involved senior managers from across departments, including operations and communications, and was gathered to build a response plan. In the lead up to the storm, the team was in frequent dialogue with utilities-specific meteorologists at DTN to hone the plan in-line with the latest forecast guidance.

With this information, they prepared and positioned resources to proactively minimize Eunice's likely impacts, which was especially critical towards the storm's end when winds were the strongest. The DTN forecast had shown when conditions would peak from west to east, allowing Southern Water to better coordinate with its utility providers and other area services, some of which also rely on DTN.

They found the impact times from DTN to be on point and were ready with alternative measures like generators, system resets, and more. At its peak, Eunice pummeled the area with 122 mile-per-hour winds — the highest recorded in decades.

Compared to the Beast from the East, Southern Water greatly reduced service outages during Eunice and was in place to immediately manage the environmental impacts. In partnership with its collaborators, the organization had 130 tankers, 30 mobile generators, and eight diesel pump sets positioned to respond to lost power events at its pumping stations. Ultimately, no pollution was recorded, and the Southern Water team felt they had complete control over the outcome thanks to their diligence.

"By being well prepared, you can really minimize the impact of a storm," said Hallett. He also confirmed that the solution helped ensure the health and safety of his colleagues during the operations, which were complete without any injuries.

Preparedness has additional benefits, including incentives and significantly reduced penalties centered around enhanced performance. With the UK water industry facing intense scrutiny from regulators, performance is critical, and preparation is key to success. It's also a way of ensuring a fair market for all parties.