

CUSTOMER
Anglian Water

PROJECT
Detecting the causes
of flooding

SOLUTION
Trimble Catalyst DA2,
K-Portal and field
data capture software

Uncovering the answers

How Anglian Water Services is solving complex and long-standing flooding problems through a data led approach and astute use of low cost, centimetre accurate, GNSS field data capture.

“We’ve quadrupled our data understanding and are now finding solutions to flooding in just a fraction of the time it took previously.”

Anglian Water Performance Manager’s, Chris Wray & Luke Murphy

Anglian Water

Anglian Water is the largest water and water recycling company in England and Wales by geographic area. The company prides itself on doing the right thing and in always exploring innovative ways to protect the region and the communities it serves from perennial problems such as flooding and discharges.

In particular, one of the areas of work the company has been focussing on in the last 12 months is the causes of flooding because identifying the many potential contributing factors responsible for this can be a complex issue.

Date led approach

Anglian Water felt that this problem, although not unassailable, needed a new approach if the company was to provide the high level of service it wished for both its customers and stakeholders. A final push came in 2021 when heavy rain flooded a catchment area of around 60 homes in a location that had caused a number of complaints over the years. Previously, floods in this area had been tackled in several ways including a replacement pump, a change in the frequency of the pump regime and jetting. However, nothing had solved the problem despite numerous site visits.

Following the most recent flooding incident, Anglian Water Performance Manager, Chris Wray, was determined to explore all potential causes and remedy the problem once and for all. Although in the past, Anglian Water had used CCTV and checked its own assets such as sewers and pumps, it was agreed that if a solution was to be found, the team needed to collect centimetre positions, images and attribute information on all the factors that could contribute to the situation, including those not owned by Anglian Water, such as council managed ditches, private sewers and water courses.

System criteria

Chris and colleague Luke Murphy felt that although this data led approach would bring the answers they were looking for, as a new strategy it would also have to be cost-effective and deliver results quickly. He therefore researched a number of field data capture systems that would deliver on three important criteria:



Mapping every relevant asset in the area with Trimble Catalyst

Trimble Catalyst DA2 Benefits for Anglian Water

- Low cost for fast acquisition and easy absorption into the budget
- Subscription business model, Anglian Water only pay for what they use
- Easy to set up and use - members of the team are not engineers
- Consistent, fast centimetre positions
- Flexible, customisable system making it suitable for any number of applications
- Ability to watch a live picture build in the Portal as data is collected



Collected data viewed in the Portal



Achieving centimetre accuracy with the Trimble Catalyst DA2

Cost – centimetre accurate GNSS can cost up to £18k for a system which would immediately ground the scheme. Any system would therefore have to come in at a fraction of this cost for a fast acquisition and easy absorption into the budget.

Easy to use – Chris and his team are not engineers or surveyors and therefore required an ‘out of the box’ solution. Good support from the provider would also be vital.

Flexible – a system with customisable software would make it suitable for other applications and further justify any outlay.

Subscription service a deciding factor

After some initial research, Chris and Luke contacted KOREC to trial the Trimble Catalyst DA2 GNSS system with KOREC field data capture software. The Trimble Catalyst business model has been developed for people exactly like Chris who require centimetre positions to supplement their primary area of work rather than positions for all day, everyday use. Trimble Catalyst comes with an ‘on demand’ subscription pricing model so users can select the accuracy they need, 1cm, 10cm, 20cm or 60cm, which means users only pay for what they use. Chris opted for 1cm accuracy and a three-month subscription. This flexibility also eliminates the need for him to predict project requirements weeks or months in advance.

The Trimble Catalyst hardware comprises a simple, low cost, lightweight Trimble DA2 GNSS receiver (around £380 per unit), connected to an Android™ or iOS device turning it into a precision mapping, navigation, and measurement tool you can use with any location enabled app or service. In this case, Anglian Water also purchased two licenses for KOREC’s customisable field data capture software along with two rugged Trimble TDC600 data loggers.

The KOREC software comes with KOREC’s secure, cloud-based Portal for analysing, viewing and sharing the collected information.

All in the detail

Revisiting the catchment with the persistent flood water, Chris and Luke’s teams used their two

“Our teams are problem solvers, not engineers, so any data capture system would have to be easy to use as well as deliver on all our criteria.

Working with KOREC, we’ve been able to adapt our field data solution into exactly the system we need. This support was an important part of our decision to go with KOREC and Trimble.”

Anglian Water Performance Manager’s, Chris Wray & Luke Murphy

“ We’ve quadrupled our data understanding and are now finding solutions to floods in a lot less time than it took previously. ”

Anglian Water Performance Manager’s, Chris Wray & Luke Murphy

newly acquired Trimble Catalyst DA2 systems to capture any detail in the area that could assist in their analysis of the flood, irrespective of who owned it. This included everything from manhole covers, gutters and roof connectivity to gullies, surface water and ditches. All the data was captured over a period of just two days despite having to revisit properties when householders were absent. The recorded data was automatically fed back to the KOREC Portal building a picture of every asset in the area.

Back in the office, Chris could literally watch the solution build before his eyes. As the data populated the Portal, it quickly became evident that the problem lay not with sewers or pumps but with a blocked ditch at the side of the catchment that was not allowing surface water to drain off the roads. Instead, this water was finding its way into the foul system by pooling over manholes and people were understandably lifting their manholes to drain surface water off their gardens. This information was fed back to the Parish Council who were then able to communicate the findings, backed up by the data, to the landowner.

The new data led approach had enabled Anglian Water to solve a ten-year problem in just one week.

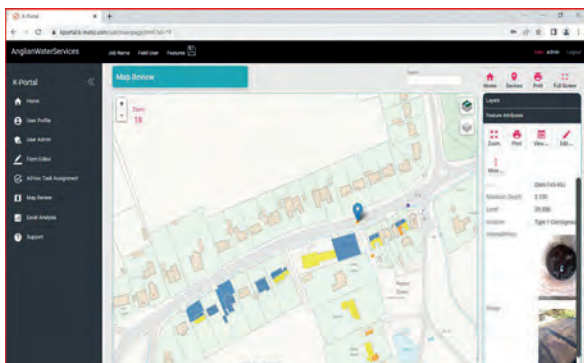
New workflow

The new workflow for tackling flood causes is now a simple one for the team: Capture data -- analyse data in the Portal -- make a decision -- present feedback to relevant parties for repair

“We can now deduce the root cause of a problem significantly faster than previously and are solving flooding issues that have been troubling our customers for fifteen years or more!” said Chris. “The quality and detail of the data we’re collecting is also proving useful for the accuracy of our corporate mapping system once it’s been through the modelling and data teams. With KOREC, we’ve created a bespoke XML export function that now takes



Easy to use system



Captured data can be viewed 'live' on the Portal

data from the Portal directly into our corporate GIS helping us to move away from the previous approach which was far more time consuming.”

Chris concludes, “This data led approach, using Trimble Catalyst and KOREC’s field data capture software, has enabled us to put a completely different perspective on the mechanics of flooding. We are now in a position to not just solve long term problems but also proactively manage potential floods in the future and that means an ever-better service for our customers, stakeholders and the environment.”

Anglian Water has just purchased a third system and is now also looking at other areas of focus across the business.

CONTACT US

Please do get in touch for further information on any of the products or services mentioned in this case study, a demonstration, support or just a chat about your requirements.

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