

CUSTOMER

Morrison Water Services

PROJECT

Cost-effective, 1-2cm accuracy asset collection

SOLUTION

Trimble Catalyst, KOREC Capture field software and portal



On site with the system

CASE STUDY

Information Flow

"...not only have the three systems greatly improved the workflow but also contributed to savings of in excess of £20k."

Straight forward, cost-effective and short-listed; Generating savings of over £20k in its first phase, a project designed and delivered by Morrison Water Services (MWS) on behalf of Yorkshire Water has achieved industry recognition and a place on the Water Industry Awards 2021 short list thanks to its simple workflow and innovative use of geospatial technology.

MWS, a part of M Group Services, is the UK's largest, dedicated, independent utility service provider working on behalf of regulated asset owners across the electricity, gas and water sectors.

Providing end to end solutions, the company assists a number of water and sewage providers including Yorkshire Water, who MWS are currently working with on a project to digitally record and update attribute information on wastewater assets along thousands of metres of pipeline.

New ways of working

Although MWS were already familiar with digital data capture techniques, their current system could not deliver the precise accuracies required to capture drainage levels on the Yorkshire Water project. This meant that assets collected with the existing system would lack precision resulting in disjointed information and the need for additional data checking time in the office. Additionally, MWS were aware that if real-time 1-2 centimetre accuracy was to be achieved, they could be looking at a survey grade system, which would be a heavy investment for an application of this type.

However, through the MWS Business Improvement Platform, (a programme for the implementation of innovation and best practices), the team in the Northern Area was introduced to an innovative data collection solution that could address their aspirations. Namely to find a simple, low-cost, accurate, integrated data capture system that would not only fulfil their needs in the field but also provide a straightforward way for the storing, viewing and reporting of the collected information.

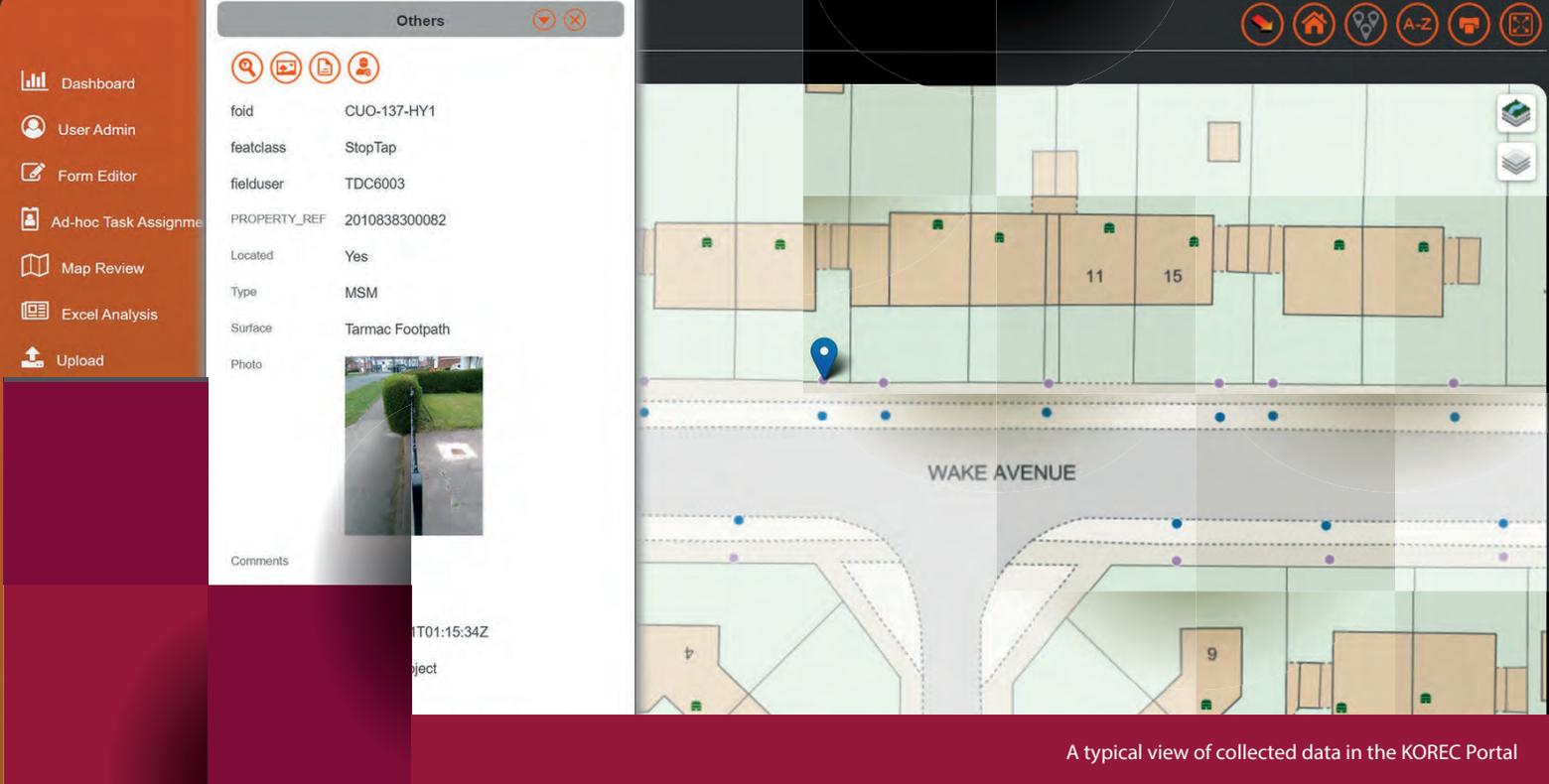
Christopher Harris (MWS Regional Technical Manager) agreed to look at how this technology could potentially benefit the Yorkshire Water project and others like it,

BENEFITS

1. Cost-effective
2. Reduction in emissions
3. Automated reports
4. Affordable 1-2cm precision data collection
5. Reduced rework
6. No paperwork
7. COVID safe workflow
8. Single source of information



Trimble Catalyst Receiver



whilst Andrew Stephenson (MWS Design Manager) was assigned to support the technology and workflow during an initial trial.

The low-cost system in question comprised Trimble’s Catalyst GNSS, KOREC Capture - data collection software running on an Android phone (in this case, Trimble’s rugged TDC600) and KOREC’s secure, cloud-based portal. Lightweight and highly portable, this field system would be perfect for MWS surveyors who were covering up to 5km daily.

Innovative, simple workflow and automated generation of complex reports

In order to create a workflow that exactly fitted the requirements of the project, Andrew Stephenson worked in partnership with KOREC over a test period. During the trial, customised forms for data collection were set up with KOREC’s guidance and both parties reviewed the best way to report on the collected information and view it within the portal.

Once satisfied that the technology would deliver in the field and office, three systems were purchased by MWS. A typical daily workflow sees each surveyor sent the location of a stretch of pipeline to be surveyed. The surveyor then completes the compulsory fields in the form including the 1-2cm position, the type and accessibility of chamber, depth of chamber etc. A time stamped, geo-referenced photo of the asset is also added. Finally, there is a walkover to capture all the information for the ‘as built’ and Health and Safety documentation. The system then automatically generates a report for that asset in a PDF format.

The automatic generation of these complex reports is a major factor in the success of the system for MWS. All data and

The MWS/Yorkshire Water system

Trimble Catalyst

A revolutionary GNSS subscription service with a range of accuracies available on demand, including 1-2cm precision.

KOREC Capture

KOREC Capture is an easy-to-use data collection app with customisable forms and a secure web (cloud) based portal for form creation, device management, data handling etc.

Trimble TDC600

A rugged, Android smartphone.

“To be able to capture data from site, with 1-2cm accuracy, using just a mobile app and a Trimble Catalyst is second to none.”

Andrew Stephenson,
Design Manager, MWS

pictures pertaining to the asset are drawn together in a process that requires no human intervention, saving valuable time and resources which in turn, free up MWS staff to attend to other important business matters.

Once an asset is completed, all collected information is automatically sent to the portal for checking where anyone with permission and an internet connection can view real-time information on each asset. From the portal, all data can be exported and used to populate the client's GIS, via the positional information, with a number of standard GIS formats available including SHP, KML and CSV.

Minimal hardware investment

One of the attractions of the system was that it kept hardware costs to a minimum on three levels:

Trimble Catalyst – Trimble's highly innovative GNSS is a subscription based software receiver with cost depending on usage and accuracy. The only hardware needed is a low-cost Trimble receiver. The system supports basic Android phones and tablets.

KOREC Capture data capture app – developed by KOREC mapping, the Capture app runs on a range of data loggers and phones.

KOREC Portal – secure, cloud hosting providing fast access to information for stakeholders from anywhere with an internet connection, reducing impact on existing IT departments and avoiding the need for additional hardware.

By the end of phase 1 of the project, Andrew believes that not only have their three systems greatly improved the workflow but also contributed to savings of in excess of £20k.

COVID safe and reduction in emissions

A paperwork free system provides a far more COVID friendly way of working, eliminating the need to visit the office or handle physical documents. A reduction in travel for resurveys has also helped reduce the MWS operational carbon footprint by an estimated 1.43 tonnes. Additionally, due to remote working, there have been significant time savings cutting out 60 days of travel (around 10,000 miles) during the project.

“There is real value in having all the up-to-date information in a single source, instantly available to those with access to the portal.”

“Support from KOREC has been excellent and all our surveyors found the system very easy to use with minimal training.”

Andrew Stephenson,
Design Manager,
MWS

Date of Survey	28/01/2020		
SPS	Topofitu SPS		
Asset Type	End Point	Reference points	SS
Grid Ref	X: 434389.642	Y: 402097.301	Level: 32.236
Location Plan			
Chamber	Type 3 / 4 Carriageway		
Surface Category of Cover	Type 3 / 4 Carriageway		
Photo Outside Chamber / Area	Photo Inside chamber		
is chamber accessible	Yes	Chamber construction	Brick
is Chamber Roadset?	No	Chamber condition	Good
Depth of chamber	1-1.5m		
Comments	no asset found from start to end		



From left to right, an example of an automated report, the Trimble TDC600 and out in the field using Trimble Catalyst and KOREC Capture

Successful completion of Phase 1

Andrew reports that Phase 1 of the project has been completed successfully, on time and on budget, delivering real benefits to the design process of MWS's projects. "To be able to capture data from site with 1-2cm accuracy using just a mobile app and a Trimble Catalyst is second to none! The hardware used in the field makes it perfect for staff with mixed IT experience and the ability to export data in a variety of files widens its range of potential uses adding even more value and driving significant efficiencies across the industry."

Phase 2 of the project with Yorkshire Water is now underway.

Key benefits of the new workflow:

Cost-effective – over £20k saved in the first phase of the project.

Reduction in carbon emissions – less travel for resurveys has reduced the MWS carbon footprint by an estimated 1.43 tonnes. Additionally, remote working has cut out 60 days of travel (around 10,000 miles) during the project.

Automated reports – complex asset reports created with no human intervention saving time and resources.

Affordable 1-2cm precision data collection – minimal low-cost hardware required, just Trimble Catalyst and a phone.

Reduced rework - using the portal, ability to verify that work is correct and complete before the surveyor leaves the site.

No paperwork – reducing the need to visit the office and consequently a reduction in carbon emissions and travel time.

COVID safe workflow – no physical paperwork or visits the office required.

Single source of information – portal provides a single source for real-time asset positional and attribute information.

Many thanks to Andrew Stephenson, Design Manager, MWS, for supplying the information and pictures for this story. www.morrisonws.com

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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The Trimble TDC600 is versatile, cost-effective and above all, rugged