South West Water

Pollution Incident Reduction Plan

July 2021 Update

southwestwater.co.uk

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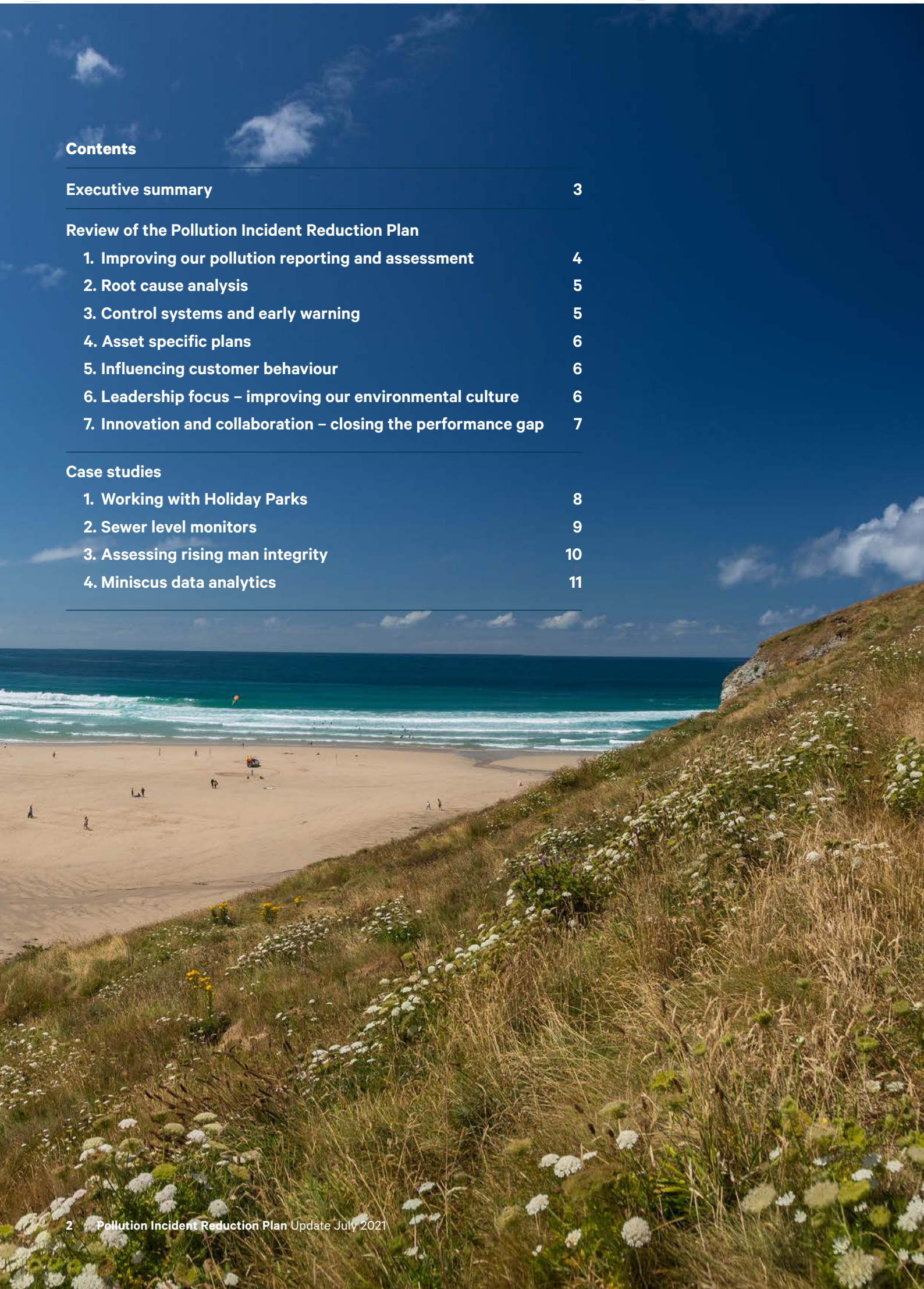


Executive summary

This is an update to the Pollution Incident Reduction Plan we published in December 2020.

It has continued to be a challenging year for a number of reasons, not least the Covid-19 pandemic and consequential impact on our business.

Our people and teams have continued to work tirelessly to provide the services our customers depend on. We have continued to adapt our working practices to ensure our people can provide the essential services our customers depend on in a Covid-19 safe and secure way.

In our December update we acknowledged that some of the activities targeted in our Pollution Incident Reduction Plan (PIRP) had not delivered improvements we had planned and that our performance was well below the standards we demand of ourselves. Although, we did see some initial sign of improvement from September 2020.

We have since refocused effort on those activities delivering greatest benefit and we have embedded our revised governance structures and operational activities.

This has already helped drive a renewed focus on pollutions and we have already achieved some notable signs of improvements compared to the first six months of 2020.

Review of the Pollution Incident Reduction Plan

We have put in place a Programme Manager to oversee and monitor our progress with the Pollution Incident Reduction Plan. This will enable us to continuously assess the impact of our interventions and ensure we continue to deliver the best outcomes from all of our projects. As a result, some of our original projects may either be reviewed and amended or even stopped to enable more effective interventions to be made.

1. Improving our pollution reporting and assessment

ON TRACK

In December we said we would continue to focus our resource on pollution reduction. Since, December we have completed the following activities:

- Installed 171 out of 210 sewer depth monitors to gain a better understanding of our network and to provide more timely information on issues that may affect our network, pumping stations and treatment works
- Procured signage to be put up at our hotspots and other locations to enable members of the public to report issues direct to us should they arise to help us respond quicker to potential incidents
- Update and revised our website to make it easier for members of the public to report a potential pollution incident to us by providing a link on our home page.

All of the above has helped contribute to a significant reduction in the number of pollutions compared to the same period in 2020. The charts opposite provide this comparison.

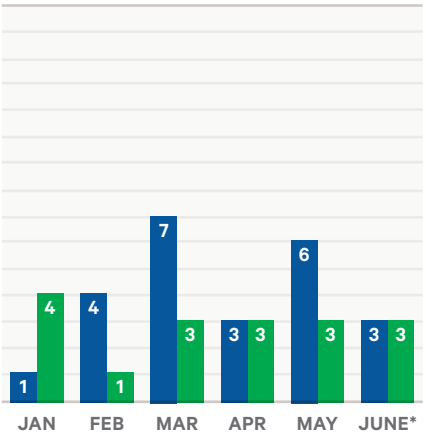
Where no environmental impact can be evidenced to the Environment Agency the pollution data can be reviewed.

*** Data still being verified and agreed with the Environment Agency.**

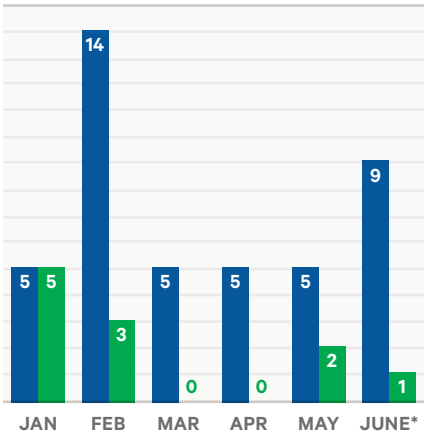
63% year on year **improvement**

Total number of pollutions – January to June

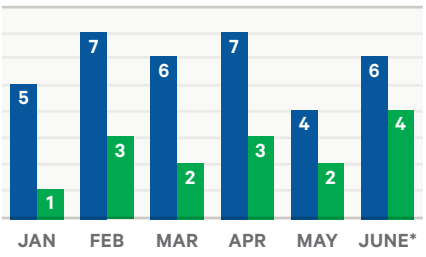
Wastewater Treatment Works



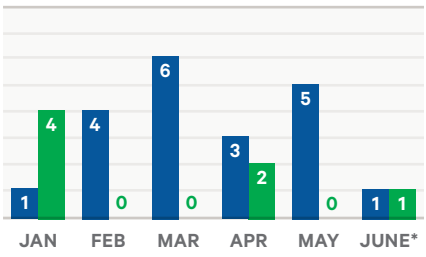
Sewage Pumping Stations



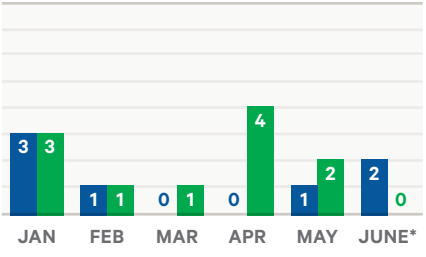
Foul Sewer



Combined Sewer Overflow



Rising Main



2. Root cause analysis

ON TRACK

Our root cause analysis has been effective in routinely reviewing all incidents to understand what interventions are required to prevent a specific incident happening again. It also provides learning for similar asset types which can be employed to further reduce pollutions occurring.

We reported in December that part of this root cause was due to the availability and functioning of our pumps. Our strategy called "Zero Pump Out" has delivered significant reductions in the number of pollution incidents compared to the same period in 2020 from 43 to 11.

We are also continuing to introduce a new app (WorkMobile) that enables the standard collection of information and evidence which can help inform the Environment Agency of potential incidents and which also helps inform of any future investment requirements.

In December, we reported that we had identified 191 hotspots across our operational region that have the most propensity to pollute. Further analysis has increased this to 210 and we now have a programme in place to deliver solutions or interventions at these hotspots. These investments will be delivered by 31 March 2022.

Hotspot and Repeat Pollution Investment Plan – Area maps

Area 1

Area 2

Area 3

Area 4

Area 5

Area 6

3. Control systems and early warning

ON TRACK

We continue to deliver and employ our network of Event Duration Monitors to better understand the performance of our assets. Our 24/7 data monitoring and service centre provide an immediate opportunity to respond to alarms escalate our response to prevent a pollution from occurring.

We continue to review the data and alarms to ensure we provide a continuously improving alarm response capability. This is linked to some pilot projects we have been undertaking to understand our network operations in real time.

4. Asset specific plans

ON TRACK

Asset specific plans have focused on improvements at 210 hotspot and repeat pollution sites across our region and a targeted improvement in operability at our pump stations.

All defects from MOTs at all of our pump stations have been rectified by our dedicated capital maintenance team for pump stations who have also been undertaking more regular site visits and inspections in accordance with our PIRP. This has helped drive a c.75% reduction in year on year pollutions for this asset type.

The delivery of our hotspot and repeat investment programme resulting from the RCA workstream noted earlier is progressing well. With the exception of some minor tasks we have completed all of the planned schemes between April 2021 and June 2021. Our plan for the remainder of the year is outlined in the table below.

Q1	April - June 2021	42
Q2	July - September 2021	57
Q3	October - December 2021	66
Q4	January - March 2022	45
		210

In addition to the hotspot investment programme we have committed £2.5m to replace a c.2km section of rising main at Crantock as a result of 4 bursts during 2021 after a period of stable operation. This work is essential to preventing further bursts and impacts to the environment. This will be started in Autumn 2021 and is due for completion Spring 2022.

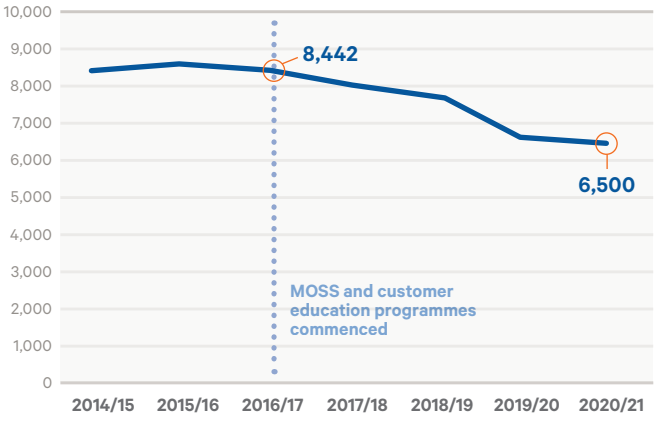
5. Influencing customer behaviour

ON TRACK

Customer behaviour will influence the performance of our assets and working with our customers on the impact of their behaviour is essential in addressing pollution risks over the longer term. Where we are able to determine the source or cause of a specific blockage we are engaging with those customers to explain how their behaviour can impact the environment.

By analysing our data we have also employed revised maintenance schedules and operational interventions to reduce the number of blockages.

Sewage network blockages



6. Leadership focus – improving our environmental culture

ON TRACK

We reported in our December update how we were making changes to our internal governance to provide a better line of sight of risks and mitigate.

We continue to hold our Daily Pollution Board, chaired by our Chief Executive Officer to maintain this focus. This has led to a more robust reporting process being established.

We have also been working on partnership with the Environment Agency on a joint culture and engagement programme.

7. Innovation and collaboration – closing the performance gap

BEING ACCELERATED

We have been successful in having nine projects being approved for stage 2 of the Ofwat Water Breakthrough Challenge. We are a partner in all nine projects which will provide an opportunity to look at innovative ways of improving our operational activities.

We continue to work with Exeter University on additional opportunities within the research and development field related to behavioural science and 'nudge' theory to understand customer behaviour and how this can have an impact on pollution incidents.

Following work on our root cause analysis we have been reviewing a number of different technologies which can help identify the integrity of our rising mains (pipes used to pump sewage under pressure to our wastewater treatment plants). This technology can be used without the need to turn sewage pumping stations off and can help with pro-active planned maintenance.

The final section of this update provides a number of case studies to show the many different types of interventions and actions we are taking to help reduce the number of pollution incidents.

Case studies

Case study 1

Working with holiday parks

Our region is a great holiday destination for many people and even more so during the current coronavirus pandemic when overseas travel is restricted. However, with this comes an increase in the population and influx of visitors to the many holiday parks we have both on the coast and inland.

This influx can lead to problems occurring on our network due to material other than the 3Ps: pee, poo and paper being flushed down the toilet. Hence, we are targeting key holiday parks and venues to provide education material to help reduce this problem.

Progress

- There are 262 businesses which are being targeted as part of this campaign
- 138 businesses have been sent the first email
- 249 have been sent the letter with promotional material
- Plan to visit 179 businesses to offer promotional material 'face to face'.

Status

- As of 2 July we have visited 112 of these businesses with 67 left to visit
- Early indications are that the messaging has been received positively and businesses are taking advantage of our offer of promotional material
- Estimated completion time for the visits: 16 July 2021.

Promotional material for the 'Love your Loo' campaign

Case study 2

Sewer Level Monitors (SLMs)

In recent years there has been significant development in deploying and adopting innovative sensor technologies and associated data analytics. Advances in sensor technology and wireless communication has enabled the opportunity to install, collect and retrieve wastewater network flow data which can help provide a better picture of our sewer network performance.

Progress

This projected started in February 2021 and since this date sewer level monitors have been installed across our region. The initial findings suggest this has enabled us to intervene at an early point to stop a potential pollution from happening.

- All 210 locations and manholes investigated
- 171 installed and sending data
- 10 installed and testing data receipt
- 24 locations to be reviewed due to bad reception
- 5 require further assessment of the technology for the specific location.

Further sites are also being reviewed for use of this technology where rising main bursts have occurred this may include Madeira Drive, Widemouth and Dobles Lane, Holsworthy.

Sewer Level Monitor

Case study 3

Assessing rising main integrity

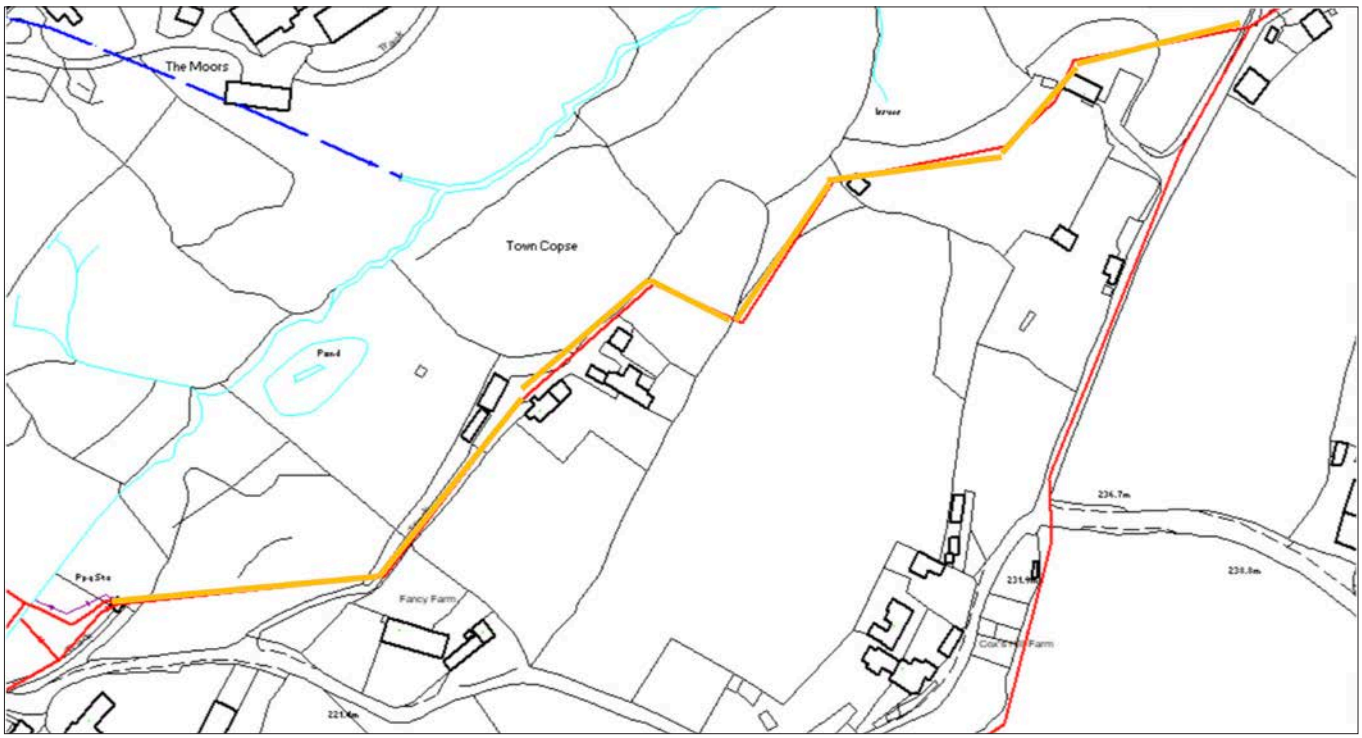
Rising mains pump sewage under pressure to enable wastewater to be moved from one location to another in order for it to be treated at one of our wastewater treatment works.

Traditional technology required the pumps have to be turned off and the wastewater removed from the pipe in order to assess the integrity and potential for any future failure to occur. Newer emerging technology can be used without the need to turn pumps off.

We have approximately 657 kilometres of rising mains within our region made up a different materials e.g. plastic, steel / iron, concrete, vitrified clay, asbestos cement and pitch fibre and of variable diameters ranging from 30mm to over 400mm. Hence, the technology will need to be adaptable for these variations.

Progress

We have begun an assessment of three of these emerging technologies working with the Water Research Centre (WRC). Currently, our preferred solution is a system called 'Sahara' and we will be trialling this on a small section of rising main near Dunkeswell.



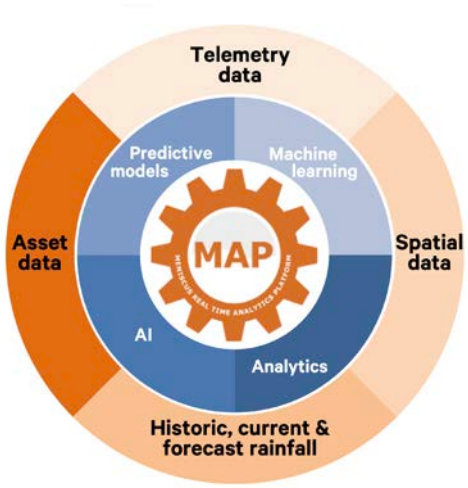
Dunkeswell Mill Lane Sewage Pumping Station
(100mm diameter, Cast Iron, 560m length)

Case study 4

Miniscus data analytics

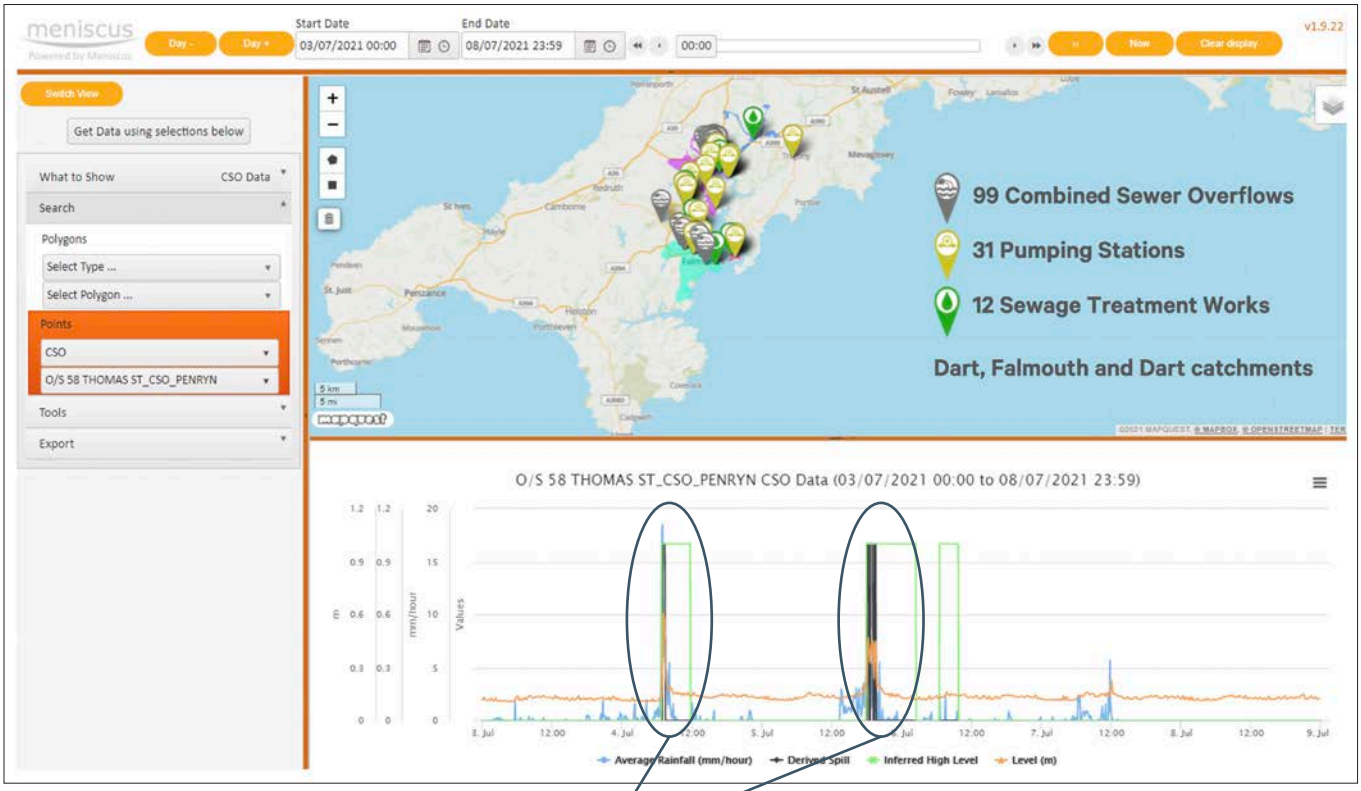
Data from combined sewer overflows (CSOs) can be used to determine when they are acting within their operating regime during wet weather or if they have fallen outside of this due to blockages or other issues.

We are trialling use of data being gathered from CSOs in the Dart and Tavy catchments to provide near real time alerts to highlight non-conforming CSOs and allow early interventions.



Progress

- Operating models have been built for the River Dart and River Tavy catchments
- CSO operating regimes have been created as static data
- Live data feeds to Meniscus have been established
- Alerts will be received from mid-July as data becomes validated.



'Normal' operation in wet weather

South West
Water

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