

# Pollution Incident Reduction Plan

## Quarter 4 (Oct-Dec) 2020 update

Wessex Water

January 2020

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## Document version control

Major version number	Details	Lead contact	Date
1.0	As published on website	Matt Wheeldon	15 Jan 2021

## 1. Introduction

This is the fourth quarterly update (covering October-December 2020) to our [Pollution Incident Reduction Plan](#) (PIRP) – which was first published in March 2020. This brief update should be read in conjunction with the full plan.

Our plan is divided into 4 themes: People and Process, Assets and Maintenance, Customers and Stakeholders, Telemetry Data and Analysis.

In this update, we report on progress with delivering the plan, present case studies and examples of what we have delivered and report on the effectiveness of the plan on our way to our aspiration to cause no pollution incidents.

## 2. Quarterly progress report

### 2.1 Numerical quarterly activity analysis against the plan

Theme	Activity (in-period unless otherwise stated) – (Unit)	Q1 2020	Q2 2020	Q3 2020	Q4 2020
People and Process	Pollution incident training (Nr/quarter)	99	0*	120	139
Assets and Maintenance	Length of sewer surveyed (Km)	1.3	5.5	4.7	13.9
	Sewerage Investigation Assessments completed (Nr)	54	21	32	39
	Treatment Investigation Assessments completed (Nr)	1	0	0	1
	Rising Main Assessments completed (Nr)	0	1	0	1
	Length of sewer rehabilitated (Km)	0.5	0*	1.1	0.765
Customers and Stakeholders	Summer shows: number of people engaged (Nr)	0	0*	0*	0*
	Student fairs: number of people engaged (Nr)	0	0*	0*	0*
	Attendees at Open Doors events (Nr)	0	0*	0*	0*
	Social media reach (Nr)	183,746	135,083	99,486	61,483
	FSEs investigated (Nr)	135	0*	405	77
	Personalised letters following blockage incidents (Nr)	227	150	334	334
	Water Guardians engaged (Nr)	0	0*	0*	27
Telemetry Data and Analysis	Cumulative number of intermittent overflows monitored (and % of total) (Nr)	970 (75%)	1000 (77%)	1021 (79%)	1056 (82%)

\*Zero due to the impact of COVID-19

## 2.2 Qualitative quarterly progress report on initiatives

Theme	Activity or initiative	Q4 2020 Progress report
<b>People and Process</b>	Additional equipment roll-out	No additional equipment purchased this quarter.
<b>Assets and Maintenance</b>	Artificial Intelligence sewer scanning initiative	Experts from the asset planning department, network design team and sewer rehabilitation team plan to trial the products over the next few months using the following key criteria: Condition grading and bulk uploads; Granular testing the algorithms against manual output on some lengths; Usability within the our wider business; Cost benefit.
<b>Customers and Stakeholders</b>	Update on events	No face-to-face events due to the Covid-19 pandemic.
	Anti-FOG initiatives	284 Food Service Establishments (FSEs) have now installed grease management systems, which means that over 80 tonnes of FOG has been prevented from entering the sewer network. To date we have now recovered £40,802 from 4 FSEs. Due to COVID we are currently not visiting any new FSE's, but we are still working with ongoing FSE's.
	Hotspot competition/promotions	We are currently reviewing our customer engagement strategy for sewer misuse. We plan to have a BAU process in place for customer engagement in hotspot areas by the start of 2021/22.
	Joint waste messaging with local authorities	This work is on hold until 2021/22 and joint messaging will be reviewed as part of the customer engagement strategy for sewer misuse.

Initiatives continued:

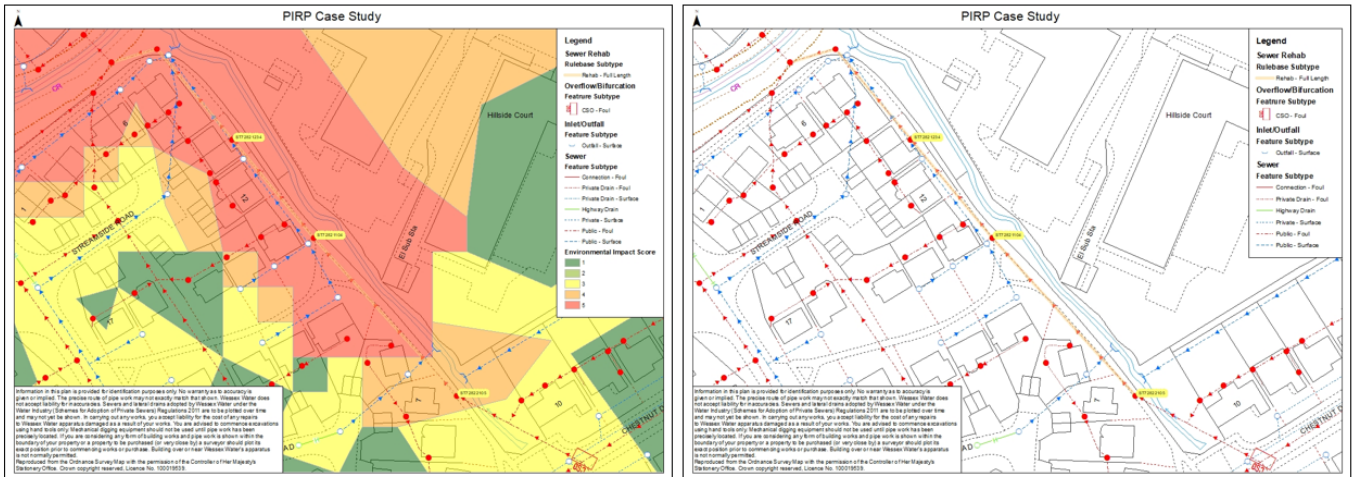
Theme	Activity or initiative	Q4 2020 Progress report
Customers and Stakeholders	Partnership working	The Resource West Group is meeting weekly to develop plans to facilitate shifts in consumer behaviour to reduce resource consumption (electricity, gas and water) and promote the correct disposal of waste, as well as protecting more vulnerable members of our community from resource poverty. Phase one has been scoped and will take the form of a digital fact tank, fuelled by customer data. A brief is currently being prepared in order to seek design pitches from agencies. We hope to launch in early 2021/22.
	Water Guardians	Somerset Wildlife Trust have now recruited 27 volunteers, which will cover th Glastonbury, Langport and Taunton areas. The main focus will be on the River Brue catchment. The volunteers have all undergone training held by Wessex Water and SWT and have been provided with teh appropriate PPE.
	National engagement	We have engaged with Defra (Water Quality), eNGOs (The Rivers Trust; Surfers Against Sewage; Extinction Rebellion Wimborne), Bournemouth Christchurch Poole Council, Philip Dunne MP (Chair of the Environmental Audit Committee) to make them aware of our views that mandatory labelling of flushable products should be done through the Water Industry Specification 4-02-06 (aka 'Fine to Flush') and that all other items that might be considered 'flushable' should be clearly labelled 'Do Not Flush' at point of use. We have also responded (via WaterUK) on the CMA consultation on misleading environmental claims <a href="https://www.gov.uk/cma-cases/misleading-environmental-claims">https://www.gov.uk/cma-cases/misleading-environmental-claims</a>
	Regional initiatives and events	No face-to-face events due to the Covid-19 pandemic.
	Local initiatives	Customer behaviour working group to look at how we can break customer behaviour somewhere in the journey of purchasing, using and then disposing of wet wipes. This will be ongoing for a few months and the measure of success will be in reducing blockages.

Theme	Activity or Initiative	Q4 2020 Progress Report
Telemetry Data and Analysis	Sewer depth monitor machine learning	Results of the trial demonstrated that we could see up-to 97% reduction in alarms from storm overflows operating as expected in wet weather reaching the control room. We are now entering a procurement phase where we have chosen to take two of the suppliers through to a competitive tender. We are aiming to complete this in the next few months.
	Rising main burst detection	Instrumentation continues to be added at sites to allow bursts to be detected, control systems continue to be developed following recent bursts and the knowledge gained from them.
	Rising main burst prevention	Trials underway into smart air valves (which alert when blocked/leaking) and resilient air valves (which should handle FOG better)
	Pumping station enhanced diagnostics	While waiting for the Qlikview dashboard to be developed further and published (incorporating the 10 "golden rules" of optimum pumping station operation), the existing Pumping Station Scorecard dashboard and the Meniscus dashboards have been used to identify many operational/performance issues with pumps running on (e.g. float stuck), partial blockages of pumps or NRVs, non-compliance, deterioration of performance. We are monitoring flow more closely to ensure we're compliant and issuing more pump maintenance based on sites at risk, or with deteriorating performance.
	Inlet works low flow detection	Currently, 3 WRCs have been tested and 2 retrospective bursts would have been detected if this model had been in place when they occurred. Over the next quarter, more sites will be tested with this method to analyse its effectiveness at detecting bursts and blockages. There is also potential for a similar method to be used to detect low flows into SPSs. Where there is no flow meter, a reduction in the number of times a pump has run could also be used to identify problems upstream.

## 2.3 Case studies

### 2.3.1 Sewer risk model prompting proactive CCTV investigations

The Sewer Risk Model flagged the length of sewer running parallel to a watercourse as high risk in Chipping Sodbury. Due to the section of the network running parallel to a tributary of the River Frome, being downstream of a CSO and being surrounded by woodland the section was designated as high risk with a maximum Environmental Impact Score.

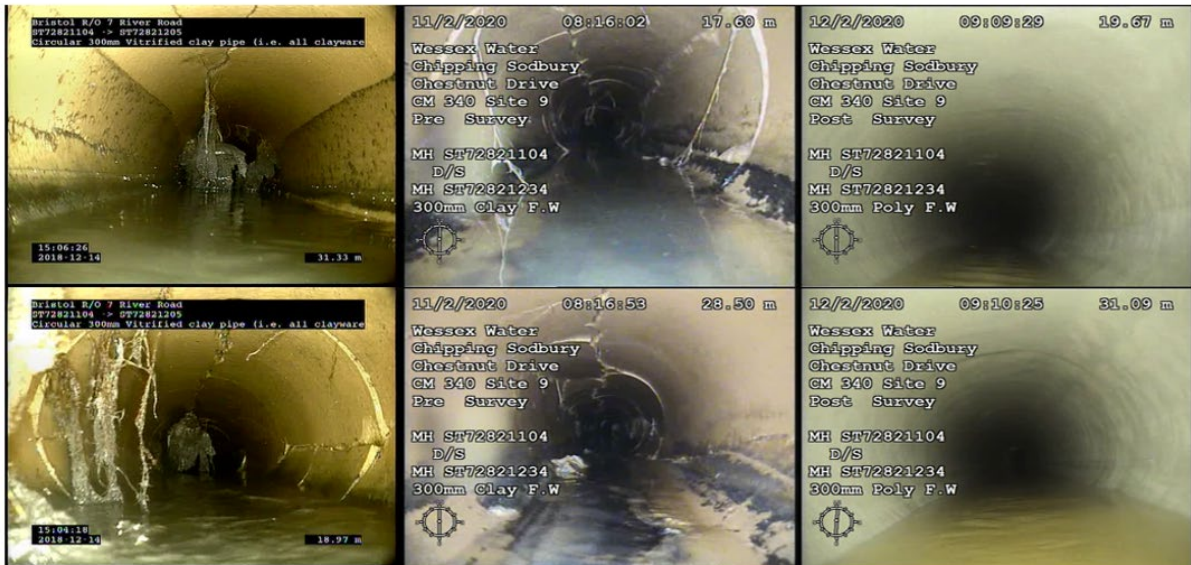


Following the identification of this section a new CCTV Survey was raised to investigate and confirm the networks conditions. This survey confirmed that the network had poor structural and service grades with root mass ingress, mass debris, lateral fractures and circumferential fractures. In order to mitigate the risk of a potential collapse, a scheme was raised to complete a full structural lining of 253m of the sewerage network. Below shows the initial CCTV, the pre-rehab clean and post rehab.

Initial CCTV

Pre-Rehab Clean CCTV

Post Rehab CCTV



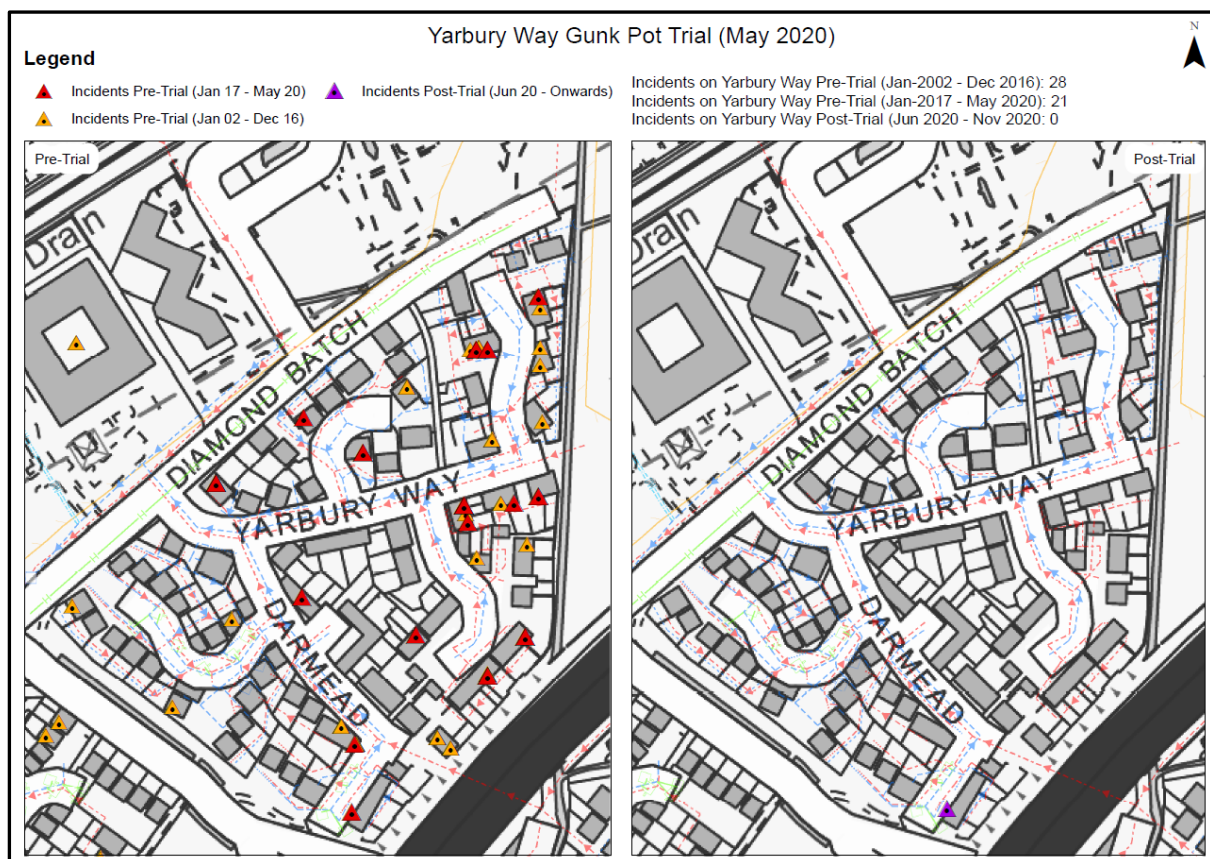


Had this section not been identified using the sewer risk model and a collapse or blockage had occurred it is likely that a significant pollution incident could have occurred, with a high environmental impact.

### 2.3.2 GunkPot Trials

In June 2020 Yarbury Way, Weston-super-Mare was identified as a blockage hotspot area, with 49 blockages between January 2002 and May 2020 and was selected for our first GunkPot trial. The aim of the trial was to assess the effectiveness of Gunkpots in reducing sewer misuse and assess the willingness of customers to change their behavioural habits.

As part of the trial 'Sewer blockage near your property' letters, which included a GunkPot, were sent to 88 properties. These letters explained that there had been recent blockages in the area caused by fat, oil and grease being disposed of inappropriately and asked the residence to support us and use our GunkPots to dispose of their fat. Following on from the trial, residents were asked to undertake a short feedback survey. Despite only 9% of residents responding, the feedback received will help us to develop a process where it will become business as usual to distribute GunkPots to properties where FOG sewer misuse is impacting our sewer system.



In addition to the Yarbury Way trial the customer engagement team also organised a Free pack GunkPot promotion on August Bank Holiday weekend. This involved making GunkPots available on our free pack page and some accompanying social media promotions around sewer misuse. Following the social media post, which reached over 19,000 people, more than 2,000 GunkPots were claimed. Although the majority of the feedback was positive

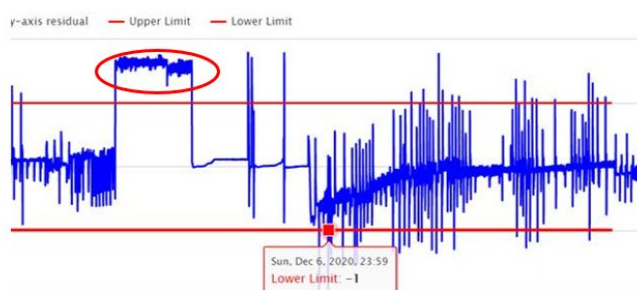
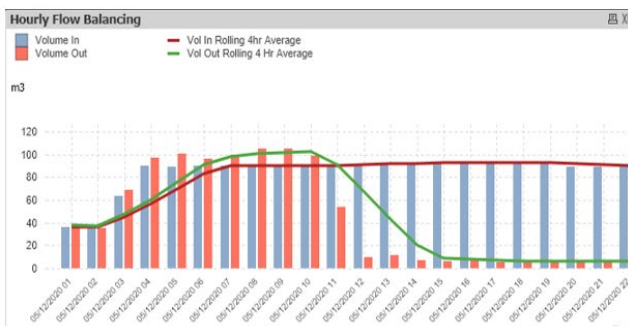
some customers struggled to claim the product. Following reviews, we are hoping to improve customer journeys and produce a new waste only free pack in the future.



We are currently looking to use the gunk pots more widely across our region and investigating the potential using of them in conjunction with other customer engagement approaches.

### 2.3.3 Bulbury Lane rising main burst detection

On Saturday 5<sup>th</sup> December 2020 a burst main was detected at 14220 Bulbury Lane sewage



pumping station. An email alert was sent from the burst detection system, reviewed and actioned by 7pm. By 11pm the site had been isolated, and work had begun on resolving the burst. The site was returned to service by 8pm on Sunday. No environmental impact was recorded at the site as the burst did not reach the watercourse.

New hourly communications for the site allowed us to respond much more quickly to the burst than we would have previously. Without the increase in communication we would not have known about the burst until the following morning and it would have been ~24 hours from the burst before a tanker could have been mobilised and a pollution incident would have occurred.

This incident confirms the accuracy of the new burst detection systems and will allow for future alerts to be sent directly to the control room for action, allowing for a faster response. We will also be reviewing our out-of-hours response protocol to ensure improved out of hours performance. The data obtained will also help us to improve the system-curve detection system which is currently under development.

#### **2.3.4 Water Guardians**

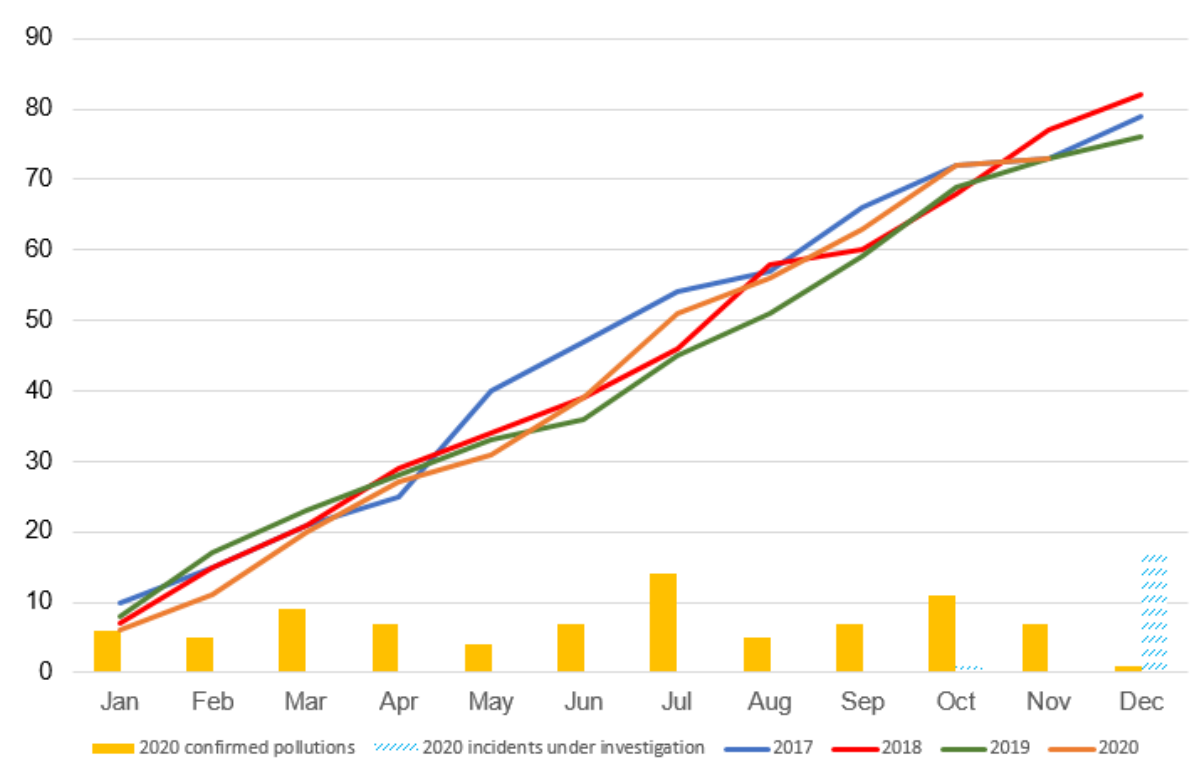
Since Somerset Wildlife Trust began advertising for Water Guardians, they have recruited 27 Volunteers. These volunteers cover the Glastonbury, Langport and Taunton area. Although the focus of the project is the River Brue Catchment, we will also be looking at the River Parrett, Tone and Yeo.

The volunteers have also undergone training which includes an introduction to Wessex Water, River Health and Pollution Monitoring. This included going through different types of pollutions (diffuse/non-diffuse), what a pollution to a watercourse could look like, and how they should go about reporting it.

In March 2021 Wessex will be reviewing the programme with Somerset Wildlife Trust, with the potential of expanding the project and collaborating with other organisations.

## 2.4 Pollution incident tracker

The graph below shows pollution incidents for 2020 up to the end of December:



**Table 1: Cumulative number of Category 1-3 incidents from wastewater assets**

## 2.5 Q4 review of PIRP effectiveness

A huge number of initiatives, additional investment and greater management focus have, so far, not made a material impact on overall pollution numbers. We are hugely disappointed about this.

The root causes of the 2020 incidents to date are shown below:

Root cause	Number (Jan - December 2020)
Blockage	37
Burst rising main	13
Poor effluent quality (within permit)	8
Hydraulic overload	6
Other	2
Power failure	8
Human error	2
Asset failure	12

\*Table includes all confirmed 2020 incidents

Whilst implementation of the PIRP has not had an impact over the first year, a number of approaches are gaining traction and demonstrating their value.

We will be reviewing all aspects of the plan, the cost effectiveness of interventions and lessons learnt from other sewerage undertakers' PIRPs, in our annual update in April 2020.

We continue to aim for zero pollution incidents resulting from our activities.