



# A report on the December 2022 Freeze Thaw

**Confidential**  
**28 February 2023**

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## **Document Purpose:**

This report is in response to Ofwat's letter dated 16th January 2023. It sets out and summarises our preparations for and response to the mid-December 2022 freeze-thaw event.

We would be happy to discuss any of the contents of this report further with Ofwat and provide additional information where appropriate.

## Executive Summary

At South West Water, we strive to deliver an excellent level of service to customers, whatever the circumstance, whatever the weather. And in doing so, we draw on our previous experiences of dealing with extreme weather events, such as the 2018 Beast from the East and the 2013-14 Winter Floods.

In March 2018, large parts of the UK experienced extreme weather, which was termed the 'Beast from the East'. The extreme cold followed closely by a rapid thaw placed significant strain on national infrastructure and the delivery of critical services was seriously impacted in some areas. In the South West, the weather was so extreme that the first ever red weather warning was issued by the Met Office, which in turn put a significant strain on our assets, systems, people and processes. Ofwat assessed our response to the 2018 freeze-thaw event and concluded that we performed well and largely met customers' expectations, but noting room for improvement we have since 2018 been focused on embedding change across the previously identified for improvement.

In December 2022, there was a similar period of weather - where temperatures changed rapidly and considerably from below freezing to moderate. Indeed, in some parts of our region there was a greater and more rapid temperature swing than was even experienced than in 2018, as the Met Office issued a further weather warning. This rapid change in temperatures placed abnormal pressure on pipes and led to an increased incidence of pipes bursting. In our Bournemouth area, the sudden change in temperature was also combined with a period of heavy rainfall which caused turbidity within the River Avon, creating a secondary resilience issue in this region.

### **Despite the pressures, we managed these impacts well.**

Due to the steps taken post 2018, our preparatory work and our response to the event meant that the impact on customers was far less severe than the 2018 event despite the similar nature of the weather (in terms of temperature swings). In total 4,472 customers experienced a supply interruption >4 hours during the 2022 incident, compared to 34,746 in 2018 (i.e., 2022 was less than one eighth of the 2018 impact). The extent of the impact was localised - largely in North and East Devon. There was no widespread or significant impact for customers in Bristol Water, Bournemouth Water and other areas in Devon and Cornwall.

Following the cold snap, the thaw materially began on the 18<sup>th</sup> December 2022. We had already set up our incident room in readiness for the event. Our Engineering Director was established as the primary lead for the management of the event; with support with managing the incident from our Clean Water Operations Directors, and communications and support to customers led by our Chief Customer and Digital Officer. The CEO and wider Executive were engaged and present to support to the teams.

### **Customer communications and keeping customers up to date was a priority throughout.**

Our response to the event built on the lessons learned from the 2018 freeze-thaw. Following the 2018 incident, Ofwat confirmed that some of the targeting of messaging to customers did not work in all cases. Since 2018, we have established dedicated contact teams, dedicated social media teams and new processes to ensure we are able to proactively keep our customers informed regarding progress with any issues in their area. During December, we proactively updated social media and our website, and contacted customers directly – through 8,384 texts and voicebursts.

We also previously recognised that more could have been done with business customers, and that the Priority Services Register (PSR) did not capture adequately all customers that needed additional support. We have made significant progress with our PSR, and are currently outperforming our PSR performance commitment. Throughout the event we delivered bottled water to 551 PSR customers.

Mutual aid arrangements were in place with pre-emptive requests made, although further support from outside of our own organisation was not required. Our common main with Wessex Water provided additional resilience with 5 Ml/d to our Bournemouth region throughout the period.

## **We have undertaken post event customer research to confirm our understanding of how well we performed.**

As was the case in the Beast from the East event, we have engaged customers in the affected areas to gain their views. Using an independent research agency, telephone surveys have helped us to understand the impacts of the event and how we handled the event through post event research. As was the case with the Beast from the East, the impacts were not uniformly felt across our region. To understand customer impacts better, customers were surveyed in Seaton in North Devon, which was hardest hit by the impact of the freeze-thaw. We also surveyed Westcliffe in Bournemouth given the overlapping weather impacts in that region.

The customer research confirms that overall, the impacts on customers were generally low, with 90% of customers reporting they were unaffected or that the impacts were negligible. 95% of customers reported being satisfied or unaffected by our handling of the event – in these worst affected areas. Customers reported low awareness of the severe weather in advance, and were less prepared than in 2018, with only half of those affected saying they felt they had sufficient supplies in advance of the interruptions. 7 in 10 customers contacted us during the event, and one third used our website and social media for updates. Customers have provided useful feedback for how we communicate in events in the future, particularly around the importance to customers of being able to speak to our call centre teams when they want the latest information and updates.

We also continued our business-as-usual customer tracking surveys across all areas of our region through December and January. These do not show any change in customer satisfaction, value for money or trust over the period.

Customer compensation payments related are being made in line with our customer charters which are updated and published annually on our websites. This involves compensation to customers in Devon and Bournemouth. No compensation payments are needed for our Bristol region because no supply interruptions were greater than 12 hours during the period.

We are making compensation payments to all customers who experienced a supply interruption of greater than 12 hours during the incident period. In our customer research, 80% of customers affected by the freeze thaw said they were happy with the compensation arrangements – with 20% noting they would have preferred the payments to be sooner, more clearly understood in advance, or larger for large sized households.

## **We have sought independent review of our response and findings from KPMG.**

An independent review by KPMG found that we could demonstrate how we had positively responded to the lessons learned from the 2018 event, whilst identifying further lessons to be learned to improve resilience even further for future events of extreme weather. We welcome these findings from KPMG alongside our own observations.

## **Overall, we conclude that our response to the freeze thaw was effective overall.**

However, and despite this, we have recognised that there are further lessons that can be learned for the future, including:

- Call waiting times – Due to the spike in customer contacts by telephone, there was a corresponding increase in average call waiting times. This was particularly acute on the 18th of December where average waiting times exceeded half an hour (the only day where this was the case). We plan to review our approach to this for future incidents to identify flexible resources trained to handle customer calls.
- Rota management – We have made improvements at this including having dedicated roles identified within our incident management procedure and a flexible standby rota approach although this remains a key area for us to focus on going forward as we continue to upskill and engage further non-operational staff in incident management.

- Staff welfare – Staff involved in the incident were engaged over a prolonged period and showed great commitment and responsiveness – we will review our approach to dedicated rostered roles from the wider business who are able to support during prolonged events.
- Staff from throughout the business supported the operational activity with non-essential tasks which freed operational resource to focus on resolving the issues facing them.

Events such as the 2022 Freeze Thaw are rare. But they are very impactful on our communities, especially if not handled right. So we recognise that it is important to be ready for such events, and the steps we have taken since 2018 to embed the learnings have ensured that we managed the impacts of the 2022 Freeze Thaw and were able to deliver a resilient service to our customers.

The recommendations from the 2022 Freeze Thaw – from our review, that of our regulators and insights shared by other companies – will be fully considered, acted upon and our progress against will be communicated openly. This will include our Watershare+ customer panel, that has a key role in representing the voice of the customer, scrutinising our performance and testing our future plans. This is important as we look to deliver a resilient service to customers, whatever the weather, whatever the circumstance, in the future.

## Introduction

In mid-December 2022, much of the country, including the South-West, experienced below freezing temperatures for several consecutive nights with a met office 'Yellow' weather warning between 6 and 14 December 2022. This was followed by a rapid rise in temperatures. This type of event is known as a freeze-thaw, often resulting in burst pipes causing leaks, damage to property and interruptions to supply.

The December 2022 freeze-thaw was severe. Across the south west there was a greater and more rapid temperature swing experienced than in the 2018 'Beast from the East' freeze thaw.

Ofwat wrote to all companies on 16 January 2023 requesting details of the impact of the freeze-thaw event to understand how well our assets performed; whether companies demonstrated resilience and whether companies were able to support our customers appropriately.

This report details:

1. The impact of the freeze/thaw event
2. Our preparedness for the incident
3. Our response to the incident
4. Customer compensation arrangements
5. Lessons learned

The effects of the event were experienced differently across SWW – Devon and Cornwall, Bournemouth, and Bristol. Where appropriate, we provide details of how we managed our response split by these regions.

# 1 The impact of the freeze-thaw event

This section of the report describes the freeze-thaw event, details the impact, and assesses underlying causes of any of the impacts.

## 1.1 The freeze-thaw event

In mid-December, the country was subject to below freezing temperatures for several consecutive nights followed by a rapid rise in temperatures causing a sudden thaw. Figure 1 below shows how the temperature increased in a very short period, by up to 17C in some areas.

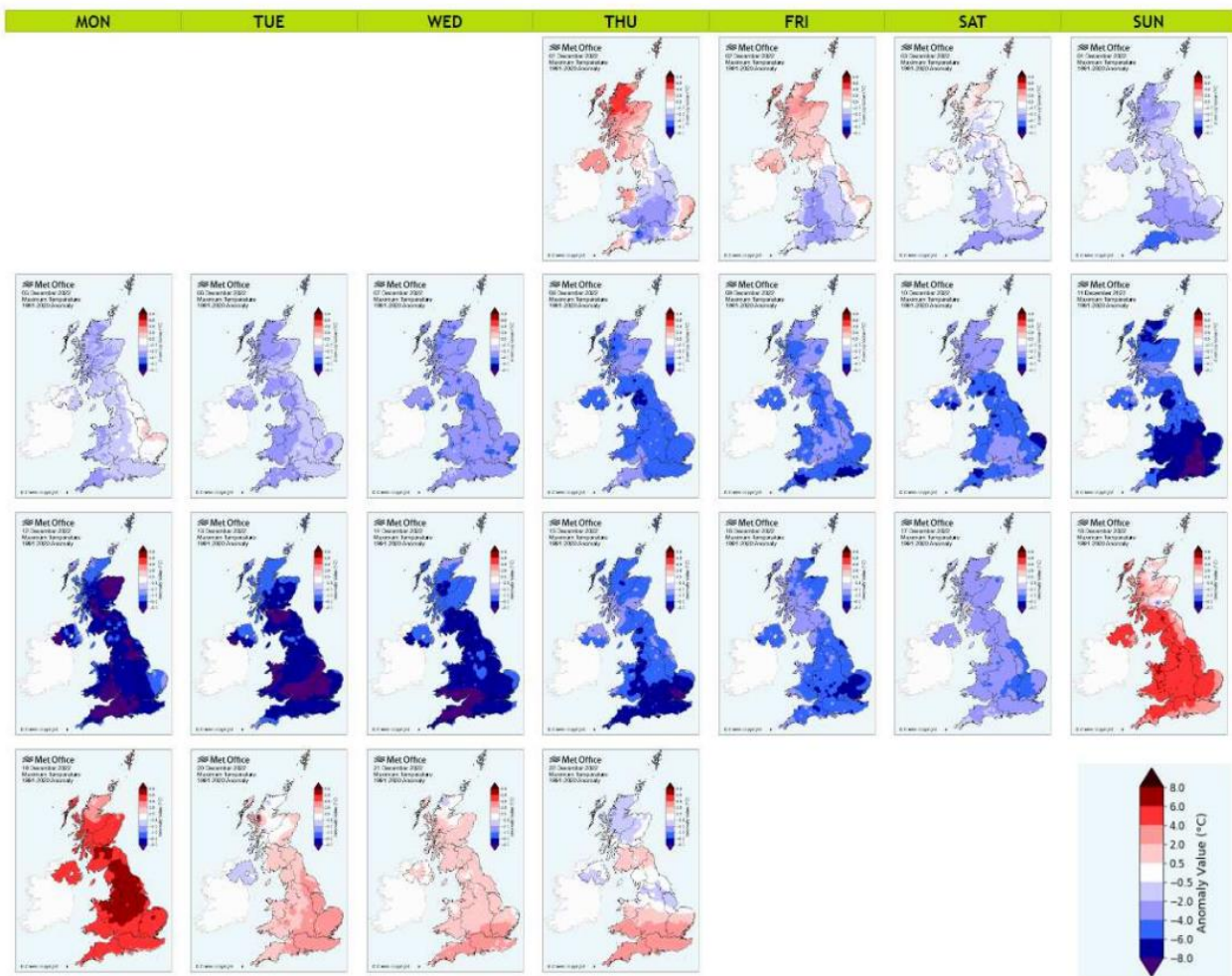


Figure 1: UK daily maximum temperatures for 1 for 22 December 2022 (source: Met Office)

For example, at Exeter Airport in Devon, between the 8<sup>th</sup> of December 2022 and the 18<sup>th</sup> of December 2022 average air temperatures were below freezing (average -0.5C) and from the 18<sup>th</sup> of December 2022 to the 29<sup>th</sup> of December 2022 they were above freezing (average 8.5C).

The speed of the thaw event was significant with a temperature increase of 12.1 C in a 48-hour period between the 16<sup>th</sup> of December 2022 (average -1.7 C) and the 18<sup>th</sup> of December 2022 (average 10.4 C).



We can compare these temperature differentials to the events of the 2018 'Beast from the East'. On average the period leading up to the thaw in December 2022 was colder with more days below freezing than in the comparable period in 2018. The thawing we experienced in December 2022 was also quicker than in 2018 with a faster rate of increase in temperature.

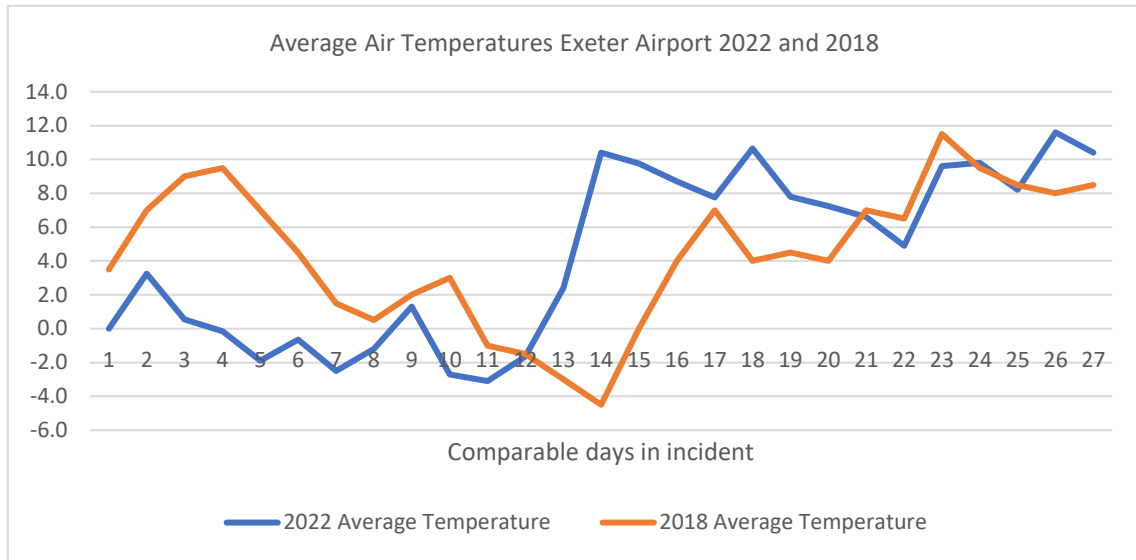


Figure 2: Average Air Temperatures Exeter Airport 2022 and 2018

Similarly, Bristol Weather Centre reported below freezing temperatures, with temperatures dropping to a low of -6.7°C and then rapidly increasing from the 18<sup>th</sup> of December (Figure 3). Daytime temperatures rose to around 12°C in a 24-hour period. This was a similar experience to the 2018 freeze-thaw event.



Figure 3: Graph showing average air temperature at Bristol Weather Centre the 14<sup>th</sup> – 23<sup>rd</sup> of December 2022 (source <https://meteostat.net/>)

Note: When the temperature is below the freezing point of water, the dew point is called the frost point

Temperatures at Bournemouth Airport were similar, with below freezing temperatures between the 7<sup>th</sup> of December 2022 and the 18<sup>th</sup> of December 2022. Temperatures increased by 17C from -6C to +11C in a 24-hour period from the 18<sup>th</sup> of December 2022 which was a greater temperature differential than we experienced in 2018 (Figure 4 below).



Figure 4: Graph showing temperature increase on the 18<sup>th</sup> of December 2022 from Bournemouth Airport (source <https://meteostat.net/>)

Note: When the temperature is below the freezing point of water, the dew point is called the frost point

Our Bournemouth region also had a second issue to deal with adding to the pressure in the region, which was actually the primary challenge faced in the region – rather than the freeze thaw.

The sudden increase in temperature was combined with a period of heavy rainfall over the 18<sup>th</sup> and 19<sup>th</sup> of December in Bournemouth. The heavy rain significantly increased turbidity within the River Avon. Following this, a decrease in the filtered water UV transmittance necessitated a reduction in the permissible flow through the UV reactors at Knapp Mill WTW to ensure their operation remained within their design envelope. This was raised via engagement to our regulators as a risk. However, through the hard work of the teams, there was ultimately no customer impact as a result of the increased turbidity.

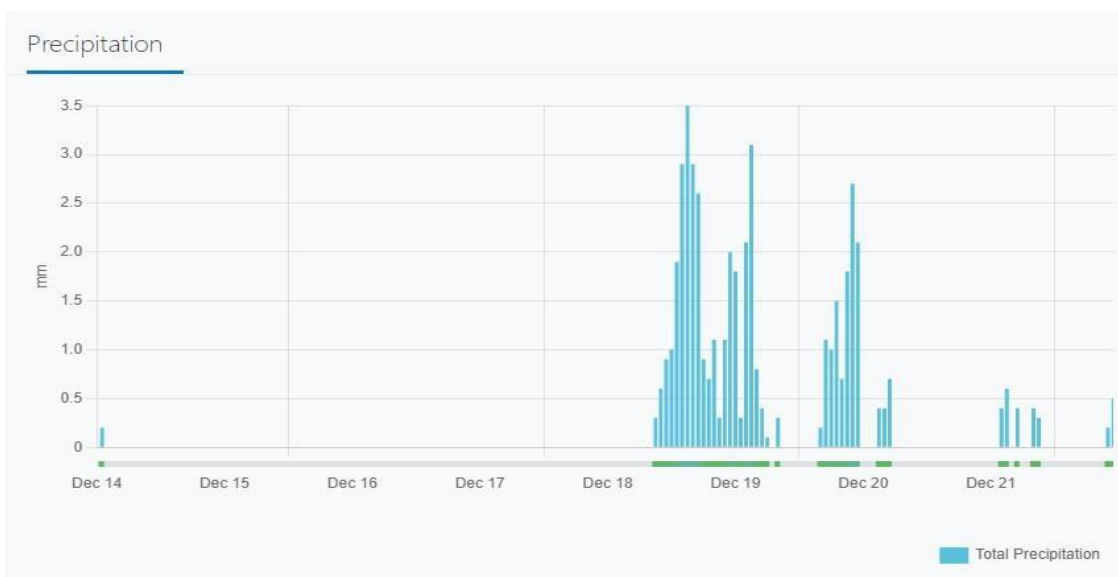


Figure 5: Graph showing hourly rainfall at Bournemouth Airport from the 14<sup>th</sup> – 22<sup>nd</sup> of December 2022(source <https://meteostat.net/>)

## 1.2 Impact of the event

The nature of the freeze followed by the sudden thaw caused a significant increase in our estimated operational leakage driven by an increase in bursts both on our mains and customer supply pipes. This increase in demand on our network coupled with pressure on our storage reservoirs and localised bursts caused some of our customers to experience water supply interruptions.

The cause of impact was not uniform across the region. The extent of the impact was largely in North and East Devon. There was no widespread or significant impact for customers in Bristol, Bournemouth and other areas in Devon and Cornwall.

The issue of turbidity at the same time as the freeze thaw in the Bournemouth region did raise the risk around supplies, but overall there was no customer impact as a result of the increased turbidity. In Bournemouth the rapid thaw created turbidity and transmissivity challenges in our river sources extending the timing of the event – but did not cause any impact on customers.

Table 1 shows the impact on customers across our regions. Overall, the number of customers interrupted >4 hours was one eighth of the impact of that experienced in the 2018 freeze-thaw event across all our operating regions.

Table 1 Customers experiencing supply interruptions between 16 December and 23 December 2022

Customer supply interruption information by customer region	South-West	Bournemouth	Bristol	Total
Percentage of the company's customers affected	1.26%	0.69%	0.24%	0.85%
Number of customers experiencing supply interruptions less than 4 hours	7255	872	1284	9411
Number of customers experiencing supply interruptions between 4 and 12 hours	3075	383	0	3458
Number of customers experiencing supply interruptions between 12 and 24 hours	97	241	22	360
Number of customers experiencing supply interruptions between 24 and 48 hours	406	93	0	499
Number of customers experiencing supply interruptions over 48 hours (<72 hours)	155	0	0	155

Total = 4,472 customers

### Impact on Leakage

In the period leading up to the deep freeze, temperatures dropped between the 28<sup>th</sup> of November and the 5<sup>th</sup> of December, and we noted an increased in our nightline flow (leakage and legitimate demand) of 15Ml/d with a further increase of 41Ml/d between the 5<sup>th</sup> and 12<sup>th</sup> of December.

We estimate that this potentially increased leakage over this period.

Across Devon, Cornwall and Bournemouth regions leakage rose by 57MI/d during this period – equating to a 28% rise compared to the November 2022 average. Figure 6 shows the weekly night flow between April 2022 and January 2023, and Figure 7 in the immediate period before the freeze and after the thaw.

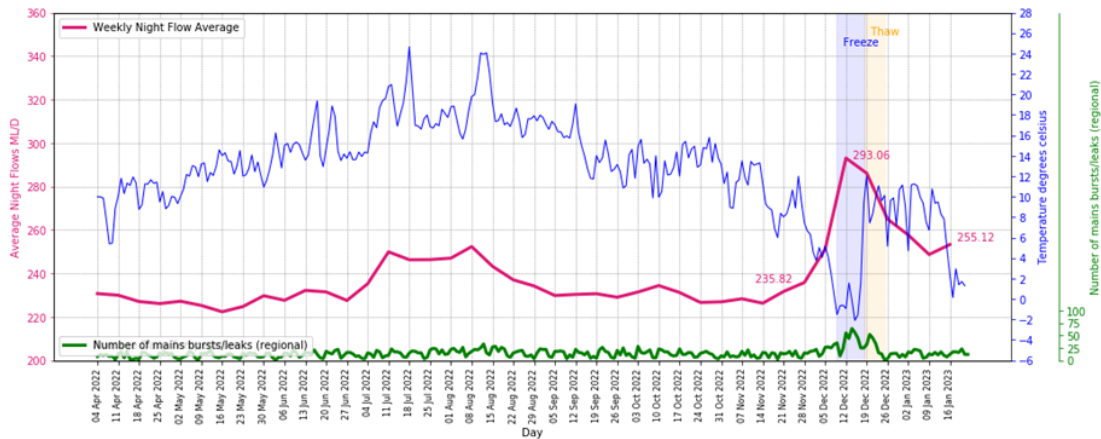


Figure 6: Graph showing weekly night flow average in the Devon, Cornwall and Bournemouth regions

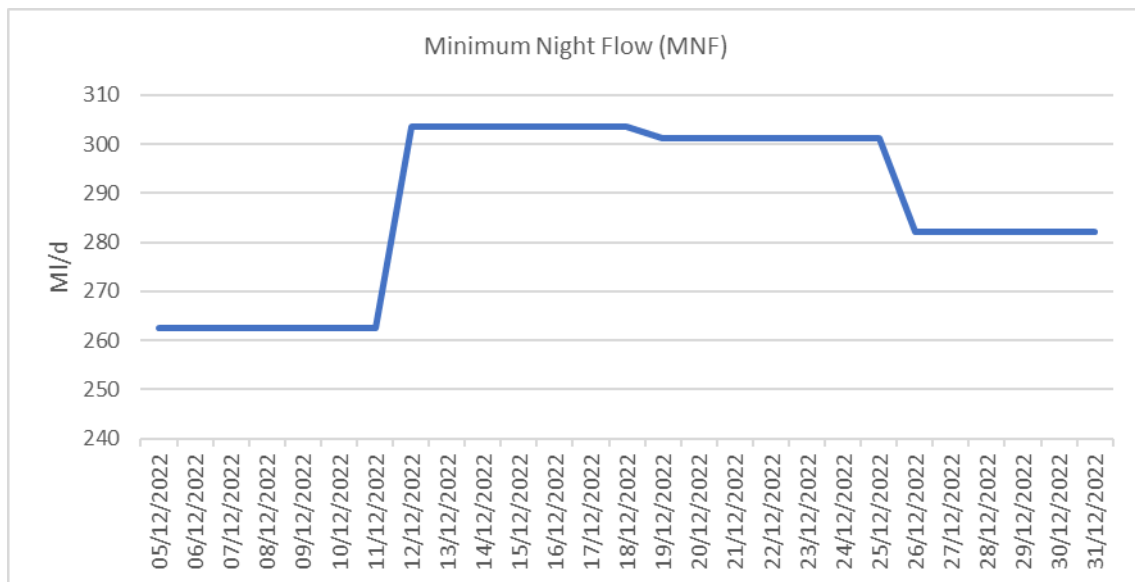


Figure 7: Graph showing estimated minimum night flow (weekly average) in the Devon, Cornwall and Bournemouth regions

During December 2022 our Bristol region experienced more bursts on the network than were experienced during the Beast from the East Freeze/Thaw event in 2018 (380 vs 237). In-month bursts were more than four times the 10-year average for December. Estimated daily leakage increased to a high of 113MI/d on the 19<sup>th</sup> of December 2022, which was less than the peak estimated leakage experienced during the comparable period in 2018.

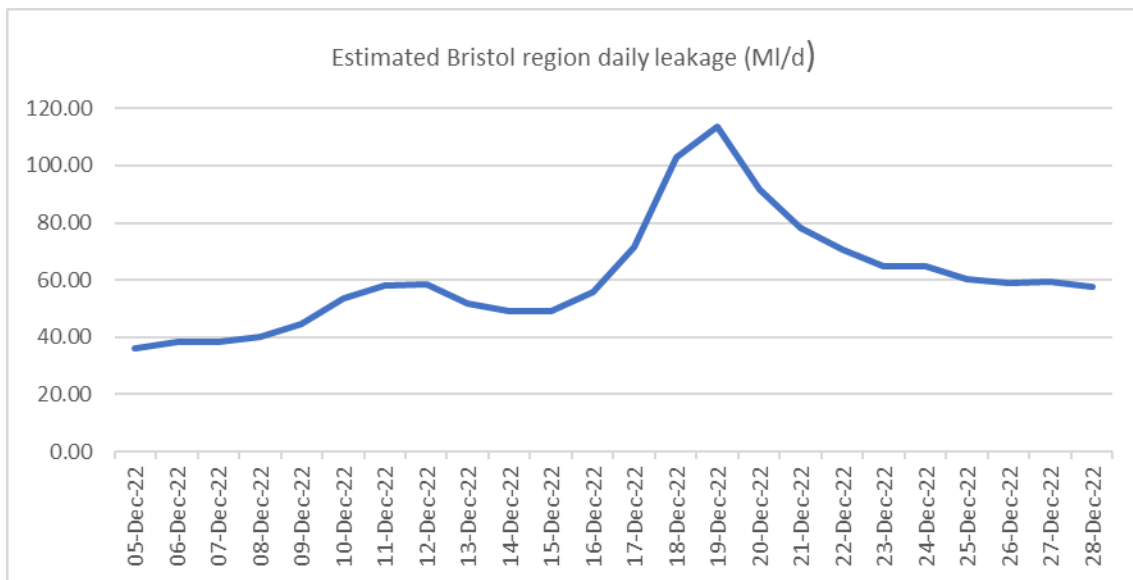


Figure 8: Graph showing the Bristol region’s estimated daily leakage 5<sup>th</sup> to 28<sup>th</sup> December 2022

#### Overall Impact on Distribution input

Across our entire region we increased output from our Water Production sites and increased service reservoir storage, as well as balancing our network to ensure we were in the strongest position possible ahead of the thaw and any potential further leakage outbreaks.

As a combination of increase in output as part of our proactive preparations and as a result of increasing leakage, we increased our Distribution Input (DI) considerably over this period.

Devon and Cornwall DI peaked at 539MI/d on the 17<sup>th</sup> of December, Bournemouth 180MI/d on the 19<sup>th</sup> of December and Bristol 333 MI/d on the 19<sup>th</sup> of December.

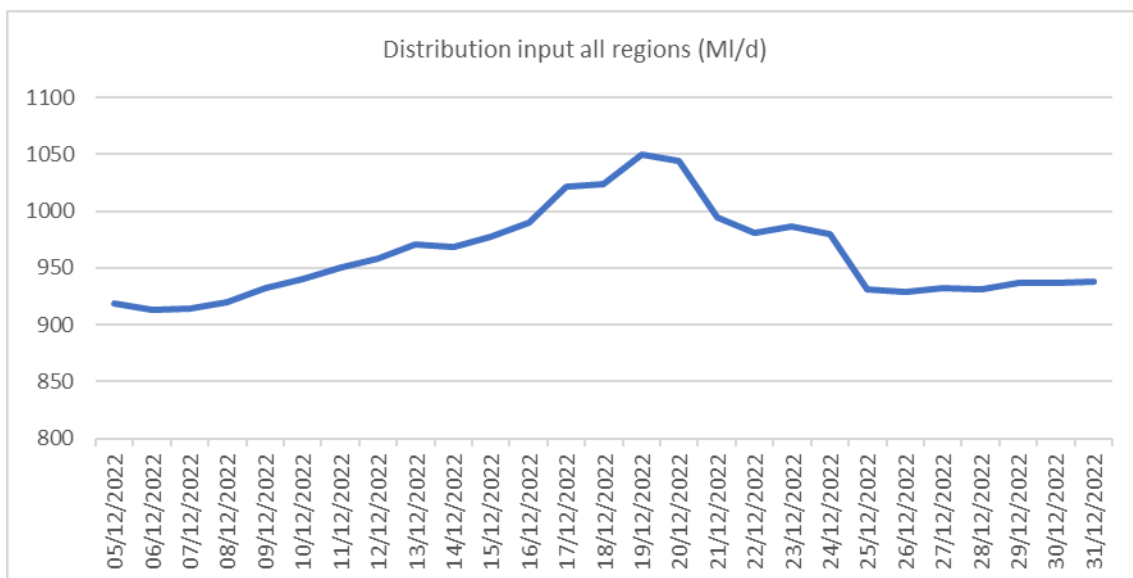


Figure 9: Distribution input between the 5<sup>th</sup> and 31<sup>st</sup> of December 2022 for South West, Bournemouth and Bristol

## Number of properties and customers experiencing problems and length of time to resolve outages

Significantly fewer customers were impacted in the South West region in December 2022 than in the comparable period (Figure 11) in the 2018 freeze-thaw incident. This comparably better performance was despite a longer period of freezing temperatures and greater temperature differential over a shorter period during the thaw in 2022.

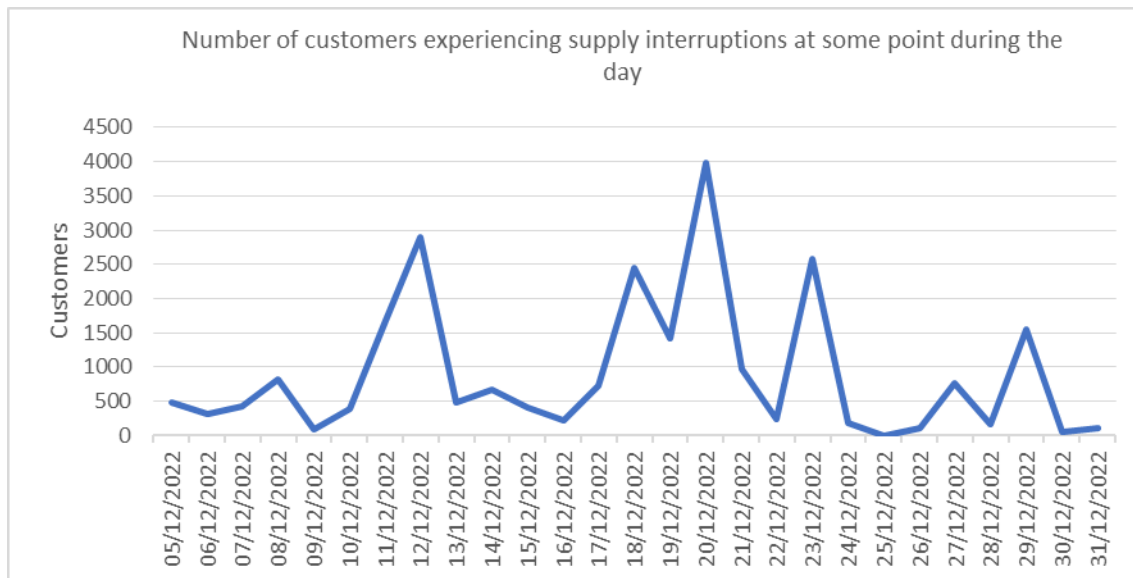


Figure 10: Number of customers experiencing supply interruptions at some point during the day between 5 December and 31 December 2022 for Devon, Cornwall and Bournemouth

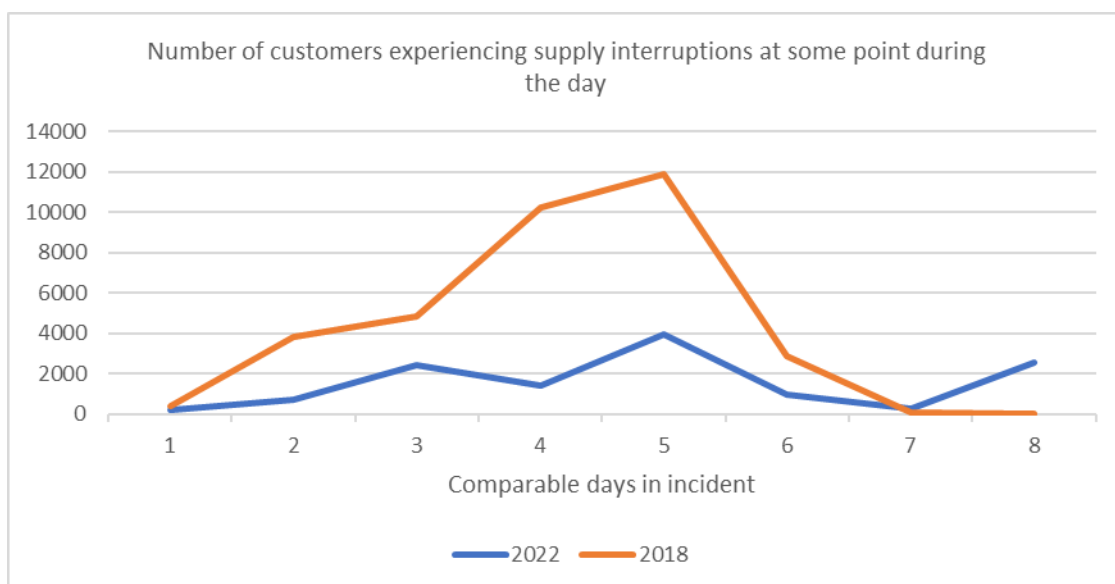


Figure 11: Comparison between 2018 and 2022 of the number of customers experiencing supply interruptions at some point during the day in comparable periods before and during the incidents for Devon, Cornwall and Bournemouth regions

The total number of customers who experienced loss of supply in the Devon, Cornwall and Bournemouth regions was not confined to a single event. There were numerous smaller events resulting from both burst mains and demand outstripping our ability to supply some customers across Tiverton, Honiton, Axminster and Seaton in particular. We have undertaken detailed supply interruption investigations including modelling to accurately identify all those customers impacted by the event.

In our Bristol region, customer impact was kept to a minimum with only one event >3 hours, impacted the overall customer minutes lost supply interruption performance. While some customers did experience poor pressures due to burst mains these were typically for short periods of time whilst repairs were made. Across the Bristol region between the 18<sup>th</sup> of December and the 30<sup>th</sup> of December 2022 we received a total of 219 contacts for no water and 176 contacts relating to low pressure. Only 22 customers experienced no water for a period exceeding 3 hours – these customers were out of water for 23 hours due to a complex repair which was delayed due to concern over the location of a tree in relation to the burst location.

### 1.3 Underlying causes

As set out in section 1.1, the primary cause of the interruptions to supply was due to an increase in bursts and leakage resulting from the rapid change in temperatures. Unlike in the 2018 freeze-thaw event our operational teams did not experience any site access issues and there were no power outages to any of our works or pumping stations.

We continue to undertake detailed supply interruption investigations for the event and there may be additional underlying causes that we identify over time as we further consider those investigations.

#### Other impacting factors

As part of our ongoing programme of reservoir inspection programme we had discovered issues at Lyme Road Service Reservoir (part of the Allers supply zone in North Devon) that required repair. This work was ongoing in December 2022 which meant that our storage capacity in this part of the network was reduced. This was a contributing factor to the supply interruption event faced in the Seaton area.

Within Bournemouth our New Milton Tower and Reservoir (combined represents 9.9ML of storage) were not in service, as it was being maintained. This compounded the challenge we faced in the Bournemouth area which was driven by the transmissivity issues at Knapp Mill Knapp Mill WTW.

In Bristol the customer impact was very limited and we have not identified any other impacting factors at this stage.

## 2 Our preparedness for the incident

### 2.1 Addressing lessons from 2018

As part of our response to the 2018 freeze thaw, we provided an analysis of what had worked well and identified areas for improvement. Since then, we have strengthened our approach and made improvements in many areas of incident management and emergency planning.

In 2018, the Ofwat review identified that we could have been more targeted with some customer communications. As a result, we put in place a new proactive customer communication approach. In December 2022 we were prepared and proactively contacted customers by text and voicebursts.

Despite the quicker thaw with a greater change in temperature in 2022, fewer customers experienced supply interruptions than 2018 – circa one eighth of the impacts. Supply interruptions were particularly localised within North and East Devon, with minimal impact in Cornwall, Bournemouth and Bristol.

#### Where we strengthened our approach

We were able to draw on experience and resource across the wider group during this incident. The structure of our incident management allowed us to have a more holistic view of the overall situation and allocate resources accordingly between our regions. This was particularly relevant to the movement of bottled water supplies and leakage crews.

We continue to maintain and keep under review our suite of emergency plans which were enacted during the life cycle of the incident; including, but not limited to:

- Incident management procedure
- Production site contingency plans
- Networks contingency plans
- Alternative water supply arrangements
- Local Resilience Forum arrangements

Since 2018, we have increased the numbers of production staff and our 4X4 vehicles to ensure this would not have posed a problem if it had occurred. During 2022 we manned our key production sites 24/7.

Improvements to our Service Support Centre (control room) include changes to our structure and technology to allow enhanced control of our networks including access to hourly data provision on reservoir levels.

#### Where we improved

In our response to Ofwat in 2018 we identified a series of improvements which we have implemented since that time.

Table 2 overleaf presents those changes we have implemented and the resultant impact on the December 2022 event.



Table 2 Progress against areas for improvement identified in the 2018 freeze-thaw incident

2018 area for improvement	Changes implemented since 2018	Impact on 2022 event
<b>Identifying and repairing supply interruptions and actions taken to prepare the supply and network system</b>		
<b>Identification of vacant/temporarily vacant non household sites e.g. caravan parks</b>	Regular forums are held with retailers to identify vacant and priority sites to ensure contact details are validated and maintained.	Large commercial users identified in higher stress areas were contacted by Source for Business (the largest retailer in the South West region) to help support leakage repairs – we did not have the need to contact caravan parks but targeting commercial leakage in 2022 event did prove useful.
<b>Additional telemetry given even greater visibility of network and more involvement in instant response by retailers to help identify leaks on non-household premises</b>	We have increased our telemetry capacity across all of our networks since 2018. Smart metering is widespread on commercial customers.	We engaged Source for Business early in this event and provided data to enable them to contact customers showing high consumption.
<b>Communicating activities to customers/stakeholders (by customer/stakeholder type):</b>		
<b>Management and control of media messaging- sometimes customers were encouraged to leave taps running if they experience discoloured water this was exactly the opposite to what we wanted given the critical resource position</b>	Our ‘preparing for winter’ campaigns have informed customers what to do in the event of severe weather	This was not an issue in 2022 as we did not suffer any widespread outages.
<b>Media updates and management - clear peak immediate interest at the height of the instant was an important activity which was difficult to resource at times with LRF and Defra calls- Media management during instant needs review</b>	We had stronger proactive media messaging and ensured resources were available to deal with all reactive responses. By adding a dedicated Senior Manager to deal with LRFs we were able to ensure attendance on all stakeholder calls.	We did not find this to be an issue during the 2022 incident.
<b>More involvement in incident communications by retailers</b>		Early engagement with Source for Business ensured the retailer was able to support our recovery efforts.
<b>Volume of LRF calls - given the instant was region wide the amount of engagement with LRF’s was enormous and required significant results perhaps coordination of neighbouring LRFs would have worked better in a large geographic incident such as this-</b>	A dedicated Senior Manager is assigned to dealing with LRFs (both during Incidents and as BAU) This sits alongside the already well established BAU and tactical response capability within our organisation managing LRF interface	Our change in approach to managing LRFs enabled us to deal with each LRF specifically South West and Bournemouth Water. We ensured continuity of attendance with this dedicated resource although we did not need support from LRFs in the 2022 incident.

2018 area for improvement	Changes implemented since 2018	Impact on 2022 event
BAU engagement with hospitals identified as having inadequate storage during the incident to ensure greater resilience and mitigation in place	Post 2018 we further developed our AWS plans and have discussed these (including the requirements from our hospitals for storage/ provision of supply/infusion points) these details form part of our plans and are shared within the LRF	No hospitals were impacted during 2022.
Since the event we have engaged with different stakeholders at a price review workshop on our response before during and after the event. We are collecting their feedback to review against the post event survey responses which are also being carried out in the areas most affected (this is part of our business as usual customer engagement which we carry out after supply interruptions to understand how we can improve our response, communications and understanding of the impact to customers of such events).	The output from these workshops has informed the continuous development of our operations	N/A
<b>Identifying and supporting the needs of customers in vulnerable circumstances</b>		
Sensitive customers were identified from our billing system. The identification of non- household sensitive customers could be improved by accessing directly through CMOS.		This was not an issue in 2022. Sensitive NHH Customers were identified through CMOS (Central Market Operating System).
Post event surveys undertaken in the areas most affected as part of our business as usual customer engagements – which we carry out after supply interventions to understand how we can improve our response communications and understanding the impact to customers of such events	The output from these has informed the continuous development of our operations	Post event surveys are arranged after a defined event criterion is met. Additionally, customer contacts are surveyed through our Rant and Rave platform.
<b>Having the appropriate governance process is in place</b>		
Similar to the LRF comments above in respect of coordination and timing of regulator calls		Our LRF and overall communications capability was demonstrably improved in 2022.

2018 area for improvement	Changes implemented since 2018	Impact on 2022 event
<p>Staff involved in the incident went over and beyond showing great commitment and responsiveness whilst health and safety were maintained the welfare of staff needs careful review to ensure not compromised-</p>	<p>Incident management procedures were updated which strengthened our incident structures enabling clearer and more defined roles. We have used this in all subsequent events. We have some further work to do to upskill and constantly keep new and existing teams familiar with these procedures.</p>	<p>We still have a culture where our staff show great commitment and responsiveness. We have a greater emphasis on wellbeing associated with fatigue. We will continue to work on further resourcing plans across our wider organisation to improve this further. One of the key learning points for us is the wider engagement of non-operations staff in events and putting this in place will continue to grow our capability</p>
<p>Specific improvements identified and made in our Bristol region since 2018 (prior to SWW merger)</p>		
<p>The preparations through the Severe Weather Task Force worked very well. There were learning points however where increased focus and awareness will improve response in future events.</p> <p>In order to mitigate the impact of the additional demand (customer and network leakage) we identified that it was essential to maximise the Treatment Works output during the event period.</p>	<p>Implementation of a Severe Weather Task Force which is in place every Summer and Winter with mitigations put in place in advance of the thaw.</p> <p>A review of our contingency plans for failures of individual water treatment works. Our 10,000 population centres resilience investment is a 10-year programme over 2020-30 to continue to reduce the risk of long interruptions.</p>	<p>Our Severe Weather Task Force is well established and was effective in the incident.</p> <p>We did not experience any impact at our treatment works during the 2022 incident</p>
<p>Other improvements since 2018</p>		
<p>Other improvements since 2018</p>	<p>The contract for bottled water provision increased the level at which we can reorder.</p> <p>Identification of critical network assets as part of our ongoing assessment of operational risks to our network. Through our resilience investment we have implemented a long-term programme to protect major population centres from critical asset failure. Our next programme of investment over AMP7 and AMP8, will address these potential failure points to protect population centres over 10,000 people.</p>	<p>Our bottled water contract was effective and indeed we were able to redeploy surplus supplies to our other operating regions.</p>

## 2.2 Progress against our 2018 action plan

In September 2018 following Ofwat's 'Out in the Cold' report we published a response entitled 'Lessons learnt and action plan' which identified key findings and improvements we could make to improve our incident management planning and preparation. Table 3 provides an update against those actions.

Table 3 Progress against areas for improvement identified in our 2018 action plan

Area for improvement	Progress since 2018
<i>Allocation of people and welfare provisions</i>	
<b>Knowledge sharing/ training sessions to upskill resource. Establish more clearly defined roles</b>	<p>Following the events of 2018, we revised our incident management procedures which strengthened our incident structures enabling clearer and more defined roles. We have used this in all subsequent events. We have some further work to do to upskill and constantly keep new and existing teams familiar with these procedures.</p> <p>Incident managers are routinely trained on internal incident management processes and procedures and those managers of a grade that require strategic standby cover are given external training on event and incident management often through events run at industry level.</p>
<b>Review of setting expectations for incident management when staff are recruited</b>	Where staff are appointed to a role that is defined in our incident management plan expectations surrounding requirements are clear.
<b>Ensure rota management is in place engage with staff during incidents</b>	We have made improvements at this including having dedicated roles identified within our incident management procedure and a flexible standby rota approach although this remains a key area for us to focus on going forward as we continue to upskill and engage further non-operational staff in incident management.
<i>Internal and external communications</i>	
<b>Making use of an incident comms strategy and quicker sharing of information on website</b>	As part of our incident management procedures the Head of Corporate Communications takes ownership and lead on the development of a comms strategy. Updating information on our website through the 'in your area' page is now standard operational practice during all events.
<b>Better technology to map networks to prioritise customers in the case of an incident</b>	We are able to identify where customers are calling in from and map these during incidents. We would like to further develop 'Network tracing' tools and will consider this as part of our PR24 submission.
<b>Reviewing the governance of who can engage in external comms e.g. could use field teams</b>	This is now dealt with as part of the event strategy set by the by the Head of Corporate communications at the time of an incident.
<b>Split corporate media internal comms between different parts of the business</b>	We place great emphasis on ensuring timely and accurate external messaging and continue to seek way to improve our internal communications during events.
<i>Visibility and use of data</i>	
<b>Traffic light of assets</b>	This has not been necessary to pursue
<b>Temporary access for data with guidelines for disposal</b>	This was primarily aimed at ensuring our key service providers were able to access data. We have adopted a different approach by bringing them directly into our incident room negates this requirement
<b>Availability of real time data</b>	This is a wide-ranging action – for our water systems this is largely in place. Considerable improvements have been and continue to be made on our wastewater assets which align with our Waterfit and storm overflow plans.

Area for improvement	Progress since 2018
More enhanced data visualisation with clear roles for reporting	This is an area that we are continuing to improve for example improving the accessibility and visualisation of real-time service reservoir capacity.
<i>Validity and usefulness of the PSR</i>	
Update register and consider links to other agencies	Customer Care Representatives are empowered to recognise customer vulnerability and offer the Priority Services Register when interacting with customers. The register is updated daily to ensure all customers are captured, with the correct contact information and priority requirements.
Review and ensure shared understanding on definition of who qualifies as a priority service register customer	<p>In September/October 2022, the Learning &amp; Development team completed vulnerability training for Customer Care Representatives (CCRs) across the Contact Centre. The training 'The Right Support for Our Customers' focused on identifying, understanding, and supporting our vulnerable customers.</p> <p>5 Modules were delivered to CCRs over a 4-hour classroom-based session.</p> <ul style="list-style-type: none"> <li>• Module 1: Introduction &amp; Learning Objectives</li> <li>• Module 2: The value of getting it right</li> <li>• Module 3: Identify</li> <li>• Module 4: Understand</li> <li>• Module 5: Support</li> </ul> <p>This activity ensures a consistent understand and approach was taken to understanding our vulnerable, and Priority Services customers.</p>
Review and update the NHH sensitive list and their associated contingency plans	<p>Sensitive NHH Customers are identified through CMOS (Central Marketing Operating System)</p> <p>Identifying Sensitive NHH customers is reliant on the relevant Retailer updating this in CMOS and providing contact details.</p>
<i>Visibility and availability of transport</i>	
Dynamic network that shows location of vehicles continuously	All vehicles contain tracking devices and key operational staff carry 'G7' personal safety devices that enable us to locate people instantly
Make greater use of larger central sites rather than multiple sites	We have not made any significant changes since 2018 and there were no deficiencies found in our approach in December 2022 however we will keep this under review.

## 2.3 Preparations immediately before the 2022 incident

We operate winter readiness plans annually. As part of these, and as a result of the enhanced management focus on leakage we had a number of actions already underway that supported the preparation for the freeze-thaw. Some of the notable and enhanced actions that we undertook as a result were:

- 1) In addition to the Yellow Met Office weather warnings, we had early sight of the events through our own weather forecasting tools.
- 2) Water UK discussions and engagement via National Incident Management (NIM) and Platinum Incident Management (PIM) groups have been ongoing year-round given the pressures on the chemical supply chain, drought situation and leading up to the freeze-thaw event.
- 3) There was an enhanced management focus with more frequent and additional calls in place.
- 4) We were increasing storage within service reservoirs in the immediate period leading up to the freeze with our reservoir storage in North and East Devon peaking on the 5<sup>th</sup> of December 2022.

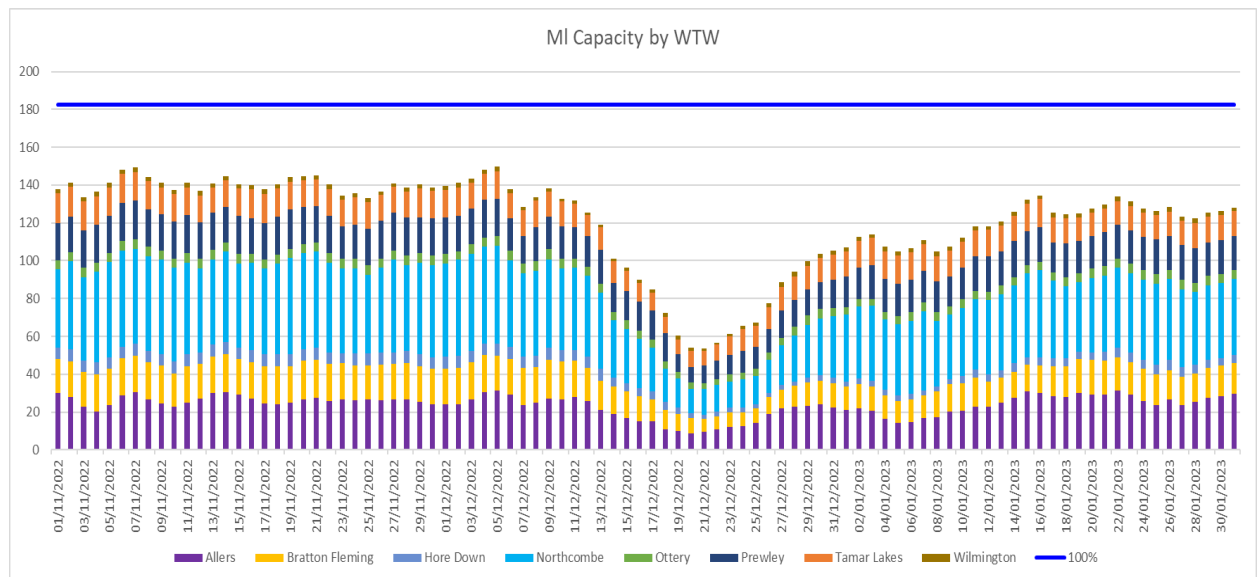


Figure 12: Storage capacity by water treatment works in the North and East Devon region November 2022 to January 2023.

- 5) We had proactively agreed additional abstraction with the EA at Stanbridge Mill in Bournemouth ahead of this period.
- 6) Bottled Water stocks had been increased prior to the cold weather meaning we were in a strong position leading into the freeze thaw.
- 7) Active leakage detection was already an area of management focus from November 2022. As such we were already on an enhanced footing regarding leakage management leading into the cold weather period including additional gangs and supervision operating in all regions.
- 8) Other areas suspended planned work e.g. water treatment works production outages.
- 9) Customer services teams had moved to extended working ahead of the event. Standard monitoring hours for social media is 07:00 – 22:00, this was increased from 06:00 – 23:00 to allow for the expected increase in customer contacts.
- 10) Since the 2018 freeze thaw there have been significant changes to the way in which our customer service teams operate with a single contact centre, dedicated social media team, offshoring and enhanced webchat capability we were in a better place to respond in this incident.
- 11) Control room teams had moved to extended working hours and senior roles were extended to cover night shifts.
- 12) Water Production teams had moved to extended working ahead of the event with additional Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) and Operational Technology (OT) support being put in place.
- 13) Materials and stock levels e.g. pipes and valves had been increased through our suppliers and partners as part of the wider winter planning process. Additional 4x4 vehicles had been hired in for Bristol Water.
- 14) More generally (i.e. compared to previous events) organisational changes that had been put in place – for example our new AWS teams meant 15 tankers were available to support SWW – (this position did not exist in 2018).
- 15) Reviewed what we said we would do following the 2018 freeze/thaw period to make sure we had not overlooked any critical actions.
- 16) We had proactively communicated with local authorities to warn of the risk of a significant rise of urgent works and the impact on highways.

- 17) We communicated frequently with the LRFs on telephone calls and via Resilience Direct. In particular, we provided an early warning of the falling reservoir levels in North and East Devon. However, no LRF support was required.
- 18) Tested contingency plans – specifically in Bournemouth to ensure ability to bulk transfer between supply zones.
- 19) Proactive media campaigns as part of our annual winter planning had already been undertaken.

## 3 Our response to the incident

### 3.1 Overview of our response

In the lead up to the weekend of the 16<sup>th</sup> to 18<sup>th</sup> of December 2022 we were aware of the predicted rapid thaw. As a result, we increased the frequency of our surveillance and co-ordination meetings scheduled for duty managers across the South West and Bournemouth operating regions and in Bristol we had already put place a Level 1 escalation in preparation. In advance of the predicted thaw, we stood up our incident room on the 17<sup>th</sup> of December and deployed additional resources to support the Bournemouth and East Devon areas where demand appeared to be most impacted.

We engaged early with the largest retailer in our region 'Source for Business' to provide data to enable them to contact non-household customers showing abnormally high consumption, indicative of leakage.

Our Engineering Director was the primary lead the management of the event; with support managing the incident from our Clean Water Operations Directors, and communications and support to customers led by our Chief Customer and Digital Officer. Our CEO Susan Davy and wider Executive regularly engaged with and were present in the incident room to provide support to the operational and incident response teams.

Our repair and maintenance supply chain partner (Kier Utilities) were also stood up as part of our incident response team, senior leaders from Kier were either present in the incident room or attended virtually all scheduled incident calls. The Kier team worked alongside our Network incident team to continually prioritise and re-prioritise bursts and leaks to ensure available resource was targeting the most impactful events, both from a water loss and customer supply perspective. The teams were able to achieve this using the most up to date information from our work and customer management systems along with data and insight from our Leakage and Modelling teams who were tracking flow and pressure data to identify areas of concern. Our internal Network Technician teams were tasked with carrying out valving and rezoning activities in support of the Kier repair resources, these activities were coordinated by our local Network management teams working alongside the local Kier management teams, these teams reported routinely through our incident management structure to ensure that strategic oversight was maintained at all times.

#### SWW: Devon and Cornwall

We opened our incident room on the 17<sup>th</sup> of December to monitor and plan for the emerging situation within our Allers water supply zone in North Devon, the objectives were to:

- Identify the root cause of the current issues
- Minimise the affected area
- Return the situation to normal as quickly as possible with a quality first approach
- Keep consumer/any other stakeholders informed.

Over the course of the incident customers across the Allers zone in Axminster, Tiverton, Broadhembury, Cullompton, Seaton, Holcombe Rogus, Talaton, Lyme Regis were impacted at one point.

Demand had been higher than distribution input over the cold snap and rapid increase in temperature. Network storage was below normal operating levels in some areas and critically low at several locations. This was due to the issues discovered at Lyme Road Service Reservoir in Seaton which required immediate repair; this meant our storage capacity in this part of the network was reduced. As a result of this, and to minimise the impact on our customers, we made a series of key interventions including:



- Reconfiguration of the network to support the affected areas and minimise impact in the Allers supply area.
- Redeployment of resources to Allers with a focus on strategic burst/leak identification and repair to reduce demand/water loss.
- The Alternative Water Supply team was mobilised including tankering being carried out in affected areas, with additional regional resource moved to support operations.
- Provision of bottled water to our vulnerable customers and those who requested deliveries.
- Communication updates provided over social media and messaging services, including advice for all customers on checking their pipework/outside taps for leaks.
- Water quality sampling in the affected area.

#### SWW: Bournemouth

Specific interventions we made in the Bournemouth region included:

- Increased management and resources (repair gangs, re-instatement gangs, alternative water supplies/bottled) focussed on the Knapp Mill area in anticipation of an increase in the number of consumer contacts regarding no water due to the increase in burst mains and subsequent repairs.
- Enhanced social media posts encouraging consumers to identify and isolate any issues with their pipework
- Proactively redeployed an additional 5 leak repair crews brought in from Bristol Water to provide additional support within the Bournemouth network.
- Notification of the DWI of the possible impacts on supply in the region.
- Imported 5MI/d from Wessex Water to support the Knapp Mill supply network
- Undertook 33 deliveries of bottled water to vulnerable customers
- Rezoning the Royal Bournemouth Hospital as a precautionary measure from Knapp Mill zone to Alderney zone
- Agreed increase of abstraction from Stanbridge Mill with the EA through a Local Enforcement Position (LEP).

#### SWW: Bristol

The Bristol Planning and Scheduling team moved to a reactive model using the company's Incident Room as a hub for prioritising any customer impacting leaks/bursts and then focussing on the highest volume leaks.

Specific interventions we made in the Bristol region included:

- Increase in leakage detection teams.
- Deployment of tankering operations to mitigate the drops in reservoir levels at Blagdon East and Mast (Mendips, BS40) and Marshfield (SN14) as a result of increase leakage– this activity help maintain supply for 3,700 properties in the region.

Over the period between the 18<sup>th</sup> and 30<sup>th</sup> of December there was minimal impact customer in the Bristol region with only 22 properties in Stoke Gifford interrupted for >3 hours due to a delayed repair. Low pressure was also experienced in multiple locations across the region due to bursts, but these were not large scale in terms of properties affected and were typically of short duration.

### 3.2 Communication with customers

We strive to deliver an excellent level of service to customers, whatever the weather. Communications is therefore an important part of dealing with any resilience events.

There were a number of channels for customers communications. Since 2018, we have established dedicated contact teams, dedicated social media teams and a number of new processes to ensure we are able to proactively keep our customers informed regarding progress with any issues in their area. Despite volumes of contacts being high, and at the peak some customers experiencing longer call waiting times, we were able to maintain all of our channels and lines of communication with customers.

Our call centre covering Devon, Cornwall and Bournemouth received a total of 5,062 calls in the period between the 5<sup>th</sup> and 31<sup>st</sup> of December of which 1,431 (28%) calls were from customers in the key impacted areas.

We received a total of 3,489 contacts from social media, webchat, internet – this data cannot be accurately allocated to the impacted areas, but assuming a similar proportion as the phone call channel it would have been c.1000 customers in the impacted areas. The total number of customer contacts over the period is shown in Figure 12 below.



Figure 13: Total number of customer contacts in South West and Bournemouth regions the 5<sup>th</sup> to 31<sup>st</sup> of December 2022

At the peak, customer contacts were around ten times the typical volume, which did lead to longer waiting times (shown below).

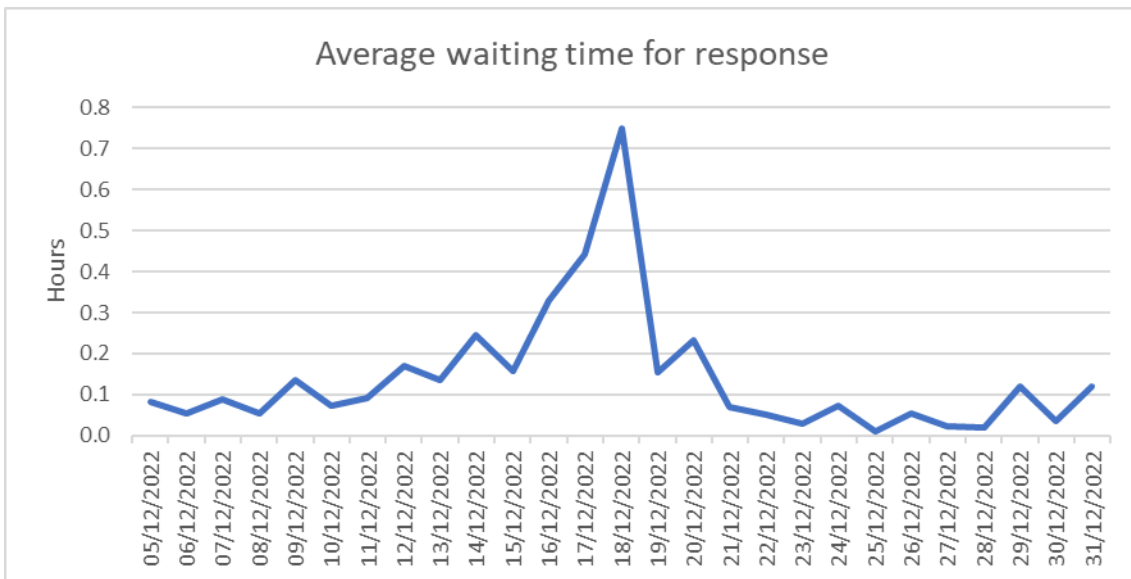


Figure 14: Average customer telephone waiting time 5<sup>th</sup> to 31<sup>st</sup> of December 2022 in South West and Bournemouth regions

As can be seen from the above, waiting times increased by around a factor of 10. This was a particular issue on the 18<sup>th</sup> of December, where average waiting times exceeded half an hour (the only day where this was the case). Please see section 6.2 on lessons learned for further details.

Throughout the period, we made proactive use of communications in a number of ways, including:

- We updated the ‘In your area’ pages on our website. Both to notify customers of issues we were aware of, to keep them updated of progress, and for the two bottled water stations that we set up – to keep them up to date around how to access these. In total there were 103 ‘posts’ on social media in respect of the specific identified areas.
- We contacted customers directly by text and voiceburst. We sent a total of 8,384 texts and voicebursts (i.e., more voicebursts than the total number of customers actually impacted).

In our Bristol region, given the lack of widespread or impact for customer we did not send texts and voicebursts, but rather responded to customers contacts and posted information on our Bristol Water website regarding any localised issues due to burst mains. The event in this region was escalated to a Level 1 (out of 3) to minimise customer impact. Figure 15 below shows that while the number of customer calls to Bristol increased slightly during that period there was not a significant spike in inbound calls.

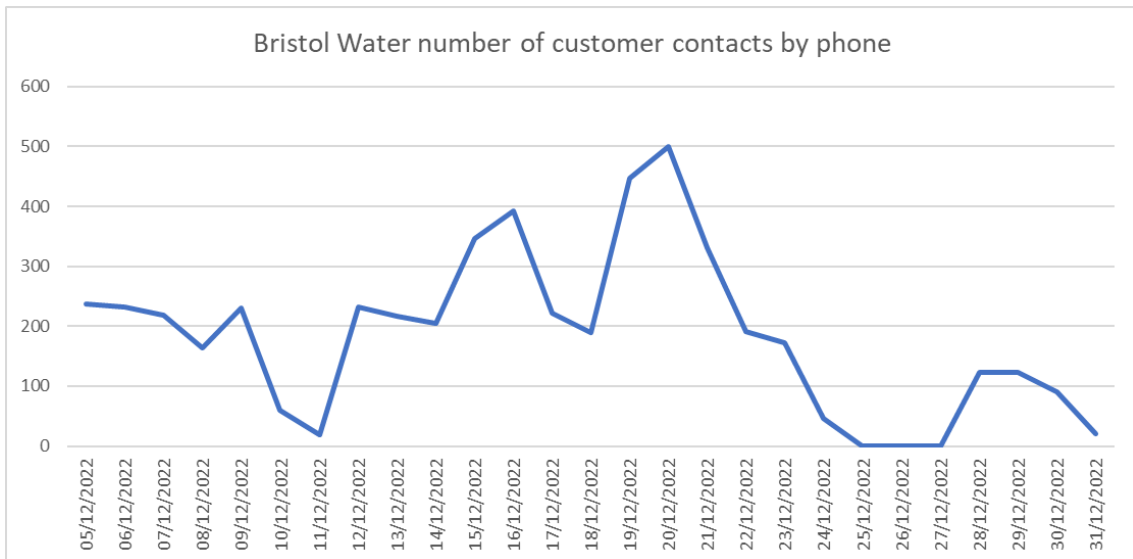


Figure 15: Bristol Water customer telephone contacts the 5<sup>th</sup> to 31<sup>st</sup> of December 2022

In our customer research in hard hit areas, we found that 7 in 10 contacted SWW. Around a third of customers looked to our website and found it a useful source for updates – with most customers preferring to contact us by phone. This shows the importance of providing information to customers through a range of forum.

### Social media – snapshot of posts

**South West Water @SouthWestWater**  
Sun, Dec 18, 2022 8:39 am  
Sent Post

As the cold weather is set to thaw tomorrow, we would like to remind all customers to check their pipes and outside taps. Any big freeze is followed by a thaw which can cause pipes to split. 1/2 [pic.twitter.com/DXYjBLInEU](https://pic.twitter.com/DXYjBLInEU)

**Bristol Water**  
18 Dec 2022 · 🌐

The big coats are out, scarves are on. We're all wrapped up for winter, so it's time to make sure your home is ready too.

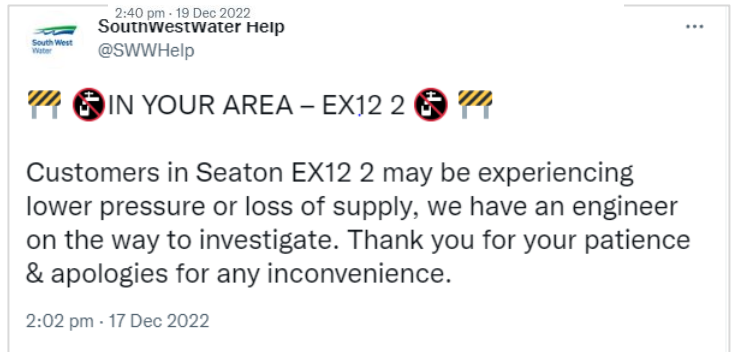
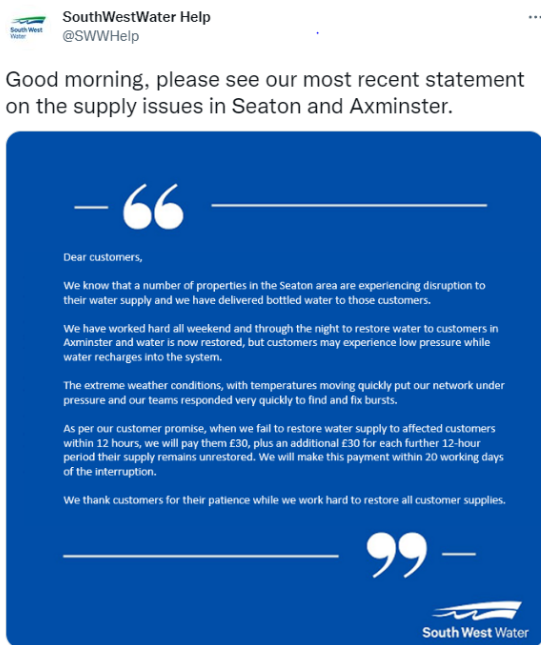
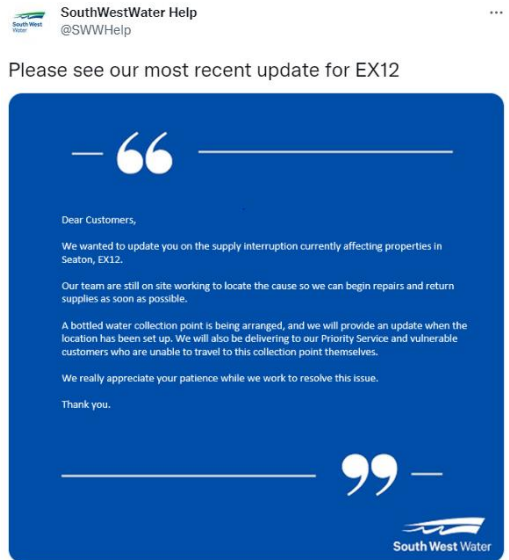
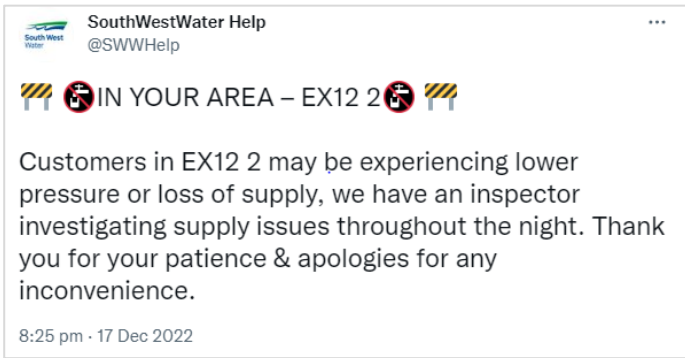
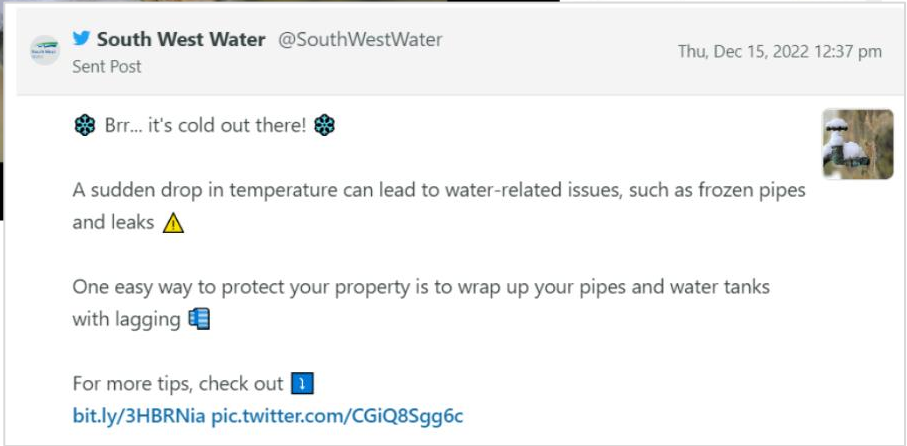
Spend a few minutes doing some simple checks, and you'll be able to stay nice and warm and minimise the risk of nasty surprises, like frozen or burst pipes.

Here are our top tips for protecting your home from the cold this winter. 📄

[www.bristolwater.co.uk/our-blogs/cold-weather-advice](https://www.bristolwater.co.uk/our-blogs/cold-weather-advice)

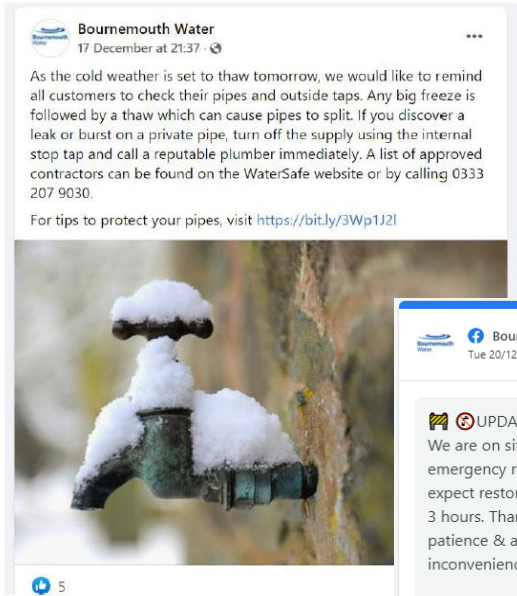
**Bristol Water**  
16 Dec 2022 · 🌐

We have published our draft long-term plan



8:18 am · 19 Dec 2022

[www.facebook.com/bournemouthwater/posts/pfbid0yXn2uVDD3nV6etNrfjUAx3VzF23EQJYQ3Z1xX6QAbpUKm3cCe5msnvWv9hUyk75I](https://www.facebook.com/bournemouthwater/posts/pfbid0yXn2uVDD3nV6etNrfjUAx3VzF23EQJYQ3Z1xX6QAbpUKm3cCe5msnvWv9hUyk75I) - 17/12/22



**Bournemouth Water**  
Tue 20/12/2022 3:04 pm GMT

**UPDATE – SO42**

We are on site completing emergency repairs, we now expect restoration in the next 3 hours. Thank you for your patience & apologies for any inconvenience.

Impressions	—
Reach	—
Engagements	—
Engagement Rate (per Impression)	—

**@SWWHelp**  
Fri 16/12/2022 4:39 pm GMT

**UPDATE – PL27 7SS**

We would like to thank our customers for their patience while we completed emergency repair work in Rumford - PL27 7SS We are pleased to confirm that supplies in the area are now restored.

Impressions	640
Potential Reach	4,084
Engagements	7
Engagement Rate (per Impression)	1.1%

**South West Water**  
Fri 16/12/2022 4:39 pm GMT

**UPDATE – PL27 7SS**

We would like to thank our customers for their patience while we completed emergency repair work in Rumford - PL27 7SS We are pleased to confirm that supplies in the area are now restored.

Impressions	108
Reach	99
Engagements	5
Engagement Rate (per Impression)	4.6%

Website

South West Water

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Home / About us / Latest news / 2022 News / Protect your pipes and fight the freeze this winter

### Protect your pipes and fight the freeze this winter

14th December 2022

As winter brings a drop in temperatures South West Water is reminding customers of the importance of being prepared for the colder weather ahead.

A sudden drop in temperature can result in water-related issues, such as frozen pipes and leaks. Water expands by nearly 10% as it freezes and turns into ice, which stops the flow of water through pipes. This can cause even new pipes to split, often resulting in leaks and bursts causing flooding and damage.

Mark Hillson, South West Water's Drinking Water Services Director, said: "Following Met Office warnings that severe cold weather is set to continue in parts of the UK this week, with the risk of sleet and snow at times continuing, we are urging customers to take action and follow some of our top tips to help protect pipes and prepare homes for the cold weather."

South West Water's top tips to prepare your home for cold weather:

- wrap up your pipes and water tanks with lagging – especially those in unheated areas such as lofts, garages or gardens
- fix dripping taps – even a small trickle can result in a frozen pipe
- find your inside stop tap (usually under the kitchen sink or where the pipework enters your property) and make sure you can turn it off
- leave the heating on low if you go away
- check your central heating boiler has been serviced

From the contact details of a reputable plumber to hand.

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- leave the heating on low if you go away
- check your central heating boiler has been serviced
- keep the contact details of a reputable plumber to hand.

**What to do if you have frozen pipes:**

If you don't have any water check with neighbours. If they still have water, your pipes may be frozen

Check pipes for signs of a split – a leak or burst will not occur until the water has thawed

Turn off the supply using the internal stop tap

If the central heating and any other water heating appliances are already on, keep on. However, if they are currently turned off do not be tempted to switch them on to thaw frozen pipes as this could cause damage

Drain the cold water system only by flushing the toilet and opening cold taps over sinks and baths

If you don't find any damage, turn on all the taps and thaw the frozen pipe using a warm towel or hot water bottle wrapped in a towel

When the pipes have thawed and you're sure no damage or leak has occurred, turn off the taps and slowly switch the supply back using the internal stop tap

Check the pipes again now that they are under pressure and check again for signs of damage or a leak before switching on water heating appliances.

If you discover a leak or burst pipe, call a reputable plumber immediately. South West Water supports approved contractor schemes and a list of approved contractors can be found on the WaterSafe website or by calling 0333 207 9030.

It's important to know that any big freeze is followed by a thaw which can cause interruptions to your water supply. Would you be able to access an alternative water supply during a disruption? If not, get in touch and sign up to our Priority Services Register at [www.southwestwater.co.uk/priorityservices](http://www.southwestwater.co.uk/priorityservices)

**For further information please contact:**

South West Water  
www.southwestwater.co.uk/contactus

Message us

WhatsApp

## Text and Voice Blast – Seaton area

18/12/22 – 14:25PM

No Water in Seaton

*We'd like to apologise to customers in Seaton who have been experiencing issues with their water supply. Our team have been working hard throughout the day and our main priority is to restore all supplies for our customers. Due to the recent freezing conditions, we have seen an increase in bursts that are causing an additional demand on our network. We are prioritising and arranging the necessary repairs. This work will continue through today and into tonight.*

*We are contacting our most vulnerable customers and providing support for those that need it most. We would like to thank customers for their continued patience and understanding while we work to restore supplies as quickly as possible.*

-----  
18/12/22 – 14:39PM

*Hello, this is a message from South West Water. We'd like to apologise to customers in Seaton who have been experiencing issues with their water supply. Our team have been working hard throughout the day and our main priority is to restore all supplies for our customers. Due to the recent freezing conditions, we have seen an increase in bursts that are causing an additional demand on our network. We are prioritising and arranging the necessary repairs. This work will continue through today and into tonight. We are contacting our most vulnerable customers and providing support for those that need it most. We would like to thank customers for their continued patience and understanding while we work to restore supplies as quickly as possible.*

-----  
20/12/22 – 08:46AM (SMS ONLY)

*We would like to thank our customers for their continued patience and understanding while we work to restore supplies in the area. We have arranged a water collection point at the Jurassic Long Stay Car Park. This will be set up from 09:30 this morning for customers, with staff on site to hand out water. We will still continue to provide water deliveries for our most vulnerable customers throughout the day. Please contact us on our services line 0344 346 2020 in order for this to be arranged.*

*Need a bit of extra help?*

*If you, or someone in your house, has a medical condition that requires constant access to a water supply, or you would find it difficult to reach an alternative supply during a mains interruption, then sign up to our Priority Services Register. Our Priority Services are free, and you don't need to be the bill payer to register.*

-----  
20/12/22 – 15:23PM

*Hello, this is a message from South West Water. We would like to thank you for your patience while we completed emergency repair work on Seaton, EX12. We are pleased to confirm that supplies in the area are now restored. We do not anticipate that you will experience discoloured water but if you do notice discolouration, please run your cold kitchen tap until clear. The brown or yellow appearance is caused by the disturbance of natural sediment within the main and can take up to an hour to clear. For more information or to claim a run off allowance please visit our website. Thank you, Goodbye.*

-----  
20/12/22 – 15:24PM

*We would like to thank our customers for their patience while we completed urgent repair work in Seaton, EX12. We are pleased to confirm that supplies in the area are now restored. If you notice discolouration, simply run your kitchen tap for up to an hour to help it clear. The brown or yellow appearance is caused by the disturbance of natural sediment within the main and whilst not harmful, due to its appearance we don't recommend that you drink it.*

*Need a bit of extra help?*

*If you, or someone in your house, has a medical condition that requires constant access to a water supply, or you would find it difficult to reach an alternative supply during a mains interruption, then sign up to our Priority Services Register. Our Priority Services are free, and you don't need to be the bill payer to register.*



### 3.3 Communications with other stakeholders

#### Local authorities

We had proactively communicated with local authorities to warn of the risk of a significant rise of urgent works and the impact on highways.

#### Local resilience forums (LRFs)

On the 18<sup>th</sup> of December we made contact with Devon and Cornwall LRF Police Incident Line to warn of a potential impact to customers the following morning. This was to provide the LRF with an early warning and background information ahead of any request for support. At 07:00 the next day we followed up, providing the LRF with further information to inform it of the stabilisation of the situation and the unlikely need for further LRF support.

Meetings were held between Bournemouth water, Dorset and Hampshire LRF through 19<sup>th</sup> – 23<sup>rd</sup> of December to provide event update and risk review. Specific meetings with the New Forest District Council were held to identify appropriate locations in the event the company would need to set up bottled water distribution sites across the Knapp Mill supply network. This was fed back to LRF during the update meetings. These distribution points were not needed.

Additional meetings were held for HIOW SCG and Dorset PEAT on the 23<sup>rd</sup> of December 2022

During the event, discussions were held with New Forest District Council to identify appropriate locations in the event the company would need to set up bottled water distribution sites across the Knapp Mill supply network.

#### Government and regulators

We provided updates to Defra on the 19<sup>th</sup>, 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> of December.

We provided updates to the DWI on the 21<sup>st</sup>, 22<sup>nd</sup>, and 23<sup>rd</sup> of December.

During the event we identified a further potential issue due to the severe weather, with raw water quality at one of our works in the Bournemouth region. This issue was managed effectively which meant there was no customer impact and water quality compliance was maintained. When we identified this potential issue, and in an abundance of caution, we provided an early warning to both the DWI and DEFRA that we may need to issue a 'boil water' notice to some customers. We kept the DWI and DEFRA updated throughout this period and ultimately were able to manage both resilience issues without any impact on customers.

#### Colleague communications

We had good internal mechanisms of ensuring our front-line customer agents were informed of key messages on a daily basis.

### 3.4 Mutual aid with other companies

We had a clear strategy in respect of Mutual Aid – to engage/inform and request support from partners as soon as possible.

We made 2 requests for mutual aid:

- 1) in respect of clean water tanker support for the Tiverton area – this was a pre-emptive request due to concerns with reservoir levels in the Allers zone.
- 2) was in respect of tanker support for North Devon – again this was a pre-emptive request due to concerns with the overall demand in the North Devon area.

On both occasions we were able to improve our position and further support from outside of our own organisation was not required. Whilst we received response to our mutual aid request, other companies were unable to support our requests for tankers. Within Bournemouth, and Bristol no mutual aid requests were made.

Although this was not a mutual aid request, we have a common main with Wessex Water, through which we were provided 5 Ml/d for the period to Bournemouth Water, following support from ourselves earlier in the year.

### 3.5 Distribution of bottled water

In advance of the event, bottled Water stocks had been increased. Early procurement through our supplier Water Direct meant we were in a strong position leading into the freeze thaw.

We started distributing bottled water to vulnerable customers and those that requested delivery from the 17<sup>th</sup> of December onwards.

On the 20<sup>th</sup> of December, we set up two bottled water collection points in Seaton and Holcombe Rogus.

At these sites we distributed circa 5,319 litres of water. Sites were set up to maximise accessibility for customers in the most impacted areas, locations of both of these sites worked well for customers and our capacity to ensure these stations were stocked at all times.

For Bournemouth and Bristol, no distribution points were required to be set up. However, worst case scenario planning meant local stations were agreed with the LRFs in advance and could have been set up if required.

### 3.6 Support for vulnerable customers

During this event we sought to prioritise vulnerable customers.

Our vulnerable customer tracker shows high levels of satisfaction with the services we deliver – in our latest PSR tracker, 89% of PSR customers told us they are satisfied with the services they receive and support we provide to them.

Building on this position, we are working hard to ensure that vulnerable customers are on our PSR. During the course of the event and discussions with customers – on the phone or through social media contacts, our teams looked to identify unregistered priority customers to add to our PSR register. Four customers were added. We were also able to ensure these customers received supplies of bottled water through the course of the event.

#### Devon and Cornwall

Through our PSR data we identified vulnerable/priority customers in the impacted areas. Through our alternative water supply (AWS) teams we delivered bottled water to these customers to ensure they were supplied during the event.

The breakdown of the 362 priority customers we supplied bottled water to is set out below:

- 19/12/22 – EX16 – 276 Priority customers were identified within the whole Tiverton area. We immediately commenced distribution of bottled water to affected areas. Though management of our network we were able to restore supplies before the full area was impacted. In the end we distributed bottled water to circa 25% of our customers so that all impacted customers on the PSR register received supply.
- 19/12/22 - EX12 – 15 PSR customers impacted. Water was delivered to all these customers between 09:52 and 12:00
- 19/12/22 - EX5 – 9 PSR customers impacted. Water was delivered to all these customers between 09:59 and 12:00.

- 20/12/22 – EX12 – 39 PSR customers impacted. Water was delivered to all these customers between 10:36 and 14:54.
- 20/12/22 – EX16 and TA21 – 23 PSR customers impacted. Water was delivered to all these customers between 11:57 and 15:36.

### Bournemouth

In total we undertook deliveries of bottled water to 189 vulnerable consumers on our PSR register. These were identified through our event management process and communicated out to our field teams for deliveries. The day-by-day breakdown of the priority customers we supplied water to is set out below:

- 19/12/22 – 57 PSR Customers impacted
- 20/12/22 – 77 PSR Customers impacted
- 21/12/22 – 27 PSR Customers impacted
- 22/12/22 – 20 PSR Customers impacted
- 23/12/22 – 8 PSR Customers impacted

### Bristol

There was no strategic bottled water distribution to PSR customers in the Bristol region given the low impact experienced here. Our local repair teams carry supplies of bottles; prior to any short term shut for repair works they identify any PSR customers via GIS and deliver bottled to those customers.

### Priority Non-Household customers

No hospitals, prisons, care or nursing homes were closed, no priority businesses were impacted across our regions.

## **4 Compensation arrangements**

Customer compensation payments related to the 2022 freeze-thaw are being made in line with our customer charters which are updated and published annually on our websites. No customers in the Bristol region were interrupted more than 12 hours during the period so payments relate to Devon, Cornwall and Bournemouth only.

Automatic payments are being made to affected customers, who experienced a supply interruption of greater than 12 hours during the incident period.

## 5 Post event customer research

We conduct post event surveys after any resilience issue as we look to engage customers as to how we deal with events and to inform lessons learned for dealing with these more severe resilience-based events in the future.

Using a survey aligned to the Beast from the East event, we have engaged customers in two affected areas by an independent market research agency, ICS and Feedback.

As was the case with the Beast from the East, the impacts were not uniformly felt across our region. To understand customer impacts better, customers were surveyed in Seaton in North Devon, which was hardest hit by the impact of the freeze-thaw. We also surveyed Westcliffe in Bournemouth given the overlapping weather impacts in that region. ICS/Feedback contacted 440 customers through telephone surveys.

During the survey customers were asked about their preparedness for the severe weather, the impact of the supply interruptions on their household, and their perceptions of our handling of the event.

The survey confirms that overall, the impacts on customers were generally low, with 90% of customers reporting they were unaffected or that the impacts were negligible. 95% of customers reported being satisfied or unaffected by our handling of the event – in these worst affected areas.

Customers reported low awareness of the severe weather in advance, and were less prepared than in 2018, with less than half of those affected saying they were aware of the severe cold weather in advance and took steps to prepare – such as ensuring sufficient supplies or by checking their pipes.

In contrast to the Beast from the East where customers were understanding of the scale of the impacts given the weather, in 2022 only half of customers considered interruptions acceptable given the severe weather, and acceptability of the time to restore was also lower. Customers have a low appreciation that it is rapid temperature changes from cold to warm – rather than the severity of the weather itself – that has the biggest impact on pipe bursts, so the seriousness of the severe weather with respect to pipes does not seem to be well understood. In contrast, the Beast from the East had very severe snow and blizzard levels that seemed to increase customer acceptance of significant impacts.

7 in 10 customers contacted us during the 2022 event, and one third used our website and social media for updates. Generally those that used social media and website for updates found it helpful but more frequent updates was a theme in the feedback. Some customers reported in the survey not having internet and therefore struggled with getting updates. Two thirds of customers affected in these hardest hit areas said it was hard to contact SWW - a consequence of people using the phone as the main source of information, suggesting that we need to consider how we build our digital reach especially for resilience events.

Customers were told about their rights and eligibility for compensation. 80% of customers affected by the freeze thaw said they were happy with the compensation arrangements – with 20% noting they would have preferred the payments to be sooner or more clearly understood in advance. Some were also concerned about the sense of unfairness that larger households get the same as smaller households that need less water.

We also continued our business-as-usual customer tracking surveys across all areas of our region through December and January. These do not show any change in customer satisfaction, value for money or trust over the period and no comments provided around the weather causing impacts.

Overall, we will use the customer feedback from the post event survey to build into our improvement plans, along with the outputs from other post event surveys and customer studies.

## 6 Lessons learned

We have conducted a review of the event and identified a large number of positives that have come out in respect of our governance, investment, planning and operational response as well as some areas where we could improve. Our post event customer survey provides additional insights.

KPMG has also been asked to review our data, reports and response to set out their independent observations. These are very much in line with our thoughts and enable us to strengthen our response to these events when they occur. A copy of their observations is contained in the appendix.

### 6.1 What went well

#### Preparedness

- Early sight of the event through the Met office yellow warnings and Water UK discussions through NIM (National Incident Management) and PIM (Platinum Incident Management) meant the cold weather event was being managed as a proactive event ahead of the thaw with twice daily calls already in place.
- Reservoir levels were being increased during the run up to the cold weather period in anticipation of increased demand from leakage.
- Bottled Water stocks were being well managed ahead of the event with our supplier, Water Direct (and subsequently during the event) in line with contractual arrangements that meant we were able to fulfil all requirements with adequate forward stock provision.
- We were already on an enhanced footing for leakage management before the incident due to increased management focus on active leakage detection – meaning additional resources were already in place through our supply chain
- Control room was operating extended work patterns (Network Operation) in the lead up to the freeze thaw to maximise output and storage.
- Production teams had put in enhanced working patterns (going to 24/7 once the event commenced) and additional Operational Technology support had been put in place.
- Additional MEICA support was put in place as a precautionary measure.
- As part of the leakage and winter planning, our supply chain partners had ensured key stock and strategic spares were in place. During the event no issues occurred from lack of materials, supplies or logistics which meant repair times were not impacted.
- Alternative Water Supplies teams were in place including a 15 tanker fleet available to support Network enhancement. We were able to quickly deploy these to the impacted areas – a significant improvement in our capability since 2018.
- Winter readiness communication campaigns were running in advance of the incident.
- Advice was provided to customers via the company website, social media and service centre throughout the event. The company issued additional social media messaging for consumers to check pipe and outside taps for leaks.
- Improvements to organisational structures since 2018 including a single contact centre, dedicated social media team, offshoring and webchat capability meant we were in a better place to respond than in 2018.

#### Response

- Timely set up of our incident room provided effective central oversight and enabled a quick response to the emerging incident across our regions.
- Provision of hourly data on reservoir levels to the incident team enabled us to target interventions in production, network configuration, AWS, communications and risk management as needed – improvements are being made to make this process even more efficient.

- Network control incident team were able to make the correct decisions to balance supply in the networks by isolating leaks and identifying where to rezone quickly and effectively.
- Water production was maximised from all water treatment works both leading into and during the incident.
- Leakage and bursts repairs targeted in the highest risk areas were dealt and dealt with as a priority. Some minor customer side leaks were suspended to free up more gangs.
- The number of customers impacted by the event was comparatively low compared to the 2018 freeze-thaw. A senior manager took ownership for the management and distribution of bottled water including supporting adequacy of stock and allocation across Devon, Cornwall and Bournemouth which was effective.
- Our common shared resilience main with Wessex was effective in maintaining supplies to our Knapp Hill area.
- Network teams were mobilised to investigate and repair leaks. Network resources were increased. Five additional leak repair crews were brought in from the Bristol region to provide additional support.
- Given the greater impact of the event on customer in the South West we were able to divert pallets of bottled water from Bristol to the South West.

### Communication

- Increasing the volume of proactive messages helped to manage customer expectations and was effective in reducing demand by focusing customers on water conservation.
- The use of 'in your area' on our website provided up to date and relevant information for customers for example on the locations of the two bottled water collection points we set up
- Utilising of our offshore teams and webchat services appeared to work well
- Local MP's had been engaged frequently through the communications teams.
- LRF's were proactively engaged ahead of any impact to customers and kept up to date throughout with information sharing protocols agreed early on.
- Communication with Water UK NIM and PIM was ongoing throughout the period and we provided 'Sit Reps' to support the wider industry. We had had early discussions on mutual aid which was requested in anticipation of potential issues although this may not have been possible to provide given the similar issues faced by other companies.
- The contact centre's event management process was able to effectively identify our PSR customers which was then communicated to our field teams for bottled water delivery.

## **6.2 Areas for improvement**

### Preparedness

- The Gold incident room was set up to focus on core activities whereas our response may have benefitted from including a wider team to deliver support activities such as transport and logistics – we plan to review whether additional cells are required as part of the incident team.
- Management of incidents is reliant on quality and timely operational and telemetry data – we plan to ensure maintenance regimes for transducers are followed in the lead up to significant weather events.

## Response

- Key pumping stations appeared to that perform well during this event and did not cause any issues. We hold a number of spares for these but will carry out further review of the resilience of these pumping stations given their criticality to our operations.
- Customer teams and meter readers were utilised in the response which had an impact on other front-line teams and programmes of work. We plan to review our rostering approach of non-operational teams to support bottled water provision and get wider support from the business for operating bottled water stations.
- Bottled water and tankering teams are currently managed by separate leads however no adverse impacts were experienced – since our merger with Bristol our approach to alternative water supplies has become more resilient – we were able to redeploy both bottled water and repair crews from Bristol to Bournemouth during the incident. We will continue to review this approach to look for opportunities to streamline our alternative water supplies structure and enhance our capability in this area.
- Infusion points into the network were not pre-defined – a review of this approach in some hotspot areas may improve our ability to respond in future events.
- Staff involved in the incident were engaged over a prolonged period and showed great commitment and responsiveness – we will review our approach to dedicated rostered roles from the wider business who are able to support during prolonged events.
- We identified there was a lack of HGV drivers available due to rest times, although this was not identified as a major issue for us in this incident, we shall be undertaking a review of available HGV drivers in events with a view to widen the cover for this across the business.

## Communication

- Customer support needs to be at the heart of any resilience event. We recognise that customer teams could have been included earlier in the wider incident calls to ensure that they are stood up and prepared for the events - we are reviewing our triggers in our incident management plans to include this.
- We know from the customer engagement that the ability to contact SWW at certain times was an issue. The volume of inbound customer calls and social media enquires was significant in the peak of the incident and we plan to review our approach to this for future incidents to identify flexible resources trained to handle customer calls.
- Development of a standard suite of documents for proactive event management would assist our communications teams in delivering clear, effective and timely messages to our customers.

## 7 Summary

The December Freeze Thaw was a serious resilience event. In the Bournemouth region this was especially so, as it also resulted in significant turbidity in the rivers that could have presented considerable water quality risks. Overall, both of these weather-related risks were managed.

Relative to the Beast from the East, the weather was very similar in terms of the severity of the temperature changes, which causes pipes to burst. But due to the learnings from that event, and other resilience events such as the 2013-14 Winter Floods, we were able to ensure much less customer impacts than in 2018 – around one eighth of the impact.

But there were still customer impacts and in some hard hit areas, we know some customers were affected for a long time.

Each of these rare resilience events does provide an opportunity to understand more about how our people, processes, systems and assets combined to deliver service for our customers and communities. We will use this event to learn and improve further.

The recommendations from the 2022 Freeze Thaw – from our review, that of our regulators and other companies – will be fully considered, acted upon and communicated openly. This will include our Watershare+ customer panel, that has a key role in representing the voice of the customer and scrutinising our performance and testing our future plans.



## 8 KPMG – Independent observations

At the request of KPMG, their *Review of Response* letter has been removed from the public version of the report. No other changes have been made to the report as submitted to Ofwat.



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