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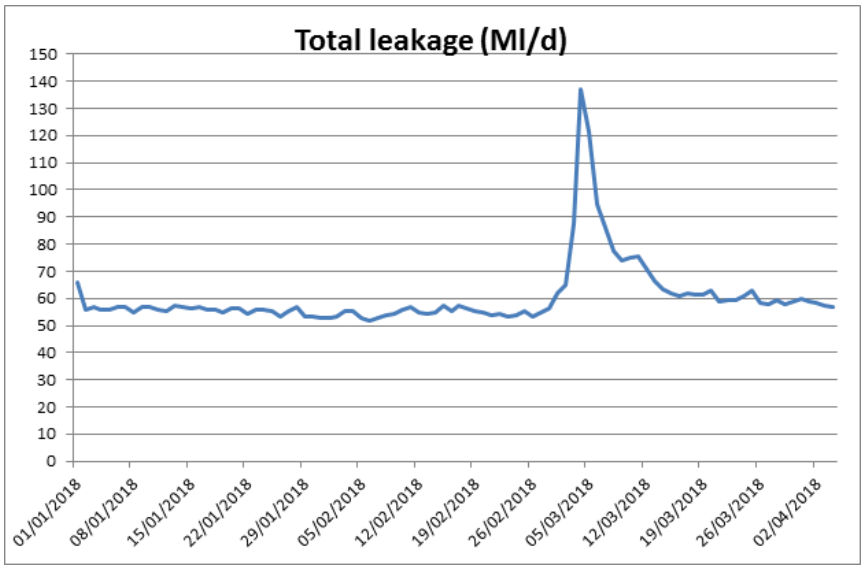
6 April 2018

Review of freeze/thaw incidents – Request for information

This covering letter sets out an introduction to the response of Bristol Water to Ofwat's request for information issued on 19 March 2018, to support the review of the recent severe freeze and thaw events which resulted in supply interruptions to customers across England and Wales. The main response, in the required format, is attached to this letter, and the data spreadsheet accompanies this information.

As a high level summary of Bristol Water experience we would like to draw attention to the following factual data:

- At their peak, mains bursts levels were 5 times higher than the average level of mains bursts experienced over the period of 14 February to 14 March. During the period of 1 March to 8 March, mains burst levels experienced were twice the average level experienced over the period of 14 February to 14 March.
- The operational response and mobilisation of resources meant the average time taken to response to mains bursts did not increase over the data period.
- At the peak days between 4 March and 6 March, as the thaw set in, Distribution Input increased to a level 25% above the average level in advance of the weather event. As the repair of major bursts and leaks progressed, by 9 March Distribution Input had reduced to 6% above prior levels, with the residual increase reflecting small leaks on the network, customer stop taps and leaks that are customers' responsibility and yet to be resolved.
- Leakage on the 4 March was circ. 2.5 times the level prior to the weather event. Leakage levels then recovered in line with the Distribution Input described above. As expected, by the end of March leakage recovered back to the levels before the early March weather event. This recovery was despite the continued generally cold weather and a spell of further snow in the south of the supply area on 17 and 18 March.



Despite the severe weather that affected our entire operating area between the 1 and 6 March 2018, less than 500 customers had supply interruptions that exceeded 12 hours. We had sufficient resources throughout this incident and our planning in advance and response to the events worked very well. Our staff and partners provided excellent services to customers during this challenging period, and we provide evidence in our response of customer and stakeholders (including Bristol City Council) satisfaction in support of this. We constantly look to learn from our events, but I am proud of the response of Bristol Water and the way we maintained the trust of our customers and stakeholders as the communities we serve suffered from some of the severest winter weather conditions that many of us had experienced.

Yours sincerely

Mel Karam
Chief Executive Officer

Section A: Factual details of freeze/thaw events

It is important that we understand the factual details and timeline of what occurred for your network and customers.

1. Provide details of the impacts of events on your network / customers using the **attached tables** (please complete both sheets). We are requesting information from the period 14 February 2018 to 14 March 2018. Please specify on which dates your company considered it was managing events rather than business as usual (the end date should be no earlier than all customers being back on supply). If you consider it appropriate, you may extend the date range (eg to the start of February) and explain why additional dates are relevant. You may not reduce the date range.

   i. The submission spreadsheet includes the relevant data entries for the period 16 February to 14 March 2018. This period spans the main event period of the 1-6 March during which Bristol Water successfully managed a period of extreme weather (1-3 March, snow and ice) followed by the effects of the thaw on the 4-6 March. During the latter period the recovery from the extreme weather event was managed by a designated Incident Team, in line with our normal incident response procedure.

   ii. The Incident was closed on Tuesday 6 March after which most company activities were managed as business as usual. This remained a very busy period for our operational and customer service response. For operational contacts, the Operational Customer Services Team continued to work in an event mode until the 8 March due to the high number of calls experienced up to this period.

   iii. A significant amount of the data provided in the table is subject to data assurance as part of the Annual Return submission (i.e. Interruptions to Supply, leakage, distribution and burst data) for 2017/18. However, due to the timing of collating the freeze/thaw data table just before the year end, data will be subject to change as corporate systems will be fully updated in time for the annual report process. However, the data is suitable for the purposes of this submission and has been derived from our day-to-day operational information.

   iv. Daily values for Operational Leakage tracking will inherently include estimations which affect the accuracy of the actual daily value. We are however confident in the magnitude of daily change experienced during the event.

2. Beyond the issues highlighted in Tables 1 and 2, please provide details of any further impacts your network or customers (by customer type) experienced that your company had to respond to?

   i. Tables 1 and 2 highlight the 9,802 properties that had some interruptions to their supply. 471 customers are calculated (based on reports of no water and low pressure and the network assessment of the impact of the network issue) to have had interruptions that lasted between 12 and 24 hours.

   ii. As we explain in more detail below, 383 (370 excluding voids) of these properties were in 3 tower blocks in Dove Street, Bristol, where a damaged high voltage cable meant the repair to the main was particularly difficult. Bottled water was supplied. The other 88 properties interrupted more than 12 hours (but less than 24) resulted from a burst in Tweentown, Cheddar. In both cases the interruption event started at just before midnight on 4th March and was repaired mid-afternoon 5 March, with the response time reflecting the health and safety considerations in making the repair.

   iii. The serious "Red" weather warning effectively meant that travel within the region and into/out of the region was very challenging. For instance, there was a very limited rail service from Thursday 1st March until Saturday 3 March. Due to the severe weather 103 planned appointments were cancelled. The Executive team of Bristol Water decided not to use any severe weather exception and paid GSS of £2,850 (£25 domestic, £50 commercial), in addition the supply interruptions detailed elsewhere in this response.

   iv. Customer information relevant to interruptions to supply (no water contacts) and poor pressure complaints have been captured in the spreadsheet. These were the main two direct impacts which had a direct result on our customers.

   v. In addition to the direct impact of low pressure or no water, as a result of dealing with a burst main repair in the Backwell area of Bristol on the 7 March, customers contacted us with reports of discoloured water. As the number of complaints was significant at 121 contacts, the DWI was notified of this event and a 72 hour report was subsequently submitted to the DWI. The number of properties potentially affected was 1,018. Normal stakeholder contacts for such events with Public Health England, North Somerset Council and the Consumer Council for Water were conducted for this incident. A large leak on a 315mm HPPE trunk main (laid in 2013) was identified on 6th March. In this single case there was an operational error when recharging the mains that did not follow the approach we had identified to minimise the risk of discoloured water.

3. Details of how responding to the incident impacted on your wider business's "business as usual" operations during the incident period. Where possible provide an indication of the scale and nature of these impacts.

   i. The weather conditions had a significant impact on the operations of the company. As a direct consequence of the weather forecast – Amber/Red severe weather warning from the Met Office, non-essential staff were sent home early on 1 March to ensure the Health, Safety and Wellbeing of employees.

   ii. On Friday 2 March as a result of the snow fall the majority of staff were working from home were possible whilst critical staff were brought into their place of work where required using 4x4 vehicles allocated as part of the Severe Weather Forecast Task Force arrangements (see further below).

   iii. All non–essential and non- critical work activities were postponed in advance of the weather conditions, and staff were reallocated to deal with the more critical activities. For example, mains flushing activities were stopped and the resource was reallocated to ensure that any visible leaks were clearly signed and salted to avoid freezing of road surface whilst awaiting the repairs. Regular liaison with the highways authorities took place to explain the roadworks, with extensions or removals planned as necessary to ensure access, particularly on key rural routes.

   iv. The Met Office Severe Weather Forecast Warning changed a number of times between 28 February and 1 March, resulted in an Amber Warning for most of the Bristol Water area and an unprecedented Red Warning that particularly affected the southern part of our supply area. It meant – don't travel at all unless essential, and all planning activities during the period used this scenario.

   v. Although non-essential company activities were scaled down to protect the health & safety of staff, Operational Customer Service (OCS) staff where possible were working from home to take customer calls, or were provided with 4x4 transport to reach the Bristol Water Head Office. The OCS centre stayed open to midnight rather than 8pm at the peak in order to handle the calls. Normally the Operations control centre would also handle customer calls at the peak, but this does not occur during events such as this, as part of our planned operational response. Effectively although this was a particularly severe weather situation, the operational response followed our normal, well planned and tested procedures.

vi. At peak volumes of calls to OCS a recorded message on in-coming customer lines (RAD) was used to provide information on how to deal with a frozen pipe, our website address, and an alternative contact telephone number. This was used from 1st to the 5th March as shown in the table below:

	RADS	ENGAGED	CALLS
01.03.2018	307	36	373
02.03.2018	95	1	125
03.03.2018	703	86	219
04.03.2018	782	364	326
05.03.2018	351	199	466
06.03.2018	0	3	337
TOTAL	2238	689	1846

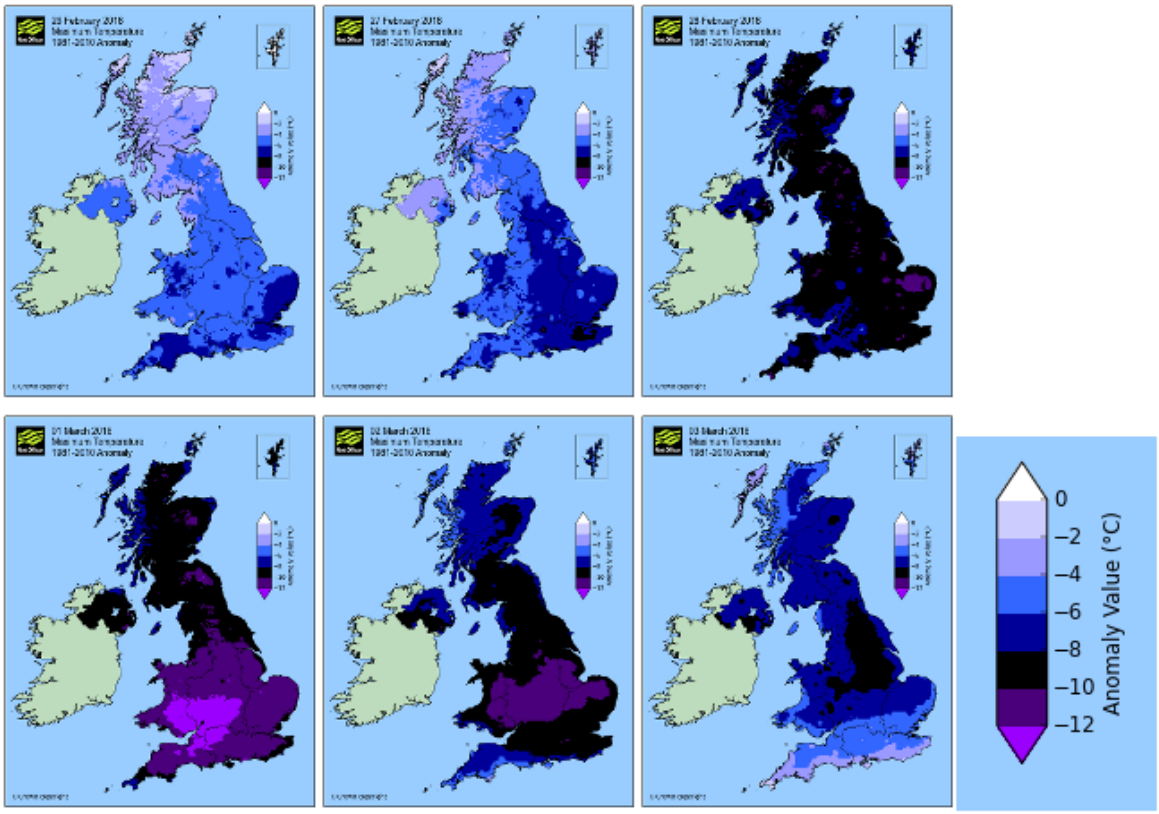
The analysis of these calls gives an indication of the nature of the incident. Customer contacts were a mix of reporting visible leaks and low pressure or no water. Around 1/3rd of the no water related calls related to customers' own frozen pipes.

WATER QUALITY (AIR/DISCOLOURED/TASTE)	24
LEAKS	688
PRESSURE & NO WATER (includes 248 No Water - Customer Responsible for customers with frozen pipes)	801
STOP TAPS & CUST PLUMBING	135
BOTTLED WATER	6
OTHER	192

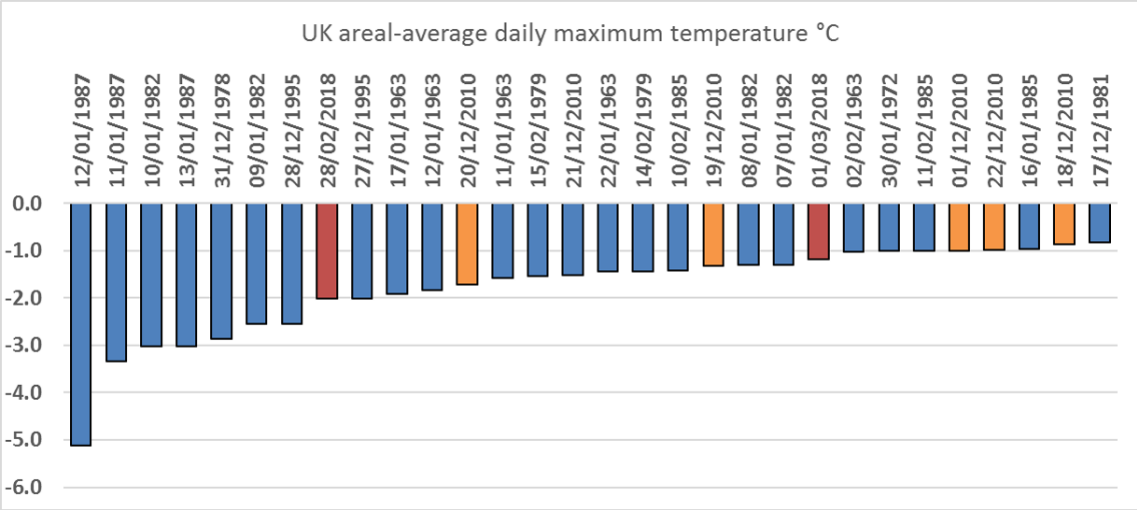
4. What have you judged to be the cause of the issues, particularly water supply interruptions, for your customers (by customer type) during this period? What factors were relevant?

   i. The weather conditions, initially the cold and snowy weather conditions had an impact on response times and some impact on burst water mains (see graph below). The rapid thaw period between Thursday 1 and Saturday 3 March had a significant impact on the outbreak of burst mains in a relatively short period. A temperature swing of 16 degree Celsius in less than 48 hours was significantly greater than experienced in other previous cold periods.

   ii. During the afternoon of 1 March, a low pressure system in the Bay of Biscay (named as Storm Emma by the Portuguese Met Service) pushed north, bringing mild, moist air into the colder air resulting in further heavy snow, particularly across southern and south-west England and south Wales; the Met Office issued a Red Warning for this event. Behind this weather system southern areas also experienced freezing rain (on contact with cold surfaces). Due to the low temperatures, falling snow readily lay un-melted on the ground, and the strong winds resulted in significant drifting. While the wind stripped snow from some locations, others recorded depths of 50cm or more; in some locations roads were blocked while surrounding fields remained relatively bare. The Met Office temperature anomaly information shows the particularly deep freeze and thaw around South East Wales and Bristol / Somerset.



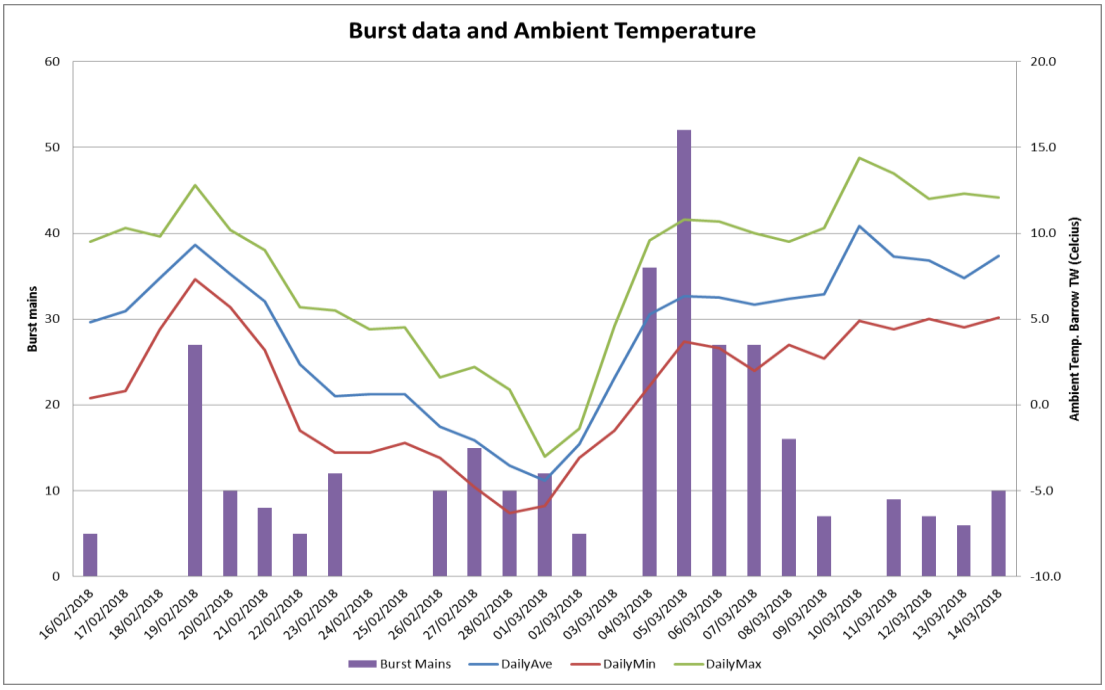
iii. Met office analysis suggests this period was the severest spell of severe winter weather since December 2010. Although December 2010 was a much longer cold period than March 2018,in terms of peak temperature March 2018 event was more severe across the UK as a whole, with particular in the South West as shown above.

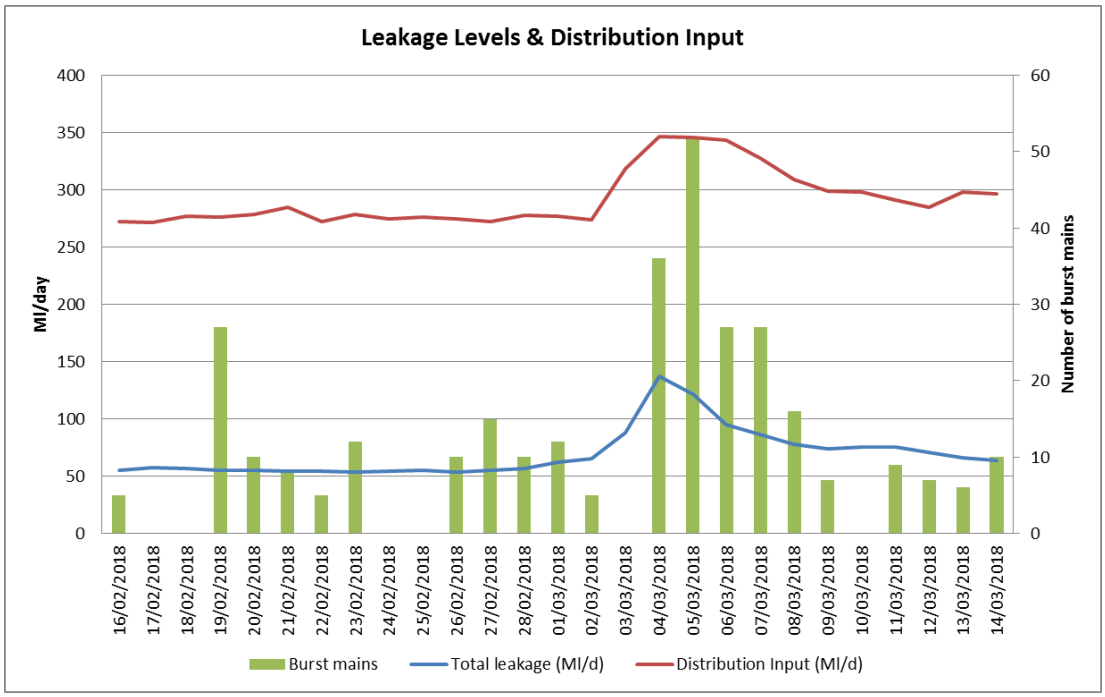


iv. During the initial cold period our Operational Customer Service team received increasing number of customer calls about frozen private supply pipes, resulting in no water calls to Bristol Water. Advice was given on lagging of pipe work (advice also on website and social media) and where possible assistance was provided for these private supply issues. We provide examples of our communications as an Annex to this paper.

v. As a result of the thaw period increased level of leakage levels were observed, both on the company and private supply network. This approx. 25% increase over the weekend of 3-4 March reduced significantly in the week following the outbreak due to main repairs and private leakage repair. It is estimated that over a third of the leakage observed was private supply pipe leakage and plumbing losses.

vi. By prioritising work over the period and ensuring that staff and contractors were in the right place, the impact of the weather conditions was limited to a relatively small number of customers (<2% over the whole period) whilst at the same time we were able to recover the network over a longer period.


Burst data and Ambient Temperature
Burst mains
Ambient Temp. Barrow TW (Celcius)
Burst Mains
DailyAve
DailyMin
DailyMax


Leakage Levels & Distribution Input
Ml/day
Number of burst mains
Burst mains
Total leakage (Ml/d)
Distribution Input (Ml/d)

Section B: Planning and preparation

We want to understand what steps companies took prior to the incident period to prepare in order to minimise the impact on customers.

B1. How did your established processes for gathering intelligence and insight into the potential effects of forecast bad weather on your network help you to prepare for this event? Did they highlight any particular risks and what did you do to mitigate these? (e.g. network preparation, communications with customers, increased engineering or call centre resources) Did you share insights with other utilities/services?

i. A company procedure for dealing with operational and business continuity named "Severe Weather Task Force (SWTF)" has been in place since the cold weather events in 2009/10. In November 2017 the SWTF met to prepare for the 2017/18 winter period. On 23 February 2018, following confirmation of the cold weather forecasts, the SWTF was again established to prepare and plan for the cold weather.

ii. The Task Force consist of a group of representatives from various departments covering key areas of the company, including H&S, Public Relations, Customer Services, Water Quality, Resilience and Network & Production Departments. The Task Force meets regularly and in preparation of the Cold weather period in February met 5 times between 23 February and 2 March.

iii. Part of the remit for the SWTF is to ensure that the customer communication messages, and other external engagement such as with local plumbers through WaterSafe promotion are in pace. Advanced web and social media reports to customers covered our advice on lagging private pipework to avoid freezing and subsequent leaking pipework.

http://www.bristolwater.co.uk/article/wrap-up-for-winter/

iv. Key areas covered by the SWTF are typically;

i. Health & Safety

ii. Workload, Resources and Risk

iii. Standby arrangements – weekend coverage

iv. Stock levels – stores

v. Vehicles/Plant/Fuel

vi. Operational issues

vii. Communication

v. The advance planning for this event was concerned with production – ensuring access to works and availability of treatment chemicals. For instance, deliveries were retimed in advance to before/after the expected weather event from 1 March. This was in advance of the Met Office alert level and probability risk increasing as noted on the spreadsheet. A Risk Matrix is maintained as part of the SWFT with a number of Risks and Opportunities covering the points above.

vi. As part of managing the high level of burst outbreak and the subsequent impact on treated water (service) reservoir levels, the Incident Planning process commenced through setting up an Incident Management Team for Monday 5 March and Tuesday 6 March. This is part of the Incident management process, an established procedure. This allowed full co-ordination of the water production, network repairs and customer response activities. There was a full central view of production and network performance from the incident room which allows for customer, stakeholder and staff communication.

vii. Contact with other utilities enabled prioritisation of the response to customers (see the Dove Street example below), with local authorities and other parties. During this weather event water supply was relatively less affected than transport infrastructure and therefore direct communication with individual customers affected was generally sufficient to maintain customer and stakeholder trust.

viii. We worked closely with Wessex Water, who agreed not to take the normal bulk water supply at Newton Meadows, which increased our operational resilience to ensure our service reservoir and production levels could accommodate the increased distribution input required as mains bursts and customer leaks arose. Small works not normally required at this time of year were brought back into supply and pump and valve maintenance rescheduled as necessary to ensure that any water supply interruptions to customers were limited to specific burst location events. The resilience of our network monitoring and the ability to redirect our water supply between treatment works across our network (particularly the main works at Purton to the North of Bristol and Barrow to the South) ensures that significant supply interruptions were by exception for particular burst events rather than as a consequence of a widespread lack of resilience in production and network recovery.

ix. The Incident Management actions are recorded in MissionMode incident management software. The log has been used to inform the response to this information request.

B2. What impact, if any, did your preparation have on your ability to handle this event? What role did your Executive take in preparing for these severe events?

i. The Severe Weather Task Force was in place well in advance this spell of cold weather, and is a well establish forum to plan for events. The Executive Team as a whole discussed the specific preparations in anticipation of the weather on the 26 February and individual members of the Executive led by the CEO attended the regular incident event briefings. As the operational response was successful in achieving the necessary response, the incident did not escalate through the defined steps in our incident management procedures to the level that required the command structure that formalises the role of the Executive – the incident was successfully run by the Incident Managers.

ii. Incident Management handled the events for two days to manage the unprecedented number mains repairs required to reduce the excess leakage levels, ensure that customer interruptions are minimised, whilst recovering the reservoir levels during the event to ensure that wider customer impacts that would have required an escalation of incident response level (and more severe customer impacts and lengthier recovery times) were avoided. We were planning for the worst-case, which did not arise in practice.

iii. The Board and Executive Team were well informed of progress through the Incident Log and periodic update meetings in the Incident Room.

iv. This event was less significant for Bristol Water and its customers than two other major incidents during 2017/18, the Willsbridge burst in July 2017 (c35,000 properties) and the Clevedon precautionary boil water notice in January 2018 (c7,000 properties), although this event was over a much wider area. However the lessons we learned from the Willsbridge event in terms of supply restoration, stakeholder communication, alternative water supplies and the use of customer communication channels were successfully deployed in this event, as they were with our response at Clevedon. Our published case study on Willsbridge is available in our Mid-year performance report and in our long-term ambition document Bristol Water…Clearly).

B3. What emergency plans were in place and were they adequate to cope with the problems? Were those emergency plans appropriately enacted? If so, when?

i. SWTF planning meeting took place on the three preceding days before the weekend of 3rd March. These were sufficient to plan for the cold weather and mitigating the effects of the thaw. In the event the thaw happened far quicker than anticipated as the forecast temperatures were significantly lower than the actual on Saturday 3rd March. Planning had focussed on a longer freeze as this was the worst-case scenario in terms of production and staff travel. The earlier thaw was therefore well within the incident plans put in place (this was not an emergency crisis).

ii. Prior to the actual event a number of 4x4 vehicles (based on the experience of previous cold weather incidents) were made available to ensure that critical activities such as water quality sampling, access for staff to treatment works and head office essential staff (critical services and OCS) were able to attend their work place. In addition IT services were prioritised for home working.

iii. Water quality samplers were paired to ensure that sampling requirements were met, for health and safety purposes and also in anticipation of the travel difficulties. Process scientists were primed ready for the anticipated increase in production from the thaw.

iv. Alternative Water Supply standby arrangements were in place and ready as it would be for any incident. The vehicle and bottled water supplies were sufficient in this incident, both for individual supplies to customers in vulnerable circumstances as well as for specific events (which in practice was only Dove Street).

B4. What training have your staff had for responding to severe weather events, particularly freeze/thaw incidents?

i. We plan and practice incidents and in 2017/18 have had two major Incidents, as described in section B2. The customer impact of this event was relatively minor in comparison, although was over a wider area across our supply area.

ii. In the end we had a single very limited Alternative Water Supply requirement which was limited to the day-time only and had more than sufficient staff volunteers to resource. In our planning we had prepared for a worse situation, and overall the response of our main AWS supply to a number of flats at Dove Street, Bristol was very well received by customers.

iii. This event, whilst severe, for our staff is a normal part of the core purpose of work in the water industry. They are trained and supported for such response, and the incident management step reflects the scale of the response required.

B5. What did you learn from previous incident management events, including through working with other water companies, local / regional partners, emergency services or other service providers, and how is this reflected in your current processes?

i. The benefits of using our web site and in particular social media as part of a very successful way of communicating effectively with customers and other stakeholders. This was one of the lessons learnt from the Willsbridge incident in July 2017.

ii. During the event we had a very effective communication, particularly with local authorities, both for specific customer interruptions and in respect to road closures and excavations in the highway. The media response was limited to one local radio update on 5 March, recognising that this route of broadcast information is the best way to reach those without web or social media access, other than our direct contact with individual customers who are affected. Our media relationship builds on the value of social media to inform and respond to customers – in this circumstance we could demonstrate both how we were responding, how customers could help us and themselves.

iii. The single most notable customer interruption was at Dove Street, Bristol where due to a burst main we had to isolate the supply to a number of flats impacting approx. 500 people for an extended period. Due to other utilities covering our main, the excavation and repair of this burst main was delayed and working closely with the local gas and electricity companies ensured that the repair could be done within a safe environment. This however impacted on the duration of interruption and as a result we worked closely with Bristol City Council to mitigate the impact on our customers and provide alternative water supply arrangements. The response from customers and the council was overwhelmingly positive.

Picture: Dove Street, Burst Main excavation

Picture: Dove Street, Burst Main repair

iv. For Dove Street we deployed sufficient staff to provide bottled water to all those who needed it. The nature of the 3 tower blocks meant that whilst we only had 1 vulnerable customer registered, we could identify others who required specific support (and could be added to the register for future events). Liaison with Bristol City Council (through both housing officers and the civil protection manager) allowed us to consider alternative ways of supplying the tower blocks as re-routing supplies would not resolve this site due to the specific nature of the burst. In the end liaison with other utilities meant the burst could be repaired faster than our worst case planning and alternative water supply response had anticipated.

v. The normal arrangements of communication with other water companies were used in this incident. Operational resilience benefits from our normal bulk supply arrangements with Wessex Water. We provide and receive resource support from other water companies for exceptional events (such as Clevedon), but in this situation we did not require such support and we would not for freeze/thaw events plan on the basis of support being available, due to the inevitable uncertainty on travel and location of weather impacts across the country.

vi. We received the following feedback from our local liaison with Bristol City Council after the incident. *"Thank you for the quick, efficient and comprehensive response Bristol Water mounted to the disruption to water supplies on Dove St following the snow last week. I was very grateful for the early notification, the excellent communication and the speed at which you arranged contingencies to be in place, to the point of having volunteers available to help distribute bottled water, if needed."*

Section C: Incident response

We want to understand how companies responded to the incident, including how it prioritised action and how the Board and Executive were involved in the process.

C1. Provide details of your established processes for responding to issues during severe weather events, particularly late winter freeze/thaw incidents (e.g. operational, governance, communications, working arrangements with other authorities through local / regional partnerships). Were these processes effective during this incident? In your response, make clear the role of your Executive in any decision making within these processes.

i. We plan and manage our event dealing with severe weather in the context of our Business Continuity Plan procedure on Severe Weather. The continuity plan (available on request) was successful in both the planning and response to this event, as described in section B above.

ii. During this event an Incident Management Team was set up and the event was managed under the governance of Incident Management processes and procedures. An incident management log was captured on MissionMode (and is available on request as detailed evidence of the activities and timing of our response).

C2. For this incident, please describe how your company went about deploying the resources required to respond to the incident. In responding, please detail the scale of resource deployed and from which parts of the business and/or external resources (eg supply chain, local / regional partners, business retailers) they were drawn.

i. Resource requirements were discussed and planned in the Severe Weather Task Force meetings. This included standby arrangements and the management of critical (frontline) staff.

ii. Kier, Bristol Water Network Maintenance Contractor, was part of all preparations for the severe weather as they provided essential services and resources on planning and management of leakage repairs during the event.

iii. Between Friday 2nd March and Monday 5th March a 24hrs rota (12 hour shifts) were operated by the Network Operations & Maintenance Team for Customer Services Inspectors to deal effectively with customer issues during the cold weather.

iv. As part of the alternative water supply arrangements at Dove Street, Bristol, office based staff provided additional support to man the 3 bottled water distribution points put in place on Monday 5th March. For the other individual properties operational staff provided bottled water delivery pro-actively to vulnerable customers via the register. Only 6 calls were received with requests, 50% of which were responded to in less than 1 hour. All of these requests were outside of the 4th to 6th March peak response period. Social media questions were similarly at a low level, highlighting the effectiveness of our incident planning and response for this event.

C3. Provide details of how your company assessed the operational implications and prioritised its responses during the incident period.

i. A major part of the Incident Management process during the event involved closely monitoring customer interruptions, reservoir levels and repair activities. It was a process of continually balancing priorities and working closely with key stakeholders in customer services, Network & Production departments and the Operations Room.

ii. Leakage repairs were prioritised on customer impact and volume of water lost so to finely balance the short term response to customers as well as the medium term recovery of reservoir levels. This is to avoid the inevitable uncertainty as to how quickly bursts will arise and distribution input reduce, including the element of customer's response to leaks they are responsible for.

iii. We undertook a social media poll at the height of the incident response to test satisfaction with our approach, in particular targeted around posts related to the main sites of short term bursts and interruptions, as well as for Dove Street, on 4 and 5 March with this question: "We have had a number of burst mains today due to the weather. Have you been happy with our response and updates?" A total of 62 customers responded with 79% saying "Yes".

C4. What challenges/barriers did your company face in resolving problems that customers experienced? How did you overcome them?

i. No major challenges in resolving customer problems, with a customer focussed approach through business as usual activities supported by Incident Management.

C5. Provide details of how your company identified customers in vulnerable circumstances before, during and after the incident. What support was offered to these customers and how was this delivered?

i. Vulnerable customers can be identified through the Vulnerable Customer Database details linked to GIS records and identifiable through running interruptions to supply traces on GIS. Where an interruption took place Vulnerable Customers were identified and, through our Alternative Water Supplies team, they were proactively contacted.

ii. Additional calls for bottled water support were made through the Operational Customer Service team, and bottled water was supplied where required. Overall the Alternative Water Supply requirements (other than Dove Street) were minor as most interruptions were for short durations, and for longer durations overnight.

Section D: Communication and support

Regular and informative communications are especially important during major incidents. We want to understand how water companies communicated with customers and wider stakeholders during the incident.

D1. How effective were your communication processes before, during and after this incident for each of the below:

a. Customers? (residential and business)

i. We believe the customer communication was extremely effective before, during and after this event. As an example, we use a range of social media channels to communicate messages of what to expect as well as updates of how we are responding. For instance, tweeting a picture of a small leak with our blue arrows raised awareness of how we respond, triggers more information on leaks not yet reported, as well as us providing updates to and from customers. Availability of information to our communication team is a key part of our response; they are a vital part of our incident response and have access to the same central information to make sure our information is accurate, up-to-date and to allow for easy two-way feedback even during the peak of the operational response. Overall we have received a very good response from our customers about the speed of action and level of communication we provided during the event.

b. Customers in vulnerable circumstances and business customers for whom a water supply is critical (e.g. hospitals, schools)?

i. Impact on vulnerable customers was relatively low, and dealt with as a Business As Usual activity. We describe the impact of positive feedback we have in the “customer impact” section above.

c. Water retail businesses? and

i. All retailer customer contacts where managed through a dedicated team within the Wholesale Service desk. We contacted all 18 retailers with customers in our supply area to let them know what we were doing, as well as informing them of any relevant customer specific information. Many retailers (as well as their customers) follow our twitter feed.

ii. The wholesale services team was notified of all the interruptions and was included in the Incident Room communication threads. They were therefore able to warn in advance any potential retail customers affected by interruptions.

iii. The communication was two-way with retailers and we could respond pro-actively for their business customers through our operational response. Retailers and their customers operations were also affected by the snow on Friday 2 March and our prior planning, communication and response anticipated this.

iv. Overall positive feedback from the Retailers and we received thanks in response for the detailed communication.

d. Wider stakeholders? (e.g. local authorities, other agencies, Government, Ofwat)

i. Local authorities were proactively engaged, particularly around the management of streetworks (in particular to reflect the impact of weather on existing works and to ensure any leaks that may freeze on roads or pavements were properly protected whilst repairs were scheduled and underway). We have received very positive feedback from the Bristol City Council staff, praising

Bristol Water response and communication during the incident. A copy of this is attached to this report. We describe the range of contacts throughout this response. We also participated in two teleconference organised by DEFRA on the Severe Weather. Stakeholders were informed in advance and at the end of our peak response period in anticipation of the worst-case, but throughout this incident the individual customer incidents were well-below the level that required widespread stakeholder communication with regular situation updates.

D2. What channels did you use for communication with customers and key stakeholders before, during and after the event? (e.g. local, regional or national news media, social media, e-mail, SMS, hard copy letter) What were your key messages at each stage? Please provide examples of your communications material with your submission.

i. The only media contact we had was on 5 March when our External Communication Team spoke to BBC Radio Bristol.

ii. Social media was extensively used below is the Social media report for the period 2-6th March:

Twitter
Number of tweets about pipe protection: 11
Number of tweets about bursts: 23
Number of responses to tweets: 81
Number of impressions: 86.2k

Facebook
Number of posts about pipe protection: 2 videos pinned to the page.
Number of posts about bursts: 8
Number of responses to comments: 32

Website
10 incident reports
2 pipe protection posts on home page

iii. A summary of the Tweets issued during the period can be found in an Annex to this response.

D3. How did you proactively engage with customers (by customer type) before, during and after the event?

i. We proactively used Twitter and our website, as well as media contacts, in our communication with customers.

ii. In addition we posted messages on Facebook and our website. In advance of the colder weather we posted videos and images of top tips for frozen pipes/bursts. On average we posted these at least twice a day.

D4. What processes do you have in place for managing properties that are vacant, void or difficult to access (e.g. businesses that are closed at weekends) in the event of a major incident?

i. We have contact details for vulnerable and significant businesses, such as schools and major users. In this event, social media is the best way of pro-active communication, particularly as retailers and other representatives who follow us may retweet to their own network. This was not of particular concern during this incident and we had no particular operational concerns that were hampered because of void, vacant or difficult to access properties. In more significant events we would liaise with stakeholders involved in the incident or use our legal powers related to water quality or supply concerns, but this did not arise or come close to arising in this event. In addition we posted messages on Facebook and our website. In advance of the colder weather we posted videos and images of top tips for frozen pipes/bursts. On average we posted these at least twice a day.

D5. What ongoing support after the incidents have you put in place, in particular for customers in vulnerable circumstances?

i. We meet the needs of individual customers through our operational response. Where we identify new information about customer needs, we seek their agreement to continue this through our vulnerable customer support mechanisms.

Section E: Impact on customers and compensation arrangements

We want to understand how water companies expect to provide customers with appropriate compensation for the disruption that they experienced.

E1. Provide details of how you will identify which customers (by customer type) are entitled to compensation.

i. Compensation payments such as GSS and Customer Promise payment have been assessed through business as usual processes. The compensation payments as a result of this event has been limited to the GSS payment to “Properties affected by an unplanned interruption to supply > 12hrs” and for missed appointments, even though this was planned due to the severe weather.

E2. Provide details of the automatic GSS payments, including any payment penalties, you expect to pay (or already have paid) to customers (by customer type) as a result of the incident period and the total value associated to these payments.

i. £7,500 worth of GSS payments have been made to the customers affected by the Dove Street, Bristol burst main interruption to supply. Payments were made to 370 household properties and 2 Non Household properties.

ii. 76 household property and 12 non-household GSS payments have been made to customers affected in Tweentown, Cheddar, at a value of £2,100.

iii. These values (all reflecting interruptions between 12 and 24 hours of duration) remain provisional as any evidence of other customers in other locations without sufficient supply or for properties that new information on being void at the time arises.

iv. 103 planned appointments were cancelled due to the weather. The Executive team of Bristol Water decided not to use any severe weather exception and paid GSS of £2,850 (£25 domestic, £50 commercial).

E3. Provide details of any further compensation you will be providing to customers beyond automatic GSS payments and how the level of compensation was calculated relative to the disruption customers experienced. In doing so please provide details of the numbers of customers (by customer type) you expect to receive this and the total value associated to these payments.

i. We are paying the standard statutory GSS as per our Customer Promise, as paying more now seems unfair to other customers that have been affected by other incidents over the last year. Given the exceptional nature of the weather and the level of disruption to water supplies was less than other public services in the local area, we believe this is fair.

E4. Provide details of how long you anticipate the process of compensating all affected customers will take and the methods by which the compensation will be paid (eg automatic, cheque). Will there be an application process for any elements of compensation? If so, please describe the process.

i. GSS payments were automatically paid by cheque. No application process is required, although isolated customer contacts that result in GSS may occur in addition. If there are circumstances where we have not made the payment automatically within 28 days, then the standard penalty GSS payment would also apply, although none have been identified to date for this incident.

Section F: Reflection and lessons learnt

We want to understand what lessons water companies will take on board from the events in terms of delivering greater resilience in the round for customers.

F1. Provide details of what you considered to work well and what you considered to need future improvement for your company and why in relation to:

a) Identifying and repairing supply interruptions and actions taken to prepare the supply and network system;

b) Communicating activities to customers/stakeholders (by customer/stakeholder type);

c) Identifying and supporting the needs of customers in vulnerable circumstances; and

d) Having the appropriate governance processes in place.

i. 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. 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. We will consider increasing the involvement of Production staff in the planning for network events, although the response to this event meant that as the thaw happened, there were no circumstances where the lack of treated water caused supply interruptions. The quality of treated water output from works was also maintained whilst maintenance activities and work operations were adjusted to ensure we maximised the output of our treatment works. This increased focus for Production staff not normally operating in a Customer Frontline role required additional awareness during the management of the event. A technical manager from the Production Team was a permanent member of the Incident Team for the duration of the event, which was an important part of our successful response.

ii. Incident management was extremely successful, together with the willingness of our staff throughout the organisation to contribute to our planning and response. Health and safety of our staff and customers was maintained throughout. We had spare capacity in terms of volunteers to provide Alternative Water Supplies to customers. The knowledge, customer-focus and response of our staff and partners was the key to delivering for customers. This was recognised as a particular success by the Executive. The Bristol Water Board were also kept informed of the potential weather impacts in advance and at the end of the event.

iii. Our response to this incident was supported by the availability of up-to-date information through our operational control systems. We already have good availability of information on incidents that we make available on our website (including maps showing affected areas), and existing plans to provide quicker and real-time information through the existing platforms. This will build on the successful use of social media for external stakeholder and customer communication in this event.

iv. The vulnerable customer response was also successful. We build our vulnerable customer information from events and customer contacts, and also allow customers to “port” their support between ourselves and Western Power Distribution. In this incident the vulnerable customer response was successful and was not a significant feature of this incident compared to our other recent events.

v. The Governance processes as set out in our incident management plans worked very well and provided an effective process that allowed quick decisions and allocation of resources that minimised the impact on customers as far as was possible.

F2. What were the biggest constraints to your company doing more, faster to respond to issues customers faced?

i. In this incident we are confident based on the detailed evidence summarised in this response that our planning of resources had scaled up sufficiently. Further resources would not have reduced the level of interruptions experienced. The ongoing active leak detection and management and response to more minor contacts such as customer stop taps caught up following the exceptionally harsh weather in a planned way that maintained customer confidence.

ANNEX: SOCIAL MEDIA COMMUNICATION

Tweets:

2 March

Due to a burst main on Coronation Road some properties in Southville will be experiencing no water. Conditions make it difficult to predict how long it will take to repair but we hope to have it fixed by 5am.

Due to adverse weather in our region, our billing contact centre is closed until Monday 5 March. We're sorry for any inconvenience caused by this. Thanks for your understanding. Read our cold weather advice here: http://www.bristolwater.co.uk/article/wrap-up-for-winter/ …

3 March

Frozen pipes are still causing some people to experience no water. You will need to call a plumber for help with this. Find approved plumbers at http://www.watersafe.org.uk

Some properties in #Kingswood are reporting no water. An inspector is on his way to investigate and we will update with further details once we have them.

A burst main has been discovered on Station Road in #Kingswood. Once we have an estimate for the repair time we will let you know. Condition out there won't make it easy!

The crew is excavating. As soon as they update us we will let you know.

4 March

Some properties in #Brislington are reporting no water or low pressure. We are investigating the issue and will update you when we can

We have a few reports of no water in #BS10 area. We are investigating and we will update once we have information from site.

We have a number of burst mains across our supply zone due to the weather. We are working as fast as we can to investigate and fix these mains. The call centre is very busy at the moment. We will keep our feed up to date
Some properties in the #BS11 area are also experiencing no water. We are investigating

We currently have no water or low pressure reports in the following postcodes #BS4, #BS10, #BS11, #BS13, #BS14, #BS15 and #BS39. The change if temperature can cause ground movements which will impact our mains. We will keep you updated

Rain! just what the teams on site needed trying to fix a number of burst mains. Still working hard to get everyone back in water. Likely to be a number of hours yet for some

We have reports of a burst main in Bristol which is affecting several areas including Stokes Croft, St Pauls, Kingsdown, Cotham and Clifton. We are currently investigating and we will update when we have more info

We have located a burst main on Dove Street which is causing no water or low pressure to a number of properties close by. We are hoping to shut this section off from the wider network which will help some properties come back into water. More to follow

We have now isolated the main on Dove Street from the rest of the network. This means that, hopefully, most people may come back into water soon. Those close to Dove Street will be out of water until the main can be repaired.

5 March

Some properties in the #BS2 area may still be experiencing no water. This will be the case until the main on Dove Street has been repaired. Electrical cables were discovered on top of the main and so the site needed to be made safe before our work could start

Repair time for the main causing no water in #BS2 area is still likely to be a few hours. The crew is working as hard and as fast as they can and have been throughout the night.

We thank everyone that has reported a leak over the last few days. We have a number of crews out repairing these leaks and we need to prioritise those leaks that are affecting the water supply to customers. Our repair time may be longer than usual for those other leaks
We are receiving a large number of calls this morning regarding leaks and burst mains. Phone lines are very busy so please contact us on Twitter if you need more information

All are crews will be repairing leaks today so some of our planned work may have no one on site today. Thank you for your understanding.

Our crew are still working hard to fix the various leaks in our supply area. Please only call our line if it is an emergency as we are dealing with a high volume. Our website/Twitter/Facebook will be kept continuously updated. Thank you for your patience.

We are delivering water bottles to those affected at Caroline / Freemantle / Armada House, and are also working on reconnecting the supply as quick as we can. Thank you for your patience and understanding.

Customers in the #Lympsham may experience no water for around 1 hour this evening, this is so our crew can undergo a crucial repair on a burst main on Rectory Way. We apologise for this inconvenience.

Supply should have returned to all properties on and around Dove Street in BS2. If this is not the case for you, please let us know by Tweeting below and we will investigate further. Thank you.

We have a number of leaks to fix today after the recent cold weather. Thank you to everyone who has reported leaks. If you see blue arrows like this one then we know about it and we're on our way to fix it

Bristol Water @BristolWater · Mar 6

We have a number of **leaks** to fix today after the recent cold weather. Thank you to everyone who has reported **leaks**. If you see blue arrows like this one then we know about it and we're on our way to fix it

1 5 3

Oliver Seal
@OllieS

Follow

@BristolWater I have had a loss of water pressure at my property in BS6. I have reported view the leak website is there anything else I need to do? Oliver

2:51 am - 4 Mar 2018

2

Tweet your reply

Bristol Water @BristolWater · Mar 4

Replying to @OllieS

Can you check with your neighbours if they have the same issue please. We haven't had any other reports in the area.

1

Oliver Seal @OllieS · Mar 4

They seem ok. Was fine earlier and then suddenly changed.

1

Bristol Water @BristolWater · Mar 4

Ok, it may well be an internal issue as we have had no other reports in the area. You may want to contact a plumber. Approved plumbers can be found at watersafe.org.uk

Bristol Water @BristolWater · Mar 4

Replying to @OllieS

Can you DM your address and I will ensure it is picked up.

Ethan Marshall @marshall_ethan_ Follow

@BristolWater a leak down Westbourne Avenue in Clevedon

2:42 am - 2 Mar 2018

1

Bristol Water @BristolWater · Mar 2

Replying to @marshall_ethan_

Thank you Ethan for reporting it. We are aware of it and will send a team as soon as we can!

1

Ethan Marshall @marshall_ethan_ · Mar 2

No worries. I was on the phone to one of your team but I lost phone signal. If you need me, please feel free to dm me

1

Example of the on-going communication, including “how to protect” videos

We also have run follow up activity – boosting the awareness of how we responded with our contacts at BBC Local Radio.