

A. Factual details of freeze/thaw events

Question A1: 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.

1. On 18 April 2018, we submitted versions of Tables 1 and 2 covering the period 16 February 2018 to 14 March 2018 which are the dates specified in the Ofwat data tables. While we experienced higher levels of mains bursts, leakage and related operational activities over the period 2 to 9 March 2018, conditions were not sufficient as to trigger our incident response procedures. Given this, we were operating on a business as usual basis throughout the period.

Question A2: 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?

2. Given the weather conditions, we proactively managed our supply network to a greater extent than usual from 2 March to 5 March. This involved changing some storage reservoir levels and pumping regimes to respond to demands from particular parts of our area of supply. This helped us to manage our system over the freeze/thaw period as part of our business as usual operations.

Question A3: 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.

3. While an incident wasn't triggered, our business as usual response to conditions over the freeze/thaw period had some implications for our wider business operations. We redeployed some operational resources from mains replacement work and developer services activities. We also redeployed our inspectors from planned work (such as on the hard flushing programme) to leakage detection and customer care visits. These actions were in line with our established processes for busy operational periods.

A4: 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?

4. The underlying driver of the supply interruptions that our customers faced was the prevailing weather conditions. The combined effect of Storm Emma and the 'Beast from the East' meant that weather conditions across the UK were severe from 23 February to 5 March.

5. While the Dee Valley Area experienced significant temperature changes over that period, those changes were less rapid than experienced in some other parts of the UK. The maximum air temperature (as measured at the Harwarden weather station) fell below 0°C on 28 February and 1 March 2018, and then increased to around 9°C over the following four days.
6. This freeze/thaw period resulted in an increase in pipe bursts, and an associated increase in leakage from our system of around 40%. Our completed version of Table 2 shows that 578 properties faced a supply interruption between 16 February and 14 March. We provided the total number of interruptions over this four week period as we do not have an 'incident period' to report against (because an incident wasn't triggered). In practice though, we consider that only those interruptions that occurred between 2 March and the 9 March are attributable to the freeze/thaw period. 328 properties faced some loss of supply over that period.
7. In total, there were 41 mains bursts over that period on our network. While 31 of those bursts had the effect of increasing losses of water from our system (and so contributed to the increase in leakage levels we experienced), they did not result in customer interruptions. The 328 supply interruptions were a direct, localised consequence of 10 separate mains bursts that occurred between 2 March and 9 March.
8. We take very seriously any disruption to our customers' supplies, and sought to restore supplies as rapidly as possible, prioritising the repair of those leaks directly affecting our customers. For around two thirds of our affected customers, supplies were restored within three hours, and no customers experienced an interruption of longer than five and half hours. No vulnerable customers, or business customers for whom a water supply is critical, were affected by supply interruptions.

B. Planning and preparation

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

Question 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? (eg network preparation, communications with customers, increased engineering or call centre resources) Did you share insights with other utilities/services?

9. We have seasonal preparation plans to cope with adverse weather conditions, such as snow in winter and hot weather in summer. Our winter preparedness plans were reviewed and updated in November 2017. Appendix C1 provides a copy of our three Winter Operations Standard Operating Procedures documents.
10. Our seasonal preparedness plans and incident planning and management arrangements are in the process of being aligned with those of Severn Trent Water to provide a consistent and coherent framework (including for making effective use of common resources with the Group).
11. Our Emergency Arrangements and Systems framework documents set out a range of incident triggers including triggers relating to severe weather. The incident trigger for severe weather is

activated when a red warning for the Dee Valley area is issued by the Met office. Met office reports are our principal source of intelligence gathering concerning weather-related risks and are reviewed on a daily basis. Appendix C2 provides the Declaration of Incident document which forms part of our Emergency Arrangements and Systems framework. The Declaration of Incident document includes a range of triggers and the procedures that should be followed in the event of a trigger being actioned.

12. The Met office reports we received showed a yellow warning from February 24 to March 3, except for February 27 when an amber warning was shown. Given this, we proceeded to manage and prepare our network in line with our normal winter preparedness arrangements.
13. In line with those arrangements, we had put in place a number of actions to prepare for the thaw, including:
 - We increased storage levels on our network in some areas (for example, on February 28 the Higher Berse reservoir was 93% full (compared with a typical level of 60-80%) and the Cinders reservoir was 97% full (compared with a typical level of 75-80%)).
 - We deferred the initiation of new programmed work that could be difficult to cease at short-notice.
 - We increased manning levels on the weekend by temporarily changing shift patterns, this gave us higher numbers of staff to deal with any problems on our network.
 - We checked our stock levels of repair fittings, chemicals, standby generator fuel levels etc., and increased them if required.
 - We contacted our suppliers of repair plant to make them aware that we may be requesting higher levels of supply during this period.
 - We obtained additional stocks (1 additional pallet) of bottled water.
14. We communicated our plans (in terms of staffing levels and network preparedness) to Severn Trent Water as part of our normal communication and planning arrangements within the Group. We did not share our plans with other utilities ahead of, or during, the freeze/thaw period, and were not approached by other utilities enquiring about our (or their) plans.

Question 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?

15. Our normal winter preparedness plan and processes allowed us to deal with the impact that the freeze/thaw period had on our customers and on our network via our normal operations. An incident was not triggered during the freeze/thaw period, and given this we did not directly involve any executive team member in our preparation.
16. Our communications arrangements are described in Section D below.

Question 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?

17. Our Emergency Arrangements and Systems framework sets out emergency plans which cover a wide range of scenarios together with our incident management planning arrangements and procedures. The Emergency Arrangements and Systems framework sits alongside the set of business as usual procedures we have in place, for example, to provide for winter preparedness.
18. Our Emergency Arrangements and Systems framework sets out actions to be taken in response to a range of forecast and observed conditions, and the triggers that mean an incident should be declared and/or escalated. As was set out in response to Question B1, our incident trigger for severe weather is activated when a red warning for the Dee Valley area is issued by the Met office. We also have an incident trigger for supply interruptions such that an incident will be declared if there is a loss, or threat of a loss, of supply of more than 6 hours for more than 1,000 properties or more than 2,500 people.
19. As an incident was not triggered (either as a result of severe weather or supply interruption levels), we managed issues that arose during the freeze/thaw period on the basis of our winter preparedness arrangements. Those arrangements were adequate to cope with the issues that arose and were appropriately enacted.

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

20. We have developed an experienced, multi skilled workforce that are capable of taking on differing tasks which allows us to be flexible in our approach to dealing with various incidents of loss or failure.
21. Training is provided through two key forms: technical training, related to the roles people will normally be expected to carry out during a response, and general incident management training, focussed on best practice behaviours and processes.
22. Training and competency have been tested by regular incident management sessions that included testing our response to losing particular assets or severe weather events and their effects.

Question 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?

23. Our plans and procedures reflect the learning gathered over the years of dealing with incidents and emergencies of all sizes. Where possible in the past, we have also reviewed our plans against significant incidents experienced by other water companies.

24. Examples of lessons we learned from previous events include:
 - Cold weather events have highlighted the benefits of 4x4 vehicles being readily available within our normal fleet, this has been reflected in our vehicle procurement over the last 5 years.
 - Previous supply interruptions have highlighted the benefits of proactive SMS and customer messages as a means of keeping our customers informed during an incident. We now use this form of communication as a default in the majority of supply interruptions incidents.

C. Incident response

Ofwat: 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.

Question 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.

Governance and Incident Management Processes

26. Our business as usual winter preparedness procedures are set out in a range of plans and these highlight a range of processes and preparatory steps associated with cold weather periods.
27. Our Emergency Arrangements and Systems framework sets out our incident management planning arrangements and procedures which sit alongside these business as usual plans. They set out a range of trigger levels that, when hit, result in a defined escalation process being applied. The Declaration of Incident document attached at Appendix C2 includes a range of triggers and the procedures that should be followed in the event of a trigger being actioned.
28. A key early step in our incident escalation process involves a call to a Duty Standby Manager (DSM). The DSM will then decide whether an incident should be declared by assessing conditions against a range of established measures. When an incident is declared, the CEO and/or other executive staff are informed.
29. Our business as usual winter preparedness procedures and escalation and incident trigger processes worked effectively over the freeze/thaw period, but as noted earlier they did not result in an incident being declared. In practice, the conditions we faced did not trigger a call to a DSM, and so the DSM stage of assessing whether an incident should be declared was not reached. In line with this, the involvement of our Executive in operational responses over the freeze/thaw period was not required.

Question 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.

30. As we had not declared an incident, our response during the freeze/thaw period followed the standard processes we have in place for dealing with busy operational periods, and for dealing

with mains bursts and supply interruptions. In terms of the deployment of our staff and contractors, this included:

- Closely monitoring hours worked by staff and changing shift patterns to ensure sufficient staff were available. While additional resource was identified and available, it was not needed in practice.
- Pausing non-essential works to allow staff to concentrate on returning customers to supply.
- Regular cross-team control room meetings to keep the situation under review.

31. The extent of the supply interruptions experienced did not warrant commissioning of bottled water stations, however we distributed 180 litres of bottled water to customers that faced some loss of supply during the freeze/thaw period. These were made available by our operational teams that were fixing those mains bursts that resulted in some customer interruption.

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

32. We assessed the operational implications of our responses during the freeze/thaw period in terms of the effect they would have on our ability to maintain supply. Our assessments were informed by our leakage measurements (using our network of District meters and loggers) and also by our system of alarms covering our network of storage reservoirs. Treatment works outputs and available capacity headroom were also monitored.

33. Priority was given to keeping customers on supply. Leakage detection and repair was prioritised based on the scale of impact a burst was having on customer supplies, and all other non-critical operational works were suspended while customer supply problems were addressed. In line with this, we prioritised fixing of the specific bursts that were resulting in customer interruptions.

34. Alongside this, we applied adjusted pumping regimes to allow us to maintain healthy levels at storage reservoirs, and targeted district meter areas for leakage detection if they showed a marked increase in demand.

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

35. Although this was a busy period, we did not face material barriers when resolving problems that our customers experienced. We were able to maintain supplies to all our customers, except at 328 properties that faced some loss of supply. Around two thirds of our affected customers had their supplies restored within three hours, and the longest supply interruption our customers faced lasted 5.5 hours which affected 24 properties.

36. While we experienced a freeze/thaw period, the temperature increase from frozen in our region was less rapid than that experienced in some other parts of the UK. As highlighted in our earlier comments, the resulting conditions and challenges we faced as a result of bursts and leakage levels were not so great as to trigger an incident. We did not face further challenges – e.g. from subsequent severe weather (such as heavy snowfall) – that impeded our response materially.

Question 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?

37. A response to the first part of this question is provided in Section D, question 1B. No customers in vulnerable circumstances were affected by supply interruptions, and so it was not necessary to provide support.

D. Communication and support

Ofwat: 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.

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

- a. Customers? (residential and business);**
- b. Customers in vulnerable circumstances and business customers for whom a water supply is critical (e.g. hospitals, schools)?;**
- c. Water retail businesses?; and**
- d. Wider stakeholders? (e.g. local authorities, other agencies, Government, Ofwat)**

Introduction

38. Our communication strategy for incidents puts emphasis on being preventative before, and then proactive during an incident. We have well-practiced and well-documented communications protocols and procedures for incidents. Our Communication and Customer Contact teams take part in several mock communication incident exercises a year, as well as some additional companywide ones, so that we can practice and refine our response. These are either conducted and assessed, or supported by an independent media agency.

Communications before and during the freeze/thaw period:

39. We issued a press release on 1 March asking customers to prepare for the cold weather, and specifically to lag their pipes. This was issued as advice on the Dee Valley website and as a proactive press release to all the media in the Dee Valley area.

40. Secondly, we issued a proactive press release on the afternoon of Sunday 4 March to all of the local media in the Dee Valley region asking customers to report leaks and telling them how to report leaks to us.

Residential and business customers

41. We monitored the impact of the weather on our customers throughout the freeze/thaw period. A total of 1,266 proactive SMS and voice messages were sent during the freeze/thaw period.

Customers in vulnerable circumstances

42. We maintain a sensitive customer list through which we manage our engagement with and response in relation to customers in vulnerable circumstances. Customers on the list are in one of the following three categories:

- High risk individuals (for example, those on dialysis)

- Individuals with mobility impairment.
- 'Notify only' individuals: individuals for whom our response will be reactive (i.e. additional support will be provided on request rather than automatically).

43. We monitored the impact of the weather on our vulnerable customers throughout the freeze/thaw period. As per the business as usual process, we checked whether the supply interruptions experienced during this period had an impact on any customers listed on our sensitive customer list.
44. No customers listed on our sensitive customer list experienced supply interruptions during the freeze/thaw period.

Business customers for whom a water supply is critical (e.g. hospitals, schools)

45. Our Sensitive Non-Household Customers include hospitals, care homes and prisons. We monitored the impact of the weather on our Sensitive Non-Household Customers throughout the freeze/thaw period.
46. Whilst we did provide support to a local hospital which experienced a customer side leak, no Sensitive Non-Household Customers experienced supply interruptions during the freeze/thaw period.

Water retail businesses

47. There are currently no customers in our supply area that are served by a separate water retail business. Given this we did not communicate with water retail businesses during the freeze/thaw period.

Local resilience forums (LRFs)

48. We monitored the impact of the weather on our customers throughout the freeze/thaw period. As all supply interruptions during this period were dealt with in under 6 hours, there was no requirement to contact the pertinent LRF.

Communications after the freeze/thaw period

49. As no customers were affected by the freeze/thaw beyond business as usual levels, no specific external communications were required after the freeze/thaw period.

Question 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.

Channels used prior to and during the freeze/thaw period

50. We issued two separate pieces of communication. One to ask customers to prepare their homes for the cold weather and one to ask them to report leaks and remind them how to do so. The specific messages were:

- 1 March 2018: Cold weather (Website update and press release):
 - Dee Valley is preparing for the cold weather by bringing in extra resources and we were making sure we have the right vehicles and equipment for the bad weather
 - We advised homeowners to take action now as the cold could and in the past has led to pipes bursting and damaging homes.
 - Customers are responsible for anything inside the property boundary so we offered 'top tips' for protecting homes including lagging pipes, turning off stop taps if you're away from home, knowing where your stop tap is in case of any issues and leaving heating on low even if you're away.
- 4 March 2018: Reporting leaks (Press release):
 - We issued advice and reminded to customers how to report leaks

51. Examples of the above are attached at Appendix D1

52. As set out above, we monitored the impact of the weather on our customers throughout the freeze/thaw period. A total of 1,266 proactive SMS and voice messages were sent during the freeze/thaw period.

Channels used after the freeze/thaw period

53. As no customers were affected by the freeze/thaw beyond business as usual levels, no specific external communications were required after the freeze/thaw period.

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

54. As set above:

- We issued a press release on 1 March asking customers to prepare for the cold weather, and specifically to lag their pipes. This was issued as advice on the Dee Valley website and as a proactive press release to all the media in the Dee Valley area. We also issued a proactive press release on the afternoon of Sunday 4 March to all of the local media in the Dee Valley region asking customers to report leaks and telling them how to report leaks to us.

- We monitored the impact of the weather on our customers throughout the freeze/thaw period. A total of 1,266 proactive SMS and voice messages were sent during the freeze/thaw period.

55. As no customers were affected by the freeze/thaw beyond business as usual levels, no specific external communications were required after the freeze/thaw period.

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?

56. As an incident had not been triggered, we followed our business as usual approach to leakage detection at vacant, void or difficult to access properties which is reactive and relies on bursts being reported. No leaks at properties that are vacant, void or difficult to access were reported to us during the freeze/thaw period.

57. If an incident had been triggered, then the risks of pipe bursts at vacant, void or difficult to access properties would have been evaluated (alongside other sources of risk to supply). If this had been identified as a priority area, in terms of protecting and/or restoring customer supplies, we would expect our response to have involved the redeployment of resources to identify the customer responsible for the property and/or isolate the source of the burst.

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

58. As outlined in section D1, we monitored the impact of the weather on our vulnerable customers throughout the freeze/thaw period. As no customers listed on our sensitive customer list experienced supply interruptions during the freeze/thaw period, no further action was required on this occasion. We continually review our sensitive customer list as a matter of course, and will continue to do that.

E. Impact on customers and compensation arrangements

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

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

59. We have a well-established GSS process for customers who have experienced a loss of supply which starts with identifying customers in an affected district metered area ('DMA'). We assess the DMA using flow and pressure data which is collected during each supply interruption to determine which properties were impacted and for how long.
60. This process was followed to identify supply interruptions during the freeze/thaw period. The duration of each supply interruption was then considered in the context of whether a GSS was payable under our current GSS policy, an overview of which is set out below in our response to E2.
61. As there were no loss of supplies in excess of 12 hours during the freeze/thaw period, no GSS was payable in respect of supply interruptions during the freeze/thaw period.

Question 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.

62. Customers who have been off supply for over 12 hours continually are eligible for our 'emergency supply interruption' GSS and would receive a payment of £20. We make further payments to customers who are still off supply 24 hours after the initial 12 hour trigger. These payments are £10 per 24 hours and are made automatically to customers as credits on their account. As per our response to question E1 there were no losses of supplies in excess of 12 hours and therefore no GSS is payable.
63. We have already started to review our approach to GSS ready for the launch of Hafren Dyfrdwy and have some proposed enhancements to the current Dee Valley GSS policy which we will be talking to CCW Wales about. These changes will be made and published in the Hafren Dyfrdwy Code of Practice on 1 July 2018.

Question 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 (e.g automatic, cheque). Will there be an application process for any elements of compensation? If so, please describe the process.

64. As per our response to question E1 there were no loss of supplies in excess of 12 hours and therefore no GSS is payable in respect of supply interruptions during the freeze/thaw period.

F. Reflection and lessons learned

Ofwat: 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.

Question 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...

65. We seek to learn from circumstances such as those arising in the freeze/thaw period, and to improve our future resilience accordingly. In practice, our opportunities for learning from our own experiences over this period are relatively limited: the weather conditions we faced were milder than those in some other parts of the UK, and did not result in an incident being triggered. We have nevertheless reviewed carefully the plans and preparations we had in place, circumstances we faced, and how we responded to those circumstances.

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

66. Our winter preparedness plans provided an effective basis for preparing our network and supply system for the issues that were subsequently experienced. Those business as usual plans also provided for a rapid response to repairing mains bursts that were resulting in supply interruptions.

67. As was set out in Section B, we currently use the issuing of a Met Office red warning for our area as a severe weather incident trigger. While this proved an effective trigger for this freeze/thaw period, we recognise that the temperature increase – and thaw – from freezing experienced in our supply area was significantly less rapid than that experienced in some other parts of the country. Experience from other areas highlights the case for developing an additional weather-based trigger reflecting the risks associated with significant temperature differentials within a short period of time (e.g. a rapid thaw). We will be assessing ways in which we might enhance our incident management preparedness to assist with management of these risks as part of the Group integration programme within Severn Trent Water.

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

68. We routinely use proactive SMS messaging and automated voicemails as valuable tools for alerting our customers when there are risks of supply interruptions, and (as was highlighted in Section D) we used these tools during the freeze/thaw period.

69. We will be identifying ways in which additional social media engagement can provide an effective supplement to our existing methods of customer contact ahead of incident being triggered, and incorporating them into our business as usual procedures.

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

70. No vulnerable customers, or non-household customers for whom a water supply is critical, were affected by supply interruptions during the freeze/thaw period. No customers were without supply for more than five and half hours, and around two thirds of the 328 properties affected by interruptions had their supplies restored within three hours. A limited amount of bottled water was distributed by our operational teams while the bursts that caused these interruptions were being fixed.
71. Given these circumstances, our experience during the freeze/thaw period has not provided a sufficient basis for highlighting areas for improvement in terms of identifying and supporting the needs of customers in vulnerable circumstances. As with other areas of activity, we welcome the opportunity afforded by Ofwat's review to draw upon sector-wide learning in relation to this.

d) Having the appropriate governance processes in place

72. Our governance processes operated in line with our escalation procedures during the freeze/thaw period. As was described in Sections B and C, this did not require the involvement of our duty standby managers or our Executive. We consider our processes to have worked appropriately in line with the circumstances that we faced.
73. As part of the integration programme within the Severn Trent Group, our incident management procedures and governance processes will be aligned with those of Severn Trent Water, with this allowing for further enhancements to the ways in which Group resources (including governance-based resources) can be mobilised in response to incidents.

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

74. We did not face material constraints on our ability to respond rapidly to the supply issues that arose during the freeze/thaw period.