

Dŵr Cymru Welsh Water
Response to Ofwat's Request for Information received by
email dated 19th March 2018 – Review of freeze/thaw incidents

6th April 2018

Introduction

The impact of the recent extreme weather event was felt right across the operating area of Dŵr Cymru (“DCC”) with emergency command centres operating around the clock between 28 February and 9 March. We experienced very challenging conditions, with a Meteorological Office ‘Red Warning’ issued on 1 March which led to large volumes of snowfall impacting on much of our operating area. Conditions were so bad that the M4 motorway in South Wales was closed, and many minor roads remained inaccessible a week after the ‘Red Warning’.

In addition to our usual operational resources, under our emergency procedures we mobilised a further 700 colleagues from other parts of the business and our supply chain to support the incident response. Our focus was very much on protecting supplies to our main population centres and this ensured that 99% of connected properties did not experience any issues at all. However, despite the best efforts of our operational teams, four rural communities suffered prolonged supply interruption. In these areas, just over 6,000 properties were affected, with the worst being 341 with a supply loss of just over 5 days. In some cases, for the shorter supply interruptions, it may have been caused by customers’ own frozen supply pipes.

We have ensured that these affected customers received a written apology and compensation very promptly starting on 9 March, as conditions improved. We have made approximately 14k payments to Household Customers since the incident. We made the decision to pay £75 fixed compensation by cheque so that even where a customer account is in debit they will receive compensation for any interruption in supply.

In the four worst affected areas we have also proactively contacted over 150 Business Customers and we are responding to compensation claims from businesses as a result of this. We had already issued over 4,000 ‘lagging kits’ free of charge over this winter period (prior to Storm Emma), as part of our annual ‘Wrap Up Wales’ campaign to help people protect their home plumbing.

Throughout the incident we did all we could to identify vulnerable customers and we utilised a process to prioritise delivery of bottled water to customers in such circumstances. More widely, we sought to get alternative supplies to communities where we had lost supply, however at the ‘height’ of the storm our efforts were severely hampered by inaccessible road conditions.

Customer communication was a key area of focus during the incident and we also engaged extensively with a wide range of stakeholders. In relation to the four specific rural areas, we have met or spoken with respective Assembly Members and MPs and have received positive feedback in terms of our response and approach to customers from them. We had regular dialogue with Welsh Government officials throughout the incident and this included direct briefing with Ministers.

Our emergency plan was enacted in the week prior to the 'Red Warning' as we took heed of the predicted deterioration in conditions. Following the experience of the 'Winter 2010' severe weather incident, we have added materially to our emergency resources, for example we have over 200 '4x4' vehicles and our own fleet of over 30 water tankers. In 2015, our Board approved a further £10m investment in additional emergency equipment from our 'Not for Profit Return of Value Customer Dividend' funding. We have an annual winter preparation plan and this was reviewed at Executive level on 21 November 2017 and we carried out a simulation test of related procedures on 14 December 2017. These actions, plus our general emergency procedures formed the basis of our response to 'Storm Emma'.

The severe weather was a significant event across the whole of our operating area and we expended every effort to mitigate the impact on our customers. We are extremely proud of our front line operational and contact centre teams, who worked around the clock to try to maintain or restore services to our customers, and to provide customers with the best available information. However, we recognise there are some things we could have done better. While we have worked to meet Ofwat's deadline for an initial report on the impact of the severe weather, further work will be needed to complete our internal review and identify fully all the areas for future improvement. We will ensure that the respective 'lessons learnt' are fully taken into account in enhancing our systems and processes to ensure company-wide resilience to deal with future emergency events.

Section A: Factual details of freeze/thaw events

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.

The tables have been included in the mail response requested as separate attachment

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?

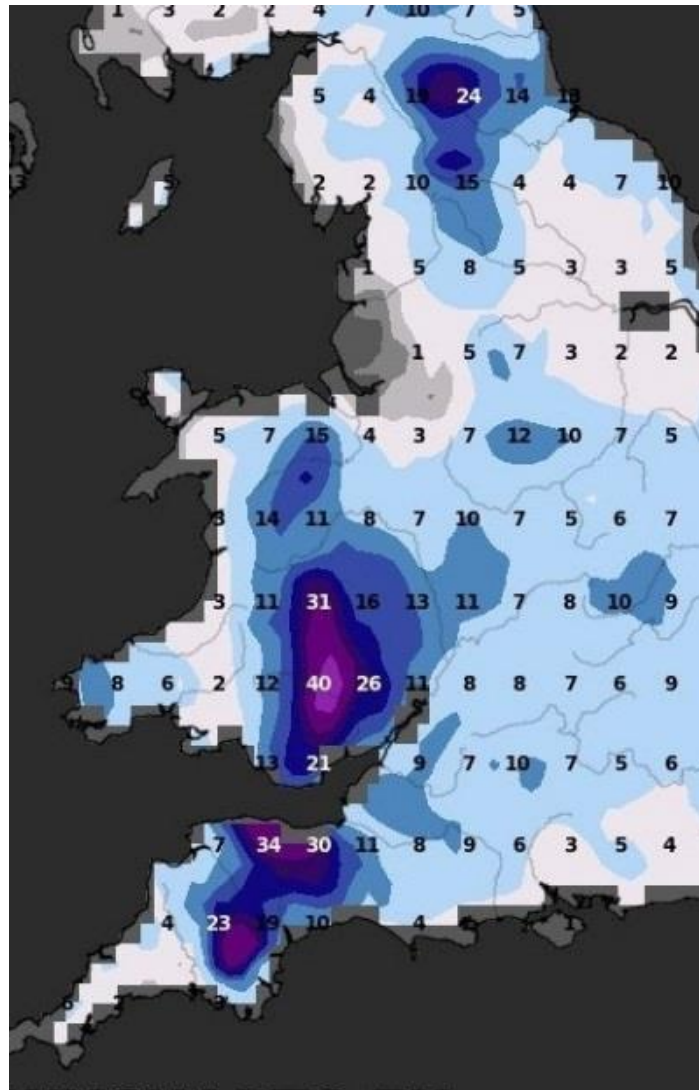
Summary of key impacts caused by the weather conditions:

- 2.1 During the period 28 February to 2 March 2018, a large part of Dŵr Cymru (“DCC’s”) supply area was subject to the highest level Met Office red weather warning. Significant snowfall, high winds and freezing temperatures, followed by a rapid thaw from 4 March led to the following consequences across a large area:
- Road closures snow and fallen trees – there were widespread road closures affecting access to sites up to a week into the incident including M4 and A roads. Many minor roads in rural areas remained inaccessible up to a week after the ‘Red Warning’ was issued. Snow clearance of roads was very slow in a number of areas with even Highway Authority Snow ploughs becoming stuck due to drifting snow. This led to extreme difficulties in accessing treatment works, offices and depots and for deploying bottled water supplies to customers; Power failures to a pumping station and two water treatment works. The worst of the winds were in North Wales where all of the treatment works were transferred onto fixed on-site generators for the duration of the incident.



- Both residential and commercial customers customers experienced a high number of bursts in unoccupied buildings.
- As the severe weather extended over the weekend period we encountered over a hundred unoccupied premises which had significant internal leakage.
- Water Temperature in distribution – water temperatures below 5C resulted in leakage outbreaks due to the impact on joint rubbers. We saw water temperatures below 1C in areas of the distribution network.
- Blocked underwater intakes – two treatment works experienced problems with debris from the high winds (both unblocked by specialist divers).
- Rural areas have a high proportion of Caravan Parks and Holiday Homes not used over the winter or weekends
- Health and Safety – whilst safety was a key message to the business throughout the incident we had three [minor] tanker accidents whilst providing temporary supplies to customers in difficult conditions. Well-being of our colleagues was made a high priority throughout the duration of the incident.

- We commissioned 'Meteogroup' (Global Weather Specialists) to review the weather experienced in our operating area and they have confirmed
 ' the period where temperatures lingered below zero in places was exceptional and the experienced wind chill was also exceptional. Frost penetrated relatively deeply below the ground and combined with the rapid nature of both the freeze and thaw would have resulted in unusual levels of ground heave'



Map showing depths of snow

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.

Detail of key impacts caused by the extreme weather conditions:

- 3.1 The first warning of potential extreme weather was received on Saturday 24 February and in response there was a Director led request to operational teams to double check that the key points in the existing 'Winter Plans' were in place and up to date. This started to focus the Operational resources on the potential operational issues that might arise.
- 3.2 Weather warnings continued throughout the week and on Thursday 1 March 2018 a Red Warning was issued by the Meteorological Office. Prior to this, the major incident teams were already in place, in anticipation of a potential extreme weather incident. The Crisis Management Team and Gold Teams were established at our control centre in Linea, St Mellons Cardiff and Silver Centres at six Operational Depots in Wales and Herefordshire.
- 3.3 From 1 March 2018 onwards, the operation teams covering Water Production and Distribution were working 24/7 rotas until Monday 12 March 2018; pausing all of the routine and planned activity to focus on maintaining supplies to customers.
- 3.4 Over 1500 of our staff are based in 4 locations which each had access issues during the relevant period:
- Nelson Treharris, Head Office – access impossible for 3 days
 - Linea St Mellons Cardiff, Operations, Billing and Operational Call Centre – M4 closed for a day and access on minor roads only possible by 4x4 for 4 days
 - Ty Awen, Newport, Main Engineering Centre - M4 closed and access on minor roads only possible by 4x4 for 4 days
 - Glaslyn Laboratory, Newport - M4 closed and access on minor roads only possible by 4x4 for 4 days. Regulatory Water sampling was not possible for 2 days due to the weather conditions across the supply area.
- 3.5 The locations listed above were all in the centre of the Red Warning issued by the Meteorological Office. Roads in the warning area and much of the rest of Wales were severely affected, preventing access to treatment works, depots and offices and with many roads being impassable. This included closure of the M4, only the second time this has happened due to snow conditions. Access roads to some sites were still impassable one week later. During this period the Police were warning people not to drive.
- 3.6 In terms of our sewerage network activities we moved to emergency response only in the South East of Wales due to inaccessible road conditions between 1 and 4 March 2018. There were no major impacts on customers

- 3.7 On Thursday 1 March we were advised by the Meteorological Office of the Red weather warning:

“Advice Red Weather Warning: Extremely bad weather is expected. Red means people in the concerned areas should take action now to keep themselves and others safe from the impact of the weather. Widespread damage, travel and power disruption and risk to life is likely. You must avoid dangerous areas and follow the advice of the emergency services and local authorities.”

A message was sent by Peter Perry the Chief Operating Officer to ensure that the safety of our staff was paramount:

‘As a result of the ongoing difficult weather conditions, we are asking that all colleagues in south Wales, mid Wales, south west Wales and Hereford that are not essential to the Gold and Silver incident management teams do not travel to offices and depots today. If you are in doubt as to whether you are essential to support this incident, please ask your line manager. Also, as previously noted, please do not use VPN (remote access method) unless it is absolutely essential.

The severe weather is likely to continue today and over the weekend, so please stay safe, keep up to date with local weather news, and do not travel unless absolutely necessary.’

- 3.8 All essential movements in these areas on Thursday 1 March and Friday 2 March 2018 and over the weekend were undertaken using trained 4x4 drivers. There was minimal work at these locations other than that directly associated with the incident over the three days, with additional colleagues working from home where possible.
- 3.9 From Tuesday 26 February 2018 until Friday 9 March 2018 all non-essential appointments and planned work was cancelled. It was not possible to take regulatory samples on 2 and 3 March 2018 and the Drinking Water Inspectorate was informed of this.
- 3.10 A large Zonal Studies programme (mains cleaning and replacement) is underway cleaning and replacing cast iron water mains. This work was stopped across the supply area on Tuesday 27 February in order to make more gangs available for leak repairs. This work is still on hold as the additional effort to reduce leakage (associated with the weather) is ongoing.
- 3.11 We diverted Developer Services team members to support the call centre and enter data into systems regarding the incident. Our engineering and field based Developer Services team members also assisted with bottled water deliveries and a limited amount of leakage detection in North Wales.
- 3.12 During this period we managed to maintain our Developer Services function with minimal impact to service delivery. The only issues encountered were a failure to deliver a few new water connections which would not have been possible to undertake in any event due to the snowfall and not being able to locate existing assets and customers not being ready with the private side installation.

- 3.13 Meter readers were diverted to bottled water delivery for vulnerable customers and bottled water stations
- 3.14 Waste water treatment and networks teams were diverted to delivering alternative supplies and tankering, as access to Waste Water Treatment works was not possible. Waste Water Compliance sampling was also cancelled/disrupted between 1 March 2018 and 3 March 2018 due to weather conditions as agreed with Natural Resource Wales and the Environment Agency.
- 3.15 Teams from across the business have continued to manage the recovery and we will be analysing the data from the event until the end of April to get definitive property counts for Customer Minutes Lost (ie minutes of supply interruption) calculations for the period.
- 3.16 Annual billing was suspended for a number of days to allow total focus on customer service during the severe weather. However this was subsequently returned to normal and is on track
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?
- 4.1 The impact on supplies to our customers developed in the following phases:
- Initially we saw a fourfold increase in calls to the Operational Contact Centre from Domestic Customers, largely as a result of large numbers of service pipes freezing. This was seen prior to any issues on our networks and continued during the period from Monday 26 February to Wednesday 28 February;
 - Private side bursts were a major issue for both our Domestic and Business Customers. The supplies to a large number of Business Customers were isolated to protect our supplies and try to prevent or limit damage to customers' property. All customers affected were contacted and free assistance in completing the repairs was offered in the most critical areas to both Business and Domestic Customers, in order to preserve/maintain supplies as far as possible.
 - As the snow and winds arrived on Thursday 1 March, operational difficulties arose with for example power failure to pumping stations causing pockets of properties to experience interruptions to supply. This was significantly mitigated as all Water Treatment Works in North Wales have fixed generators.
 - The heavy snow and drifting made access to our treatment works sites for operation and breakdown maintenance very difficult or impossible for up to a week following the first snow. Teams manned the sites equipped for extended stays as most are on higher ground near our impounding reservoirs. Out of 63 operational sites, 6 were shut down by equipment or power failure resulting in freezing problems on chemical dosing lines, despite trace heating and space heaters, as water flows stopped.
 - High demands caused by bursts (both on our distribution system and customer side) and we understand also by some customers opening taps in an attempt to avoid freezing pipes, even though this is contrary to our advice on freezing pipes which was published on our website and via social media and used by the call

centre to provide advice to customers. These increased demands resulted in the inflow to some service reservoirs being overtaken by demand, causing reservoirs to empty and properties to lose supplies. This phenomenon was first observed at the high points of the network and then spread as the system drained. In many areas supplies were intermittent as the system recovered overnight then drained again as the demand increased in the morning.

- The frost penetrated relatively deeply below the ground surface, which combined with the rapid nature of both the freeze and thaw resulted in unusual levels of ground heave causing widespread burst mains.
- Significant difficulties in locating leaks in snow covered ground and using acoustic logging in depressurised pipes made demand reduction difficult/impossible from 2 to 5 March 2018.
- Finally high burst volumes (over 3 times the normal rate) required shut offs to repair the main interrupting supplies for short durations. This is normal daily activity but on a significantly wider scale

4.2 In addition, as mentioned above (response to Question A2):

- Sub zero temperatures affected our supply pipes and treatment works;
- Water Temperature in distribution close to freezing point impacted on Service Pipes and Water treatment/distribution equipment
- High Winds caused loss of mains power, access issues due to significant snow drifting (up to 2m deep) and fallen trees, and blocked raw water intakes; and
- Impassable roads restricted our ability to safely deploy alternative (bottled) water supplies.

Section B: Planning and preparation

1. 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?

- 1.1 Our processes for preparing for potential severe weather events have been developed and improved as they are tested and lessons learnt implemented. This refinement process has resulted in procedures to cover all of the known risks, for example: Contact Centre Escalation, Leakage outbreak management, Tankering management etc

Early Warning of Weather Impacts

- 1.2 Early warning processes for monitoring potential weather impacts were upgraded after the Winter of 2010. We subscribe to the Meteorological Office 6 day Hazard Forecast Template and circulate this to the 364 staff [within the operational?] business 3 times per week.
- 1.3 We also receive the following ad-hoc updates from the Meteorological Office as a Category 2 responder:
 - Severe Weather Warnings – as and when they are issued
 - Weather Updates from the Meteorological Office Advisor (Civil Contingencies) – during periods of severe weather
- 1.4 The other services we purchase from the Meteorological Office are rainfall data that is made available to the business using our telemetry system, Prism:
 - UK Rainfall Radar (5 minute / 5km resolution)
 - UK Rainfall Radar (5 minute / 1km resolution)
 - Nowcast data feed (15 minute / 5km resolution / 6hr forecast)

Publicity/information campaigns for customers

- 1.5 One of the main risks during cold weather events is freezing of customers' private supply pipes which is the subject of a long standing and ongoing publicity/educational campaign aimed at all of our customers: 'Wrap up Wales'. Free lagging kits have been offered for a number of years to mitigate the impact of sub zero temperatures. Our Wrap up Wales campaign starts during November and runs until March every year. Prior to 'Storm Emma' we issued over 4000 free kits to customers.

Routine winter weather checks

- 1.6 Every Autumn, a check is made that we are prepared for poor weather and severe cold spells/snow. Papers were submitted to the November 2017 Chief Operating Officer's monthly meeting of his direct reports, outlining the readiness of the Operational business to respond to a severe weather event. Preparations cover all aspects of Health and Safety, mobilising resources, maintaining operations, hiring sufficient additional 4x4 vehicles and securing stock levels. This planning process has been in place since the Winter Freeze of 2010 and was tested for real early in December 2017 when an Amber weather warning led to substantial snow fall across North East Wales, Mid Wales and Herefordshire. A full breakdown of this year's preparations is given below (response to Question B3).

Immediate preparations following notification of adverse weather

- 1.7 Following the first weather warning on 24 February 2018 the Chief Operating Officer escalated preparations with the Managing Director of Water Services in readiness for the potential issues caused by severe weather. Storage levels were maximised from this point onwards and it was agreed to suspend all non-essential work. Rotas were considered for all operational teams and the Incident Command structure.
- 1.8 Additional leakage repair resources were placed on standby from 27 Feb 2018 utilising teams from our Capital Partners
- 1.9 Plans were developed through our standard escalation procedures led by the Crisis Management Team to identify additional resources for the Contact Centre, Capital Engineering Teams and additional repair gangs again from our Capital Alliance.

Additional information for customers

- 1.10 An information campaign for customers was initiated, to highlight the potential for frozen plumbing and leading people to our website which contains written guidance and customer self help films. Proactive text messaging was used to send messages to 91,000 customers during the event advising them where applicable to check for leaks on their pipework, or to notify them of low pressure, of loss of supply or to provide general updates on the restoration of their water supply.

Collaboration with third parties

- 1.11 We provided information about locally based vulnerable customers following a request from the Chief Constable of Blaenau Gwent Police under the 'data protection and sharing guidance for emergency planners and responders guidance' following a declaration of a civil emergency in that area during the incident.
- 1.12 We liaised with the Local Resilience Fora as Category 2 respondents both in the period leading up to the incident and during the incident itself.
- 1.13 Throughout the incident we were in liaison with the Highways Authority across our operating area and reached agreement to allow 'speedy' repair of burst pipes with them relaxing the notification process in some instances.

Particular risks and how did we mitigate them

1.14 Learning from previous events since the Winter of 2010 and subsequent incidents has resulted in us developing procedures to mitigate the impact of severe weather:

- Winter Preparation plans mitigate a whole range of potential operational risks for example chemical deliveries, checking trace heating etc (a full list is given in Section B 3.36)
- Transporting Staff – increase the number of 4x4 vehicles in the fleet and hiring additional 4x4 vehicles for key sites such as the Operational Contact Centre.
- High volumes of customer calls – to avoid calls queuing and respond to customer queries the Operational Contact Centre has escalation procedures which call in additional staff from the billing contact centre or the wider business to improve call handling capacity increasing resourcing levels to a peak of 218 from normal levels of 30.
- Three days of sub zero temperatures followed by a thaw results in an outbreak of bursts on our mains and customers service pipes and plumbing – additional leakage teams to find and repair the leaks were made available from our R&M Contractors and Capital Alliance, rested and ready to mobilise when the cold weather finished.
- Staff Resources – these are always stretched during an incident so early preparation of rotas and rest periods was implemented
- We have undertaken liaison with Western Power Distribution Ltd (South, mid Wales and Herefordshire electricity Distribution Company) to agree a programme to protect our water treatment works from power fluctuations. This programme targets our main water treatment works that have had historical problems with power dips or interruptions due to weather or other impacts on the local electricity networks.

2. 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?

2.1 The actions outlined in our Winter preparations each year have been subject to continuous improvement for a number of years. We consider that the actions mitigated many of the potential problems and eliminated many of the issues experienced during previous similar incidents.

2.2 As set out above, every winter a check is made that we are prepared for poor weather and severe cold spells/snow. Papers were submitted to the November 2017 Chief Operating Officer's monthly meeting for his direct reports, outlining the readiness of the Operational business to respond to a severe weather event. The four Directors of the main operational business units attend this meeting and are responsible for implementing the actions in their reports.

2.3 Our preparations meant that:

- Procedures were in place to respond to the event and minimise the impact on our customers
- Sufficient resources were mobilised in our Customers Contact Centre to respond to customer contacts by phone or social media to keep them informed and identify problem areas for our Field teams.
- We kept our treatment works at their maximum outputs for the duration of the incident period.

- We were able to mobilise additional Company and Supply Chain resources ahead of the weather impact
 - Normal and additional leakage gangs to find and fix leaks were available to mobilise as soon as we experienced the leakage outbreak hence minimise the impact of increased demands
 - Our full emergency Command structure was mobilised as soon as the event started
- 2.4 The Managing Director of Water Services responded to the early weather warning on the 24 February 2018 by instigating a series of further readiness checks to reinforce our preparedness and check each of the points within the plan with the accountable Head of Service for Production and Distribution respectively, this was completed and fully signed off on Monday 26 February in readiness for the weather event.
- 2.5 The Chief Operating Officer led the company Crisis Management Team throughout the incident until the 9 March 2018 and the Managing Director of Water Services headed the Gold Incident Command until it was closed down on 9 March 2018.
- 2.6 The Executive team and the main Board of DCC was kept informed via regular email updates and by attending the Crisis Management team meeting and Gold Incident room as appropriate. The Executive team liaised closely to address specific issues- for example, the HR Director assisted in coordinating redeployment of colleagues and additional resources and arranging contact with colleagues over the weekend, the Managing Director of Domestic Customer Service coordinated the call centre response and ensured that information from the Gold and Silver incident rooms was passed on to colleagues handling calls as appropriate, and the Director of Communications and Customer Service coordinated the internal and external communications and managed a 24/7 communications team response.
- 2.7 The Chief Executive and Chief Operating Officer also led stakeholder briefings with Welsh Government, Assembly Members and MP's

3. [What emergency plans were in place and were they adequate to cope with the problems? Were those emergency plans appropriately enacted? If so, when?](#)

[What emergency plans were in place?](#)

- 3.1 In the event of disruption to the normal supply of water by pipes, the Company's Emergency Response Manual (ERM) provides for management of the event to be reinforced and for additional resources to be mobilised to maintain the supply of water to customers. The Company will give priority to maintaining a sufficient and wholesome supply of water by pipes; deploying additional supply or treatment capacity, or rezoning the distribution network as necessary, according to local operating instructions and procedures.
- 3.2 Where the piped water supply becomes and remains insufficient or unwholesome, the Company will attempt to provide Alternative Water Supplies other than by pipes, according to Company Policies and as described in IMS procedures (EP - Emergency Incidents) and Local Network Plans. The Company's Plan provides a

strategy for the management and resourcing of events occurring simultaneously in the same or other parts of the operating area. The Company has resourced its Emergency Equipment stocks to support the provision of water other than by pipes in excess of the requirements of *Advice Note 9 (edition 3 Feb 2005)*. The Company will use best endeavours to maintain supplies to its customers, calling on additional resources as may be available from the Industry Mutual Aid Scheme

- 3.3 Associated plans for Water Supply Services under the Security and Emergency Measures Direction 1998 are included in the Company's Plan. In developing its emergency and contingency plans the Company has liaised over many years with other public bodies and services in its operating area. The Company has also developed Total Loss Contingency Manuals for 32 Water Treatment Works to date and these are reviewed and updated following any changes.

Generic Overview of the Company's Emergency Response Manual

The Supply of Water by Pipes

- 3.4 IMS includes procedures for all activities affecting the quality of drinking water, but does not make specific provision for the sufficiency of water supply. The sufficiency of water supply is documented in the Company's Water Resources Management Plan, and a Drought Contingency Plan has also been developed. These are reviewed and updated on an annual basis.
- 3.5 The operation of each Water Treatment Works (WTWs) is described in local Works Operating Manuals (WOMs) which include relevant details of:
- normal and reserve sources of raw water for treatment
 - emergency pipe-work to bypass selected treatment processes
 - back-up supplies of electrical power, and connections for emergency generators
 - start-up and shut-down procedures
- 3.6 All WTWs have WOMs produced to a common format and any changes to WTW processes and operations will be reflected in local amendments to the documentation which are reviewed annually. Controlled copies of the WOMs are available at the WTW and with the Works Manager.
- 3.7 The operation of each Service Reservoir (storing treated water available for supply at atmospheric pressure) is prescribed in local Service Reservoir Manuals which include relevant details of:
- alternative inlet and outlet pipe-work arrangements
 - operating instructions for Decommissioning & Re-commissioning, Emergency shut down, and drop Tests for each site

- schematic pipe-work and treatment process at each site
 - emergency chlorination for disinfection
- 3.8 All Service Reservoirs have manuals produced to a common format and any changes to reservoir processes and operations will be reflected in local amendments to the documentation which are reviewed annually. Controlled copies of the manuals are available in each Network operations areas
- 3.9 Local Network Manuals contain details of the operation of distribution networks, including:
- the operation of trunk mains and feeder mains
 - provision for rezoning
 - supply arrangements to Essential Users
 - vulnerable group customers known to the Company, including home-dialysis patients
- 3.10 The documentation comprises:
- Primary Trunk Mains - Schematics and operating instructions for trunk mains (from WTW to service reservoir), including any Essential Users supplied directly from these trunk mains.
 - Secondary Trunk Mains- Schematics and operating instructions for feeder mains (from service reservoir to District Meter), including Essential Users in the district meter areas (DMAs) supplied.
- 3.11 All Trunk Main systems have manuals produced to a common format and any changes to systems, processes and operations will be reflected in local amendments to the documentation which are reviewed annually. Controlled copies of the manuals are available in each Network operations areas.
- 3.12 Telephone calls from customers regarding the sufficiency or quality of piped water supplies are received at the Operations Activity Centre (OAC) Call Centre in accordance with Company procedures.
- 3.13 Requirements for corrective and remedial action are passed to dispatchers at local depots for attention. Advice to customers is given on the basis of information supplied from the local depot (or incident management centre if appropriate).
- 3.14 The operational Control Room in South Wales (Linea) receives incoming operational real-time information from telemetry and from operations staff. Operations Controllers and Managers access telemetered information directly. The operation of Telemetry, Alarms and Control Room is prescribed in the IMS Procedures (PT - Telemetry).

Incident Response & Management

3.15 The Company's ERM provides a generic escalation of management for a wide variety of emergency situations, and defines roles and responsibilities for remedial and recovery action. The ERM is updated annually the definitive copy being available on the Company's INFOZONE website. A limited number of controlled paper and electronic copies are held at the gold and silver incident centres and with incident managers.(see Section C Section 2.1 for an explanation of our command structure)

3.16 In incidents, normal management roles are augmented or replaced by a 3-tier command structure:

- Bronze – Operational Management, specific functional responsibility
- Silver – Tactical Management, local operational co-ordination
- Gold – Strategic Management, high level co-ordination of the Company response
- Crisis Management Team – Executive Co-ordination of Major Incidents

Lists of trained staff available at all times to carry-out these roles are maintained by the Company Control Room (Smart hub)

3.17 An Inventory of Emergency Equipment under the control of the Emergency Planning Manager is maintained, including details of:

- stocks of emergency equipment held in reserve in the Company
- equipment potentially available through the Water Industry Mutual Aid Scheme

3.18 Emergency equipment held by the Company includes:

- pumps, pipes and fittings
- water tanks, bowzers and road tankers
- emergency bottled water stock
- mobile generators
- emergency communications equipment
- mobile command centres

3.19 The Company retains abstraction licences for some water resources which are not normally used for water supply. These resources are of two types:

- standby supplies, where treatment/pumping plant is maintained at operational readiness for immediate use
- emergency supplies, where abstraction for public water supply has been discontinued and plant has been removed, but which could be reinstated in emergency.

Lists are maintained of these supplies, which are each under the control of the DCWWs Water Resources team.

Operational Escalation of Emergency Response

- 3.20 From the onset of an incident, the Company progressively escalates the emergency response as necessary. In a single incident this escalation of response is instinctive and follows trigger levels identified within the ERM; resources are mobilised as required, situation updates are concise, and the prioritisation of resources and responses is generally not an issue.
- 3.21 In a widespread or multiple-incident scenario possibly involving both water and sewage services priorities and decisions would have to be made as to the deployment of resources, and the overall "operational status" of the Company would need to be assessed and described to an outside audience. For these reasons, the Company's Contingency Plan introduces an Operational Escalation, which is incorporated into the ERM.

Status	Description
"Normal"	Sufficient and wholesome supply by pipes.
"Category 3 Incident"	Sufficient and wholesome supply by pipes can be maintained by augmented operational resources, such that the customer is generally unaware of a serious problem. Some risk of minor discolouration or lower pressure, and the possible issue of precautionary boiling advice.
"Category 2 Incident"	Supply by pipes is maintained; but by use of emergency supplies, radical rezoning, over pumping, partial bypassing of treatment or other non-routine operational measures. Supply by pipes is at risk of insufficiency or unwholesomeness, and customers are advised that alternative supplies of water are available for their use.
"Category 1 Incident"	Supply by pipes is unavailable or is unfit for use, and customers are reliant on alternative supplies of not less than 10 litres per person per day.
"Major Incident"	Widespread incidents across the operating area requiring the support of external agencies to respond and assist.

- 3.22 Operational Procedures for the deployment of alternative supplies (and the associated issuing of advice to customers) are set out in IMS Procedures (EP – Emergency Planning).

- 3.23 The Company requires the co-operation of its customers in the use of alternative water supplies, and has adopted specific Customer Service Policies for such circumstances.
- 3.24 The Company has the capability to deliver bottled water to selected customers (Priority Service Register) to supplement piped water or water collected from tanks.
- 3.25 The Company has contractual arrangements with water bottlers who hold additional bottled water in stock available for the Company and have the capability to produce further bottled water for the Company on request. This company can also supply large stocks of their own labelled 'off the shelf' bottled water. [REDACTED]
- [REDACTED]
- This is sufficient to mobilise at the start of events but not too much that there isn't turnover problems during normal operations. The Contract with our supplier [REDACTED] also requires them to hold stock and provide additional bottles from their stock or European operations if we require.
- 3.26 Alternative water supplies will usually be provided for collection by customers from tanks/bowsers deployed at pre-defined suitable locations. Locations for tanks/bowsers have been identified, based on each tank (typically 2000 litres) serving 150-200 properties within a distance of some 150 metres. A Database of locations is maintained, and each location is also shown on the Company's GIS System.
- 3.27 To assist operational teams in dealing with potential large scale emergencies a database and GIS overlay has been developed which provides information relating to deployment of static tanks. The database, which will be reviewed and updated, is under the control of the Local Operations Manager, and held on a secure server. Paper copies are held at local depots.
- 3.28 Customers will be informed of the Company's contingency arrangements in advance. At the time of an event, information on the collection of alternative water supplies will be provided by the most appropriate means (OAC, Company Website etc.).
- 3.29 In the event of an emergency a Priority Customer Bronze Manager will be appointed to identify customers at risk. It will be the Manager's responsibility to take positive action to ensure that we communicate details of the incident to the customers at risk, and, in addition it will be the Manager's responsibility to contact the Local Health Boards and Social Services to advise them that an emergency situation exists.

- 3.30 To assist the Priority Customer Bronze Manager an Priority Services Register of customers is maintained and held on the Company's Secure Server. The register is updated monthly and is accessible to the network teams.
- 3.31 The Company will also provide advice to customers at the time of an event by leaflets and/or by loud hailing in the affected area.

Water Supply Scenario for Contingency Planning

- 3.32 The scenario for the worst possible single event has been developed in a confidential memorandum from Emergency Planning Manager. Regard has been taken of the Company's ability to resupply the affected area from zones, service reservoirs or water treatment works unaffected by the single event.
- 3.33 The Company recognises that multiple events occurring simultaneously increase the magnitude and severity of an emergency situation. In an incident situation, the Company's procedures require the separated but integrated operation of the:

Operations Activity Centre	for customer communications
Company Control Room	for operations communications and real-time operations data
Silver Centre	for local Tactical and Operational management and response
Gold Centre	for Strategic response and management
Crisis Management Centre	for Executive management and external agency support

- 3.34 The Company is a founding member of the Water Industry's Mutual Aid Scheme, and participates fully in all its activities. The Water UK Protocol for Supplying Equipment under the Mutual Aid Scheme allows water companies to benefit from inter-company borrowing of emergency equipment to supplement their own stocks during a severe incident. Any Water UK member company will provide Mutual Aid equipment if requested by another member unless they are simultaneously managing an incident of their own where such equipment is required, or where there is a real and credible threat of a similar incident to that company. Each Water UK member agrees to supply up to, but not exceeding 50% of their total serviceable stock of Mutual Aid equipment.

IMS Procedures

3.35 The procedures for operating and maintaining supplies of piped water are set out in DCC's documented Integrated Management System (IMS), which includes operational procedures for specific assets, installations, systems and activities. The scope of IMS covers the activities of 'source to tap' and also includes waste water and sewerage activities. The IMS was initially Certified to the ISO 9001 Quality Management Systems by the British Standards Institute (BSI) in 2000 and has continued to grow and last year transitioned to the new ISO 9001 Quality and ISO 14001 Environmental Management System Standards, in addition to OHSAS 18001 the Health and Safety Management and most recently ISO 55001 the optimised management of physical assets specification - all by our external UKAS accredited audit and awarding bodies.

Winter 2017-2018 Preparations

3.36 In accordance with our procedures the Winter Preparedness was reviewed at the Chief Operating Officer's monthly meeting in November 2017. The following action points were agreed to be implemented by individual teams:

Winter Preparation Plan Water Engineering and Water Distribution 17/18		
Item	Area	Actions
1	Health and Safety	Tool Box talks across business, Take 5, Lone working, Winter conditions, Vehicles- snow socks, PPE, Slips trips and falls, 4x4 training
2	Strategic stock	<ul style="list-style-type: none"> • Carry out audit of Strategic Stock (North and South), identify gaps and order items as required • Carry out review of the UTS fabricated fittings and confirm that they are marked up appropriately • Additional collars and repair clamps ordered • Procure additional stock of PN25 fittings • Check shuttering and box sections in Clydach as per Cefn Hirgoed incident actions • 7m Sheet pile shuttering purchased for Clydach & Kimmel Park • Key stock items to be transferred to Nelson as a central location for R&M and Capital Contract Partners
3	Transport	<ul style="list-style-type: none"> • Winter driving bulletin reissued • 4x4 training being reviewed. Driver refresher training requested as required • Check 4x4 availability of standby team and hire in additional where shortfall identified. • Check all vehicles have wheel socks available
4	Repair & Maintenance gangs	<ul style="list-style-type: none"> • Review R&M gang numbers and need for further arrangements- Commercial discussions have started. We have specified a replica of last year's plan in terms of plant/ equipment etc. Resources are still under discussion

		<ul style="list-style-type: none"> • Additional gangs to be provided if freeze / thaw conditions occur:- • Review stocks of <ul style="list-style-type: none"> ○ Temp Tarmac ○ Stone ○ JCBs/ plant equipment ○ Tower lights/ welfare • Authorization for Temp reinstatements to be provided by DCWW for holiday period when quarries are closed
5	Leakage detection resource	<ul style="list-style-type: none"> • Additional detection resource planned • Can cancel Distribution staff non-essential work, reduce appointments etc. if weather becomes problematic • Would consider buy back of leave if necessary (max 5 days)
6	Operational Control Centrerramp up	<ul style="list-style-type: none"> • Retail to review ramp up and training • Standby list requires review post the loss of a number of staff • Prepare a script for handling the following <ul style="list-style-type: none"> ○ Visible leaks during freezing conditions- get done on public highways ○ Wrap up advice for freezing pipes- campaign is started • Request 2/3 lagging kits per stand by inspector to be maintained locally
7	Grit/ access to depots etc.	<ul style="list-style-type: none"> • All ROs to check depot plans and ensure grit stocks adequate. • Review for new sites
8	Lagging of sample lines and PRVs	<ul style="list-style-type: none"> • Sample taps to be checked and vulnerable PRVs with the PM team
9	Generator/ diesel top up	<ul style="list-style-type: none"> • All generators topped up. Orders placed available transport to tow in place • Standby generators checked for fuel and ready to go throughout the winter period • Trace heating on thermostat controlled – check all stations by end of November
10	Christmas holiday cover	<ul style="list-style-type: none"> • Review DCWW manpower plans for holiday period, maintain 50% minimum cover throughout December and Jan • Standby lists reviewed and amended. Communicate to all staff. • Update management standby rota
11	Capital design/ engineering standby	<ul style="list-style-type: none"> • Confirm standby arrangements- populate rota on Infozone with contact information • Confirm Waterco availability and cover for Christmas period
12	Capital contractor stand by	<ul style="list-style-type: none"> • Lewis kept on standby for winter period • UTS on standby based in Wales (Christmas cover extended- confirm costs this will incur) • Arrangements in place for quarry stone and concrete via Lewis
13	Weather reports	<ul style="list-style-type: none"> • Responsibility for reviewing daily weather bulletins and cascading out alerts agreed

		<ul style="list-style-type: none"> • Long range forecasts to be reviewed • Review with Control escalation processes
14	Incident management training	<p>Emergency planning</p> <ul style="list-style-type: none"> • Number of tankers 31 available, 23 for quick deployment, others within 24 hrs • Tanker drivers to be made available Contract in place with [REDACTED] available as a fall back. [REDACTED] to be requested to provide a price for having 4 drivers on standby. • [REDACTED] • Issue reminder to check for out of date stocks
15	Welfare	Procurement cards in each depot- only approved at DM level (Director instruction)
16	Customer comms	<ul style="list-style-type: none"> • Wrap up- discussion required re timing of this year's campaign • Web data – bring videos on protecting pipes to the front screen in November • Leak line • All colleagues – business communication
17	Data	<ul style="list-style-type: none"> • Review stopped meters • Cello data – score data operability • Fast track any essential work
18	Customers	<ul style="list-style-type: none"> • Check direct fed/pumped customers that correct post code list is available for text • Ensure all rider pipes are checked and lagged
19	SRV control	<ul style="list-style-type: none"> • Check all rate of change alarms • Trigger customer texting in place • All SRVs to have a tankering plan • Prism Widget in place all Ok
20	Silver centres	<ul style="list-style-type: none"> • Local silver centre cover in place, nominated centres by area • Alarms handling & Pcs- people trained to alarm
21	Local arrangements of pumps	Reserve pumps been sourced such as Beddau /Llantrisant
22	Highways authority/ Streetworks	Discussions with HAs around Wales re Christmas embargoes, and approach in the event of a severe winter
23	Incident Management	Silver manager training/ bronze- CML logging alarms expectation
24	Wider incident management support	Volunteer list- roles particularly required- skills sets

Water Production Winter Preparation Plan Production 2017/18		
Item	Area	Actions
1	Health and Safety	Stand-down day to be completed in each area on Winter Prep. Stand-down day to make reference to existing TBTs: <ul style="list-style-type: none"> - Take 5 - Lone working - Winter conditions - Vehicles - PPE - Slips trips and falls Winter Driving Bulletin
2	Standby plant availability and critical spares	All areas to review key component and equipment spares including availability of standby plant. Maximise availability of duty standby equipment and order any spare kit by 1st Dec.
3	Transport	<ul style="list-style-type: none"> • 4x4 Driver training to be requested as required • Arrange for any required hire of 4 x 4 (balance requirement with budget impact)
4	Additional resources	<ul style="list-style-type: none"> • Review internal resource availability and any gaps that need supporting by other internal teams, e.g. Capital, Statutory Maintenance, Telemetry, Comms (BT) etc. any reinforcement from Agency, BIS or Contractor support, SIs. • Any other plant or equipment to be purchased or hired.
5	Resource availability for standby cover	<ul style="list-style-type: none"> • Identify management and front line standby cover from 1st Dec to 2nd week in January – save on S Drive. • Ensure any outstanding leave does not stack up until year end but spread through autumn. • Identify who is in work, available, contactable, and not available. • Identify second line standby arrangements where necessary. Complete the Christmas Availability Tracker
6	Grit and salt stocks/ access to WTWs etc.	Ensure all Gritters serviceable and appropriately located for rapid deployment.
7	Generator/ diesel top up	<ul style="list-style-type: none"> • All generators maintained, service and topped up. Orders placed for any additional kit and availability of transport to tow in place • Standby generators checked for fuel and ready to go throughout the winter period. • Heating oil orders in advance and topped up.
8	Chemical stocks	<ul style="list-style-type: none"> • Ensure chemical stocks are maximised for holiday period and be prepared for increasing stocks ahead of any forecasted adverse weather period. • Identify any tanks that need cleaning or maintenance work to ensure max capacity is available well ahead of winter period (before December!) • Identify any pinch points or temp shortage of capacity due to asset or maintenance issues and have contingency plans available, temp storage tanks, tankers etc.

9	Capital design/ engineering / ATC and System Integrators standby Procurement support	<ul style="list-style-type: none"> Confirm standby arrangements for various teams and share with wider team. Confirm availability of Procurement support over Dec/Jan for support with any bespoke orders, STAs, Chemical orders, other plant and equipment
10	Weather reports	<ul style="list-style-type: none"> Responsibility for reviewing daily weather bulletins and cascading out alerts Long range forecasts to be reviewed Review with Control escalation processes
11	WTWs asset resilience	All areas to critically review the post 2010/11 asset resilience actions. Ensure all actions have been completed or where further work necessary that this is completed or have mitigation measures in place. Any major capital works o/s to be highlighted to AJH
12	Trace heating/ lagging and temp heaters	<ul style="list-style-type: none"> Confirm that all lagging/trace heating installed is operational and intact. . Identify where additional space heating may be required and arrange purchase or hire ahead of any forecasted adverse weather. MEI to advise on any at risk sites in distribution!
13	Welfare	Ensure contingency welfare arrangements in place for high risk locations where sudden adverse weather could result in temporary isolation, e.g. Alwen WTWs, Strata Florida WTWs.
14	Communications with Distribution	<ul style="list-style-type: none"> Production plans to be reviewed on weekly basis taking account of any potential adverse weather forecast ensuring Production and Distribution are fully briefed of any asset or demand issues. Identify any SRVs out of service or other works in distribution that may affect production. Use the summer demand action triggers for any SRV depletion and communicate any potential issues well in advance between Prod/Dist
15	Limitations in asset capacity	<ul style="list-style-type: none"> Identify any raw water, WTWs or supply capacity limitations due to known asset limitations that are likely to remain over winter period or be affected by severe weather. Mitigation measures needed for dealing with high demands. Any intake protection or mitigation work?
16	Check availability of additional mobile Poly plants	Identify sites at risk of cold water affecting coagulation. Identify availability of Poly plants and purchase/hire in where necessary.

17	Suspension of non-urgent planned work	Aim to ramp down planned outages from 1 st Dec and no intrusive works from w/c 11 th Dec (N.B. this is assessed on case by case basis)
18	Disinfection turbidity risks	Ensure all WTWs run to waste procedures have been reviewed. Identify and arrange any temporary plant such as pumps, generators, and pipework are established on site.
19	Site by site plans	All PMs to review specific site access plans and contingencies.
20	Chemical supplier resilience	Check up on Supplier preparations and contingencies to ensure supplies are maintained in all weather conditions.

Operational Services Severe Weather Preparation		
Item	Area	Actions
1	Smart Hub	<ul style="list-style-type: none"> Smart Hub Ramp Up Plan – Tested, with all objectives met, during Exercise Snowdrop. Smart Hub DR Facility available 24/7 @ Nelson – for DR and/or Ramp Up. Full capability for up to 5 Smart Hub Analysts, 1 manager, and 1 hot desk. Smart Hub desking @ Clydach to support DR and/or Ramp Up for 2 users. Ability to manage and dispatch alarms, but no functionality to receive incoming calls via Genesys IWS. Telemetry machines and alarm handling capability trained for all Silver Centres Four mobile phones available at all times in Smart Hub to facilitate additional capacity for communication outside of corporate telephony. Agile Response and Risk Teams rota over Christmas period, including additional standby.
2	Alarm Handling	<p>FORCAST Utility now suppressing the vast majority of wet weather related 'unwanted' alarms – as seen by very flat Alarm profile trend throughout the year:</p> <p>Ability to activate individual Wet Weather inhibits for 2788 alarms across wastewater operations. This is increasing to ~5000 by end of November, aligned with ongoing config/review of wastewater BGA alarms.</p> <p>CML pressure alarms to <u>all</u> be announcing to Risk Desk for analytics/Triage and pass out as per recently developed Smart Hub Process</p>
3	Smart Hub Systems	<p>Smart Hub Systems and Configuration standby has been strengthened to provide ramp up and sickness cover for the Smart Hub Response Team but also enhanced configuration support to Gold or Silver:</p> <ul style="list-style-type: none"> General Configuration Support Summary Pages Modify/Creation Schematics Modify/Creation Control Pages Modify/Creation

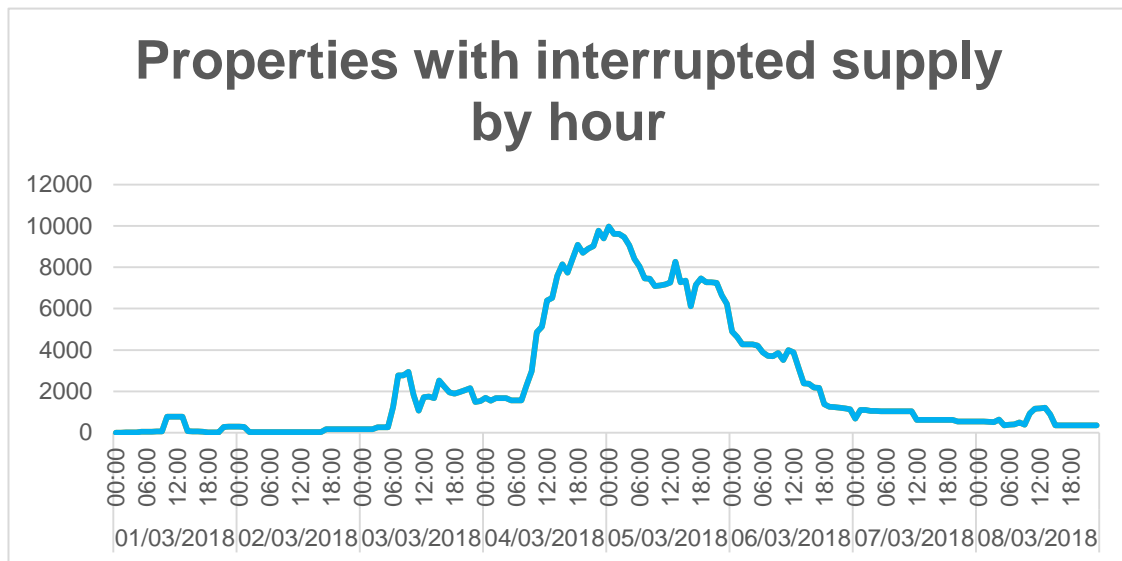
		○ Tabular Mimic Modify/Creation
4	Clean Hydraulic Modelling	New Clean Modelling Standby rota to begin on 1 st November for remote or on site support of Silver/Gold incidents
5	Transport	One 4x4 vehicle to support access to Linea / Nelson / Clydach in order to 'turn over' shift staff. Smart Hub staff [x5 across shift pattern] have been trained to drive a 4x4 in poor conditions.
6	Emergency Planning and Logistics	<ul style="list-style-type: none"> Local Authority contacts available for snow clearing/gritting of access to critical DCWW sites MACA (Military Aid to Civil Administration) arrangements confirmed with Army RJLO Internal fuel stocks, DERV & Gas Oil kept topped up from November to March Grit stocks replenished 2 towable gritters available, 1 North Wales, 1 South Wales Additional Grit available from multi-agency partners Snow plough blades available for Telehandlers in North & South 19 4x4s available, 15 South Wales, 4 North Wales 2 All Terrain 4x4s available, 1 South Wales, 1 North Wales 40 Mobile Generators available Large generator fleet renewed in North Wales – 500kVA, 300kVA, 275kVA, & 125kVA Discussions started with framework contractors for additional vehicles and drivers for the Christmas and New Year period. Lighting sets available in North and South Wales Flood Guardian, inflatable, and Water Gate, self-erecting, flood barriers available in North and South Wales. 1,200 Sandbags available Process in place for emergency use of Waste Services tanker drivers if required All alarm escalation PCs to be checked at the end of October. This will be the first full test since the migration from Scope X to Scope Prism. The Clydach PC will be held in the Emergency Planning Room until the Silver Room is completed. Satellite phones tested

Retail Severe Weather Preparation		
Item	Area	Actions
1	Resourcing	<ul style="list-style-type: none"> Increase number of staff on weekly call advisor standby Collate list of contact details for back office cover ie correspondence and Developer Services and ex call advisors In hours back office cover correspondence teams/new connections Set up Salutations for additional staff

		<ul style="list-style-type: none"> • Review and refresh Social Media ramp up
2	Training	Refresher training for any back office staff and ensure access to systems
3	Snow bus	<ul style="list-style-type: none"> • Clarify 4X4 availability • Clarify driver availability • Ensure all contact details of staff are up to date • Plan staff in geographical areas ie snow bus route
4	Dark Nights	Comms to staff reminding them to take 5 and utilise the shuttle bus if required
5	Health and Safety	<ul style="list-style-type: none"> • Jon Sam to roll out slips trips falls policy • Near miss reporting and positive interventions • Liaise with facilities to ensure car park and side roads are gravelled • Promote careful and safe driving in bad weather conditions • Lone working
6	Freeze/thaw	<ul style="list-style-type: none"> • Review freeze thaw message for home page of web site • Ensure we can put alert message on phone lines • Winter campaign to wrap up pipes • Lagging kit availability • Review process for visible leaks during freezing conditions

Were they adequate to cope with the problems?

- 3.37 The plans have been developed, tested and subject to continuous improvement over many years and are audited annually under the SEMD Guidance. The recommendations of the audit are implemented and a report showing our compliance is submitted to Welsh Government.
- 3.38 We consider our plans are well developed and appropriate for dealing with the whole range of scenarios we have to mitigate under our emergency procedures.
- 3.39 We have analysed the interruption to supply data available and correlated this with the delivery of alternative supplies. The data in The 'Spreadsheet Appendix 1' shows 'the number of properties experiencing a supply interruption at some point during the day' based on our theoretical calculations and represents our best estimate before we undertake the full Customer Minutes Lost validation process. The chart below shows the properties experiencing supply interruptions by the hour. The interruptions built up from the morning of the 4 March to a peak overnight on the 4/5 March 2018 then falling through to midnight on the 6 March 2018.



The table below shows the number of properties who had been without water for more than 24 hours on any day and the amount of water we should have supplied through bottled water or bowzers as Alternative Supplies to meet our 10l per person per day (approx. 25l per property) target. Note this doesn't comment on the correlation between the actual customers interrupted and the actual location of the provision.

Row Labels	01/03/2018	02/03/2018	03/03/2018	04/03/2018	05/03/2018	06/03/2018	07/03/2018	08/03/2018	Total Property deliveries of water required	Unique Props.
24-48 hrs	-	139	661	4,122	4,279	2,626	144	144	12,115	4565
48-72 hrs	23	23	250	1,176	1,176	949	124	-	3,721	1253
72-96 hrs	-	-	-	-	47	47	47	47	188	47
96-120 hrs	-	-	77	77	77	77	77	-	385	77
120 hrs+	-	-	341	341	341	341	341	341	2,046	341
Total Customers over 24 hrs									18,455	6,283
Total Water required (6l/day per property)	575	4,050	33,225	142,900	148,000	101,000	18,325	13,300	461,375	
Volume distributed copied from Table 1	840	656	3680	36711	105379	63806	29545	65235	305,852	
Note: Properties captured within the days will not have necessarily been off supply for the whole 24 hr period that they are first captured in. For example the 139 properties affected for between 24-48 hours on the 2/3/18 were in Nebo district and only went off supply 16:30 in the afternoon.										

The table highlights the difficulties in mobilising the alternative supplies due to the severe weather conditions. This was particularly difficult in the areas where road access was affected by deep snow or ice. The maximum duration of supply interruption was 123 hours.

Welsh Government were kept fully briefed throughout the duration of the event.

3.40 There is always opportunity for enhancements to systems and processes as part of our ongoing commitment to continuous improvement. Details of our post incident lessons learnt are given in section F

Were those emergency plans appropriately enacted? If so, when?

3.41 Our plans were enacted in line within our emergency procedures. However we took additional steps beyond the Emergency Response Manual procedures in preparation for the predicted severe weather.

- 24 February 2018 – Chief Operating Officer and Managing Director Water Services invoked a review of Winter Preparation plans to double check our readiness.
- 27 February 2018 – Process to establish Silver Centres Enacted
- 28 February 2108 – Gold Command set up
- 1 March 2018 – Crisis Management Team invoked
- 9 March 2018 – Gold Command stood down

The roles taken by each team and procedures followed are detailed in the response to the questions in Section C.

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

4.1 The strategy for training our managers is outlined in our procedure 'Incident Manager Training EP(3) 07':

It is the aim of Dŵr Cymru Welsh Water to meet obligations as a Water and Sewerage Undertaker to ensure that all staff that may be involved during an emergency are adequately trained and experienced.

To meet the requirements, Emergency Planning provides training to those that may have a role in managing operational incidents.

It is DCWWs policy that all new Incident Managers will attend compulsory Incident Manager Introductory Training prior to actively entering the formal duty standby rota. Annual refresher training must also be attended by all Standby Incident Managers (Silver, Gold and Managing Director).

In addition to Training Seminars, Incident Managers are required to take part in simulation exercises, these are organised both internally, and by external organisations. Exercises present participants opportunities to experience emergency conditions in a safe and controlled environment.

4.2 Over 220 of our Gold, Silver and Bronze Managers have been trained in how to manage incidents or the Incident Response Manual since 2011.

4.3 In addition to the normal training programme it was identified that the stress placed on staff during incidents was an issue. During 2017 all gold and silver incident managers attending a one day Resilience training course. The course was delivered by "Insight" who use occupational psychologists to improve teams' performance and individuals' resilience. Attendees developed an individual assessment of their resilience to high stress situations and produce a plan of coping mechanisms to maintaining their health

and wellbeing. The course utilised techniques such as Mindfulness and deep breathing, focused on diet and exercise during and after an event and the value of downloading with a friend or colleague. The training was extremely well received by all participants.

- 4.4 The teams who undertake the most frequent regular exercises are the silver managers in Distribution who meet as an area team once a quarter (South East, West and North) to review any changes to procedures and learnings from incidents. This is a session run by the area Distribution Managers in order to ensure that others who fulfil the role out of hours but is not their main role are equally as well informed.
- 4.5 Over 15 emergency exercises (some multi agency involving blue light services and Local Resilience Fora were undertaken during the year). Whilst not all of these would have been have been winter weather or supply failure related they would have all given participants the opportunity to manage a response in accordance with the Emergency Response Manual and prove a valuable learning experience.
- 4.6 The exercises directly relevant to the recent incident were:

Operational Contact Centre Resource Stress Test - To understand the capability to continue to deliver essential services at an acceptable level during a disruptive incident. The importance of stress testing critical business areas helps to understand the point at which failure is most likely to occur and identify opportunities to improve.

Planning and preparing in advance helped increase resilience, reduce response times and increase likelihood of success. The Operational Contact Centre has an Incident Response Plan that assists the escalation process, increasing call handling capacities by requesting assistance from Operational Contact Centre standby colleagues, other areas of Retail Billing Services and ex- Operational Contact Centre colleagues now working elsewhere in the business.

The table-top exercise was delivered on the 14th December 2017 and consisted of 5 scenarios aligned with the Operational Contact Centre incident Response Plan with each scenario worsening over time. Stress points included, outside of normal working hours, weekend, Christmas Bank Holiday, Severe Weather and finally resources involved in a Road Traffic Collision that prevented onward travel.

Three core customer communication disciplines were concentrated on during the exercise, Call Handling, Welsh Speaking and Social Media.

Responding to a Major Water Incident – A multi-agency exercise with Gwent and South Wales LRFs on 29th November to test the response to a significant loss of piped water supply is identified in the National Risk Register.

- 4.7 The exercise considered:

- Water Undertakers Obligations
 - Getting the best from resources during Response and Recovery
 - Different methods for providing Alternative Water Supplies
 - Supporting Vulnerable Persons, Communities and Businesses
 - Alternative Water Supply Equipment Deployment
- 4.8 Realistic scenarios for widespread loss of water supplies were considered and the multi-agency response to providing alternative water for vulnerable persons, vulnerable establishments and domestic customers were explored. The exercise looked at the appropriate use of bottled water and static tanks, the vehicles and equipment required and establishing alternative water supply sites, establishing bottled water hubs and distribution points and static tank hubs.
- 4.9 All of the emergency 4x4 vehicle drivers receive specialist training.
- 4.10 We send selected staff to the Water UK Emergency Planning training course and attend awareness sessions at the Welsh Government Emergency Command Centre and Regional Strategic Command Centres.
5. [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?](#)
- 5.1 Water UK has set up a number of groups where the Water Companies can get together to share experiences and best practice. This includes an Emergency Planning Managers Group which meets twice a year and will have a presentation from a Company with a significant learning event eg the Cryptosporidium outbreak in United Utilities. The next event in October 2018 is being hosted by DCWW Welsh Water.
- 5.2 The company has extensive processes for analysing previous events and implementing the lessons learnt. Below are 4 examples of these processes:
- Lessons learnt from the Winter of 2010
 - Sample of asset improvements post Winter of 2010
 - Incident Response Manual Lessons Learnt
 - Water Services Lessons learnt
- All of these lessons learnt have been implemented as set out in further detail below:
- Lessons Learnt from the Winter of 2010*
- 5.3 A full post incident review was undertaken following the Winter Freeze of 2010, combined with other improvements since has resulted in considerable improvements in the Companies resilience:
- Shallow service pipes relayed and free lagging kits issued to 12,000 customers in 2010 and 16,000 since then including 4000 during 2017/18 for protecting their private supply.
 - Trace heating installed across all of our treatment assets impacted during the freeze

- 200+ 4x4 vehicles introduced into the fleet– probably the biggest fleet of this type in Wales
- 30+ water tankers – one of biggest fleets in UK plus additional support contracts in place
- Additional mobile generators and lighting purchased
- Additional overland pipe capability developed
- 1900 District Meters upgraded to measure pressure and flow during 2014
- 3000 pressure monitoring points installed as part of our customer minutes lost improvement strategy during 2017
- Smart technologies implemented eg improved visibility of storage
- Upgraded telemetry system
- New ‘state-of-the-art’ telephony system from 2011
- Emergency Planning and logistics team increased from 5 to 20 people since 2010
- Standby rotas that can double up at short notice through use of engineering contractors and support functions
- Resilience training for all of our 80 Gold and Silver Managers to deal with periods of intensive activity and stress during 2017
- 6 x Pipe trailers provided to each distribution area that can deploy temporary overland pumps and pipes
- Specialist framework in place for 24/7 fabrication of large diameter pipe and fittings. This in 2017 has resulted in a dedicated fabricating facility being provided in Newport, South Wales.
- Strategic stock for pipes and fittings currently 3 times larger than it was in 2010 with provisions to cover every large diameter pipe we have on our raw water and distribution network.
- New bottled water contract in place
- In house capability developed for snow clearing and gritting DCWW owned access roads

The effectiveness of the post incident improvement plans were tested with a series of 8 emergency exercises under the banner ‘Exercise Whiteout’ in 2011/12

Sample of asset improvements post Winter of 2010

- 5.4 In addition to the review of processes and procedures following the Winter of 2010 a review was undertaken of the performance of the assets and a number of improvements identified and implemented. The example in Appendix 4 shows the work identified in Gwent with similar plans for all 6 of our Water Production areas.

Incident Response Manual Lessons Learnt

- 5.5 The Company’s Emergency Response Manual Section 9 provides guidance to Incident Managers of Best Practice and Lessons Learnt identified during the post incident review process following previous incidents or following Emergency exercises. The section is included in Appendix 2.

Water Services Post Incident Review – Continual Learning

- 5.6 As part of our aim to continuously improve performance we undertake detailed reviews of key incidents and events. These generally take the form of a

Director led review with action plans created which are then been tracked to completion. The reviews are held by the accountable Head of Distribution or Head of Production and presented to the Managing Director of Water Services. The tracking of actions from these incidents are reviewed every 6 months at the Managing Director of Water Services team meeting, the last review being undertaken on the 25 October 2017.

- 5.7 In Water Distribution this has resulted in 28 major incidents being reviewed since 2014 with a total of 256 actions identified. Almost half (46%) of the actions relate to long term investment requirements which are being progressed as risks in our Investment Management system.
- 5.8 For Water Production, there have been seven incidents reviewed since 2016 with a total of 34 actions identified. Post incident reviews (wash-ups) are held for all incidents that are deemed to have had (or had the potential to have) significantly impacted public health, customer service, or safety. Action plans are produced to provide clear improvement plans along with target delivery dates.

	Central	Eastern	Swansea	South West	North East	North West	SEWCUS	Total
Distribution Incidents (since 2014)	7	3	11	1	4	1	1	28
Production Incidents (since 2016)	5					2		7

- 5.9 Actions captured during a review are classified into five categories:

- Process – procedural changes required, systems not followed
- Resources – equipment availability such as trench boxes, instrumentation, fittings, supply chain
- Human factors – training, awareness
- Investment – includes system betterment, resilience, failed assets
- Data – inaccurate system information, location of valves, telemetry information

Action type	Closed/ completed	Ongoing	Total
Data	7	5	12
Human Factors	26	6	32

Investment,	57	29	86
Process	79	5	84
Resources	61	15	76
Total	230	60	290

Benefits of the Post Incident Review

5.10 The process of undertaking a post incident review and agreeing, documenting and tracking actions has resulted in a number of key areas of improvements as detailed below:

1. Effective mobilisation processes – clear channels of communication have been established with roles and responsibilities to be put in place when an incident occurs.
2. Business wide procedural change and shared learning to ensure that incidents that happen in one area are not repeated elsewhere (e.g. Chemical Deliveries, Final Treated Water Tank improvement plans).
3. Improved technical competency for handling more complex trunk main repairs has grown organically but each time we have an issue we resolve it and make sure it doesn't happen next time, e.g use of flow stop in mains repairs.
4. Improved mobilisation of resources, Capital, Supply Chain, Emergency planning (tankers) resulting a reduced impact of an event.
5. Improved resilience through holding critical equipment and spares to reduce incident timelines.
6. Documenting responses to incidents so that they become the basis for a shared knowledge and understanding, everyone learns.

Continual improvements are being made with the learning from incidents being identified and disseminated across the business.

5.11 If incidents are deemed as 'serious' (as per our Emergency Response Manual Definition) this is reviewed by the Chief Executive and presented to the Quality and Environment Committee of our Board as a formal Serious Incident Review.

Section C: Incident response

1. 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.

Established processes for responding to issues during severe weather events

- 1.1 Appendix 3 below is extracted from our 'Winter Weather Business Continuity Plan' which covers our approach to severe weather events.

Liaison with other parties

- 1.2 DCC's Emergency Planning Manager provides the link between the business and Local Resilience Fora and attends all of their meetings.
- 1.3 The Local Resilience Fora held daily conference calls and in addition, if deemed necessary they were in direct contact with the Emergency Planning Manager:
 - We were part of the Tactical Coordination Group for Dyfed Powys, South Wales and Gwent LRFs
 - We sat on the Strategic Coordination Group for Gwent LRF chaired by Superintendent [REDACTED] as the representative of the Chief Constable following the declaration of an emergency under the Civil Contingencies Act in Blaenau Gwent
 - **Ceredigion County Council** provided assistance in clearing 8 miles of highway to access Strata Florida WTW, they also cleared the access to Bontgoch WTW
 - **Pembrokeshire County Council** assisted in delivering bottled water in the Trefin area and cleared the access to Bolton Hill WTW
 - **Merthyr CBC** Cleared the access to Pontsticill WTW
 - **Caerphilly CBC** Cleared the access to Nelson Depot
 - **Blaenau Gwent CBC** Cleared 2 miles of road to access Rassau SRV and also provided access to Fitzroy SRV
 - **Vale of Glamorgan Council** Cleared the access to St Lythans SRV
 - **Torfaen CBC** cleared the access to Sluvad WTW
 - **Powys County Council** assisted in establishing an alternative access to Pen y Crug SRV, Brecon
- 1.4 It was apparent that local authorities were less able to assist on this occasion due to the widespread nature of the snow and the reduction in resources available to them. Some Local Authorities were still dealing with medical evacuations on the 6th March 2018 so prioritised their activity on this
- 1.5 We also provided updates to:
 - Gwent Police who were leading the response in Blaenau Gwent following the declaration of an emergency under the Civil Contingencies Act

- Daily updates to the Water Branch of the Welsh Government's Water, Waste, Resource Efficiency and Flood Division for inclusion in the national situation report DEFRA – we also joined the 2 conference calls they convened
- Daily updates were provided by the Water Quality teams to the DWI from Mon 5 March 2018 to Thurs 8 March 2018
- The joint Board of Glas Cymru and Dŵr Cymru
- Glas Members

1.6 A Mutual Aid request was made on the Sunday 4th March but no equipment was available due to similar issues being experienced in other water companies.

Were these processes effective during this incident?

1.7 Overall the procedures were well implemented and proved effective. There were however a number of lessons learnt that are highlighted in Section F that will be used to improve our response procedures and systems. For example:

- Snow clearing by the Councils was less responsive than in previous events due to less resources being available and prioritisation of their own incidents where life was at risk.
- On occasion updating the website with accurate information to inform customers of local issues proved difficult as the exceptional weather made it hard to understand the root cause of problems and hence advise customers of the likely time periods to restoration of supplies

1.8 Support from 2 councils proved particularly effective:

- Pembrokeshire County Council delivered bottled water in Trefin area, collecting water from our bottled water distribution hub at Portfield Gate, Haverfordwest.
- Blaenau Gwent Council declared an emergency from 3rd March to the 5th March but were still able to assist us in accessing Rassau and Fitzroy SRVs which was instrumental in maintaining supplies to Ebbw Vale.

Role of your Executive in any decision making within these processes.

- 1.9 The Chief Operating Officer was kept informed of liaisons with third parties and with the Local Resilience Fora, and sent a personal update to the joint Boards of Glas Cymru and Dŵr Cymru on a daily basis. The Director of Communications and Customer Strategy was heavily involved in coordinating the internal and external communications and ensuring 24/7 coverage from the Communications team. The General Counsel advised on data protection issues arising from proposed data sharing in relation to customers eligible for priority services.
- 1.10 The Crisis Management team met three times a day at 9.30, 13.00 and 17.00 from the first day of the declared Major Incident on 1 Marc 2018 to the end of the full incident on 9 March 2018. Their Role and duties:
- Chief Operating Officer – overall Strategy and coordination of the resources to manage the event
 - Managing Director of Water Services – managing the Operational resources and representation of the Gold Command Team
 - Managing Director of Waste Water Services – coordinated waste water resources supporting the Event
 - Managing Director of Household Customer Services Retail – customer contact and customer compensation, Social Media and silver call
 - Director of Human Resources – mobilised the support services resources of the business
 - Director of Communications and Customer Strategy – managed all media in conjunction with the Crisis Management Team and Gold Team
 - Director of Operational Services – Wholesale Service Centre, Business Customers, and Control
 - Head of Emergency Planning and Logistics –LRF liaison and Logistics
 - Head of Business Information Services – technology support
 - Director of Engineering – engineering support and supply chain resourcing
- 1.11 The Chief Executive joined the Crisis Management Team for discussions on key issues and visited staff in a number of locations to support the teams on the ground.
- 1.12 The remainder of the Executive Team supported in relation to specific issues arising during the incident, as outlined above.
- 1.13 The full Gold command structure was set up and led by the Managing Director of Water Services. This team managed the overall coordination of the Silver Centres and prioritising deployment of resources across the regions. The Managing Director of Water Services provided the link into the Crisis Management Team and instigated the additional preparations on the 24 February 2018. Throughout the incident Gold Command calls with relevant Silver Centres were undertaken at 08:30, 12:00, 16:30 and 20:00.

2. 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.

Deployment of Resources

- 2.1 Our response was implemented in line with the emergency procedures and was structured as follows:
- Crisis Management Team – provide high level liaison and strategic coordination of Company Wide Resources
 - Gold – Provide overall Management of all aspects of the incident
 - Silver – Identify and correcting the causes of the incident, provide information to customers and restoration of services
 - Bronze – provide supporting managers to the Silver Team
- 2.2 The Crisis Management Team oversaw the requirement to support the Gold Incident response by ensuring the full support of the business resources and supply chain.
- 2.3 Due to the scale of customer impact and the concern over the health, safety and wellbeing of our workforce we took the decision to support the regional Silver Centres with Leadership Team members. Our Head of Water Assets supported the Silver Centre in North West Wales, our Head of Water Engineering supported our Silver Centre in North East Wales before moving to support our Silver Centre in South East Wales, our Head of Water production supported our Silver Centre in Swansea, our Head of Wastewater Treatment supported our Silver Centre in West Wales. This was instrumental in ensuring the 24/7 centres were given direct leadership support in decision making where instructed from Gold Command.
- 2.4 Over the course of the event 27 out of our 61 Water Treatment Works were manned for 24 hours per day at some point. None of these works would normally be continuously manned.
- 2.5 Locations of Silver centres – each was manned 24/7 from the 27 February to 9 March 2018

Command Centre	Location
Crisis Management Team	Linea Cardiff
Gold Command	Linea Cardiff
Dedicated Comms Team	Linea Cardiff
NW Production Silver	Dinas North West Wales
NW Distribution Silver	Dinas North West Wales
NE Production Silver	Kinmel Park North East Wales
NE Distribution Silver	Kinmel Park North East Wales
Eastern Production Silver	Broomy Hill Hereford
Easter Distribution Silver	Broomy Hill Hereford
Central Production Silver	Nelson Treharris
SEWCUS Silver	Nelson, Treharris
Central Distribution Silver	Nelson Treharris
SW Production Silver	Capel Dewi WTW, Carmarthenshire

SW Distribution Silver	Glien House, Carmarthenshire
Swansea Distribution Silver	Clydach, Swansea
Leakage and R&M	Nelson Treharris
Retail Customers	Linea Cardiff

- 2.6 During the 2, 3 and 4 of March the Silver Centre for our South East Wales area could not be manned due to significant snow fall and we relocated this to our Cydach Depot in Swansea to run 2 separate Silver Centres from the depot. The difficulties in moving around the business should not be underestimated and include extensive use of 4x4 vehicles and local hotel accommodation to ensure staff were available
- 2.7 Initially existing resources were utilised and shift rotas planned out for three days in advance to ensure staff were given sufficient rest periods. As the scale of the issues developed resourcing issues were identified. Initially this was in the Customer Contact Centre where the escalation procedures were utilised as set out below.
- 2.8 Tankering capability was increased following the Freeze of 2010 and has been further increased to meet Customer Minutes Lost targets. The 17 in-house HGV tanker drivers were supplemented by resources from the wider business, completing 45 shifts and existing contract resource available through framework agreements.
- 2.9 As these became fully utilised a number additional companies which we have on standby were used to deploy additional HGV resources. 10 Companies provided drivers to complete 363 12 hour shifts. Prioritisation of tanker deployment across the Silver Centres was undertaken by the Gold team.
- 2.10 Leakage repair resources were placed on standby from 27 Feb 2018 ready for the impact of the thaw on bursts and all non-essential work was cancelled. The large Zonal study pipe refurbishment programme currently being implemented was cancelled and additional repair gangs from these Contractors made available.
- 2.11 The final phase was delivery of bottled water where resources from all parts of the business were deployed into the localised areas affected. Additional support was received from Local Authorities in relation to deployment of water in some areas.

Scale and Source

- 2.12 The normal resources deployed in Water Operations, Emergency Logistics and the Operational Contact Centre were supported with resources from across the business and supply chain. Over 700 additional people supported the response:

- Operational contact centre – the table below shows the total number of advisors mobilised from the additional Operational Contact Centre, other advisors available from the Billing Contact Centre and colleagues from the rest of the business.

Activity	Thurs 1 Mar	Fri 2 Mar	Sat 3 Mar	Sun 4 Mar	Mon 5 Mar	Tues 6 Mar	Wed 7 Mar	Thurs 8 Mar	Fri 9 Mar
Total number of OCC advisors	35	32	28	25	39	36	40	39	32
Total number of other Retail advisors	54	18	21	16	111	105	74	77	77
Total number of company wide colleagues	0	0	0	8	44	77	56	38	34
Total number of call takers	89	50	49	49	194	218	170	154	143

The Billing contact lines were closed from Friday 2 March to Monday 5 March 2018 to make additional resources available

- Tanker drivers – supported by HGV drivers from the Wastewater Sludge logistics team
- Tanker Drivers – Drivers to complete 363 12 hour shifts were hired from the supply chain
- Capital partners – an additional 27 repair gangs were made available from the pipeline Contractors. The zonal studies work cleaning and replacing water mains was stopped on Tuesday 27 Feb 2018 and has still not restarted
- Bottled water delivery – over 70 volunteers from around the business were mobilised to deliver bottled water in various locations
- 120 DCWW people from our in-house engineering team were involved in the response – covering engineering solutions, setting up a repair and maintenance function with our pressurised pipe suppliers, manning tanker points and delivering bottled water
- 10 employees from the Capital Engineering business were deployed on everything from gold and silver rotas, manning call taking and delivering bottled water
- 23 people from the Alliance Partners supported with bottled water delivery
- 10 people from the Alliance Partners supported with engineering & process input across our assets e.g. Tynywaun & Pontsticill
- 180 personnel from our supply chain were involved in everything from diving operations, laying overland pipes, defrosting assets, snow clearance and undertaking leakage find and repair work.
- 3 Divers and their support teams were utilised in the unblocking of intakes in the reservoirs supplying the Cwm Dulyn and Dolbenmaen Water Treatment Works
- Our existing supplier of water Brecon Careg water was supplemented by Princes Gate water from Pembrokeshire

2.13 The HR director took overall responsibility for coordinating the broader support resources of the business to support critical areas as the different skill sets were required in liaison with the Crisis Management Team.



Capital Team laying temporary raw water pipe to bypass blocked inlet



Diver unblocking raw water inlet pipe

3. Provide details of how your company assessed the operational implications and prioritised its responses during the incident period.
- 3.1 The event and operational implications developed in phases as the event moved from its first warning on 24 February 2018 through to full restoration of supplies on 9 March 2018:

24 February – 1 March 2018 – Preparation and Monitoring phase

- Possible severe weather predicted so Winter plans checked, additional repair gangs made available, resource implications assessed.
- Wrap up Wales messaging brought to front page of website directing customers to specific advice on frozen pipes
- Trigger points established for Silver Centres based upon number of frozen supply pipe calls to the call centre
- Vulnerability assessment of frozen supplied established between Call Centre and Silver Centres
- Ensure that strategic storage was kept as full as possible leading up to the potential leakage/ demand issues following the thaw
- Focus on maintaining treatment works outputs to maintain storage and avoid frozen pipes

1 March 2018 – Full Command Structure implemented

- Red warning issued by the Met Office in the morning and first meetings of the Crisis Management Team, Gold and Silver teams.
- Detailed preparation for travel problems, and planning for high demands and bursts in the thaw period.
- Problems with frozen supply pipes causing significantly higher Customer Calls.
- Preparation for alternative supplies through tankering, bowser and bottled water deployment.
- Staff rotas prepared to keep teams fresh on a rolling 3 day basis
- Enhanced communication, including Traditional and social media, by Executive to customers providing advice on frozen pipes and conserving water

2 March 2018 – 4 March 2018 – Worst of Snow

- Movement of staff a major issue managed by doubling the fleet of 4x4's for moving staff : most arterial routes in South East Wales, Mid Wales and Herefordshire now closed including the M4.
- Council support requested gritting and snow plough support. Internal resources, JCBs etc utilised to clear trees and snow blocking access.
- Significantly increased staffing levels for the Contact Centre ready for the thaw
- Set up enhanced leakage monitoring
- Making preparations to commission 2 standby treatment works to meet demands

3 March 2018- 9 March 2018 - Thaw

- Assessment and protection of supplies to the main population centres including Major Hospitals
- Thaw causing high leakage and demands.
- Messaging changed to reporting of leaks, checking of customer side pipework
- Mobilised tankering, bottled water and bowsers where possible as road closures still widespread and hampered by large snow drifts
- Mobilised leak find and repair effort to bring down demands with a prioritised focus.

3.2 The prioritisation of the response was focussed on:

- 1 Ensuring the Health and Safety of our employees due to the exceptionally severe weather
- 2 Enhanced monitoring of network and deployment of bottled water to vulnerable customers
- 3 Initial focus on stabilising the strategic network to main population centres and key institutions (hospitals, schools etc.)
- 4 Resources focused on regaining 'storage' in the rural areas that were known to have lost supplies – and continuing to protect strategic storage. Keeping the network pressurised was essential to finding leaks
- 5 The tanker fleet was mobilised to help 'storage hot spot' recovery to allow blitzing of areas with leak detection and repair whilst systems were temporarily pressurised.
- 6 Focus on high demand areas where storage was reducing by identifying leaks and high demand areas prioritising keeping customers in supply rather than the overall Company leakage position.
- 7 Planned leak detection activity were co-ordinated through Gold command
- 8 Balanced the needs of Business customers with the broader public health considerations of maintaining supplies

3.3 The Gold Incident team and Crisis Management Team the overview of the response prioritising our focus and resourcing.

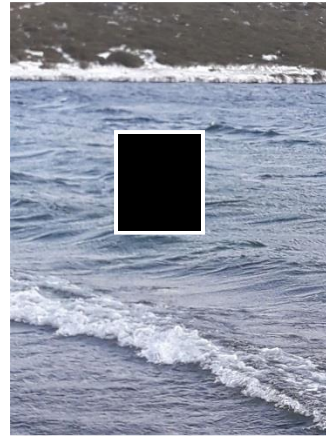
4. What challenges/barriers did your company face in resolving problems that customers experienced? How did you overcome them?

4.1 From the 26 February through to 11 March 2018 we experienced the full impact of the extremely cold weather, snow and high winds. The extreme weather impacted on our Operations across all of our area in Wales and Herefordshire:

- The cold weather started on the 26 February 2018 with freezing temperatures in most of our operating area that fell below -5deg overnight and that lasted through until 5 March 2018. This led to a large volume of frozen supply pipes and bursts that progressively got worse until the heavy snow hit most of Wales and Hereford on the 1 March 2018
- From the 1 March 2018 however the heavy snowfall under a Meteorological Office Red Warning took the incident into its most difficult phase
- Extremely challenging travelling conditions with the M4 and other major routes closed by police and some access roads to our sites still closed a week later
- Frozen dosing lines at Water Treatment Works despite trace heating being installed following 2010 event and the use of space heaters. Some dosing lines were not heated so that blockages could be located but still froze despite the use of the space heaters.
- Power interruptions to Treatment Works and Pumping stations. [REDACTED]
[REDACTED]
[REDACTED].
- Treatment works continuously manned for over 24 hours to keep them running
- Blocked raw water pipes on the inlet to works at Cwm Dylan and Dolbenmaen – divers were deployed to unblock debris washed into the reservoirs by snow and wind to protect supplies to 17,000 customers.



Ice at Treatment Works in Ceridigion



Divers deployed to unblock raw water pipes Cwm Dulyn

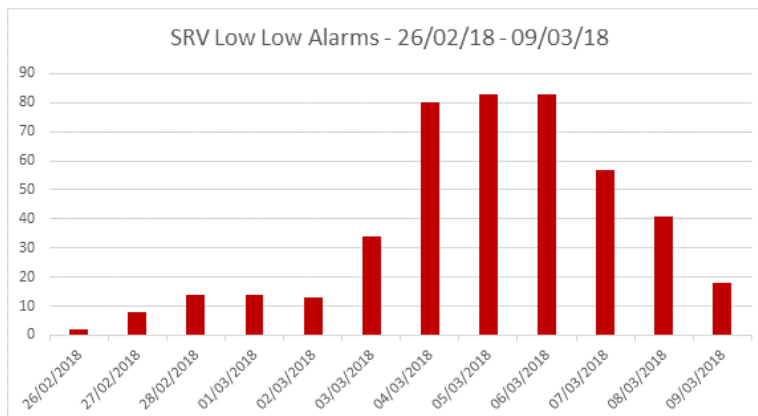


Snow drifts left road unpassable Vale of Glamorgan

4.2 The impact on supplies to customers developed in five phases:

- Initially, on 26-28 February, there were large numbers of customers experiencing frozen supply pipes resulting in a significant increase in calls to the Operational Contact Centre in advance of any operational issues manifesting.
- As the snow and winds arrived, operational difficulties with for example power failure to pumping stations caused pockets of interruptions to supply
- High demands caused by bursts and customer open tap use to avoid freezing resulted in the inflow to Service Reservoirs being beaten by demand causing the reservoir to empty and properties losing supplies starting at the high points and spreading as the system drained. In many areas this would have been intermittent as the system recovered overnight then drained again as the demand increased in the morning
- As the demand was higher than local Treatment Works outputs a limited number of areas went without supplies for an extended period
- Finally high burst volumes (over 3 times the normal rate) required shut offs to repair the main interrupting supplies for short durations. This is normal daily activity but on a significantly wider scale

4.3 Over 80 of our 354 service reservoirs went into 'Low Low' state over the 3 days 4/5/6 March 2018 indicating that they were causing concern about the amount of water available to continue supplying water to customers:



- 4.4 Despite nearly all of our treatment works being at full output for much of the event the total potable water storage was gradually depleted as the poor conditions continued:

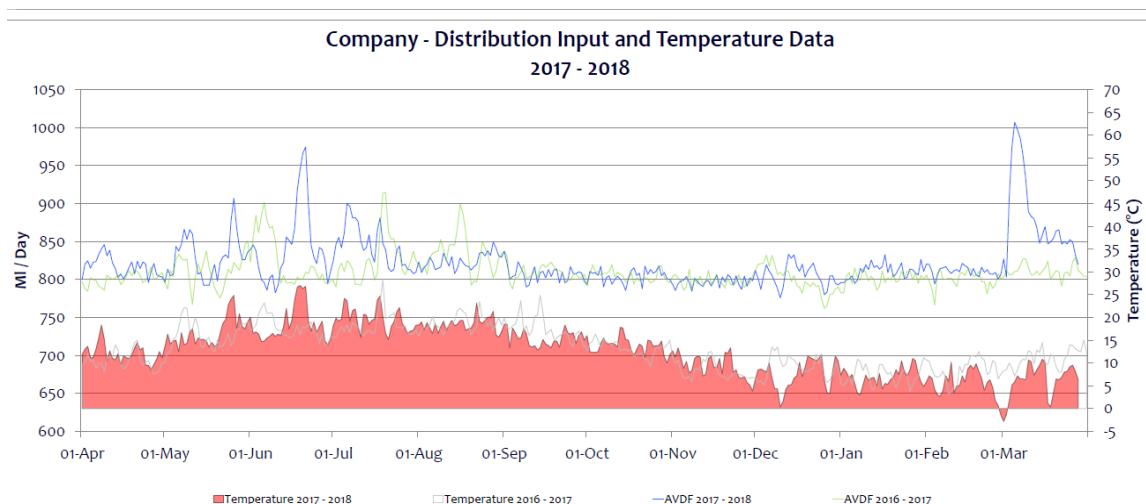
Region	Deviation from 21 st Feb to 7 th March
Wales	-25.84%

Region	Deviation from 21 st Feb to 7 th March
SE	-21.80%
SW	-34.67%
N	-20.52%

Area	Deviation from 21 st Feb to 7 th March
Central	-30.31%
Gower [Swansea]	-18.22%
Gwent	-5.5%
Hereford	-8.93%
West	-46.69%
North West	-23.00%
North East	-19.22%

Change in total potable storage

- 4.5 The majority of our treatment work proved to be extremely resilient and we managed, with the efforts of operational staff, to maximise our works output for an extended period.



4.6 Alternative supplies

- We operate a fleet of 31 tankers made up of 14 larger fully articulated tankers, 9 smaller rigid tankers and supplemented by 8 demountable tanks for use with hookloader lorries. (we own 5 hookloaders).
- The DCWW Emergency logistics team has its own resources consisting of a team of 17 experienced HGV water tanker drivers. These were supplemented by other tanker drivers from the Sewerage teams and other Contracted in resources.
- The contract for supply of Tractor units to supplement our internal resource is provided by [REDACTED]. Due to the scale of the event a number of other Hauliers were utilised during the incident.
- Requests for Mutual aid from other adjacent Water Companies could not be responded to due to the significant problems they were experiencing on their own systems. Hired tankers were difficult to procure as the cleaning and disinfection takes at least 48 hours and the availability of Contract HGV drivers had already exhausted the local market.

Tankers Deployed											
Date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th
March											
N Wales	5	11	10	31	9	31	15	10	6	5	5

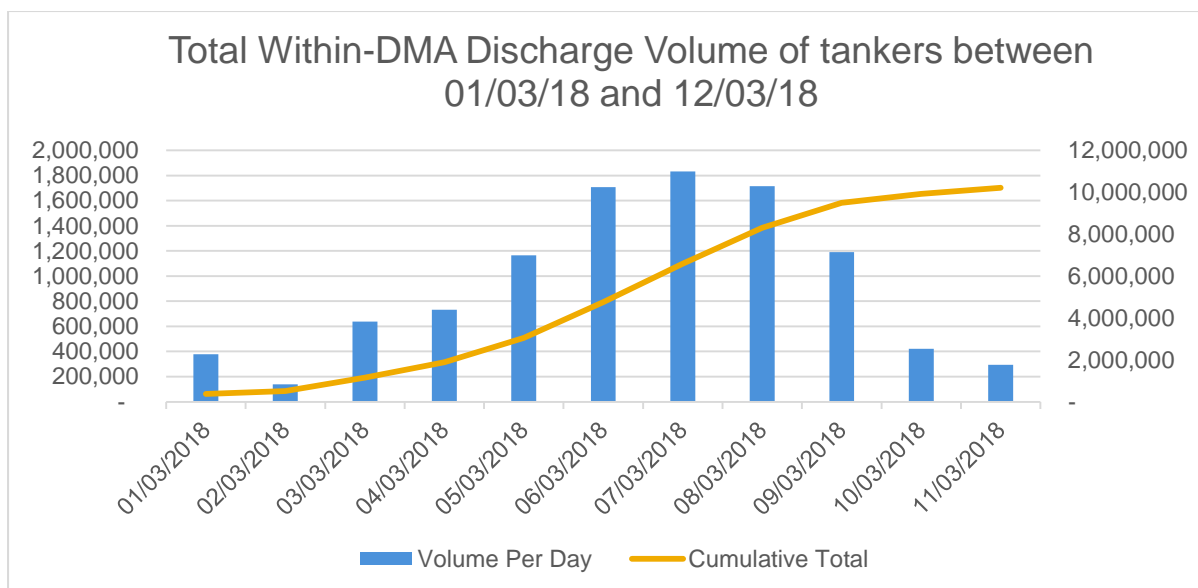
S Wales	0	0	15		17		10	6	15	4	4
Total	5	11	25	31	26	31	25	16	21	9	9

Note on the 4 and 6 March Tankers were moving between North and South Wales

- 4.7 Customers in the areas experiencing the longest interruption to supplies were either delivered bottled water or had access to bottled water distribution points. In total over 300k litres of water were delivered or collected from distribution points between 4 and 8 March 2018.



- 4.8 A detailed analysis of tanker movements and volumes of water transported which shows that over 10 Mld (enough water to supply 40000 properties for a day at 10l per person). The table below shows the total volume of water moved to an area suffering supply difficulties from surrounding fill points. It will have either supplemented local storage to maintain supplies or fed directly into water mains in areas with no Supplies.



	Nos Pallets	Bottle size	Nos Bottles	Nos Litres
N Wales Stock	20	2	11040	22080
S Wales Stock	30	2	16560	33120
Purchased	92	0.5	158976	79488
	100	1.5	67200	100800
	110	2	60720	121440
Total	352		314496	356928

4.9 In addition to Tankers and bottled water 3 Pairs of 1135 litre Static Tanks were deployed on the streets in Blaenau Ffestiniog and towable bowzers were deployed to, Letterston, Croesgoch, Caerfarchell, Solva.

4.10 A total of nearly 25 bottle water collection points were set up at different stages across the areas worst affected and nearly 360k bottles of water were purchased for deployment

4.11 The strategy adopted the Gold Team was:

- Monitor frozen supply pipes and protect vulnerable customers
- Initial focus on stabilising the network to main population centres and critical institutions (hospitals etc.)
- Resources focused on regaining 'storage' – and stemming major losses. Keeping the network pressurised was essential to finding leaks

- The tanker fleet was mobilised to help 'storage hot spot' recovery.
- Focus on high demand areas where storage was reducing by identifying leaks and high demand areas

4.12 The biggest customer impact, where supplies were lost continuously for extended periods, were seen in four locations below. The table shows the root causes and the mitigating actions taken either at the time, where possible, or subsequently put into effect:

- Blaenau Ffestiniog, Gwyedd

'Root Cause'	Comments	Mitigation
<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <p>Combined with the level of bursts on the network and customer properties.</p>	.We have been operating the works with lowered inflow through the raw water mains. Until the 'freeze-thaw' this was manageable.	Find and fix leakage on raw water main or replace. (temporary overland main laid during incident).

- Mid Ceridigion

'Root Cause'	Comments	Mitigation
<div style="background-color: black; width: 100px; height: 100px;"></div>	<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div>	Review incoming mains power supply with WPD. Review Uninterrupted Power Supply (USP) protection

- St Davids, Pembrokeshire

'Root Cause'	Comments	Mitigation
<div style="background-color: black; width: 100px; height: 100px;"></div>	<p>A lack of network monitoring equipment did not result in notification of problems on this supply area.</p> <p>Unlike other operating areas we do not have a network performance resource in the Distribution team, who in emergencies can analyse and highlight emerging issues with supply.</p>	<p>Increase the level of remote network monitors in the area. Conclude the current (pre-incident) recruitment process for a network Performance Manager.</p>

- Llanddona, Anglesea

'Root Cause'	Comments	Mitigation
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Leakage and Recovery

- 4.13 Our operational Leakage strategy along with our Water Engineering & Distribution winter plan, focusses on increasing detection and repair efforts at critical periods of throughout year and following rises in reported Leakage levels as a result of severe weather. Following sub-zero temperatures observed during November 2017, we enacted the Leakage and Repair and Maintenance elements of the plan to recover an increase in reported Leakage levels.
- 4.14 This resulted in extended working patterns and additional resources being deployed on Leakage activities and reducing the number of Leakage tasks within the Repair and Maintenance work baskets from early December and continued throughout the Christmas period and into January and February.
- 4.15 Leakage levels are constantly monitored through daily operational reporting and resources are flexed geographically to deal with areas of high leakage levels. Careful consideration is paid to weather forecasts and temperatures, as these factors can influence observed Leakage increases and productivity of detection and repair teams.
- 4.16 The most difficult scenario we face whilst managing Leakage is several days of sub-zero temperatures followed by a rapid thaw. This alongside water temperature of below 5C leads to a mass outbreak of burst mains, services and private side leakage. During the extreme weather during Storm Emma, we also observed the added complication of mass snow coverage, making accessibility to areas of high leakage levels impossible.
- 4.17 As the event unfolded, we revised our strategy to focus on the areas where high demand was causing reservoirs to deplete and to also ensure that reservoir storage was maintained around the greater customer populations and critical institutions such as hospitals. Once this was secure we moved our focus onto isolated areas with loss of supplies and then finally focussed high leakage areas bring leakage down to pre incident levels.
- 4.18 Additional Leakage Detection and Repair and Maintenance resources were sourced and mobilised following the weekend of 3 and 4 March 2018 using our Capital partners for Repair activities and Water Distribution teams for leakage detection. This extended our Repair and Maintenance resources from 62 teams to 107 teams which we maintained through to the 9th March, at which point we reverted to the use of our dedicated Repair and Maintenance contractors.
- 4.19 Leakage Detection focussed on leaks on the Water Network as well as customer-side leakage, which was as a direct response to learning from previous incidents. Our private leakage repair policy was relaxed and we supported all customers to repair leaks on the private side wherever we could, especially in areas where the demand for water and Leakage levels was contributing to depleting reservoir levels.
- 4.20 Detected leak numbers rose significantly following the thaw effect, with as many as 240 leaks per day reported or detected, which is almost 3 times as many as normal

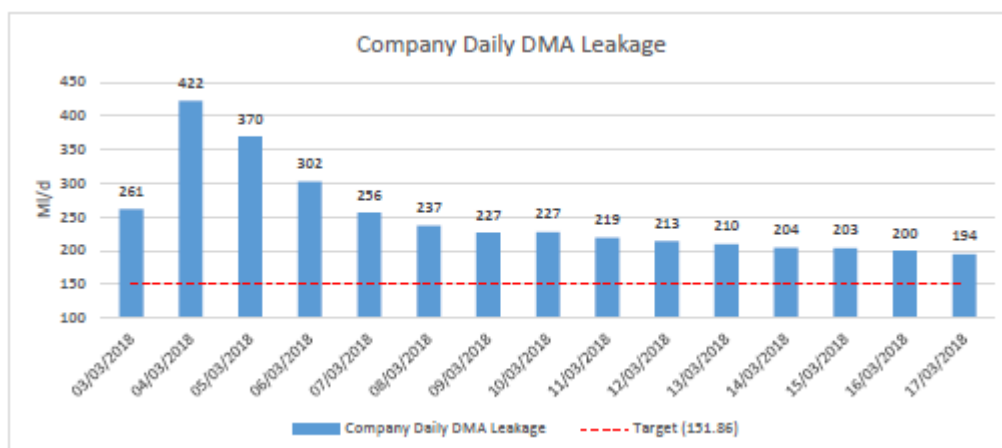
operation. Repair and Maintenance teams focussed solely on repairing leaks and by working in conjunction with local highway authorities, gained immediate access to the highways to carry out repairs. Burst water mains were completed, in most cases, in under 24 hours from being reported or detected and by the 9 March, Repair teams were working “hand to mouth” with Detection teams with no backlog of Leakage tasks.

- 4.21 Daily Leakage estimates, based on information from over 1700 flow loggers were analysed and produced to track the impact of the weather and increases in Leakage levels. Our analysis highlighted that Leakage levels peaked at 422 MLD, however, by the 14th March, levels had returned to those of pre Freeze-Thaw, due to the effort and focus of maintaining supplies and repairing leaks.

<u>Leakage Tasks Raised (All status (TSOS,TSRL & TSCO))</u>								
	Central	Eastern	North East	North West	Swansea	West	TBC	Grand Total
Created on								
04/03/2018	36	7	8	10	16	13	1	91
05/03/2018	73	21	9	21	39	24	2	189
06/03/2018	80	30	9	49	28	35		231
07/03/2018	70	23	17	33	18	43	3	207
08/03/2018	78	17	11	30	36	38	1	211
09/03/2018	61	19	17	23	27	25	2	174
10/03/2018	29	7	2	2	6	10		56
11/03/2018	14	1	1	4	7	3		30
12/03/2018	50	23	22	29	25	21	2	172
13/03/2018	68	34	15	24	45	30	5	221
14/03/2018	57	25	24	31	31	25	3	196
15/03/2018	70	38	23	30	45	21	13	240
16/03/2018	49	23	15	18	44	23	4	176
17/03/2018	18	8		4	5	13	1	49
18/03/2018	4	1		1	3	1		10
19/03/2018	50	20	17	18	34	29	2	170
20/03/2018	68	32	22	12	39	35	5	213
21/03/2018	73	27	12	19	43	57	1	232
Grand Total	948	356	224	358	491	446	45	2868

(TSOS Job Outstanding, TSRL Job Released to gangs, TSCO Job Completed)

<u>Completed Tasks "Time Confirmations"</u>																			
	04-Mar	05-Mar	06-Mar	07-Mar	08-Mar	09-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar	16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	Grand Total
Ops Area																			
Central	20	56	74	71	57	56	9	12	36	38	46	40	44	4	3	47	48	56	717
Eastern	14	23	35	27	26	14	12	1	19	16	25	22	12	2		17	24	12	301
North East	6	10	23	16	8	15	3	1	12	11	28	14	19	2	3	21	10	16	218
North West	9	11	35	17	17	15	3	2	9	16	25	16	11		6	13	17	10	233
Swansea	3	20	29	20	13	19	4	5	13	11	22	36	20	3	1	12	30	20	281
West	10	22	21	24	33	25	11		33	16	26	46	19	2	3	21	23	17	352
TBC		1	3	3	3		2			1	4	5	5	1	1	2	1	1	33
Grand Total	62	143	220	178	157	144	44	21	122	109	176	179	130	14	17	133	153	132	2135



Customer Acceptability Impact to Customers during Storm Emma

4.22 During the storm we received 923 contacts from customers in relation to water quality issues around the region. These were predominantly discoloured water caused by high flow and demand for water which subsequently scoured mains; and milky water caused by air in the network after systems were depleted and then recharged. A breakdown of contacts per day is included in the table below.

4.23 The most significant days were the 5th and 6th of March when the systems were recharging and we were undertaking tankering activities to replenish networks.

	Total	01/03/2018	02/03/2018	03/03/2018	04/03/2018	05/03/2018	06/03/2018	07/03/2018	08/03/2018	09/03/2018
Discoloured (Inc. Particles & Blue/ Green Water)	721	53	19	65	108	190	99	76	81	30
Illness	17	1	0	0	2	2	2	1	5	4
Milky / White Water	142	12	2	4	4	17	37	15	20	31
Other	1	0	0	0	0	0	1	0	0	0
Taste & Odour	42	2	1	2	0	8	10	7	8	4
Total	923	68	22	71	114	217	149	99	114	69

4.24 For each of the three areas we reported on during the event, North received 142 contacts, Central and Eastern areas combined 613 and West Wales 168.

4.25 The level of contacts over the 10 day period was over 5 times higher than we would normally expect to see on our networks during the winter months.

	Total	South East	South West	North
Discoloured (Inc. Particles & Blue/ Green Water)	721	520	99	102
Illness	17	10	3	4
Milky / White Water	142	61	53	28
Other	1	0	0	1
Taste & Odour	42	22	13	7
Total	923	613	168	142

How did you overcome them?

4.26 The majority of problems were caused by exceptionally high demands in local areas exceeding the outputs of the Water Treatment Works. These demands were caused by a combination of customers leaving taps running to avoid freezing, customer side bursts and mains bursts.

4.27 These problems were overcome by:

Reducing demands:

- Isolating leaking customer services
- Fixing Customer side leaks
- Finding and fixing mains leakage
- Discouraging open tap use with publicity campaigns
- Rezoning to reduce demands on struggling areas
- Tankering to transfer water between areas

Maximising Water put into Supply:

- Keeping works at maximum outputs by 24/7 manning
- Bringing two additional treatment works into operation - recommissioning of Cantref (brought back online Sunday 4 March which had been off since raw water quality event caused by landslip in January) and Rhiwgoch (brought back online Tuesday 6 March which had been off for winter as per usual arrangements).
- Resolving operational issues at Treatment Works for example divers unblocking raw water inlet pipework and laying temporary overland mains

5. 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?

Our Overall Approach

- 5.1 We are committed to providing all of our customers with the best possible service and tariff to suit their individual needs. We understand that not everyone's situations or needs are the same.
- 5.2 To be trusted to do the right thing is one of our core values and there are a number of ways that we responsibly assist customers with additional needs.
- 5.3 Many of our customers have additional needs due to particular circumstances they may find themselves in, for example as a result of their age, physical or mental ill-health, disability, or financial status or an event that impacts their lives such as bereavement. We recognise that our customers can find themselves in a vulnerable situation at any point in their lives - either on a permanent or temporary basis, as a result of their particular circumstances at the time. Aspects of vulnerability are often linked – for example, someone with a disability can find it harder to find employment and may therefore be subject to financial vulnerability. Our aim is that customers in vulnerable circumstances receive a service that meets their requirements in a way that fully reflects their particular needs. In developing our policies for customers in vulnerable customers we have considered Ofwat's definition of 'vulnerability' and developed our own definition:

"Customers may be vulnerable where, because of their particular circumstances, they are likely to require services to be provided in a different way or at a reduced price"

Priority Services Scheme

- 5.4 We maintain a priority services register to ensure that the way we communicate with our customers' meets their additional needs, and that they are given the priority and assistance they need in the event of an operational incident. For example, in the event of an interrupted supply of water, we deliver bottled water to customers we know require water due to a medical condition, such as at-home dialysis.
- 5.5 At the end of February 2018 we had just over 26,000 customers on our priority services register. A summary of the scheme is provided in Appendix 1.

Working with others

- 5.6 We engage directly with our customers wherever possible to better understand their needs and also work with third party organisations to gain a better understanding of the

needs of all of our customers and to publicise our additional and priority services as widely as possible. The way we work with other organisations to share data is compliant with the law and is appropriate to customers' interests.

- 5.7 We ensure that our contractors share our commitment to providing an excellent service to all customers, including those in vulnerable circumstances, whilst complying with the law on data protection and safeguarding.

Responding to vulnerable customers during the recent severe weather

- 5.8 In line with our Priority Services Scheme, we contacted those customers registered with us where we were aware they were impacted by a loss of their water supply, to understand their current circumstances and whether they required bottled water. We delivered water on request and proactively to 1320 customers at their doorsteps during the event.

- 5.9 We are mindful that many vulnerable customers may not have registered with us and/or their vulnerability maybe transient – e.g. having a new born baby, young children, recently discharged from hospital. To try and identify these customers our Call Advisors asked about vulnerability whilst talking to customers and offered to arrange for bottled water to be delivered where required.

- 5.10 Persons that fall into this category included:

- Pregnant Women
- Babies and Small Children
- Elderly
- Mobility Impaired
- Sensory Impaired
- Mental/Cognitive Function Impaired
- Critically Ill (at home) e.g. Home Dialysis Patients

- 5.11 These calls were prioritised during the incident as we had to assess the safety of undertaking bottled water deliveries and potentially putting our staff at risk. All drivers undertaking deliveries had 4x4 vehicles for the 1st, 2nd and 3rd March 2018. Deliveries were possible without 4x4 vehicles on the 4th in North and West Wales but SE Wales still posed a challenge in the more elevated areas, such as the Heads of the Valley, which was still difficult to access in parts on the 5th and 6th of March.

- 5.12 Of the 1020 requests we received for assistance all were contacted by the local silver centres and 776 received deliveries of bottled water to their doorsteps where access was possible

- 5.13 In addition to individual customers, we also arranged alternative water supplies to 9 nursing homes. Schools and colleges remained closed through the worst of this period and our teams ensured that all the major hospitals' water supplies were monitored throughout to ensure continuity of supply.
- 5.14 Bottle water collection points were also set up, 25 in total across the areas worst affected.
- 5.15 A key part of the vulnerable customer strategy is liaison with third party organisations that hold information on vulnerable customers as part of their statutory duties, such as local authorities, hospitals etc.
- 5.16 During the incident our Emergency Planning team had regular conference calls with Local Resilience Forums allowing them to highlight concerns and flag specific issues with meeting the needs of vulnerable groups.
- 5.17 The most active Local Resilience Fora were Dyfed Powys and Pembrokeshire County Councils who assisted in the delivery of bottled water to communities and vulnerable customers. In Blaenau Gwent, where an emergency was declared, we provided a list of priority services customers to the emergency response team.

Section D: Communication and support

1. 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 (eg hospitals, schools)?;
 - c. Water retail businesses?; and
 - d. Wider stakeholders? (eg local authorities, other agencies, Government, Ofwat)

Residential Customers

- 1.1 There are two main types of contact with Residential Customers during the incident:

Proactive - using Social Media, texting, website, traditional media etc to proactively publicise/promote advice to customers and to keep them informed of the latest situation throughout the event. This activity included locally targeted messaging using all available channels and paid for promotion where appropriate (eg Social Media)

Reactive – responding to customer contact via telephone, email, live chat, social media etc

The overall impact and effectiveness has initially been assessed by Social Media Sentiment Analysis and Customer Research on trust. Whilst negative Social Media Sentiment increased to 15.5% of Social Media messages, 36% remained positive and 40% neutral. Trust, accordingly increased during this period.

Business customers

- 1.2 Only the largest (>50Mld per annum) of our customers are in the Retail Market although we use the same communication routes for all of their associated sites in our supply area. The Wholesale Service Centre maintained communication with the relevant Retailers for eligible business retail customers throughout.
- 1.3 There were issues with two of the eligible business customers in affected areas. One arranged their own tankering from a designated point on an adjacent system and the other we deployed a tanker once our supplies in key areas had been secured.
- 1.4 The Business Customer Team identified non eligible business customers in the affected areas and tried to contact 30 with 27 calls being answered to offer a contact point, provide support and request that they check their premises for leaks/bursts.

- 1.5 The Business Customer Team called 35 customers during the event and 148 customers after the event to offer further support and made contact with 86.
- 1.6 There were around 100 business and domestic customers whose supply was turned off: the property was either vacant or the leak so large that we deemed it unsafe to remain on supply and therefore emergency disconnected the supply. All these properties were revisited within the first 48 hrs to offer support and advice and check a repair had been completed before turning on the supply

Water retail businesses

The wholesale service desk ensured that contestable customers and their retailers were kept informed of the issues in the affected areas throughout the incident.

Customers in vulnerable circumstances

- 1.7 In line with our Priority Services Scheme, we contacted those customers registered with us where we were aware they were impacted by a loss of their water supply, to understand their current circumstances and whether they required bottled water. We delivered water [door to door?] on request and proactively to 1320 customers during the event.
- 1.8 We are mindful that many vulnerable customers may not have registered with us and/or their vulnerability maybe transient – e.g. having a new born baby, young children, recently discharged from hospital. To try and identify these customers our Call Advisors asked about vulnerability whilst talking to customers and offered to arrange for bottled water to be delivered where required.
- 1.9 These calls were prioritised during the incident as we had to assess the safety of undertaking bottled water deliveries and potentially putting our staff at risk. All drivers undertaking deliveries had 4x4 vehicles for the 1st, 2nd and 3rd. Deliveries were possible without 4x4 vehicles on the 4th in North and West Wales but SE Wales still posed a challenge in the more elevated areas, such as the Heads of the Valley, which was still difficult to access in parts on the 5th and 6th of March.
- 1.10 Of the 1020 requests we received for assistance all were contacted by the local silver centres and 776 received deliveries of bottled water.
- 1.11 In addition to individual customers, we also arranged alternative water supplies to 9 nursing homes. Schools and colleges remained closed through the worst of this period and our teams ensured that all the major hospitals' water supplies were monitored throughout to ensure continuity of supply.
- 1.12 Bottle water collection points were also set up, 25 in total across the areas worst affected and over 110,000 bottles of water were available for collection.

- 1.13 A key part of the vulnerable customer strategy is liaison with third party organisations that hold information on vulnerable customers as part of their statutory duties, such as local authorities, hospitals etc.
- 1.14 During the incident our Emergency Planning team had regular conference calls with Local Resilience Fora who had the opportunity to highlight concerns and flag specific issues with meeting the needs of vulnerable groups
- 1.15 The most active LRF was the Dyfed Powys and Pembrokeshire county council who assisted in the delivery of bottled water to communities and vulnerable customers. In Blaenau Gwent where an emergency was called we provided a list of all our additional services customers to the emergency response team.

Stakeholder Briefings

- 1.16 We already have an extensive stakeholder engagement programme with our elected representatives which means that we are often in contact with Assembly Members (AMs), Members of Parliament (MPs), Local Authority Leaders and fellow Councillors. This includes arranging site visits to capital investment programmes and annual 'surgery days' to help promote our services (e.g. social tariffs) and address any queries they have may have.
- 1.17 Such ongoing and proactive engagement ensures that they have clear lines of communication into the company (should they have any queries) and helps strengthen and safeguard our reputation – not least during any operational incidents which can impact on our services. The success of this approach is evidenced in our latest reputation tracker amongst Assembly Members (shared in January 2018) which places us as the most favourable organisation (from within the public and private sector in Wales).
- 1.18 Under these circumstances, we brief our political stakeholders 'early and often' and so between 1 March and 10 March, we:
- Issued daily update emails to all AMs and MPs in our operational area, providing updates on any impact to our services and advice that could be shared with their constituents (based on our media messaging);
 - Provided more detailed updates, several times a day, to those MPs, AMs, local authority leaders and Ward Councillors in those communities that were worst affected– providing more information on the reasons for interruptions to supplies; probable length of disruption and timelines around restoration of supplies; location of bottled water stations; how we were helping vulnerable customers and advance they could share through their own social media platforms;
 - Arranged that the Chief Executive and Chief Operating Officer spoke directly to these stakeholders (5th March) as we updated them on our recovery action plan. This included Elin Jones AM (Ceredigion), Ben Lake MP (Ceredigion), Paul Davies AM

(Preseli Pembrokeshire), Stephen Crabb MP (Preseli Pembrokeshire), Rhun ap Iwan AM (Anglesey), Liz Saville-Roberts MP (Dwyfor Meirionnydd) and several Ward Councillors in Ceredigion, Pembrokeshire and Anglesey local authorities.

- Arranged a telephone briefing (5 March) between the Secretary of State for Wales, Rt Hon Alun Cairns MP and our Chief Executive and Chief Operating Officer.
- Set-up a further telephone briefing (6 March) between the Welsh Government's Cabinet Secretary for Environment & Rural Affairs, Lesley Griffith AM and our Chief Executive (Chris Jones) and Chief Operating Officer (Peter Perry). We also briefed her deputy, Hannah Blythyn AM. We kept the Welsh Ministers updated on the operational challenges and our efforts to mitigate the impact of the weather on a regular basis
- Chris Jones, Chief Executive briefed Rachel Fletcher (CEO, Ofwat) by phone and Claire Forbes (Director of Communications, Ofwat) was also briefed
- Eifiona Williams, Head of Water Branch Welsh Government also briefed regularly
- Sent daily updates to CCWater Wales' Chair (Tom Taylor) and the Chair of our Customer Challenge Group (Peter Davies) and liaised with Ofwat's Director of Communications (Claire Forbes).

1.19 Such engagement was crucial in not only keeping stakeholders informed but also enabling us to use their social media platforms to disseminate key information as illustrated by the selection overleaf:

Welsh Government Deputy Minister MP for Dwyfor Meirionnydd



MP for Ceredigion



AM for Rhondda

AM for Carmarthen East & Dinefwr



MP for Carmarthen East & Dinefwr



- 1.20 During the incident, the company was also mentioned by Liz Saville-Roberts MP (Dwyfor Meirionnydd). In a question to Thérèse Coffey (Parliamentary Under Secretary of State at the Department for Environment, Food and Rural Affairs), she asked: *“The town of Blaenau Ffestiniog lost their water supply on Friday and many people had to cope for three days or more without mains water, some of them boiling snow. Will the Minister join me in commending the community of Ffestiniog who’ve helped their neighbours and family – and the water company workforce who’ve worked day and night in horrendous conditions to restore supplies. And will she also enjoy join me in commending Dŵr Cymru’s not-for-profit business model, which directs all profits to supporting the vulnerable and rolling investment in infrastructure?”*

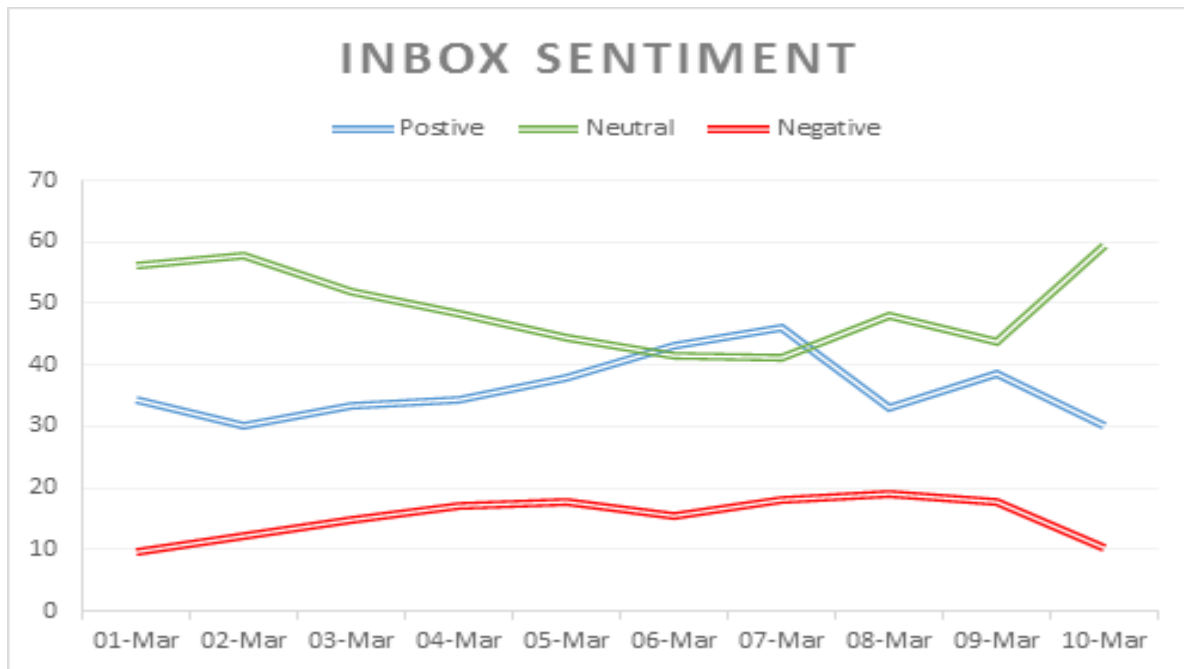


- 1.21 We also closed the incident down with stakeholders and ensured that they received a copy of the letter of compensation being sent to those customers who were worst affected along with contact details for any constituents who had ongoing concerns about their service issues.
- 1.22 In addition to political stakeholders, we also engaged with wider stakeholders such as the Farming Union of Wales and the National Farmers' Union to proactively offer a meeting with union representatives. We were aware that many of the communities which were worst affected in North West Wales and West Wales were rural communities and we wanted to ensure that their members had a direct line of communication into the co
- 1.23 On the 14 March 2018 the Chief Operating Officer and Managing Director Water Services met Rhyn-ap-Iwerth and Daffydd Elis Thomas respectively Assembly Members for Angelsey/Ynys Mon and Gwynedd/Blaenau Ffestiniog. This session at the Sennedd was used to fully brief them on the background to the supply interruptions in their areas

How effective were your communication processes?

Sentiment

- 1.24 Throughout this incident, the general sentiment (relating to the sentiment of messages received from customers via Facebook and Twitter) over the entire incident remained over 36% positive, 48% neutral and 15.5% negative.
- 1.25 The general sentiment pattern from the beginning of the incident to the very end can be seen below:



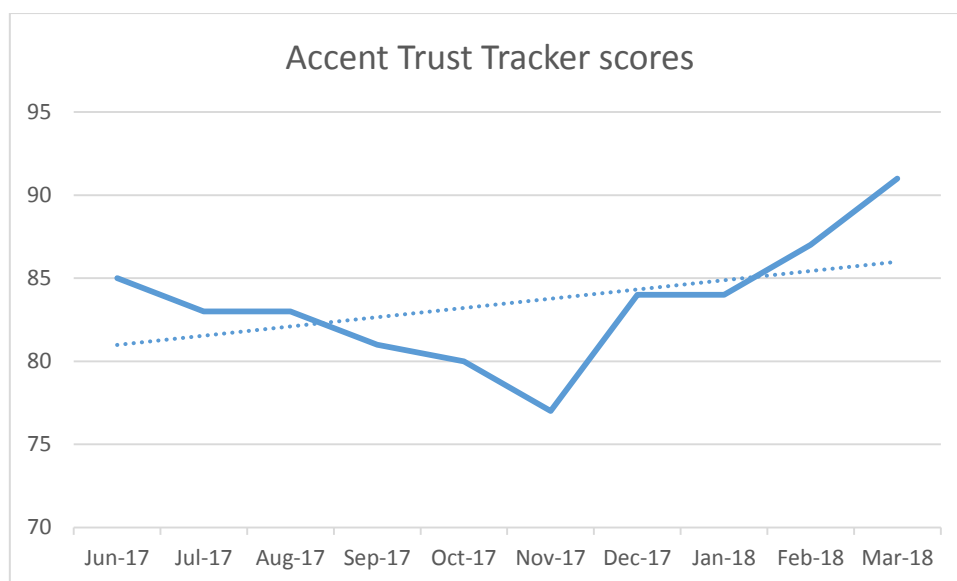
1.26 An indication of the broader effectiveness of our communications can be seen in the nature of the press coverage, which remained relatively positive for most of the incident. We sought to be proactive and local in our approach, providing useful tips and advice and trying to reinforce what our colleagues were up against in terms of the weather. This resulted in a general appreciation of what we were doing as reflected in the coverage below. However, this changed as the water supply interruptions continued with the change in coverage becoming more reflective of the frustration and concerns of customers.

Impact on trust

1.27 A customer survey is undertaken throughout the financial year with a total of 1,500 customers, surveys are taken monthly across the whole year. An independent company (Accent Marketing & Research Ltd) has been appointed to carry out this work for the period 2015-20 following a competitive tender process, which includes representative samples of household and non-household customers.

1.28 During the survey customers are asked the following question: “On a scale of 1 to 5 to what extent do you agree or disagree that you can trust Welsh Water to do the right thing”?

1.29 The percentage of participants scoring this as 4 – tend to agree, or 5 – strongly agree, is the figure used to determine the reported figure for the MOS. Normal rounding protocols are applied.

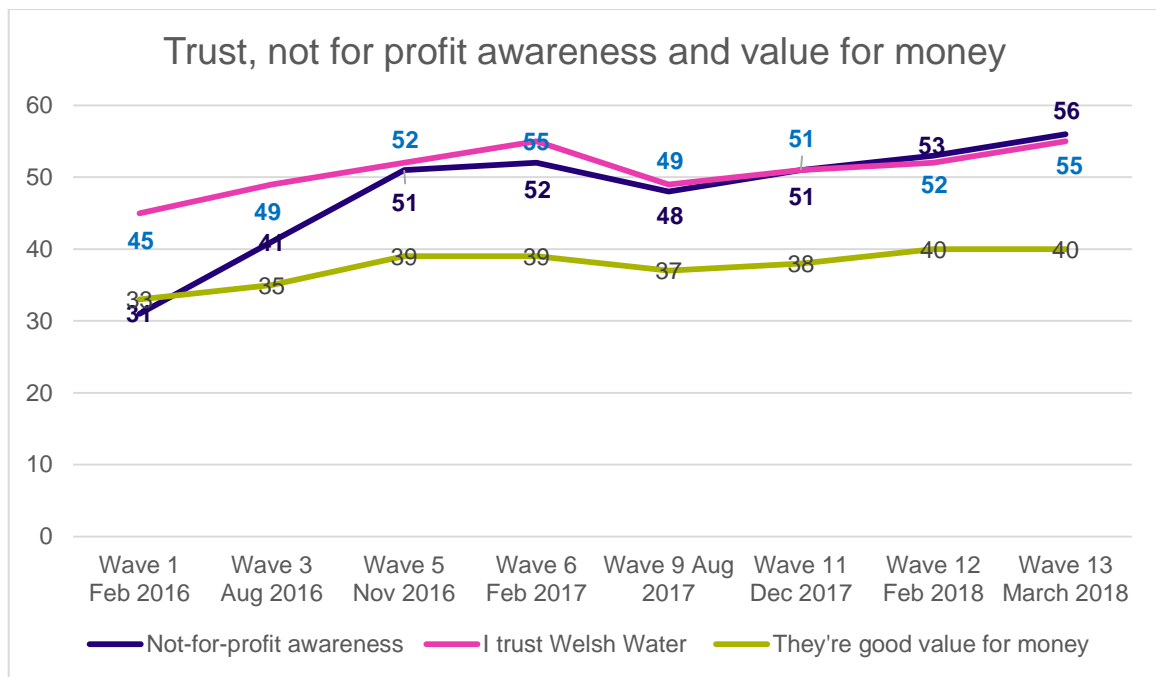


1.30 Overall the trust score has remained relatively consistent between 80 and 85 over the past few years. During the most recent surveys during and following “Storm Emma”, the trust achieved a score of 91 for March 2018, the highest monthly score achieved using this measure.

1.31 We also carry out a regular independent research tracker through YouGov which covers over 1000 respondents for each wave. It is demographically weighted a representative of society in Wales. Our research consistently shows a clear correlation between awareness of our not-for-profit model and an increase in trust and value for money scores. Net trust is general high, and has risen 10 in the past two years from 45% to 55%.

Trust

1.32 The graph below shows impact of the incident on trust and value for money as a percentage of customers surveyed who agreed that they could trust us to do the right thing and rated us as value for money



The impact of Storm Emma

- 1.33 We undertook an additional research burst in the aftermath of Storm Emma (15-19 March 2018) to gauge the impact of the incident on perceptions of the general population. During this period, trust increased 3% from the previous wave in Feb 2018, and awareness of our not-for-profit model also increase 3%, with perceived value for money remaining constant.
- 1.34 We believe that this increase can be partly attributed to the fact that customers were very aware of the scale of the challenge that we, and other vital services in Wales, faced during this extreme weather event and felt that they were kept informed.

2. What channels did you use for communication with customers and key stakeholders before, during and after the event? (eg 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.

2.1 Our Communications Team often works closely with operational colleagues to help manage the impact of any service disruption on our customers. As part of our usual approach, we embed ourselves with colleagues to ensure that we have a direct understanding of the incident so that we can communicate messages to audiences clearly, concisely and in a way that is timely. As a team, we undertake our own emergency planning exercises which ensures that we not only have our own established protocols for managing incidents but this has enabled us to develop a suit of materials to accommodate different scenarios.

2.2 As part of our day to day communications with customers, we use a range of different platforms to ensure that we can reach the widest possible audience. During this weather incident, we utilised the following channels to proactively communicate key messages with key audiences, namely customers, colleagues and stakeholders:

- Traditional media - print and broadcast
- Website
- In Your Area
- Social media (proactive)
- Social media (reactive)
- LiveChat
- Text messaging
- Internal comms channels (so that colleagues could share key messages on their social media networks)
- Stakeholder briefings

Key messages

2.3 We agreed on the simple messages that could be communicated with customers and this was done at the outset at our Gold Command level at our first operational update before being disseminated consistently across all our communication platforms.

2.4 We split our messaging into three key phases:

Key Messages

Phase 1 (1-3 March)

- Our key priority in these severe weather conditions is to maintain water supplies to our three million customers
- We're now facing some really big challenges to maintain water supplies and so we need your help
- Please ensure that you only use the water that you need
- Do not leave any taps – internal or external - running

- Help us find water leaks– big or small. If you spot a leak, down the street, up the alley or round the corner – please tell us [here](#) so that we can fix it fast
- We're still dealing with a lot of calls and messages from you about frozen pipes and some issues on our network - and we are still also prioritising our most vulnerable customers.
- If your pipes are frozen you can find advice on our website [here](#)
- If you're out and about and spot any leaks on Welsh Water's network, report them to us straight away
- Thank you for your help and for working with us

Key Messages

Phase 2: Preparing for the thaw (4 March)

- With forecasters now predicting temperatures to rise, we know the weather conditions will still affect parts of our network in the coming days
- As temperatures increase and the snow and ice thaws, there could be some ground movement that can damage our pipes – and customers' own pipes can also burst.
- Our teams are working in very difficult conditions to get out to burst pipes across our area - and we will work hard to get to them as quickly as possible so we can deal with them.
- But you can help us deal with bursts as they happen - if you notice a leak or burst pipe out on the road and not on private property contact us (Webchat on our [dwrcymru.com](#), Website, Phone 0800 052 0130) to let us know so we can fix it as soon as possible.
- If your supply is interrupted, rest assured we're working hard to repair it as soon as possible. You can track our progress in the "In Your Area section" of [dwrcymru.com](#)
- We've got as many staff as possible working around the clock to respond to your calls - but it may still take us some time to respond. Thank you very much for your patience so far and we hope you'll bear with us just a little bit longer.

Key Messages

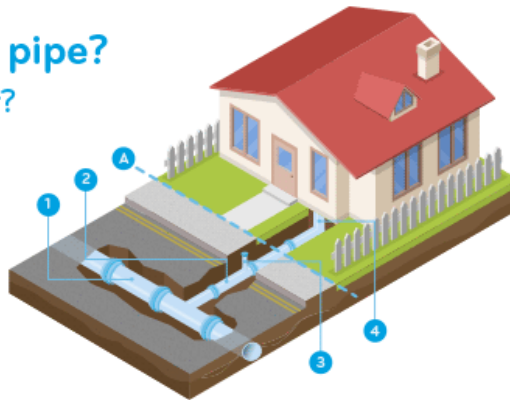
Phase 3: Thawing home pipes (5-9 March)

- If a pipe in your home bursts, this is your responsibility and you should contact a private plumber – check [Watersafe.org.uk](#) for registered plumbers.
- Welsh Water is only responsible up until a property's boundary

Burst or leaking water pipe?

Who's responsible for fixing it?

RESPONSIBILITY	
A Property boundary	
1 The water main	Welsh Water
2 The communication pipe	Welsh Water
3 Stopcock/meter	Welsh Water
4 The water supply pipe	Homeowner



- When the water in your pipes freeze, it causes a build-up of pressure which - when it thaws - can cause the pipes to split.
- There are tips on what to do if your pipes burst in your home which you can find on our website [here](#).
- Find out where your stop tap is - it's usually under the kitchen sink, or in a downstairs toilet. It may sometimes be in a garage or outhouse.
- If your pipes have frozen or are burst - it's important to turn the stop tap off quickly and arrange for a plumber to come to your property

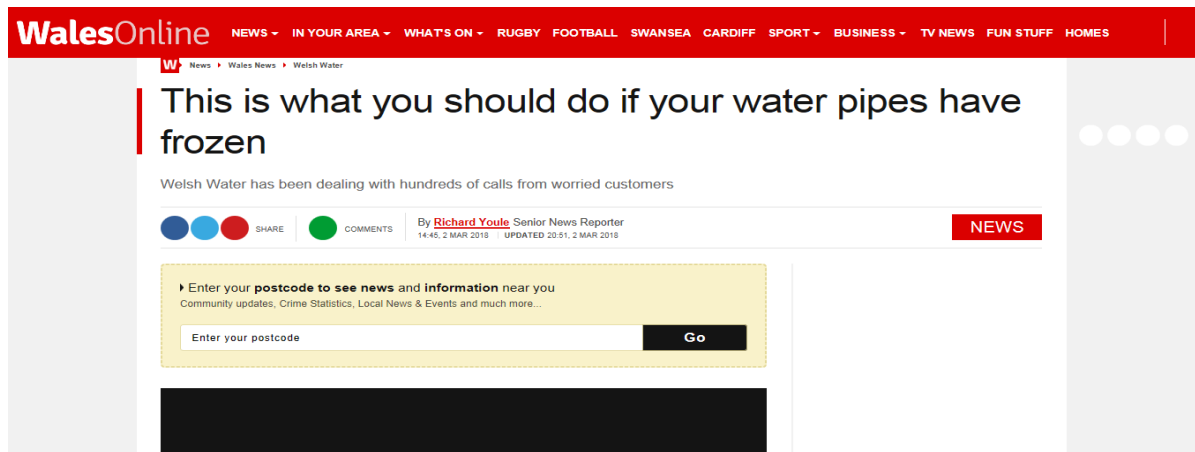
The Big Thaw - what to do if your pipes burst

- If your pipe has burst, don't panic.
- Try to find where the burst is - and turn off the supply by turning the stop tap clockwise.
- They usually look like this [PIC OF A STANDARD STOP TAP] and are usually found under your kitchen sink or in your downstairs bathroom - or where the service pipe comes into your home.
- Open all taps to reduce flooding.
- Soak up or block off escaping water with thick towels
- Turn off your electrics: if the water is near anything electrical - including lights, sockets or appliances - don't touch them. Electrical wiring damaged by water can be very dangerous and you'll probably need to call a professional to repair damage.
- Call a registered plumber - if you need help to repair a burst pipe, contact a [Watersafe-assured plumber](#).

Traditional media (television, radio and broadcast)

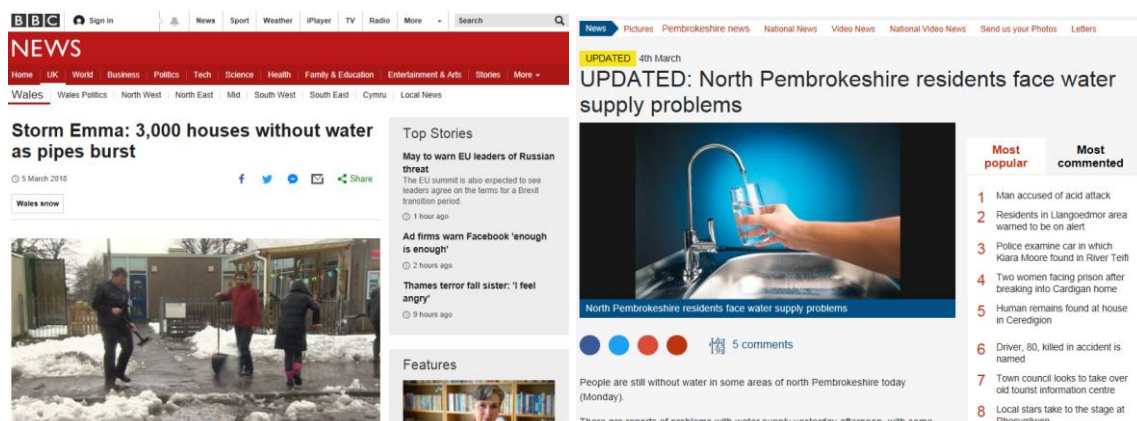
- 2.5 Our press office was fully resourced throughout this incident and colleagues were also embedded in Gold Command as well as various Silver Command Centres across our operating area. This enabled us to ensure that communications/messaging were always part of our strategic thinking and operational planning.

- 2.6 During the initial period of heavy snow, the media coverage of Welsh Water was relatively muted but we did seek to proactively push the messaging around ensuring customer homes were protected from the low temperatures. This was picked up mostly online initially such as the WalesOnline piece below (1 March) which focused on preparing homes to be protected from the low temperatures (which featured an informational video on lagging / protecting pipes):



- 2.7 As the broadcasters were initially interested in doing background, informational packages on what we were doing in difficult conditions, logistical difficulties in getting around in heavy snow (for ourselves and broadcasters) meant broadcast coverage was more limited. However, we succeeded in ensuring that the BBC covered us as part of the weather story on its news bulletins on 4 March, arranging filming opportunities for them in North Wales to demonstrate our crews battling through the elements to try to find and fix bursts.

- 2.8 However, from 5 March onwards, the media's interest increased as the weather continued to impact on water supplies. We were keen to be as proactive as possible in terms of communicating with customers and arranged daily updates for the print press (resulting in the local coverage as seen below) and sought to provide information that was as localised as possible. This was particularly important in areas which experienced prolonged loss of supply - such as Pembrokeshire (Western Telegraph), Blaenau Ffestiniog (Cambrian News, Daily Post), and Anglesey / Gwynedd (Daily Post, Caernarfon Herald).



NEWS

Water supply problems continue after snow thaws

Published 3 weeks ago on March 5, 2018
By Jason Cooper



HOUSEHOLDS in Carmarthenshire have suffered water supply problems this weekend, with many properties still without water across west Wales this afternoon (Mar 5).

The Mercury

News Sport Events What's On Announcements Buy & Sell Book an ad Family Buy & Sell Today Video Photos Weather

6th March

Bottled water for residents hit by supply problems arrives

(2) View gallery

Most popular	Most commented
1 Father sentenced for assaulting son	1 Father sentenced for assaulting son
2 That reminds me... A damaged traveller, a 'vision of Christmas' and drinking songs	2 That reminds me... A damaged traveller, a 'vision of Christmas' and drinking songs
3 Cracking effort for 3 Angels Easter egg run	3 Cracking effort for 3 Angels Easter egg run
4 New name, new amazing sound for Millford Haven songwriter	4 New name, new amazing sound for Millford Haven songwriter
5 Millford train denies burglary of Lord Nelson pub	5 Millford train denies burglary of Lord Nelson pub
6 Thieves stole £3,000 of copper	6 Thieves stole £3,000 of copper

0 comments

2.9 We also arranged that our Chief Executive, Chief Operating Officer, Managing Director of Water Services and Director of Communications and Customer Strategy participated in several broadcast interviews (English and Welsh) between 5 March and 7 March. Apart from one broadcast interview request with LBC (does not cover our area), we accommodated every single interview request. Again, we sought to use these opportunities to ensure that we were seen as 'fronting up'. This included:

- Eight live or pre-recorded interviews across radio in English and Welsh language
- Four live or pre-recorded television interviews across BBC and ITV
- Responded to more than 60 queries from all media between 5 and 7 March

2.10 Among the 12 broadcast interviews we took part in, coverage included:

- Good Morning Wales & Good Evening Wales (Wales' leading radio news programmes)
- BBC Wales Today (Wales' flagship news bulletin)
- ITV Wales News
- Several leading commercial radio stations in Wales of the including Heart FM, GTFM
- Leading Welsh-language radio and television programmes – Newyddion 9 and Post Cyntaf (BBC Cymru television and news programmes)
- BBC News Channel's Afternoon Live programme with Peter Perry as part of its wider UK coverage



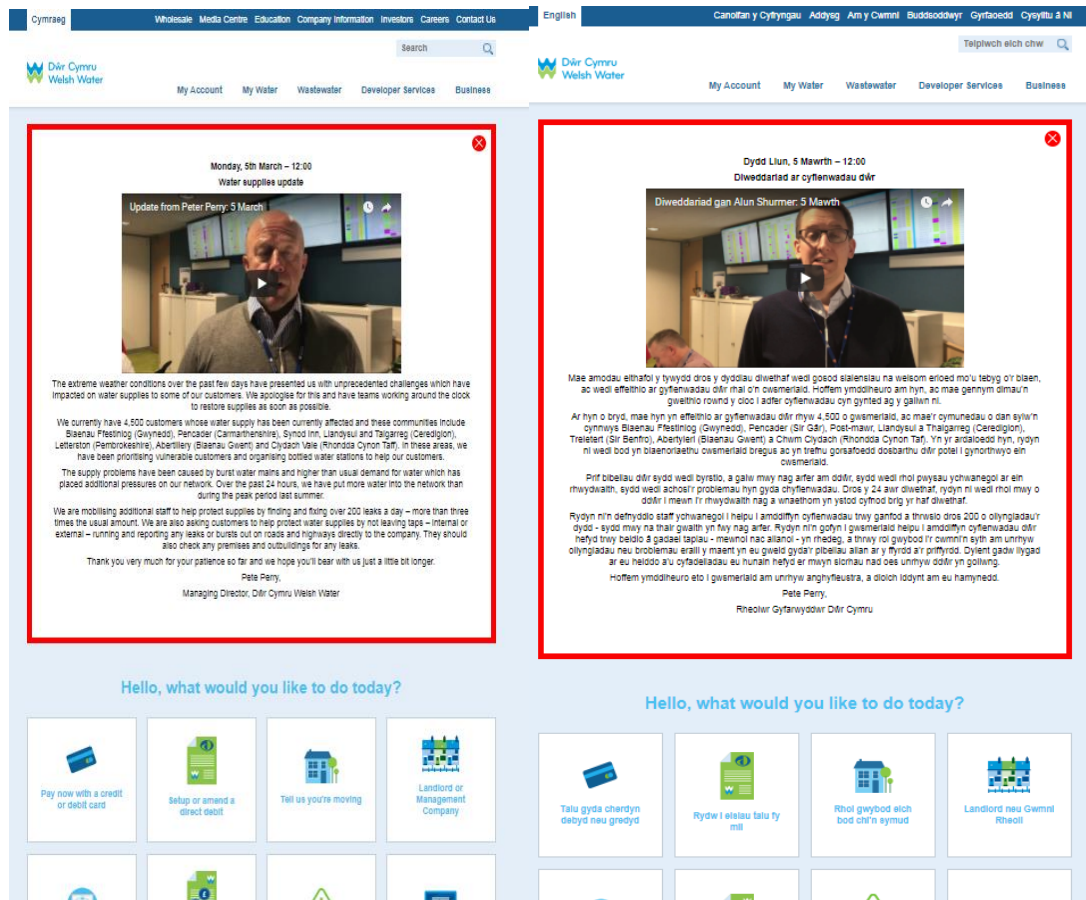
- 2.11 In terms of the nature of the press, we sought to be proactive and local in our approach, providing useful tips and advice and trying to reinforce what our colleagues were up against in terms of the weather. Our own internal monitoring of media coverage (as illustrated below) shows this coverage became more negative as water supply interruptions continued with the change in coverage becoming more reflective of the frustration and concerns of customers.

Website

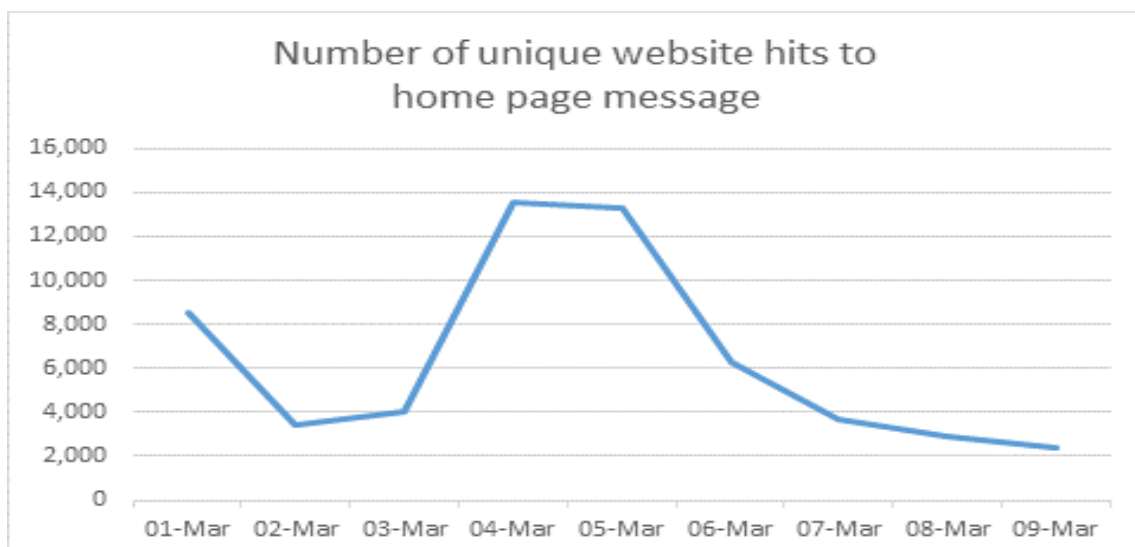
- 2.12 The website was also used as a key communication platform during this incident. We posted regular and timestamped updates every 4 hours on the homepage to ensure that customers had regular information on any interruptions to supply. These were usually more generic updates (as show below) and customers were then directed to 'In Your Area' part of the website (detailed in the following section) for more detailed updates:

English

Welsh

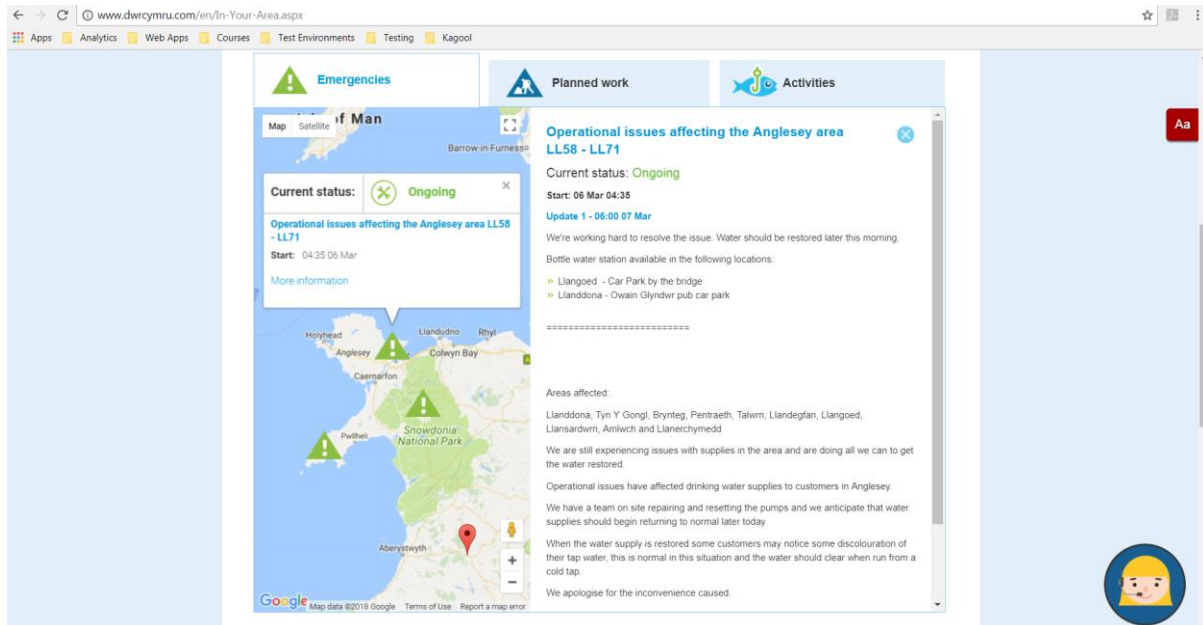


- 2.13 The website again proved to be a ‘first port of call’ to many customers. Such updates on our homepage were instrumental in providing information to Customers, especially with the number of users visiting the website hitting a record high during the incident. Between 1 March and 9 March, we received over 58,000 unique website hits to our home page – 6,455 on average per day which compares to the 2,120 unique hits that we usually receive:

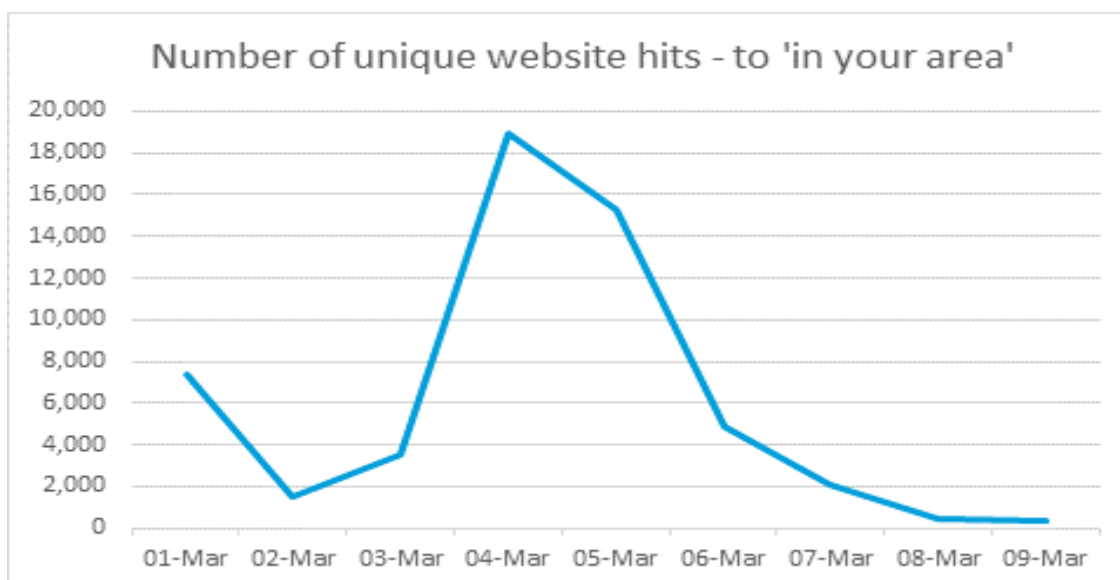


In Your Area

- 2.14 On our company website, we also have a dedicated section which provides 24/7 services updates to customers when we are trying to resolve any interruptions to supply. Customers use a postcode search facility to obtain a local update as shown below (in relation to Llanddona, Anglesey):



- 2.15 This section of the website usually receives an average of 260 unique hits per day but this increased to 6,046 between 1 March and 9 March, with 54,413 unique hits during the course of the incident. As with all the other communication platforms (social media, LiveChat, texts sent), this activity/interest peaked on 4 and 5 March as shown below:



- 2.16 It should be noted that the number of unique hits roughly equates to the number of unique users – with the caveat that a single user can generate two unique hits (if they visit the website at 9am and then again at 9pm on the same day) if web browsing session has expired.

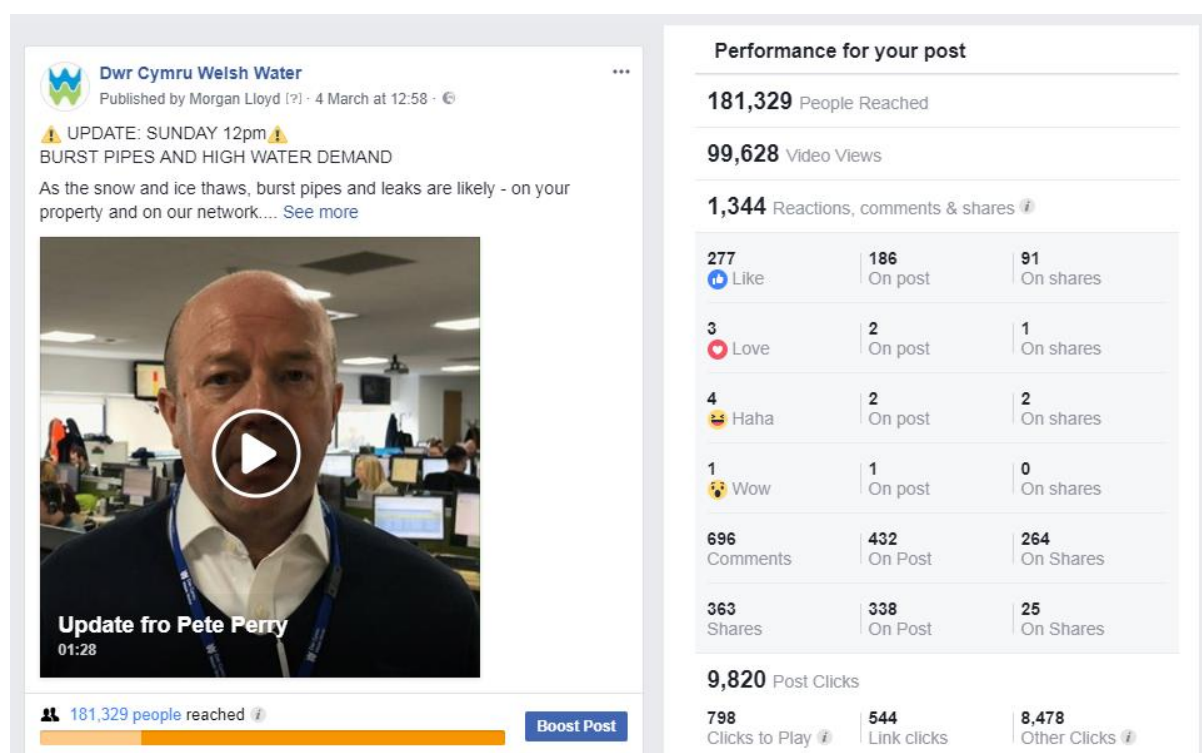
Social media (proactive)

2.17 During the incident we used our social media channels to provide advice (on what to do if pipes were frozen or burst) and information updates proactively to those affected by intermittent or no water. These included:

- 40 update posts – videos, updates, advice videos
- Updates were posted across channels: website, Facebook, Instagram, Twitter, YouTube and LinkedIn.
- 12 bilingual video update by our Directors Pete Perry, Ian Christie and Alun Shurmer.
- Links to our website for advice

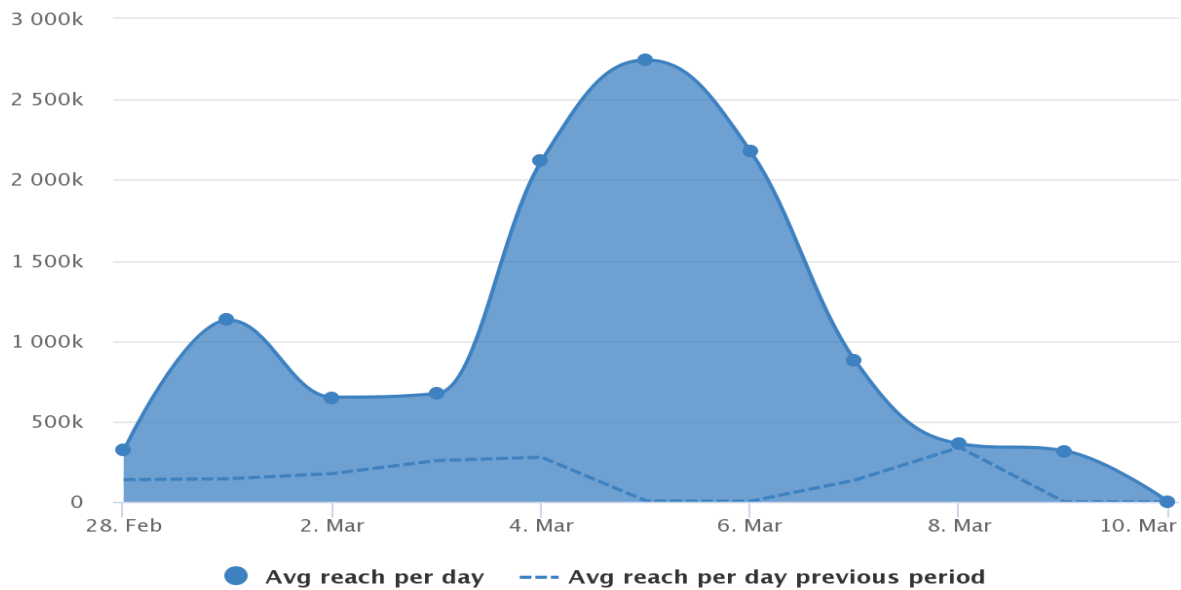
Facebook	Twitter
<ul style="list-style-type: none"> • 2.1million impressions • 1.35 million people reached • 106,000 engagements: comments, shares, likes. • 42,000 video views 	<ul style="list-style-type: none"> • 900,000 impressions • 9,396 engagements: comments, shares, likes. • 51,487 video views

2.18 Example of one of the video post update with paid advertising boost to entire operating area on Facebook:



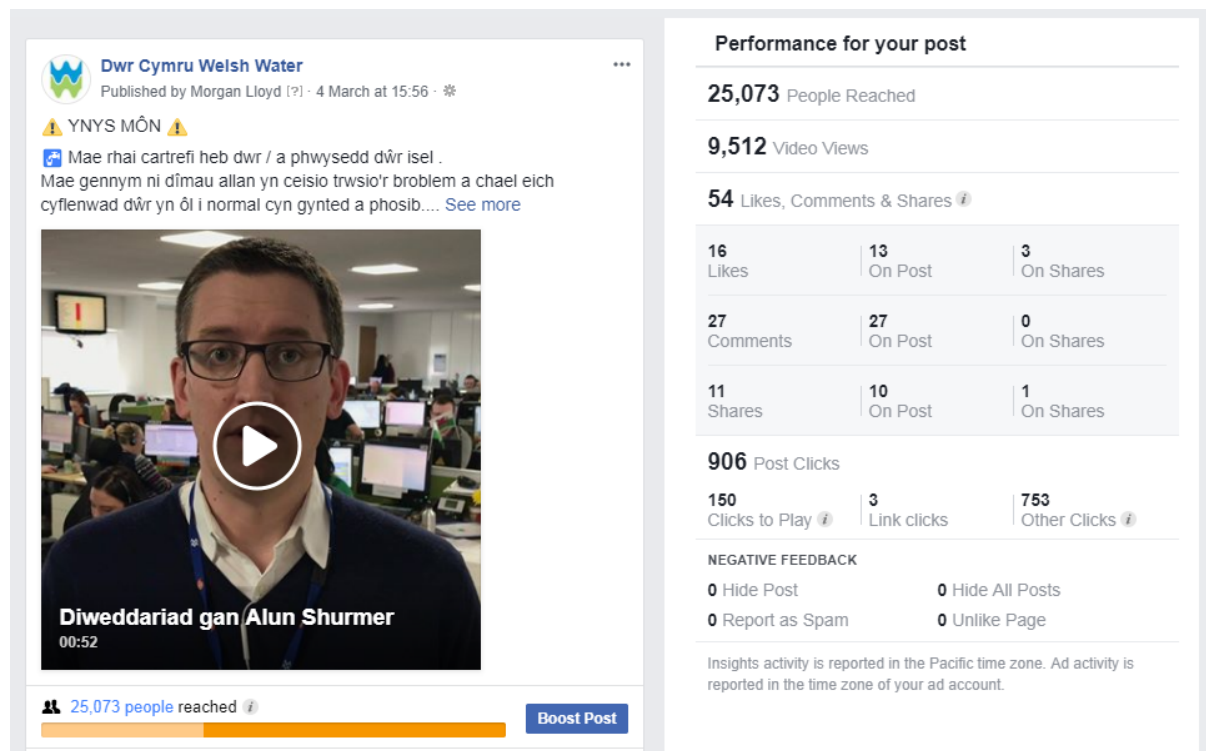
2.19 The following graph shows the scale and reach of our pro-active social media messages (compared to a typical week shown by the dotted line). This can be attributed to

increased number of proactive updates we were publishing; boosting some updates with paid targeting; customers and stakeholders sharing the content on their own profiles:

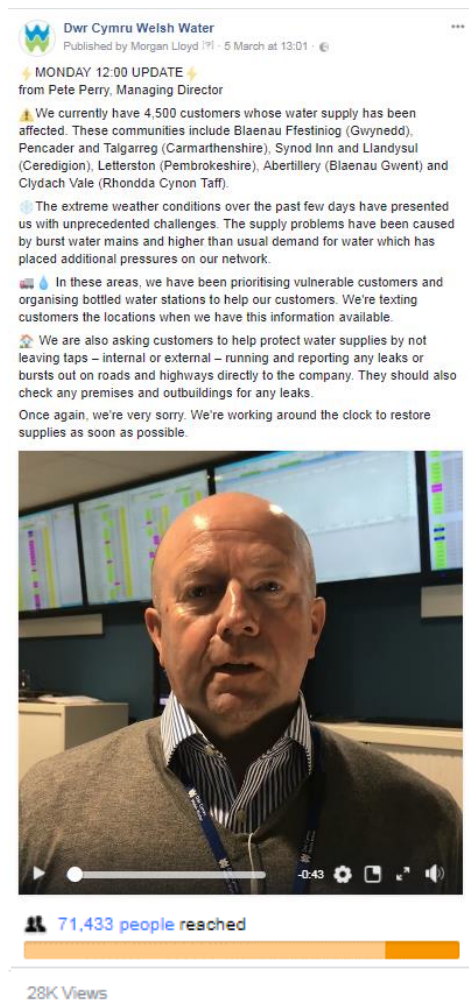


Geo-targeted Facebook advertising

2.20 We also geo-targeted Facebook alerts to worst affected areas which again proved effective in ensuring that we were targeting the correct audience with the most local and up to date messaging. We ran boosted paid advertising to areas including Anglesey, Blaenau Ffestiniog. Example of geo-targeted post boosted to Anglesey:




2.21 We filmed daily updates with our Managing Director and Director of Communications that were shared via our social media platforms:



2.22 We created a variety of content, including infographics and videos to communicate important information for our customers in the run up and during the incident.

Dwr Cymru Welsh Water
Published by Hayley Edwards [?] · 1 March at 12:00 · 6

Frozen Pipes? ❄️
Here's what to do...



01:22

👤 Your video is popular with **women aged 25-34** [Boost Post](#)

👍❤️ 112 267 Comments 2.1K Shares

👍 Like 💬 Comment ➦ Share 🌐

Performance for your post

250,142 People Reached

91,859 Video Views

4,116 Reactions, comments & shares ⓘ

950 👍 Like	111 On post	839 On shares
11 ❤️ Love	4 On post	7 On shares
9 😂 Haha	0 On post	9 On shares
3 😮 Wow	0 On post	3 On shares
3 😞 Sad	0 On post	3 On shares
1 😡 Angry	0 On post	1 On shares
946 Comments	362 On Post	584 On Shares
2,194 Shares	2,194 On Post	0 On Shares

20,037 Post Clicks

4,901 Clicks to Play ⓘ	2 Link clicks	15,134 Other Clicks ⓘ
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Dwr Cymru Welsh Water
Published by Hayley Edwards [?] · 2 March at 17:22 · 6

If you haven't got water, it might be your pipes have frozen. Check out below some tips below to keep your home safe 🏠



1 CHECK YOUR STOP TAP
To prevent frozen pipes it's important to check where your stop tap is located and ensure that it is well insulated, along with other water pipes that are exposed to freezing temperatures.

2 FROZEN PIPES
If you don't have water, it may be because your pipes have frozen. Check with your neighbours - if they have water it's likely the issue is with your home.

3 DRAIN THE SYSTEM
If the supply pipe has already frozen then turn off the stop tap and open a tap in the kitchen or bathroom to drain down the system. This will help prevent any damage.


4 DAMAGED PIPES
Check the pipes for signs of damage if it's safe to do so.

👤 **20,325** people reached [Boost Post](#)

Dwr Cymru Welsh Water
Published by Morgan Lloyd [?] · 3 March at 16:42 · 6

⚠️ **FROZEN AND BURST PIPES** ⚠️
As the snow and ice thaws, burst pipes and leaks are more likely - on your property and on our network.

🏠 **PROBLEM IN YOUR HOME?**
Pipes up to your property boundary are your responsibility. Keep an eye out for pipes or taps which are outdoors or in a cold loft or garage. ... See more



BURST OR LEAKING WATER PIPE?
Who's responsible for fixing it?

RESPONSIBILITY

A Property boundary	
1 The water main	Welsh Water
2 The communication pipe	Welsh Water
3 Stopcock/meter	Welsh Water
4 The water supply pipe	Homeowner

Dwr Cymru Welsh Water
Water treatment service

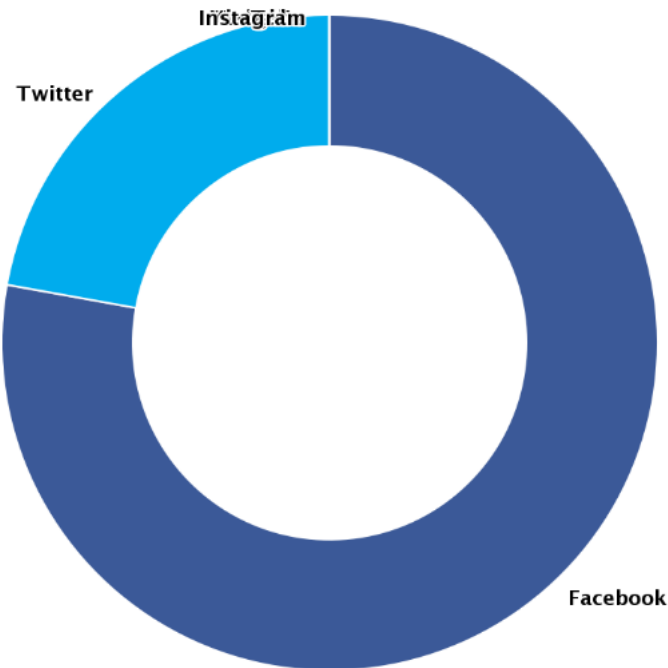
👤 **95,160** people reached ⓘ [Boost Post](#)

2.23 The extent of the reach of our bilingual video messages via Facebook can be seen by the timeline of posts below:

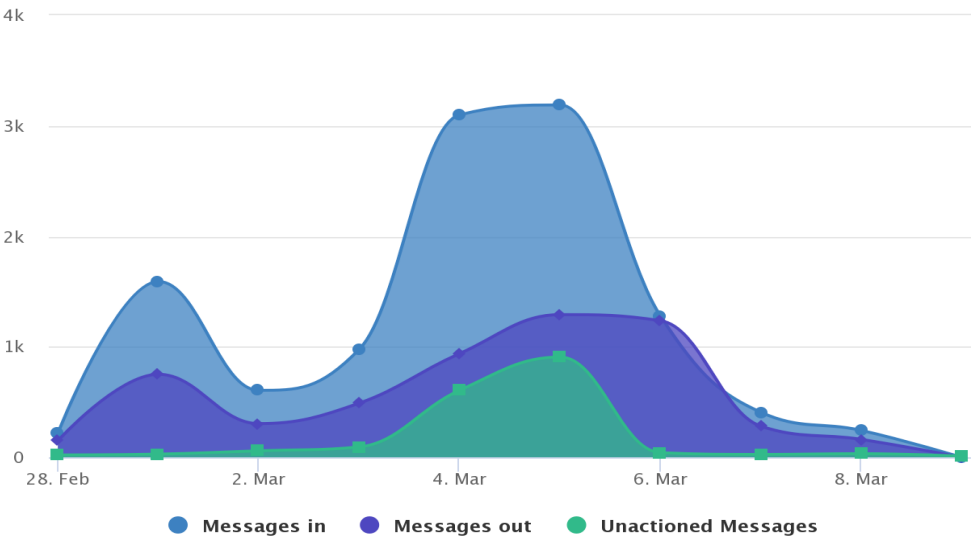
Feb 27, 2018 at 6:03pm Dwr Cymru Welsh Water: What to do if your water pipes are frozen	92,526 organic views 4,134 post engagement Total 2,204 shares
Mar 1, 2018 at 2:24pm Dwr Cymru Welsh Water: Beth i'w wneud os yw'ch pibellau dŵr wedi rhewi (Welsh language version)	Video Views: 4846 Post Engagement : 76
Mar 1, 2018 at 12:00pm Freezing pipes: what do do	Video Views: 92,753 Post Engagement : 4,134
Mar 1, 2018 at 5:11pm Dwr Cymru Welsh Water: Cold weather update from our COO ❄️💧	Video Views - 14,749 Post Engagement - 458
Mar 2, 2018 at 5:03pm Dwr Cymru Welsh Water: COO Update	Video Views - 69,451 Post Engagement - 851
Mar 2, 2018 at 4.49 Check out our team battling the Beast	Video Views - 3,539 Post Engagement - 124
Mar 3, 2018 at 3.23 MD of Water Services, Welsh Water Update	Video Views - 42,509 Post Engagement - 217
Mar 3, 2018 at 3.23 Director of Communications, Welsh Water Update	Video Views - 14,562 Post Engagement – 67
Mar 3, 2018 at 7.02pm Keeping the water flowing for our customers in this weather is a real challenge ❄️🔧💧	Video Views - 15,804 Post Engagement – 744
Mar 4, 2018 at 4:58 Update From COO	Video Views: 128,846 Post Engagement 2742 40k Organic 88K Paid Advertising
Mar 4, 2018 at 4:58 Diweddariad gan Director of Communications (Welsh language version)	Video Views: 12,850 Post Engagement 176 3.8k Organic 8.9K Paid Advertising
Mar 5, 2018 at 1:26 Update From COO	Video Views: 28,678 Post Engagement 1154 24k Organic 4.3K Paid Advertising
Mar 5, 2018 at 1:26 Diweddariad gan Director of Communicaionts (Welsh language version)	Video Views: 1182 Post Engagement 20 430 Organic 752 Paid Advertising
Mar 5, 2018 at 9:31pm Update From COO	Video Views: 9,500 Post Engagement 40
Mar 5, 2018 at 9:36pm Diweddariad: Nos Lun 9.30pm (Welsh language version)	Video Views: 530 Post Engagement 40

2.24 As shown below, Facebook was the majority channel for incoming queries and requests. Facebook accounted for almost 80% of incoming messages, with Twitter at 13% and the remainder through Instagram. Uniquely for the UK companies affected, we also

received/answered queries and needed provide updates in both Welsh and English. 95% of messages were in English with around 5% in Welsh.

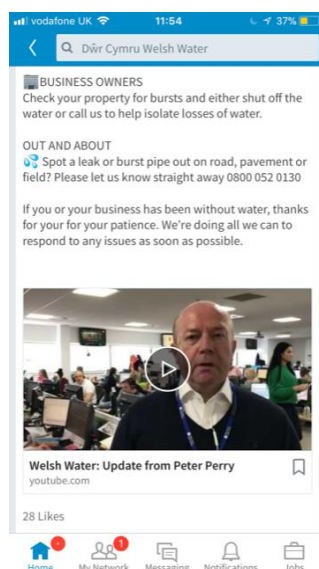


2.25 As indicated by the graph below, we saw unprecedented levels of customer interactions via social media. Messages were up significantly over the entire incident period, with the largest spike spanning a three day period between 3 and 6 March as thaw took hold (note unactioned messages refer to ‘comments’ that don’t need a response :



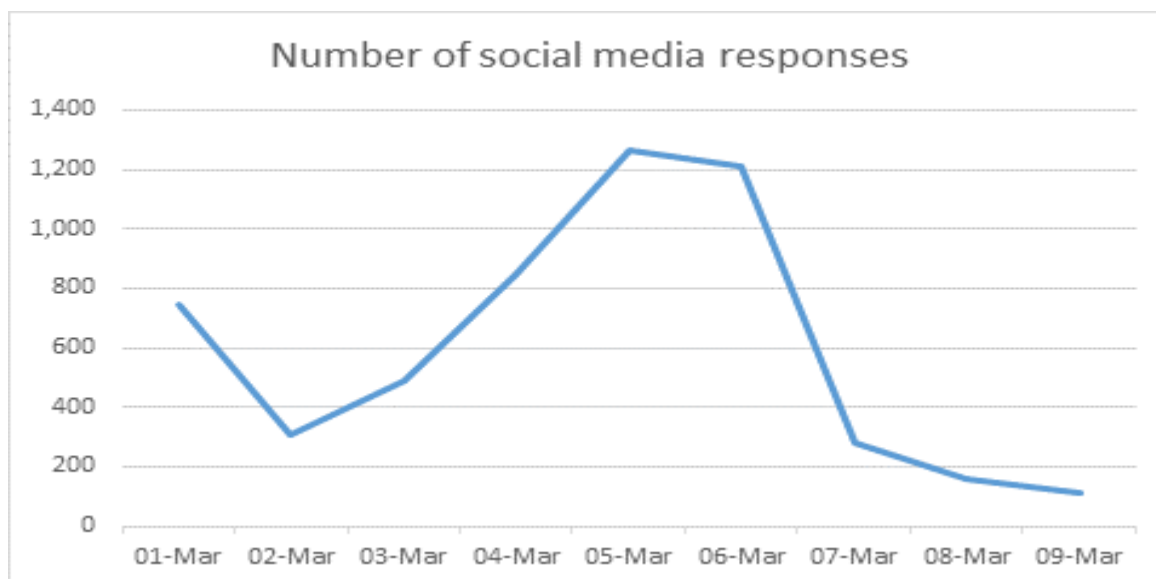
Business customers

- 2.26 In addition to proactively using social media to contact household customers, we also targeted local businesses. The messaging was slightly different, and using platforms such as LinkedIn, we asked businesses to help us spot leakages, reduce wastage and open tap use on their sites to help us maintain supplies:



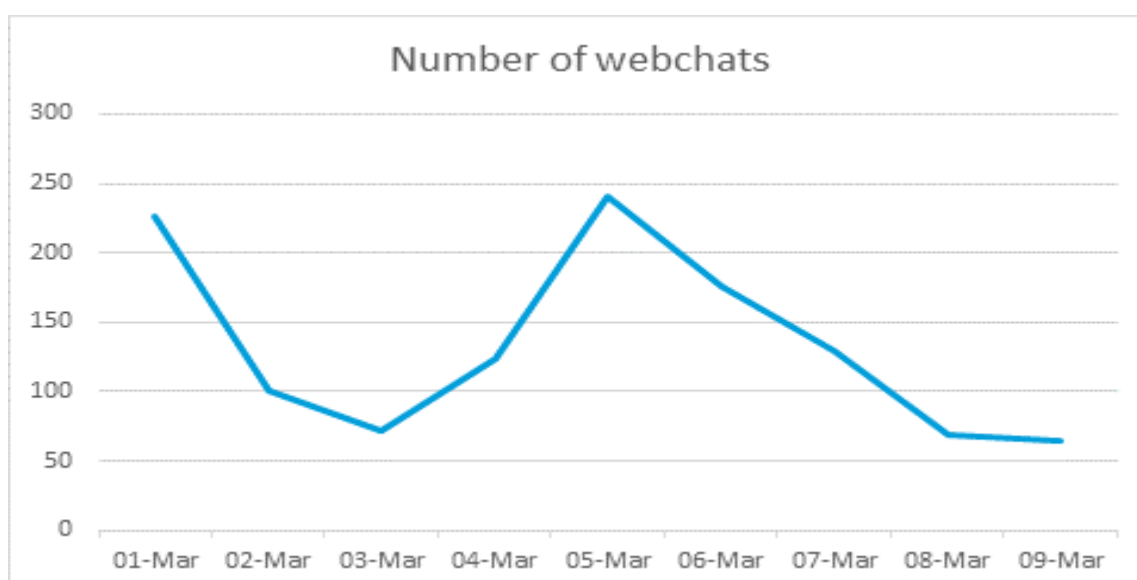
Social media (reactive)

- 2.27 Social media is now firmly embedded within the company as a communication platform. The continuing rise in the use of social media has also given customers more ways to start and drive conversations with us — and this is why we undertook a review of our digital media capability in 2017. Its findings helped ensure that we were better prepared to meet ever increasing customer expectations and enabled us to review the resources we would need to manage a large scale incidents.
- 2.28 We have continuously been utilising social media platforms (predominantly Facebook and Twitter) in recent years to help facilitate customer communications during operational incidents. This has been useful in allowing us to develop the processes for managing customer queries but the recent weather incident presented us with some unprecedented challenges in terms of responding to customers' queries.
- 2.29 We have a dedicated team of 4 colleagues usually managing social media but this was increased to 13 colleagues during the incident as we responded to more than 600 queries a day – 10 times the usual amount we receive on an average day. As explained above, we sought to be as proactive as possible in terms of sharing messages on social media but this in turn generated many more queries from customers:



LiveChat

- 2.30 We offer LiveChat as a way of enabling customers to communicate with us in real time, using easily accessible web interfaces. It is easy to use and accessible to customers who may not wish to take the time to install and learn to use specialised chat software.
- 2.31 During the incident, we ensured that this platform was monitored continuously. Between 1 March and 9 March, we completed 1,328 webchats, a daily number of webchats around of 147 - much higher than the 37 webchats we usually manage on an average day:

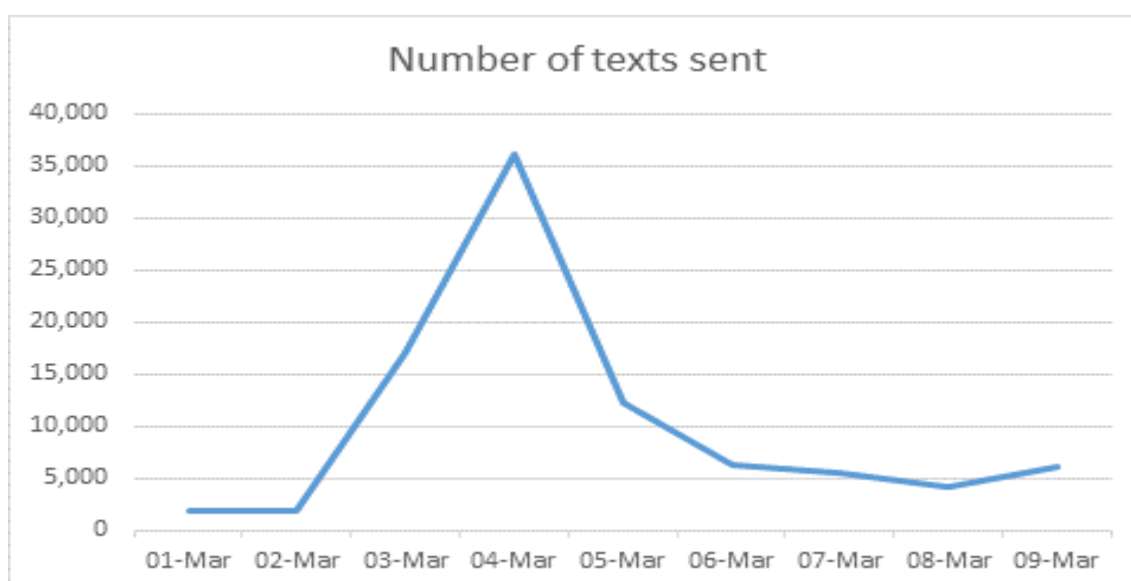


Text messaging

2.32 During any disruption to services, we try to reduce the need for customers to contact us by not only providing more targeted information on our website (in Your Area section – as outlined above) but also through our proactive text messaging service (this service sends a text message to mobile phones or an automated voice message to landlines). This is now used as part of our standard approach to notify customers of any potential unplanned interruptions to their water supplies and an example of the texts sent can be seen below:

We're really sorry. We're working as quickly as possible to get your water back to normal but we're not expecting the supply to be fully restored until later today. When restored, you may have low pressure or discoloured water.

2.33 Having been the first water company to do this, we now send an average of 2,152 texts per day to the landlines or mobile of those customers in areas who supplies may be affected. Between 1 March and 9 March, we sent a total of 91,116 texts to customers, an average of 10,124 a day. These were coordinated through our Silver Command Centres and communicated the messaging agreed with Gold Command and colleagues in the communications teams:



Colleagues

2.34 During the recent challenging weather conditions a key priority was to ensure the safety of all colleagues. We utilised a variety of communications channels to keep colleagues informed of the weather conditions as well as keeping them up to date with our operational issues. We ensured colleagues did not travel unnecessarily by closing offices and depots and sent weather updates via email and links to the Meteorological Office on our intranet. The main channels used were:

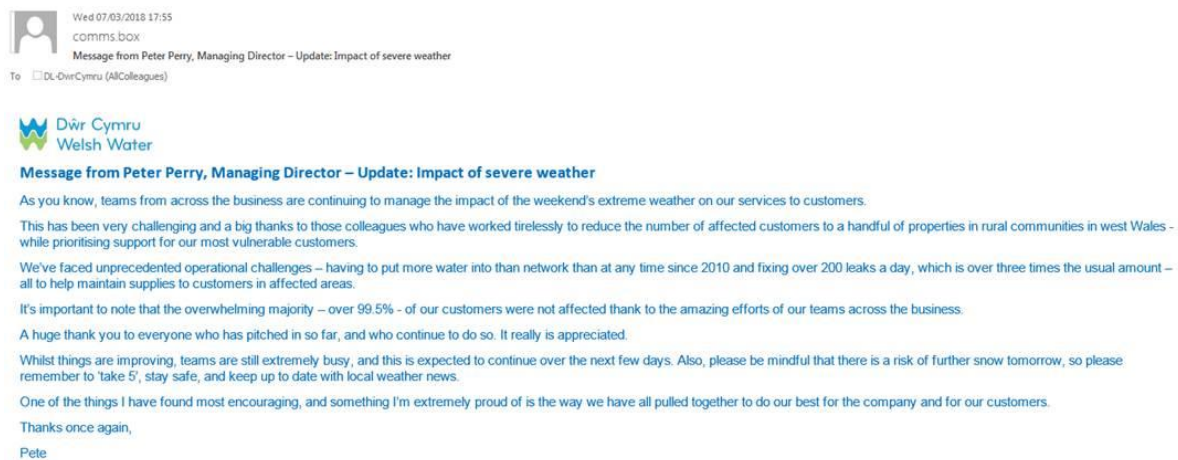
- company-wide emails
- intranet updates
- company-wide text messages

- text messages to home phones and personal mobiles
- internal digi screen platform updates

2.35 Between 1 March and 16 March we sent a total of 16 all company emails; 8 companywide text messages and ensured daily updates of the intranet and internal digi screens. These channels were instrumental in enabling us to:

- ask colleagues to help more locally with delivering bottled water to local communities
- mobilise 150 colleagues to volunteer in the call centre to help manage call volumes on from 5th March

2.36 An example of the messages issued to staff can be seen below:



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

Before

3.1 We undertake an annual campaign to encourage customers prepare for winter, called Wrap up Wales campaign. By way of a dedicated website, WrapUpWales.com, we provide key tips to prepare properties, and offer 1,000 – 1,500 free lagging kits to customers to protect pipes and taps and encourage people to report any leaks on the network to us, so that we can fix issues as quickly as possible. This campaign starts in October (to coincide with the clocks going back) and last until the end of January.



3.2 In 2017-18, our Wrap Up Wales campaign included:

- digital advertising; target google searches with keywords such as “cold weather”, “winter weather”, “cold snap” – so if anyone is searching anything with these keywords, our adverts were shown
- media relations: proactively issuing press releases to local and regional media
- stakeholder relations providing advice for stakeholders to share with their constituents as part of their own newsletters and communications platform
- community events: handing out useful guides, advice and a hot chocolate to keep warm while they take the online challenge to get their kit including the Llanelli Christmas Carnival and Mumbles Christmas
- local radio advertising – which included many of the worst affected areas as show below:

Radio		Oct				Nov			
		9	16	23	30	6	13	20	27
Smooth South Wales	Reach: 60,000								
Heart North Wales	Reach: 104,778								
Nation Radio	Reach: 118,000								
Radio Carmarthenshire	Reach: 22,000								
Radio Ceredigion	Reach: 12,000								
Radio Pembrokeshire	Reach: 27,000								
Sunshine Radio	Reach: 65,000								

3.3 We created a series of videos about encouraging customers to get ready for cold weather and to show our customers what they need to do if their pipes freeze.

3.4 Over the past winter our Wrap up Wales website has had 24,336 page views, initial content prior to Storm Emma gained 12,931 video views on Facebook and over 1,000 lagging kits were ordered.

During

3.5 The extent and content of our proactive communications with customers during the incident is set out in response to Question D2 above.

After

3.6 We believe that the way in which we continue to communicate with customers and communities following this weather incidents is as important as how we managed the communications during the incident. As a result, we are now implementing our recovery plan which includes the following elements:

- issuing an apology letter, accompanied by a £75 cheque, to all those customers who were significantly impacted by interruptions to their water supplies;
- ensuring that our community vans (usually used at public exhibition events showcasing our capital investment) – are made available to visit most affected areas to offer advice and where appropriate to record customer details to add to our Priority Services Register;
- local legacy initiatives: identifying local community events or shows we could attend, sign people up to HelpU financial assistance where appropriate, and/or Priority Services and also raising awareness of the company’s Community Fund;

- Educational Outreach programme: targeting lessons explaining how our network works and offering such lessons to all schools in areas affected by the extreme weather;
- Stakeholder briefings: proactively offering to meet all County Councillors to brief them on what happened, lessons learnt etc – but to also gather their feedback on how we managed the incident
- Wrap up Wales (October 2018): in autumn 2018, we will prioritise the Wrap up Wales campaign, and lagging kits made available to the areas affected by storm Emma.

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

- 4.1 We use our emergency disconnection powers under the Water Industry Act 1991 (as amended) to temporarily disconnect in these circumstances. Our legal team are available 24/7 to support.
- 4.2 During this incident where businesses were in some cases closed from March onwards due to transportation issues, we made a decision to isolate supplies where leaks or bursts were identified. Our Business Customer team offered support in communicating with these customers during the incident and afterwards when supplies were being restored.
- 4.3 Schools were equally a potential problem and our teams checked these in areas where we had customers without water. There were none that needed to be isolated but we would have taken the same approach as for a business if this had been necessary.

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

- 5.1 All the affected customers based on our initial assessment will have received the £75 payment for an interruption exceeding 12 hours. As our data analysis is completed new customers will emerge as eligible for payment and these will be processed.
- 5.2 As we receive contacts from any customers in vulnerable circumstances that did not receive bottled water, where appropriate they are being added to our Priority Services register as requiring bottled water within 4 hours.
- 5.3 The teams have completed call backs to 9,600 customers, apologised for the interruption and ensured that they are now back in supply fully with no ongoing issues. At the time of this call we have taken the opportunity to check we have contact information such that we can proactively text them in the future with operational updates and that we have an accurate indication of any vulnerabilities that they wish to share with us.

- 5.4 Over the last few weeks we have also been assisting those customers that have ongoing leaks on their supply pipe and wherever possible undertaking a free repair. Since the 1st March we have repaired around 530 services on behalf of customers.
- 5.5 In addition, we have also provided a further approximately 2355 lagging kits to customer since the 1st March 2018 (in addition to the approximately 4000 kits already issued during the 17/18 Winter period).

Section E: Impact on customers and compensation arrangements

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

- 1.1 The Crisis Management Team made the decision to compensate customers as expeditiously as possible in a simple transparent way ie customers who had been significantly impacted for 12 hours or more, because of issues on our network. This decision was made on 8 March 2018 and we started to write to them w/c 12 March to let them know.
- 1.2 We identified the customers that fell into this Category (being significantly impacted for 12 hours or more because of issues on our network) from the incident records we were tracking during the event (e.g. mass texting information). We are aware that this approach may have resulted in a number of customers who were not continuously off for over 12 hours being paid.
- 1.3 We took this approach (as opposed to waiting for network logging data to confirm the actual durations of loss of supply) to ensure customers received compensation as quickly as possible.
- 1.4 A fixed payment of £75 to each connected property that was affected by the event has been made. We have not differentiated between household and non-household customers and have made approx. 8,400 payments via cheque and 5,500 by BACS so far.
- 1.5 Over the coming weeks we will be reviewing our network logging data to ensure all affected customers have been captured and compensation paid by this approach and expect to have all the data finalised by the end of April.
- 1.6 Any non-household customer whose business has been affected by the loss of water and is seeking compensation for loss of business etc. will be dealt with on a case by case basis.

2. 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.

- 2.1 No additional payments will be made apart for those already set out above in response to Question E1, since the payment already made would exceed any GSS payment due to the customer.

3. 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.
 - 3.1 In order to simplify the process and ensure the speedy payment of the compensation no differentiation was made between the impacted areas and timescales. This level of detail will not be ready until the end of April 2018. We have adopted a precautionary approach but will compensate any new properties identified through the detailed Customer Minutes Lost process we are working through
4. 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.
 - 4.1 The majority of the affected customers have already received compensation and we are aiming to ensure that any remaining affected customers will be paid as the detailed Customer Minutes Lost process is worked through before the end of April 2018.
 - 4.2 All business customers in the worst affected areas have received the £75 payment and we will continue to review further correspondence. Only 1 of the customers contacted indicated that they were likely to seek further compensation.

Section E: 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:

There are a number of Technology projects and initiatives underway or planned for the remainder of this AMP, or will be included in our PR19 submission, that will contribute to ongoing continuous improvement of our overall performance in these areas:

Project/Programme	Relevant Deliverables
Project Uno – New IT Customer System Providing better visibility of customer history and improving our web site and telephony system.	<p>a) Web Cloud – New Azure website allows improved capacity and speed of access by customers to our website. Able to deal with increased ‘hit’ volumes eg in emergency – due end of April 2018</p> <p>b) Customer Desktop – provides considerable improvements to Contact Agents call handling capability and allows sign on from any location and provides better data to identify priority customers, customer history and routing to operational teams. Will also improve our ability to identify ‘trigger customers’ who for example are the first to be affected if we have a localised problem on the water network – allowing us to target faster response – due end December 2018</p> <p>c) Customer Desktop - easier ‘intuitive’ Genysys telephone operating system allowing emergency resource call handlers to take calls and enter data directly into SAP for operational team response – due December 2018</p>
SAP Roadmap – further investment in our main operational IT platform.	Implementation of C4C the latest Customer Relationship Management software making it easier to use non specialist resources for escalation – linked to the Customer desktop project above – due December 2018
SMART Roadmap Further use of ‘SMART’ technology and systems.	Covers a range of improved capabilities from Remote Control, Optimisation, Additional ‘field sensing’ monitors to aid proactive interventions on the water network – due by end AMP6
Clio – Proprietary IT Software used by ‘Blue Light Services’ to aid incident management.	Incident management software as used by the Police and other Emergency Services to improve log taking and information sharing – additional aid to Silver and Gold Command Centres – due April 2019
Automation and Control – further	Control Group work improving local automation and remote control – enabling improved telemetry monitoring and remote

investment in our Telemetry and control systems.	operation of assets at water treatment works and on the water network – due end of AMP 6
Data Science	Utilise data analytics to introduce predictive and ultimately prescriptive tools for Operational Use – already deployed for service reservoir level monitoring and pilot for mains burst prediction – will aid Silver and Gold Command Centres in emergency incidents and will speed up response in ‘day to day’ management of the water network – extend use over AMP6 and further implementation in AMP 7

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

What went well:

Area	Activity
Water Treatment	<ul style="list-style-type: none"> • Safety of colleagues was ensured throughout through use of the DCWW lone working system and pairing individuals up on the higher risk activities. • Incident free from an Environmental perspective through collaborative working with our environmental regulator during the event. • Staff Commitment to resolve issues was excellent, availability even when not on call was utilised when required. • All winter planning contingencies were implemented as planned on all sites • Combined Water Services Silver Centres worked well to ensure information was escalated quickly and effectively. • Gold Management presence throughout Wales assisted in actions being implemented. • Telemetry systems were robust with any issues identified and rectified quickly through the Welsh Water Automation team. • Pre-arranged snow clearance at most remote sites and having our own plant at selected sites sped up resolving access issues. • Production of unprecedented volumes of treated water without compromising water quality. • Early decision to man at risk WTW's backed up by a detailed resource plan • Trace heating and lagging was largely effective apart from some exposed vulnerability that will now get further investment. • Gold conference calls gave clear direction on focus areas • Localised support from sludge contractors in resolving access issues proved effective.

	<ul style="list-style-type: none"> • Scientific Process support provided throughout and was targeted to most critical assets. • Hired in 4x4 fleet were effective in getting the required colleagues to site.
Distribution	<ul style="list-style-type: none"> • The backlog of burst main repairs was maintained at a low level prior to the weather event and reviewed daily • Storage was continuously optimised to provide maximum storage in the event of operational or weather issues • Private leakage policy had been improved to include all households including those in Local Authority/ Housing Association accommodation and Private sector landlords. • During the winter our inspectors carried lagging kits to assist any customers with frozen supplies wherever possible • Our telemetry system operated very well and bespoke summary pages for each of the areas prevented the need for in depth analysis to identify supply issues
Alternative Supplies	<ul style="list-style-type: none"> • Full Tanker fleet was available and HGV drivers from across the wider business had been identified. • 3 additional tankers purchased in the year were available as part of overall winter preparedness • Stocks of bottled water were maintained at maximum levels despite business as usual operational call on water supplies • The newly expanded in house Emergency logistics resources ensured early mobilisation and logistics support to silver centres

Areas for further enhancement of current capabilities/ ongoing focus of continuous improvement:

Area	Activity
General	<ul style="list-style-type: none"> • Increase our own 'snow clearing' capability due to instances of 'stretched' local authorities.
Water Treatment	<ul style="list-style-type: none"> • A review of diesel capacities at WTW will be undertaken to ensure sufficient quantities are available for stand by generation in the event of another prolonged severe weather event. • Localised snow clearing by our contractors was utilised in this event, but discussions required with contractors pan Wales on how we could improve further throughout all WTW's.

	<ul style="list-style-type: none"> • Additional lagging/heat tracing along with more mobile heating and associated fuel stored at WTW to be built into “Winter Plan”. • Critical look at resource levels and ability to cope with a longer duration incident. • Adequate facilities and supplies for welfare – build into “Winter Plan” • Action plans to be produced where WTW output is restricted to ensure full capability is maintained where possible. • Review of overall generator effectiveness - Generators that had been tested and found to be working a couple of days before the big freeze wouldn't start when the temperature subsequently dropped.
Distribution	<ul style="list-style-type: none"> • Increased remote network monitoring in affected rural areas. • Inlet and outlet flow monitoring at all our Storage Reservoirs is not currently available. Key meters are included in the plans for AMP7 • More automation and integration of our data to assist teams in diagnosing network issues • Data on void properties and seasonal business properties such as caravan parks should be available to assist in reducing network losses in key supply areas • A small number of network improvements to allow us to connect systems and move water around in an incident have been identified for investment in AMP7
Alternative Supplies	<ul style="list-style-type: none"> • Review process currently used for bottled water delivery and improve via emergency procedures and ‘dedicated’ additional delivery resources. • Consideration should be given to purchasing a third curtain sider with forklift truck for bottled water deployment • Tankering logistics is already an analysis project within our data science team and we will use the outputs to improve tankering effectiveness • A dedicated team will be established in Silver to manage vulnerable groups in conjunction with the LRFs and Welsh Assembly government in future. • Wider Contract needed for HGV Drivers • Local Contracts for bottled water required

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

What went well:

Area	Activity
Multi Media	<ul style="list-style-type: none"> • Multimedia customer contact team performed well
Operational Contact Centre	<ul style="list-style-type: none"> • Escalation procedure for mobilising additional resources in the contact centre • Maintaining responsiveness in call handling and providing information to customers • Overcoming transport challenges with 4x4's
Communications	<ul style="list-style-type: none"> • Co-location of the Company Communications team in a meeting room adjacent to Gold Command • Proactive approach to media • Use of all communication channels available • No schools closed as a result of losing supplies

Areas for further enhancement of current capabilities/ongoing focus of continuous improvement:

Area	Activity
Multi Media	<ul style="list-style-type: none"> • Size of the Multimedia customer contact team needs to increase with changing use of communication channels • Dedicated multimedia resource to be included in Silver Centres • Better visibility of multimedia needed in Silver Centres and Gold so clusters of communications can be identified to spot emerging/ongoing issues
Operational Contact Centre	<ul style="list-style-type: none"> • Use of manual logs resulted in a large backlog to enter onto SAP post event so a scalable easy to use logging system required

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

What went well:

Area	Activity
Working with Local Authorities	The liaison with Pembrokeshire County Council was extremely effective and a model to be explored with other councils in future (although we recognise that Pembrokeshire had the least impact from snow so their resources were less stretched than other local authorities across Wales and Herefordshire)

Working with the Emergency Response team for Blaenau Gwent	The Emergency Response Gold Command for Blaenau Gwent resulted in clear support for delivery of bottled water to vulnerable customers in their area.
Specific groups	Requests from nursing homes were managed well. There were no other specific groups identified but the ability to support with bottled water was effective
Individual deliveries	As the incident progressed and support from the wider business mobilised bottled water deliveries were completed effectively

Areas for further enhancement of current capabilities/ ongoing focus of continuous improvement:

Area	Activity
Identification of Vulnerable customers	Whilst our priority services register has significantly increased in numbers over the last few years we will work with agencies across Wales and Welsh Assembly Government to ensure that this is an accessible list which includes temporary vulnerability
The Priority Services register	Proactive contact was difficult due to the volume of requests we received. We will change our approach in future to contact these customers electronically with a dedicated means of requesting bottled water outside of the published contact centre numbers
Dedicated team	No one team had an overall view of how well we were meeting the needs of vulnerable groups. This will have a dedicated silver management team response during future events
Schools and Hospitals	We have committed to ensure that all schools have a continuity of supply as part of our Customer Minutes Lost strategy and as a result are working with our Business customer team to ensure we have dedicated contacts. Hospitals and Care Homes etc are already covered

d. [Having the appropriate governance processes in place.](#)

What went well:

Area	Activity
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Command Structure	<ul style="list-style-type: none"> • Crisis Management, Gold and Silver teams established early and worked well • Use of HR Director to mobilise broader staff teams • Dedicated manager on Tankering in Gold and Emergency Logistics Teams
Executive Team	<ul style="list-style-type: none"> • Crisis Management Team worked well with appropriate representation from key areas of the business • Early and continuous engagement of the Executive with specific designate roles • Chairman and Board engagement and updating

Areas for further enhancement of current capabilities/ ongoing focus of continuous improvement:

Area	Activity
Resourcing	<ul style="list-style-type: none"> • More formal readiness training for support staff • Review of roles in command structure to ensure activity such as Social Media is covered in all locations

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

2.1 Widespread deep snow and cold weather combine with High Winds give a unique set of challenges. Deployment of alternative supplies was made challenging by difficulties in transporting tankers, bowzers and bottled water around our supply area.

- Access Issues – we have seen a degradation in the ability of local councils to prioritise any of our key offices or operational sites for snow clearing and gritting activity, which affected our ability to respond;
- The remoteness of many of our customers in rural areas made access for alternative supplies extremely challenging; and
- Shallow and unlagged private supply pipes which freeze remain an issue despite publicity campaigns and issuing free lagging kits.
- Sub zero temperatures also meant that deployment of static tanks would have frozen and become unusable

Appendix 1: DCC's Priority Services Register procedure

Priority Services

We want to make sure that we always give the best service possible to all of our customers. If you have particular requirements due to your age, health, medical condition or extra communication requirements. Please register with us so that we can help adapt our services to your needs. We understand that not everyone's situation or needs are the same and our Priority Services may help you.

What sort of help is available?

There are a number of different ways we can help you. We can help you with your water bill or water meter, offer practical help and potentially offer extra services if you are visually impaired, speech impaired, hard of hearing, elderly or have physical or learning disabilities. The types of services we offer are explained below, alternatively you can download our Priority Services booklet [here](#).

Practical Help



I need water because of a medical condition

If you need water because of a medical condition, such as home dialysis, please let us know as soon as possible so that if your water supply is interrupted for any reason, we will make sure that we contact you as a priority. Your hospital may have already informed us but please let us know anyway.



I have a physical disability

We can provide you with bottled water if your water supply is interrupted. If the water is likely to be off for a long period of time and we need to use water bowisers these will be located as convenient as possible to you. We can offer assistance if you are unable to collect water from these bowisers.



I am blind or visually impaired

We can offer assistance with your bills and leaflets in the following ways:

- Large print
- Braille
- Audio tape/CD/MP3
- Read your bill to you over the phone
- Send your bill to a friend or a relative

If you are housebound we can send a representative of the company to your home to discuss the bill and payments with you.



I am deaf or hard of hearing or have a speech impairment

- If you use a text phone you can access our Text Relay Service (via the Next Generation Text Service) on **18001 0800 052 0145**. This is a free service that allows you to speak or type and it's converted into text.
 - If you have access to the web. you can talk to us through **Live Chat, Facebook** or **Twitter**.
- Register for **My Bill** where you can view your bills, current balance and the payments you've made
www.dwrcymru.com/mybill



Nominee

If you want us to contact a relative, friend or carer about your water and sewerage supply and/or your bill we need your permission. This will safeguard your interests and privacy. They will be our first point of contact and they will be able to contact us and sort out payments on your behalf. If you would prefer a relative/friend to represent your needs on a permanent basis you may want to consider a Power of Attorney. To find out more you can contact the Office of Public Guardian for further information [here](#).



I have dyslexia

We can help you by providing large print bills and correspondence on coloured background to stabilise the text.



I have a learning disability

If you contact us on the telephone we won't rush you and we will take our time when explaining things to you. If you have difficulties communicating or if you find it hard to understand your bill or other information you can nominate a relative, friend or carer to talk to us or receive correspondence on your behalf.



Help using our website

We want to make sure that our website is easy for you to use. We use RECITE which helps customers to personalise our website to suit their needs. This includes reading the screen, adapting the colour and font and providing a choice of languages. Look out for the Aa symbol on our website and click on it to start using Recite.

Keeping Safe



Password Scheme

We want you to feel safe in your home and you can choose a password for us to use when we need to visit, or contact you. We will always confirm your password first. This will help protect you from bogus callers who claim to be working for us. Try to choose a password that is easy for you to remember but make sure no one else knows it.



Bogus Callers

Bogus callers pretend to be working for a company to gain access to your property, or ask for your details over the phone. If you would like to find out more about bogus callers and what to do if you suspect them, you can visit our Bogus Callers page [here](#)

Help with your bill

We know that times are tough. So, we've got a number of ways that we can offer extra help to customers who are really struggling to pay their water bill. Get in touch to see if you may be able to get some extra help to lower your water bill. We're here to help.

Depending on your personal circumstances we may be able to reduce your bill. You can find out more about the options available to you by following this [link](#)



HelpU

Our HelpU scheme could save you up to £250 off your water bill and is available to those customers whose total household income is £15,000 a year or less.



Water Direct

Our Water Direct scheme takes away the hassle of paying your bills. It allows those customers who receive certain benefits and are currently in arrears to pay directly through their benefits. It's the lowest available payment plan that we can offer. If you sign up we will reduce your bill by £25.



WaterSure Wales

Our WaterSure Wales scheme is available to our customers who already have a water meter or who have a water meter fitted. WaterSure Wales helps low income households who receive a qualifying benefit or tax credit and either a large family or a family member with a certain medical condition that requires the extra use of water. Your annual charge will be capped for the year.



Customer Assistance Fund

If you have arrears with us that you're unable to pay, the Customer Assistance Fund could help. If you pay your current charges for 6 months we will pay off half of your arrears! If you then pay for a further 6 months we will pay off the remaining balance of your arrears.



Switching to a Water Meter

If your fixed annual charge is high, or you are a low user of water or live on your own, you could save money by having a meter installed. Installation is free and many of our customers have already made the switch and found it works in their favour. If you apply for a meter you have the option to switch back to your fixed annual charge at anytime up to 2 years from the date the meter was installed.

Interested? Sign up for our 'Priority Services' by:

- **Option 1** - Print off and complete the [Priority Services application form](#) and send it to us at the following address: **Dŵr Cymru Welsh Water, Freepost SWC 5253, Cardiff CF3 5GY.**
- **Option 2** - You can request a copy of the Here to Help application form via post by calling us on **0800 052 0145** between 9am and 5pm Monday to Friday. Alternatively, you can request one via text relay on **Telephone or text 18001 & the number you want to call.**

- **Option 3** - If you're unable to complete the form yourself, we're happy to do it for you. Please call us on **0800 052 0145** between 8am and 8pm Monday to Friday and 8.30am to 1.30pm on Saturday. Alternatively, you can use text relay on **Textphone: 18001 & number you want to call**.

Priority Services Application Form

[Click here to download the application form](#)



Priority Services Booklet

[Click here to download the Priority Services booklet](#)

Appendix 2 Extract from DCC's Emergency Response Manual - Section 9

9.1 Purpose of Section 9

The purpose of this section is to provide guidance to Incident Managers of Best Practice and Lessons Learned identified during the Post Incident Review process following Incidents or Exercises.

9.2 Forming Incident Management Teams

Following incidents in 2010, it was identified that members of Incident Management Team(s) availability and capability was at a disadvantage in some areas. As the scale of the emergency emerged, so the need to increase the number of incident management team members needed to. The scale of the emergency required the dedication of staff, as shift changes failed to occur and resources became strained.

Best Practice

During what is known as the 'Golden Hour', Incident Managers have a duty to assess the scale of the incident and implement an adequate number of incident management roles to mitigate the effects of an emergency. This should be assessed regularly throughout the course of an emergency. Identifying and implementing a shift pattern to ensure the Health, Safety and Welfare of all those involved during an emergency is a primary objective of all Incident Managers.

Preparation

Identifying Incident Management Team members prior to any emergency is key to understanding what resources an Incident Manager can call upon, ensuring that individuals have the skills, are willing to accept a role, have the correct level of access to systems and information to meet the challenges that an emergency will bring and determine any training needs or shortcomings that require development.

Response

Reducing the need to 'Catch-up' when an emergency is declared the following should be considered:

- Form an Incident Management Team quickly;
- Form a *Full* Incident Management Team initially, only make efficiency cuts following a review once the scale and severity is determined;
- Identify from the start what shift pattern will be followed and who will replace the current team.

Recovery

Remember, many activities continue beyond the emergency, responding to customer complaints, recovery of emergency equipment deployed etc. Factor this in when considering closing the incident and what additional support is required post emergency

9.3 Incident Management Logs

Following incidents and exercises in 2011, it was identified that the importance of maintaining both Incident Centre Logs and Personal Incident Logs are underestimated as to their importance.

A new Incident Log Procedure and Form has been developed and forms part of DCWWs Policy Managing Emergencies. [See IMS Procedure **EP(3) 09 Incident Logs** and **EPF 004 Incident Log Template**]

Best Practice

Visually displaying the Incident Centre Log and an account of Actions Arising will allow the whole incident room to be aware of both progress and remind them of actions that need to be completed.

Personal Logs

A Personal Log of events will provide the user a number of useful references for a number of reasons:

- If there is an inconsistency in the Incident Centre Log the personal Log can verify the situation;
- It should contain contacts made and received and brief content of conversations;
- It should contain what discussions took place, with who and decisions made and by whom;
- If a complaint is received that contact failed to be made to a Stakeholder, this can be verified;
- It can be used during a Regulatory Review;
- It can be used during a Post Incident Review;
- It can be used in a court of law (if hand written) as evidence;
- It is a defence as a record of actual events.

If a Personal Log of events is not maintained, in the eyes of the law, every conversation, discussion, decision and action would be called into question whether they actually occurred.

Incident Centre Log

An Incident Centre Log is used to capture key events, it verifies the actions taken by the Incident Management Team, the whole incident team need to feed information into the Incident Centre Log to keep it up to date with the most

relevant information. Following incidents and exercises in 2011, there was some ambiguity around resources that have been deployed in response to an incident.

Best Practice

Knowing what resources have been deployed and the location(s) throughout the course of an incident is vital to cater for the Health, Safety and Welfare of staff and contractors and understanding what available resources remain available. A clear record of what resources have been deployed also provides confidence to Regulators and Customers that Dŵr Cymru Welsh Water have provided an adequate response with sufficient types and quantities resources to discharge its duties as a Water & Sewerage Undertaker. Responsibility for staff and contractors is a responsibility of all tiers of Incident Management, for example: a contractor engaged to carry out duties on request by a Silver Manager, become the responsibility of the Silver Manager throughout the course of the incident, if a Bronze Manager is appointed, although the direct responsibility is that of the Bronze Manager, the responsibility remains that of the Silver Manager who is accountable for the actions of Bronze Managers.

9.5 Bottled Water Stocks

Following incidents and exercises in 2011, further clarification on the purpose and use of Bottled Water stocks was required. Bottled Water in terms of an Emergency is held to serve 'Vulnerable Customers' needs, these customer groups may be restricted in their ability to collect drinking water from deployed Static Tanks or Bowsers. For further guidance on how to identify Vulnerable Customers see IMS Procedure **EP(3) 03 Identifying Vulnerable Customers**

There are two types of bottled water stocks held by Dŵr Cymru Welsh Water:

- **Local Operations** – This Stock is normally used for small scale planned works and as an immediate response to an emergency until emergency stocks arrive to replenish. The principle purpose of bottled water stocks are to make provision for 'Vulnerable Customers'.
- **Emergency** – Stock held in storage to replenish Local Operations Stock (this allows turn-over and prevents shelflife expiry). This stock is held to provide support to Local Operations stocks.

Best Practice

When carrying out planned works or where there is a potential for an emergency to occur, it is prudent to issue bottled water to those registered vulnerable customers in advance, this will provide an element of breathing space when dealing with other vulnerable groups identified.

Preparation

Each Operations Area must retain a local stock of bottled water sufficient to serve the number of vulnerable customers for at least 24 hours for the areas worst case scenario. Failure to hold a sufficient stock is a failure in preparation.

Response

Local Operations Stock must be used to provide an initial response to an emergency until emergency stocks arrive to replenish those stocks. The cost of Bottled Water can be as much as **six times the cost** of water provided in Static Tanks or Towable Bowsers. Consideration should also be given to impact on the environment, where plastic waste will increase for the affected area.

Recovery

Where large volumes of bottled water have been deployed to Hospitals, Care Homes, Prisons or Schools, the collection of surplus bottled water must also be considered.

9.6 Severe Weather Information

Following incidents and exercises in 2010, it was identified that severe weather conditions were not foreseeable and preparation was not possible. Dŵr Cymru Welsh Water has access to Severe Weather Warnings and Flood Guidance Statements issued by the Met Office in conjunction with the Environment Agency, the Company Control Room receives these alerts on behalf of the company and disseminates to those staff that have signed up to receive those alerts through the company MS Outlook Group owned by the Control Room.

Best Practice

All Incident Managers should apply to the control room to receive Severe Weather Alerts, on receipt an assessment should be made and determine what preparations can be made, depending on the risk, this may include implementing an Incident Management Team to pro-actively monitor and react or preparing adequate available resources to respond

9.7 Multiple Incident Centres in Operation

Following incidents and exercises in 2010, a request to clarify how multiple Incident Management Centres would operate, the following guidance is provided. There are two distinct ways in which Incident Management Centres would be organised that depend on the circumstances, this depends on whether the incidents are related or unrelated.

Best Practice

Locally at the Tactical level, the Silver Incident Management Team will manage their incidents independently and the Gold Incident Management Team shall

oversee the Strategic response for multiple Silver Responses... unless.....the number of incidents are unmanageable due to scale, or whether the incidents are completely unrelated and require alternative skills to manage both incidents, for example a Water Incident and a Sewerage Incident occurring simultaneously would prove difficult and the decision to open multiple Gold Incident Centres resides with the Duty Gold Manager.

To ensure Dŵr Cymru Welsh Water continues to follow the National Emergency Planning Framework, only a single Silver Incident Management Team can be in place to manage an incident, the Silver Manager has the authority to direct the tactical activities of all other functions involved during the course of the incident. Only following the Gold Manager approval may a secondary Silver Incident Management Team be in place to manage a completely unrelated incident.

9.8 Provision of Alternative Drinking Water Supplies

To meet the requirements of Legislation (*SEMD 1998*) Dŵr Cymru Welsh Water have a duty to provide a Wholesome Piped Water Supply, where the piped supply is likely to fail or where an unavoidable failure of the piped supply has occurred, then an alternative means of supply is to be provided, as may be instructed to the Undertaker by the Secretary of State.

Best Practice

The Aim is to maintain a piped supply of wholesome water to all Dŵr Cymru Welsh Water customers. Therefore, to meet this strategic aim, the following objectives should be applied in order to achieve this. All efforts are to be made to return a wholesome piped supply as a matter of priority in a timely fashion, this can be achieved by:

- Re-zoning of a wholesome piped supply to affected customers;
- Issuing of Bottled Water to Vulnerable Groups (Registered or identified by Agencies);
- Deployment of Tankers to Vulnerable Groups where adequate 24 hour provision of on-site storage has been
- maintained (Hospitals, Schools etc.), this should correlate with *their* Business Continuity Plans;
- Deployment of Static Tanks for the needs of Domestic Customers;
- Have regard to, and deploy Non-Potable Water Tanks for Agricultural Livestock needs;
- Have regard to, the needs of Non-Domestic Customers if resources allow.

The *minimum* quantity of 10 litres of wholesome drinking Water per person per day (within 24 hours of any failure) must be provided for drinking and cooking purposes. If a Major Incident is declared, this quantity is to be increased to 20 litres of wholesome drinking water per person per day after 3 days to maintain hygiene standards (washing and flushing).

9.9 Reporting Emergencies

Following exercises in 2011, it was identified that internal communication failures affected the external communication process and could compromise Dŵr Cymru Welsh Waters' requirements under SEMD to inform the Welsh Government of any likely or actual emergency. To effectively discharge the Legislative and Regulatory Duties, Incident Managers must inform and keep informed those persons that have a role in communicating with Regulators.

Best Practice

Emergency Planning have a responsibility to inform the Welsh Government of any likely or actual emergency whether Water or Sewerage and will maintain a record of all incidents that have occurred no matter what the cause. Most known types of emergency are detailed in '*Incident Benchmark Tables*' within the Emergency Response Manual whether at Dams/Reservoirs, Potable Water, Sewerage, Security or Business Continuity related. Emergency Planning shall maintain the definitive list of emergencies that have occurred within each reporting period (1st April – 31st March) and have a duty to provide the list of emergencies that have occurred to the SEMD Certifier on an annual basis. Therefore all Incident Managers are required to inform the Emergency Planning Manager of any likely, or actual emergencies as they occur. This does not replace any other requirements of other functions within Dŵr Cymru Welsh Water to inform government departments or regulators made by, for example Water Quality/Scientific.

9.10 Issuing of Drinking Water Advice

Following exercises in 2011, an issue identified during the post exercise review determined there was ambiguity as to who has the authority in the company to issue '*Boil*', '*Do Not Drink*' and '*Do Not Use*' advice. The ultimate responsibility to issue advice on the Public Drinking Water Piped Supply remains the responsibility of the

Water Undertaker, although advice will be sought from other agencies (Health Protection Agency, Food Standards Agency, etc.) it is only the Water Undertaker that can issue advice on the Drinking Water Piped Supply for the area it serves. Although the responsibility for the issuing of a '*Boil*', '*Do Not Drink*', '*Do Not Use*' or '*All Clear*' notice resides with the Silver Incident Manager, it is prudent to take the advice from Water Quality specialists as to whether or not there is a need to issue such a notice and the type of notice to be served. '*Boil*' notices are issued where there is a risk to health from the piped water supply where the water can be used following boiling. '*Do Not Drink*' notices are issued where the piped water supply has been contaminated or suspected of being contaminated and there is a risk to health even if boiled. '*Do Not Use*' notices are issued where the drinking water supply is to be issued if the water supply is harmful to skin. '*All Clear*' notices are to be issued only once the drinking water supply has been verified as safe to drink following sampling¹

9.11 Bowser Location Plans

Following exercises carried out in 2011, an issue with producing Bowser Location Plans, specifically the time taken to print using a plotter. The Bowser Location Plans have been developed working to a set criteria to allow a maximum walking distance of 150 yards and maximising the number of properties served between Emergency Alternative Water Supply Static Tanks deployed on the roadside during periods where the piped supply or wholesome water supply has failed. Failure to deploy Static Tanks in the pre-determined locations could result in communicating incorrect locations, delays in communicating Static Tank Locations to customers and confusion as to where to locate static tanks by deployment staff that best serves the communities affected and having to rely on delayed or incorrect addresses being given by staff or contractors unfamiliar with the area.

Best Practice

It is recommended that Bowser Location Plans are pre-printed to minimise the period of time taken to print from the Company IT Systems, it would also serve as a good Business Continuity arrangement if for any reason the IT system were to be unavailable. It is a Legislative requirement that Static Tank Locations are to be reviewed annually and new housing developments that require additional Static Tank locations be included.¹²

9.12 Emergency Planning Portal INFOZONE

Following the series of Exercises in 2011, an issue has been raised as to the Incident Management Teams capability to access the Emergency Planning Portal.

Corrective Action

It is recognised that following recent restructuring changes to the Incident Management Rota appointments that a number of staff are unable to access the Emergency planning Portal, it has also been raised that Bronze Managers also have a need to access the information within the Portal to allow them to carry out their role.

We are pleased to announce that the Access Restrictions to the Emergency Planning Portal have now been lifted. In the event that a document is found to be password protected, this is for National Security Reasons, if you require access to any specific document please contact the Emergency Planning Manager. How to access the Emergency Planning Portal – Instructions Open the Company Intranet System 'INFOZONE' Select 'My Workspace' in the uppermost Toolbar Select 'Emergency Planning & Security' from the Document Library List¹³

9.13 BIS Critical System Availability

Following an incident in 2014, an issue was raised where essential BIS Planned Activities carried out to Dŵr Cymru systems could have compromised the data needed to effectively operate during an Incident. It is possible to suspend any planned BIS activities by contacting the BIS Service Desk (56701) 0303 313 0303. The Standby BIS Manager can authorise to suspend any BIS software upgrades or system maintenance that could be needed during an incident.

Best Practice

It is recommended that the BIS Service Desk are informed of an incident at the earliest opportunity of:

- Critical IT Systems needed during the Incident;
- Critical Sites (e.g. Incident Centre's);
- The BIS Service Desk should be informed of any change in Incident status:
- Escalation
- Downgrading; or
- Stood down

This is to ensure that essential BIS planned activities can resume or be re-arranged.

Appendix 3: DCC's Winter Weather Business Continuity Plan

1.1 Introduction

Effective contingency planning and the securing of strategic stocks will help the company to coordinate its response to cold weather and manage operations, wherever possible, as business as usual thereby reducing the impacts on the customer.

1.2 Objective

To maintain potable water and waste water services to the customer throughout any period of severe weather.

1.3 Aim

- Prevent operational incidents and disruption of supply caused by cold weather through effective preparation, management and forward planning of business activities leading up to winter.
- Minimise disruption to Dŵr Cymru's operations during winter weather. In the event of severe weather this plan, combined with the information held in the Emergency Response Manual (ERM) will help to manage and coordinate Dŵr Cymru's response at Strategic, Tactical and Operational levels.

1.4 Trigger

- The Winter Weather plan will be active throughout the year. A review of the previous year's plan will be conducted annually in March/April with subsequent activities identified in the plan following afterwards.
- The plan provides a timeline of all core activities counting down until the day before cold/severe weather is due to arrive.
- The SmartHub will be responsible for receiving severe winter weather warnings and communicating the information to the company via the weather warning distribution list.
- Upon receiving notice of a severe weather warning from the SmartHub function manager/area managers will be required to invoke their contingency arrangements.
- In the event of a specific incident caused by severe weather the response will be triggered in accordance with the guidelines set out in the Emergency Response Manual (ERM).

1.5 Supporting Documents

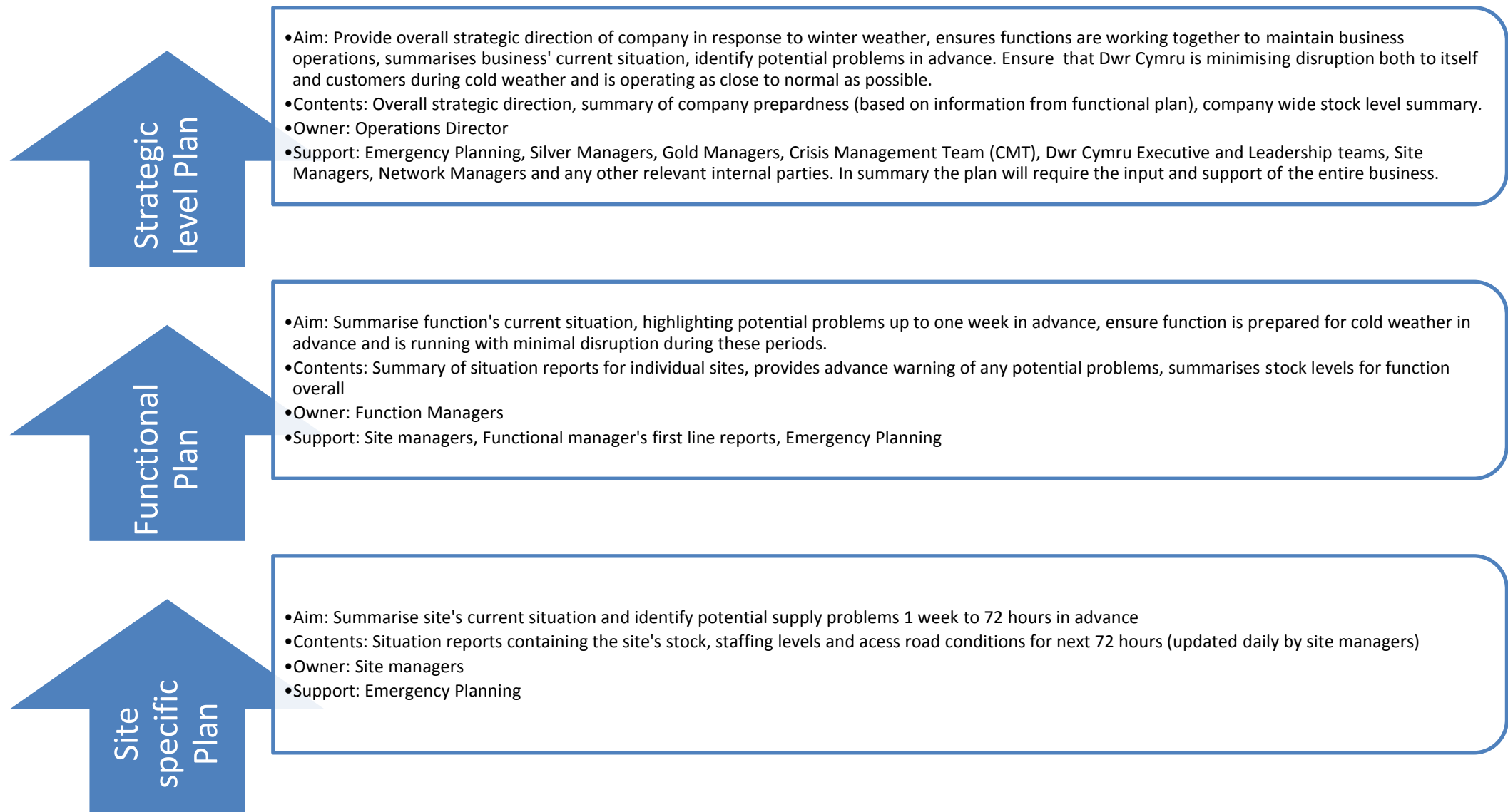
ERM: Once an incident has been declared plans and responses detailed in the ERM will take precedence.

Business Impact Analysis (BIA): Business Impact Analyses identify the critical colleagues in business areas.

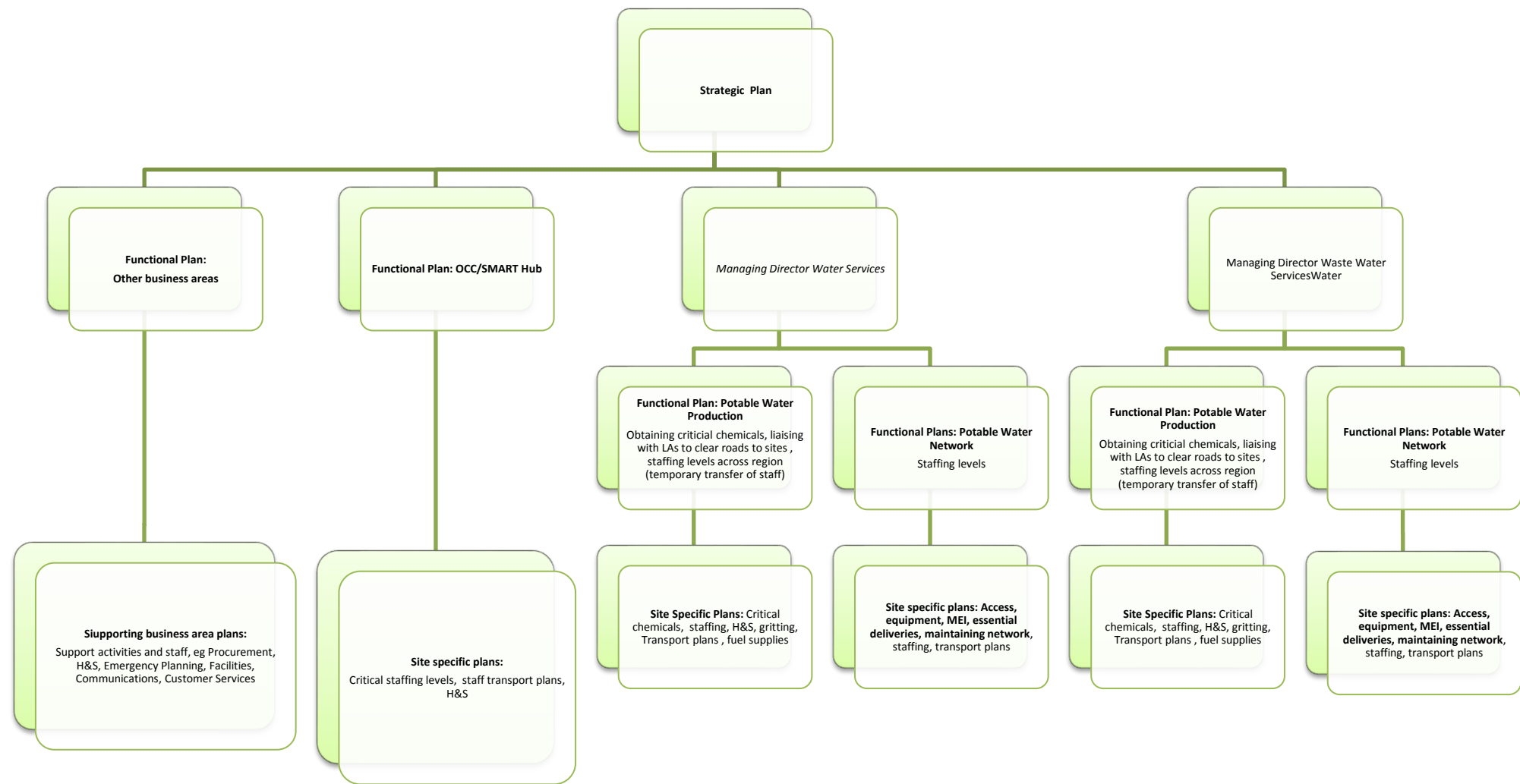
Functional level winter weather plans and risk assessments

Strategic level winter weather plans and risk assessments

2.1 Plan Summary



2.2 Winter Weather Plan Structure



2.3 Considerations

Communication with customers: The company website will be used extensively to advise customers during severe weather. Customers should be directed to the company website to answer queries in order to reduce the number of calls being received by both the contact centre and local teams during cold weather. It will be the responsibility of the communications department to ensure that the website is kept up to date during such events.

Cross functional training: Cross functional training, wherever feasible, will be organised on a local level by function manager/area managers (for example training production colleagues to work on the networks and vice versa). During cold weather this will enable colleagues to be temporarily transferred to support business areas that are experiencing higher levels of disruption. During periods of high call volume into the contact centre, colleagues from the income and billing call centre will be seconded to support this function.

Fuel stocks: Daily site risk assessments provide information on fuel levels providing information on when reordering should take place. During winter weather this will enable site and function manager/area managers to plan ahead to both order fuel earlier and also arrange for roads to be cleared. Principal fuel stocks to monitor are gas oil for generators and diesel.

Grit: It is the responsibility of site operators to ensure that they have an adequate supply of grit to maintain access to their sites. It is also their responsibility to identify when public roads accessing the sites need to be cleared. Both of these considerations are taken into account in the daily site risk assessment. Site operators will use this information to plan ahead and secure more grit from Dŵr Cymru or other local sources. Function manager/area managers will liaise directly with Local Authorities, on behalf of site operators, to arrange road clearance to their site.

Grit is bought in bulk by Dŵr Cymru during the summer months to ensure the company has an adequate stock well in advance of any cold weather. This is included in the strategic plan. In the event of extremely cold weather (below minus 8 degrees centigrade) grit will no longer melt the ice. In these instances alternatives to grit will have to be found.

Health & Safety (H&S): Sites managers are to complete winter weather H&S assessments as specified and monitored by H&S department. The H&S department will organise any additional safety training relating to winter weather working as identified by these risk assessments. Other health and safety considerations will relate to assessing whether sites are safe to work at during severe weather, colleagues driving on company business, ensuring appropriate staff are trained to use snow clearing and gritting equipment.

Helicopters: Emergency Planning will be responsible for liaising with category one responders (emergency services etc) to secure the use of a helicopter in the unlikely event that circumstances are so severe that it becomes impossible to reach sites by other means.

Off-road vehicles (4x4s): During snowy and icy weather the only way to access some sites is by using off road vehicles. Furthermore when poor weather leads to road conditions deteriorating 4x4s may be needed to shuttle colleagues from their homes into work. In order to ensure an adequate

fleet of 4x4s being available to Dŵr Cymru during the winter 4x4s will be sourced centrally by the company's transport department over the Summer/Autumn and be available for use by the end of November.

Priority delivery of chemicals/stocks: Based upon the daily site risk assessments provided by site operators, function managers/area managers will be made aware of priority deliveries to each site within the coming week. The risk assessments will also assess the condition of access roads to the site. It is then the responsibility of function manager/area managers to arrange for access roads to the site to be cleared.

Snow clearing (LRF, local): Function manager/area managers will be required to coordinate with Emergency Planning and Local Authority contacts to organise the clearing of public roads to the site. Emergency Planning are to coordinate in advance with LRFs to make them aware of operational need to keep public roads clear.

Colleagues: Business Impact Analysis (BIA) documents already identify the minimum number of colleagues required to run each site and function. BIA will be used by site and function manager/area managers to implement emergency backup rotas from November to March. It is both the site and function manager/area manager's roles to continually review and update these standby rotas. It is critical that these rotas are updated once early warning of bad weather has been received and once again once bad weather has arrived. The incremental updating of rotas should ensure that radical alterations to rotas at the last minute (and the disruption this could cause) are avoided.

2.4 Timescales

This table identifies key business task for the company as a whole. Individual tasks are allocated in the Strategic, Functional and Site specific plans.

Tasks commencing	Task(s)
April	Review last year's plans, BIA and risk assessments to identify lessons learnt. This will include strategic plans, functional plans and site specific plans. <i>Plans contained in the ERM will be reviewed as part of the annual ERM review.</i>
August	Organise training, order salt stocks, order new equipment, complete H&S assessments
September	Carry out training
November	Receive delivery of hired equipment, construct emergency backup rotas, complete site risk assessments (use information to confirm critical staff lists, critical delivery plans and identify access roads that may need clearing)
Weekly from last week in November	Update risk assessments, amend critical colleagues lists, critical delivery plans, arrange road clearance (when needed)

Regularly during cold weather (at least every 72 hours)	Update risk assessments, amend critical colleagues lists, critical delivery plans, arrange road clearance (when needed), arrange staff transport to site
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2.5 Stand down

Once cold weather period has passed revert back to weekly sit reps until the end of the winter (end of March). From start of April focus transfers to reviewing the plan and preparing for the winter. Weekly reporting will resume from the third week of November.

2.6 Transfer of plan ownership during severe winter weather incidents

During an incident caused by winter weather the responsibility for the execution of the winter weather plans will be transferred to the following response teams. The ownership of each plan will transfer to the incident team leader who will then delegate it to another (or several) incident team members.

Plan	Ownership transferred to	Trigger (see EIRM for further details)
Strategic Level Plan	Crisis Management Team (CMT)	Major incident
Functional Level Plan	Gold Team	Category One incident or higher.
Site Specific Plans	Silver Team, however responsibility for the completion and reporting of daily sit reps will remain with site operators (Bronze Managers).	Category Two incident or higher.

DCWW Winter Weather Plan: Strategic Level Plan

Owner	Task	Notes	Critical dependencies	Target completion	Date completed
Managing Director	Monitor performance and execution of functional level plans.	MD to be provided with regular Situation Reports on each functional area's performance.	Effective monitoring and execution of functional level plans by function manager/area managers.	Sit reps provided mid June, early September, early November, weekly from mid November and daily during cold weather periods declared by the Met Office.	Ongoing
Emergency Planning	Review last year's Strategic Level Winter Weather Plan		Successful completion and review of previous year's Strategic level, functional level and Site Specific response plans.	April	Ongoing

DCWW Winter Weather Plan: Functional Level Plans

Owners: Head of Potable Water, Head of Operational Services, Head of Commercial, Head of Communications DCWW functional level managers

Owner	Task	Notes	Critical dependencies	Target completion	Date completed
All Function manager/area managers	Review last year's Functional Level Winter Weather Plan		Successful completion and review of previous year's, functional level and site specific plans.	April	Ongoing
	Review BIA		Successful completion of BIA. If this has yet to be completed a BIA must be carried out by the Function manager/area manager as a priority	April	
	Complete winter weather H&S assessments for sites.		H&S assessments to be designed and issued by H&S department.	August	
	Liaise with talent development team to arrange any additional training identified as essential for effective working in winter conditions.			Training to be completed by November	
	Compile backup colleague rotas and route plans.			November	

	Provide procurement department with a request list of all additional equipment and grit requirements.			June	
	Complete functional level risk assessments. Provide sit reps for Strategic level plan.		Effective monitoring and execution of site specific plans by site operators.	Sit reps provided mid June, early September, early November, weekly from mid November and daily during cold weather periods declared by the Met Office.	
	Monitor performance and execution of site specific level plans.	Performance monitoring by functional team leaders who are to be provided with regular Situation Reports on each of their sites/business areas.	Effective monitoring and execution of site specific plans by site operators.	Sit reps provided mid June, early September, early November, weekly from mid November and daily during cold weather periods declared by the Met Office.	
	Invoke contingency arrangements		Upon receiving severe weather warning from the control room.	Ongoing through severe weather.	
Communications	Keep customers informed during winter by updating the website, issuing press releases and the use of any other communication tools that are seen as appropriate.	Constant updates on progress from the business as a whole.		Ongoing through severe weather and the subsequent thaw.	
SmartHub	Communicate severe weather warnings to the business via <i>the weather warning distribution list</i> .			Upon receiving severe weather warning.	

Emergency Planning	Review and update Emergency Equipment Plans			October	
Facilities	Identify grit stocks for each office site.			June	
	Ensure entrance and pathways around office sites are clear from snow and ice.			Ongoing during severe winter weather.	
	Complete H&S risk assessments for office sites.			November	
	Ensure food and drink arrangements during cold weather are communicated to the OMC			Ongoing during severe winter weather.	
H&S	Design H&S risk assessment for safe working on site in winter conditions. Distribute to site operators.			June	
	Issue H&S winter weather alerts		Communications department to support.	Commencing November	
Human Resources (Talent Development)	Arrange any additional training as identified by unit managers or H&S department.		H&S department to support.	November	

DCWW Winter Weather Plan: Site Specific Plans

Owners: Area/Site operators, Control Room manager, OAC Manager, Facilities Manager

Owner	Task	Notes	Critical dependencies	Target completion	Date completed
Site Manager	Review last year's Site Winter Weather Plan		Successful completion and review of previous year's, functional level and site specific plans.	April	March
	Review Site's BIA		Completion of previous year's BIA	April	
	Monitor performance and execution of site specific level plans by completing regular sit reps and forwarding them to function manager/area managers.	Performance monitoring by site operators who are to be provided with regular Situation Reports on each of their sites/business areas.	Effective monitoring and execution of site specific plans by site operators.	Sit reps provided mid-June, early September, early November, weekly from mid November and daily during cold weather periods declared by the Met Office.	
	Complete H&S assessments for working on site in winter conditions.			August (In order to allow H&S team time to arrange H&S training).	
Site/Area Manager	Compile emergency backup rotas (November-March) for site		Completed BIA	November, to be updated upon Severe Weather Warning, and once Severe Weather arrives.	

Appendix 4: Asset Improvement Plan for Gwent Water Production area following severe weather incident in 2010

Works	Issues	Actions Ops	Action Capital
Gwent	General	Weather watch arrange for Gritter to be ready to use and driver	
		Weather watch arrange for Gritter to be ready to use and driver	
		Weather watch arrange for Gritter to be ready to use and driver	

[illegible]

