Emergency Planning
Information for Local Resilience Forums & Emergency Responders

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Version 1

Southern Water

Contents

Introduction

This document includes information for Local Resilience Forum partners (LRFs) and emergency responders about Southern Water's emergency planning and how we respond to incidents that affect the local water and sewerage distribution system.

It's designed for incident leads and civil commanders responding to an incident at tactical and strategic levels, but also aims to provide an overview of the water industry and what to reasonably expect during a supply interruption or sewer flooding.

Company overview

Southern Water Limited operates in the South East of England. We provide water and treat wastewater across an area of 10,530km^2, from East Kent through to Sussex, Hampshire and the Isle of Wight.

We supply 521 million litres of drinking water a day – from 83 water treatment works along 13,905km of water mains. Each day we treat and recycle 718 million litres of wastewater at 365 treatment works after it's been pumped through a network of 3,321 pumping stations and 39,726 km of sewers.

Service area

Emergency response

Southern Water has round the clock processes to enable a quick response to any incident affecting water services. All day, every day monitoring of the water and waste water services is managed by our Regional Control Centre (based at our operational centre in Durrington, West Sussex).

We maintain significant storage levels of potable water (typically 24 hours). Should a failure in a major production or water transfer asset occur, this would maintain drinking water supply to our customers, enabling us to respond and correct many failures without any impact on our service.

Many parts of the network can also be re-zoned by remote or local means to enable supplies to be restored quickly. First line response teams are capable of investigating and re-zoning or isolating supplies as necessary and have round the clock access to repair teams who are fully equipped to carry out all temporary or permanent repairs in order to restore supplies.

Although the restoration strategy will take critical services and vulnerable customers into account, in practice the most effective and equitable method of supply restoration is to restore supplies to all customers as quickly as possible. All options for supply restoration will be considered including the use of temporary repairs and the provision of temporary overland pipes (in the case of water) or overland temporary pumping systems (in the case of sewerage), although the best option is often permanent repair or replacement to avoid the need for further supply interruptions later in the process.

Customer Information

As well as reporting the loss of water supply, customers contacting the emergency telephone numbers (available online, in directories and on their bills), will be provided with regular information updates and the closest estimated supply restoration as more detailed information becomes available.

Automated messaging and contact logging systems are used in conjunction with contact centre advisors to maximise the number of customers receiving a response even when the incident affects supplies to a large number of customers across a wide area; specific arrangements are in place to provide regular feedback on request, particularly to vulnerable customers registered on the Priority Services Register. Customers can also obtain updates from our social media channels and website at southernwater.co.uk.

We’re increasingly using social media such as Facebook and Twitter, to interact with customers on a more personal level and give real time updates.

Vulnerable Customers

Our response

Our Priority Services Register is a database containing information on all our customers who have a need for extra assistance, including:

- home dialysis
- medical condition
- medication to be taken
- mobility problems
- visual impairment.

Customers can register online at **southernwater.co.uk/register-for-individual-needs** or by phone on Freephone 0800 027 0800 from 8am–7pm, Monday to Friday.

Those on the register can benefit from:

- additional meter reading services – arrange for meter to be read regularly and customer will receive details of the readings.
- alternative formats of bills - braille or large print.
- talking bills – when bill is produced we will telephone customer to inform how much it is before posting.
- nominated bill facility – customer can chose an allocated person to receive bills.
- minicom service – customer type direct to southern water who talk to customer over the phone. 0330 303 1265 (calls charged at local rate) from 8am–7pm, Monday to Friday, and 8.30am–2pm on Saturday.
- type talk relay service – customer type to independent operator who relays the message to southern water. southern water talk to independent operator who types response to customer.
- free delivery of bottled water in an incident.

Local Authority response

As stated above, during an incident Southern Water will deliver bottled water to customers on our Priority Services Register. This will typically involve the delivery of packs of water to meet the requirements of 10 litres per head per day to the customer's home.

This process will not encompass all individuals classed as 'vulnerable' by the Local Authority. We expect the Local Authority to identify and coordinate the listing of those customers that they deem to be 'vulnerable'. It's also likely that those listed may need extra assistance, for example, delivery of bottled water to their home may not be sufficient – they may need assistance with opening bottles.

Southern Water will work together with the Local Authority for onward distribution to their listed 'vulnerable' customers. This will be on the basis of 10 litres per head for five days/20 litres per head per day after five days.

Emergency response – major incidents

Southern Water has emergency plans in place to deal with major incidents affecting water or wastewater services. We're aware of the types of external influences that can cause problems and have appropriate monitoring in place to escalate any response. The emergency plan includes the establishment of an internal strategic, tactical and operational structure and arrangements for coordination of all available employees in the response as well as the activation of water industry mutual aid where appropriate.

Severe weather

The most common current weather threats to Southern Water are freeze-thaw conditions, intense rainfall and prolonged dry weather.

Freeze-thaw

A freeze-thaw cycle has a tendency to burst water pipes. This is either due to water freezing inside the pipe, expanding, and then splitting the pipe (leaking when the water thaws) or due to the freeze-thaw process causing ground movement, then causing pipes to crack. The pipes that fail can be either the responsibility of customers or Southern Water.

Pipes owned by Southern Water are typically buried in the ground to a depth where the water does not freeze inside the pipes. These burst pipes can cause localised interruption of water services and if widespread/prolonged can cause wider interruption to supplies if demand is outstripping production capacity to the wider area. Ground covered with snow or ice also makes it difficult to identify leaks. Localised problems have been encountered in our supply area during the winters of 2010 and 2017.

Intense rainfall

Increased levels of rain which are higher than average can lead to localised flood events which affect the sewer network where combined sewers (those that carry both sewage and rainwater) are in operation. The combined sewers may not be capable of carrying the volume of rainfall if there is severe increased rainfall and as such the sewers may surcharge – either through manholes, or backing-up through the sewer network into properties. Typically, this would affect a very small proportion of the sewer network but can be a very stressful experience for customers should it flood their property.

Threats, including metal theft, cyber-attack and terrorism

Southern Water is actively involved in preparation and response planning at a national and local level for all types of threats which may affect water services, including steps to protect those elements of the critical national infrastructure owned and operated by us. This information is subject to security restrictions but can be obtained where appropriate from our security team or the police Counter Terrorism Security Advisers (CTSAs).

Civil Contingencies Act partner engagement

Our plan for major incidents includes roles to meet our obligations as a Category 2 responder under the Civil Contingencies Act 2004.

The number of Local Resilience Forum and Local Authority areas we cover presents us with considerable resource issues for regional events. We're committed to supporting partner agencies as much as possible but cannot compromise our response to an event by deploying front line commanders to LRF incident command rooms.

Partners can request assistance and advice with any water service-related emergency, round the clock – through our operations control centre out of hours, and from our Emergency Planning team during working hours. To ensure an effective and swift deployment of resource we'd prefer to attend via teleconference where possible. This also enables our Resilience Adviser to be based at our operations centre and obtain the most up to date information. We'll try to attend all levels of teleconference but will normally need to deploy the same individual as a single point of contact.

Where the situation requires it, or where partners specifically request, we'll deploy a Resilience Advisor to a local or regional command centre. While we have sufficient resources to maintain a presence for the full duration of any incident, we're unlikely to be able to support more than one location at a time and would prefer to attend the most senior coordinating group in any one event.

We'll proactively contact partners, using the call out procedures on resilience direct, during very large scale events. Such as where 10,000 population will be without water supply for more than 24 hours. Due to the nature of the water supply system (storage capacity of potable water) it's unlikely that we'll immediately lose supply to very large numbers of customers, and should therefore be able to inform our partners prior to a major incident affecting customers.

Partners can request our involvement with any water service-related incident. Contact details are available through the relevant contact directory of the Resilience Direct website.

Information sharing

We're clear that accurate and timely information is essential in dealing with the consequences of a water service interruption. During an incident, the number of localised problems (for example, during intense sporadic rainfall), the complexity of the work and the weather, travel and site conditions mean that we often don't have our normal level of detailed information.

We use automated messaging on our call centre telephony system to provide an overview of the major incident to explain why the nature of the event is causing reduced level of service response compared to normal service levels.

During a water service related major incident, we provide generic updates to Defra and these can be made available to partners on request. We can also provide copies of media statements that we've issued although due to the area we cover, we may not be able to contribute to a joint media statement with partners. We also aim to provide partners with the following on request:

- An overview map of the locations affected.
- A summary postcode listing of areas we know to be affected by faults.
  A separate list of customers (with property details) registered on our Priority Services Register known to be affected, that we're keeping updated as much as possible. Due to GDPR this information can only be shared in an emergency and must be deleted after the incident.

Wherever possible, we prefer to use de-personalised data to avoid any potential issues with the Data Protection Act/General Data Protection Regulation, but we recognise that this information is being provided in the interests of individual safety and will release additional information following an appropriate request. Partners should note that the level of information available depends upon the nature and type of event:

- Customers affected by specific incidents, where the extent of affected equipment is known early in the response, are relatively easy to identify.
- Customers affected by multiple widespread incidents are not easy to identify until a full understanding of the situation is available after initial specific site assessments.

Information requests can be made through the relevant liaison officer or single point of contact. When we have not activated our major incident plan, our regional control centre will help as far as resources allow.

Emergency planning

National

All water companies must comply with the Security and Emergency Measures (Water and Sewerage Undertakers) Direction 1998. This is part of the Water Industry Act 1991. The SEMD instructs the water companies to have necessary plans in place for providing essential water supply and sewerage services at all times. This is not necessarily the normal piped services.

Each water company must produce an internal annual report to confirm that it is complying with the SEMD. An independent certifier (approved by Defra) also confirms company compliance with SEMD. Both of these reports are required under the SEMD and are sent to Defra each year.

All water companies share industry mutual aid through a formal agreement which coordinates additional resource allocation across the country in an emergency. Southern Water Limited also has a formal contract in place with a logistics company, which would utilise their resources and expertise in distribution and refilling water tanks that would be deployed on the streets in an incident.

Regional and local

Southern Water is a Category 2 responder under the terms of the Civil Contingencies Act and works closely with Local Authorities, the emergency services, other utilities and all other partner agencies. This includes attending relevant Local Resilience Forum meetings, taking part in exercises and participating in response command groups as necessary.

Risk assessment

In common with all water companies, Southern Water has well developed emergency plans to ensure a coordinated response to a range of events. There are three main currently identified risks to the water supply services:

Failure of water Infrastructure or loss of drinking water (H39)

Loss of, or no availability for drinking, of the piped water supply for up to 50,000 people, for more than 24 hours and up to three days. There hasn't been an incident of this scale in our area in recent times.

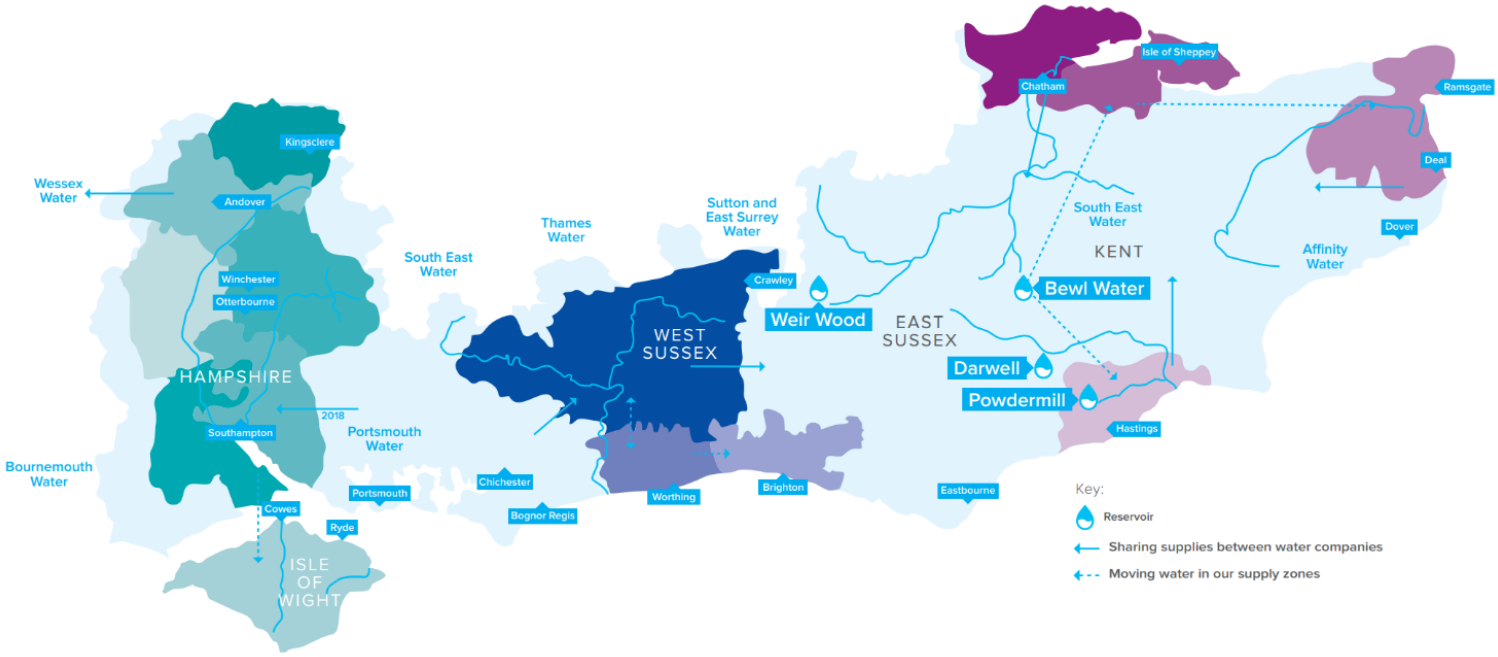
Reservoir dam failure/collapse (H44)

Reservoir (capacity > 25,000 cubic metres) dam failure or collapse, collapse without warning resulting in almost instantaneous flooding, significant movement of debris (including vehicles) and sediment, complete destruction of some residential and commercial properties and serious damage to a large number of other properties. This type of event has never occurred in the Southern Water region.

Drought (H50)

There are two sets of indicators used to define a drought these are rainfall and water levels. Both indicators are monitored across the region. Water levels are monitored in three different locations: groundwater, rivers and reservoirs. Flows are derived from water level measurements taken in a river. These measurements are typically taken at discrete points called gauging stations. By using these two different types of measurements we can then asses the prevailing conditions to determine whether a drought is developing by calculating the rainfall deficit.

Consideration should be taken into account for other risks that would have an immediate knock-on effect to the water supply such as Disruption to regional electricity transmission (H45).



Western water resource zones

Kingsclere, Hampshire
100% groundwater

Andover, Hampshire
100% groundwater

Isle of Wight
47% groundwater,
23% river, 30% transfers

Rural Hampshire
100% groundwater

Winchester, Hampshire
100% groundwater

Southampton East, Hampshire
52% river,
48% groundwater

Southampton West, Hampshire
100% river

Central water resource zones

North Sussex
35% groundwater, 51% river,
8% reservoir, 6% transfers

Worthing, Sussex
98% groundwater,
2% transfers

Brighton, Sussex
100% groundwater

Eastern water resource zones

Medway East, Kent
100% groundwater

Medway West, Kent
56% river and reservoir
44% groundwater

Thanet, Kent
77% groundwater,
2% river, 21% transfers

Hastings, Sussex
5% groundwater, 79% reservoir,
16% transfers

Plan for major incidents

The Southern Water Incident Management Plan covers all the policies and procedures required to respond to any major incident that has the potential to affect water or wastewater services. The plan incorporates coordination with other water companies and the government for national water service emergencies.

Information sharing and exercise attendance

Partners may request information to assist them in developing multi-agency plans and carrying out local risk assessments through the appropriate single point of contact. Response timescales will depend upon the complexity of the information requested. Southern Water will support multi-agency exercises and events wherever possible. We find these events supplement the internal training offered to our liaison officers and may ask for them to participate or attend as an observer.

In order to provide meaningful information for water service-related, multi-agency exercises, we need to conduct considerable 'what if…?' scenario investigations to produce information from our real-time systems. The resources required limit our ability to participate fully in multi-agency exercises and we may need to provide generic response information rather than incident specific.

Customer resilience and advice

In the event of issues with water supply or flooding, we have lots of information and advice for domestic and business customers on our website at **southernwater.co.uk/emergencies**.

Simple advice for customers with no water includes:

- Check the internal stop tap of the property to make sure it's fully on.
- If it is, check with your neighbours to see if they're affected too.
- If you live in an upstairs flat, you may be on a joint supply with the downstairs flat. Check with your downstairs neighbour to see if they have turned off their supply internally as this may be affecting yours.
- Call us on 0330 303 0368 if you and your neighbours have suddenly lost water. We'll be able to advise if there's a problem with the supply in your local area.

Due to essential maintenance, or in an emergency, it may be necessary to temporarily turn off or re-direct a water supply. When possible we'll notify all customers with a card through the door, or a loud hailer, with expected timescales for completing the work.

Beat the freeze

Simple advice for customers during winter months includes:

- Ensure pipes are properly lagged/insulated, both inside and out, to prevent freezing.
- Keep heating turned on, or on a timer for short periods every day, to maintain warmth.
- Check for draughts around windows and doors and insulate if needed as pipes can freeze if near a draught.
- Make sure pipes and tanks in the loft are lagged/insulated.
- Customers should find out where the property's internal private stop tap is located and check that it works in case of an emergency. If it doesn't work, contact a plumber to fix it.
- Turn off valves to outside taps and drain any excess water.
- If the property is going to be unoccupied, the water supply should be turned off at the private stop tap and internal water pipes and tanks should be drained. If we get long cold spells, static water in pipes will eventually freeze despite lagging

If pipes do freeze:

- Apply gentle heat to the pipes. Use a hair dryer, heat lamp or fan heater. Do not use a naked flame or blow torch. Start at the tap and work away from it, leaving the tap open to allow thawed water to escape.
- Watch the pipes for any splits which may develop.
- If any bursts are found, turn the water off and call a plumber who will be able to help.

Customers can access this information online at **southernwater.co.uk/prepare-for-winter**.

Reporting leaks

We also encourage customers around the region to help us in the drive to stop leaks, especially in icy conditions, by reporting any leaks they spot either out in public or outside their property. To report a leak customers can phone us on 0800 820 999 or use our online form at **southernwater.co.uk/report-a-leak**.

Sewer flooding

Sewer flooding is a very serious issue and we're committed to reducing the risk of it occurring in our region. While we're able to identify the cause and resolve a great number of flooding problems quickly, there are occasions when more detailed investigations are needed. To ensure that all customers receive the same high level of service, all incidents of sewer flooding are dealt with under our sewer flooding procedures.

Simple advice for customers experiencing sewer flooding includes:

- Contact your household insurance company to inform them of an incident, your insurers will provide advice when dealing with any loss or damage to your property.
- Turn off your gas and electricity supply if the inside of your property is flooded.
- Please phone us on 0330 303 0368 providing as much information as possible so we can accurately record details of the flooding.

The water industry

The water industry comprises four main areas reservoirs, water treatment, water distribution, and sewage treatment.

Reservoirs

A reservoir is a large, natural or man-made lake used for collecting and storing water when there's plenty for people to use. Few large cities today could survive periods of drought without their reservoirs. Even where most of their water is obtained by direct abstraction from a river, reservoirs are still needed to make sure water is available during drought periods so that too much water isn't taken from the environment. There are two main types of reservoir:

- Direct supply – stores water and supplies it straight to a water treatment works.
- River regulating – stores water during rainy periods and releases extra water into rivers when needed so that it can be taken out further downstream for treatment.

Water treatment

We clean water to take the colour and dirt out of it, and remove any germs. The germs that can be found in unclean water could cause diseases like cholera and typhoid, as well as diarrhoea.

There are four main stages in water treatment:

- Abstraction – taking water out of a river or other water source.
- Clarification – making the water clearer by removing the dirt and colour.
- Filtration – filtering the water to trap anything floating in it.
- Disinfection – killing any germs with chlorine.

At all points along the way, water is continuously tested and monitored to ensure it's being treated correctly, following compliance and that the water is flowing smoothly.

Water distribution

The distribution system is a network of pipes, pumps and tanks which ensures that enough water is available when needed and that it's delivered safely to people's homes and places of work or leisure.

Once treated, the water passes along water mains to a service reservoir where it's stored until needed. From the service reservoir water passes down the water mains to the stop tap (normally beneath the pavement outside customers' homes). At this point their private water supply pipes take over and carry the water into their homes.

Sewage treatment

The majority of used water drains away and enters the sewerage system. Sewage is the water found in sewers. It can be a mixture of water which has been used for a variety of purposes in the home, at work or in leisure activities, rainwater from roads, footpaths and roofs and water used for business and industrial purposes.

Sewage contains a wide range of waste products including:

- solids suspended in the water
- things dissolved in the water
- bacteria and other sewage micro-organisms living in the water.

Sewage treatment works remove things from sewage that could harm the environment, so that the water can be returned to a river or the sea.

There are six stages in sewage treatment:

- Preliminary – removes the large bits, sand and grit.
- First settlement – removes the small solids.
- Biological phase – removes things that are dissolved.
- Second settlement – removes dead bacteria and their waste.
- Tertiary treatment – removes any harmful germs.
- Sludge drying – removes water so that it can be recycled as a fertiliser or a fuel.

The above illustrates the assets we manage, monitor and maintain on a daily basis to make sure our services are as resilient as possible, as well as the number of properties that rely on us.

Network resilience

Although typically, water and wastewater services are available to customers almost 100% of the time, it's not possible to guarantee a continuous service.

There's currently no regulatory or water industry standard which sets an acceptable level of resilience for water supply networks. A resilience event may be caused by the catastrophic failure of a critical asset, for example a raw water source, a critical water treatment works, or a critical asset in the distribution network such as a service reservoir.

Reasons for the catastrophic failure could include:

- contamination of the raw water supply
- loss of a major river or rail crossing
- fire at a water treatment works causing widespread damage to systems and processes.

Southern Water continues to invest millions of pounds each year to improve network resilience so that a resilience event is even more unlikely.