



Resilience

South West Water's progress and plans towards provision and maintenance of a long term resilient and reliable service for customers.

June 2017



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Resilience – what is it?

Resilience is the ability to cope with, and recover from, disruption, and anticipate trends and variability in order to maintain services for customers and protect the natural environment now and in the future.

South West Water is aware that for it to be considered as resilient it must demonstrate a mature understanding of the level of financial, corporate, environmental and operational risk it faces, and the consequences of those risks being realised. This in turn places a further obligation on the business to ensure the right skills, leadership, systems, processes and infrastructure are in place to support delivery of a robust, affordable, and reliable service to its customers.

It is vital to ensure resilience is considered in the round. As outlined in the current UK Government guidance 'Keeping the Country Running'¹, provision of a resilient service can be delivered in a number of different ways;

the need for companies to avoid reliance on single assets

making sure systems and assets are afforded adequate protection



the ability to respond to events and incidents in a timely, proportionate and cost effective manner

ensuring that systems and assets are designed in such a way that operation can be maintained in the event of risks being realised

¹ Keeping the Country Running - 21 October 2011

Resilience – what is it? continued

The need to be resilient is not unique to the Water Industry, resilience is key across all critical national infrastructure assets including road, rail, energy and communications networks. It is also crucial to understand the interdependencies between these networks, to consider resilience in the round and to understand the potential effect of ‘cascade failure’. For example a well protected water treatment works is not fully resilient unless the third party services it relies on (power, communications etc) are also resilient and readily available under all conditions.

The Water Act 2014 places a duty upon Ofwat to use their powers to ensure companies current performance and future plans have resilience at their very core. Companies will be expected to provide evidence that their plans are fully aligned to the needs and wants of their customers and can be implemented within affordability constraints. This promotes a long-term requirement to ensure resilience of our water and wastewater systems and resulting service provision in the face of increasing external stresses, such as environmental pressures, population growth and changes in consumer behaviour.

The recently published Defra guidance – The government’s strategic priorities and objectives for Ofwat – has reinforced the priorities for Ofwat and companies in this area. The document is clear that securing long term resilience at a price customers are willing to pay is central to the long term vision of a water industry that works for everyone.





Why is it important for customers?

A resilient supply of water is vital to UK industry and the wider economy, the UK water industry is faced with the effects of a changing climate, growth in population, worldwide financial uncertainty, increasing environmental standards and ever higher customer expectations.

There have been a number of high profile events in recent times that have highlighted the challenges associated with the delivery of water and wastewater services in extreme conditions, from extreme levels of flooding through to periods of drought.

South West Water continue to actively engage with our customers and they have repeatedly told us that they expect us to provide a service that is secure, safe and reliable so that supplies can be maintained, even in extreme conditions.

Recent customer research has identified that a clean, safe and reliable supply of drinking water remains our customers' number one priority. For us to ensure the expectations of customers are realised a basket of measures are required, these measures range from protecting the source habitats of our raw waters through to the effective management of the distribution network.

Customers in our region also continue to place a high priority on protection from flooding and storm overflow from our wastewater treatment works and sewerage network which may impact on rivers, shellfish and bathing waters. Again a basket of measures are required to ensure these expectations are realised from protection of our treatment facilities through to the management of our wastewater network and catchment based initiatives designed to alleviate sewer flooding and protect the environment.

For business customers it is also vital that we continue to work to provide and maintain an infrastructure network that underpins sustainable economic growth. This requires a careful balance to be struck between facilitating development and understanding the longer term issues to be considered if such development is to be deemed both sustainable and resilient.

This document outlines the work completed in these areas to date and focuses on the improvements we intend to implement at an affordable pace over the long term. Improvements that will secure services for current and future customers, and ensure the outstanding natural environment of our peninsula is afforded the level of protection it demands.

Delivering on our commitments

CASE STUDIES

1.

FLOOD PROTECTION AT PYNES

2.

WIMBORNE DUPLICATE MAIN

3.

CATCHMENT MANAGEMENT/ UPSTREAM THINKING

4.

DOWNSTREAM THINKING

5.

RIVER EXE/ COUNTLESS WEAR

6.

FLOOD PREVENTION IN CAMBORNE AND TORBAY

7.

FINANCIAL RESILIENCE

8.

WORKFORCE / SKILLS / APPRENTICES

9.

FLOOD DEFENCE INNOVATION

10.

LOCAL RESILIENCE FORUM/ MUTUAL AID

11.

ENERGY STORAGE

12.

CYBER SECURITY

13.

SEWER MISUSE - LOVE YOUR LOO



1.

FLOOD PROTECTION AT PYNES

Keeping our operational sites running and available at times when they are needed is **fundamental to maintaining reliable and uninterrupted service to our customers.**

With some key changing climate and unpredictable weather patterns, our sites are now at more risk from such events and we need to make sure we take steps to sufficiently protect them or develop systems to enable a rapid recovery to normal service when required.

South West Water experts have been working with the Environment Agency (EA) for a number of years to understand the risk presented by flooding of our critical assets. Using historical data, projected climate change impacts and computer modelling we have been able to identify those of our sites most at risk of being inundated during flooding events.

We have already put a number of protections in place, including that for our strategic water treatment works, Pynes, which supplies the whole of Exeter and the surrounding area. This site is located on the flood plain of the River Exe, and only recently the main rail line which runs nearby was damaged by floods, disrupting travel for thousands of commuters. We intend to avoid similar disruption to our services.



2.

**WIMBORNE
DUPLICATE
MAIN**

We believe it is important that should an interruption to water supply occur, our customers can continue to receive water from an alternative source.

Where possible, we are looking to duplicate our larger mains to prevent unnecessary supply interruptions.

Over the past 20 years within the South West Water area, we have already installed a duplicate main in Cornwall to ensure a resilient supply to the west of the region and we are now undertaking further investment to duplicate mains within the Bournemouth Water area.

We are in the process of installing a dual supply to the Wimborne area, reducing the risk of unplanned interruptions and securing supplies for a significant number of properties. The scheme will also readily enable maintenance to be undertaken of the existing main which will have additional benefits of reducing discolouration events in the area.

The new main will enable Wimborne to have a dual resilient feed from both of our Stanbridge and Alderney sources.





3.

CATCHMENT MANAGEMENT/ UPSTREAM THINKING



Upstream Thinking Protecting water supplies, infrastructure and the environment through catchment management.

Since 2007, South West Water has been working on 'Upstream Thinking' – an initiative that takes a holistic view of the water management of entire catchment areas, Upstream Thinking focuses on achieving improved raw water quality and water storage in the natural landscape to make the provision of drinking water more sustainable. In turn, this will help to control the rate of bill increases in the future and, as a linked benefit, it also restores the natural environment and the ecosystems within it.

Our catchment management projects are looking after the land to protect the rivers. This work is aimed at improving raw water supplies by reducing agricultural run-off and pollution and increasing storage in the catchments through wetland and mire restoration. It is also protecting wildlife in the rivers and on the moors and providing additional environmental protection to South West Water's assets.

The land, rivers and coast of the South West are its natural capital assets. The key principle of Upstream Thinking is investment in natural capital to protect and enhance it.

Improvements to natural areas such as the moorlands are direct investments that improve the function of these habitats. Improvements to farm yard drainage and slurry storage, river bank protection measures and chemical spraying workshops for farmers are indirect investments that also protect the natural environment.

In both examples the investment goes to the land manager, a direct payment for an investment that delivers cleaner water (an ecosystem service).

We are also delivering other innovative developments in the area of payments for ecosystem services. We worked with Westcountry Rivers Trust to develop a reverse auction scheme with land owners in the Fowey catchment, Exmoor National Park Authority to deliver an annual payment to moorland owners with restored peatland on Exmoor, and we are developing agricultural pesticide amnesty and replacement schemes.

We will continue to develop the principles of investment in natural capital for the ecosystem services as they deliver a way of developing resilient catchments for the future.

The majority of the water we supply to our customers is sourced from rivers and reservoirs but the process of improving its quality now begins before the water arrives at our treatment works .



3.

**CATCHMENT
MANAGEMENT/
UPSTREAM
THINKING**
CONTINUED

**Sustainable
partnership approach**

The current programme is being delivered through a partnership of the Devon Wildlife Trust, the Cornwall Wildlife Trust, the Westcountry Rivers Trust, the Exmoor Mires Partnership, the Exmoor National Park Authority and South West Water.

The partnership works closely with the Environment Agency, Natural England, the University of Exeter, the Farming and Wildlife Advisory Group, the National Farmers Union and local catchment partnerships.

We are working to put all our combined knowledge, expertise and available funding together to achieve multiple benefits.

Upstream Thinking is a natural partnership for South West Water and the project partners.

There are two main strands of work.



**Devon
Wildlife Trust**



1. Working with the agricultural community to promote and support environmentally safe farming

Upstream Thinking is reducing diffuse pollution and agricultural run-off into the region's rivers, estuaries, bathing waters and reservoirs.

The project includes farm visits, one-to-one advice, and the provision of grant funding for improvements, such as:

- River bank fencing to stop stock erosion and nutrient input
- Yard improvements to separate clean and dirty water and reduce the volume of dirty water leaving farmyards
- Increased slurry storage and protection measures
- Habitat restoration to increase water filtering and storage

The long-term benefits include:

- Reducing the resources (i.e. chemicals) needed to intensively treat water
- Increasing biodiversity
- Reducing energy use for water treatment
- Potentially delaying the need to upgrade water treatment works
- Less contaminated water reaching our bathing and shellfish waters
 - Increased catchment storage in wetlands and mires adds to the baseflow of river water supplies.
 - Flood risk mitigation through peak flow reductions.
 - Protection of groundwater supplies, reservoirs and other water supply assets.
 - Total reductions of nutrients like phosphorous and Nitrates entering our rivers and estuaries.



3.

CATCHMENT MANAGEMENT/ UPSTREAM THINKING CONTINUED

The Upstream Thinking Programme is being delivered in 11 catchments by 5 partners. This programme is focused on improving raw water quality and supplies.

2. Restoring wetlands and peat bogs

Peatland and wetlands have been an intrinsic part of the South West landscape for over 5,000 years. During this time, human intervention through agricultural drainage, peat cutting and burning has had a significant impact, resulting in significantly less wetlands, dried out and eroding areas of moorland and a reduced ability for the landscape to hold, clean and store water. The role of these areas in carbon storage and capture and the climatic benefits restoration can bring is now well evidenced and understood. Mires damaged by drainage release on average 1-5 tons of carbon per hectare, per year depending upon the damage. Re-wetted mires can turn this around and sites can start to store rather than emit carbon in less than 5 years after restoration. On Exmoor the average carbon dioxide emissions savings from restoration have been measured as 0.87 tons of CO₂/ha/yr. When multiplied up to over 1000 ha of restoration this equates to 870 tons of CO₂ saved from the atmosphere/ha/yr.

Using locally developed moorland ditch-blocking techniques, culm and wetland grassland restoration, and other techniques, the partners involved in Upstream Thinking are working to re-wet the peatlands and restore or create wetlands.

The benefits this will bring include :

- Reduced peak flows and increased river base flows
- Improved water quality with less sediment and discolouration
- Reduced water treatment costs
- Restored habitats for local wildlife (including insects, amphibians, otters, snipe and curlew)
- Carbon capture and storage.

For the future

We are now looking at how catchment management principles and techniques can be applied to the whole catchment to deliver greater benefits. As well as upstream water quality, catchment management can be used to reduce the amount of nutrients and pollution in the whole catchment, estuary, bathing water and shellfish areas. Catchment management can also have downstream peak flow and flood risk reduction benefits on wastewater and drainage systems as well as South West Water's assets and urban and coastal communities at risk of flooding.

4.

**DOWNSTREAM
THINKING**

Downstream Thinking is South West Water’s catchment-based approach to **alleviating sewer flooding and reducing pollution of watercourses.**



Downstream Thinking is South West Water’s catchment-based approach to alleviating sewer flooding from our wastewater networks helping to accommodate more house building and reducing pollution of watercourses through soft engineering solutions and partnership collaboration. The aim is to achieve both the best outcomes for customers in the short term and support our longer term goals by applying the principles of holistic catchment management.

Our sewer network is in most places a ‘combined system’, taking both surface water and foul flows. This network is increasingly being overwhelmed by stormwater from the catchment.

Some traditional ‘hard engineering’ solutions, such as large stormwater retention tanks or upsizing of pipework might resolve the sewer flooding for a time but unless the whole issue of surface water in a given area is tackled, homeowners and businesses will continue to be at risk from flooding.

Working in partnership with other agencies and the community, Downstream Thinking incorporates a range of activities including retrofitting Sustainable Drainage Systems (SuDS), Natural Flood Management (NFM), targeting sewer misconnections, and tackling sewer misuse, alongside developing the use of real-time data.

By holding back stormwater during heavy rainfall until the worst weather has passed, we can alleviate sewer flooding whilst creating attractive urban landscape features.

A wide range of partners are consulted in a Downstream Thinking approach to ensure all potential sources of flood water, from highway drainage to flooding from watercourses, are fully considered.

Engagement with communities is central to our approach. Unlike traditional infrastructure, which is buried in the ground, green infrastructure might change land-use in places like parks, pavements and even farmland. It is vital to understand how the land in question is used so that SuDS can be implemented in a way that communities and landowners agree with and which enhances amenity, recreation and biodiversity. Keeping surface water out of our combined system also frees up capacity for housing development to meet the needs of a ever increasing population.



5.

RIVER EXE/ COUNTESS WEAR

Resilience is about the capacity to **maintain essential services** under a range of circumstances from normal to extreme.

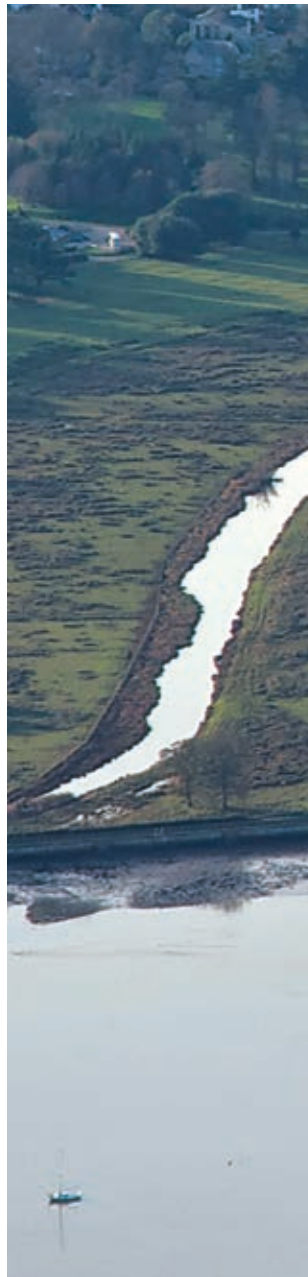
This emphasises the need for service resilience, not just asset resilience.

Understanding future needs is complex as so many actions contribute to problems and to solutions, and issues often tend to be localised in nature. Developing and improving the resilience of the wastewater sector for the long term by partnership working is key.

A key partnership project is the flood protection for Countess Wear wastewater treatment works in Exeter in collaboration with the Environment Agency's Exeter Flood Defence Scheme. The lower reaches of the River Exe are at risk of flooding from the river and tidal influences of the estuary. We have large trunk sewers and Countess Wear, which serves a population in excess of 140,000, within this risk area. The damage or loss of use of these assets would seriously impair our ability to maintain a wastewater service to our customers, impacting significantly upon the local environment. We are investing to provide enhanced bunding to protect against site flooding and to help protect the trunk sewers located adjacent to the river.

In addition to the work proposed by the Environment Agency, we have provided a steel sheet pile wall to the full 1.4 km perimeter of Countess Wear to protect the site from 1:100 year fluvial/pluvial and 1:200 year tidal flooding.

We recognise that holistic planning and partnership building is essential in order to deliver successful outcomes to customers. Through a series of meetings and consultations both internally and externally we will continue to identify opportunities for partnership working and efficiencies in delivery with partners such as the Environment Agency, local authorities and our local Resilience Forum colleagues.



6.

FLOOD PREVENTION IN CAMBORNE AND TORBAY

South West Water has been actively working to develop sustainable solutions to urban drainage problems.

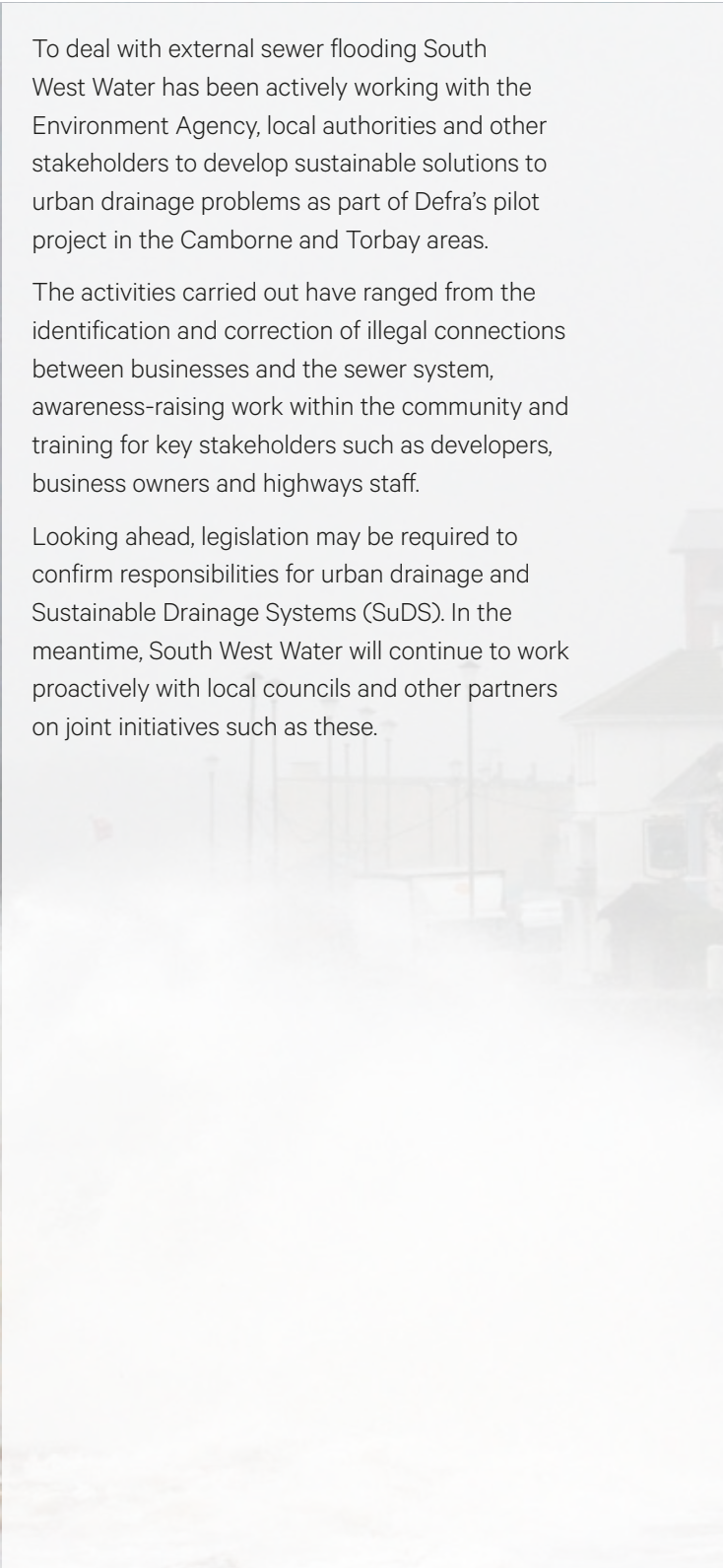
To deal with external sewer flooding South West Water has been actively working with the Environment Agency, local authorities and other stakeholders to develop sustainable solutions to urban drainage problems as part of Defra's pilot project in the Camborne and Torbay areas.

The activities carried out have ranged from the identification and correction of illegal connections between businesses and the sewer system, awareness-raising work within the community and training for key stakeholders such as developers, business owners and highways staff.

Looking ahead, legislation may be required to confirm responsibilities for urban drainage and Sustainable Drainage Systems (SuDS). In the meantime, South West Water will continue to work proactively with local councils and other partners on joint initiatives such as these.



South West Water will continue to work proactively with local councils and other partners on joint initiatives such as these.





7.

FINANCIAL RESILIENCE

The South West Water Board continually assesses the Company's financial viability.

The South West Water Board continually assesses the Company's financial viability and confirms that it has a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over a five-year period. The assessments are made with reference to the Company's current position and prospects, its longer-term strategy, the Board's risk appetite and the Company's principal risks and how these are managed.

The Company's strategic business plan and associated principal risks are the foundation for this scenario testing. This assessment considers the potential impact of arising risks on the business model, future performance, solvency and liquidity over the period in question. In making a given assessment, the Directors review the principal risks and consider which risks might threaten the company's viability. It must be determined that none of the individual risks would in isolation compromise the Company's viability, so a number of plausible risk combinations are considered to stress test the plan, primarily by assessing reduced revenues, increasing costs and impacting cash flows in a similar fashion to banks.

The Board routinely consider the monetary impact of these scenarios over a five-year period, to ensure that they do not adversely impact the Company's viability.

In making an assessment, the Directors take account of the Company's robust capital solvency position, its ability to raise new finance and a key potential mitigating action of restricting any non-contractual payments.

In assessing the prospects of the Company, the Directors note that as the Company operates in a regulated industry which potentially can be subject to non-market influences, such assessment is subject to uncertainty, the level of which depends on the proximity of the time horizon, and accordingly the future outcomes cannot be guaranteed or predicted with certainty.



8.

**WORKFORCE/
SKILLS/
APPRENTICES**

We recognise apprenticeships are a fantastic way to earn a living, gain valuable work experience and sought after qualifications.



One of the key ways South West Water can move our business forward is through the training of young people through apprenticeships. Since introducing them in 2011, 102 apprentices have joined the company. Getting 'buy in' from our workforce has been key in the successful introduction of our programme, particularly in areas such as mentoring and coaching.

As our experience and plans have grown our apprentices and the company have achieved recognition from the wider business community. Around 5% of our workforce is now made up of apprentices and we boast a an 80% conversion rate to permanent employment for those in front line roles. Apprenticeships were introduced to help us in our succession plans and they now form a key part of our business planning cycle.

We recognise apprenticeships are a fantastic way to gain valuable work experience and qualifications. South West Water provides roles in 15 operational and business disciplines. From April 2017, the way in which apprenticeships are funded will fundamentally change. To mark this step change South West Water will now offer advanced, higher and degree level apprenticeships which can be undertaken by new recruits or existing members of staff. We are currently working alongside EU Skills and other Government bodies to develop and deliver a series of trailblazer apprenticeships to reflect the changing requirements in apprenticeship training and in our industry. We are also taking the lead in influencing the adoption of similar schemes with the rest of Pennon Group as well as stakeholders such as our H5O alliance.



9.

FLOOD DEFENCE INNOVATION

A cost effective and flexible way to protect our assets.

Given the essential services we provide to our customers, we have invested in innovative temporary flood defence barriers which can be deployed quickly for use in our communities to prevent or reduce storm and flood damage, enabling us to maintain our service to customers.

The 'Beaver' flood defence barriers provide us with a flexible approach to flood protection, as they can be deployed to any site, adapted to a variety of terrain and can also be used to divert river flows.

This provides us with a cost effective and flexible way to protect our assets rather than undertaking large scale capital schemes at a number of our sites.



10.

LOCAL
RESILIENCE
FORUM/
MUTUAL AID

Recognising the need for a multi-agency approach.

Maintenance of links with other regional utilities and service providers is managed through active participation with our Local Resilience Forum (LRF). South West Water are key stakeholders and our Security and Emergency Planning Manager represents and promotes the needs and abilities of our business in mitigating and responding to multi-agency events and incidents.

South West Water is also actively engaged with the wider industry and network of utilities contractors through mutual aid arrangements. South West Water is able to provide manpower, technical expertise and equipment to assist any company in times of major event or incident. This was demonstrated during the flooding event in Gloucestershire back in 2007 when the company despatched a fleet of tankers to assist in the delivery of emergency water supplies.





11.

ENERGY STORAGE

South West Water are actively engaged in pursuing this technology and have planned a pilot scheme to test the deployment of containerised inverters utilising battery technology.

The UK Government acknowledges that energy storage projects provide an opportunity to diversify the way we use available power and deliver it when it is needed. The technology provides an opportunity to make the existing grid network more sustainable long term storing excess energy when it is generated and releasing it when it can be used.

Wind and solar energy are used to generate over 8% of the UK's electricity. The proportion of electricity from these sources, combined with electricity from new wave and tidal sources, is set to increase to 24% by 2020 to meet EU renewable energy targets (Source: Parliamentary POST note 464 May 2014 Intermittent Electricity Generation).

As a nation, we're moving away from coal and gas burning power plants and replacing these traditional technologies with renewable technologies. However, most forms of renewable electricity generation are deemed as disruptive due to their intermittency. The national challenge is to maintain the constant supply with a backdrop of intermittent supply and irregular consumption.

Energy Storage is fast becoming an essential ingredient to securing a future of being able to deliver a constant supply; providing a balanced delivery of energy onto the grid. Such developments are therefore crucial to local residents and businesses; ensuring that they may maintain usage of the energy needed to maintain day-to-day life/business.

Energy storage installations will make a valuable contribution towards achieving each of these objectives

South West Water are actively engaged in pursuing this technology and have planned a pilot scheme to test the deployment of containerised inverters utilising battery technology that will enable the storage of up to 0.09MW/0.096MWh of electricity that can offer grid balancing services and resilience against grid supply outages.

12.

CYBER SECURITY

Cyber security threats are increasing in scale and complexity.

Globally Information Security threats continue to rise, with the number of attacks against industrial control systems (SCADA) and the theft of customer data increasing significantly.

Organisations are now seeing real and credible threats to cyber security of an unprecedented scale and complexity.

South West Water's Information Security Strategy reflects the fact that companies running industrial control systems operate two discrete technology environments: corporate (IT) and operational (OT or SCADA), each with specific information security threats and requirements.

The strategy is a risk based approach utilising a combination of

- ISO27001, the Information Security standard which South West Water has been certified against since November 2009
- National Cyber Security Centre (NCSC) Best Practice Guides and Defra's Cyber Security Strategy

The strategy builds upon the previous successes and will drive continual and proactive improvements to mitigate the increasing risks. The key principles of this strategy are:

- Differentiating between 'corporate' and 'operational' IT
- A security aware culture across our business
- Enhanced protection of operational technology from cyber attack
- Deployment of security technologies and processes to enable our business
- Compliance with legal, regulatory and statutory requirements.



13.

SEWER MISUSE: LOVE YOUR LOO

Typically, we have to deal with **about 8,500 sewer blockages a year at a cost of c. £5m per annum.**

LOVE
your
LOO

MOST *ONLY*
FLUSH
THE 3Ps
PEE, PAPER
& POO
DO YOU?

southwestwater.co.uk/loveyourloo


SOUTH WEST WATER

The impact of disposing of items other than the three Ps – pee, paper and poo – down the toilet is making national headlines with customers increasingly recognising that this is not what the sewer system is designed for, linking loos in the home with the sewer network and the local treatment facility.

Sadly, however, some people still throw all sorts of stuff down the loo, causing a real problem for us all. Typically, we have to deal with about 8,500 sewer blockages a year at a cost of c. £5m. Some of the worst culprits are wet wipes, moist toilet tissues and sanitary products. Instead of being bagged and binned, they are flushed away.

By raising awareness of the problem, explaining what we are doing, educating and encouraging, rather than exhorting, we aim to normalise behaviours around only flushing the three Ps.

We ran a successful campaign that included local events to generate publicity and secured support from external stakeholders such as the Environment Agency and Exeter University.

Our customers have indicated that this kind of educational activity is something they place a high value on and following the successful Love Your Loo campaign, we launched 'Think Sink!' to raise awareness of what shouldn't be put down customers' drains.

Every year, tens of thousands of litres of waste fat, cooking oil and grease are poured down sinks by customers who don't realise the problems this could cause. When hot fat, oil and grease cools it forms a solid mass which can build up inside pipes which not only can cause a problem on the public sewer, but also to private drains.

We will continue to build on such initiatives to ensure we help our customers to understand how they can benefit from correct use of the sewerage system and helping the Company avoid future problems.

Planning for the future

Disruption can take many forms and our region is not immune to natural and other extreme events which could have an impact on the business and operation in both the South West Water and Bournemouth Water areas. These extreme events could include flooding, drought, fire, and the threat of criminal or terrorist activity.

As the provider of essential services, South West Water has a responsibility to take steps that ensure the safe and secure provision of water and wastewater services at all times. It is our aim to increase the amount of protection we have for our assets and systems.

South West Water is committed to ongoing investment in the maintenance and improvement of our network and assets in order to deliver water and wastewater services that our customers can rely on while meeting future challenges.

Not investing further in these areas would run the risk of our networks and resources failing to cope with additional demand and the impact of extreme weather events, making it more difficult to deliver the improvements and resilience our regulators and customers will expect in the long term.

Ofwat have set out their expectations as follows;

- Companies play their full role in delivering sustainable environmental improvements.
- Understanding the resilience that their customers need, and can afford, both now and in the future.
- Having a clear view of how resilient they are, based on common measures, and building on this to develop the levels of resilience they will need to address the challenges of the future.

South West Water will ensure these expectations are reflected through the full range of business planning and investment optimisation activities and are fully tested with its customers and stakeholders.

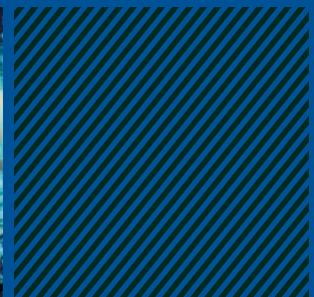


In order to deliver against those expectations South West Water will:

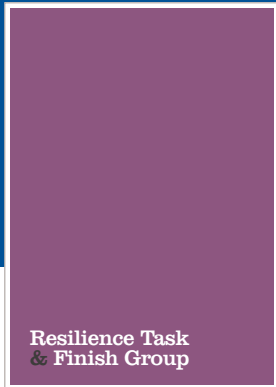
- Make further provisions to protect our assets against natural disasters (flood defence schemes are one example).
- Develop our security capabilities to further reduce the threat from malicious attacks (vandalism / extortion), terrorism or sabotage.
- Actively monitor and upgrade our IT systems as appropriate to protect our system data and capabilities from the risk of cyber attacks.
- Embrace innovation and work with partner and academic institutions to ensure we are delivering solutions that are at the frontier and securing invaluable benefits.
- Ensure that our services are delivered in a manner that provides societal, economic and environmental benefit by design.
- Engaging with national forums and working groups to derive a common set of performance metrics that will enable resilience to be measured across the industry.
- Continue to work with partner agencies to ensure that we are all prepared for and adhere to best practice in the event of an emergency.



South West Water
is committed to ongoing investment in the maintenance and improvement of our network and assets in order to deliver water and wastewater services that our customers can rely on.



REFERENCE DOCUMENTS



OFWAT

Resilience task & finish group

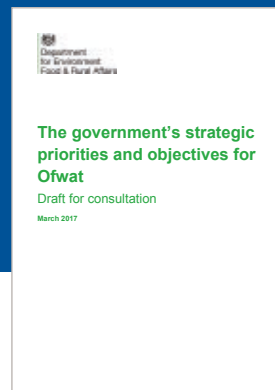
KEY MESSAGES

The task and finish group was formed to consider the outputs of a publication by the Cabinet Office in 2011, titled “Keeping the country running” and in recognition of the primary resilience duty placed on Ofwat by the Water Act 2014. The outputs from the group will be used to define policy and inform requirements on companies for consideration during the PR19 price review process.

This group considered the need to build and maintain resilience in infrastructure and to appreciate the importance of understanding and mitigating vulnerability, specifically with regard to natural hazards.

Through a systematic review of the hazards, analysis of resilience guidance, key water sector documents and extensive research activity the group were able to identify the main resilience challenges to be addressed. The outputs largely fall into three groups.

- 1.** The need for a step change in the approach to resilience to ensure that a wider range of solutions and delivery models are considered, including the need for partnering arrangements where appropriate. This change also places even greater value on customer engagement to ensure their expectations are met with regard to service levels.
- 2.** The lack of, and requirement for an agreed definition and performance framework against which to ensure a consistent approach to resilience.



DEFRA

The government's strategic priorities and objectives for Ofwat

3. A lack of clarity as to whether the current industry and regulatory framework encourage legitimate investment in resilience. There also remains a question over the ability to make decisions on an appropriate geographical scale in order for solutions to be fully effective.

The group concludes that further work is required to develop a deeper understanding and awareness of the resilience agenda across all stakeholder groups. Solutions will also need to be considered across industry sectors in order to ensure the risk of cascade failure is mitigated.

Recommendations from the report will inform Ofwat policy but also have more far-reaching implications across industry sectors. Only by working together will resilience be systematically developed within the water sector. It is also recognised that the level of challenge is significant and it may be many years before robust resilience can be fully realised.

A water and wastewater resilience action group (WWRAG) has been established to follow through on recommendations from the Resilience Task and Finish Group this forum will consider and provide guidance on best practice and leading thought on resilience across the water sector contribution.

Defra set out their strategic priorities for Ofwat and the wider water industry; these priorities reflect the need for all parties to focus on a resilient stable industry that meets the needs of all stakeholders, now and in the longer term.

Defra expect companies to understand all threats and pressures to the services they provide. Such pressures shouldn't be viewed as short term and companies will need to develop plans that take account of long term requirements and deliver solutions that are inclusive, innovative and affordable to this and future generations.

Companies will need to work with all those who may have an impact, directly or indirectly, on the services they offer to ensure that solutions are considered in the round and embrace innovative techniques from across all industry sectors. Solutions must also be viewed not only from a industry perspective but with a view to the wider societal, economic and environmental benefits they can provide.



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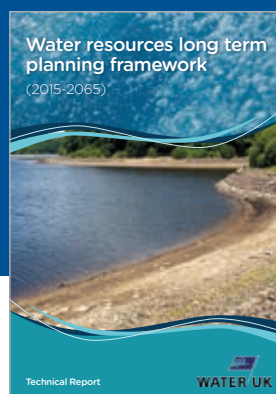
**Creating a great place for living –
Enabling resilience in the water sector**

Defra sets out a compelling vision for the UK to be a great place in which to live, with clean water and air, beautiful countryside for all to enjoy and which provides a habitat in which a diversity of plants and wildlife can flourish.

A key element of this vision is to provide for a nation well protected against natural hazards, with the right balance of responsibility between government, communities and business. The objectives, aims and ambitions are well aligned to the wider resilience agenda and the approach sets out the role Defra expects to fulfil in delivering against the vision.

The key aims are set out as follows;

- Protection against flooding and coastal erosion
- Protection from animal and plant pests and diseases
- Protection against invasive non-native species
- Enhanced resilience of businesses and individuals to drought and loss of water supply
- Strong preparedness to respond to emergencies where Defra has lead responsibility
- Greater resilience to climate change.



WATER UK

**Water resources long term planning
framework (2015 – 2065)**

Water UK outline a strong case for the UK and Welsh governments to consider adopting consistent national minimum levels of resilience. There is recognition that there are significant issues to address for this to become a reality, including the need to ensure fairness across both regions and generations.

Water UK has concluded that;

- There is a balance to be struck and investment needed to increase resilience is relatively modest compared with the cost of dealing with a drought.
- There is no single solution and an approach that considers supply enhancement, transfers and demand management as a suitable mix of strategic measures.
- There is a case for a national level planning strategy that supports ongoing Water Resource Management Plans (WRMPs) and is able to assess risks and opportunities to ensure investment is proportionate.
- Industry, government and regulators must work together with customers on how best to respond to the risk of severe drought.



A resilient supply of water is vital

to UK industry and the wider economy, the UK water industry is faced with the effects of a changing climate, growth in population, worldwide financial uncertainty, increasing environmental standards and ever higher customer expectations.



South West
Water



Bournemouth
Water