

Written evidence submitted by Southern Water

Introduction

1. Southern Water provides water and wastewater services to 4.7 million customers. We're lucky to operate in a region which includes two national parks, four areas of outstanding natural beauty, 14 rivers (including world-renowned chalk streams) and 83 bathing waters.
2. Our vision is to deliver a resilient water future for the region. We need to face up to many challenges, including the effects of climate change and the need to continually reduce our own environmental impact. We also need to rebuild trust with customers and stakeholders and are taking bold steps to set our environmental performance record straight. We have a clear path for transformation and our Pollution Incident Reduction Plan plays a critical role within this. We are confident this plan will allow us to reduce the number of incidents in future.
3. River water quality has improved significantly since privatisation as a result of prudent investment and robust regulation. However, improvements have been made in the context of continued population growth and increasing climate change. These pressures are placing stress on the combined surface water and wastewater systems.
4. It is clear that a multi-sector approach to developing and implementing solutions is necessary. While water companies have a vital role to play, there are many stakeholders which are also key to making progress. Our regulators are fundamental to supporting improvements in river water quality and further support from them, and key stakeholders, would undoubtedly help accelerate our efforts in this area.

Southern Water's response to call for evidence

What are the best indicators for river water quality that could be used as targets being developed under the Environment Bill?

5. The Water Framework Directive indicators provide a holistic, integrated view of river health. These should be the building block for any river quality targets under the Environment Bill.
6. There is an argument for closer examination of the WFD's 'one out, all out rule' to help target investment where it will deliver the most environmental improvement (rather than just GES/GEP) and enable better communication of river quality improvements. This could be addressed through the targets being developed under the Environment Bill.
7. Indicators which impact our ability to use river water for drinking water supplies (e.g. metaldehyde) should also be included. We support the ongoing work to develop a distributional input target to bring together activity on leakage and water demand.

How could drainage and sewage management plans, introduced by the Environment Bill, play a role in reduced sewer discharges?

8. Drainage and Wastewater Management Plans are comprehensive, evidence based and transparent plans that assess current capacity and actions/investment needed in short, medium and longer term (25 years +), considering issues such as asset deterioration, urban creep, climate change and growth. The plans strive to deliver resilient systems that will meet operational pressures and minimise system failures.
9. DWMPs assess current and future risks from storm overflows, and consider investment required to manage those risks to “acceptable levels”. Acceptable levels are determined by the Environment Agency based on permits issued to companies. Funding for any improvements needs to be approved by Ofwat.
10. The plans enable greater collaboration with other organisations and sectors to consider future need, improve customer outcomes and awareness, and provide value for money. Government’s intention to require all Risk Management Authorities to co-operate in the preparation of DWMPs is therefore very welcome.

How adequate are the monitoring and reporting requirements around water company discharges? How can technology improve and assist with transparency and enforcement?

11. Storm overflows play a vital role in protecting homes and businesses from flooding during extreme weather. However a changing climate and population growth has resulted in these being used more often in recent years and we recognise the strength of public concern about their use.
12. Our storm overflows are equipped with an Event Duration Monitoring (EDM) device which records the frequency and duration of stormwater releases. The Environment Agency issues a permit/licence for each storm overflow and we report our performance to the EA.
13. We fully support the Storm Overflow Taskforce’s long term goal to eliminate harm from storm overflows and recent pledges to increase transparency. Southern Water has made significant investment in technology so we can inform customers, regulators and wider stakeholders when storm water is being released from the 1063 outfalls in our region. Our EDMs use multiple sources of telemetry to confirm when one of our outfalls is releasing storm water. Our programme is well ahead of the deadline set by Defra of 2023.
14. The monitoring helps provide water users with real-time data on storm water releases and our Beachbuoy service notifying recreational users is now running 365 days a year. We are working hard to extend coverage to all our designated bathing waters.

What is the impact of plastic pollution and other materials on drainage and water quality in rivers and what should be done to mitigate it?

15. Every year in England and Wales, water companies deal with over 300,000 sewer blockages – costing customers £100 million to resolve, causing sewer flooding in customers’ homes, and pollution incidents. Around 70% of internal sewer flooding incidents, 80% of external sewer flooding incidents and 65% of sewer pollution incidents in our region are caused by blockages. Around 75% of those blockages are due to people putting the wrong things down sinks and toilets, such as wet wipes and cotton buds.

16. Our targeted behaviour change campaign on 'unflushables', launched in 2017, has helped reduce blockages across our region by around 13%. However, more needs to be done.
17. Wet wipes can make up to 90% of the material in fatbergs. **We want to see mandatory labelling on packaging to ensure wet wipes are disposed of correctly.** Manufacturers should identify whether wet wipes comply with the water industry's standard for flushability - Fine to Flush – together with clear disposal instructions.
18. **We strongly support Water UK's suggested amendment to the Environment Bill which would ensure any producer responsibility scheme includes wet wipes within its scope.** As well as reducing the cost burden for water customers, this would also help incentivise greater action and innovation by manufacturers.
19. Microplastics may also pose a risk to the water environment but conventional wastewater treatment processes are not specifically designed to remove microplastic particles. We therefore welcomed the ban on microbeads in 2018, but again more action is needed. Significant research is being undertaken across the sector and with other key partners to understand the prevalence of different types of plastic pollution, the sources, pathways, potential impacts and possible solutions.

How can consumers be persuaded to change their behaviour to minimise pollution?

20. We have been working with consumers for many years to change behaviour to help prevent sewer blockages. This is alongside extensive work to reduce consumer demand for water. Activities include targeted visits, partnerships and working with schools.
21. We have seen a steady increase in awareness of the causes of blockages and customer desire to take action. More recently we have been driving further change through larger scale, integrated campaigns, using multiple channels and tracking performance.
22. Through this experience, our work with experts such as The Behavioural Insights Team (partly owned by Cabinet Office), and extensive industry knowledge there are two key areas that have the greatest impact:
 - **Personalised & tailored** – many customers want to change their behaviour but it needs to be relevant to them. We need to tap into their motivations, speak to them as individuals and make it easy for them to adopt new behaviours.
 - **Social pressure** – customers want to play their part, don't want to have a negative impact on others or be too far from 'normal' behaviour. We need to link into customers social value and sense of community.
23. We have seen greatest success where we have targeted those key areas and delivered against our framework below:
 - **Engage** – reach out to customers in a meaningful way, using a range of channels / partnerships to reach the right audiences
 - **Explain** – help customers understand the impact of their action
 - **Assist** – make it easy for customers to take action

24. A recent campaign that provided reusable 'cheeky wipes' picked up awareness levels of 47% compared with previous peaks of between 25-30%. This is because the wipes campaign: targeted younger families (who have the greatest need for wipes), were delivered directly to customers (so they were aware), explained the importance of action and provided practical help (making it easy for them to act). Examples of some suggested schemes are included in appendix 1.

What is the required investment level needed to minimise storm overflows vs the scope for sustainable drainage and nature-based solutions?

25. Separating older parts of the combined network, or creating additional storage can help resolve sewer flooding problems and reduce the need for storm overflows. However, this is disruptive for local communities and costly for customers. As an example, the Thames Tideway is designed to reduce storm spills at a cost of nearly £5bn.
26. There is clear potential to deliver lower cost sustainable/nature based solutions for storm overflows which are 'high spillers'. Site specific assessments follow a Natural Capital approach to help drive green solutions and are not limited to the cheapest Whole Life Cost. We are already delivering this approach under the Water UK and Environment Agency Storm Overflow Assessment Framework (SOAF) process, and have a large number of studies in progress.
27. Preventing surface water entering sewers is the most economical way to safeguard capacity in the network, reduce the amount of storm overflows, delay the need for new investment and reduce the need for carbon intensive treatment of clean surface water. **The automatic right to connect to the sewerage network should be removed to increase use of sustainable drainage systems. Water companies should also have powers to enforce private drain maintenance or undertake work and recover costs from the pipe owners. We're also keen to see a review of Part G of Building Regulations in order to prevent the proliferation of more water-inefficient homes.**

How effective are the planning policy and standards around sustainable drainage systems to reduce urban diffuse pollution in England?

28. Policy for sustainable drainage systems is captured in section H3 of the building regulations and in our view is fairly robust. Its effectiveness depends on the ability of local authorities to inspect systems once they are installed and ensure the regulations are followed.
29. Planning policy guidance requires consideration of SuDS for housing developments above 10 houses. **Guidance should be strengthened to ensure sustainable drainage is the default position. It should apply to all developments to mitigate the cumulative impact of large numbers of small housing developments.**

Should local authorities and highways agencies be given a duty to prevent pollution to watercourses without prior treatment?

30. Yes. Maintenance on local authority or Highways Agency networks is often focused on flooding prevention rather than pollution. The Environment Agency also needs sufficient resources to monitor and intervene where needed.
31. Local authorities and highways agencies should focus on gulley pot cleaning in the short term as this can be insufficient or inconsistent. Medium to long term treatment options could include end of pipe screening treatment/settlement and sustainable drainage.
32. UKWIR recently started an Urban Run-off study that will identify types of river pollution from run-off.

How effective is Ofwat's remit and regulation of water companies? Does it facilitate sufficient investment in improvements to treat water quality, including sustainable drainage system outflows and nature-based solutions such as constructed wetlands?

33. Companies have strong regulatory incentives to deliver the lowest cost solutions for customers. This can help support nature-based solutions, which can often be delivered at lower cost. Ofwat's removal of the regulatory distinction between capital investment and operating cost solutions at PR14 also allowed for a wider range of solutions to be considered, including nature-based solutions. However, there are a number of areas where the regulatory framework can discourage innovative, sustainable approaches.
34. Ofwat's Outcome Delivery Incentive (ODI) regime, alongside Environment Agency regulation for innovation and compliance, can influence decision-making towards less innovative solutions which have greater certainty of outcomes and/or shorter timescales for outcome delivery. **Greater tolerance of failure in cases where companies are putting in place innovative solutions to meet their targets should be explored.**
35. Ofwat set a large number of performance targets as part of the recent price review – 47 separate metrics for Southern Water. The sheer number of targets, alongside sometimes small rewards/penalties, can dilute management focus on what is most important to customers. As an extreme example, we have regulatory targets for per capita water consumption (PCC), leakage, Distribution Input, water saved from water efficiency visits, access to daily water consumption data and re-use of effluent. The ultimate outcome of all these targets is less abstraction from the environment. **Regulatory targets should be focused on areas that are of most importance to customers and society as a whole. Targets should also be set at a higher level to enable flexibility over how they are delivered. Consolidating targets at 'outcome' level rather at component level would allow greater scope and flexibility for companies to identify and deliver optimal solutions.**
36. Ofwat's price review regime strongly supports the delivery of mandatory investment, such as the WINEP programme, but rightly scrutinises delivery costs to ensure value for customers. The last two price reviews delivered significant bill reductions for customers, which are welcome. However our research shows the priority for most customers is stable bills and resilient services. Water services remain affordable for the majority of customers and research indicates many would be willing to pay for more environmental and resilience improvements. Ofwat's price review framework seems to have a presumption against allowing the costs of such discretionary improvements, and sets an evidence bar for investment which is very difficult to

meet. At the last two price reviews there was scope to deliver significantly more environmental and resilience improvements within a stable or even falling bill environment, but the focus on delivering very large bill reductions meant that this opportunity was lost. **More could be done to facilitate discretionary investment for environmental outcomes, where these are affordable.**

37. There remains an ongoing challenge for all parties within the sector in reconciling five-year price control periods with a focus on longer-term challenges and outcomes. **Some aspects of the price control should look beyond the five-year period, to reinforce the need for long-term thinking.**
38. Our ability to deliver WINEP funded improvements using a catchment based approach has been restricted by the Environment Agency due to our Environmental Performance Assessment rating. However, there is disconnect between the metrics that make up the EPA (for example - pollution and wastewater compliance) and catchment based schemes. **Where environmental performance needs to improve this should be addressed through underperformance penalties applied by Ofwat, rather than limiting our ability to deliver more nature based solutions.**

Is adequate investment being made in adapting water treatment systems to future climate change?

39. We face serious water challenges in the South East. Without action, we predict a supply and demand deficit by 2030, equivalent to around 50% of our current supply. We published [Water Futures in the South East: Towards 2050¹](#) in 2017. This independent report outlines the unprecedented change, challenges and opportunities facing our water stressed region and it underpins our long-term strategy. The report includes a deep-dive into nanotechnology advances and the evolution of nano-filtration, graphene and 'clean' technologies that will make desalination increasingly economic in future and bring other benefits such as water purification and recycling at scale.
40. Understanding the driving forces for change, including climate and the technology landscape, has been critical to developing the long-term water resource options included in our Water Resources Management Plan for 2020-2070. Our plans are updated every five years and funding is agreed by Ofwat through the periodic review process. As well as making the best use of water through water demand and catchment schemes, we're progressing long-term options to secure new water supplies.
41. Securing water resources and protecting the environment in Hampshire is one of our biggest challenges. Our multi-million pound *Water for Life – Hampshire* programme draws on international expertise, research and technology and is at the frontier of water resource planning nationally and globally
42. The programme will revolutionise the way we source, treat and supply water across Hampshire and the Isle of Wight. Central to our plans is a desalination plant capable of producing up to 75 million litres of water a day. We are also investigating back-up solutions including taking more water from Havant Thicket Reservoir and potentially topping it up with recycled water to create a truly sustainable water source that would further reduce the reliance on chalk sources.

¹ <https://www.southernwater.co.uk/media/default/PDFs/water-futures.pdf>

43. We fully support the protection of chalk streams and are actively planning for more alternative sources of supply across our region. We note that the costs of the investments being made in our Water for Life Hampshire programme are large, and fall only on the customers of Southern Water. **Future abstraction reductions to protect chalk streams, and increase resilience to climate change, should consider sources of funding that go beyond water bills.**

How could the designation of inland bathing waters by water companies affect the costs of achieving the associated water quality standards?

44. The Environment Agency designates bathing waters rather than water companies. We have discussions with our Environment Agency and local authority counterparts about this process. River water quality standards are less stringent than those for coastal bathing waters. However, there is typically much less dilution and dispersion in rivers than in the sea. If a designated inland bathing water is close to a water company discharge, considerable investment is likely to be required for tertiary (UV) treatment, storm storage or other interventions such as surface water separation.
45. The impact of agriculture and other sources of pollution such as road runoff could also have a greater impact on a site by site basis. A clear understanding of the source apportionment of the bacterial load would be essential to design the right solution – this could include catchment based solutions. However, these could have less certainty of success and/or take longer to deliver results.

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Appendix 1: possible behaviour change approaches to help minimise water pollution

1. Government/Defra led national campaign similar to the “Recycling” behaviour change campaign.
 - a. It has to be long term, at least 5 years
 - b. Include a variety of media channels
 - c. TV coverage - for adults and children
 - d. Films created for social media and video streaming services highlighting common pollution drivers and correct behaviour
2. Collective, multi-sector effort to reinforce the correct behaviour as a social norm
 - i. Partnership approaches – government, manufacturers, retailers, environmental groups, community groups, water sector
 - ii. Include in national curriculum
 - iii. Engage influencers/trusted celebrity to spread the message
3. Work with retailers to place messages on shelves next to unflushables with the “bag it and bin it” message
4. Encourage ‘choice editing’ by retailers to enable more sustainable choices by consumers and incentivise innovation/sustainable design by manufacturers.