



Congestion, Capacity, Carbon: Priorities for National Infrastructure

**Response from the Consumer Council for Water
(CCWater)**

Consumer Council for Water

January 2018

1. Introduction

- 1.1. The Consumer Council for Water (CCWater) is the statutory consumer organisation representing water and sewerage consumers in England and Wales. We have four regional committees in England and a committee for Wales.
- 1.2. We welcome the opportunity to share our views on this consultation on a National Infrastructure Assessment. As the consumer representative body for the water industry, our comments are largely on the consumer (and customer) facing aspects of the questions that refer to water and sewerage infrastructure of water and sewerage companies in England and Wales.
- 1.3. Our responses to these questions reflect evidence we have collected through our own customer research, and constant dialogue with water companies, industry bodies and regulators. Our answers also reflect comments we have made in responses to previous consultations by the National Infrastructure Commission (NIC).

2. Key Points

Water supply and demand

- 2.1. We support ‘the twin track approach’ of using demand management as well as resource management and development to balance water supply and demand. We believe that demand management (including water efficiency measures and leakage reduction) *is only part of the solution*, and on its own will not be enough to secure resilient water supplies. As such, demand management is not a justification to delay investment in water resources development, where significant deficits are anticipated.
- 2.2. We know that customers (and consumers) expect Government (and others, including water companies and regulators) to take the steps required to deliver the long-term security of the public water supply and that they understand and place importance on securing water supplies for current and future generations.
- 2.3. Large scale investments to secure water supplies should be re-prioritised ahead of other issues that may not be considered to be as important by water customers. Where infrastructure resulting in significant bill impacts are deemed necessary and approved, water companies need to ensure customer support, that the investment is phased and bill impacts are smoothed so that water bills remain affordable for current and future customers.
- 2.4. Practical ways to reduce water demand include:
 - Metering: can help to provide better information to water companies and encourage customers to change their behaviour to use water wisely. However, implementation of metering has to be done carefully to overcome the significant concerns of some customers.
 - Leakage reduction: consumers want to see their water companies playing their part by reducing the amounts of water lost through leakage.
 - Messaging: water companies (and others) need to do more to encourage consumers to think about (and take action on) how they use water in their day to day activities.
 - Technology: this can be a means to an end (to increase water efficiency) and has to be targeted carefully as it may not be suitable for all types of customer.

Drainage, sewerage, and flood risk

- 2.5. We support the need for better, long-term planning for drainage and sewerage. As such, we support the work undertaken by the Water UK-led 21st Century Drainage Programme to develop a framework of long-term drainage and wastewater management plans (DWMPs). These plans would set out how future challenges are to be met and how current issues are being dealt with.
- 2.6. We support the inclusion of sustainable drainage systems (SuDS) and/or flood prevention schemes to build in local resilience. The use of these schemes would ensure that sewers are used to transport sewage rather than for surface water drainage, reducing the likelihood of sewer flooding. We note and are supportive of the proposals put forward in recent months by the Welsh Government, which make mandatory the requirement for SuDS on new developments.
- 2.7. In recent years there has been an increased focus on managing flood risk and developing ways in which partnership working can help to protect homes, businesses and communities against flooding. We also believe that in the near future, additional investment and collaborative working will be required, particularly to deal with the challenges brought by climate change, population growth and the need to build new housing and associated infrastructure.
- 2.8. We encourage sewerage companies to adopt a more proactive approach to sewer flooding by identifying those properties that may be at risk now and in the future. With challenges such as climate change and population growth, sewerage companies should make more use of modelling techniques to understand what properties are at risk of flooding and take action.

3. Questions

What should be done to reduce the demand for water and how quickly can this have effect?

Given increasing pressures from climate change and population growth, and the need to safeguard the environment, it will be necessary to make better use of the water that is available. Metering can help identify leaks and customers to use less water but will not be enough by itself.

- 3.1. We support ‘the twin track approach’ of using demand management as well as resource management and development to balance water supply and demand. We believe that demand management (including water efficiency measures and leakage reduction) *is only part of the solution*. As such, *demand management is not a justification to delay investment in water resources development*, where significant deficits are anticipated. The scale of the projected deficit of water resources, especially in the South East, should not be underestimated. On its own, demand management will not address this issue in the seriously water stressed areas in the south and east of England in the longer term.
- 3.2. We are not aware of any evidence that a reduction in the demand for water can be achieved *quickly*. If anything, evidence suggests that behavioural change needed from consumers to make a real difference will be over the long-term.
- 3.3. Leakage reduction is a very different endeavour - it is about how far do companies want to go in to go in terms of their leakage reduction commitments, how much will it cost, how it will be paid for and how much are customers willing to pay to achieve the chosen level.
- 3.4. The effects of climate change and population growth as well factors such as technological/industrial development, Government policies and behavioural changes will exacerbate the supply/demand deficit. Although per capita water consumption may be reduced as a result of different interventions and behaviour change, more people will mean that the requirements for water will still increase over time.

- 3.5. Recent research by CCWater¹ suggests that the future of water supplies is not at the top of people's minds. It is 'lived experiences' that shape customers' views on this issue - they rarely connect issues such as climate change and population growth with the water supply. As a result, many are surprised by the scale of the challenges faced by the water sector and the short timescales associated with them.
- 3.6. In general, customers also accept the need to have their behaviour 'nudged', for example with water meters. But, customers feel it is important that water companies explain why metering is required, and are transparent and open about their investments in this area and progress made towards reducing water use.
- 3.7. We also know that customers (and consumers) expect Government (and others, including water companies and regulators) to take the steps required to deliver the long-term security of the public water supply and that they understand and place importance on securing water supplies for current and future generations.
- 3.8. Practical ways to reduce the demand for water include:
- Metering: can help provide better information to water companies (about how much water is used by consumers as well as how much is lost due to leakage) and, as a result encourage customers to change their behaviour to use water wisely. However, implementation of metering has to be done carefully to overcome the significant concerns of some customers.
 - Leakage reduction: This is a reputational issue for companies - consumers want to see their water companies playing their part by reducing the amounts of water lost through leakage². Consumers will play their part, as long as water companies company play theirs.
 - Messaging: water companies need to do more to encourage consumers to think about (and take action on) how they use water in their day to day activities. For example, messages that raise awareness of the 'bigger picture' outlining what the problem is and why it matters may help consumers understand the issues and how they can help; and both Government and the media can play very important roles in this respect.
 - Technology: this can be a means to an end (to increase water efficiency) and has to be targeted carefully as it may be suitable for some types of customers. This can include smart meters as well as water efficient appliances, apps and gadgets that may be able to show users how much water they are using and how much it is costing.

Metering

- 3.9. Compulsory water metering is not a 'silver bullet' to address water scarcity. It does not overcome the need to invest in further water resources in seriously water stressed areas. Targeted metering can, however, be part of a wider strategy that considers aspects such as: active leakage control, water re-use, grey water recycling and water resources development. Together, these will be required to address the pressure on available water resources resulting from climate change, population growth and unsustainable abstractions. Water UK³ highlights this point in its 2016 report.

¹ Community Research (2017). Water Saving: Helping Customers See the Bigger Picture. A report on behalf of CCWater. <https://www.cewater.org.uk/research/saving-water-helping-customers-see-the-bigger-picture/>

² SPA Thinking (2013) CCWater leakage study. Research into customer perceptions of leakage: report. June. <https://www.cewater.org.uk/wp-content/uploads/2013/12/Research-into-customer-perceptions-of-leakage.pdf>

³ Water UK (2016) Long-Term Water Resources Planning Framework. <https://www.water.org.uk/policy/environment/water-resources>

- 3.10. In 2016-17, just over half (54.8%) of household customers in England and Wales had a water meter installed⁴. We expect that gradually, the percentage of metered customers will increase. This will happen either as a result of water companies' metering strategies or because customers choose to have a meter installed. Implementation of metering needs to take account of the sizeable minority of customers who oppose compulsory metering and/or would suffer significant bill increases as a result of being given a meter. Insensitive implementation of metering would risk a strong customer backlash.
- 3.11. The use of water meters can help to provide better information for the water company and, ultimately for customers/households. This additional information can be beneficial for all:
- Water companies can get better information about how much water is being used (and when) as well as providing additional tools to improve leak detection and repair.
 - Metering linked to (comparative) information about use on bills and messaging on using water wisely *may* help customers to change their behaviour and reduce their water use. According to the 'Discover Water Portal'⁵, on average, metered customers use 127 litres per person per day, whilst un-metered customers use 160 litres per person per day.
- 3.12. Our recent report on resilience of water systems⁶ shows that per capita water use of metered customers rose in 2016-17 (124.0 litres/person/day), compared to 2015-16 (122.9 litres/person/day). This is in part due to a greater number of higher-use customers being transferred to meters as part of compulsory metering programmes. This increase suggests that additional engagement is needed about why and how to save water. Nonetheless, this increase in water use raises the question of whether metering alone changes customers' (and consumers') behaviour.

Leakage reduction

- 3.13. Leakage is a reputational issue for the water industry. As a result, customers also want to see their water companies playing their part by making sure that water lost through leakage is reduced.
- 3.14. Leakage targets should therefore be suitably challenging but water companies should be aiming to meet and where possible exceed the expectations of their customers where they support and prioritise expenditure on even greater leakage reduction.
- 3.15. We have pushed (and influenced) Ofwat to move away from the 'sustainable economic level of leakage' (SELL) approach during its 2019 Price Review (PR19). Doing so will allow water companies to reduce leakage at a faster pace and achieve Ofwat's target of a 15% reduction by 2025. That said, we expect water companies to provide clear evidence that their customers support the proposed targets given the relative costs and benefits of leakage reduction⁷.
- 3.16. Our research⁸ shows that 72% of customers say that water companies should spend more resources on addressing leakage, which amounts to over 3,123⁹ mega litres per day in England and Wales. This is equivalent to an industry (weighted) average of almost 121 litres per property per day. In

⁴ CCWater (2017) Water, Water Everywhere? Delivering a resilient water system. <https://www.cewater.org.uk/wp-content/uploads/2017/12/Water-water-everywhere-Delivering-a-resilient-water-system-2016-17.pdf>

⁵ Data for 2016-17. <https://discoverwater.co.uk/amount-we-use>

⁶ CCWater (2017) Water, Water Everywhere? Delivering a resilient water system. <https://www.cewater.org.uk/wp-content/uploads/2017/12/Water-water-everywhere-Delivering-a-resilient-water-system-2016-17.pdf>

⁷ CCWater (2017) Response to Ofwat's 2019 Methodology Consultation. <https://www.cewater.org.uk/wp-content/uploads/2013/12/Consulting-on-Ofwats-methodology-for-the-2019-Price-Review-August-2017.pdf>

⁸ SPA Thinking (2013) CCWater leakage study. Research into customer perceptions of leakage: report. June.

<https://www.cewater.org.uk/wp-content/uploads/2013/12/Research-into-customer-perceptions-of-leakage.pdf>

⁹ Data for 2016-17. <https://discoverwater.co.uk/leaking-pipes>

comparison, per capita water consumption per day is 141.1 litres.¹⁰ Customers' perception that the amount that they can save by using less water in their homes is 'tiny' compared to what is lost through leakage, is largely borne out by the facts. In short, customers *will do more if the company plays its part too*.

- 3.17. If leakage is reduced through better network management and more efficient ways of working, this is beneficial for all, including the environment. If less treated water is lost, water supply resilience in the future will be improved.

Messaging

- 3.18. Reducing water use will be a key part of the supply/demand balance, especially in water stressed areas with comparatively high per capita water consumption. Evidence¹¹ shows that some water companies are already working well with their customers and this is having positive results.
- 3.19. But, regardless of demand reductions, there will be a need for investment in the near future to make our water supply infrastructure more resilient to growing pressures from climate change and population growth (as well as other events). This will therefore require the development and utilisation of new sources of supply or the more efficient utilisation of available resources through transfers.
- 3.20. Our research¹² indicates that one fifth of customers feel they do not have enough information or would need more information to make a decision to use water wisely. This suggests that, as there are opportunities for increased customer engagement in this area.
- 3.21. Messages that raise awareness of the 'bigger picture' outlining what the problem is (in this case, the need to use water wisely) and why it matters may help to get customers engaged and to act on relevant messaging¹³. This process can help people understand the problem and its consequences, as well as why they are being asked to think about and act on their water use.
- 3.22. These messages should be presented in an engaging, coherent and structured way to enable customers to 'join the dots' and understand the relationship between population growth extreme weather and the potential availability of water supplies by the year 2050. These joined-up messages can help to make the situation more real to people, in terms of scale and immediacy.
- 3.23. Messages to encourage people to use water wisely should be tailored further to 'fit' certain customer types/segments classified in terms of water use, attitudes, behaviour and socio-economic characteristics - to name a few attributes. These can also be linked to variables such as personality, lifestyle, values, attitudes and life stage. CCWater's recent research¹⁴ established the eight typologies shown in Figure 1 below.

¹⁰ CCWater (2017) Water, Water Everywhere? Delivering a resilient water system. <https://www.cewater.org.uk/wp-content/uploads/2017/12/Water-water-everywhere-Delivering-a-resilient-water-system-2016-17.pdf>

¹¹ CCWater (2017) Water, Water Everywhere? Delivering a resilient water system. <https://www.cewater.org.uk/wp-content/uploads/2017/12/Water-water-everywhere-Delivering-a-resilient-water-system-2016-17.pdf>

¹² BMG Research (2016) Using Water Wisely and Attitudes to Tap Water. Research on behalf of CCWater. <http://www.cewater.org.uk/wp-content/uploads/2016/08/Consumer-Attitudes-to-Tap-Water-and-Using-Water-Wisely-August-2016.pdf>

¹³ Community Research (2017) Saving Water: helping customers see the big picture. Research on behalf of CCWater. <https://www.cewater.org.uk/research/saving-water-helping-customers-see-the-bigger-picture/>

¹⁴ Community Research (2017) Saving Water: helping customers see the big picture. Research on behalf of CCWater. <https://www.cewater.org.uk/research/saving-water-helping-customers-see-the-bigger-picture/>

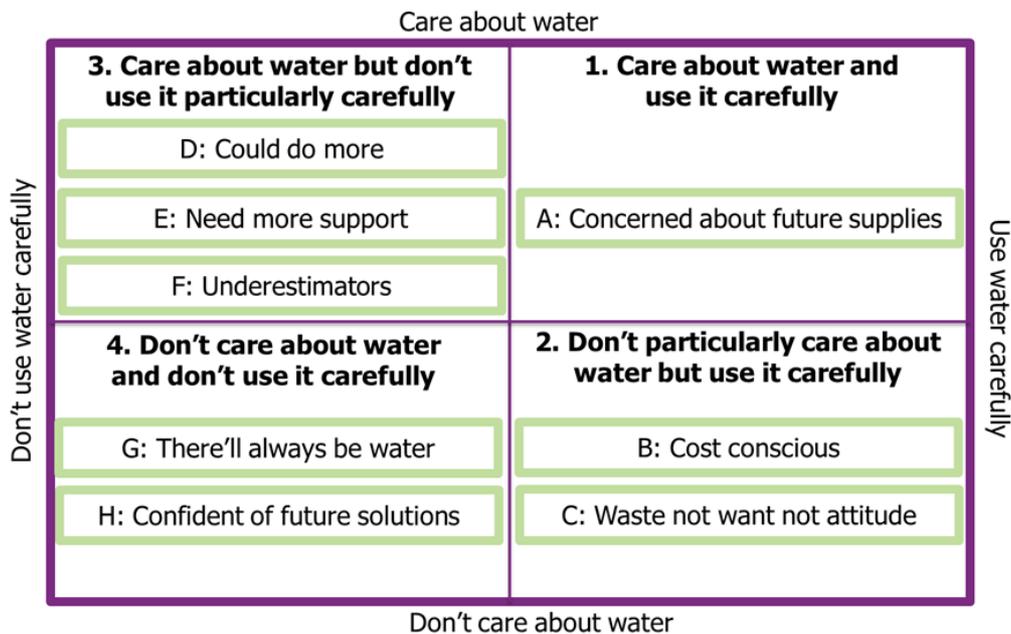


Figure 1 - Typologies of water customer depending on attitudes towards water (Community Research, 2017).

- 3.24. Research done by the water industry (UKWIR¹⁵) confirms the existence of different types of customers, in relation to their attitudes to water and the potential to modify their behaviours. As a result, targeted messages for different types/segments of customers are required.
- 3.25. CCWater research¹⁶ suggests that messages around the scope for saving money as a result of using less water need to be realistic and achievable. We found customers soon gave up their water saving efforts if the financial savings they were 'promised' didn't materialise.
- 3.26. Finally, another aspect to consider when developing these messages is the language used and the timing of these communications. For example 'water saving' could imply that consumers need to reduce their water use and limit the activities (and the enjoyment they derive from them). Water efficiency could be seen as a too technical term. On the other hand, 'using water wisely' could encourage people to use the 'right' amount, without being wasteful. The principle should be about encouraging people to use the amount of water they need without being wasteful, and without 'blaming' them for their behaviour.
- 3.27. We would look to Government to give direction and take the lead in this area. Co-ordination is needed to succeed as reducing pcc requires a joined up, consistent approach between a range of stakeholders. Also, to ensure (as much as practicably possible) that effort/work is not being duplicated and that there is meaningful and persuasive customer engagement leading to long-term behaviour change.

Technology

- 3.28. The use of 'smart' technology, can be means to an end (increase water efficiency), but it should be targeted carefully as it may be more suitable and efficient with some customer segments. Innovative products (including household appliances that use less water as well as apps and gadgets) need to be

¹⁵ UKWIR (2014) Understanding Customer Behaviour for Water Demand Forecasting. UKWIR Reference: 14/WR/01/14

¹⁶ Research Works (2016) Beneath the Surface: Customers' Experiences of Universal Metering. A report on behalf of CCWater and Southern Water. November <http://www.cwater.org.uk/wp-content/uploads/2016/11/Customers-Experiences-of-Universal-Metering.pdf>

accessible, not only from an economic point of view, but also in terms of being easy to understand and operate. Customers will also need to understand what the appliance/ gadget/app does, why it might be important to consider, and how it can encourage them (and take action) to use less water. The life cycle of the gadget also needs to be considered, to avoid creating additional waste or to prevent it from becoming obsolete too soon.

- 3.29. More needs to be done to understand how customers will accept and use technology in their everyday lives to help them use water wisely and whether the water savings achieved would justify the associated costs.

What are the key factors that should be considered in taking decisions on new water supply infrastructure?

Reducing demand is unlikely to be enough to secure resilient water supplies. Some major new water supply infrastructure is likely to be needed well within the next 30 years.

- 3.30. When making decisions on new water supply infrastructure, the key factors that should be considered are the impact and the likelihood of losing the safe, reliable and affordable access to water highly valued by customers. It would be deemed *catastrophic* if water companies could not provide an adequate service.
- 3.31. -We believe that demand reduction on its own will not be enough to secure resilient water supplies, and, that, new infrastructure will be required sooner rather than later.
- 3.32. We support the development and introduction of National Policy Statement (NPS) for Water Resources in England and Wales, as the proposals contained in the document will continue to promote a *twin track* approach and to build on the Water Resources Management Plan (WRMP) process¹⁷.
- 3.33. So far, the WRMP process has helped to identify potential investment in water resources infrastructure. We expect the upcoming WRMPs to provide more information of the resource development and, resulting investment required to ensure that customers' top priorities for water supply are met.
- 3.34. We support joint working within the regions as well as with other sectors and interested parties, such as the collaboration achieved through the Water Resources in the South East and Water Resources East groups. These collaborative approaches should enable more strategic solutions and efficient use of water resources. However, there is currently no requirement to agree a regional water resources management plan, so while regional modelling and planning informs individual water company WRMPs, each individual company is ultimately producing its preferred (and independent) plan.
- 3.35. As a result, we question whether it is time to consider a regional planning requirement which would build, for example, on the good foundations that the Water Resources in the South East Group modelling work has created. If all water companies had this requirement it would provide a good platform for taking forward some of the larger infrastructure, such as more complex transfer schemes. We would expect this regional, infrastructure planning process to include extensive customer engagement and evidence of customer support and willingness to pay when selecting and deciding on the most suitable options.

¹⁷ CCWater's response to the NPS is available here: <https://www.ccwater.org.uk/wp-content/uploads/2017/12/Developing-a-National-Policy-Statement-for-Water-Resources-December-2017.pdf>

- 3.36. Large scale investments to secure water supplies should be re-prioritised ahead of other issues that may not be considered to be as important by water customers. Where infrastructure resulting in significant bill impacts are deemed necessary and approved, water companies need to ensure customer support, that the investment is phased and bill impacts are smoothed so that water bills remain affordable for current and future customers.
- 3.37. In terms of the funding arrangements, it will be important to understand and have clear governance of how water resources infrastructure (including Nationally Significant Infrastructure Projects as defined in the Government's NPS for water resources) will be funded, how these costs will be recovered and over what period of time. Risk should be carried by those best able to carry it. Risks associated with financing an infrastructure project, and any risk in its delivery, should be carried by the water company (or companies) chosen to deliver the project. Adequate arrangements need to be in place to protect water customers from carrying a high level of risk due to a potentially higher cost of capital, and from paying further costs if the project fails to deliver, or if the cost of financing has been underestimated.
- 3.38. Separate financing of significant infrastructure projects (as with Thames Tideway Tunnel) could enable greater transparency to customers in terms of who is delivering the project, its financing arrangements, the costs incurred, and how this translates to customers' bills. Such transparency could enable scrutiny and accountability of the project.

How can long-term plans for drainage and sewerage be put in place and what other priorities should be considered?

There is limited understanding of current drainage and sewerage capacity. Although pressures are increasing, there is little long-term planning.

- 3.39. We agree with the need for better, long-term planning for drainage and sewerage. As such, we support the work undertaken by the Water UK-led 21st Century Drainage Programme¹⁸ to develop a framework of long-term drainage and wastewater management plans (DWMPs). These would be equivalent to water companies' Water Resources Management Plans (WRMPs).
- 3.40. The DWMPs should set out how future challenges are to be met and how current issues are being dealt with. In addition, since these plans would require public consultation, interested parties (i.e. commercial sector, planners, developers and local authorities) would have an opportunity to look for issues (and to propose solutions) as well as opportunities where joint working would be beneficial for all.
- 3.41. In 2016, the 21st Century Drainage Programme published a document setting out the challenges in this area over the next 25-50 years and how they should be dealt with¹⁹. These recommendations will enable each sewerage company to determine what it needs to do to deliver the ambitions set out by the Programme Board and help to reduce the risk (and number) of flooding incidents attributed to failure of the sewerage network.
- 3.42. We support the inclusion of sustainable drainage systems (SuDS) and/or flood prevention schemes to build in local resilience. The use of these schemes would ensure that sewers are used to transport sewage rather than for surface water drainage, reducing the likelihood of sewer flooding.
- 3.43. We think sewerage companies can (and should) work harder to work with others to plan to reduce sewer flooding. We would like to encourage partnership working in this area with all parties

¹⁸ <https://www.water.org.uk/policy/improving-resilience/21st-century-drainage>

¹⁹ <https://www.dropbox.com/s/yvp9ok76nni8shr/21CD%20Context%20doc.pdf?dl=0>

contributing towards achieving a common goal. Where costs fall to sewerage companies these should be planned so that bill impacts are managed appropriately to ensure acceptance and affordability. For example, the implementation of SuDS and working to understand their catchment areas by using Drainage and Wastewater Management Plans are just two areas where partnership working between different interested parties would be beneficial.

- 3.44. We note and are supportive of the proposals put forward in recent months by the Welsh Government²⁰ which make mandatory the requirement for SuDS on new developments.
- 3.45. We look forward to the recommendations (due to be published in the spring) of the upcoming report by the Inter Ministerial Group on Flooding²¹ and how these can help to shape long-term plans for drainage and sewerage.

What investment is needed to manage flood risk effectively over the next 10 to 30 years?

Flood risk is increasing due to climate change and population growth. A range of actions are already being taken to manage risk, but the overall level of ambition is unclear.

- 3.46. In recent years there has been an increased focus on managing flood risk and developing ways in which partnership working can help to protect homes, businesses and communities against flooding. We know that in the near future, additional investment and collaborative working will be required, particularly to deal with the challenges brought by climate change, population growth and the need to build new housing and associated infrastructure.
- 3.47. We think that the water sector (sewerage companies) have a very important role to play alongside other interested parties including Government, statutory bodies like the EA and Natural Resources Wales (NRW), local authorities and landowners.
- 3.48. The risk of surface water and sewer flooding could be reduced if more sustainable methods of draining and storing surface water were to be adopted. Measures that utilise natural resources and the landscape can all have a useful and relatively low cost impact on flood resilience (compared to more traditional 'end of pipe solutions'). These natural solutions aim to address the cause rather than the effect of problems within a catchment.
- 3.49. Several sewerage companies across England and Wales are involved with or have been involved with such natural flood management schemes²². The benefits of these schemes could be increased further through partnership working between sewerage companies, local authorities and other parties responsible for different aspects of drainage.
- 3.50. In general, we expect sewerage companies to invest in schemes that provide proven benefits to their customers at a reasonable cost. However, for some natural drainage schemes, such as catchment-based solutions, benefits can take many years to emerge. Therefore, conditions need to be appropriate for sewerage companies to consider and invest in these types of schemes. Decisions should be made based on the best available evidence. As this evidence may not be definitive, however, sewerage companies (and other stakeholders) must subsequently be able to identify, and remedy where possible, schemes that are failing to deliver expected results, in order to reduce the scale of costs which will ultimately be borne by customers.

²⁰ <https://consultations.gov.wales/consultations/implementation-sustainable-drainage-systems-new-developments-draft-regulations-and>

²¹ <http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2017-12-19/HCWS368/>

²² Dwr Cymru - Welsh Water Rainscape in Llanelli, Northumbrian Water also has schemes in Killingworth, Jarrow and the Ouseburn.

- 3.51. Another aspect that needs to be considered is how to reduce the risk of sewer flooding. Although the number of properties affected by sewer flooding is relatively small, it is an event unacceptable to customers as well as an environmental health hazard. Our data²³ shows that in 2016-17 there was a 31% increase in the number of properties affected internally by sewer flooding, compared to 2015-16. Although this increase can be partly explained by localised, significant weather events, investment to deal with this problem should be a priority for sewerage companies. This should reduce the number the number of properties that are flooded and to some extent, the frequency at which this occurs. It is worth noting that In Ofwat's 2014 Final Determinations the industry committed to reducing the number of properties that are flooded by sewage by 33% between 2015 and 2020²⁴.
- 3.52. In terms of external sewer flooding, our data²⁵ shows that the number of incidents was reduced by 11% during 2016-17 (compared to the previous year) and that there has been a noticeable reduction (36%) over the last five years.
- 3.53. We encourage sewerage companies to adopt a more proactive approach to sewer flooding by identifying those properties that may be at risk now and in the future. With challenges such as climate change and population growth, sewerage companies should make more use of modelling techniques to understand what properties are at risk of flooding and take action. There is scope for innovation in this area and cost-effective solutions could be achieved in a variety of ways, including larger schemes to increase sewer capacity, the use of SuDs or other 'softer' solutions and/or property level protection.
- 3.54. Having said that, we know and accept there are a number of properties at risk of sewer flooding where the solution required to protect them may be considered too expensive, but where mitigation measures (such as fitting a Non-Return Valve (NRV) in the drain, using air brick covers and door guards) might be more cost-effective, although they do not eliminate the risk completely.

4. Enquiries

Enquiries about this submission should be addressed to:

Dr Ana-Maria Millan

Policy Manager

Consumer Council for Water

e-mail: anamaria.millan@ccwater.org.uk

Telephone: 07810 655309

²³ CCWater (2017) Clear Way Forward: Delivering a resilient sewerage and drainage system (2016-17)

<https://www.cewater.org.uk/wp-content/uploads/2017/11/Clear-way-forward-Delivering-a-resilient-sewerage-and-drainage-system-2016-17.pdf>

²⁴ <https://www.ofwat.gov.uk/regulated-companies/price-review/price-review-2014/final-determinations/>

²⁵ CCWater (2017) Clear Way Forward: Delivering a resilient sewerage and drainage system (2016-17)

<https://www.cewater.org.uk/wp-content/uploads/2017/11/Clear-way-forward-Delivering-a-resilient-sewerage-and-drainage-system-2016-17.pdf>