Appendix 5.1.B – Meeting WISER and Innovation

Wessex Water

September 2018

Wessex Water
YTL GROUP

Business plan section		Supporting document	
	Board vision and executive summary		
1	Engaging customers		
2	Addressing affordability and vulnerability		
3	Delivering outcomes for customers		
4	Securing long term resilience		
5	Markets & innovation: wholesale	**5.1**	**Protecting and enhancing the environment**
		5.2	Using water efficiently
		5.3	Providing excellent drinking water quality
		5.4	Minimising sewer flooding
		5.5	Bioresources
		5.6	Maintaining our services
		5.7	Accommodating growth and new development
		5.8	Water resources bid assessment framework
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6	Markets & innovation: open systems & DPC		
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13	Data tables and supporting commentaries		

Contents

This is a copy of the report sent to the EA on 17 August 2018.

1. Introduction

1.1 Purpose of report

This report is in response to a letter from the Environment Agency dated 15th June 2018 (included in Appendix 1) requesting evidence of how WISER will be delivered through our PR19 Business Plan.

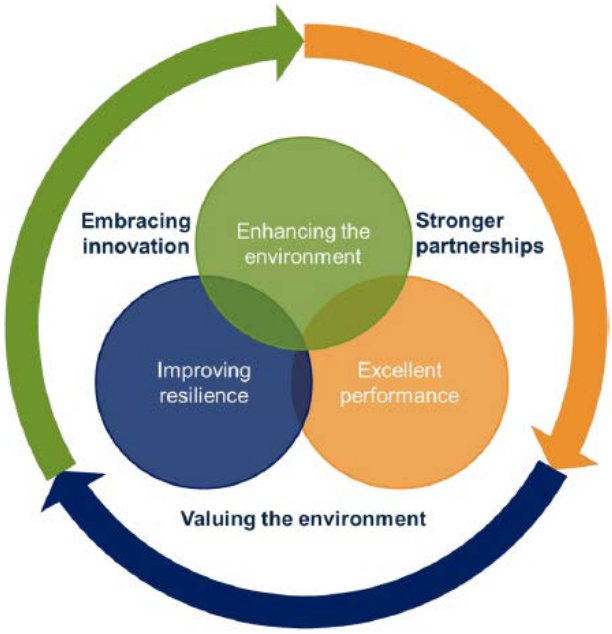
We set out our approach to delivering the actions, investment and approaches required to meet the Water Industry Strategic Environmental Requirements (WISER) expectations and our statutory obligations. We also outline how we demonstrate innovation and partnership working within our PR19 business plan and present exemplar innovation projects.

This report has been prepared for the Environment Agency in August 2018, prior to the submission of our Business Plan to Ofwat. Within the report we have identified links to the sections in the Business Plan where we demonstrate our plans to deliver the expectations of WISER. Our Business Plan will be available on our website from 3rd September 2018 after which these links and references can be viewed.

We will include this report as an appendix to our business plan.

1.2 WISER

WISER requires water companies to demonstrate how nature is valued within our decision making and builds on our role as stewards of the environment both now and for future generations. Integrating the needs of customers and the environment (as illustrated below) provides an opportunity to protect services and improve our natural assets.



It is anticipated that we will achieve this by:

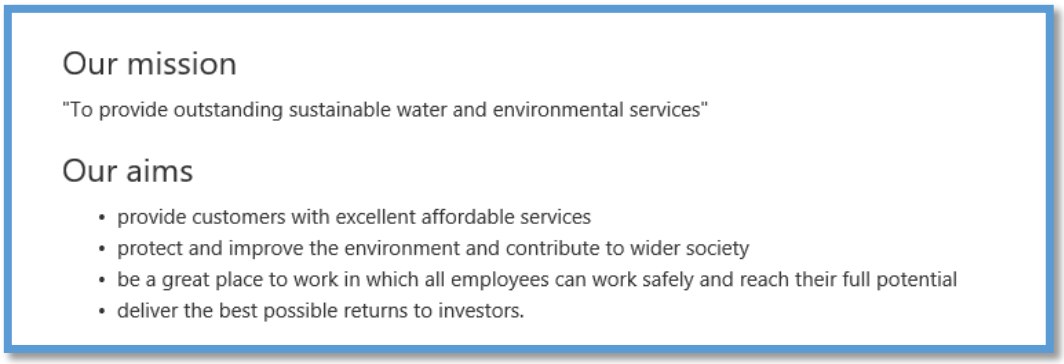
- Enhancing the environment
- Improving resilience in water infrastructure and the natural environment
- Achieving excellent performance.

Our PR19 Business Plan has been developed with full recognition of the expectations contained within WISER.

1.3 Meeting the expectations and statutory obligations

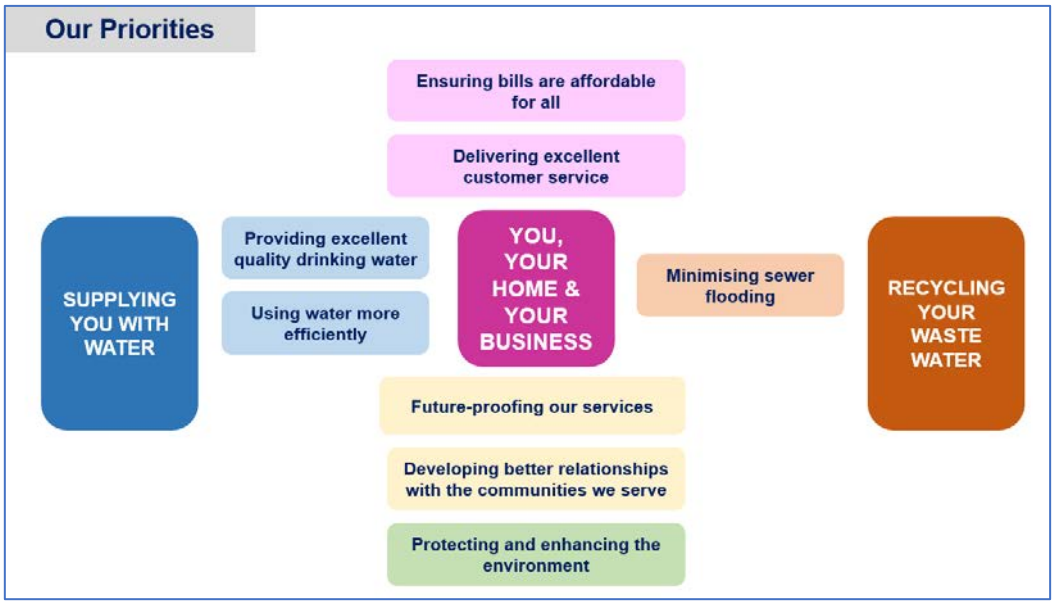
Tables A2-1 to 3 in Appendix 2 provide details on the actions included in our Business Plan to satisfy the expectations described in Table 1 of WISER. A high-level summary is provided below.

Our mission and aims demonstrate Wessex Water's commitment to delivering the three key elements of WISER:



The mission and aims are further translated into eight company outcomes and 41 performance commitments. There is a strong thread running from our high-level strategy to the individual capital schemes and maintenance programmes ensuring that we deliver the best and most sustainable outcomes for our customers and the environment within our region. This is auditable through our performance commitments and company Key Performance Indicators which are presented to the Board, Audit Committee, Wessex Water Partnership and Catchment Panel.

Our eight outcomes are illustrated below:



Our approach to each of the strands in WISER are set out below.

Enhancing the Environment

One of our key priority areas is to protect and enhance the environment and the natural capital in our region. We will do this by delivering the schemes outlined within WINEP3, including the alternative proposals submitted to Defra, EA and Ofwat in June, and subsequently approved on 12th July 2018.

In addition, we have identified 12 performance commitments to protect and enhance the environment. Two of these are the Ofwat common measures, five are mandatory bespoke measures and the remaining five are optional bespoke measures, going beyond statutory requirements and involving partnership delivery. In addition there are 7 PCs for resilience, 4 for sewer flooding and 5 for water efficiency.

Improving resilience in water infrastructure and the natural environment

We define resilience as our ability to:

- maintain high-quality and reliable services for our customers
- protect the natural environment in the face of disruptive events
- ensure the long-term viability of those services against a backdrop of strategic pressures and a changing external environment.

Our resilience depends on natural resources, how we maintain our assets and systems, and fundamentally on our people, their skills and their expertise. In order to further our resilience, we will continue to embrace new opportunities such as market based approaches and co-delivery through partnership working.

Achieving excellent performance

Wessex Water has been Industry Leading under the Environmental Performance Assessment (EPA) for the five of the last seven years and our plan aims to deliver the best overall service standards of all UK water companies.

We currently deliver the best overall customer and environmental service levels in the industry on the things that matter most: drinking water quality, environmental pollution, supply interruptions and customer service. We will build on this excellent foundation to become a top 20 service provider, within the UK, by 2025. We have been a leader in terms of environmental pollutions and aspire to a zero-pollution target. Through this plan, we will aim to achieve the 40% reduction in pollution target by 2025 outlined in WISER.

In addition, we have stretching performance commitments covering:

- 100% sewage treatment works compliance
- More stretching Abstractive Incentive Mechanism (AIM) targets than described through Ofwat's methodology
- Targeting carbon neutrality by 2040

- Working with communities to improve bathing water amenity above statutory requirements
- 100% compliance with sludge disposal
- Developing a framework to report against natural capital.

We will retain the EPA as in an internal company target to continue to achieve Industry Leading performance throughout AMP7.

2. Delivering excellent performance

2.1 Environmental Performance

Our environmental performance is comparatively very high. Using the headline Environmental Performance Assessment (EPA) measure published by the Environment Agency we've been rated as industry leading for five of the seven years the measure has existed – more than any other company.

2.1.1 Pollutions

Although we have been a regular industry leader in terms of the number of pollution incidents per 10,000km of sewer, our board is clear that we aim to have zero pollutions (of any category), in accordance with the statutory obligation on us.

In line with our aspiration to continue to be an industry leader on environmental performance, we will continue to have the EA's Environmental Performance Assessment as a Key Performance Indicator for the company and it will continue to be an integral part of performance targets across the business, including at executive level.

In addition WISER sets out the EA's expectations for excellent performance around pollutions. We will plan to meet the performance targets set out in WISER, including:

- no serious (category 1 and 2) pollutions.
- 40% reduction in all pollution incidents compared with the number of incidents recorded in 2016, which requires a reduction from 75 pollutions in 2016 to 45 by 2025, equivalent to 13 incidents per 10,000 km of sewer. Our plan enables us to, and we plan to meet the 40% reduction target in a way that is in the long-term interests of customers.
- high levels of self-reporting.

Separate from the statutory and policy requirements described above, the PR19 methodology includes a common performance commitment for wastewater pollution incidents (categories 1, 2 and 3), with a requirement to set a stretching target and accompanying outcome delivery incentive package.

In accordance with the PR19 methodology we have set our performance commitment target as a 25% reduction in the number of pollution incidents by 2025 (equivalent to 17 incidents per 10,000 km of sewer), which we forecast will keep us as a leading company on this measure. The ability to gain outperformance payments that are in-line with customers willingness to pay means that we have a strong incentive to deliver a greater reduction and that customers are protected. This separate regulatory mechanism does not diminish our ambition to minimise all pollutions and meet the performance targets in WISER.

So we consider that our proposals comply with the three sets of requirements that we need to meet:

1. the statutory obligation not to pollute by aiming for zero pollutions of any category.
2. the expectations for excellent performance set out in WISER, including a target to have no serious pollutions and 40% reduction in all pollutions by 2025.

3. a separate regulatory mechanism in accordance with the PR19 methodology including a performance commitment with a stretching target that protects customers from both under-delivery and from paying too much.

We aim to improve our self-reporting of pollutions by using the additional monitoring which is available, such as the increased application of EDM. We will also use on-the-ground teams to assist with additional monitoring.

2.1.2 Compliance

Our plan includes a commitment to achieving 100% compliance with our sewage treatment works permits.

2.1.3 Other performance measures

We will continue to improve our understanding of our sewerage networks, particularly s105 sewers which have recently been transferred into Wessex Water's ownership. This includes a programme of inspection and risk assessment of these sewers which informs our sewer rehabilitation programme.

Our plan includes a performance commitment to achieve 100% satisfactory sludge disposal, as per the Sludge (Use in Agriculture) Regulations and EPR Regulations. The principle objective of our bioresources business is to ensure we manage sewage sludge so as not to cause pollution to land, surface water or groundwater. All sludge will be recycled and will meet the requirements of the Biosolids Assurance Scheme.

We have invested in our sludge treatment centres so that we digest a greater proportion of our sludge, including provision of two advanced digestion sites, reducing our reliance on lime as a form of treatment and increasing our renewable energy production.

The opening of the bioresources market, an idea we promoted in our Water 2020 paper, will increase focus on efficiency. Our plan identifies how, through the creation of GENeco, we have been able to improve our understanding of costs and service performance, delivering benefits for customers and the environment. Our preparation for market opening and this expertise will be used to maximise opportunities from bioresources.

3. Delivery of the Water Industry National Environment Programme

Wessex Water has an exemplary record in delivering our environmental enhancement obligations as identified in the WINEP, and formerly, NEP. As a company, we have never missed an output. We have adopted a pragmatic and collaborative approach to the WINEP, working with the Environment Agency and Natural England to ensure that the outputs and regulatory dates are achievable.

In some cases, regulatory dates have been challenged to ensure delivery can be met taking account of pressures such as deliverability, new technologies and levels of certainty. This has been demonstrated by the submission of our alternative proposals in June 2018, promoting a phased catchment approach in the Stour and Parrett to achieve WFD outcomes.

We will deliver the obligations identified in WINEP3 within the timescales outlined. This forms an integral part of our plan (supporting document 5.1 - Protecting and enhancing the environment).

Our investment and delivery proposals have been scrutinised by the Wessex Water Board, who have provided their assurance for this Business Plan:

> *The full Board confirms that, in our view, the proposals within the Business Plan are consistent with and should allow the company to deliver against its statutory obligations, now and up to 2025.*

4. Alignment with the Water Resources Management Plan.

Our Business Plan and Water Resources Management Plan are in alignment. These Plans identify how we will meet our statutory requirements, understand and deliver resource requirements into the future and promote efficient use of water.

Minimising water wastage and supporting the continued growth in the efficiency of water use are cornerstones in our ambition to operate as a truly sustainable business. Despite a 13% increase in population since 1995 we are abstracting around 21% less water from rivers and aquifers than we did 20 years ago. Within our Business Plan we have further investigations to understand the environmental impacts of these abstractions. The outcomes of these investigations will be incorporated into our Water Resource planning to understand whether future changes will be required which could impact our deployable output.

We will reduce leakage by a further 15% and per capita consumption by three litres by 2025, our plan details how we will achieve these targets, in section 5.2 Using Water Efficiently. In addition, we address the long-term resilience of our water resources and future projections within section 4.1 of our the main narrative of our plan, as described below.

5. Resilience

Section 4 of our business plan provides a detailed explanation of our plans to ensure that we deliver resilient services to our customers, the environment and in our business operation. Delivering resilient services is highlighted as one of ten key priorities in Our Strategic Vision, our latest strategic direction statement. The strategic direction statement informs our water resources plan which runs to 2045, and our business plan up to 2025.

Providing resilient services to our customers is not a new concept for us. Our assets, systems and people are already very resilient, as demonstrated by the high levels of service we provide to our customers every year, and our performance during recent disruptive events such as:

- the flooding of the Somerset levels in 2014 – the largest flood event ever known in the area since records began in the 1600s
- the foot and mouth outbreak in 2001 when access to land for sludge disposal was restricted
- the 'Beast from the East' in 2018 when we were able to keep all our customers in supply despite extreme cold weather.

Furthermore, it is over 40 years since we imposed a hosepipe ban and our essential supplies are resilient to a 1 in 200 year drought.

5.1 Water Resources

Our supply demand balance forecasts indicate that we have a surplus of resources over demand for the next 40 years, therefore our plan focusses on demand management and efficient use of water, including leakage reduction.

As part of our Water Resources Management Plan, modelling has shown that our system is resilient to a repeat of any of the droughts which we have seen in the last 100 years without the need to restrict customer supplies. Elements of our plan to increase resilience relate to demand management where metering will feature strongly. We will also reduce leakage by a further 15% despite currently operating below the economic level of leakage.

The development of the water grid system has enabled stand-alone water sources to be connected such that if there is a long-term outage of a single source it can be supported by other sources. The exception to this is one of our water treatment works, which if a failure occurred, due to its size and location some of the water demand from this source cannot be supplied from elsewhere.

Customer research shows that resilience of supply is a priority for customers and cost benefit analysis shows that the investment will deliver benefits greater than the costs. Therefore, we have included proposals within our business plan to improve the reliability of our largest water treatment works and reduce the risk of supply interruptions to customers.

5.2 Flood Risk Management

As part of our business planning approach we have assessed flood risk to our own assets as well as risks to our customers' homes and businesses.

Climate change, change of land use and developmental pressures increase the risk of flooding of our assets from a number of different sources. We have undertaken a full review of historical site flood assessments for both our water supply and waste water assets. These historic assessments to date have all focussed on the existing design flood as per the National Planning Policy Framework (NPPF).

We have updated the Flood Risk Assessments of 63 critical assets. The flood risk review conducted at each site assessed the source of flooding from potential sources including impacts of climate change up to the 2050 horizon for the following return periods:

- Fluvial flood risk (1 in 100 year, 1 in 1000 year event, present day and climate change)
- Tidal flood risk (1 in 200 year, 1 in 1000 year event, present day and climate change)
- Surface water flood risk (1 in 30 year, 100 year and 1000 year event)
- Risk of flooding from reservoirs

The measures identified through this review process have been included within our business plan to improve the resilience of Wessex Water assets to flood risk.

Wessex Water is industry leading in terms of the occurrence of internal or external flooding to homes and businesses within our region. In order to achieve this level, we use spatial analysis of all known issues and sewer condition to develop a risk-based approach to our rehabilitation and maintenance programmes. We proactively inspect and repair high risk sewers, this will be extended to include high likelihood sewers, for example S105 sewers in blockage hotspot areas.

We have a bespoke hydraulic flooding risk score performance commitment which helps to identify sewers at risk from capacity pressures which may result in flooding. This can be challenging due to a changing climate and development pressures. However, it provides a good indication of capacity risks and ensure that we have a robust programme to reduce the risk of flooding and also to address blockages and collapse which can compromise performance.

5.3 Drainage Planning

We fully support the Drainage and Wastewater Management Plan approach developed through the 21st Century Drainage Programme. This will help to inform our long term strategic and partnership approach to reduce the impacts of flooding and enable development across our region.

Partnership working has been a key element of our drainage planning and flood risk approach for many years. We actively engage with Lead Local Flood Authorities, Risk Management Authorities and the catchment partnerships in sharing data and jointly addressing issues.

5.4 Climate Change Adaptation

Climate change adaptation is a fundamental element covering many parts of our business plan from water resources to environmental enhancement and resilience planning. There is

no standalone section within the plan which is dedicated to describing our approach to climate change adaptation.

As a company, we are committed to report on climate change risks and adaptation approaches as part of the Adaptation Reporting Power, on the timescale advised by the Government. To date, we have produced two such reports, the last being published in August 2015. Our Adaptation Plan within this report is wide ranging, covering our water resource modelling and flood risk assessments but also includes where we work with others through our catchment management and partnership working.

5.5 Natural Resilience

Natural, or environmental, resilience is captured across significant elements of our environmental enhancement programme, ensuring that we promote solutions which deliver the regulatory outcomes whilst being sustainable. This is evidenced in the following approaches:

- Catchment management to improve raw water quality and the development of EnTrade
- Working with local authorities to deliver our sewerage and flooding programmes
- Catchment permitting to optimise existing assets to deliver phosphorus reductions.

In addition to these requirements, we promote a partnership approach to enhancing the natural environmental resilience within our region. These are primarily delivered through:

- Catchment Partnerships
- Biodiversity Action Plan (Partners Programme)
- Bathing Water engagement.

These activities are component parts of two performance commitments:

- Working in Partnership to deliver natural capital benefits
- Community Projects to deliver bathing water amenity.

5.6 Performance Commitments

We have a number of performance commitments to ensure we operate a resilient business to enable us to provide excellent customer service and environmental outcomes. These include:

- Volume of water leaked
- Volume of water saved by water efficiency engagement
- Sewer flooding risk
- Water supply interruptions
- Asset health: sewer collapse; water main bursts; wastewater treatment works compliance and unplanned outage
- Satisfactory sludge disposal.

6. Innovation and partnership working

6.1 Innovation

We aim to be a leader in innovation across the water industry, in ways that benefit the people we serve and the environment around us.

We will deliver improved services and better outcomes by innovating, including:

- EnTrade- a trading tool that enables us to reduce nitrogen at a fraction of the cost of building new treatment processes
- catchment permitting - a new and flexible system that maximises the use of existing phosphorus removal plants, the only company to do so in AMP6
- catchment management - a continuation of our pioneering approach to control nitrates at source
- Grid optimiser - automatic control to ensure the optimum utilisation of our sources as well as ensuring resilience.

As part of our Business Plan we have put forward a new, innovative approach to delivering phosphorus reductions through Catchment Nutrient Balancing in the Parrett and Dorset Stour catchments. This will combine our PR14 water industry leading innovations: Catchment Permitting and EnTrade.

In addition to this, we are excited to explore new market opportunities in the water resources and bioresources price controls.

We have developed robust academic and research partnerships, such as the GW4 Partnership involving the universities of Bristol, Bath, Exeter and Cardiff, to pursue new ideas, research and innovative technologies.

6.2 Partnership working

We strongly believe that co-design and collaborative delivery of our work enables us to maximise efficiencies and deliver greater environmental benefits. We host two catchment partnerships in Dorset and the Bristol Avon and are actively engaged in the remaining two within our region. Within Poole Harbour, we work with the agricultural sector and co-ordinate an agricultural group which identifies and co-delivers a number of projects, including working with our Catchment Delivery Team and EnTrade.

Our Drainage and Wastewater Management Plans will enable a further route to work in partnership, sharing data and delivering solutions. We will continue to work with Local Lead Flood Authorities and other stakeholders to identify joint schemes that provide value for money, sustainable solutions to reduce flooding.

Wessex Water was the first water company to publish a Biodiversity Action Plan, a key component of this is the Partners Programme. This provides funding for (typically) four projects over the AMP cycle to deliver biodiversity and natural capital projects off our landholding within the region. This is an invaluable opportunity to share knowledge and best practice to deliver environmental outcomes.

A number of Performance Commitments include partnership delivery, including:

- Community projects to deliver Bathing Water amenity
- Catchment partnership projects to deliver natural capital benefits.

Appendix 3 provides some case studies which showcase the innovative work which we have delivered during AMP6.

Appendix 1: PR19 WISER Letter to regulatory directors

Our ref: Wiser Report

Date: 15 June 2018

Dear Regulatory Director,

PR19: Water Industry Strategic Environment Requirements (WISER)
In October 2017 we jointly released, with Natural England, our Water Industry Strategic Environment Requirements (WISER) document. This sets out the environmental, resilience and flood risk obligations we want all water companies to take account of when developing business plans for 2020-2025.
We now need assurance that your company business plans will include actions, investments and approaches that meet the WISER expectations, and your statutory obligations. So, prior to completing your plans we are asking all water companies to provide a short report outlining this information.

What you need to do
Your report (around 10 pages) should provide the following information:

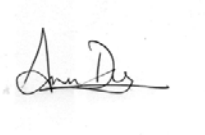
- A description of how you have met the expectations and statutory obligations set out in Table 1 of WISER. If your business plan does not show a potential to achieve these objectives by the end of the Asset Management Plan period (2020-2025) you should provide clear reasons why they will not be achieved.
- A summary on how your plan will deliver excellent performance, including the way your strategies, management practices and investment will eliminate serious pollution incidents and ensure 100% compliance with all permits and licences.
- Assurance that you will deliver the Water Industry National Environment Programme within the timescales agreed with the Environment Agency.
- Confirmation that your business plan aligns with your water resources management plan.
- A short explanation on how your plans will increase resilience in line with government expectations and customer priorities. You should include how you have assessed water resources, flood risk management, drainage planning, climate change adaptation and natural resilience.
- Evidence of how you will demonstrate innovation and partnership working as you implement your business plan.
- An example (or examples) of initiatives or projects that you consider to be exemplar.

How we will use the information that you provide
We will review how quickly you are planning to deliver your obligations, together with your overall level of performance. We will share a summary of our findings with Ofwat and Defra, including examples of exemplary performance and good practice. If there are gaps in the information you provide we may carry out further investigations and discussions with you to address this before reporting our findings.

When you need to respond
We will expect your response by 5.00pm 17th August 2018.

Where to send your response
Your report and any covering material should be sent to PR19_delivery@environment-agency.gov.uk

Yours faithfully,



Anne Dacey, Deputy Director Integrated Water Planning

Appendix 2: Demonstration of actions within the Wessex Water Business Plan to deliver WISER

This appendix covers all the requirements on the table 1 in WISER and provides a brief description of what is in our PR19 plan with a signpost to the relevant supporting document.

Table A2-1: Enhancing the Environment

			Brief description of what is the plan	Reference PR19 business plan supporting document and section
Water body status (Water Framework Directive)				
1	Measures to prevent deterioration in current water body status.	S	The WINEP includes 10 lines covering no deterioration drivers for BOD or ammonia at 7 sites.	5.1 Protecting & Enhancing the Environment, section 3.3 Ammonia & BOD Removal.
2	Measures to improve water body status.	S+	£200m delivery of WINEP3 waste requirements, primarily focussed on phosphorus, removing 305 tonnes/year by 2025. 76 lines in WINEP3 on phosphorus reduction.	5.1 Protecting & Enhancing the Environment, section 3.2 Nitrogen & Phosphorus Removal.
3	Work with stakeholders and Catchment Based Approach (CaBA) partnerships to explore integrated solutions at a catchment scale.	NS	Continuation of our exemplary catchment management work to improve raw water quality and the use of EnTrade, where appropriate. 8 specific DrWPA lines with catchment solutions. Catchment Permitting in Bristol Avon and Little Avon Catchment (phosphorus). Alternative proposals for delivery of the WINEP have been accepted for Stour and Parrett (Phosphorus). In addition, Wessex Water will continue to host catchment partnerships in the Bristol Avon and Dorset, and actively engage with the other two partnerships within our region.	5.1 Protecting & Enhancing the Environment, section 3.2 Nitrogen & Phosphorus Removal, section 8 Catchment delivery for drinking water compliance (DrWPA).

Bathing waters				
1	Measures to achieve at least sufficient class.	S	Improvements to West Huntspill UV to provide greater disinfection- Burnham Jetty bathing water.	5.1 Protecting & Enhancing the Environment, section 7.1 Bathing Waters.
2	Measures to prevent deterioration in class.	S	Holdenhurst storm tank improvements to reduce levels of spills.	5.1 Protecting & Enhancing the Environment, section 7.1 Bathing Waters.
3	Event monitoring of storm overflows impacting on bathing waters.	S	The plan includes monitoring all storm overflows. It also includes for the installation of EDMs for flows to and from storm tanks at STWs and where the FFT control is at an upstream SPS or CSO EDMs will be installed at that location.	5.1 Protecting and Enhancing the Environment, section 3.5 Improving flow compliance and monitoring and section 4.1 improving river water quality - intermittent discharges.
4	Measures to achieve good / excellent class.	NS	10 no bathing water investigations as specified by EA National Team to identify measures to ensure a robust good or excellent classification.	5.1 Protecting & Enhancing the Environment, section 7.1 Bathing Waters.
Shellfish waters				
1	Measures to prevent deterioration in current water body status.	S	UV disinfection to be provided at Corfe Castle to achieve the log reduction requirements between the STW and designated shellfish water.	5.1 Protecting & Enhancing the Environment, section 7.1 Shellfish Waters.
2	Measures to achieve shellfish water protected areas objectives.	S+	3 no. Poole Harbour investigations to understand the potential impact of waste assets on the three designated shellfish areas in Poole Harbour- to inform PR24.	5.1 Protecting & Enhancing the Environment, section 7.1 Shellfish Waters.
3	Event monitoring of storm overflows impacting on shellfish waters.	S	The plan includes monitoring all storm overflows. It also includes for the installation of EDMs for flows to (as well as from) storm tanks at STWs.	5.1 Protecting and Enhancing the Environment, section 3.5 Improving flow compliance and monitoring and section 4.1 improving river water quality - intermittent discharges.
Biodiversity and ecosystems				

1	Measures that contribute to meeting and or maintaining conservation objectives of Natura 2000 sites (Special Areas of Conservation (SAC) & Special Protection Areas (SPA)) and Ramsar sites.	S	14 no Habitats Directive drivers primarily focussing on improvements to phosphorus discharges from STWs.	5.1 Protecting & Enhancing the Environment, section 3.2 Nitrogen & Phosphorus Removal & section 6 Improving Natural Capital on Land and in Rivers.
2	Measures that contribute to meeting and/or maintaining Favourable Condition targets for Sites of Special Scientific Interest (SSSI).	S, S+	3 no SSSI drivers for P removal.	5.1 Protecting & Enhancing the Environment, section 3.2 Nitrogen & Phosphorus Removal & section 6 Improving Natural Capital on Land and in Rivers.
3	Measures that contribute to priority habitat and species outcomes as well as other biodiversity actions and measures to enhance ecosystem resilience on your own land or in the catchments within which you operate	S+	3 no biodiversity investigations; 7 no DrWPA investigations which include biodiversity opportunity mapping and assessment and 6 no catchments with implementation of biodiversity improvements (137ha of habitat improvements).	5.1 Protecting & Enhancing the Environment, section 8 Catchment Delivery for Drinking Water Compliance.
4	Measures that contribute to the conservation objectives of Marine Conservation Zones (MCZ).	S+	No measures included within the WINEP or business plan specifically related to MCZ, however, our bathing water amenity performance commitment will include measures focussed on education and engagement to change behaviours and improve marine water quality.	Performance Commitment: Community Projects to deliver Bathing Water Amenity.
Sustainable fisheries				
1	Screen abstractions and outfalls to prevent the entrainment of eels and salmon.	S+	2 sites where improvements to screens have been identified (Clifton Maybank, Albert Street).	5.1 Protecting & Enhancing the Environment, section 6 Improving Natural Capital on Land and in Rivers.

2	Address barriers to the passage of fish.	S+	Ibsley Weir (lower Hampshire Avon) identified as a barrier for removal/modification in PR19.	5.1 Protecting & Enhancing the Environment, section 6 Improving Natural Capital on Land and in Rivers.
Invasive non-native species (INNS)				
1	Prevent deterioration by reducing the risks of spread of INNS and reducing the impacts of INNS.	S	The WINEP identifies a suite of targeted biosecurity measures to be implemented at 15 sites, examples of which include the provision of cleaning/disinfection facilities for anglers and sailors and the development of site-specific INNS awareness information board.	5.1 Protecting & Enhancing the Environment, section 6 Improving Natural Capital on Land and in Rivers.
2	Reduce the impacts of INNS, where INNS is a reason for not achieving conservation objectives or good status.	S, S+	There are no waterbodies in the Wessex Area which are failing WFD status for INNS alone. Therefore, we have no such investigations or actions on the WINEP. However, we are actively working to better understand the occurrence of INNS within our area. This work includes partnership working to survey and undertake actions to address INNS, education and advice and routine monitoring of WW at risk sites.	5.1 Protecting & Enhancing the Environment, section 6 Improving Natural Capital on Land and in Rivers.
3	Understand pathways of introduction and spread of INNS.	NS	During AMP6 Wessex Water developed a risk assessment process which was used across our asset base to quantify risks and exposure to INNS and the potential to spread. This Risk Assessment process has been used as the exemplar for other water companies. The WINEP identifies eight raw water transfers for which we will investigate the risks posed by these transfers and identify measures that could be implemented in future to mitigate the risk of spreading INNS through this mechanism.	5.1 Protecting & Enhancing the Environment, section 6 Improving Natural Capital on Land and in Rivers.
Urban wastewater				

1	Measures to protect newly identified sensitive areas.	S	River Stour and River Isle still not confirmed as a newly designated Sensitive Area under the UWWTD but treated as such within the Business Plan.	5.1 Protecting & Enhancing the Environment, section 3.2 Phosphorus and Nitrogen removal.
2	Measures to improve wastewater treatment where population thresholds are exceeded.	S	Development growth has been assessed to check where thresholds would be exceeded. Cromhall STW crosses the 2,000 pe threshold during AMP7. Plans are in place to accommodate the change in permit requirements. Lytchett Minster STW has been identified as crossing the 10,000 p.e. threshold early in AMP8 and our plan for Poole STW development incorporates the likely future need for N removal at Lytchett Minster STW.	5.1 Protecting and enhancing the environment. 5.7 Accommodating growth and new development. 8.6.A Claim WSX02 - Sewage treatment works capacity programme.
3	Maintain sewers to demonstrate sewer leakage to ground is minimal, especially in Source Protection Zones.	S	Our sewer risk model includes Groundwater Source Protection Zones to increase the prioritisation of sewer inspection and rehabilitation in these areas. We also have a programme of making sewers watertight (primarily targeted in areas where groundwater can infiltrate into our sewers.)	5.6 Maintaining our services, section 7.2.
Drinking Water Protected Areas (DrWPA)				
1	Catchment measures to prevent deterioration in water quality and to reduce the need for additional treatment.	S	6 new catchments included where there is a rising trend in nitrate levels within the groundwater. The Catchment delivery team will work with farmers and landowners to understand the causes and implement actions to reverse trends where possible. Continuation with catchment management work in 21 existing catchments to improve raw water quality and deliver wider environmental benefits.	5.1 Protecting and Enhancing the Environment, section 8.

2	Catchment measures to improve water quality to reduce the level of existing treatment.	S+	Ongoing catchment management at 21 sites.	5.1 Protecting and enhancing the environment, section 8.
Chemicals				
1	Measures to prevent deterioration (includes load standstill measures).	S	3 schemes have been identified in WINEP3 with either no deterioration or standstill permit requirements. These are: • Croscombe (dissolved zinc) • Glastonbury (TBT) • Shepton Mallet (dissolved zinc).	5.1 Protecting and enhancing the environment, section 3.
2	Measures to achieve compliance with environmental quality standards (EQS).	S+	2 improvement schemes identified: • Glastonbury (TBT) • Shepton Mallet (dissolved zinc). The improvement targets are more stringent than those proposed as 'no-deterioration' schemes. Due to the lack of confidence in technologies to remove TBT, we have agreed with the EA that we will undertake an investigation to assess the sources of TBT rather than pursue the treatment option.	5.1 Protecting and enhancing the environment, section 3.
3	Work with business customers and catchment partners to explore alternatives to end of pipe treatment solutions.		There are a number of the CIP3 investigations where we plan to work with business, customers or other sectors to review source control opportunities. CHEM4 Innovative Pathway Control - we will be working with the health sector and delivery partners in the Bristol Avon Catchment to explore green prescribing options to reduce pharmaceutical levels in sewage. CHEM6 includes sewer catchment investigations in the Brinkworth Brook, Royal Wootton Bassett and Frome. It is anticipated that this will involve liaison with the agricultural	5.1 Protecting and enhancing the environment, section 3.

			sector and traders to understand the sources of specific substances. Under CHEM13 we will be investigating the sources of TBT entering Glastonbury STW, this will include liaison with traders to better understand their processes.	

Table A2-2- Improving Resilience

Improving resilience			Brief description of what is the plan	Reference PR19 business plan supporting document and section
Flood risk management				
1	Co-operate with other risk management authorities in exercising your flood risk management functions.	S	We will continue to do this. We aim to attend all the meetings we are invited to, adapting to different LLFAs approaches, to ensure we are as fully engaged as possible. We attend over 100 meetings every year to look for synergies that partnership working can bring.	5.4 Minimising Sewer Flooding, section 3.2.1. 8.9.A Claim WSX05 - Flooding programme, section 6 and Annex A Case Studies.
2	Co-ordinate and share information with Cat.1 and 2 responders.	S	We will continue to do this. We share reports, advice, our hydraulic computer models and flooding incident data (once data licences have been agreed).	5.4 Minimising Sewer Flooding, section 3.2.1.
3	Comply with statutory reservoir safety requirements.	S	We are fully compliant with the Reservoirs Act 1975. One of the main aims of our maintenance plan is to ensure that we are compliant with the Reservoirs Act.	5.6 Maintaining our services.
4	Develop a clear and systematic understanding of service and system risks and include options for reducing the likelihood of future service failures and service failures that lead to flooding.	NS	We use spatial analysis of all known issues (structural and serviceability) and sewer asset condition to provide a risk-based approach. Every plotted sewer has likelihood and consequence scores of failure and a proactive inspection date. Sewers with high risk (both high likelihood and high consequence) are proactively surveyed and where assets need improving then remedial works are carried out. We also	5.4 Minimising Sewer Flooding, section 2. 8.9.A Claim WSX05 - Flooding programme. 8.10.A WSX06 - Pollution reduction strategy.

			proactively inspecting and repairing high consequence sewers (e.g. tunnels). Our business plan is also proposing to start proactively inspecting and repairing high likelihood sewers (e.g. S105A sewers in blockage hotspot areas). We are also proposing to install in-sewer depth monitors at blockage and pollution hotspots, with an enhanced data analytics capability. Our proactive jetting programme (over 500km per year) is being optimised using velocity predictions from our computer model (e.g. sewers with low velocities are more likely to block).	
5	Reduce sewer flooding of homes and businesses trending towards zero.	NS	Internal flooding of homes and businesses is rare. Wessex Water are industry leading in this metric, and we want to continue this. We are proposing a target of 22% reduction in number of internal flooding incidents a year. The approach described in the answer to the previous question will reduce internal flooding risks as well as external flooding and pollution risks.	5.4 Minimising Sewer Flooding, section 2.
6	Reduce the number of properties at risk of flooding.	NS	The above questions answer how we will reduce the number of properties at risk of flooding caused by blockages and structural failure. Hydraulic flooding also accounts for about 15% of all flooding incidents but the cost of reducing the risk of hydraulic flooding is expensive. We are continuing our bespoke performance commitment, to have a stable hydraulic flooding risk score. This is challenging when our sewers are under strain from development, urban creep and the impacts of higher intensity rainfall due to climate change. We have retained this performance commitment, to ensure we have an ongoing hydraulic flooding programme to reduce the number of properties at risk of flooding, as well as addressing blockages and collapses.	5.4 Minimising Sewer Flooding, section 2.
7	Take every opportunity to increase the number of partnership flood	NS	We will continue to work with other Risk Management Authorities and we believe our Drainage and Wastewater Management Plans will also achieve this. Our website now	5.4 Minimising Sewer Flooding, section 3.2.1. 8

	schemes achieving multiple benefits.		includes a DWMP webpage (www.wessexwater.co.uk/DWMP).	
8	Work with others to actively identify and build in sustainable drainage options.	NS	Sewers for adoption being updated to include SuDS for adoption, to promote sustainable solutions.	5.7 New Development section 3.6.3.
9	Work with government and other utilities to take forward the recommendations of the National Flood Resilience Review.	NS	We have undertaken a detailed review of flood risk based on the latest National Flooding Resilience Review guidelines. Where residual risks have been identified investment is included in our plan to provide a resilient service. The plan includes protection of a sewage treatment works at Portbury Wharf against flooding to mitigate the risk of pollution of the Bristol channel.	4.1 Providing resilient services.
Future drainage				
1	Use the 21st Century Drainage Programme workstreams on storm overflows and drainage capacity metrics to inform business plans.	NS	We support the new DWMP framework, which incorporates the guidance developed under the 21st Century Drainage programme.	5.4 Minimising Sewer Flooding, section 3. 5.1 Protecting and Enhancing the Environment, section 4.1.2 Overflows.
2	Maintain networks and WwTWs to reduce the risk of future failures.	NS	Our base maintenance budgets include proactive maintenance to achieve this.	5.6 Maintaining our services.
3	Event duration monitoring on high significance storm overflows.	S	75% coverage includes monitoring all high significance overflows by 2020. 100% coverage of all overflows by 2023.	5.1 Protecting and Enhancing the Environment, section 4.1.2.

4	Ensure compliance with permitted flow to full treatment settings.	S	Wessex continually reviews and where necessary makes improvements to STW flow controls to ensure FFT compliance. Our PR19 plan includes for the installation of EDMs for flows to and from storm tanks or controlling pumping station together with assessments of Mcerts installations for their suitability to measure FFT compliance. Where existing MCerts installations are already known not to be suitable for FFT flow measurement these have been included for replacement.	5.1 Protecting and Enhancing the Environment, section 3.5 Improving flow compliance and monitoring.
Water resources security of supply				
1	Solutions to meet water resources management plan outcomes or measures to protect the environment form the supply-demand component of business plans.	NS	Our SDB forecasts indicate we will have a surplus of resources over demands for the next 40 years. Our future proposals therefore focus on demand management (metering and water efficiency) and leakage reduction. No new supply resources are proposed.	5.2 Using water efficiently.
2	Assess resilience of your water supply system to predicted droughts and other non-drought water supply hazards.	NS	Modelling shows that our water supply system is resilient to a repeat of any of the droughts we have experienced in the last 100 years without the need to restrict customer supplies. We have also assessed our resilience to a 1 in 200-year drought and this indicates that we would not need to impose severe restrictions (stand pipes and rota cuts) during such an event.	4.1 Providing resilient services.
3	Measures to reduce demand and per capita consumption.	NS	The main way that we can influence per capita consumption is by metering. Our proposals include an enhanced metering programme that will see meter penetration increase to 77% in our region by 2025. Our plans also include a step-change increase in water efficiency activity which will see 40,000 homes receive our Home Check retro-fit and behavioural advice service and the launch of a new digital platform for water saving advice and comparison tool.	5.2 Using water efficiently, Sections 2 and 3. See also WRMP section 9: www.wessexwater.co.uk/waterplan.

4	Achieve a downward trend for leakage with rates at or below the sustainable economic level of leakage.	NS	Our plan incorporates a 15% reduction in leakage by 2025. We already operate below the economic level of leakage.	5.2 Using water efficiently, Section 4. See also WRMP section 5.7: www.wessexwater.co.uk/waterplan.
5	Assess universal metering in water stressed areas.	S	Our region is not classed as water stressed. For comparison with other options we have however considered a universal metering programme - this was not selected as our preferred plan though.	5.2 Using water efficiently, Section 2. See also WRMP section 9: www.wessexwater.co.uk/waterplan.
6	Ensure agreed and up to date plans are in place to manage a drought.	S	We prepared an updated Drought Plan and ran public consultation on the plan in 2017.	4.1 providing resilient services, section 4.2. See also www.wessexwater.co.uk/drought.
7	Demonstrate that Defra's Guiding principles for water resources planning have been met.	NS	The focus areas of the guiding principles are to: 1) take a long term strategic approach to protecting and enhancing resilient water supplies: 2) consider every option to meet future public water supply needs: 3) protect and enhance our environment acting collaboratively; 4) promote efficient water use and reduce leakage. In our plan: 1) we have a very resilient system owing to previous investments. We project that we will have a surplus of supply over demand for 40 years without the need to develop new sources of water, but nonetheless our plan contains ambitious proposals to reduce demand and leakage. 2) public water supply needs are met for our region even without the implementation of 'options'. However, we recognise the importance of our position as a potential area of surplus water resources that could be traded with	5.2 Using water efficiently, Section 1. Plus: 4.1 Providing resilient services, section 4.2. See also WRMP sections 10 and 11: www.wessexwater.co.uk/waterplan. 4.1 Providing resilient services, section 4.2. See also WRMP section 4.6: www.wessexwater.co.uk/waterplan. 5.1 Protecting and enhancing the environment, section 5.1. See also WRMP section 4.4: www.wessexwater.co.uk/waterplan. 5.2 Using water efficiently. See also WRMP section 9: www.wessexwater.co.uk/waterplan.

			neighbouring regions where water supplies are less secure. We will continue to explore third party and cross boundary solutions as part of the West Country Water Resources Group. 3) We have a long history of working collaboratively with the EA to investigate abstraction licences where concerns have been raised regarding their sustainability. Where the impacts of abstraction have been found to be detrimental to the environment we have reduced licences and invested to maintain secure supplies for our customers - our water supply grid is one such example. 4) Our future proposals focus on the efficient use of water including demand reduction through water efficiency, metering and leakage reduction.	
8	Incorporate sustainability changes into supply forecasts.	NS	Our WRMP supply forecasts incorporate confirmed sustainability changes into baseline projections. It also includes a scenario test of the implication on the SDB of further licence reductions that may be required following investigations being undertaken in the 2020-25 period.	5.1 Protecting and enhancing the environment, section 5.1. See also WRMP sections 4.4 and 10: www.wessexwater.co.uk/waterplan.
9	Current abstractions and operations, and future plans support the achievement of environmental objectives.	S, S+	Our proposals are consistent with Defra's 25-year environment plan and the EA's WINEP programme. We have ambitious proposals to reduce demand so that we abstract less from the environment. We have also incorporated the confirmed sustainability licence reductions into our future supply forecasts and undertake sensitivity testing on the unconfirmed ones.	5.2 Using water efficiently. 5.1 Protecting and enhancing the environment, section 5.1. See also WRMP sections 4.4 9 and 10: www.wessexwater.co.uk/waterplan.
Climate change				
1	Report on understanding of risks from climate change and how they are being addressed via	S	We will continue to report on climate risks and adaptation approaches via the Adaptation Reporting Power (ARP) reporting cycle.	https://www.gov.uk/government/publications/climate-adaptation-reporting-second-round-wessex-water.

	Adaptation Reporting Power (ARP) reports.			
2	Reduce total carbon emissions.	S+	We will continue to seek opportunities to reduce our emissions, through a) avoidance, b) energy efficiency and c) renewable energy measures. We will report annually using UK industry standard reporting methodologies.	5.1 Protecting and enhancing the environment, section 9.
3	Ensure Adaptation Reporting Power (ARP) report commitments are consistent with, and embedded within, business plans.	NS	Adaptation approaches are spread throughout the business plan. We will ensure that our next ARP report reflects the 2020-25 business plan.	3.1.A Performance commitment detail. 4.1 Providing resilient services. 5.2 Using water efficiently. 5.4 Minimising sewer flooding. 5.6 Maintaining our services. 5.7 Accommodating new growth and development. 5.8 Water resources bid assessment framework. 12.12 Strategic Direction Statement.

Table A2-3- Excellent Performance

Excellent performance			Brief description of what is the plan	Reference PR19 business plan document and section
Regulatory compliance and sludge				
1	A plan in place to achieve 100 per cent compliance for all licences and permits.	S	Our plan includes a commitment to 100% compliance with all permits. A major objective of our sewage treatment works maintenance and capacity programmes will be ensure compliance.	5.1 Protecting and enhancing the environment. 5.6 Maintaining our services. 5.7 Accommodating growth and new development.

2	100% compliance with environmental permit conditions at WwTWs with descriptive not numeric limits.	S	Our plan includes a commitment to 100% compliance with all permits. A major objective of our sewage treatment works maintenance and capacity programmes will be ensure compliance.	5.1 Protecting and enhancing the environment. 5.6 Maintaining our services. 5.7 Accommodating growth and new development.
3	Serious pollution incidents must continue to trend towards zero.	S	We will plan to meet the WISER performance target of no serious (category 1 and 2) pollution incidents.	5.1 Protecting and enhancing the environment. 5.6 Maintaining our services.
4	Trend to minimise all pollution incidents (category one to three) by 2025. There should be at least a 40% reduction compared to numbers of incidents recorded in 2016.	S	Although we have been a regular industry leader in terms of the number of pollution incidents per 10,000km of sewer, our board is clear that we aim to have zero pollutions (of any category), in accordance with the statutory obligation on us. We will plan to meet the performance targets set out in WISER, including: • no serious (category 1 and 2) pollutions. • 40% reduction in all pollution incidents compared with the number of incidents recorded in 2016, which requires a reduction from 75 pollutions in 2016 to 45 by 2025, equivalent to 13 incidents per 10,000 km of sewer. Our plan enables us, and we plan to meet the 40% reduction target in a way that is in the long-term interests of customers. • high levels of self-reporting.	5.1 Protecting and enhancing the environment. 5.6 Maintaining our services. 8.10 Claim WSX06 - Pollution reduction strategy.
5	Effective management of transferred private sewers and pumping stations with low levels of pollution incidents.	S	We are proposing to undertake more inspections of transferred S105A sewer, by proactively inspecting high Likelihood sewers (as well as high consequence and high risk). It is anticipated that this will lead to more inspection and rehab of S105A sewers. The transferred pumping stations have all been risk-assessed.	5.6 Maintaining our services, section 7.2 (sewers) and 7.4 (pumping stations).

6	No D, E, or F rated sites under Operational Risk Appraisal OPRA for waste related sewerage service Environmental Permitting Regulations permits.	S	The final tracker for 2017 confirms that we have no OPRA D, E, or F sites. A plan is in place to achieve 100% compliance for all licences and permits including works with descriptive limits.	Main narrative
7	Compliance with flow requirements, including MCERTS certification, at WwTWs	S	All our WwTWs with flows greater than 50m^3/d already have MCERTS meters installed (256 No.). These all have current MCERTS certification. We have also checked those WwTWs approaching the 50m^3/d threshold to assess whether population growth up to 2025 could take them up to or over the 50m^3/d DWF and concluded that there are none in this category.	5.1 Protecting and enhancing the environment.
8	High levels of self-reporting of pollution incidents with at least 80 per cent of incidents self-reported by 2025. More than 90% of incidents self- reported for WwTWs and pumping stations.	NS	Our pollution reduction strategy includes a proposal to install in-sewer monitors in addition to completing full monitoring of our combined sewer overflows. The in-sewer monitors will be located at pollution hotspots, so that, using data analytics, we should have the ability to detect downstream blockages to allow jetting to occur, before the blockage causes pollution. Improved monitoring, telemetry and data analytics will improve our self-reporting capability.	5.1 Protecting and enhancing the environment.

9	Business plans include all measures identified within the Water Industry National Environment Programme and these are planned well and completed to agreed timescales and specification.	S	Our plan includes for all the measures included in WINEP3. Our track record of delivery of the WINEP is exemplary and we have adopted the same approach to planning of the PR19 WINEP. We will plan the programme so the measures are delivered by the completion dates and in accordance with the specification. We have proposed an alternative for delivery of the phosphorus removal programme, which extends the timescale to 2027. The EA and Ofwat commented that the proposal was well thought out and they have supported the alternative.	5.1 Protecting and enhancing the environment.
10	Sample and provide data in relation to self-monitoring under Operator Self-Monitoring (OSM), Urban Waste Water Treatment Directive (UWWTD), Flow monitoring and UV disinfection.	S	The sampling requirements for OSM, UWWTD and UV are received from the Environment Agency (EA), in terms of location, frequency and analyses required. This is arranged into a convenient programme of site visits for the sampling team. The programme is scheduled into the Laboratory Information Management System (LIMS) to produce round sheets for the Environmental Monitoring Technicians (EMTs). Data Reporting - OSM and UWWTD is sent to the EA monthly. UV is submitted quarterly and Flow data annually as per permit requirements.	
11	Manage sewage sludge treatment and re-use so as not to cause pollution to land, surface water or groundwater.	S	Our plan includes a performance commitment (PC E8) to achieve 100% satisfactory sludge disposal, as per the Sludge (Use in Agriculture) Regulations and EPR Regulations, including works with descriptive limits. The principle objective of our bioresources business is to ensure we manage sewage sludge so as not to cause pollution to land, surface water or groundwater. All sludge will be recycled and will meet the requirements of the Biosolids Assurance Scheme.	Section 5 of main narrative and 5.5 - Bioresources.

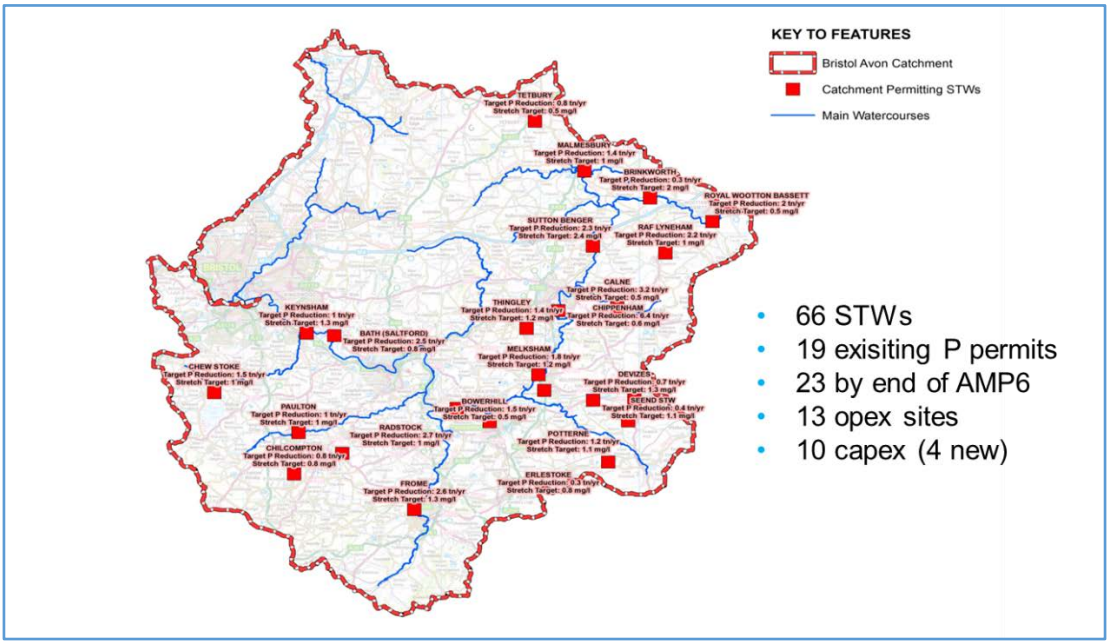
			We have invested in our sludge treatment centres so that we digest a greater proportion of our sludge, including provision of two advanced digestion sites, reducing our reliance on lime as a form of treatment and increasing our renewable energy production.	

Appendix 3 Innovation Case Studies

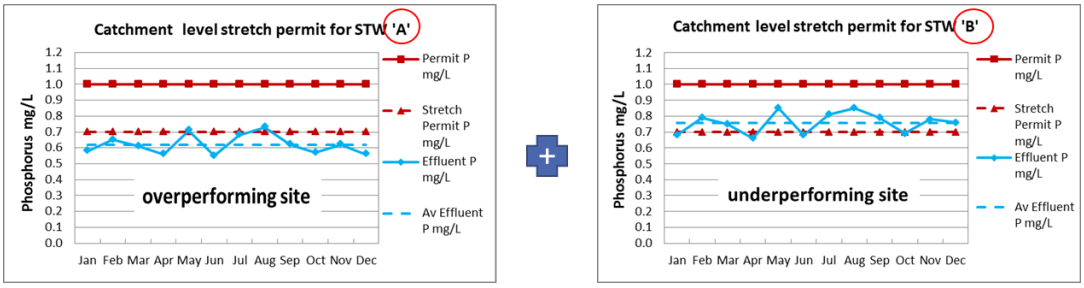
Case Study: Bristol Avon Catchment Permitting Trial

The Bristol Avon Catchment Permitting trial was the first trial of its kind in the UK. We promoted this trial in order to deliver the greatest phosphorus reduction in the catchment for the least cost, while improving the environment.

This innovative type of permitting enabled us to take different approach to risk, with more focussed and appropriate capital investment. In some cases STW performance could be significantly improved through operational changes only, albeit at a higher risk than the conventional capital solution approach.



The catchment permit links contributing polluting sources (STWs) together to facilitate a focus on achieving the environmental outcome for the catchment as a whole. It involved the introduction of “stretch targets” at 24 STWs together with normal regulatory permits providing a “back-stop”. The details were agreed with the EA in a new Operating Technique agreement, linked to the permits for all the STWs in the catchment. The opportunity to take a greater risk on STW performance at some sites, and to sweat assets to over-perform at others, meant that significant capital investment could be avoided.



At the end of the first year the trial had worked well, removing an additional 37.4 tonnes of phosphorus from the catchment, compared to the target of 25.2 tonnes. Compared to a conventional solution we have estimated the cost savings as:

Traditional solution :	Capex : £47.1m; Opex : £1.1m/yr
Catchment-wide permit :	Capex : £22.4m; Opex : 0.8 m/yr

Case Study: Reverse Auctions- EnTrade

In 2016 we launched EnTrade which is an innovative, market-based method for improving the water environment. EnTrade involves an online platform by which farmers bid for payment via reverse auction to carry out measures such as planting cover crops that reduce the amount of nitrogen that leaches from soil into groundwater and run off into surface water. This approach is much more cost-effective than conventional engineered solutions and the first two auctions were significantly oversubscribed.

Newer approaches to environmental stewardship, such as nitrogen offsetting, online nitrogen trading, can rarely be delivered by single bodies. We are showing how new types of public-private partnership can produce benefits for all involved

Case Study: Litter Free Coast and Sea- Somerset and Dorset

We have been working with the Local Authorities, Environment Agency and wider partners in Dorset and primarily Sedgemoor to deliver engagement projects in the last mile before the sea. We have been supporting and steering these projects for over five years, focussing on community engagement, awareness raising and encouraging ownership of local beaches.

The partnerships have delivered an array of positive engagement activities with local schools, businesses, residents and visitors to address some of the key issues which impact bathing water quality and amenity, such as:

- dog fouling on beaches
- sewer misuse, particularly focussing on fats, oils and grease disposal from food outlets
- littering and increasing seagull numbers
- beach litter

Case Study: Weston-super-Mare Superpond

Need: to reduce spills from a major overflow in the catchment to comply with the Bathing Water Directive.

Solution: 21,000 m^3 of storage at the treatment works and a surface water separation scheme.
Partnership: Additional storage secured as part of North Somerset's council's superpond scheme planned to accommodate run off from new development and compensatory floodplain storage.

How it worked: By working closely with partners additional storage was provided to allow Wessex Water to discharge 4,000 m^3 of surface water during rainfall events. Wessex Water contributed to North Somerset Council for the design, construction, use of the land, and a commuted sum for the future maintenance.

Benefits: Through partnership Wessex Water realised cost savings, met bathing water standards, helped provide biodiversity and amenity and increased resilience

Case Study: Southmead Green Street, Bristol

Need: To assist in promoting the largest urban area within Wessex Water's catchment as European Green Capital 2015

Solution: Retrofitting SuDs in Embleton Road, Southmead, Bristol.

Partnership: Wessex Water contribution to Bristol City Council and Sustrans

How it worked: A contribution to a partnership fund.

Benefits: Through partnership Wessex Water improved surface water drainage to reduce the likelihood of flooding and improve water quality.

Case Study: Supply interruptions – network infusion

Avoiding any interruption to the water supply or reducing the duration, has always been a strong driver for Wessex Water. Recently we have been investigating ways to get customers supply restored or prevent it going off, even before we have completed the repair.

To do this we have been feeding water back into our mains system past the point where the mains are shut off. Where there is a 'dead end' in our system we have been bringing in temporary tanks or tankers to allow us to pump water back into the mains system. Often this is possible through a hydrant without any need to dig up our pipework system.

Tanker being used to supply over 50 properties in Taunton, via a hydrant, to allow a leak to be repaired without any one's water being turned off.

Temporary tanks with pumps to resupply an area can be delivered with a small van and positioned in places where a large tanker would be difficult to park.