



AFW Securing Long Term Resilience

Evidence Document

March 2019

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1 High level response to Ofwat Feedback

1.1 Summary

In this document, we respond to our IAP actions on the test area Securing Long-Term Resilience. We describe the bespoke resilience measures additional to our September Plan and we commit to take a system-based approach to resilience. We explain how we will work collaboratively with others on asset health metrics.

This document answers questions around **financial resilience**, where we reconfirm our intent to gearing and explain our steps to achieving this. We commit to demonstrating that our assessment of financial resilience extends beyond 2025 in our next Long-Term Viability Statement.

In the development of **additional bespoke resilience measures**, we reviewed customers' responses to consultation and to other companies' proposals. Taking this into account, our additional bespoke resilience measures aim to support:

- securing resilience in our networks
- securing sustainable water resources
- ensuring cyber security

These bespoke measures are linked to the activity we will deliver to address customers' experience of low pressure, interruptions to supply and disruption. They also link to regional resilience in water resources through our revised draft Water Resources Management Plan.

Our **systems-based approach** will build on the work we presented in our September Plan, taking a systematic approach to the assessment of internal and external systems' interdependencies as well as implementing more fully the 4Rs principles in our assessments of resilience risks. We noted and took account of Ofwat's assessment of good practice in the IAP and we will build on the lessons learnt from the work of others into our approach. We also note Ofwat's comment on the need to provide more emphasis on response and recovery in our resilience approach and have committed to develop - as part of our action plan - a measure for 'network response resilience'. We give the principles of this measure in our response.

We will continue to collaborate on the development of **asset health metrics** as we continue to deliver our Asset Care Optimisation (ACO) programme and contribute to the work of the industry. We support and contribute to the UKWIR project on asset health metrics.

2 Detailed response to Ofwat feedback actions

2.1 AFW.LR.A1

2.1.1 Overview of test area action

Table 1: Action details for AFW.LR.A1

Action Ref.	Action
AFW.LR.A1	The company should ensure that its common and bespoke performance commitments associated with operational resilience are clearly defined, sufficiently demanding for AMP7 and the long term, and supported by the right incentives. We expect the company to satisfy the relevant actions set out in relation in the outcomes areas ensuring a line of sight between risks to resilience and package of outcomes.

Nature of adjustment: action completed

2.1.2 Our response

We are confident that our common and bespoke Performance Commitments (PCs) associated with operational resilience are clearly defined, sufficiently demanding for AMP7 and the long term, and that we have the right balance of incentives. We have sought to satisfy the relevant actions set out in the Delivering Outcomes for Customers test area ensuring a line of sight between our key risks to resilience and our package of outcomes.

This response should be read in conjunction with our response to the test area 'Delivering Outcomes for Customers' and in particular action AFW.OC.A1 where we explain that we have now included additional bespoke resilience measures in our Revised Plan. The additional measures to address high impact low probability risks include:

1. Unplanned interruptions to supply over 12 hours
2. Cyber security & resilience

We have also included measures to address business as usual risks:

3. Properties experiencing longer or repeated instances of low pressure (non-DG2)
4. BSI accreditation
5. Strategic resource development

This means that our overall approach and performance commitment framework includes 11 measures in total including those listed above:

1. Leakage
2. Per capita consumption
3. Risk of severe restrictions in a drought
4. Environmental innovation – delivery of community projects
5. Abstraction reduction
6. Number of sources operating under the Abstraction Incentive Mechanism
7. Properties experiencing longer or repeated instances of low pressure (non-DG2)
8. Unplanned interruptions to supply over 12 hours
9. BSI accreditation
10. Strategic resource development
11. Cyber security & resilience

These PCs - associated with operational resilience - are clearly defined and demanding for AMP7 and the long term. Data table App1 and the supporting table commentary set out the specific details for each PC confirming that all but one of the 11 PCs listed commit the Company to an improved level of performance over AMP7. The one exception (Risk of severe restrictions in a drought) is constrained by the completion of the Sundon water conditioning plant towards the end of AMP7.

For each PC we have addressed the relevant Ofwat actions set out in the Delivering Outcomes for Customers test evidence document (AFW Delivering Outcomes for Customers Evidence Document) where we establish our overall package of outcomes. In our September Plan, we identified the following specific resilience risks:

- Water sources
- Population and economic growth
- Exceptional events and behaviours in relation to customer demand
- Reducing operational headroom requiring greater operational resilience

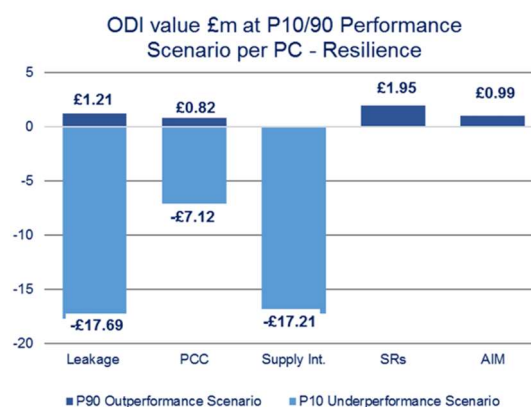
We have ensured that there is a clear link to these risks from our Performance Commitments as well as our immediate operational risks around the performance of our network and our increasing dependency on cyber and digital technology and so we have specifically introduced a PC on cyber resilience and supply continuity.

Of the 11 PCs within our PC framework outlined earlier, seven include financial incentives as set out in the figure below.

Strategic resource resilience will potentially be an underperformance only incentive and is subject to finalisation and agreement with all 6 companies with the same set of actions. Environmental innovation has been amended into an outperformance only incentive designed to allow us to recover costs after the successful delivery of projects. Further information is set out in the test area evidence document 'Delivering Outcomes for Customers'.

The remaining five resilience PCs are illustrated below, taking into account our P10/P90 performance scenarios. Four of the PCs are reputational including low pressure (DG2), supply interruptions (average minutes lost), BSI accreditation and cyber security and resilience.

Figure 1: Financial ODI values £m



2.1.3 Implications across the plan

We have included additional bespoke resilience PCs that we will deliver in response to the IAP challenge. We have not included additional funding to deliver the majority of these commitments as we regard these as essential elements of providing a resilient base service. There are two exceptions:

Firstly we have included a PC and are developing an ODI type mechanism for strategic resource development in response to action AFW.CE.A2. This includes the additional funding that Ofwat has provided for six companies to develop strategic options ready for delivery.

Secondly, we have included the funding necessary to deliver the increased leakage reduction PC of 18.5% as well as the funding to deliver the leakage reduction of 15% included in our September Plan.

2.1.4 Assurance

Assurance of our App1 data table and commentary has been provided by Atkins. Their audit report is included as appendix LR.A1.1.

2.1.5 Evidence

Table 2: Evidence to support the response to AFW.LR.A1

Appendix	Description
LR.A1.1	Atkins Technical Assurance Report March 2019

2.2 AFW.LR.A2

2.2.1 Overview of test area action

Table 3: Action details for AFW.LR.A2

Action Ref.	Action
AFW.LR.A2	The company should provide a commitment that it will, by 22 August 2019, prepare and provide to us an action plan to develop and implement a systems-based approach to resilience in the round and ensure that the company can demonstrate in the future an integrated resilience framework that underpins the company's operations and future plans showing a line of sight between risks to resilience, planned mitigations, package of outcomes and corporate governance framework.

Nature of adjustment: action completed

2.2.2 Our response

Our Board provides this commitment. We see this action as an important part of our ability to provide best value, long-term, resilience for our customers and the environment.

We have reviewed this action and can make a clear commitment to address the outstanding issues highlighted by Ofwat. We are keenly aware of the challenges and uncertainties that customers and our stakeholders face within the Company's particular operating environment. Accordingly, whilst resilience in the round is also at the heart of a systems-based approach for other affected companies in the sector, we have resilience issues that are specific to our own operating area.

In this respect, water stress in our area is a particular issue which requires urgent action and planned mitigation for both the short and longer term. We will continue to address this challenge through our own actions in operational improvement, through close relationships with our customers on the demand side, and with our supply chain, to ensure we build resilience into the heart of our response to wider supply-demand balance challenges.

We already work with a wide range of stakeholders to minimise the cascading impacts of our activities on the natural environment. For example, we carry out extensive impact assessments to understand the effects of abstraction on the surface water flows of our rivers. Conversely, we continue developing the understanding of how the wider environment affects our service. For the last ten years our catchment management schemes have brought systems solutions to raw water quality deterioration.

We also recognise the wider interdependencies between our own systems and those within the wider region. These require a regional approach, and mean we must focus on getting collaboration right through the right framework.

Within this collaborative framework, different dimensions of resilience in the round must have shared values with other companies, build into their own short and longer-term plans for us to be able to ensure fair value for customers now and in the future.

However, in addition to deepening our collaborative approach to the planning and delivery of sustainable water resources in the South East of England in line with the increased funding proposed by Ofwat, our response to action AFW.LR.A2 is also closely connected to our revised Performance Commitments, including those in response to the relevant actions on outcomes in the IAP. Hence, we are now proposing two additional bespoke resilience PCs, specific to our appointed area.

Below we provide more information on our approach to develop a systems-based framework for resilience, outlining the core elements of the action plan we will be submitting in August 2019.

The development of a systems-based resilience framework is an opportunity to build on our current understanding of internal and external systems dependencies, mapping the overlaps and the interconnections between them as part of our service delivery. We will continue to align our decisions on long-term asset investment with improving our capability to respond to the potential shocks and stresses we will face – both in the short and longer term.

We are already building on the work we have done to identify a prioritised list of shocks and stresses to our systems, and potential responses (see appendix LR.A2.1 where we reference the shocks and stresses and 4Rs assessment from our September Plan). We will now build on the value of this prior work, by developing our resilience framework to connect our understanding of external hazards to the potential impacts they may have on our short and longer-term service outcomes. As Ofwat and other regulators develop relevant sector-wide measures for common service outcomes (such as CRI, and the new national resilience measures), we can continue to refine and align our own resilience framework to this developing understanding at regional and national levels.

On this basis, our earlier work is being extended to a more systematic approach as we develop our action plan for August 2019, based on the 'system of system' national infrastructure model. This development of our action plan comprises two main phases: deepening our understanding our systems (phase 1); and reflecting how these systems drive outcome delivery - including resilience outcomes - in the testing of mitigation solutions (phase 2). These phases are detailed in the table on the following page.

Table 4: Phased activity summary

Phase	Activity	Description
1	Mapping our external systems	<p>In our 2018 resilience maturity assessment, we identified a list of shocks and stresses relevant to us. We intend to use these to clearly define and identify our affected external systems. These shocks and stresses were drawn from our pre-existing company risk system, but complemented by UKWIR’s list of shocks and stresses facing the industry more broadly. We could therefore develop a comprehensive list of external systems, more closely relevant to our service provision.</p> <p>We will now update the map of external system connections and their interdependencies. To undertake this further work, we will combine our existing local awareness of these external systems, and how they interact, with best practice research from the ITRC ‘System of Systems’ approach. On this basis, we aim to document and prioritise the various interactions and dependencies between our external systems.</p>
	Mapping our internal systems	<p>We will align the resilience framework with our service outcomes to define and identify the roles played by our internal systems in the different outcomes. Our systems reflect the different roles played by different parts of our business in the delivery of our wider outcomes, including the delivery of our resilience Performance Commitments. The four service outcomes will also form a base from which we will perform a deeper dive into the interdependencies and interactions of our internal systems in the delivery of these service outcomes.</p>
	Mapping the interactions between systems and outcomes	<p>Using the results of the prior work, we will then identify and understand in more detail the nature of the various relationships between our external systems and internal systems. This will identify how different key changes in our external systems would have specific impacts (including knock-on impacts) on both internal systems and outcomes. These interactions and impacts will be traced through our own internal systems, to understand their consequential impacts delivering our service outcomes for customers and other stakeholders.</p> <p>In this way, we will create a clear line of sight from our external systems to our service outcomes. This will enable us to refine and update our existing risk framework. This improved understanding of business risks to our service outcomes will then allow us to refine the prioritisation of mitigations of risks to our service outcomes, based on improved understanding of the interactions of our internal and external systems. The systems approach will accordingly allow us to improve the resilience of our service outcomes, by connecting the risks captured in our risk management system to the external systems where they originate, and to tangible effects on our service outcomes and Performance Commitments.</p>

Phase	Activity	Description
2	Identifying future change scenarios that are specific to our service area	We will then further develop our systems-based risk framework by identifying likely future scenarios for our external systems, and understanding the effects on our internal systems and outcomes. For this purpose, we will use foresight research to identify the likely future scenarios concerned. These scenarios will help us to understand the key pressures placed on our service outcomes by tracing the impacts of these external scenarios through our internal systems.
	Building on resilience in the round mitigations using the 4Rs of resilience	The potential mitigations already identified in our September Plan will be built upon and expanded in developing our systems-based action plan for August 2019. In doing so we will aim to secure resilience in the round by using the 4Rs of resilience to create mitigations for the future exogenous change scenarios outline above. Testing the expected effects of these potential mitigations will allow us to compare their impact on our different service outcomes, including the improvements to the resilience of our services which they are capable of delivering.
	Making balanced strategies and decisions	<p>The above systems-based framework will allow us to understand more clearly the future pressures that are likely to be placed on our service outcomes by the interactions between our internal and external systems. By translating these interactions into comparable business risks, in line with the performance commitments expected of the appointed business to customers and stakeholders we will be able to prioritise our planned interventions and mitigations, based on the relative impacts they are expected to have on the risks posed to delivering resilient services.</p> <p>Furthermore, we recognise the importance of intergenerational investment in creating mitigations and hence helping to secure a resilient service over the long term. We understand that these investments must be based on a consistent recognition of the value of resistance, reliability and redundancy in different systems.</p>

In summary, our proposed action plan will build on existing work to create a framework that integrates the component building blocks of risk and maturity assessment and the 4Rs, to create clear links between the understanding of external risks, the interaction of external systems with our internal systems, our outcome commitments, and our planned mitigation actions and expenditures.

This systems-based framework will form the basis of more integrated and collaborative working in the future at regional level, and provide the basis for the PR24 Business Plan, by identifying the best investment strategies needed to deliver long-term resilience of service to customers based on service outcomes.

2.2.3 Implications across the plan

The response to this question is a forward-looking action and has no direct implication on our plan.

2.2.4 Assurance

Not applicable.

2.2.5 Evidence

Table 5: Evidence to support the response to AFW.LR.A2

Appendix	Description
LR.A2.1 Resilience in the Round	References sections of the Affinity Water September Plan Appendix 9 relating to this response.
LR.A2.2 Customer Engagement on Long Term Resilience.	Detailed findings from our resilience research from our customer engagement

2.3 AFW.LR.A3

2.3.1 Overview of test area action

Table 6: Action details for AFW.LR.A3

Action Ref.	Action
AFW.LR.A3	The company should also provide a commitment to work with the sector to develop robust forward-looking asset health metrics and provide greater transparency of how its asset health indicators influence its operational decision making.

Nature of adjustment: action completed

2.3.2 Our Response

With first-hand experience of the benefits of collaboration, we share and learn with others in infrastructure management and we provide the clear commitment to continue to work with the sector and other leading-edge experts to build robust asset health metrics.

For example, we are already working with the sector, through the WIMES (Water Industry Mechanicals and Electrical Standards) group for collaborative thinking on asset performance, operations and maintenance. We work with other companies in a collaborative programme of trunk mains testing and we provide the Programme Lead for the Water Distribution Programme, where we actively promote more industry-wide collaboration in trunk mains asset health, having organised a cross-industry workshop with the Water Industry Federation on the subject in 2018. We also have recently joined the Strategic Asset Management Specialist Group of the International Water Association (IWA), where we are developing a programme of benchmarking and review of asset health metrics for both infrastructure and non-infrastructure assets.

We fully support the proposed UKWIR project – ‘Asset Health Indicators - Forward Looking Metrics’. This proposal follows the Ofwat Initial Assessment of Plans (IAP) to set a common action for the sector to provide a commitment to work to develop robust forward-looking asset health metrics and provide greater transparency of how its asset health indicators influence its operational decision-making. The primary objective of the proposal is to develop a suite of measures that can be used by the industry against a standard method measurement. We fully intend to support this UKWIR proposal and provide both Steering Group engagement and data to support its’ success.

Maintaining the health of our assets requires the thorough understanding of their condition, performance and criticality. For the last 10 years we have developed and implemented our Asset Care Optimisation (ACO) programme; a programme which delivers a root and branch review of assets and existing care plans. We have recently included in the ACO process the management of our storage assets, which were previously managed under a separate maintenance and inspection programme. This provides a single platform for maintenance and performance insight, specifically to drive improvements in that asset class area and tackle risks more effectively. The ACO programme includes asset inventory normalisation (hierarchy and naming convention), failure mode effects analysis (FMEA) of assets at type level, to determine the appropriate level of care required to maintain the service and a criticality assessment of each asset to the service it provides.

Information from the ACO programme feeds routinely into both the development of asset maintenance schedules and capital investment prioritisation providing the common asset information required for the balance of Opex/Capex decisions.

2.3.3 Implications across the plan

Not applicable.

2.3.4 Assurance

Not applicable.

2.3.5 Evidence

Table 7: Evidence to support the response to AFW.LR.A3

Appendix	Description
LR.A3.1 UKWIR Asset Health Indicators Project Proposal	UKWIR project proposal scope for Asset Health Indicators

2.4 AFW.LR.A4

2.4.1 Overview of test area action

Table 8: Action details for AFW.LR.A4

Action Ref.	Action
AFW.LR.A4	The company's assessment of financial stress scenarios extends only to 2025. The company should commit to demonstrating that its assessment of financial resilience extends beyond 2025 in its next Long-Term Viability Statement.

Nature of adjustment: action completed

2.4.2 Our Response

We commit that our Long Term Viability Statement in the next Annual Report, to be published later this year will extend to cover a period of ten years.

We also commit to addressing the points raised by Ofwat in the Company Monitoring Framework in our viability statement. We will include further narrative to cover the points raised in our Long Term Viability Statement, our strategic report and the viability statement section in our APR. This will include additional detail from our data assurance summary on the assurance procedures performed by our auditors – PwC – with regard to the accuracy of the underpinning stress testing.

2.4.3 Implications across the plan

There are no implications across the Revised Plan, because this action relates to the Annual Report.

2.4.4 Assurance

Assurance is not applicable at this stage – the APR will follow our assurance process.

2.4.5 Evidence

Not applicable.

2.5 AFW.LR.A5

2.5.1 Overview of test area action

Table 9: Action details for AFW.LR.A5

Action Ref.	Action
AFW.LR.A5	<p>Please explain:</p> <ul style="list-style-type: none"> - how the company will achieve the planned reduction of gearing to 70% referred to in the plan - how the company will maintain Baa1/BBB+ credit ratings if its planned gearing reduction does not proceed as planned; and - the company's assessment of the impact of the gearing outperformance mechanism for PR19 on its financial metrics in case the planned gearing reduction is not achieved.

Nature of adjustment: alternative approach

2.5.2 Our response

How the company will achieve the planned reduction of gearing to 70% referred to in the plan

We re-confirm our intent and the intent of our shareholders to reduce the gearing of Affinity Water Limited to 75% in AMP7 and our ambition to reduce gearing to an actual reported level of 70% in the same period. In our Business Plan, we reported that our shareholders were minded to modify the capital structure of the Daiwater Investment Limited group to meet this intent and to pursue this ambition. We also reported that we were working on a plan to enable this.

Following the submission of the September Plan, we have worked with our external financial advisors to refine the analysis of the options that we have considered. Through this work we have ruled out the option of repaying existing debt, as our existing borrowings are at rates that are efficient and therefore any repayment would be at a significant premium.

Our Revised Plan will require £120m of new financing. We also have £14m of existing debt maturing during AMP7. If these funding requirements remain in our final determination, we plan to modify the capital structure of the Daiwater Investments limited Group to reduce the gearing level in Affinity Water Limited, possibly ahead of AMP7. A further capital injection could then be made at the Affinity Water Limited level later in the AMP to keep the gearing at 75% or below. The change to our Group capital structure could trigger a change in our Dividend Policy.

We continue to expect to confirm implementation once the AMP7 price controls are finally determined, when the investment and funding needs of the business are finalised. We have assumed in our planning that the fundamentals of our Business Plan (as updated by this submission) are maintained (including Ofwat's initial assessment of the WACC). We have also assumed that current market conditions will continue to prevail. If either of these were to change significantly, our plan to reduce gearing would need to be reconsidered.

There also remains some uncertainty about timing of implementation. We therefore believe it is right for our customers and our assessment of financeability, to base our AMP7 plan at the top level of our current target range of gearing of 80%, for each year of AMP7. We remain satisfied that this level of gearing would be appropriate and that this Business Plan will facilitate the Company maintaining an investment grade credit rating as set out in the Risk and Return document in this submission.

How the company will maintain Baa1/BBB+ credit ratings if its planned gearing reduction does not proceed as planned

Our Revised plan has assessed how the company will maintain its credit rating BBB+/Baa1 with a gearing at 80%. Based on Moody's current ratings methodology and ratios. In the Risk and Return report within our Revised Plan submission we set this out. In summary, the Company will meet the ratios expected to be required to maintain the current credit rating with the current ratings methodology. We have also assessed the other elements of the current credit rating assessment and are confident that these will be fulfilled.

The company's assessment of the impact of the gearing outperformance mechanism for PR19 on its financial metrics in case the planned gearing reduction is not achieved.

Our Business Plan already includes the full default "benefit sharing mechanism" as per Ofwat's "Putting the sector in balance; position statement on PR19 business plans". This has been calculated at the 80% gearing level and reflected in the data table Wn3 line 10.

2.5.3 Implications across the plan

Not applicable.

2.5.4 Assurance

Not applicable.

2.5.5 Evidence

Not applicable.

3 Appendices

All the appendices listed below for this evidence document are included in the appendices titled AFW Securing Long-Term Resilience Appendix.

Table 10: Full summary of Securing Long-Term Resilience appendices

Appendix	Action ref(s)
LR.A1.1 Atkins Technical Assurance Report March 2019	AFW.LR.A1
LR.A2.1 Resilience in the Round	AFW.LR.A2
LR.A2.2 Customer Engagement on Long Term Resilience.	AFW.LR.A2
LR.A3.1 UKWIR Asset Health Indicators Project Proposal	AFW.LR.A3