

**WSX45 -  
Annexes -  
assurance  
reports**

Business plan  
2025-2030



**Wessex Water**  
YTL GROUP

FOR YOU. FOR LIFE.

# WSX45 - Annexes - assurance reports

## CONTENTS

Our Assurance Statements	3
Summary	3
A1-1 Mott MacDonald report on PR24 submission	5
A1-2 Cost adjustment claims	6
A1-3 Early submission of data for PR19 reconciliation models	7
A1-4 Long-term delivery strategies	8
A1-5 Solutions process	9
A1-6 Final DWMP	10
A1-7 Final WRMP	11
A1-8 DWI	12
A1-9 PCDs	13
A1-10 eCAF DWI	14
A2-1 EY Report on PR24 submission	15
A2-2 Statutory Year End Submission	16
A3-1 CCG Report on PR24 submission and challenge diary	17
A4-1 Wastewater Treatment	18
A4-2 P-Removal, WINEP and Growth Programmes	19
A4-3 Storm overflows	20
A4-4 Smart meters	21
A4-5 Sludge Storage (barns)	22
A4-6 Mains replacement	23
A4-7 Bioresource IED	24
A5-1 Financial resilience	25
A6-1 Affordability review	26
A6-2 Financeability	27
A7-1 Willingness to pay	28

*This supporting document is part of Wessex Water's business plan for 2025-2030.*

*Please see 'WSX00 – Navigation document' for where this document sits within our business plan submission.*

*More information can be found at [wessexwater.co.uk](http://wessexwater.co.uk).*

# Our Assurance Statements

## Summary

This annex contains the assurance statements produced by our 3<sup>rd</sup> party assurance providers. A summary of these statements is shown in Table 1 below:

Table 1 – Summary of assurance statements

Reference	Name	Assurance undertaken by
A1-1	Mott MacDonald report on PR24 submission	Mott MacDonald
A1-2	Cost adjustment claims	Mott MacDonald
A1-3	Early submission of data for PR19 reconciliation models	Mott MacDonald
A1-4	Long-term delivery strategies	Mott MacDonald
A1-5	Solutions process	Mott MacDonald
A1-6	Final DWMP	Mott MacDonald
A1-7	Final WRMP	Mott MacDonald
A1-8	DWI	Mott MacDonald
A1-9	PCDs	Mott MacDonald
A1-10	eCAF DWI	Mott MacDonald
A2-1	EY Report on PR24 submission	EY
A2-2	Statutory Year End Submission	EY
A3-1	CCG report on PR24 submission and challenge diary	CCG
A4-1	Wastewater Treatment	ChandlersKBS
A4-2	P- Removal, WINEP and Growth Programmes	ChandlersKBS
A4-3	Storm overflows	ChandlersKBS
A4-4	Smart meters	ChandlersKBS
A4-5	Sludge Storage (barns)	ChandlersKBS
A4-6	Mains replacement	ChandlersKBS
A4-7	Bioresource IED	ChandlersKBS

---

A5-1	Financial resilience	Frontier Economics
A6-1	Affordability review	Economic Insight
A6-2	Financeability	Economic Insight
A7-1	Willingness to pay (WtP)	Professor Cherchi

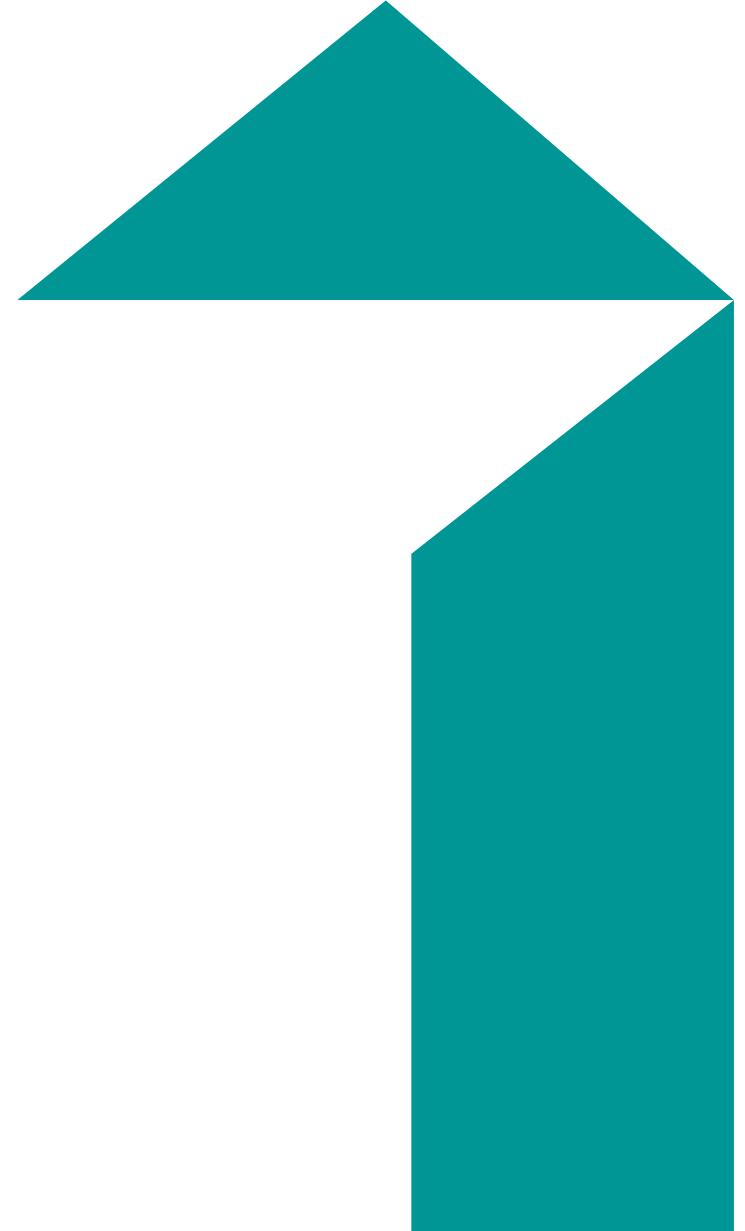
## **A1-1 Mott MacDonald report on PR24 submission**



# PR24 technical assurance

Final report

September 2023



Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

## Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	5 Sept 2023	AIJ Heather	Y Zhang	AIJ Heather	Outline report structure for discussion.
B	22 Sep 2023	AIJ Heather	Y Zhang	AIJ Heather	Draft report for WSX Board.
C	29 Sept 2023	AIJ Heather	Y Zhang	AIJ Heather	Clarification on PCDs, update to s.2.3.
D	30 Sep 2023	AIJ Heather	Y Zhang	AIJ Heather	Minor typographical corrections.

**Document reference:** 100416626-001 | PR24 | D |

**Information class:** Standard

Wessex Water  
Claverton Down  
Bath  
BA2 7WW

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

---

Mott MacDonald Limited. Registered in  
England and Wales no. 1243967.  
Registered office: Mott MacDonald House,  
8-10 Sydenham Road, Croydon CR0 2EE,  
United Kingdom

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Scope of assurance	1
1.2	PR24 Data Tables covered by our scope of work	1
1.3	Assurance tests	1
1.4	Approach to audits	2
<b>2</b>	<b>Findings</b>	<b>3</b>
2.1	Consistency with long term delivery plans	3
2.2	Sufficient and convincing evidence for credible delivery	3
2.3	Provision of the data and information requested	3
2.4	Stretching but achievable performance commitment levels	4
<b>3</b>	<b>Assurance statement</b>	<b>5</b>

## A. Tables Audited 6

<b>Tables</b>	
Table 1.1: Assurance tests for data tables	1
Table 3: Table Audited	6



# 1 Introduction

Ofwat sets maximum wholesale and domestic retail prices for water supplies, and for its five-yearly price review in 2024 (PR24) it requires companies to explain the services they will deliver and the costs they will incur.

You commissioned us, under our technical assurance contract, to review your PR24 data tables as you decide to provide your assurance to Ofwat.

This report sets out our scope and approach, our findings and assurance statement.

## 1.1 Scope of assurance

You asked us to consider four aspects of Ofwat's board assurance expectations:

1. The company's PR24 business plan is fully consistent with the long-term delivery strategy and the company presents a single adaptive strategy, rather than multiple alternate plans.
2. The company provides sufficient and convincing evidence to demonstrate how its track record of performance, or lessons learnt from poor performance, support the credible delivery of the proposals in its plan.
3. The company provides that data and information as requested in our methodology and business plan tables. This data and information is consistent, accurate and assured using effective internal systems, controls, and processes
4. The performance commitment levels in the plan are stretching but achievable and reflect performance improvements expected from both base and enhancement expenditure

## 1.2 PR24 Data Tables covered by our scope of work

You asked us to focus our assurance on the compilation of your data tables, tracing back from the tables to the underlying calculations and assumptions. Appendix A lists the tables audited.

Where data from recent annual performance reports has been transferred to the PR24 tables, we audited the transfer but did not re-audit the data.

## 1.3 Assurance tests

We agreed the following tests, to be applied at audit to the extent that they were relevant to each line reviewed.

**Table 1.1: Assurance tests for data tables**

<b>Pre Audit-Check</b>
1. Have the documents for audit been uploaded to SharePoint?
2. Is this table/line linked to an APR23 table/line? If yes, please list the APR23 table/line reference.
<b>Audit Tests</b>
3. Has the data table/line been signed off by the owner and compiler?
4. Does the method statement (MS) adequately support the provision of consistent and accurate data and information? Has it been used to populate the reported figures?
5. Is data collection and storage robust, including the upstream processes which generate the data?
6. Are the systems, controls and processes in place adequate to provide consistent and accurate data and information. For example, is there a checks and controls process? Any internal sign-off tracker?
7. Has reported performance been calculated in accordance with the latest PR24 definitions/requirements?

---

8. Does the commentary / narrative provide sufficient and convincing evidence to demonstrate that the track record of performance or lessons learned from poor performance support the credible delivery of proposals in the plan?

---

9. Has the commentary / narrative been produced in line with the latest PR24 definitions/requirements

---

10. Are there any material risks or issues that may impact the consistency or accuracy of reporting?

---

11. Is the data supported by audit trails, confirmed by sampling (at least 3 samples)

---

12. (PCs only) Are the performance commitment levels in the plan stretching but achievable and do they reflect performance improvements expected from both base and enhancement expenditure

---

## 1.4 Approach to audits

Audits were carried out through in-person and/or on-line meetings, plus a review of presented documentation including the draft tables, commentary documents (where available) and governance documents. You showed that you had a managed process to control changes post-audit.

We provided feedback after each audit and held follow-up audits as necessary.

## 2 Findings

### 2.1 Consistency with long term delivery plans

We reviewed your long term delivery strategy and your EDA investment planning system (reported separately) as well as the wholesale data tables covered by this report.

You demonstrated that your plan is based on a single preferred plan with adaptive pathways, including the Ofwat Core Scenarios and your own adaptive pathways.

We were satisfied that your five-year plan is intended to deliver the first five years of your long term delivery strategy.

- It was clear that your PR24 business plan is fully consistent with your long-term delivery strategy and the company presents a single adaptive strategy, rather than multiple alternate plans.

### 2.2 Sufficient and convincing evidence for credible delivery

During our audits we reviewed the basis of your plans and showed they build on areas of good performance and address areas where performance has been more challenging.

For example, in water quality you have struggled to eliminate customer contacts about water quality and you are now proposing investment in the distribution network to reduce the risk of poor aesthetic quality.

A further example is your sewer sealing programme which aims to address areas where excessive groundwater ingress may be increasing flood risk or sewer overflow frequency.

Our auditors also challenged you to demonstrate the deliverability of your plans, especially given the potential scale of AMP8 investment.

You showed that your plans avoid undue step changes in delivery, providing time to acquire the resources necessary to manage programmes. With regard to supply chain capacity, you explained that you have begun supplier engagement in anticipation of an expanded programme.

We expect that the large scale of AMP8 could lead to ongoing supply chain challenges in the short term, depending on the progress of other civil engineering projects which demand a similar workforce.

We have not reviewed all chapters of your final plan documents, but we concluded that your planning demonstrates your track record of performance, and lessons learnt from poor performance, support the credible delivery of the proposals in its plan.

### 2.3 Provision of the data and information requested

You showed how the data and information on investment needs was compiled in a central system (EDA), providing a common reference point for the business plan. You showed how the investment needs were compiled from site surveys, model-derived forecasts, and bespoke estimates for enhancement.

- We discussed the interpretation and meaning of Ofwat's PR24 final methodology, and in some cases the published changes to the tables. We consider that your interpretation of Ofwat's guidance is reasonable.

Where our sampling found that data was not provided in line with Ofwat's PR24 final methodology, or there were errors in calculations, we made recommendations for correction, which were addressed during the audit cycle.

In the case of price control deliverables (assured separately) three of those you have proposed are on a different basis to that assumed by Ofwat. Your business plan is clear on your reasoning and approach.

- We concluded that you have provided data and information as requested in Ofwat's methodology and business plan tables. This data and information is consistent, accurate and assured using effective internal systems, controls, and processes.

## 2.4 Stretching but achievable performance commitment levels

We challenged whether the PCs were all stretching, especially those that showed no or little improvement from the current period. You showed how you have proposed performance commitment levels for the AMP8 period, in line with your LTDS. This has led to some outcomes being prioritised and hence less investment to improve performance in others.

You showed how each performance commitment profile uses the forecast outturn of AMP7 as the starting point and has been proposed on the basis of plans for operation and investment.

We challenged you to show that performance can be improved from base expenditure. You showed how although base expenditure has delivered improvements, you are also finding the cost of delivering higher performance is difficult to sustain.

- We concluded that the performance commitment levels in the plan are stretching but achievable and reflect performance improvements expected from both base and enhancement expenditure.

### 3 Assurance statement

To the Board of Wessex Water

We audited technical tables of your PR24 business plan submission between June and September 2023, under our technical assurance contract with you. We used a mix of online and in-person audits, together with desktop reviews of some of your planning documents.

We were given free access to people and information as necessary to complete our work.

Our opinion is based on audits carried out during compilation of the tables, after which your change control process managed post-audit updates to finalise the tables.

In my professional opinion, based on and to the extent disclosed by our sampling carried out and as described in this report:

1. The company's PR24 business plan is fully consistent with the long-term delivery strategy and the company presents a single adaptive strategy, rather than multiple alternate plans.
2. The company provides sufficient and convincing evidence to demonstrate how its track record of performance, or lessons learnt from poor performance, support the credible delivery of the proposals in its plan.
3. The company provides that data and information as requested in Ofwat's methodology and business plan tables. This data and information is consistent, accurate and assured using effective internal systems, controls, and processes.

4. The performance commitment levels in the plan are stretching but achievable and reflect performance improvements expected from both base and enhancement expenditure.

Yours sincerely,

Dr Andrew Heather  
Technical assurer

# A. Tables Audited

**Table 2: Table Audited**

Tables	Table Description
<b>1: Outcomes</b>	
OUT1	Overall outcome performance - Performance commitments
OUT2	Outcome performance from base expenditure - Performance commitments
OUT3	Outcome performance from enhancement expenditure - Performance commitments
OUT4	Underlying calculations for common performance commitments - water and combined
OUT5	Underlying calculations for common performance commitments - wastewater
OUT6	Summary information on outcome delivery incentive payments
OUT7	Outcome performance - ODIs (financial)
OUT8	PR19 outcome performance summary
OUT9	Biodiversity - Habitat information
<b>3: Costs (wholesale) - water</b>	
CW1	Totex analysis - water resources and water network+ (post frontier shift and real price effects)
CW1a	Totex analysis - water resources and water network+
CW2	Base expenditure analysis - water resources and water network+
CW3	Enhancement expenditure - water resources and water network+
CW4	Raw water transport, raw water storage and water treatment data
CW5	Treated water distribution - assets and operations
CW6	Water network+ - Mains, communication pipes and other data
CW7	Demand management - Metering activities
CW8	WRMP schemes (excluding leakage and metering activities)
CW9	Enhancement expenditure (cumulative) - water resources and water network+

Tables	Table Description
CW12	Transitional expenditure - water resources and water network+
CW13	Best value analysis; enhancement expenditure - water resources and water network+
CW14	Best value analysis of alternative option; enhancement expenditure - water resources and water network+
CW15	Best value analysis; benefits - water resources and water network+
CW16	Best value analysis of alternative option (benefits) - water resources and water network+
CW18	Cost adjustment claims - base expenditure: water resources and water network+
CW19	Demand management - Leakage expenditure and activities
CW20	Water mains - asset condition
CW21	Water - net zero enhancement schemes
<b>4: Costs (wholesale) - wastewater</b>	
CWW1	Totex analysis - wastewater network+ and bioresources (post frontier shift and real price effects)
CWW1a	Totex analysis - wastewater network+ and bioresources
CWW2	Base expenditure analysis - wastewater network + and bioresources
CWW3	Enhancement expenditure - wastewater network+ and bioresources
CWW4	Wastewater network+ - Functional expenditure
CWW5	Wastewater network+ - Large sewage treatment works
CWW6	Wastewater network+ - Sewer and volume data
CWW7a	Wastewater network+ - Sewage treatment works; size and consents
CWW7b	Wastewater network+ - Sewage treatment works data; UV permits
CWW7c	Wastewater network+ - Sewage treatment works data; treatment type
CWW8	Wastewater network+ - Energy consumption and other data
CWW9	Enhancement expenditure (cumulative) - wastewater network+ and bioresources
CWW12	Transitional expenditure - wastewater network+ and bioresources
CWW13	Best value analysis (enhancement expenditure) - wastewater network+ and bioresources

Tables	Table Description
CWW14	Best value analysis of alternative option (enhancement expenditure) - wastewater network+ and bioresources
CWW15	Best value analysis; benefits - wastewater network+ and bioresources
CWW16	Best value analysis of alternative option; benefits - wastewater network+ and bioresources
CWW18	Cost adjustment claims - base expenditure: wastewater network+ and bioresources
CWW19	Wastewater network+ - WINEP phosphorus removal scheme costs and cost drivers
CWW20	Wastewater network+ - Sewage treatment works population, capacity and network data
CWW20 a	Wastewater network+ - WINEP nutrient removal (phosphorus and total nitrogen) scheme costs and cost drivers
CWW21	Wastewater sewers; asset condition
CWW22	Wastewater - net zero enhancement schemes
<b>5: Water resources</b>	
RES1	Water resources asset and volumes data
<b>6: Bioresources</b>	
BIO1	Bioresources sludge data
BIO3a	Bioresources energy analysis
BIO3b	Bioresources; income, liquors and metering analysis
BIO4	Bioresources sludge treatment and disposal data
BIO5	Bioresources - additional treatment and storage data
BIO6	Bioresources - NMEAV for capital enhancement schemes
<b>8: Developer services</b>	
DS2e	Developer services expenditure (excluding diversions) - water (English companies)
DS3	Developer services expenditure (excluding diversions) - wastewater (English and Welsh companies)
DS4	Developer services - New connections, properties and mains

Tables	Table Description
DS6	Network reinforcement drivers - potable mains, sewers, pumping stations and pumping capacity
<b>9: Long-term strategies</b>	
LS1	Forecast outcomes
LS2	Forecast outcomes from base expenditure
LS3	Wholesale water totex enhancement expenditure by purpose, core pathway
LS3a	Wholesale water totex enhancement expenditure by purpose, alternative pathway 1
LS3b	Wholesale water totex enhancement expenditure by purpose, alternative pathway 2
LS3c	Wholesale water totex enhancement expenditure by purpose, alternative pathway 3
LS3d	Wholesale water totex enhancement expenditure by purpose, alternative pathway 4
LS3e	Wholesale water totex enhancement expenditure by purpose, alternative pathway 5
LS3f	Wholesale water totex enhancement expenditure by purpose, alternative pathway 6
LS3g	Wholesale water totex enhancement expenditure by purpose, alternative pathway 7
LS3h	Wholesale water totex enhancement expenditure by purpose, alternative pathway 8
LS3i	Wholesale water totex enhancement expenditure by purpose, alternative pathway 9
LS4	Wholesale wastewater totex enhancement expenditure by purpose, core pathway
LS4a	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 1
LS4b	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 2
LS4c	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 3
LS4d	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 4

<b>Tables</b>	<b>Table Description</b>
LS4e	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 5
LS4f	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 6
LS4g	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 7
LS4h	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 8
LS4i	Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 9
LS5	Wholesale water totex enhancement expenditure under common reference scenarios
LS6	Wholesale wastewater totex enhancement expenditure under common reference scenarios
LS7	Average total water, wastewater and combined bills under core and alternative pathways
<b>10: Supplementary tables</b>	
SUP1A	Connected properties, customers and population
SUP1B	Properties and meters
SUP12	Direct procurement for customers (DPC)
SUP14	Customer engagement and affordability/acceptability of business plans
<b>11: Summary tables</b>	
SUM1	Performance commitments
SUM4	Expenditure
<b>12: Past delivery</b>	
PD6	Bulk supply information
PD8	Totex analysis - wholesale
<b>Additional Tables</b>	
	Energy Cost Data
	Reservoir Data
	Sewer Overflow Data





## **A1-2 Cost adjustment claims**



# Cost adjustment claims

Technical assurance

September 2023



Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

## Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	8 June 2023	AIJ Heather	Y Zhang	AIJ Heather	First issue.
B	9 June 2023	AIJ Heather	Y Zhang	AIJ Heather	Updated to reflect final draft claims, including coverage of approach to estimating costs.
C	21 Sept 2023	AIJ Heather	Y Zhang	AIJ Heather	Updated to reflect final cost adjustment cases.

Wessex Water

**Document reference:** 100416626-001 | CAC Sept 2023 | C |

**Information class:** Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Mott MacDonald Limited. Registered in  
England and Wales no. 1243967.  
Registered office: Mott MacDonald House,  
8-10 Sydenham Road, Croydon CR0 2EE,  
United Kingdom

# Contents

<b>1</b>	<b>Introduction and scope</b>	<b>1</b>			
<b>2</b>	<b>Finding</b>	<b>2</b>			
2.1	Growth at Water Recycling Centres	2			
2.1.1	Nature of the claim	2			
2.1.2	Need for adjustment	2			
2.1.3	Need for investment	2			
2.1.4	Best option for customers	3			
2.1.5	Customer protection	3			
2.2	Industrial Emissions Directive (IED)	3			
2.2.1	Nature of the claim	4			
2.2.2	Need for adjustment	4			
2.2.3	Need for investment	4			
2.2.4	Best option for customers	5			
2.2.5	Customer protection	5			
2.3	Changes over time in efficient industry-wide costs	5			
2.3.1	Nature of the claim	6			
2.3.2	Best option for customers	6			
2.4	Above industry-average performance from base expenditure	7			
			2.4.1	Nature of the claim	7
			2.4.2	Best option for customers	7
			2.5	Opex solutions, especially nature-based solutions	7
			2.5.1	Nature of the claim	7
			2.5.2	Best option for customers	7
			2.6	Water mains renewal	8
			2.6.1	Nature of the claim	8
			2.6.2	Best option for customers	8

# 1 Introduction and scope

You are proposing to submit up to five cost adjustment claims for PR24 and asked us to provide technical assurance of specific aspects of each claim. This report sets out our scope of work, approach and findings.

Ofwat's PR24 final methodology mentions the need for external technical assurance of relevant aspect of cost adjustment claims and therefore you asked us to consider the following scope:

*“To review the two cost adjustment claims below in relation to Ofwat's methodology, including the applicable elements of the cost adjustment claim criteria*

1. *Growth at Water Recycling Centres*
2. *IED*

*To review the three cost adjustment claims below in relation to the best option for customers' criteria (which includes 'third-party technical assurance of the analysis provided') if applicable*

1. *Changes over time in efficient industry-wide costs*
2. *Above industry av. Performance / what base buys*
3. *Opex solutions (inc. nature based)”*

Subsequently a fourth claim, for *water mains renewal*, was added the second list.

Our scope was agreed for individual claims as shown below:

**Growth at Water Recycling Centres:** Need for adjustment, the approach to identifying efficient costs, the need for investment, identifying the best option for customers, customer protection

**Industrial Emissions Directive:** Need for adjustment, the approach to identifying efficient costs, the need for investment, identifying the best option for customers, customer protection

**Changes over time in efficient industry-wide cost:** The approach to identifying efficient costs, identifying the best option for customers.

**Above industry-average performance:** The approach to identifying efficient costs, identifying the best option for customers.

**Opex solutions (inc. nature based):** The approach to identifying efficient costs, identifying the best option for customers.

**Water mains renewal:** The approach to identifying efficient costs, identifying the best option for customers.

We attended audits in person and online, at which we heard your case and presented challenges on the basis of the case, supporting evidence, and alignment with Ofwat's guidance for cost adjustment claims<sup>1</sup>. Our audits were conducted during preparation of your early submission (June 2023) and revisions for your business plan (October 2023) and focused on your approach, evidence gathering and overall case.

This document summarises our main challenges and findings for each claim.

---

<sup>1</sup> Ofwat: PR24 final methodology, Appendix 9, setting expenditure allowances.

## 2 Findings

### 2.1 Growth at Water Recycling Centres

#### 2.1.1 Nature of the claim

You explained that this case relates to dry weather flow (DWF) capacity at wastewater treatment works. As dry weather flow increases, so the treatment works needs to get bigger so that it can provide adequate treatment during wetter conditions.

You showed examples of increases in dry weather flow and you propose to carry out investment at some sites to improve their capacity and reduce the risk of failing to comply with discharge permits.

You explained that Ofwat made an allocation of £40m at FD19, from a cost adjustment claim of £60m. You currently forecast your AMP7 expenditure on DWF will be more than the FD19 allowance.

#### 2.1.2 Need for adjustment

We understand that some DWF improvement work was allowed under the water industry national environment programme (WINEP) prior to 2015, being recognised as enhancement activity. Since 2015 it has been treated as maintaining current service (base expenditure) but by the route of individually agreed allocations through cost adjustment claims.

We challenged why this work could not be proposed as an enhancement investment.

- You pointed to the current WINEP guidance which does not include increasing DWF.

It therefore appears reasonable that, where the need arises, further work should be agreed through cost adjustment claims.

#### 2.1.3 Approach to identifying efficient costs

We understand you have benchmarked a sample your proposed costs, with the support of the cost consultancy Chandler KBS.

We challenged whether the scope of work included other activities beyond those required to address flow capacity needs.

- You showed how you have identified DWF investment needs on a site-by-site basis, and that the proposed projects have the scope of improving the capacity of the site.

We challenged the interaction with asset renewal and enhancement projects, and whether this might lead to double counting costs.

- You showed how your prioritised list of sites includes those proposed for other investment purposes, so that double-counting can be eliminated.
- You showed how you have reviewed site-level investment needs and used proportional allocation where investment will deliver multiple benefits.

We concluded that the proposed costs are developed for a scope appropriate to your current understanding of the need, from which a sample has been benchmarked by your independent cost consultant.

#### 2.1.4 Need for investment

You presented a list of your wastewater treatment works, each of which has been assessed for dry weather flow compliance risk for the period to 2030. Some sites on list already have difficulty in treating the dry weather flow they receive.

We challenged whether routine asset renewal work at the sites would be able to improve DWF capacity.

- You responded that although DWF is considered in ongoing base expenditure, the rate of renewal is insufficient to address all sites.

We challenged whether sites included in the WINEP for other drivers would be double-counted, if other improvements could also improve DWF capacity.

- You explained that your final cost adjustment claim will take full account of the final WINEP, which may overlap with DWF improvements, for example if new treatment is provided to meet new discharge standards, then it will have to be sized appropriately. You showed that your list of wastewater treatment works shows which are likely to have WINEP projects alongside DWF compliance risk, so that the cost can be shown once, with proportional allocation where necessary.
- You confirmed that this claim will be for the growth-only investment activity.

We challenged whether DWF was likely to continue to increase given the trend of a decline in industrial demand.

- You responded by showing the measured  $Q_{90}$  flow<sup>2</sup> over the past five years for the most 'at risk' sites. Although the  $Q_{90}$  value varies between years, it is clear that it is persistently high at some sites.

We agree that it appears necessary to invest in the sites highlighted in your list as being at risk of failing to provide adequate capacity for dry weather flow.

### 2.1.5 Best option for customers

We challenged whether annual variations in DWF are driven by rainfall and therefore indicate a need for more sewer sealing, rather than end-of-pipe investment.

- You responded that increased sewer sealing is included in your drainage and wastewater management plan but is very expensive and, at smaller sites that have been subject to population growth, is not likely to provide

adequate recovery of DWF capacity. Your list of sites needing investment for DWF capacity shows that almost are relatively small and so population growth may have an important effect.

On the basis of the clear need and the limited options available, which have been considered in your review, we agree that investment is the best option for customers and the environment.

### 2.1.6 Customer protection

We challenged whether investment needs might change before delivery, for example flow decreasing at some sites and increasing at others.

- You responded that some change may occur, but this would be limited once the WINEP is finalised for sites with multi-purpose schemes.

We challenged how, if investment needs change, customers would be protected.

- You have proposed a price control deliverable for growth at sewage treatment works.
- You responded that full compliance with the DWF capacity will be mandatory under the Environmental Protection Act and so customer protection is also provided through Environment Agency enforcement routes for flow compliance.

We concluded that between environmental enforcement for DWF compliance and a potential price control deliverable, customers will be protected.

---

<sup>2</sup>  $Q_{90}$  is the flow that is exceeded 90% of the time, the measure of dry weather flow.



## 2.2 Industrial Emissions Directive (IED)

### 2.2.1 Nature of the claim

You explained that this case relates to significant increases in operating costs to comply with the Industrial Emissions Directive (IED). The IED controls emissions from industrial processes and it will apply to water company sludge treatment centres of greater than 100,000 tonnes per year (wet capacity).

You explained your concern that it is apparent that significant capital investment and operating costs are required, which has not been funded through other routes, and that leads to this claim.

Ofwat also wrote to wastewater companies about IED costs, indicating that it would consider cases for investment using an uncertainty mechanism or cost adjustment claim.

### 2.2.2 Need for adjustment

You explained that although the IED was enacted in 2018, the extent of its implications for sludge treatment, and guidance from the Environment Agency on compliance activities, became apparent from late 2019 – after the PR19 draft determination.

We challenged whether activities to comply with the IED are better aligned to enhancement than to a cost adjustment claim, which is intended for base expenditure.

- You responded that it has not been accepted into WINEP because the compliance deadline is before the end of AMP7.
- You showed an Environment Agency consultation on activities for compliance with the IED, from 2020, which provides evidence in support of your view that costs were not included at PR19 because the scope of work was not at that time agreed.

- You showed your estimates of annual compliance costs which include permit fees and monitoring that are not currently experienced at most sites.

We agree that compliance with the IED is a new activity with material costs that do not appear to have been included in previous base cost models, and therefore that an adjustment is necessary.

### 2.2.3 Approach to identifying efficient costs

You APR table 4k does not show any costs for compliance with new Industrial Emissions Directive permits, although you began work to ensure future compliance.

We challenged why you are not incurring compliance costs, with the IED deadline being in 2024.

- You responded that development work for compliance is ongoing and you will take this into account in future returns. You pointed out that with Table 4k Line 13 having been removed, this is in line with Ofwat's modelling assumptions in its implicit cost allocation.

We challenged how the costs had been constructed and whether they were limited to the scope of the IED.

- You showed how they were built up from estimates at site level, based on the interventions necessary for compliance with the IED.
- You showed an example cost build-up for Trowbridge sludge treatment centre and confirmed that the scope was only for IED compliance.

We challenged how you knew the costs are efficient.

- You showed that your cost consultant, Chandler KBS, has benchmarked your proposed costs for one site and found it to be very close to its expectations.

Whilst we expect the interaction with WINEP to be limited to the potential increase in sludge production, once the final WINEP is agreed the impact on IED expenditure may need to be revised.

We concluded that the proposed costs are developed for a scope appropriate to your current understanding of the need, from which a sample have been benchmarked by your independent cost consultant.

#### 2.2.4 Need for investment

You showed that your five sludge digestion sites will be within the scope of the IED and will therefore be required to comply with it. You explained that you will likely propose enhancement investment to upgrade sludge barns to meet the requirements of the IED, and a cost adjustment claim for the operating costs.

We challenged whether the activity would be in addition to existing business as usual.

- You responded that you do not expect any existing activity to be avoided as a result of IED compliance – rather, there will be more work to maintain and demonstrate compliance.

We challenged why you could not comply with no further investment.

- You responded by showing how the IED requirements cannot be met using existing assets, in particular for sludge barns, with investment needed to provide the capability for emissions management.
- You responded by explaining the anticipated permitting, monitoring and management activities, to ensure and demonstrate compliance.

We agree that non-compliance is not an option and that your existing sludge treatment facilities will not be able to comply without investment. We therefore agree that there is a need for investment.

#### 2.2.5 Best option for customers

We challenged whether the proposed investment options could be avoided.

- You responded that for Poole digesters, you had considered risk-management options in addition to larger capital options such as secondary containment, but only the secondary containment option was considered robust enough to qualify for an IED permit.
- You responded that for sludge barns, full enclosure will be required rather than the ventilated designs currently in use.

Considering that IED compliance is mandatory, we agree that delivering and maintaining compliance as soon as possible appears to be the best option for customers.

#### 2.2.6 Customer protection

We challenged whether investment needs might change before delivery, for example through innovation or as a result of new guidance.

- You responded that an uncertainty mechanism would be appropriate, to align the cost allowance with final requirements once the terms of permits are agreed with the Environment Agency.
- You acknowledged that a price control deliverable might be required for capital investment, if an uncertainty mechanism is not adopted by Ofwat.
- You responded that ongoing costs of maintaining compliance will be incurred in any case.
- You responded that customers will also be protected by Environment Agency enforcement powers should you fail to comply with the IED.

We concluded that between environmental enforcement for IED compliance and an uncertainty mechanism or price control deliverable, customers will be protected from non-delivery of capital schemes, and that for operating costs any savings will likely manifest as short-term outperformance.

## 2.3 Changes over time in efficient industry-wide costs

### 2.3.1 Nature of the claim

You explained that this case addresses the significant increases in costs of delivering basic services, which you have found to increase at greater than CPIH.

### 2.3.2 Approach to identifying efficient costs

You showed a report by your economic consultant, Reckon LLP, in which you based your modelling on Ofwat cost models.

We challenged whether the Ofwat models will automatically pick up increases in base costs.

- You responded that your observed costs have risen faster than modelling assumptions and therefore the implicit allowance will not recognise them. You attribute some of this additional cost to 'hidden or embedded enhancement expenditure', where service improvements are being delivered through base activities.

We challenged why there is such a large difference in costs between water and wastewater services, greater than the difference in appointed areas for water and wastewater services.

- You explained that you had not incurred cost increases on the same scale for water network plus as for wastewater network plus.

We challenged whether the increase you have observed is permanent.

- You explained that you have assumed the costs will prevail and continue to increase over the next period, to continue to improve service through base expenditure.

Since the econometric modelling analysis has been carried out in detail, by professionals in the field, we did not investigate further.

### 2.3.3 Best option for customers

We challenged whether the increase in costs reflected a decrease in efficiency.

- You showed how unit costs of energy have risen dramatically, as have the costs of chemicals, equipment, and labour.

We challenged whether current high costs are temporary and therefore at the company's risk.

- You responded that current energy cost forecasts (from energy market analysts) do not show a rapid fall in prices.
- You responded that the labour market is tight and rates of pay to secure new staff have increased significantly.
- You responded that the large AMP8 investment programme is likely to hold rates of pay at relatively high levels.

We challenged whether customers paying more would make it easier for you to meet your performance commitments and thus to earn outperformance payments.

- You responded that you currently spend more than the implied allowance on delivering some of your performance commitments, for example to maintain low levels of leakage.
- You responded that with a more ambitious plan for PR24, including major infrastructure investment and stretching performance commitments, the potential for outperformance is reduced.

We agree that it is better for customers to pay the cost of delivering good service than to allow service to deteriorate as a result of under-funding.

## 2.4 Above industry-average performance from base expenditure

### 2.4.1 Nature of the claim

You explained that this case addresses your totex being above FD19 allowances, which you attribute to your relatively high performance compared with your peers. You consider that implicit base expenditure is insufficient to deliver the level of activity necessary for the performance levels achieved.

You explained that you had reviewed industry data and concluded that the claim was not well supported by the available evidence.

### 2.4.2 Approach to identifying efficient costs

We agree that industry data do not show a clear correlation between implicit (or expended) costs and level of service, and that insufficient explanators are available to fully explain the differences (for example to differentiate catch-up expenditure when service is poor, inefficient expenditure which may deliver poor service, and efficient expenditure).

### 2.4.3 Best option for customers

We agree with your decision to withhold this claim.

## 2.5 Opex solutions, including for nature-based solutions

### 2.5.1 Nature of the claim

You explained that this case addresses the relatively high operating costs that are incurred in maintaining the efficacy of nature-based solutions, such as catchment management to protect water resources, and to reduce nutrient loads in rivers, compared with end-of-pipe solutions such as additional treatment.

You are concerned that traditional implicit allowances underestimate the ongoing scale of activity that is required, and hence the costs.

### 2.5.2 Approach to identifying efficient costs

You showed that your claim is based on a continuance of existing work including nature based and catchment management activities.

We challenged whether the costs were likely to continue.

- You showed your list of activities that you expect to continue run through the whole of AMP8.

We challenged whether the costs were likely to be included by other companies.

- You responded that Ofwat has acknowledged there may be a funding gap for catchment management and nature-based solutions, which appear to offer significant savings over traditional water and wastewater treatment options.

We concluded that the costs in your claim are in line with other preparatory work for your PR24 business plan that we have seen, in which your activity forecasts include ongoing catchment management and nature-based solutions, to reduce the need for more expensive enhanced treatment.

Since the analysis has been carried out in detail by professionals in the field, we did not investigate further.

### 2.5.3 Best option for customers

We challenged whether this claim is a sub-set of the 'increasing efficient costs over time' claim.

- You responded that this claim refers specifically to escalating costs that will occur with an increased use of nature based solutions to reduce sewer overflows and to improve the sustainability of sewerage services.

We challenged whether this claim should be incorporated in the business plan tables for Drainage and Wastewater Management.

- You responded that the current implicit allowance does not accommodate the nature-based solutions already delivered.
- You explained that the current implicit model assumption of reducing costs (efficiency) do not reflect your experience of increasing costs over time for nature-based solutions.

Between your early submission and business plan, you developed your explanation of how these costs differ from operating costs at 'traditional' sites.

- You explained that this case is important because it addresses a disincentive for nature-based solutions in the current implicit allowance for opex.

We agree that balancing incentives for nature-based solutions is likely to be the best option for customers and the environment, enabling nature-based solutions to be fully maintained and thus remain viable, thereby avoiding capital solutions, which would themselves have ongoing costs after the initial investment.

## 2.6 Water mains renewal

### 2.6.1 Nature of the claim

You explained that this case proposes a material increase in water mains renewal to address aging of the network.

### 2.6.2 Approach to identifying efficient costs

You showed your cost forecasts for each year of AMP8, under your current scenario of 04% pa average over AMP8.

We enquired as to how the costs had been estimated.

- You showed how length of pipe renewed is the main cost driver, with average unit renewal costs applied to the length.
- You showed how your activity – and hence investment – profile increases over the AMP.

We challenged whether the make-up of activity types has been accounted for in the costing.

- You responded that your claim is based on scenarios developed from your water mains deterioration and investment models, which identify priorities for delivering the best value from the expenditure scenario.

We concluded that your costs are based on activity forecasts appropriate to the scenarios you propose.

### 2.6.3 Best option for customers

We challenged whether your proposed increase, to 0.4% pa over the 5-year period, is sufficient to make a difference either to service or asset deterioration.

- You responded that you expect to further increase mains renewal after 2030. Your renewal profile over the period to 2030 shows increasing

renewal activity rather than an immediate step change, so that higher average rates will be achievable after 2030.

We challenged whether similar benefits could be achieved from less renewal over the period.

- You responded that existing network management activity would continue but your proposed renewal rate would slow the deterioration in service resulting from asset decay.
- You reminded us of improvements you have made to incident management, so that customer minutes lost is protected by good practice response and recovery, rather than fewer incidents.
- You reminded us of your network management activities such as pressure management and monitoring, which both protect pipes and enable early burst detection.

We challenged why customers should pay for 0.4% per year and not some other value.

- You explained that you have developed other investment scenarios using your water mains deterioration and investment modelling tools. You consider that the proposed value is an appropriate balance of affordability and progress, in the context of other large-scale investments such as the drainage and wastewater management plans and potential new water resources.

We agree that the use of good water mains deterioration and investment modelling tools will help to deliver efficient targeting of investment.

We challenged whether customers paying for this investment would make it easier for you to earn outperformance payments for leakage, mains bursts and customer interruptions.

- You responded that this renewal activity will help to slow an inevitable rise in operating costs associated with an ageing network. You cited the cost of mains repairs and leakage control during the current period and your

business plan table CW18 shows the marginal cost difference from the implicit allowance (i.e. will taking account of current renewal rates).

- You responded that performance commitments are expected to continue to be ambitious for the next period and the potential to out-perform them is reduced.

We concluded that addressing deterioration of the water network is the best option for customers, compared with increasing the risk of a sudden collapse in service or higher ongoing intervention costs to manage mains bursts and interruptions.



## **A1-3 Early submission of data for PR19 reconciliation models**



Matt Greenfield  
Wessex Water  
Claverton Down  
Bath  
BA2 7WW

**Our Reference**  
100416626-001

Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

## **PR19 reconciliation models – July 2023 submission**

28 July 2023

Dear Matt,

### **Background**

Ofwat requires you to provide information for the PR19 reconciliation models no later than 31 July 2023, for use in its PR24 price review. Ofwat's information notice IN23/03 highlights the need for external technical assurance of your prepared tables and costs models.

### **Scope**

We reviewed the following tables:

CW1	Totex analysis post frontier and RPEs (AMP7),
CWW1	Totex analysis post frontier and RPEs (AMP7),
PD8 and	Totex analysis – wholesale (AMP7), and
Bio1	Bioresources sludge data (AMP7),

together with:

PR19 model, cost sharing total costs reconciliation, and

PR19 model, bioresources revenue reconciliation model.

We agreed the appended tests, to be applied to the compilation of each table and model. After each audit we provided feedback on our findings and where we made recommendations, we followed your progress in addressing actions to their conclusion.

## Findings

We observed the tables and PR19 reconciliation models at various points during their construction and the final copies. From our sampling we observed:

1. Good process was followed during compilation of the tables and PR19 reconciliation models, with data drawn from prime corporate systems.
2. Frontier shift and real price effect adjustments were made in line with expectations.
3. The completed tables appear to have been compiled in line with the table guidance.

Yours sincerely,

Andrew Heather

Technical assurer

## Use of this document

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

## **Appendix: tests for technical assurance of PR19 reconciliation tables and models**

The following tests were agreed between Wessex Water and Mott MacDonald, for assurance of technical aspects of the PR19 reconciliation models, July 2023 submission:

4. Have the documents for audit been uploaded to SharePoint?
5. Is this table/line linked to an APR23 table/line? If yes, please list the APR23 table/line reference.
6. Has the data table/line been signed off by the owner and compiler?
7. Does the method statement (MS) adequately support the provision of consistent and accurate data and information? Has it been used to populate the reported figures?
8. Is data collection and storage robust, including the upstream processes which generate the data?
9. Are the systems, controls and processes in place adequate to provide consistent and accurate data and information. For example, is there a checks and controls process? Any internal sign-off tracker?
10. Has reported performance been calculated in accordance with the latest PR24 definitions/requirements?
11. Does the commentary / narrative provide sufficient and convincing evidence to demonstrate that the track record of performance or lessons learned from poor performance support the credible delivery of proposals in the plan?
12. Has the commentary / narrative been produced in line with the latest PR24 definitions/requirements?
13. Are there any material risks or issues that may impact the consistency or accuracy of reporting?
14. Is the data supported by audit trails, confirmed by sampling (at least 3 samples)
15. (PCs only) Are the performance commitment levels in the plan stretching but achievable and do they reflect performance improvements expected from both base and enhancement expenditure
16. Do you have any checks within your spreadsheets to ensure data integrity?

## **A1-4 Long-term delivery strategies**



Matt Greenfield  
Director of Regulation and Strategy  
Wessex Water  
Claverton Down  
Bath  
BA2 7WW

Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

## Long term delivery strategy: technical assurance

27 September 2023

Dear Matt,

### 1 Background to long term delivery strategies

Ofwat's 2024 price review (PR24) requires water companies to publish their long-term delivery strategy for the 25 year period 2025-2050, in line with Ofwat planning guidance. According to Ofwat's *PR24 and Beyond: Final guidance on long term delivery strategies*, the LTDS is intended to:

- Bring together all the strategic planning frameworks and statutory environment programmes.
- Include planned enhancement activities that lie outside of these frameworks, taking into account forecast performance improvements from base expenditure.
- Integrate these activities into a holistic 25-year framework.
- Use the first five years of the strategy to form the PR24 business plan.

The LTDS sits between the strategic direction statement and the five-year plan, showing the main steps and costs of delivery. It develops a core pathway which forms the basis of the 25-year strategy and the AMP8 delivery plan.

An important feature is the handling of uncertainty through adaptive pathways, options which can be introduced in a controlled manner if and when needed. Ofwat set 'common reference scenarios', for fast and slow climate change, technology, demand, and abstraction reductions. Companies are free to add additional scenarios relevant to their own situation.

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

	Climate change	Technology	Demand	Abstraction reductions	Wider scenarios
'Adverse' scenarios	High: RCP8.5	Slower: slower development than expected	High: higher growth forecasts	High: 'Enhanced' scenario (in England)	Material local or company-specific factors, as appropriate
'Benign' scenarios	Low: RCP2.6	Faster: faster development than expected	Low: lower growth forecasts and legislation on building regulations and product standards	Low: Current legal requirements (in England and Wales)	Parameters between the reference scenarios, e.g. a 'medium' scenario, as appropriate
<b>Mandatory</b> Impacts presented separately					<b>Discretionary</b> Can be combined if plausible

Ofwat's common reference scenarios from *Ofwat, PR24 and Beyond: Final guidance on long term delivery strategies*

## 2 Scope of assurance

You asked us to review your LTDS in the context of Ofwat's guidelines. We reviewed the provenance of the data in your LTDS tables as well as your narrative which explains your core scenario and the key drivers for change in the common reference scenarios and your additional adaptive pathways.

You asked us to give our opinion on the Ofwat board assurance tests of whether your LTDS:

1. Is high quality and represents the best possible strategy to efficiently deliver its stated long-term objectives, given future uncertainties.
2. Will enable the company to meet its statutory and licence obligations, now and in the future.
3. Is based on adaptive planning principles
4. Has been informed by customer engagement.

Our work took the form of meetings to review the provenance of data in your LTDS tables, meetings to review your approach to developing adaptive pathways, your presentation of your LTDS and an offline review of the draft LTDS document.

We provided feedback after each review and you showed how your updates had taken that into account.

## 3 Findings

### 3.1 Whether your LTDS is high quality, and represents the best possible strategy to efficiently deliver its stated long-term objectives, given future uncertainties

You showed that the data in your 'LS' tables was taken directly from your programme and scenario modelling. For the core scenario, you have forecast the activities that will be required to deliver the 2025 planning objective, assuming current conditions prevail and no new regulatory requirements emerge.

Your LTDS document explains the core scenario and we notice this includes ambitions such as zero interruptions to water supply by 2050, per capital consumption reduced to 110L per day, implementation of the sewer overflow reduction plan, and a reduction in sewer flooding. We challenged your forecast for bathing water quality, which you do not expect to significantly improve. You explained that even with sewer overflow reduction, you consider that sources outside your control may prevent significant change in compliance.

We observed that your LTDS document is clearly drafted and sets out the impact of each scenario. In addition to the common reference scenarios, you have added bespoke scenarios for water and wastewater. Overall, you have included six water adaptive pathways and 10 for wastewater.

We observed that the costs for each core scenario and alternative pathway are related directly to the scenario being considered.

- We concluded that you have developed a core long-term delivery strategy with adaptive pathways that represent your current understanding of the best possible strategy to delivery your stated objectives for 2050.

### **3.2 Whether your LTDS will enable the company to meet its statutory and licence obligations, now and in the future**

You showed how your forecasting was based on identifying the activities needed to comply with statutory and licence obligations.

Some of your adaptive pathways deal with potential legislative change such as loss of the 'sludge-to-land' route, or further water abstraction reductions. You explained that other changes, not yet envisaged, could require new adaptive plan, thereby changing your LTDS.

We were particularly interested to know if any of your scenarios would result in non-compliance with your known statutory and licence obligations. Your approach to investment planning demonstrated that you are planning to meet those obligations under all scenarios.

- We concluded that your strategy will enable you to meet your statutory and licence obligations, to the extent that they are currently known, now and in the future.

### **3.3 Whether your LTDS is based on adaptive planning principles**

Our review work confirmed that your planning has been based on adaptive planning principles. In addition to the adaptive pathways included in your 'LS' tables, you showed how you have considered other scenarios, so that your tables represent a selection of plausible and impactful futures.

- We concluded that your LTDS is based on adaptive planning principles.

### **3.4 Whether your LTDS has been informed by customer engagement**

Our assurance included a review of your customer engagement results and you showed how that has influenced your business plan. You showed how your PR24 outcomes, reflected in your plan and LTDS, were informed by customer engagement and your more recent research has provided further evidence on customer priorities.

With many of the PR24 obligations requiring significant investment, bill impacts is an important issue. We observed that activities set out in your plan are focused on delivering the necessary objectives using benchmarked costs. You showed that you initially planned for a rapid removal of remaining lead pipes, but you later adopted a flatter profile to reduce the impact on customer bills.

- We concluded that your plan has been informed by customer engagement.

### **3.5 Assurance statement**

To the Board of Wessex Water

In my professional opinion and to the extent revealed by sampling, your long term delivery strategy:

1. Is high quality, and represents the best possible strategy to efficiently deliver your stated long-term objectives, given future uncertainties.
2. Will enable the company to meet its statutory and licence obligations, now and in the future (based on current and known future obligations);
3. Is based on adaptive planning principles; and
4. Has been informed by customer engagement.

Yours sincerely,

Dr Andrew Heather  
Technical assurer.



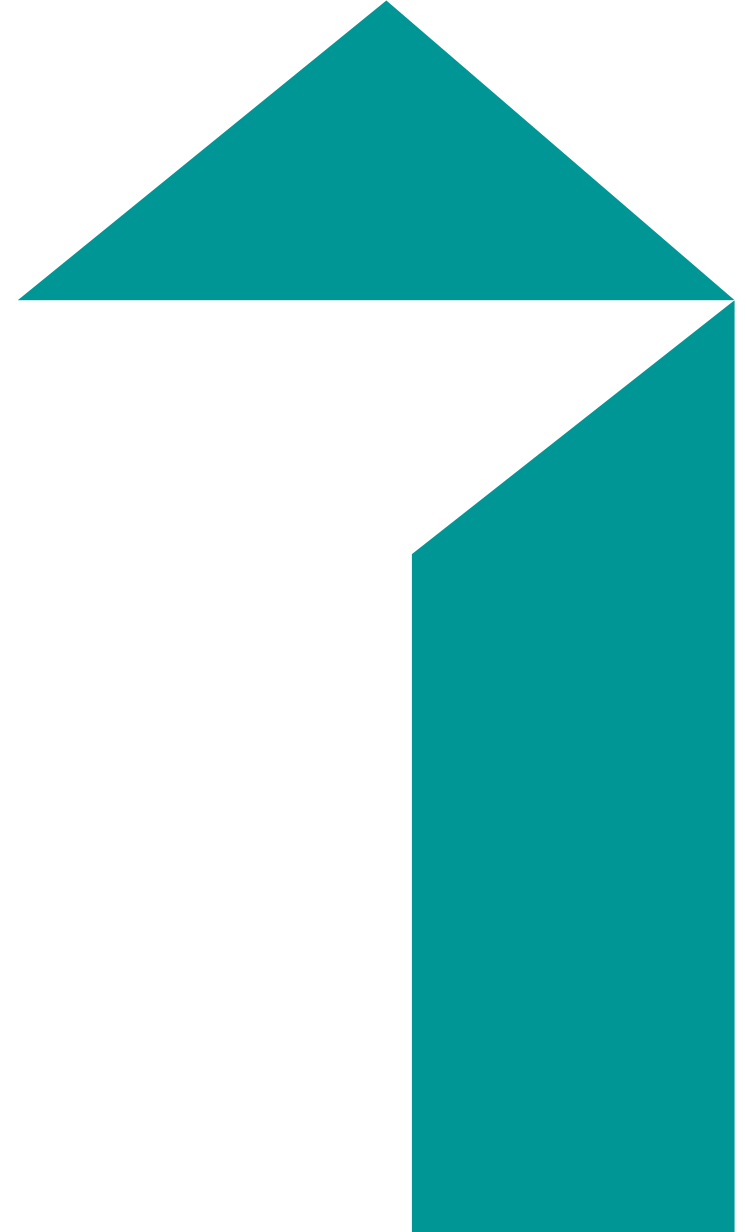
## **A1-5 Solutions process**



# **PR24: Investment planning in EDA**

Technical assurance report

September 2023



Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

## Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	4 July 2023	AIJ Heather Y Zhang S Pratt	Y Zhang	AIJ Heather	First issue
B	21 July 2023	Y Zhang	AIJ Heather	AIJ Heather	Revised to clarify and list recommended actions
C	1 August	AIJ Heather	Y Zhang	AIJ Heather	Correction to include action 26 in appendix.
D	22 Sept '23	AIJ Heather	Y Zhang	AIJ Heather	Update to include WSX responses.

**Document reference:** 100416626-001/PR24-EDA | | D |

**Information class:** **Standard**

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Mott MacDonald Limited. Registered in  
England and Wales no. 1243967.  
Registered office: Mott MacDonald House,  
8-10 Sydenham Road, Croydon CR0 2EE,  
United Kingdom

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>	A.4	What base buys	14
<b>2</b>	<b>Findings</b>	<b>2</b>	A.5	Totex and whole-life costing	14
2.1	Ofwat board assurance requirements	2	A.6	Improve asset data	14
2.2	Optimising the plan using EDA	2	A.7	AMP8 delivery plan	14
2.3	Summary of strengths by assurance requirement	3	A.8	Service forecasts from asset renewal scenarios	14
2.4	Approach to base expenditure	3	A.9	Whole-plan optimisation	15
	2.4.1 Deterioration modelling and needs assessment for water and wastewater non-infrastructure investment	3	A.10	Greenhouse gas emissions	15
	2.4.2 Base expenditure – non-infrastructure	5	A.11	Sludge plan – regulatory risk	15
	2.4.3 Base expenditure – infrastructure	5	A.12	Protecting opex costs	15
2.5	Enhancement programmes	7	A.13	Strong assessment of benefits	15
	2.5.1 Bioresources	7	A.14	Eliminate overlaps between business plan lines	15
	2.5.2 WINEP	8	A.15	Explain approach to multipurpose schemes	15
	2.5.3 Sewerage enhancement	9	A.16	Optimising for low GHG solutions	15
	2.5.4 Water supply – WRMP enhancement	10	A.17	Cost of operating sludge treatment	16
	2.5.5 Information technology enhancement	11	A.18	Enhancement not recovering maintenance activities:	16
	2.5.6 Management and general assets	11	A.19	Best option for customers	16
	2.5.7 Carbon reduction	13	A.20	Eliminate double-counting of needs and benefits	16
<b>A.</b>	<b>Recommendations</b>	<b>14</b>	A.21	Align EDA values with sub-plan values:	16
	A.1 Long-term use of EDA	14	A.22	Appointed business costs	16
	A.2 Further develop base expenditure models	14	A.23	Capitalisation of software services	16
	A.3 Develop system-level modelling	14	A.24	Complete the benefits assessment	16
			A.25	Present best evidence of need:	16
			A.26	AMP9 engineering preparatory costs	17
			A.27	Fleet asset life	17
			<b>Tables</b>		
			Table 2.1: Findings by board assurance requirement		2



# 1 Introduction

You asked us to provide assurance on your "EDA" investment planning system, linked to Ofwat's PR24 final methodology, including the specific expectations of the Board Assurance Statement. The requirements cover five areas:

- Long-term delivery strategies
- Affordability
- Costs and outcomes
- Risk and return
- Customer engagement

We agreed to focus on the "costs and outcomes" and customer engagement aspect of your plan, noting that costs are being benchmarked for you by a different supplier, Chandler KBS, we considered the underlying activities driving the costs.

Appendix 9 of Ofwat's PR24 final methodology sets out Ofwat's expectations in relation to the costs and outcomes element of Board Assurance Statement<sup>1</sup>, which include:

1. the needs for enhancement investment are not influenced by non-compliance or non-delivery of programmes of work (both base and enhancement) that customers have already funded,
2. the options proposed within the business plan are the best option for customers and a proper appraisal of options has taken place,
3. the plan includes price control deliverables covering the benefits of material; enhancement expenditure (not covered by performance commitments),

4. the expenditure proposals reflect customer views, and where appropriate are supported by customers "

On customer engagement, Ofwat's assurance test is:

5. that the board should provide assurance that the company's customer engagement and research meets the standards for high-quality research and any other relevant statements of best practice and has been used to inform its business plan and long-term delivery strategy.

We held structured interviews with auditees to develop our understanding of your approach to developing your preferred (or "optimised") plan, the common reference scenarios, and your bespoke adaptive pathways. We considered how the needs and service impacts for each investment area have been quantified.

You showed that customer engagement has been used to inform the outcomes and service measures framework. You showed that you had tested your draft plan with customer groups, using specialist consultants, and made adjustments to priorities as a result.

You showed your detailed proposal for price control deliverables (PCDs), which provide customer protection for enhancements that are not protected by other mechanisms, reflecting the benefit of those activities.

The following section summarises our main findings by topic and your response to our recommendations for improvement. Our recommendations are collated in Appendix A.

## 2 Findings

### 2.1 Ofwat board assurance requirements

Considering your overall approach in the context of Ofwat’s board assurance requirements for costs, outcomes, and customer engagement:

**Table 2.1: Findings by board assurance requirement**

Board assurance requirement	Finding
The needs for enhancement investment are not influenced by non-compliance or non-delivery of programmes of work (both base and enhancement) that customers have already funded;	<p>We observed that enhancement programmes are directed to meet specific new requirements for water or wastewater quality and, with one exception, do not address current failures or previously funded work.</p> <p>On sewer flooding we note you are not expecting to achieve your 2024-25 PCL of 2,000 flood per year, and have planned improvement from a higher starting point of 2,240 floods per year. This may represent an overlap of 240 floods per year that was funded at PR19, and should be accounted for in your costing.</p> <p>[Outcome: you explained that for measures where you have spent above the implicit allowance, you consider that this demonstrates the need for enhancement, rather than under-performance.]</p>
The options proposed within the business plan are the best option for customers and a proper appraisal of options has taken place;	For statutory enhancement we observed that options have been reviewed on a site-by-site basis. The preferred options appear to provide long-term solutions to the need, in line with your normal process-selection approach and technical regulator expectations.

Board assurance requirement	Finding
The plan includes price control deliverables covering the benefits of material; enhancement expenditure (not covered by performance commitments);	<p>You developed price control deliverables with an underperformance payment rate greater than the direct cost. We carried out a separate review of your price control deliverables.</p> <p>We suggest minimising the number of PCDs you propose. [Outcome: You reduced the number from your initial estimate]</p>
The expenditure proposals reflect customer views, and where appropriate are supported by customers “	You showed that your planning was finalised in the light of customer market research as well as your best view of the enhancement programme required by the technical regulators.
Customer engagement	
That the board should provide assurance that the company’s customer engagement and research meets the standards for high-quality research and any other relevant statements of best practice and has been used to inform its business plan and long-term delivery strategy.	You showed that your planning was finalised in the light of customer market research as well as your best view of the enhancement programme required by the technical regulators.

### 2.2 Optimising the plan using EDA

We notice that owing to the large statutory programmes such as WINEP, DWMP, and water quality enhancement, the majority of expenditure is likely to be ‘constrained-in’ to EDA, giving little scope for optimisation of the whole plan. We make the following recommendations:

- 4 What base buys: we **recommend** your narrative clearly explains ‘what base buys’, thereby demonstrating that enhancements beyond that require additional expenditure.  
 [Outcome: you updated your narrative to explain the impact of base expenditure.]
- 14 Eliminate overlaps between business plan lines: we **recommend** that in finalising your plan you review the potential for overlaps between the different investment lines.

[Outcome: Since our initial audit you reviewed the investment proposed at each site to remove overlaps resulting from duplicate needs, or the same asset being addressed by different needs, and applied proportional allocation.]

## 2.3 Summary of strengths by assurance requirement

This is our current view of your key strengths and weaknesses in use of EDA, based on our initial interviews and your ongoing work to populate the system.

Key strengths:

- A significant proportion of statutory enhancement investment is backed up with detailed plans, down to site level in some cases.

Key weaknesses:

- Weak explanation of the benefits of current maintenance expenditure
  - Recommendation 4, what base buys, applies.  
[Outcome: you updated your narrative to explain the impact of base expenditure.]
- Enhanced maintenance not yet presented in terms of the service measures framework.
  - Recommendation 8, Service forecasts from asset renewal scenarios, applies.  
[Outcome: You further developed your EDA analysis and expect to continue developing it for future use, post business-plan submission.]
- For 'block expenditure' lines, not yet presented with evidence as to how they are the best expenditure option for customers.
  - 19 Best option for customers: We **recommend** that your narrative explains, with evidence, the way in which your core plan represents the best option for customers. (Action recommended for current business plan.)  
[Outcome: You showed how narrative has been developed to better demonstrate how our plan is the best option for customers.]

## 2.4 Approach to base expenditure

### 2.4.1 Deterioration modelling and needs assessment for water and wastewater non-infrastructure investment

You explained how, before EDA could be used, a major data cleansing exercise was undertaken. Anomalous data was highlighted for review, and standard "SAMP categories" were added to the asset data. The modelling approach is based on recovering asset condition of the most deteriorated assets, assuming that condition links directly to service risk. This has the advantage of reducing the risk of cascade failure resulting from advanced deterioration of multiple assets, but the disadvantage of limited ability to prioritise spend, and an inability to link the investment directly to the level of service delivered.

A "capital maintenance" module is being used to forecast investment needs, which are then presented as complete sub-programmes to EDA. The capital maintenance module does not include uncertainty modelling and so the sensitivity to assumptions or scenarios is assessed by multiple model runs, with variations in the input data.

Adaptive planning: The way the plan is presented to EDA – as a complete unit with limited choice – makes it impossible for EDA to propose adaptive plans even if it had the capability to do so. However, the plan is certain to need to adapt as delivery progresses and so adaptive plans will be developed by changing the constraints on investment options in the inputs. The long-term delivery strategy must be based on adaptive planning principles for enhancements after the next five-year period, and was covered by a separate review.

You explained the 'triangulation' process which takes account of current and past expenditure, service delivered, and needs identified by asset owners and operators, in addition to the EDA asset analysis, in setting the expenditure



levels. In this context the approach is reasonable although the EDA analysis is hampered by a lack of high quality data (recommendation 6 applies). The difficulty in linking asset condition to service levels could limit your options to defend base expenditure in the event of significant challenge. A further limitation is the focus on capital maintenance rather than a totex-based approach, which would take better account of changes in opex over time.

key strengths:

- EDA is a well-established platform.
- Good checking of the data and results; corrections to data and the EDA scripts are evidence that the checks were worthwhile.
- Step-change in CM appears to reflect Wessex's concerns about asset condition.

Key weaknesses:

- EDA is new to Wessex Water and will take some time to deliver its full potential,
  - 1 Long-term use of EDA: we **recommend** you continue to develop your corporate capability with EDA in preparation for PR29.  
[Outcome: action deferred until post-PR24.]
- The PR24 plan requires a significant expenditure on enhancement, which will be constrained-in to EDA, resulting in EDA having minimal opportunity to optimise the plan.
- For modelled investment, the approach is mostly recovery of condition, with an implicit link to service, rather than being service-risk based.
  - 2 Improve base expenditure models: we **recommend** you continue to develop your base expenditure models to enable service risk forecasting (PR29).  
[Outcome: action deferred until post-PR24.]
- Not system-based planning – unable to use the redundancy function in EDA, so potentially over-states the urgency (but converse is that it won't

allow deterioration to the point of 'last pump' before commissioning refurbishment).

- 3 Develop system-level modelling: we **recommend** you develop a capability to model system-level impacts of deterioration, to better support investment decision making (PR29).  
[Outcome: action deferred until post-PR24.]
- It appears to be difficult to link base investment to service improvement “what does base buy” e.g. sewer overflows, etc.
  - Recommendation 4, What base buys, applies.  
[Outcome: you updated your narrative to explain the impact of base expenditure.]
- Weak explanation of the current cost to serve and hence whole-life totex, which appears to be very difficult to analyse below departmental budget level.
  - 5 Totex and whole-life costing: we **recommend** more detailed analysis of base maintenance totex, to enable interventions to be focused on a whole-life-cost basis.  
[Outcome: You explained that currently 50% of base modelled expenditure is based on detailed deterioration modelling, which is a whole life cost approach. We consider that on balance this is a reasonable approach.]
- Owing to the high-level nature of some EDA lines, it could be difficult to get from EDA to schemes for promotion. For the pressing schemes and bespoke statutory enhancement schemes, there is confidence in the likely activity, down to site level. We understand your Service Measures Framework will support this but we note the scale of work could be significant.
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]

## 2.4.2 Base expenditure – non-infrastructure

We understand that for non-infrastructure expenditure you have used the EDA Asset tool to develop forecasts of the necessary expenditure. You have taken models developed for PR04 and refreshed at PR09, as the basis of your model development. Modelling uses the Weibull estimation technique to forecast progression through condition grades to the point where renewal is necessary.

Time constraints have made it difficult to gather new data to enable development of the models as much as you had hoped.

Where data are not well populated, you have used infill techniques, such as applying average size and age to assets, to enable the forecasting to work.

Advantages of this approach include:

- It offers continuity with your historic planning, which appears to have given reasonable results.
- The method is well understood in the industry and in the asset modelling community.

Disadvantages of this approach include:

- the need to infill a significant amount of data means the model is forced towards extrapolating average trends,
  - 6 Improve asset data: We **recommend** your AMP8 budgets include a plan to improve asset data, to support efficient investment during the period and to improve the evidence for proposed investment at PR29. [Outcome: action deferred until post-PR24.]
- the reliance on past averages – via the data infill technique – may mask any need for changing renewal rates in future,
  - Recommendation 6, improve asset data, applies. [Outcome: action deferred until post-PR24.]

- the model identifies when asset condition needs to be recovered, but does not appear to link strongly to service risk,
  - Recommendations 2, improve base expenditure models, and 3, Develop system-level modelling, apply. [Outcome: action deferred until post-PR24.]
- the model focuses on capital cost and is not well suited to identifying the least-totex asset management plan.
  - Recommendation 5, totex and whole-life costing, applies. [Outcome: You explained that currently 50% of base modelled expenditure is based on detailed deterioration modelling, which is a whole life cost approach. We consider that on balance this is a reasonable approach.]
- The modelled results will enable budget setting but need further work to become a deliverable investment plan.
  - 7 AMP8 delivery plan: we **recommend** continuing to develop your AMP8 delivery plan for base expenditure, using service risk and your service measures framework to prioritise schemes. Any additional evidence gathered in the process will further support your business case should the need arise. [Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]

We understand after modelling various investment scenarios, the results from EDA Asset are then loaded into EDA as “must invest”. This approach should ensure the maintain service does not become the balancing line for offsetting higher costs in other areas such as enhancement.

## 2.4.3 Base expenditure – infrastructure

**Leakage maintenance:** you have taken a ‘same again’ approach, carrying forward the average expenditure of AMP7 yrs 1-3. This is a greater activity than AMP6 and hence recognises the increased cost of delivering lower leakage during AMP7.

- At the time of our review there did not appear to be a detailed analysis of the underlying leakage break-out rate and this limits the quality of the forecast for future scenarios: however, such forecasts tend to be speculative and mainly serve to demonstrate the range of expenditure that may be required.
  - 25 Present best evidence of need: We **recommend** that in your narrative you present the evidence of the need for any change in base expenditure.  
[Outcome: addressed in PR 24 business plan narrative.]

Advantages of this approach include:

- Informed by current activity, therefore well evidenced by the costs and impacts.

Disadvantages of this approach include:

- The modelled results will enable budget setting but need further work to become a deliverable investment plan.
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]

**Water mains renewal:** you explained that you have developed three scenarios of 0.2%pa, 0.4%pa., and 1.0%pa. The programme has been built on a bottom-up basis and not through the Assets module. The needs assessment has been supported by challenge meetings and empirical evidence rather than a detailed analysis of deterioration rates and future service levels.

Advantages of this approach include:

- Links asset renewal to service measures, providing a direct link between company inputs and outcomes for customers.
- Uses current cost rates to inform likely activity costs.
- Developed in close collaboration with technical specialists

Disadvantages of this approach include:

- Enables budget setting but need further work to become a deliverable investment plan.
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]
- Does not provide a detailed analysis of future performance under different scenarios.
  - 8 Service forecasts from asset renewal scenarios: we **recommend** you continue to develop service forecasts for the different asset renewal scenarios, to provide robust evidence that proposed increases in expenditure will reduce service risk and are the best option for customers.  
[Outcome: You explained that this will be included in development of EDA.]
- Not integrated with other investment plans for infrastructure.
  - 9 Whole-plan optimisation: we **recommend** you develop EDA to enable optimisation across the plan as whole, using your service measures framework to balance the benefits of investment in one service area with those of others (PR29).  
[Outcome: action deferred until post-PR24.]
- Does not provide a detailed link to the service measures framework.
  - Recommendation 9, whole-plan optimisation, applies.  
[Outcome: action deferred until post-PR24.]
- Without a detailed underlying plan, it may be difficult to defend the exact proposed investment level and the point of division between maintenance and enhancement.
  - Recommendations 4 what base buys, applies  
[Outcome: you updated your narrative to explain the impact of base expenditure.]

- Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]

**Wastewater infrastructure base sewers renewal:** We understand that your approach has been to roll-forward sewer maintenance expenditure and to justify additional expenditure as enhancement at this stage. The result is that sewer rehabilitation is focused on the service measures of reducing flooding, reducing pollution, or linked to the DWMP to reduce overflows.

The advantages of this approach include:

- Good tie-in with other programmes such as DWMP and WINEP
- Increases in expenditure are focused on specific service measures.

The disadvantages of this approach include:

- Does not provide a detailed analysis of future performance under different scenarios.
  - Recommendation 8, service forecasts from asset renewal scenarios, applies.  
[Outcome: You explained that this will be included in development of EDA.]
- Without a detailed underlying plan, it may be difficult to defend the exact proposed investment level and the point of division between maintenance and enhancement.
  - Recommendations 4 what base buys, applies  
[Outcome: you updated your narrative to explain the impact of base expenditure.]
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]

## 2.5 Enhancement programmes

### 2.5.1 Bioresources

Your premise for increasing expenditure on bioresources is your vulnerability to the agricultural land-bank, which currently receives all your treated sludge. You wish to improve your resilience to land-bank loss, whilst continuing sludge-to-land for as long as practicable. In regulatory terms, Defra and the EA currently see recycling to land as the best end-point for treated sludge.

You have considered blending sludge into municipal solid waste incinerators, but they require a more consistent feedstock that you currently produce, and you feel the regulatory barriers of mixing feedstocks are significant.

Your sense of urgency is driven by a study by Grieve and Adas, which from which you identified the land bank could reduce by more than half over the next decade, driven by a shortening of the season for application to land, and farmers becoming less willing to accept sludge as a result of produce-buyer pressure.

Your plan aligns with your long-term delivery strategy, with your core pathway moving from 100% sludge-to-land in 2025, to 20% receiving advanced thermal conversion treatment by 2030, for example to biochar or similar mineralisation.

A significant regulatory change is the transfer of sludge regulation from the Urban Wastewater Treatment Directive to the Environmental Protection Regulations and the Industrial Emissions Directive. You expect this change to mean that more sludge storage is needed, and whilst your WINEP includes four sludge barns, you forecast up to seven barns overall during AMP8.

We did not investigate the impact on carbon footprint, although it is likely to be complicated: the high forecast opex implies an increase in greenhouse gas emissions from energy use, but the change in sludge treatment pathway may reduce the energy use in downstream stages. It may also change the process

emissions and, together with the change in energy use, lead to a different greenhouse gas profile for sludge treated via the new processes.

- 17 We **recommend** you check you have high confidence that you can deliver and operate the new assets as described and for the cost provisions in your business plan.  
[Outcome: You confirmed that you believe the cost allocation would be sufficient. The high-cost items such as advanced thermal conversion have been transferred to the IED adaptive pathway, reducing the risk at PR24.]

Advantages of this approach include:

- bespoke plans to protect the sludge stream at site level.
- responding to best information on vulnerability of the sludge-to-land route.
- aiming to use base expenditure to build resilience over time.

Disadvantages of this approach include

- no apparent regulatory support for a move away from sludge-to-land.
  - 11 Sludge plan regulatory risk: we **recommend** you consider how to manage the risk that the lack of EA and Defra support for alternative sludge treatment options undermines Ofwat support for your whole wastewater network-plus base plan.  
[Outcome: These proposals are moved to an adaptive pathway so they are no longer in the core plan to 2030.]
- proposed schemes have significant opex (and potentially carbon footprint) that will be burdensome if there is no regulatory requirement to operate the new processes.
  - 12 Protecting new opex costs: we **recommend** you review how to provide for full opex costs after efficiency challenges and hence operating budget constraints, especially if the programme qualifies for a price control deliverable.  
[Outcome: You confirmed that optimisation is based on benefit: cost ratio and not simply least cost.]

- The greenhouse gas impacts of the change in sludge treatment pathway for some sites is not well documented at this stage.
  - 10 Greenhouse gas emissions: we **recommend** that your business plan document explains the greenhouse gas emission implications of your proposed changes to sludge treatment at some sites.  
[Outcome: These proposals are moved to an adaptive pathway so they are no longer in the core plan to 2030.]

### 2.5.2 WINEP

You showed how you are developing an agreed WINEP list with the Environment Agency. Since the programme will be mandatory, it will be constrained-in to EDA as 'must invest'. You explained that the scheme costs were developed from recent cost of similar work and, for novel projects, from data provided your cost consultants.

We understand that the WINEP list is not yet finalised, but little further change is expected. The majority of schemes have been constrained-in to EDA, with some phosphorous removal schemes left as optional.

Advantages of this approach include:

- bespoke plans to deliver the WINEP give high confidence in site-level activity,
- costs can be linked directly to outcomes.

Disadvantages of this approach include

- not yet clear how base maintenance will be integrated with WINEP – for example to ensure that the WINEP cost is net of maintenance that would otherwise be carried out.
  - Recommendation 4, what base buys, applies.  
[Outcome: you updated your narrative to explain the impact of base expenditure.]

### 2.5.3 Sewerage enhancement

This programme covers enhancement work that falls outside the WINEP. We understand the EDA has two programme options to choose between, in meeting the needs identified below. It is closely related to the DWMP and WINEP and may adapt in response to the final versions of those plans when they carry forward to your PR24 plan.

The programme consists of individual schemes to address needs that have been identified in detail, and block allocations for emerging or yet-to-emerge needs.

**Flooding:** You explained that you propose enhancement expenditure to improve sewer performance to reduce the risk of internal and external sewer flooding. Your aim is to maintain upper quartile performance for internal flooding, under deteriorating conditions in which an increase in heavy rainfall and asset-related issues has caused flooding to increase. For external flooding, you forecast that you need reduce recent flooding by about 22% to maintain an industry-median position, or 40% to achieve upper quartile.

You showed that you have developed around 200 specific needs for PR24, with a forecast impact on external and internal flooding for each. You have assumed a base (starting position) of 2,240 external floods, since you do not expect to achieve your AMP7 target of 2,000 external floods.

- On sewer flooding Ofwat may consider that you have already been funded to achieve 2,000 floods per annum and so costing would need to be based on improvements from 2,000 floods not 2,240.
  - Recommendation 4, what base buys, applies.  
[Outcome: you updated your narrative to explain the impact of base expenditure.]
  - 18 Enhancement not recovering maintenance activities: We recommend you ensure that enhancement costs do not include recovery of performance to levels already committed in AMP7. (Action recommended for current business plan.)

[Outcome: you explain that you currently spend above the implicit allowance, to deliver the current performance level.]

You explained that your core scenario is based on external flooding analysed by geographic area (hexagon) and you showed me a slide with results indicating areas with multiple events. Adjacent hexagons were also considered so in case the geographic boundaries affected the analysis.

Your analysis includes the link between blockages and external flooding, of which some are expected to become internal floods. You showed your event route cause analysis (ERCA) approach which successfully highlights areas where flooding may not be one-off, for further action. You explained that you propose to carry out 1,600 ERCA's by 2030, with 894 of the areas having had more than five incidents during AMP7 to date.

Your alternative scenarios include more emphasis on opex solutions.

**Pollution:** Regulatory guidance is for the industry to 'trend to zero by 2050'. You reported an increasing trend in pollution incidents, partly 'real' and partly through improvements in the reporting process. Your 5-yr average number of incidents is 85pa (79 for the five years before 2022-23). There were 110 pollution incidents in 2022-23.

Your core plan to reduce pollution incidents by 12pa would result in 13pa in 2050, and 1pa by 2051. It includes more sewer cleaning, more blockage prevention activity, and at treatment works more process monitoring, faster repair and more process resilience.

Advantages of this approach include:

- Detailed programme linking solutions to outcomes.
- Targeted block allocations with forecast volumes and costs.
- Close linkage to WINEP and DWMP, with potential to demonstrate that overlaps have been addressed.

Disadvantages of this approach include

- Given the significant cost pressures constrained-in to AMP8, EDA may be unable to choose other than the cheapest option for non-WINEP enhancement. This makes it important that the service measures framework is well calibrated.
  - Recommendations 8 service forecasts from asset renewal scenarios, applies.  
[Outcome: You explained that this will be included in development of EDA.]
  - Recommendation 9, whole plan optimisation, applies.  
[Outcome: action deferred until post PR24.]
  - 13 Strong assessment of benefits: we **recommend** checking that EDA is not excluding the best option for customers purely on the basis of option cost.  
[Outcome: You explained that EDA selected options on the basis of benefit: cost ratio and simply least cost.]

#### 2.5.4 Water supply – WRMP enhancement

You explained that your plan is based on the WRMP plan and uses the same source data, aiming to balance costs with benefits to meet demand needs over the next 25yrs.

You showed how you have all the supply demand options that link to the WRMP, so it will be relatively simple to update the programme to reflect the final WRMP should schemes be added or removed.

You showed that in the service measures framework, all the schemes from WRMP are attributed to supply demand balance with benefits after 2026, for infra or non-infra assets as appropriate.

Advantages of this approach include:

- Schemes carried through EDA and into the business plan are fully matched to the WRMP, giving a line-of-sight from SDB need through the WRMP to the PR24 investment plan.

Disadvantages of this approach include:

- The link between WRMP and other investment drivers such as growth or maintenance is less clear at the moment. It is likely that further semi-manual work will be necessary to identify and manage overlaps, to avoid potential double-counting of costs.
  - Recommendation 4, what base buys, applies.
  - 14 Eliminate overlaps between business plan lines: we **recommend** that in finalising your plan you review the potential for overlaps between the different investment lines.  
[Outcome: Since our initial audit you reviewed the investment proposed at each site to remove overlaps resulting from duplicate needs, or the same asset being addressed by different needs, and applied proportional allocation.]
  - 15 Explain approach to multipurpose schemes: we **recommend** that your narrative provides evidence of your approach to eliminating overlaps between the various expenditure drivers, with proportional allocation where appropriate.  
[Outcome: You explained that this will be addressed in your final business plan documentation.]
- The service drivers need further work to fully integrate them with the service measures framework, including quantification of the relevant benefit of a scheme on each service driver.
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]
- EDA is currently populated with capital schemes and those required to meet the WRMP needs are constrained-in to the selection – i.e. ‘must invest’. You explained that opex effects will updated to the schemes for later EDA runs.
  - Recommendation 5, totex and whole-life costing, applies.  
[Outcome: You explained that currently 50% of base modelled

expenditure is based on detailed deterioration modelling, which is a whole life cost approach. We consider that on balance this is a reasonable approach.]

### 2.5.5 Information technology enhancement

You explained that IT projects did not fit well into the service measures framework. Further, the short-life nature of IT investment was difficult to model alongside longer-life assets in EDA.

You explained that you had reviewed Ofwat's PR24 methodology and identified where technology was cited as a potential facilitator of improvement in service. You then considered whether further investment would be needed to deliver such technology, and if so you assigned a priority to it. We discussed whether the PR24 methodology was comprehensive in its scope and noted that it makes little mention of cyber security, which remains a priority for the UK.

Your strategy is built around three strands of security, maintaining productivity, and improving future capability, aiming to support your PR24 strategy. You showed your benefits realisation model which links projects to outcomes and also allows you to track progress and the level of success of each project. Where possible, integrated projects are proposed, rather than discrete and potentially overlapping projects.

You showed your plan which has been built from the bottom up as a bespoke plan and constrained-in to EDA, attributed to sponsoring departments.

Advantages of this approach include:

- Detailed programme linking solutions to specific benefits.
- Targeted block allocations with forecast volumes and costs.
- Close linkage to other departments, as a facilitator of their work.

Disadvantages of this approach include

- Although there is clearly a link between current capability and service, or limitations in capability, it could be difficult to articulate or defend.
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]
- It is not clear what improvements would come naturally through improving value-for-money of solutions over time, such as indicated by 'Moore's law': this could be addressed in the business plan narrative.
  - Recommendation 4, what base buys, applies.  
[Outcome: you updated your narrative to explain the impact of base expenditure.]

### 2.5.6 Management and general assets

You explained that a team-by-team review of needs, costs, benefits and carbon impact was carried out, covering the following scope:

- Conservation access and recreation (including enhancement expenditure for new site facilities for customer access),
- Company depots,
- Digital platforms – internet and intranet (covered under the ICT review),
- Vehicle fleet (including enhancement expenditure for electrical vehicle infrastructure)
- Facilities management
- Laboratory (including enhancement expenditure for PFAS testing)
- Property management
- Preparation of the PR29 business plan

We made the following observations and recommendations:

- As would be expected, M&G is the sum of many shared service costs, which you have reviewed at a reasonable level of detail although for many



of these the focus is on capex rather than totex (fleet vehicles having the strongest totex analysis).

- Recommendation 5, totex and whole-life costing, applies.  
[Outcome: You explained that currently 50% of base modelled expenditure is based on detailed deterioration modelling, which is a whole life cost approach. We consider that on balance this is a reasonable approach.]
- You showed your benefits assessment approach which we noticed was still being populated.
  - 24 Complete the benefits assessment: We **recommend** completing the benefits assessment in time for the phase 2 EDA review, and in case before the final EDA business plan compilation.  
[Outcome: You explained that your final plan uses benefit:cost ratio to prioritise expenditure.]
- We noticed that there may have been double counting, for example of visitor numbers in base and enhancement cases, whereas we would expect the base case to be in maintenance and increases to arise from enhancement. However, we note also that you assign a very low confidence to visitor numbers since not all visitors travel through measured access points.
  - 20 Eliminate double-counting of needs and benefits: We **recommend** you check needs and benefits are not double-counted within business plan lines or between base and enhancement lines.  
[Outcome: Since our initial audit you reviewed the investment proposed at each site to remove overlaps resulting from duplicate needs, or the same asset being addressed by different needs, and applied proportional allocation.]
- We noticed that for laboratory expenditure, your bottom-up estimate was £4.5m but your plan currently totals £8m on a top-down basis. It was not clear what the additional £3.5m was for.
  - 21 Align EDA values with sub-plan values: We **recommend** you check that EDA values reflect your current estimate of expenditure for each sub-plan.  
[Outcome: You explained that this was done as part of the final optimisation modelling in EDA .We did not investigate further.]
- On property management, we questioned whether the costs of maintaining company properties for letting is inside the appointed business or whether it should be excluded from the plan.
  - 22 Appointed business costs: We **recommend** checking that the costs fall within the appointed business and hence this price review.  
[Outcome: You confirmed that the review had been carried out.]
- On digital transformation there was uncertainty as to the approach to capitalisation of 'software as a service' costs.
  - 23 Capitalisation of software services: We **recommend** clarifying the approach to capitalisation, especially of software as a service, which increasingly features in company plans.  
[Outcome: You explained that you are proposing a Totex based on a blend of capital and opex, subject to ongoing review.]
- For the vehicle fleet we noticed a depreciation life of four years but a once-per-AMP replacement rate implying a 5yr life.
  - 27 Fleet asset life: We **recommend** reviewing whether fleet asset depreciation life is appropriate.  
[Outcome: We omitted to properly reference this in our initial report but understand from our wider assurance of your business plan that depreciation lives were reviewed]
- Your proposed costs for PR29 provide an allowance to your engineering department for AMP9 preparation, which is currently set at less than the AMP8 preparatory costs. We were not clear what the underlying assumptions of efficiency were.
  - 26 We **recommend** reviewing the AMP9 preparatory cost allowance to check that anticipated efficiency is deliverable, after incurring asset data collection costs.  
[Outcome: You confirmed that you are satisfied that a reduction in

preparatory costs is appropriate, given the anticipated reduction in enhancement programmes.]

Advantages of this approach include:

- Thematic analysis provides department-level budgets linked to specific activities and some outcomes.
- For the larger M&G expenditure areas requiring enhancement, the need and benefit has been estimated, for example the introduction of electric vehicles, improvement of laboratory testing facilities, enhanced customer access.

Disadvantages of this approach include:

- Focus on capex may make it difficult to demonstrate that the preferred option is the best-cost option for customers.
  - Recommendation 7, AMP8 delivery plan, applies.  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]
- Some examples of weak benefits assessment need to be addressed prior to final EDA runs.
  - Recommendation 13, strong assessment of benefits, applies.  
[Outcome: You explained that EDA selected options on the basis of benefit: cost ratio and simply least cost.]

### 2.5.7 Carbon reduction

The industry is faced with a significant challenge to reduce carbon footprint to net zero by 20235, whilst also investing to protect against deterioration of existing service and to further enhance service.

You have used Mott MacDonald to assess the carbon intensity of investment. You showed how for the WINEP programme you assessed the carbon impact of various schemes but at this stage, schemes have been selected on their technical merit rather than for carbon footprint. The modelling approach aligns

with standard costing, including an assessment of optimism bias, so that it can be integrated into scheme selection and promotion.

Given the high proportion of investment constrained-in to EDA, carbon reduction plans will need to be applied separately to each planned outcome.

Advantages of this approach include:

- Detailed analysis linking the cost of different investment to embodied and operational carbon impacts.
- Uses industry-standard conversion factors so will be straightforward to update.

Disadvantages of this approach include:

- Not yet influential in investment decision-making.
  - 16 Optimising for low-GHG solutions: we **recommend** further developing EDA modelling to take into account (and report on) the greenhouse gas impacts of different investment options (PR29).  
[Outcome: action deferred until post PR24.]

## A. Recommendations

### A.1 Long-term use of EDA

We recommend you continue to develop your corporate capability with EDA in preparation for PR29. (Development recommended for PR29.)  
[Outcome: action deferred until post-PR24.]

### A.2 Further develop base expenditure models

We recommend you continue to develop your base expenditure models to enable service risk forecasting (PR29). (Recommended development for PR29.)  
[Outcome: action deferred until post-PR24.]

### A.3 Develop system-level modelling

We recommend you develop a capability to model system-level impacts of deterioration, to better support investment decision making. (Recommended development for PR29.)  
[Outcome: action deferred until post-PR24.]

### A.4 What base buys

We recommend your narrative clearly explains 'what base buys', thereby demonstrating that enhancements beyond that require additional expenditure. (Action recommended for current business plan.)  
[Outcome: you updated your narrative to explain the impact of base expenditure.]

### A.5 Totex and whole-life costing

We recommend more detailed analysis of base maintenance totex, to enable interventions to be focused on a whole-life-cost basis. (Action recommended for current business plan.)  
[Outcome: You explained that currently 50% of base modelled expenditure is based on detailed deterioration modelling, which is a whole life cost approach. We consider that on balance this is a reasonable approach.]

### A.6 Improve asset data

We recommend your AMP8 budgets include a plan to improve asset data, to support efficient investment during the period and to improve the evidence for proposed investment at PR29. (Development recommended for PR29.)  
[Outcome: action deferred until post-PR24.]

### A.7 AMP8 delivery plan

We recommend continuing to develop your AMP8 delivery plan for base expenditure, using service risk and your service measures framework to prioritise schemes. Any additional evidence gathered in the process will further support your business case should the need arise. (Action recommended for current business plan.)  
[Outcome: you explained that EDA will be able to use updated asset hierarchy and criticality data to improve prioritisation.]

### A.8 Service forecasts from asset renewal scenarios

We recommend you continue to develop service forecasts for the different asset renewal scenarios, to provide robust evidence that proposed increases in expenditure will reduce service risk and are the best option for customers. (Action recommended for current business plan.)  
[Outcome: You explained that this will be included in development of EDA.]

### **A.9 Whole-plan optimisation**

We recommend you develop EDA to enable optimisation across the plan as whole, using your service measures framework to balance the benefits of investment in one service area with those of others (PR29). (Development recommended for PR29.)

[Outcome: action deferred until post PR24.]

### **A.10 Greenhouse gas emissions**

We recommend that your business plan document explains the greenhouse gas emission implications of your proposed changes to sludge treatment at some sites. (Action recommended for current business plan.)

[Outcome: These proposals are moved to an adaptive pathway so they are no longer in the core plan to 2030.]

### **A.11 Sludge plan – regulatory risk**

We recommend you consider how to manage the risk that the lack of EA and Defra support for alternative sludge treatment options undermines Ofwat support for your whole wastewater network-plus base plan. (Action recommended for current business plan.)

[Outcome: These proposals are moved to an adaptive pathway so they are no longer in the core plan to 2030.]

### **A.12 Protecting opex costs**

We recommend you review how to provide for full opex costs after efficiency challenges and hence operating budget constraints, especially if the programme qualifies for a price control deliverable. (Action recommended for current business plan.)

[Outcome: You confirmed that optimisation is based on benefit: cost ratio and not simply least cost.]

### **A.13 Strong assessment of benefits**

We recommend checking that EDA is not excluding the best option for customers purely on the basis of option cost. (Action recommended for current business plan.)

[Outcome: You explained that EDA selected options on the basis of benefit: cost ratio and simply least cost.]

### **A.14 Eliminate overlaps between business plan lines**

We recommend that in finalising your plan you review the potential for overlaps between the different investment lines. (Action recommended for current business plan.)

[Outcome: Since our initial audit you reviewed the investment proposed at each site to remove overlaps resulting from duplicate needs, or the same asset being addressed by different needs, and applied proportional allocation.]

### **A.15 Explain approach to multipurpose schemes**

We recommend that your narrative provides evidence of your approach to eliminating overlaps between the various expenditure drivers, with proportional allocation where appropriate. (Action recommended for current business plan.)

[Outcome: You explained that this will be addressed in your final business plan documentation.]

### **A.16 Optimising for low GHG solutions**

We recommend further developing EDA modelling to take into account (and report on) the greenhouse gas impacts of different investment options (PR29). (Development recommended for PR29.)

[Outcome: action deferred until post PR24.]

### **A.17 Cost of operating sludge treatment**

We recommend you check you have high confidence that you can deliver and operate the new assets as described and for the cost provisions in your business plan. (Action recommended for current business plan.)

[Outcome: You confirmed that you believe the cost allocation would be sufficient. The high-cost items such as advanced thermal conversion have been transferred to the IED adaptive pathway, reducing the risk at PR24.]

### **A.18 Enhancement not recovering maintenance activities:**

We recommend you ensure that enhancement costs do not include recovery of performance to levels already committed in AMP7. (Action recommended for current business plan.)

[Outcome: you explain that you currently spend above the implicit allowance, to deliver the current performance level.]

### **A.19 Best option for customers**

We recommend that your narrative explains, with evidence, the way in which your core plan represents the best option for customers. (Action recommended for current business plan.)

[Outcome: You showed how narrative has been developed to better demonstrate how our plan is the best option for customers.]

### **A.20 Eliminate double-counting of needs and benefits**

We recommend you check needs and benefits are not double-counted within business plan lines or between base and enhancement lines. (Action recommended for current business plan.)

[Outcome: Since our initial audit you reviewed the investment proposed at each site to remove overlaps resulting from duplicate needs, or the same asset being addressed by different needs, and applied proportional allocation.]

### **A.21 Align EDA values with sub-plan values:**

We recommend you check that EDA values reflect your current estimate of expenditure for each sub-plan. (Action recommended for current business plan.)

[Outcome: You explained that this was done as part of the final optimisation modelling in EDA .We did not investigate further.]

### **A.22 Appointed business costs**

We recommend checking that the costs fall within the appointed business and hence this price review. (Action recommended for current business plan.)

[Outcome: You confirmed that the review had been carried out.]

### **A.23 Capitalisation of software services**

We recommend clarifying the approach to capitalisation, especially of software as a service, which increasingly features in company plans. (Action recommended for current business plan.)

[Outcome: You explained that you are proposing a Totex based on a blend of capital and opex, subject to ongoing review.]

### **A.24 Complete the benefits assessment**

We recommend completing the benefits assessment in time for the phase 2 EDA review, and in any case before the final EDA business plan compilation. (Action recommended for current business plan.)

[Outcome: You explained that your final plan uses benefit: cost ratio to prioritise expenditure.]

### **A.25 Present best evidence of need:**

We recommend that in your narrative you present the evidence of the need for any change in base expenditure. (Action recommended for current business plan.)

[Outcome: addressed in PR 24 business plan narrative.]

## A.26 AMP9 engineering preparatory costs

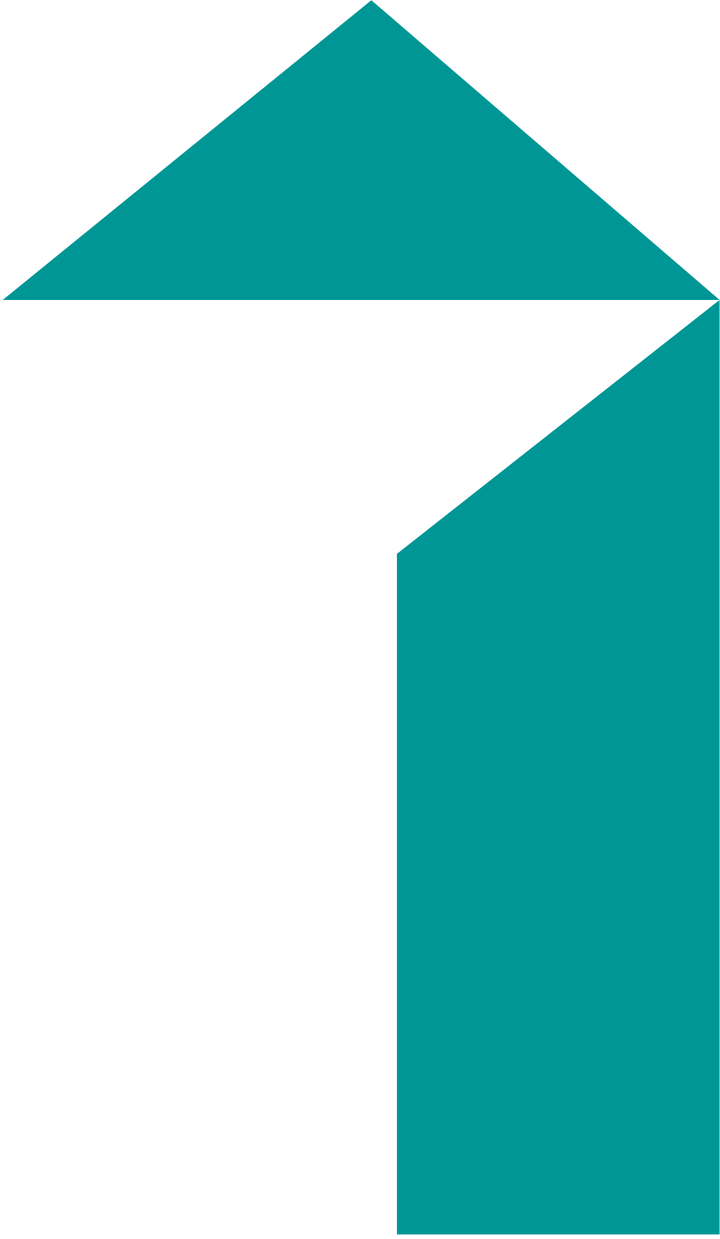
We **recommend** reviewing the AMP9 preparatory cost allowance to check that anticipated efficiency is deliverable, after incurring asset data collection costs.

[Outcome: You confirmed that you are satisfied that a reduction in preparatory costs is appropriate, given the anticipated reduction in enhancement programmes.]

## A.27 Fleet asset life

Fleet asset life: We **recommend** reviewing whether fleet asset depreciation life is appropriate.

[Outcome: We omitted to properly reference this in our initial report but understand from our wider assurance of your business plan that depreciation lives were reviewed]



## **A1-6 Final DWMP**





# Assurance report

Drainage and wastewater management plan

May 2023



Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

Wessex Water  
Claverton Down  
Bath  
BA2 7WW

Mott MacDonald Limited. Registered in  
England and Wales no. 1243967.  
Registered office: Mott MacDonald House,  
8-10 Sydenham Road, Croydon CR0 2EE,  
United Kingdom

## Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	29 May 2023	AIJ Heather	Y Zhang	AIJ Heather	First issue

**Document reference:** 100416626-001 | A |

**Information class:** Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

# Contents

1	Introduction	1
2	Scope of assurance	2
3	Findings	3
3.1	Guiding principles:	3
3.2	Meeting the planning objectives:	4
3.3	Processes and links to your PR24 business plan:	4
3.4	Objectives set out in the Government's Storm Overflows Discharge Reduction Plan:	4
3.5	Best value plan for customers and the environment:	5
4	Assurance statement	7

## Tables

Table 3.1: Observations on your adoption of the Defra Guiding Principles for DWMPs	3
------------------------------------------------------------------------------------	---

# 1 Introduction

Drainage and wastewater management plans are a new way for sewerage companies to publish their plans for long-term management of the sewerage system. They bring together all the activities needed for long-term management of wastewater services, including the prevention of flooding, storm overflows, accommodating growth, and improving environmental performance.

Your draft cycle 1 drainage and wastewater management plan was published for consultation in June 2022. Ofwat wrote to wastewater companies in October 2022, challenging them to fully meet the targets set in Defra's Storm Overflow Discharge Reduction Plan, with better-developed costs and benefits, more ambitious improvements from base expenditure and nature-based solutions, and to bring more focus and maturity in partnerships with other relevant organisations.

Since publishing your draft DWMP you have continued to develop your plan and to adopt regulatory requirements for your final DWMP, which is to be published on 31 May 2023.

Major steps include responding to stakeholder consultation responses, planning to fully deliver the Defra Storm Overflow Discharge Reduction Plan, integrating your WINEP programme as proposed to the Environment Agency, and improving links to your base expenditure plan.

Since the WINEP programme is yet to be finalised, there may be further changes to the plan in preparation for the 2024 price review plan to be published in October 2023.

This report is a brief summary of the scope of our audits, our findings, and our concluding assurance statement.

## 2 Scope of assurance

A document “Expectations for assurance of cycle 1 draft and final drainage and wastewater management plans (DWMPs)<sup>1</sup>” was issued to sewerage company CEOs by Defra, the Environment agency and Ofwat on 18 February 2022. It set out the regulators’ expectations for Board assurance statements, saying they should state that they are satisfied that:

1. The guiding principles and the DWMP [Drainage and Wastewater Management Plans] technical framework is being followed and applied.
2. The planning objectives are being met (both common and bespoke).
3. There are clear links and processes in place to ensure the appropriate DWMP interventions, including partnership and co-funded schemes, will be put forward for investment in PR24 business plans.
4. Measures are in place to achieve objectives set in the Government’s Storm Overflows Discharge Reduction Plan – consulted in March 2022 and to be finalised in September 2022]
5. It is a best value plan for customers and the environment for managing and developing drainage and wastewater services and is based on robust evidence and costing processes.

Since the draft DWMPs were published, stakeholders have provided feedback for companies to consider as they prepare their final DWMPs. Ofwat published a letter “Ofwat’s industry overview of draft drainage and wastewater management plans 2022” on 10 October 2022, in which it challenged companies to be more ambitious in reducing storm overflows from sewers, provide stronger evidence of needs, cost and benefits of solutions, be more

ambitious in prioritising improvements from base expenditure, make more use of nature-based solutions, and develop more mature, focused, partnership solutions.

Defra and the Environment Agency also provided feedback. Defra confirmed that companies should plan to deliver the sewer overflow reduction plan in full, within Defra’s timescale of 38% of high priority overflows being improved by 2035.

Other stakeholders providing feedback included Environment Agency, Natural England, River Trusts, CC Water and four customer responses.

We asked you to show what work you have done to respond to the feedback and further develop your DWMP. Our observations and conclusions are summarised below.

---

<sup>1</sup> [Guiding principles for drainage and wastewater management plans - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/111111/guiding-principles-for-drainage-and-wastewater-management-plans-2022.pdf), accessed May 2023.

## 3 Findings

### 3.1 Guiding principles:

You showed the steps you have taken to adhere to the Water UK guiding principles for DWMPs. We observed that since receiving feedback on your draft DWMP, you have continued to develop your plan in line with the Defra requirements and following the Water UK framework<sup>2</sup>. Table 3.1 summarises our key findings on your adoption of the Guiding Principles.

**Table 3.1: Observations on your adoption of the Defra Guiding Principles for DWMPs**

Guiding principle	Finding
Be comprehensive, evidence based and transparent in assessing, as far as possible, current capacity and actions needed in 5, 10 and minimum 25-year periods considering risks and issues such as climate change. Plans should also align, as far as possible, with other strategic and policy planning tools.	<p>You have continued to develop sewer models, in priority order, to better understand the effects of climate change, population growth and changes in urban drainage. Climate change is clearly a material risk to future performance.</p> <p>You have developed detailed scheme lists for major investment during AMP8.</p> <p>You have developed your plans in line with your WINEP and environmental compliance strategies and 25-yr strategic direction.</p>
Strive to deliver resilient systems - that will meet operational and other pressures and minimise system failures.	You have developed your plan with a reliable wastewater network in mind. You showed how your main sewer models have been upgraded to improve the quality of forecasts.
Consider the impact of drainage systems on immediate and wider environmental outcomes including habitats and in	You have considered a wide range of solutions and their impacts on performance, the environment and costs.

<sup>2</sup> DWMP Framework Report Main Report September 2021.pdf (water.org.uk), Water UK 2021, accessed May 2023.

Guiding principle	Finding
developing options for mitigation to include consideration of environmental net gain and enhancement	Environmental net gain, especially biodiversity net gain, is not calculated in detail for every scheme at this stage.
Be collaborative - recognising the importance of sectors working together to consider current and future risks and needs and to deliver effective solutions, setting out how they will do this, how they have engaged with and responded to stakeholders.	Since your draft DWMP you have continued to work with stakeholders in your Catchment Panel and to develop partnership opportunities with local authorities and other organisations. Your approach appears to have the potential to be a stimulus for multi-organisation projects, for example benefitting Local Authority environmental strategies.
Show leadership - in considering the big picture for an organisation's operational capacity to develop and deliver the plan, and mindful of linkages with other strategic planning frameworks.	Your plan has developed in line with expectations to be a focal point for wastewater planning. It has clear integration with WINEP and maintenance strategies, with integration into the overall planning tools as other components of your PR24 investment plan.
Improve customer outcomes and awareness and that solutions and actions provide both value for money and consider societal benefits	<p>You have prioritised your plan to deliver the most beneficial outcomes first, for example to increase capacity at wastewater treatment works and to reduce the most important sewer overflows first.</p> <p>You have preferred the most cost-effective solution to meeting each statutory need, to reduce the impact on customer bills. You have taken account of wider stakeholder needs to help focus solutions on wider overall benefits.</p>

We were satisfied that you have taken account of Defra's guiding principles for DWMPs, together with the Water UK technical framework, and more stakeholder feedback, in developing your DWMP.

### 3.2 Meeting the planning objectives:

You showed how you have produced several 'scenarios' to reflect a range of planning objectives, which resolve identified issues over time scales. You showed how for each scenario, your plan identifies the activities that are likely to be required to deliver the planning objectives.

Your draft scenarios included a 'sound science' option which reduced sewer overflows more slowly than called for by Defra's storm overflow reduction plan. The scenario allowed time for more detailed investigations of catchment-level options to some mid-risk sewer overflows.

You showed how none of the feedback on your draft plan supported your 'sound science' option, so you have dropped it from your final DWMP.

I was satisfied your final DWMP plans to meet the objectives set out in Defra's storm overflow reduction plan and your own 25-year strategy.

### 3.3 Processes and links to your PR24 business plan:

You showed how your plan is built up from proposed interventions to the issues that have been identified and how it feeds directly into investment plans being compiled for PR24. I was able to trace from your compiled tables back to your detailed plan, and from there to an individual scheme appraisals or budget lines. Examples included single projects for high-cost or high-risk schemes, and block budgets for minor works.

You showed how your final DWMP plans have been fed directly to your draft PR24 plans. You explained that there might be further amendments as your PR24 plan is finalised, and hence that there may some changes presented in your DWMP tables at PR24.

Stakeholder feedback on your draft DWMP challenged you to make more use of partnership funding opportunities.

We noticed you have made good progress in developing partnership funding opportunities and that significant benefits may be realised. We recognise that

the nature of partnership funding is that many potential partners are unable to fully commit until project-level details and timescales are finalised, together with their own funding. Hence partnership funding is likely to develop and to change over time as projects reach their delivery phase. It might be that even after PR24, partnership funding is still tentative for many schemes.

Considering the sewer overflow reduction plan, you showed how you have assessed each of your sewer overflows and given each a priority for further investment. Some appear not to overflow nor to present a risk of significant harm to the environment, whereas others require investment to meet the Defra objectives. Since your draft DWMP, you have adopted the full pace of the Defra sewer overflow reduction plan.

You showed your current WINEP programme of 148 schemes, including schemes to improve bathing water quality and reduce sewer overflow frequency.

We were satisfied that you have clear and direct links between your DWMP and PR24 business plans.

### 3.4 Objectives set out in the Government's Storm Overflows Discharge Reduction Plan:

You showed how you have taken account of the March 2022 consultation document for storm overflow reduction and subsequent stakeholder feedback.

Your draft DWMP planning scenarios included a range of delivery timescales for the storm overflow reduction plan, with indicative costs for each option.

Your final DWMP adopts Defra's Storm Overflows Discharge Reduction Plan<sup>3</sup>, a development from your draft DWMP in which you considered the plan to be prohibitively expensive for implementation in full.

Considering the use of nature-based solutions, you showed how you have assessed costs and benefits of a range of options for nature-based solutions including diverting rainwater drains from sewers to sustainable drainage systems and providing treatment for sewer overflows.

We challenged whether the apparently high cost of nature-based solutions results from a less commoditised market for such projects. You showed how re-routing rainwater often requires very large projects, compared with installing additional storage, leading to high costs for large-scale nature-based projects. You have used GIS-based tools linked to network models, to identify the best value locations for rainwater disconnection.

You explained that scaling-up the design and delivery processes to support the sewer overflow reduction programme will be challenging, given the scale of the programme nationally. You have been engaging with your supply chain about future workload, including seeking new skills to improve 'green' solution design and delivery.

We were satisfied that you are planning to meet Defra's requirements, noting that the cost is relatively high and, at a national level, scaling-up for delivery is a major undertaking.

### 3.5 Best value plan for customers and the environment:

You showed how you have reviewed indicative costs and benefits for resolving each identified issue and selected the most cost-beneficial (or least cost, as appropriate) option for each issue.

Your options include traditional, low-energy and nature-based solutions, as well as potential for partnership funding. Your team includes roles to identify potential scheme and funding partners where appropriate, placing you well to realise partnerships as the plan moves to delivery.

It appears that the initiative and pace of Water Company investment may act as a catalyst for partners coming together, with the potential for significant efficiencies compared with each agency attempting to solve problems individually. For example, reducing rainwater runoff could reduce highway and property flooding, reduce land erosion and reduce sewer overflows.

You showed how accelerating the early years of your plan to meet the Defra Sewer Overflow Reduction Plan timescale would likely lead to a greater proportion of traditional 'grey' solutions, compared with your now-discontinued 'sound science' option which allowed for more site-level research prior to investment. It was not clear how much the outcomes would differ between the two options in reality, since that would depend on the outcome of research under the 'sound science' option.

Considering nature-based solutions, you have continued to develop your proposals for treating water from some storm overflows using nature-based techniques. You propose to seek a discharge permit for those sites, thereby making them into the equivalent of small treatment works. We understand that the Environment Agency is considering your proposals but has not given its support. We agree that if a treated overflow is still considered to be 'spilling' it

---

<sup>3</sup> [Storm Overflows Discharge Reduction Plan.pdf](#) (publishing.service.gov.uk), Defra, August 2022, accessed May 2023.



may be difficult to recognise sufficient benefit from the scheme to justify the approach, even though environmental harm could be reduced.

You showed how your plan includes increasing the length of sewers sealed against infiltration, to reduce inflow from groundwater and improve the capacity of sewers to cope with storm events.

We were satisfied that your DWMP is based on best-value principles of focusing solutions only on the validated need and selecting the most cost-beneficial or least-cost solution for the need.

## 4 Assurance statement

To: Wessex Water audit and risk committee:

In my professional opinion and to the extent disclosed by sampling, I am satisfied that your cycle 1 drainage and wastewater management plan (DWMP) has been developed:

1. Following and applying the guiding principles and the DWMP technical framework.
2. To meet the common and bespoke planning objectives, to the extent that the objectives have been finalised at this stage.
3. Has clear links and processes in place to ensure the appropriate DWMP interventions, including partnership and co-funded schemes, will be put forward for investment in PR24 business plans, once the DWMP is finalised.
4. With the intention of being able to meet the objectives of the Government's Storm Overflow Discharge Reduction Plan.
5. With an approach that will enable a best value plan for customers and the environment for managing and developing drainage and wastewater services and is based on robust evidence and costing processes.



## **A1-7 Final WRMP**

Matt Greenfield  
Wessex Water  
Claverton Down  
Bath  
BA2 7WW

**Your Reference**

**Assurance: Final water resources management plan**

**Our Reference**  
100416626-001

15 August 2023

Dear Matt,

You are preparing your final Water Resources Management Plan 2024 (fWRMP24) and asked us to provide assurance prior to your plan being published.

Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

We reviewed your fWRMP24 during its documentation in June and July 2023. This letter sets out the scope our audit and approach; our findings and recommendations; and our assurance statement.

T +44 (0)1223 463500  
mottmac.com

**Scope of audit**

Our assurance has been split into two stages:

Stage 1 – we reviewed your responses to the regulatory feedback to ascertain:

- the extent to which you have addressed the regulatory must requirements, according to Defra's WRMP Direction statement, which you have to meet to publish a legally compliant plan,
- the extent to which you have addressed the Environmental Agency (EA) recommendations, which if not addressed may lead to a risk to public water supplies and/or the environment.

Stage 2 – we are reviewing your final data table that submitted as part of the plan to

- assess the accuracy and completeness of the data reported.

**Approach to the Stage 1 audit**

You provided a draft statement of responses in June 2023. We reviewed your Responses 1 – 67 in section 2, including Recommendation 6: to ensure the plan is legally compliant by adhering to the WRMP Directions.

At our audit.

- We reviewed the regulatory recommendations, your responses and the relevant supporting evidence,
- We provided feedback in the form of comments against your responses,

- We did not review your other sections or other responses that were included in your documentation.

### **Approach to the Stage 2 audit**

You have provided us with your completed final WRMP tables, the relevant supporting documentations, and the change log.

At our audit:

- We reviewed the changes you made in the table based on your change log and the supporting documentation by applying a random check approach. We therefore did not review every single cell or every single line.
- We have not reviewed your table 5b, 5c and 6 as you told us there is no change on these tables compared to the draft submission where table 5b remained blank.
- We provided feedback according to our review and by marking whether the table audit status is completed or not, as shown in Appendix B.

### **Findings and recommendations**

#### **Responses to the regulatory feedback (Appendix A):**

Appendix A shows the audit status where twenty-four are green (response complete and satisfactorily addresses the representation), one is amber (outstanding actions to fully address query or risks will remain) and none are red (incomplete and not ready for review).

Our one amber query relates to the following actions:

- Non delivery/late delivery of the WCWR Regional Plan (R5.1):
  - this representation could be considered technically complete. The query relates to the regional plan and not the WRMP and therefore is outside the scope of the Statement of Response. However, an answer has been provided by Wessex and highlights that delivery is outside the direct control of Wessex and is dependent on other members of the WCWR. We **recommend** you agree and publish a timetable of ongoing engagement between companies and expected dates for publication of plans and documents to assure regulators you are working to produce a consistent regional plan. This response will likely remain amber as it is not wholly within the control of Wessex.

#### **EA Recommendations 1 – 5**

The Environment Agency made 18 separate queries across 5 distinct recommendations. The themes covered were:

1. environmental obligations for sustainable abstraction,
2. water resource zone integrity,
3. achieving Government expectations for reducing PCC to 110 l/h/d,
4. achieving Government expectations for reducing leakage by 50%,
5. alignment of WRMPs with Regional Plans.

As a result of this you have produced three scenarios which consider the different timings for sustainability reductions and have set out details of investigations and activity you are undertaking to achieve your obligations. You showed me evidence

of your ongoing engagement with the Environment Agency in which they agreed activity required to address their recommendations . Where there is reference to legal compliance, e.g. within Water Environment Regulations 2017 and Conservation of Habitats and Species Regulations 2017, this is not assured as part of our review.

You have provided additional detail and modelling relating to the integrity of your water resource zone. You have set out how growth will impact subzones within your WRZ and how your preferred plan addresses this and maintains the integrity of the WRZ.

We have confirmed your plan includes meeting government expectations for PCC and leakage by 2050, based on the information you have provided. However, we also **recommend** you set out the alignment of your plan with interim targets that the Government has set out within its Environmental Improvement Plan 2023.

You have highlighted your agreement and intent for your WRMP to align with other companies within the West Country Regional Planning Group. However, completion is held back because South West Water's WRMP is delayed and contents of its WRMP is beyond your control. You showed that you have ongoing engagement with South West Water and explained that you intend to align plans across the regional group through this process.

### **EA Recommendation 6 (Defra Direction Failures)**

You have provided responses to the seven Defra Direction Failures and our review is that they address the causes of the failures as explained in the Environment Agency's representation. We consider that all these representations have been satisfactorily responded to within your Statement of Response.

#### **Data Table (Appendix B):**

Appendix B shows the audit status for the data table where 2 tables are green (table completed and audit completed), 2 tables are red as not completed hence cannot be audited, 1 table is amber as partially audited and the table is not fully completed, and 3 tables are grey as not included in the review.

During the table review, you have provided the relevant source files to support the changes made in the data table. Due to the number of files involved, we suggest you consider improving the structure and storage of the source files in the future.

You have demonstrated that you have implemented a change control by using a change control log. We recommend that you consider improving this process by introducing a sign off procedure.

**Assurance statement**

I refer to my review of technical aspects of Wessex Water’s responses to the regulatory recommendations for the final water resources management plan (fWRMP), which have been audited under my direction. We were given free access to people and information as necessary to complete our work.

In my professional opinion, based on and to the extent disclosed by the reviewing carried out and as described above,

1. All responses to EA’s recommendation related to the ‘Defra Direction, have been adequately addressed and assured.
2. All responses to the EA’s other recommendations, except one, have been adequately addressed and assured. There are outstanding actions identified for Response R5.1.
3. The data tables have been completed to reflect the changes you proposed for the final submission.

Andrew Heather  
 Technical assurer

**Use of this document**

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

**Document history**

<b>Issue</b>	<b>Date</b>	<b>Author</b>	<b>Checker</b>	<b>Approver</b>	<b>Purpose</b>
1	06 July 2023	A Heather R Henderson	Y Zhang	A Heather	Draft statement: audits incomplete.
2	13 July	R Henderson	Y Zhang	A Heather	Updated statement: audits incomplete.
3	21 July	Y Zhang	R Henderson	A Heather	Updated statement: Stage 2 is in progress
4	10 Aug	Y Zhang	R Henderson	A Heather	Updated statement: Stage 2 audit status
5	14 Aug	Y Zhang	R Henderson	A Heather	Updated Stage 2 audit status
6	15 Aug	Y Zhang	R Henderson	A Heather	Final version



## Appendix A: Assurance Checklist

The table below shows the audit status of each response.

Recommendation	Reference	Status
<b>Recommendation 1:</b> Ensure its draft plan meets the company's environmental obligations and achieves sustainable abstraction	R1.1 Delays in implementing sustainability reductions	
	R1.2 Timing of Conservation of Habitats and Species Regulations 2017 solutions	
	R1.3 Show that your plan meets requirements for protected areas, particularly the river Hampshire Avon SAC	
	R1.4 Continue to work with Veolia Water Projects (VWP) to come to an agreement on the LB bulk import	
	R1.5 Further consideration should be given to feasible options which could provide sources to replace sustainability reductions on the Hampshire Avon	
	R1.6 Abstraction Incentive Mechanism schemes (AIMS)	
	R1.7 There are a number of WINEP investigations currently being undertaken that do not appear in the WRMP	
<b>Recommendation 2:</b> Review the integrity of the single water resources zone covering the whole supply area	R2.1 Water resource zone modelling outputs	
	R2.2 Water resource zone assessment	
	R2.3 Water supply zone figure showing new grid connections	
<b>Recommendation 3:</b> Ensure its draft plan per capita consumption meets the government's target of 110 litres per person per day by 2050 or explains the reasons why it can't achieve this	R3.1 The least cost plan does not meet Government expectations	
	R3.2 Unmeasured household per capita consumption (PCC)	
	R3.3 Meter penetration inconsistencies between plan and Tables	
<b>Recommendation 4:</b> Ensure its preferred, most likely pathway of its draft plan includes reducing leakage by 50% from 2017/18 levels by 2050	R4.1 Leakage reduction does not meet Government expectation (Direction 3(m))	
<b>Recommendation 5:</b> Ensure the company works with neighbouring companies to make a firm decision on strategic resource options.	R5.1 Non delivery/late delivery of the WCWR Regional Plan	
	R5.2 Cheddar 2 –Strategic Regional Option (SRO) does not feature in the company's preferred or adaptive plan	
	R5.3 Timing of the Poole effluent recycling transfer (PERT) option is inconsistent throughout the plan and with SWW's WRMP24	
	R5.4 Mendip Reservoir option selected under high needs pathway. Inconsistent with SWW plan and WCWR's Regional Plan.	
<b>Recommendation 6:</b> Ensure the plan is legally compliant by adhering to the WRMP Directions	R6.1 Direction 3(c)sub-paragraph (b), including but not limited to drought severity;	
	R6.2 Direction 3(e)(ii) and (iii)	
	R6.3 Direction 3 (f) (iii)	
	R6.4 Direction 3(g) (ii)	
	R6.5 Direction 3(i)	
	R6.6 Direction 3(m)	
	R6.7 Direction 3(n) (ii)	

### Key to the assurance status

Code	Meaning
	Assurance completed with no issue
	Assurance completed with actions identified (non-material)
	Assurance incomplete as not ready for review

**Appendix B: Assurance Checklist – Data Table**

Table	Audit Status
1	
2	
3	
4	
5	
5a	
5b	
5c	
6	
7	
8	

Code	Meaning
	Assurance completed with no issue
	Assurance completed with actions identified
	Assurance incomplete as not ready for review
	Not to audit as no change compared to draft WRMP

## A1-8 DWI

Matt Greenfield  
Wessex Water  
Claverton Down  
Bath  
BA2 7WW

**Your Reference**

**Assurance: Drinking Water Inspectorate (DWI) compliance measures**

**Our Reference**  
416627

29 June 2023

Dear Matt,

You are required to provide a submission to the DWI to set out your plans for long-term improvements to drinking water quality.

Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

We reviewed the key elements of this plan during January and February 2023. This letter sets out the scope our audit and approach; our findings and recommendations; and our assurance statement.

T +44 (0)1223 463500  
mottmac.com

**Scope of audit**

The scope of our assurance was to:

- Review the key plans in your long-term drinking water quality improvement plans in relation to the DWI 'Long term planning for the quality of drinking water supplies' guidelines
- The key plans are: Lead pipe reduction; Maundown treatment works resilience; and nitrate removal at Sturminster Marshall/ Shapwick Treatment Works.
- Review the Appendix B submission from the DWI guidance for the above (Appendix B from the DWI guidance sets out a template for the submission, each of the key plans have a separate Appendix B submission).

**Approach to the audit**

We agreed a set of tests to assess completeness and accuracy of Appendix B submission. This formed the basis of our audit.

- We met with the Appendix B authors and compliers to check that the relevant items from the test had been appropriately addressed and documented.
- We provided feedback in the form of comments against the tests and provided recommendations for improvements.

**Audit status**

Each document has been reviewed and audits completed in January and February 2023. Audit feedback was provided for all three plans in February 2023.

## Findings and recommendations

### Lead reduction

Lead pipe replacement is an established enhancement expenditure to improve water quality at the customer tap, this is supported by DWI regulatory guidance which sets the ambition that all water supply should be 'lead-free'. The DWI does not set out specific timelines to achieve this ambition. In the DWI submission, you propose to retain the current approach of pro-active and re-active replacements, with some changes to how the pro-active replacements are prioritised. This will achieve around 6000 pipe replacements in the next AMP. No material issues were found in the audit, however the lead strategy document was still in production and not reviewed as part of the audit.

Recommendations from the audit are:

1. Complete drafting of Lead Strategy document and ensure the strategy and Appendix B submission align.
2. Clearly articulate the impact on the 'lead-free' ambition for each option in the strategy e.g., the number of pipes to be replaced and how long it would take to become lead-free for each option.
3. Consider the inclusion of additional more ambitious options that would mean the lead-free ambition is met earlier than the chosen option (potentially up to the deliverable 12,000 pipes an AMP).

### Maundown resilience

At the time of our audit, you were considering whether to propose work at Maundown as part of your water quality and resilience submission. We carried out a more detailed review and you have decided that work at the site would be more appropriately funded through base expenditure, should the work go ahead.

### Nitrate removal

You propose to supplement the blending scheme at Sturminster Marshall water treatment works with ion exchange nitrate removal. Your approach appears to be based on robust data which shows a continuing rising trend of nitrate in raw water, beyond that you expected in your PR19 forecasts.

There were no recommendations from the audit.

### DRAFT Assurance statement

Considering our review of technical aspects of Wessex Water’s Long Term Drinking Water Improvement Plans, which have been audited under my direction, we were given free access to people and information as necessary to complete our work.

In my professional opinion, based on and to the extent disclosed by sampling carried out and as described above,

1. All elements of the Appendix B submissions from the DWI Long Term Drinking Water Improvement Guidelines are complete for the three key plans (Lead reduction, Maundown resilience, and Nitrate Removal)
2. The plans are aligned to the guidance provided by the DWI and address the requirements for long-term improvement of drinking water quality.

In addition to the points above we gave feedback with minor recommendations to improve the clarity or scope of some points of detail in addressing the planning guideline and reporting process.

Andrew Heather  
Technical assurer

#### Use of this document

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

#### Document history

Issue	Date	Author	Checker	Approver	Purpose
1	26/06/2023	M Plaha	Y Zhang	A Heather	First issue.
2					
3					

## **A1-9 PCDs**

Matt Greenfield  
Director of regulation and strategy  
Wessex Water  
Claverton Down  
Bath  
BA2 7WW

**PR24: price control deliverables**

22 September 2023

Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

Dear Matt,

You asked us to review your proposed PR24 price control deliverables (PCDs), under our technical assurance contract with you. For each PCD, we considered:

1. The need for the PCD
2. Whether your proposal is clearly described
3. How the PCD will be measured and reported
4. The specific conditions that apply to the allowance
5. Your proposals for assurance
6. The proposed PCD payment rate.

We reviewed your proposed PCDs during development and immediately prior to their being finalised for your published business plan. We provided written and oral challenge and feedback, including a table of challenges to which you responded with the actions you have taken.

When considering Ofwat requirements we referred to Ofwat's PR24 final methodology Appendix 9, and its information letter *IN23/05 Further guidance on price control deliverables for PR24*.

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.



## Findings

### 1. The need for the PCDs

You propose PCDs for areas where the enhancement expenditure is greater than 1% of price control totex, other than in three wastewater areas (PCDWW2, PCDWW12, PCDWW30) where you have set out the reasoning for not proposing a PCD at this stage.

For areas where the expenditure is less than 1% totex for the water or wastewater service, but there are no other regulatory mechanism providing customer protections, you have applied a threshold of 0.5% of price control totex to consider whether a PCD would be proportionate.

Based on this approach, you have proposed seven PCDs for water, and nine PCDs for wastewater.

We concluded that you have identified the need for PCDs in line with Ofwat's requirements.

### 2. Whether your proposal is clearly described.

Your narrative "WSX26 – Price control deliverables (PCDs)" provides a description of each proposed PCD, linked to the appropriate Ofwat driver codes. The descriptions are preceded by sections of the document that set the context and explain your overall rationale.

We made minor recommendations to improve the clarity of some PCD descriptions, which you took into account in your draft final version.

We concluded that you have provided descriptions of your PCDs in line with Ofwat's requirements.

### 3. How the PCD will be measured and reported

Your narrative describes the measurement and reporting of each PCD. For three PCDs – leakage, internal flooding and pollution – you propose an approach that is different to Ofwat guidance. You have already briefed Ofwat on your proposal and your narrative is clear in its description.

We made some challenges on the frequency of reporting and you responded by clarifying your draft final version.

We concluded that you have proposed measurement and reporting of most of your PCDs in line with Ofwat requirements, and you have clearly presented your alternative approach where appropriate.

### 4. The specific conditions that apply to the allowance

Your narrative includes a description of conditions that apply to the PCD, for example acceptance of completed works by technical regulators, or 'non' where appropriate. In this respect your experience has been that the scale of programmes such as WINEP may be beyond the monitoring resources of the Environment Agency, and it is therefore difficult to guarantee acceptance dates. You have therefore proposed evidence of your own completion as the condition for some PCDs, for example, the date of sending your completion notice to the EA. We suggest this could be supported by assurance of your completion reports.

We concluded that your identification of conditions was reasonable and in line with Ofwat guidance.

### 5. Your proposals for assurance.

Your narrative sets out your proposal for assuring each PCD.

We made minor challenges to clarify our intention on the frequency of assurance, which you addressed in your final draft.

We recognise the need to balance the provision of regular information with the regulatory burden of reporting too frequently. This could be an area for further discussion with Ofwat, for example to assure less frequently than annually for some programmes if they only deliver in year five.

We concluded that your proposals for assurance appear to be in line with Ofwat guidance.

#### 6. Your proposed PCD payment rates

Ofwat's guidance sets expectations for PCDs to recognise the value of the benefit to customers of the proposed enhancements, rather than just the private costs to the company. Your PCDs include a 'premium' so that non-delivery is more expensive than delivery.

For leakage, pollution and internal flooding, your proposed approach only incurs underperformance payments if you have not spent the whole of your allowance for those topics. In such an event, the ODI will apply an underperformance payment, and you will also have spent at least the full allowance. It appears that this will still create an incentive to deliver the performance commitment level within the allowance.

We made some minor challenges to be clear on the definition of the payments (for example the units, whether they apply for delayed delivery at the same rate as for non-delivery) and you took account of those in your final draft.

We concluded that your payment rates appear to have been proposed in line with Ofwat guidelines, noting your bespoke proposal for leakage, pollution and flooding, which still adopts the spirit of the guidance.

Yours sincerely

Dr Andrew Heather.  
Technical assurer

## **A1-10 eCAF DWI**

Matt Greenfield  
Wessex Water  
Claverton Down  
Bath  
BA2 7WW

Mott MacDonald  
22 Station Road  
Cambridge CB1 2JD  
United Kingdom

T +44 (0)1223 463500  
mottmac.com

## **PR24 enhanced cyber assessment framework: technical assurance**

27 September 2022

Dear Matt,

You have proposed actions to ensure compliance with the cyber assessment framework, for inclusion in your PR24 business. Subsequently you have been directed to plan to comply with the enhanced cyber assessment framework (eCAF) within the AMP8 period.

You asked us to assure your proposed activities and completion of the PR24 data table lines CW3.124-126, under our technical assurance contract with you.

### **1 Approach to audit**

We met your table compiler to review the proposed work and confirm that the table reflects the costs of the activities proposed.

We applied our standard PR24 tests to the table lines, to the extent that they applied.

### **2 Findings**

You showed how you have reviewed assets at site level and identified needs on the basis of the eCAF.

You showed how you have allocated the costs to the water price control in line with government requirements. A minor correction was made to the table commentary, to remove outdated reference to proportional allocation between water and wastewater.

We challenged you to show that the work will deliver the eCAF requirement.

- You showed the basis of your plan is to address site-specific needs, based on a local assessment and the requirements of the eCAF.

We challenged you to show that the work was all justifiably attributed to eCAF.

- You showed examples to illustrate that your activities only address needs related to the eCAF, with current equipment being in operational use.

We challenged whether the costing is based on high-level averages or a detailed assessment.

- You showed that although unit-cost allowances had been used, the activities were based on a detailed assessment of needs down to asset level.

We inquired as to the level of customer protection.

- You responded that you expected to sign a legal undertaking with the DWI as well as extending your proposed CAF PCD to cover eCAF. You would therefore be at risk of a double penalty if you did not deliver the full requirements.

**Assurance statement**

Considering our review of your proposed activities to comply with the DWI’s requirements for further enhancing cyber security, we audited your plan and lines CW3.124-126 of your PR24 data tables.

In my professional opinion, based on and to the extent disclosed by sampling carried out and as described above,

1. Your proposed activities are based on a reasonable assessment of need at your sites, using the eCAF requirements as the benchmark.
2. Your planned activities are limited to those necessary to deliver your eCAF obligations in the required timescale.
3. Customers are likely to be protected from delivery by a combination of a legal Undertaking with the DWI and a PR24 price control deliverable.

Yours sincerely,

Dr Andrew Heather  
Senior associate, asset management

**Use of this document**

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

**Document history**

Issue	Date	Author	Checker	Approver	Purpose
A	22 Sep 2023	AIJ Heather	Y Zhang	AIJ Heather	First issue.
B	27 Sept 2023	AIJ Heather	Y Zhang	AIJ Heather	Correction to MM branding and other marking.

## **A2-1 EY Report on PR24 submission**

## Agreed-Upon Procedures Report on PR24 Business plan data tables

The Directors  
Wessex Water Services Limited  
Wessex Water Operations Centre  
Claverton Down Road  
Claverton Down  
Bath  
BA2 7WW

28 September 2023

### *Scope and purpose*

We have performed the procedures enumerated below, which were agreed to by Wessex Water Services Limited (the “Engaging Party”), solely to assist you in with PR24 Business plan data tables submission, (“Subject Matter”) for the period from 1 April 2025 to 31 March 2035, and may not be suitable for another purpose.

### *Restricted use*

This agreed-upon procedures report (“AUP Report”) is intended solely for the information and use of the Engaging Party and is not intended to be and should not be used by anyone else.

### *Responsibilities of the Engaging Party*

Engaging Party has acknowledged that the agreed-upon procedures are appropriate for the purpose of the engagement.

Engaging Party is responsible for the Subject Matter on which the agreed-upon procedures are performed. The sufficiency of these procedures is solely the responsibility of the Engaging Party.

### *Responsibilities of the Practitioner*

We have conducted the agreed-upon procedures engagement in accordance with the International Standard on Related Services (ISRS) 4400 (Revised), *Agreed-Upon Procedures Engagements*. An agreed-upon procedures engagement involves our performing the procedures that have been agreed with Engaging Party, and reporting the findings, which are the factual results of the agreed-upon procedures performed. We make no representation regarding the appropriateness or the sufficiency of the agreed-upon procedures described below either for the purpose for which this AUP Report has been requested or for any other purpose.

This agreed-upon procedures engagement is not an assurance engagement. Accordingly, we do not express an opinion or an assurance conclusion. Had we performed additional procedures, other matters might have come to our attention that would have been reported.

### *Our independence and quality management*

In performing the Agreed-Upon Procedures engagement, we complied with the ethical requirements in the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA). We are not required to be independent for the purpose of this engagement. We are the independent auditor of the Entity and complied with the independence requirements of the IESBA Code that apply in context of the financial statement audit.

EY applies International Standard on Quality Management 1, which requires the us to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

*Description of procedures performed*

We have performed the procedures described below, which were agreed upon with Engaging Party, on PR24 Business plan data tables.

*Our procedures and findings included:*

<b>Table</b>	<b>Agreed Upon Procedure</b>	<b>Finding</b>
BIO2	<p>All Rows: Agree input cells for 2022-23 to APR 22-23 table 8B per the RAG4 line references provided in table BIO2 column BU.</p> <p>BIO2.1-30: Agree input cells for each forecast years to the underlying working "Opex Plan - AMP8 - PR24 working file", tab BIO2.</p>	No findings to report
CW11	<p>CW11.1-15: Agree input cells for all rows to underlying working documents, Opex Plan - AMP8 - PR24.</p> <p>CW11.16-30: Agree input cells for all rows to underlying working documents.</p> <p>CW11.11, 15: Agree sum of annual totals of CW11.11 and CW11.15 to CW1a.5 annual totals for all years.</p> <p>CW11.26 &amp; 30: Agree sum of annual totals of CW11.26 and CW11.30 to CW1a.12 annual totals for all years.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report
CWW11	<p>CWW11.1-13: Agree input cells for all rows to underlying working documents, Opex Plan - AMP8 - PR24.</p> <p>CWW11.14-26: Agree input cells for all rows to underlying working documents.</p>	No findings to report



Table	Agreed Upon Procedure	Finding
	<p>CWW11.7, 13: Agree sum of annual totals of CWW11.7 and CWW11.13 to CWW1.5 annual totals for all years.</p> <p>CWW11.20 &amp; 26: Agree sum of annual totals of CWW11.20 and CWW11.26 to CWW1.12 annual totals for all years.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	
PD1	<p>PD1.2 to PD1.13: Agree all input cells in column Q and R to source document “WW23 Historic price indices &amp; inflation forecasts PR24 version”, tab “RPI Forecast indices”.</p> <p>PD1.15 to PD 1.26: Agree all input cells in columns Q to column AB to source document “WW23 Historic price indices &amp; inflation forecasts PR24 version”, tab “CPIH Forecast indices”.</p> <p>PD1.27: Agree all input cells (columns L to Q) to respective columns in line PD1.33 for years from 2018-19 to 2023-24. Agree input cells (columns R to W) to respective columns in line (PD1.28 + 1%) for years from 2024-25 to 2029-30. Agree input cells (columns X to AB) to respective columns in line PD1.36 for years from 2030-31 to 2034-35.</p> <p>PD1.28: Agree all input cells to respective columns in line PD1.36.</p> <p>PD1.38: Agree all input cells in columns N to column AB to source document “WW23 Long term Inflation rate”.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report

<b>Table</b>	<b>Agreed Upon Procedure</b>	<b>Finding</b>
PD11	Agree all input cells in the table PD11 to the underlying working document "PD11 & PD12 workings", tab PD11.	No findings to report
PD12	Agree all input cells in the table PD12 to the underlying working document "PD11 & PD12 workings", tab PD12.	No findings to report
PD5	<p>PD5.1: Agree to RR27.4 for water resources and water network plus and RR27.12 for wastewater network plus and Bioresources.</p> <p>PD5.2: Agree Water Network Plus to sum of (DS1e.1, DS1e.4, DS1e.5, DS1e.11, DS1e.12) minus DS1e.7 and Wastewater Network Plus to sum of (DS1e.18, DS1e.19, DS1e.25, DS1e.26) minus DS1e.21.</p> <p>PD5.4 to PD5.6: agree data in columns E to I to APR 2022-23 table 2M. Agree forecast data in columns K to U back to CPIH adjusted figures of workbook "PD5 working document" tabs "Charges model processed 2023-24" and "Charges model processed 2024-25".</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report
PD9	<p>PD9.1 to PD9.4, PD9.7 to PD9.13: Agree entries for 2022-23 (column E to I) to the PD9 workings.xlsx spreadsheet, tab "Workings", and these to the respective tables referenced in column B.</p> <p>PD9.1 to PD9.4, PD9.7 to PD9.13: Agree future years entries (column J to S) to PD9 workings.xlsx spreadsheet, tab "Workings". Agree figures in Column G to K of "PD9 workings.xlsx" spreadsheet, tab "Workings" to the respective tables referenced in column B.</p> <p>PD9.6: Agree all input cells to PD9 workings.xlsx spreadsheet, tab "Workings".</p>	No findings to report

Table	Agreed Upon Procedure	Finding
	<p>Check that the values within the commentary are consistent with the information disclosed in the table PD9, if applicable.</p>	
RET1	<p>RET1.1-8: Agree input cells for all years except 2022-23 back to underlying working document, Opex Plan - AMP8 - PR24, tab RET1.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p> <p>RET1.9-12: Agree input cells for all years except 2022-23 to underlying workings, Opex Plan - AMP8 - PR24, tab RET1.</p> <p>RET1.13-17: Agree input cells for all years except 2022-23 to underlying workings, Opex Plan - AMP8 - PR24, tab RET1.</p>	No findings to report
RET1a	<p>RET1a.1-8: Agree input cells for all years except 2022-23 back to underlying working document, Opex Plan - AMP8 - PR24.</p> <p>Check that all values disclosed within the commentary are consistent with the information disclosed in the tables.</p> <p>RET1a.9-12: Agree input cells for all years except 2022-23 to underlying workings.</p> <p>RET1a.13-17: Agree input cells for all years except 2022-23 to underlying workings.</p>	No findings to report
RET2	<p>Agree 2022/23 entries to relevant rows in APR table 2F using the line reference ID's in the RAG 4 reference column.</p> <p>For each forecast years, agree input cells to the underlying working document "RET2 workings", tab RET2.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report

<b>Table</b>	<b>Agreed Upon Procedure</b>	<b>Finding</b>
RR1	<p>Agree all input cells for lines RR1.1 to RR1.74 to the corresponding lines in the underlying working document.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report
RR10	Agree all input cells in this table to the "Output RR10" tab of the Ofwat PR24 financial model.	No findings to report
RR11	Agree all input cells in this table to the "Output RR11" tab of the Ofwat PR24 financial model.	No findings to report
RR12	Agree all input cells in this table to the "Output RR12" tab of the Ofwat PR24 financial model.	No findings to report
RR13	Agree all input cells in this table to the "Output RR13" tab of the Ofwat PR24 financial model.	No findings to report
RR14	Agree all input cells in this table to the "Output RR14" tab of the Ofwat PR24 financial model.	No findings to report
RR15	Agree all input cells in this table to the "Output RR15" tab of the Ofwat PR24 financial model.	No findings to report
RR16	Agree all input cells in this table to the "Output RR16" tab of the Ofwat PR24 financial model.	No findings to report
RR17	<p>For all input cells in the table agree to the underlying working document.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report
RR18	<p>Agree all input cells for 2022-23 to corresponding lines in APR table 1A (as referenced in column P).</p> <p>For 2023-24 to 2029-30, agree all input cells to corresponding lines in the underlying working.</p>	No findings to report
RR19	<p>Agree all input cells for 2022-23 to corresponding lines in APR table 1C (as referenced in column P).</p> <p>For 2023-24 to 2029-30, agree all input</p>	No findings to report

Table	Agreed Upon Procedure	Finding
	cells to corresponding lines in the underlying working.	
RR2	<p>Agree all input cells in the table to the corresponding lines in the Financial Model.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report
RR2.25 - RR2.36	<p>For each year from 2025-26 to 2034-35, agree that:</p> <p>RR2.25 is 0.0 RR2.28 is 0.0 RR2.29 is 0.0 RR2.30 is 0.0 RR2.31 is 0.0 RR2.34 is 0.0 RR2.35 is 0.0 RR2.36 is 0.0</p> <p>RR2.26, RR2.27, RR2.32, RR2.33 : Agree input cells for each year from 2025-26 to 2029-30 to the corresponding lines in RR2 workings.</p>	<p>For FY2029-30, we noted a rounding difference between line RR2.33 and RR2 workings as follows:</p> <p>Value per RR2.33: £0.993m Value per RR2 workings: £0.994m Difference: -£0.001m</p> <p>No other findings to report</p>
RR2.37 - RR2.48	<p>For each year from 2025-26 to 2034-35, agree that:</p> <p>RR2.37 is 0.0 RR2.40 is 0.0 RR2.41 is 0.0 RR2.42 is 0.0 RR2.43 is 0.0 RR2.46 is 0.0 RR2.47 is 0.0 RR2.48 is 0.0</p> <p>RR2.38, RR2.39, RR2.44, RR2.45: Agree input cells for each year from 2025-26 to 2029-30 to the corresponding lines in RR2 workings.</p>	No findings to report
RR2.7 - RR2.12	<p>RR2.7-12: Agree RR2.7-8 to CW1 or RR2.9-10 to CWW1 for all years. Check that input cells RR2.11-12 are blank.</p>	No findings to report
RR20	Agree all input cells for 2022-23 to corresponding lines in APR table 1D (as referenced in column P).	No findings to report

<b>Table</b>	<b>Agreed Upon Procedure</b>	<b>Finding</b>
	For 2023-24 to 2029-30, agree all input cells to corresponding lines in the underlying working.	
RR25	For all input cells in the table agree to the underlying working document.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR26	For all input cells in the table agree to the underlying working document.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR27	Agree all input cells in the table to the underlying working document "RR27 & RR27a workings", tab RR27.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR27a	Agree all input cells in the table to the underlying working document "RR27 & RR27a workings", tab RR27a.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR28	Agree all input cells for 2022-23 to corresponding lines in APR table 2D (as referenced in column CB).  For 2023-24 to 2029-30, agree all input cells to corresponding lines in the underlying working.	No findings to report
RR29	Agree input cells for each year from 2024-25 to 2029-30 to the corresponding lines in the underlying working document as follows:  RR29.1 Water Resources	No findings to report

Table	Agreed Upon Procedure	Finding
	RR29.2 Water networks+ RR29.3 Wastewater networks+ RR29.4 Bioresources RR29.5 nil line RR29.6 nil line RR29.7 Residential retail RR29.8 nil line RR29.9 Legacy assets plus new additions	
RR3	Agree entries to the PR24 RCV Feeder Model.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR30	Agree all input cells to internal RORE model.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR6	Agree input cells to the relevant lines in PR24 revenue feeder model .  Agree input cells to the relevant lines of the Financial Model.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR7.14 - RR7.17	For each year from 2025-26 to 2034-35, agree lines RR7.14 to RR7.17 to underlying working document, which is calculated as follows: RR7.14 = HH unmeasured trade debtors / Annual HH unmeasured revenue x 365 RR7.15 = HH measured trade debtors / Annual HH measured revenue x 365 RR7.16 = HH Receipts in advance unmeasured / Annual HH unmeasured revenue x 365 RR7.17 = HH Receipts in advance measured / Annual HH measured revenue x 365	No findings to report

<b>Table</b>	<b>Agreed Upon Procedure</b>	<b>Finding</b>
RR7.2-7	Agree input cells to internal workings of retail costs for PR24. Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR7.20-26	Agree input cells to source data and internal workings of retail costs for PR24.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR7.18	For each year from 2025-26 to 2034-35, agree input cells to underlying working document, which is calculated as follows: RR7.18 = measured income accrual / Annual HH measured revenue x 365.	No findings to report
RR7.49-57	Agree input cells to corresponding lines in underlying working document.  Check that the values within the commentary are consistent with the information disclosed in the tables.	No findings to report
RR9. 7-12	For each years from 2025-26 to 2034-35, agree all input cells for lines RR9.7 to RR9.12 to the corresponding lines in the underlying working document.	No findings to report
RR9.1-6	Agree values to RR9 tab of treasury model (exact replica of RR9 table).  Check total value agrees to pension value on line 69, column BO on Mar Model tab.	No findings to report
RR9.13-18	Agree all input cells for lines RR9.13 to RR9.18 to the corresponding lines in the underlying working document.	No findings to report
RR9.178-261	Agree values to RR9 tab of treasury model (exact replica of RR9 table).	No findings to report
RR9.19-135	Agree values to RR9 tab of treasury model (exact replica of RR9 table).	No findings to report
RR9. 172-177	For each years from 2025-26 to 2034-35, agree all input cells for lines RR9.172 to RR9.177 to the corresponding lines in the underlying working document.	No findings to report
RR9. 262-266	Agree all input cells for lines RR9.262 to RR9.266 to the corresponding lines in the underlying working document.	No findings to report



Table	Agreed Upon Procedure	Finding
SUP11	<p>Agree Retail Price Effect and Frontier shift assumptions to underlying working document.</p> <p>Agree expenditure weights to underlying working document.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report
SUP15	Agree all input cells in the table to the underlying working document "SUP15 workings", tab SUP15.	No findings to report
DS5	<ul style="list-style-type: none"> <li>a) Agree all input cells for 2022-23 to corresponding lines in APR table 2J (as referenced in column X).</li> <li>b) DS5.1: agree input cells for each forecast year to total capex costs in underlying workings for investments in treated water distribution tagged as "infrastructure".</li> <li>c) DS5.2: agree input cells for each forecast year to total capex costs in underlying workings for investments in treated water distribution tagged as "non infrastructure".</li> <li>d) DS5.4: agree totals for each year for columns (Network reinforcement capex + On site / site specific capex (memo only)) to capex totals for each year in table DS2e line DS2e.10. (except year 2022-23)</li> <li>e) DS5.4: agree totals for each year for Network reinforcement capex to capex totals per year in table DS2e line DS2e.1.</li> <li>f) DS5.5-6: For each forecast year agree total of DS5.5 + DS5.6 for columns (Network reinforcement capex + On site / site specific capex (memo only)) to total capex costs in workings for investments in foul and surface water drainage tagged as "infrastructure".</li> </ul>	<ul style="list-style-type: none"> <li>a-e) No findings to report</li> <li>f) For FY2023-24, we noted difference between total of lines (DS5.5 + DS5.6) and total capex costs in the working for investments in foul and surface water drainage tagged as "infrastructure" as follows:  Total of lines DS5.5 + DS5.6: -£4.934m Total per underlying working: -£4.981m Difference: £0.047m</li> <li>g) No findings to report</li> <li>h) For FY2023-24, we noted difference between DS5.9 "Network reinforcement capex" and capex totals in table DS3 line DS3.1 as follows:  Total per DS5.9: £4.700m Total per DS3.1: £4.652m Difference: £0.048m</li> <li>i) No findings to report</li> </ul>

Table	Agreed Upon Procedure	Finding
	<p>g) DS5.7: agree totals of columns (Network reinforcement capex + On site / site specific capex (memo only)) for each forecast year to total capex costs in workings for investments in foul and surface water drainage tagged as "non infrastructure".</p> <p>h) DS5.9: agree totals for each year for Network reinforcement capex to capex totals in table DS3 line DS3.1. (except year 2022-23)</p> <p>i) DS5.9: agree totals for each year for columns (Network reinforcement capex + On site / site specific capex (memo only)) to capex totals per year in table DS3 lines DS3.1+DS3.14 +DS3.6. (except year 2022-23)</p>	
PD10	<p>Column E, H and I: Check that the input cells are 0%.</p> <p>Column F and G: Agree input cells to underlying working "SD10 Calcs July 23", cell range H54 to I61.</p>	No findings to report
CW10	Agree all input cells in the table to BR Model Sept 2023 spreadsheet as included in the CW10 tab in that spreadsheet.	No findings to report
CWW10	Agree all input cells in the table to BR Model Sept 2023 spreadsheet as included in the CCW10 tab in that spreadsheet.	No findings to report
DS1e	<p>For DS1e column E agree input cells to Table 2E of APR23 (column E) as follows:            DS1e.1 = 2E.12            DS1e.2 = 2E.17            DS1e.11 = 2E.9            DS1e.25 = 2E.22 + 2E.25            DS1e.26 = 2E.24</p> <p>For DS1e column F agree input cells to Table 2E of APR23 (column F) as follows:            DS1e.4 = 2E.10            DS1e.5 = 2E.13            DS1e.7 = 2E.15            DS1e.12 = 2E.11</p>	No findings to report

Table	Agreed Upon Procedure	Finding
	DS1e.18 = 2E.23 DS1e.19 = 2E.25 DS1e.21 = 2E.27 DS1e.25 = 2E.22 DS1e27 = 2E.31	
PD4	Agree input cells in column 2022/23 to APR table 2L. Check input cells are zero for all future years.	No findings to report
RR21	Agree all input cells in column 2022/23 to corresponding lines of APR table 1E.	No findings to report
RR22	Agree all input cells in column 2022/23 to corresponding lines of APR table 4B.	No findings to report
RR23	Check all input cells are Zero.	No findings to report
RR24	Agree input cells to corresponding inputs of the Treasury Model for each year from 2024-25 to 2029-30 as follows:  RR24.1 - 14, RR24.16 –19, RR24.22- 46 - Agree input cells to Treasury Model, tab “WSX-RR24” RR24.15 - Agree input cells to Treasury Model, tab “RR24 Fixed Rate Debt” RR24.21 - Agree input cells to Treasury Model, tab “RR24 Floating Rate Debt” RR24.20 - Agree input cells to Treasury Model, tab “RR4” line RR4.33	No findings to report
RR5	Agree inputs cells to Treasury Model tab RR5 Allocation for lines RR5.1-25, RR5.26-49, RR5.98-165 Agree inputs cells to file “AMP8 Programme Capex WIP”, tab “RR5“ for lines RR5.50-97 Agree tax rates used in input cells RR5.44-49 and RR5.135 to tab “RR5 Allocation”.	No findings to report
RR4	Agree input cells in RR4.1 - 4.6 to corresponding lines “RR4a” tab of file “Wsx Model – Sep”. Agree input cells in RR4.7-85 to corresponding lines within “RR4 tab of “Wsx Model – Sep”. Agree overall debt balance (sum of RR4.9-26) equates to cell BO78 (net debt) on tab “Mar Model”, file “Wsx Model – Sep”	No findings to report

<b>Table</b>	<b>Agreed Upon Procedure</b>	<b>Finding</b>
RR8	<p>Agree input cells RR8.22-33 in the table to the underlying working document "RR8 workings", tab RR8.</p> <p>Check that the values within the commentary are consistent with the information disclosed in the tables.</p>	No findings to report

### *Limitations*

This agreed-upon procedures engagement is not an assurance or audit engagement, because the above procedures do not constitute either an audit or a review made in accordance with International Standards on Auditing (UK) or International Standards on Review Engagements (UK) or International Standards on Assurance Engagements, we do not express any assurance on the Subject Matter.

Had we performed additional procedures or had we performed an audit or review of the Subject Matter in accordance with International Standards on Auditing (UK) or International Standards on Review Engagements (UK) or International Standards on Assurance Engagements, we might have identified other issues that would be of relevance to you.

The Engaging Party is responsible for the source documents that are described in the specified procedures and related findings section. We were not engaged to perform and we have not performed any procedures other than those previously listed. We have not performed procedures to test the accuracy or completeness of the information provided to us except as indicated in our procedures. Furthermore, we have not performed any procedures with respect to the preparation or verification of any of the source documents. We have no responsibility for the verification of any underlying information upon which we relied in forming our findings.

Furthermore, we undertake no responsibility to update this Report for events and circumstances occurring after the Report is issued.



*Restriction on distribution and use*

Our Report is solely for the purpose set forth in the first paragraph of this Report and for your information and is not to be used for any other purpose or to be distributed to any other parties. This Report relates only to the accounts and items specified above and does not extend to any financial statements of Engaging Party taken as a whole. To the fullest extent permitted by law, we do not assume responsibility to anyone other than Wessex Water Services Limited for this Report.

*Ernst & Young LLP*

Ernst & Young LLP

## **A2-2 Statutory Year End Submission**

# **Independent Auditor's Report to the members of Wessex Water Services Limited**

## **Opinion**

We have audited the financial statements of Wessex Water Services Limited for the year ended 30 June 2023 which comprise the Income Statement, the Statement of Other Comprehensive Income, the Statement of Financial Position, the Statement of Changes in Equity, the Statement of Cash Flows, and the related notes<sup>1</sup> to 32, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and UK adopted international accounting standards.

In our opinion, the financial statements:

- give a true and fair view of the company's affairs as at 30 June 2023 and of its loss for the year then ended;
- have been properly prepared in accordance with UK adopted international accounting standards; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

## **Basis for opinion**

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to other entities of public interest, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

## **Conclusions relating to going concern**

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate. Our evaluation of the directors' assessment of the company's ability to continue to adopt the going concern basis of accounting included completing the following procedures:

- Gained an understanding of the process undertaken by management to perform the going concern assessment, including discussion with management to ensure all key factors were taken into account.
- Obtained management's forecast cash flows and covenant calculations covering the period from the date of signing to 30 September 2024 and agreed these to the Board and regulatory approved budgets and forecasts.
- Inquired of management as to their knowledge of events or conditions beyond the period of their assessment that may cast significant doubt on the entity's ability to continue as a going concern.
- Tested the mathematical accuracy of the cash flow forecasts, as well as the calculation of the forecast covenants.
- Compared forecast future cashflows to historical data, ensuring variations are in line with our expectations, such as historical performance, and understanding of the business and considered the reliability of past forecasts.

- Considered the Company's ability to obtain additional liquidity, with the support of our debt advisory specialists and agreed available facilities to underlying agreements and the extent of drawings thereunder to external confirmations.
- Performed forecast covenant testing and considered any potential indicators of breach in the assessment period.
- Considered two of the most severe downside scenarios modelled by management in respect of the assumptions used in the going concern assessment and performed sensitivity analysis on management's forecast cashflows to understand how more severe conditions would have to be to breach liquidity and/or covenants.
- Understood and challenged the Board's controllable mitigation plans and the forecast impact on the ability of the business to operate within its financial covenants. We obtained supporting documentation to evaluate the plausibility and achievability of management's mitigation plans considering actions delivered to date.
- Considered the results of other audit procedures and other knowledge obtained in the audit and whether it was consistent with or contradicted management's assumptions.
- Assessed the appropriateness of disclosures within the Annual Report and Accounts.

Our key observations:

- In March 2023, the Company secured a £300 million bond.
- In September 2023 the Group established a £5,000,000,000 Euro Medium Term Note programme.
- The Company also has a £225 million revolving bank facility available to draw upon during the going concern period, none of which has been drawn down at 30 June 2023.
- The Company has £265 million of debt maturity payments to make in the going concern assessment period.
- The Directors are satisfied that the issuance of debt included within the forecasts prepared for the going concern period is achievable.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the company's ability to continue as a going concern for a period to 30 September 2024.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the company's ability to continue as a going concern.

### **Other information**

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report in this regard.



## **Opinions on other matters prescribed by the Companies Act 2006**

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and directors' report have been prepared in accordance with applicable legal requirements.

## **Matters on which we are required to report by exception**

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or directors' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

## **Responsibilities of directors**

As explained more fully in the directors' responsibilities statement set out on page 143, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

## **Auditor's responsibilities for the audit of the financial statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

## ***Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud***

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect irregularities, including fraud. The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below. However, the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the entity and management.

- We obtained an understanding of the legal and regulatory frameworks that are applicable to the company and determined that the most significant are:
  - UK adopted international accounting standards
  - Financial Reporting Council (FRC)
  - Tax Legislation (Governed by HM Revenue and Customs)
  - General Data Protection Regulation
  - The UK Bribery Act
  - Anti-Money Laundering Legislation
  - Health & Safety Legislation
  - Ofwat Regulations
  - The Water Act (2003; 2014)
  - Environment Act (1995; 2021)
- We understood how Wessex Water Services Limited is complying with those frameworks by enquiring with management to understand how the company maintain and communicate its policies and procedures in relation to these areas. We evaluated the entity level control environment through discussion with management and in-house legal counsel and inspecting and observing the control environment.
- We assessed the susceptibility of the Company's financial statements to material misstatement, including how fraud might occur by meeting with management and internal audit to understand where they considered there was susceptibility to fraud. We also considered performance targets and the potential incentives or opportunities to manage earnings. We considered the programmes and controls that the Company has established to address the risks identified, or that otherwise prevent, deter and detect fraud; and how senior management monitors those programs and controls. Where the risk was considered to be higher, we performed audit procedures to address each identified fraud risk. These procedures included testing manual journals and were designed to provide reasonable assurance that the financial statements were free from material fraud.
- Based on this understanding we designed our audit procedures to identify non-compliance with such laws and regulations. Our procedures involved making enquiries of key management and in-house legal counsel, reviewing key policies, inspecting legal registers and correspondence of non-compliance from the relevant authorities and reports from any external legal teams, and reading board meeting minutes. We performed journal entry testing to ensure that there are no unusual legal or penalty expenses incurred during the year that haven't been disclosed and to ensure that the management is in compliance with the applicable framework. For any non-compliance noted, we assessed the accounting implications and read the financial statements to evaluate the appropriateness of the disclosures.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at <https://www.frc.org.uk/auditorsresponsibilities>. This description forms part of our auditor's report.

## Use of our report

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.



Simon O'Neill (Senior statutory auditor)  
Ernst & Young LLP  
Bristol  
19 September 2023

## **A3-1 CCG Report on PR24 submission and challenge diary**



**WESSEX WATER  
CUSTOMER CHALLENGE GROUP**

**Report on the  
Wessex Water 2025–2030  
Draft Business Plan**  
October 2023

# CONTENTS

CHAIR'S EXECUTIVE SUMMARY.....	1
1. INTRODUCTION .....	2
2. ABOUT THE GROUP AND ITS WORK .....	3
2.1 The Group's objectives.....	3
2.2 Membership and Governance.....	4
2.3 Sub-Groups .....	4
2.4 Meetings .....	5
2.5 Challenge process and documentation .....	5
2.6 Assurance.....	6
3. CUSTOMER AND COMMUNITY ENGAGEMENT FOR THE BUSINESS PLAN .....	7
3.1 The Group's review and challenge .....	7
3.2 Routine research.....	7
3.3 Customer willingness to pay for outcomes .....	8
3.4 Willingness to pay for Sustainable Abstraction.....	8
3.5 Social Tariff Cross Subsidy research .....	9
3.6 Outcome Delivery Incentive rates .....	9
3.7 Your Water, Your Say .....	10
3.8 Affordability and acceptability testing of the draft Business Plan .....	10
3.9 Public consultation on the Business Plan .....	12
3.10 Triangulation and synthesis of research findings .....	12
3.11 Overall quality of research .....	12
4. THE PR24 INVESTMENT PLAN .....	14
4.1 The Group's review and challenge .....	14
4.2 Key investment drivers .....	14
4.2.1 Statutory obligations.....	14
4.2.2 Customer priorities.....	15
4.3 The reflection of customers views and wishes in the draft Business Plan.....	15
4.3.1 Customer experience .....	15
4.3.2 Water safety and reliability.....	16
4.3.3 Sustainable abstraction .....	16
4.3.4 Sewerage .....	16
4.3.5 River and coastal water quality.....	17
4.3.6 Biodiversity and net zero carbon.....	17
4.3.7 Affordable bills.....	18
4.4 Trade-offs and bill impacts .....	18
4.5 Environmental ambition.....	18
4.6 Deliverability .....	19
5. BESPOKE PCS AND PRICE CONTROL DELIVERABLES .....	20
5.1 The Group's review and challenge .....	20
5.2 Bespoke PCs.....	20
5.3 Outcome Delivery Incentives.....	20
5.4 Price Control Deliverables .....	20
6. AFFORDABILITY .....	21
6.1 The Group's involvement .....	21
6.2 Affordability strategies and the Group's opinions .....	21
7. VULNERABILITY .....	23
7.1 The Group's review and challenge .....	23
7.2 Vulnerability strategies and the Group's opinions .....	23
8. CONCLUSIONS.....	25
8.1 The Group's review and challenge .....	25
8.2 The quality of customer and community engagement.....	25
8.3 The reflection of customers needs and wishes in the draft Business Plan .....	26
8.4 The acceptability and affordability of the Plan .....	26
8.5 Addressing customer vulnerability.....	27
APPENDICES:	
APPENDIX 1 Glossary .....	28
APPENDIX 2 List of Group members .....	29
APPENDIX 3 List of meetings .....	30
APPENDIX 4 The Group's assessment of its compliance against Ofwat's independent customer challenge requirements.....	33
APPENDIX 5 The Group's assessment of the WW's customer engagement against Ofwat's standards for high quality research.....	35
APPENDIX 6 Role of ICGs in the acceptability and affordability testing of the business plan – summary of key tasks identified in the Ofwat/CCW guidance and the Group's findings .....	39
APPENDIX 7 Challenge Log .....	43

# CHAIR'S EXECUTIVE SUMMARY

The Wessex Water Customer Challenge Group is an independent panel, made up of people with expertise in different aspects of what the company does. Our role is to question the company and to review its performance. The company produces a Business Plan, setting out its aims for the next five year period. This Plan is then submitted to the water industry financial regulator Ofwat. We have scrutinised the research the company has carried out into customers' views and examined how those views have been taken into account in the company's Plan. This Report sets out our findings.

The company has shared its thinking with us and given us advance notice of their research plans. Sometimes we would have liked more time to respond. We are pleased that the company has taken on board some of our recommendations and replied in detail to our requests for clarification.

The new Business Plan is being submitted at a time of rising costs. This has made customers more concerned about all the bills they are required to pay. At the same time, the public has become increasingly concerned about the causes of environmental pollution and the system of water company financing. The Government and regulators are instructing companies to go further in preventing pollution and in reducing the amount of water they take from nature.

Companies will need to invest in new solutions to these problems. The next period of investment (to be known as AMP8) will see much more money spent than ever before.

The need to undertake this work must be set against the costs for customers. The company also has to set out how it will help customers who might find it difficult to pay their water bill.

In order to understand the views of their customers, Wessex Water learns from complaints and contacts. It also undertakes regular tracking surveys. As part of the business planning process, it undertakes special research – this work is listed in our Report.

In all, we are satisfied that the research was carried out in line with the expectations of Ofwat. However, we feel that Ofwat's instructions on how research had to be carried out was not always in line with best practice. The research was generally of good quality.

The company has built its Plan and altered it in line with the views it has heard from customers. However, the biggest areas of spending are those dictated by the regulators and so the areas in which customer opinion has guided the content of the Plan are limited.

Again, we are satisfied that the company has taken account of customer priorities where the regulatory framework allows them leeway to do so.

Our colleagues who specialise in issues of affordability and vulnerability have reviewed the measures the company has put in place for vulnerable customers. The company has done well in this area of work in the past and we are happy that their policies will help. However, we will hold this under review as the tough economic situation continues.

As the company embarks on its biggest ever programme of works, and requires more of bill payers in order to do that, we have challenged the company to go further in sharing information. Customers need to know where and how effectively their bill money is being spent, and so the company should do more in keeping customers updated.

As Chair, I would like to thank the company for the way in which it has allowed us to carry out our role and to my fellow Group members for the considerable time and knowledge they have invested in the work. I also thank our Report writer for his efforts in producing this and all our other Reports and minutes.



**Dan Rogerson**  
Chair – Wessex Water Customer Challenge Group



# 1. INTRODUCTION

**The independent Customer Challenge Group (CCG) for Wessex Water (WW) is known as the Wessex Water Customer Challenge Group (the Group). It is regarded by Ofwat (the economic regulator for the water industry and England and Wales) as the Independent Challenge Group (ICG) for Wessex Water.**

The Group is independently chaired, and its membership includes representatives from various customer and stakeholder groups including charities, academic specialists in customer research, engagement and social policy, the Consumer Council for Water (CCW) and the Environment Agency (EA).

The purpose of this Report is to provide the WW Board and its customers and stakeholders with the Group's opinion of the

company's customer engagement undertaken for its Price Review 2024 (PR24, 2025 – 2030) Business Plan. It also reports on how this engagement has fed into the Business Plan and how well the Plan reflects customers' priorities and needs, including affordability and vulnerability.

A glossary of terms used in this report is provided in Appendix 1.

The EA, as a member of the Group, supports the views expressed in this Report. However, these views will not necessarily influence any subsequent position the EA takes as part of its ongoing statutory and regulatory duties associated with WW's environmental obligations.





## 2. ABOUT THE GROUP AND ITS WORK

### 2.1 The Group's objectives

**The Group was established in January 2016 as the Wessex Water Partnership with an independent chair and diverse membership representing various customer and stakeholder groups. The name Wessex Water Customer Challenge Group was adopted in April 2020.**

The Group's general roles are to:

- › Monitor and report on WW's delivery of all aspects of the final PR19 regulatory settlement from the perspective of its customers, including scrutiny and assessment of delivery against its outcomes and measures of success
- › Provide advice and challenge to WW on any proposal to share outperformance with customers over and above the requirements of the regulatory settlement
- › Provide advice to and challenge the company on policy areas such as customer engagement, customer service, affordability, vulnerability and tariffs
- › Provide advice and challenge to the company on its preparation for the next Price Review and its business plan for 2025-2030, particularly to ensure customers' views from the company's engagement feed into the business plan and to review and assess the company's approach to affordability and vulnerability.

The Group agreed with the company that its specific objectives for the PR24 Business Plan were to report on whether:

- › The customer research was high quality and was carried out in line with Ofwat/CCW guidance (including following Ofwat's guidance to ICGs for the review and challenge of WW's acceptability and affordability testing)
- › The Business Plan was challenged, including with regard to affordability and value for money for customers
- › The customer engagement and research informed the Plan and Long-Term Delivery Strategy.

The Group's Report would form part of the company's wider assurance in relation to Ofwat's Quality and Ambition Assessment (QAA) of company plans.

Information on the economic regulation of the water industry in England and Wales, including the setting of prices, is available on the regulator's website [www.wessexwaterccg.co.uk](http://www.wessexwaterccg.co.uk).

Ofwat has progressively developed its guidelines for consistent high-quality research, best practice for triangulation of research findings, minimum standards for independent customer challenge, and the independent assurance of companies' customer engagement.

Ofwat expectations for independent customer challenge are that it is:

- › Independent
- › Ongoing
- › Informed
- › Transparent
- › Representative
- › Comprehensive
- › Timely
- › Has Board accountability.

The Group has assessed its working methods and the skill set of its members, and considers it meets Ofwat's requirements for independent customer challenge. Its assessment is included in Appendix 4 of this Report.

## 2.2 Membership and Governance

**A list of the current Group members is provided in Appendix 2.**

The Group is chaired by Dan Rogerson. He was also the Group’s Chair during Ofwat’s PR14 Price Review so has provided leadership and continuity since then.

Several members of the Group have been involved in the independent challenge of water company business plans and company

performance against regulatory obligations for many years and have been through several Price Reviews. Members have been recruited specifically for their knowledge of research methods, in view of the large body of research that would be commissioned by the company.

The areas of focus and challenge of the current Group member organisations are as follows:

ORGANISATION	AREA OF FOCUS AND CHALLENGE
CCW	Interests of all water customers
Environment Agency	Environmental regulation and compliance
Wiltshire Citizens Advice	Customer vulnerability, affordability and social welfare
Age UK Wiltshire	Interests of customers in later life
Wessex Water Catchment Panel	Environmental priorities and outcomes
University of Bristol	Specialist knowledge on consumer behaviour, research and engagement
NatCen Social Research	Specialist knowledge on customer research and engagement

The Group periodically reviews its membership to ensure it has adequate and appropriate representation to best fulfil its role on behalf of customers and to satisfy Ofwat’s expectations for independent customer challenge.

A WW Independent Non-Executive Director acts as the liaison point with the WW Board and has attended several meetings of the Group.

## 2.3 Sub-Groups

**The Group established two sub-groups to enable it to review and scrutinise certain aspects of the WW Business Plan.**

The Customer Research Sub-Group (CRSG) has assisted and supported the Group in its review and challenge of WW’s customer engagement and research (both routine and for the PR24 Business Plan) and in the Group’s reporting on this.

The Group’s Performance Commitment and Investment Sub-Group (PCISG) reviewed the company’s performance against Ofwat’s PR24 methodology, the company’s Long Term Delivery Strategy (LTDS), the development of its Water Industry National Environment Programme (WINEP), its wider investment plan for PR24 (including AMP8 transition expenditure), its asset management strategies and processes, and the development of its bespoke Performance Commitments (PCs) for PR24.

The chairmanship of the company’s long-standing Vulnerability Advisory Panel (VAP) is shared by two members of the Group, both previously sitting on the Panel. This created a direct link between

the Group and the VAP and enabled the Group to be informed and assured of WW’s performance on affordability, vulnerability, both financial and non-financial, and its plans in these areas for the next five years. The VAP, chaired by the Group members, reports the outcomes of its meetings at the subsequent Group meetings.

The independent Chair of WW’s Catchment Panel (CP) is also a member of the Group. The Group looked to the CP Chair and the EA to inform and advise on WW’s performance against its regulatory environmental commitments and on its environmental outcomes and investment plans for PR24.

The Group’s Chair is an active participant in the independent Challenge Co-ordination Group (COG), facilitated by CCW and is intended to provide comparative performance data, both on companies and Independent Challenge Groups (ICGs). The COG reviewed the Group and its processes during the year as part of a cross-ICG assessment. There were no significant outcomes from this for the Group’s work although it did strengthen an aspect of its governance arrangements concerning declarations of Group members’ interests.

## 2.4 Meetings

**The Group commenced its review and challenge of the company’s PR24 Business Plan in earnest in Summer 2022 when the Ofwat draft PR24 methodology became available.**

The Group and its Sub-Groups set the agenda for each of its meetings and produced the minutes and notes of each.

The meetings held during the period and the topics discussed at each are given in Appendix 3.

In total there have been:

- › Six Group meetings
- › Nine CRSG meetings
- › Eight PCISG meetings.

The Group meetings were held in a hybrid format (with most members attending in person) and the Sub-Group meetings were online.

In-camera sessions were held before and after each Group meeting enabling the discussion without the company being present.

Executive Directors, along with other senior company staff, attended the Group meetings as presenters and/or observers. A Non-Executive Director of WW also attended several of the Group’s meetings.

All meetings were fully documented with the minutes of the Group’s main meetings published on its website.

There were also a number of ad hoc conference calls to discuss specific issues as and when the need arose.

## 2.5 Challenge process and documentation

**The Group used its Challenge Diary process, first established in 2016, to document the challenges, key questions and information requests made to WW and the company’s responses to these. The Group regards its Challenge Diary as strong evidence of its independence and the extent of its challenge.**

Both the Group and the company considered the challenge process to have been constructive and effective.

The Group’s Challenge Diary is reproduced in Appendix 7.

Around 260 challenges and key questions were logged between June 2020 and September 2023, the period over which issues relevant to performance and long term planning were discussed.

The company’s responses to the challenges and key questions were considered by the Group.

The vast majority of issues raised were addressed to the Group’s satisfaction. Some 55 issues resulted in the company amending its engagement materials or plans. No issues remain outstanding at the time of publication of this report. All challenges were dealt with to the Group’s satisfaction.

The challenges and key questions raised were as follows:

CHALLENGE AREA	NUMBER OF CHALLENGES	CHALLENGE AREA	NUMBER OF CHALLENGES
PR19 PC performance	14	Per capita consumption	1
23/24 charges	4	Pension Credit Discount	1
Affordability	6	Pollution incidents & other environmental performance	10
Business Plan	4	PR24 investment programme	4
C-Mex	1	PR24 methodology	1
Cost adjustment claims	1	PR24 PCs	2
Covid 19	15	Price Control Deliverables	1

CHALLENGE AREA	NUMBER OF CHALLENGES	CHALLENGE AREA	NUMBER OF CHALLENGES
Customer engagement and research	128	Sewer collapses	2
Deliverability	5	Sewer flooding	1
Drainage and Wastewater Management Plan	1	Smart meters	3
DWP data sharing	1	Social tariffs	4
Education	4	Tariffs	1
Environmental investment	5	Transition expenditure	1
Environmental quality	3	Trym Tunnel	1
Financing	2	Value for money	1
Incentive sharing	1	Vulnerability	9
Leakage	4	Water quality	3
Long Term Delivery Strategy	1	Water resources	3
Net zero and climate change	4	WINEP	3
ODIs	2		

## 2.6 Assurance

**The company informed the Group that it received third party assurance on the following aspects of its Business Plan relevant to the CCG’s work:**

- › Technical audit on the PR24 submission and all PR24 data tables
- › Long term delivery strategies
- › Final WRMP
- › Final DWMP
- › Other technical components of the PR24 investment programme
- › Price Control Deliverables
- › Affordability review
- › Willingness to pay.

The company provided the Group with the associated assurance reports.

The company’s assurance regime is described in Section WSX44 of its Business Plan and the assurance reports in Section WSX45.

The Chair and the Report Writer liaised with the company’s Non-Executive Director assigned to the Group over the Group’s PR24 Report contents and findings.

## 3. CUSTOMER AND COMMUNITY ENGAGEMENT FOR THE BUSINESS PLAN

### 3.1 The Group's review and challenge

#### The Group's review and challenge of WW's customer engagement and research activities and results included:

##### Routine engagement

- › The Wessex Water Image Tracking Survey
- › Young People's Panel
- › Unitary authority engagement
- › Home Check
- › Have Your Say Panel (online).

##### PR24 engagement

- › Willingness to pay research
- › Water efficiency and smart metering research
- › Acceptability and affordability research
- › Sustainable abstraction research
- › Social tariffs research
- › Public consultation on the PR24 Business Plan.

In December 2022, Ofwat and CCW issued guidance for water companies on the testing of customers' views of the acceptability and affordability of PR24 business plans. This included a requirement for ICGs to play a key role in the assurance process for affordability and acceptability (A&A) testing. The Group has followed this guidance in its review and challenge of WW's acceptability and affordability testing of its PR24 Business Plan. Its detailed findings against the individual areas of this guidance are given in Appendix 6.

The Group agreed with WW the scope for its reporting on and assurance of the quality of the customer research used for the PR24 Business Plan.

The Group also monitored the development of, and outcomes from, Ofwat's national research including marginal benefits rates for ODI setting.

WW shared its PR24 Engagement Strategy and framework with the Group in December 2021. The Group welcomed this, as it enabled it to understand how the Strategy fitted with the key regulatory milestones for PR24.

The Group received regular updates from the company on the implementation of its PR24 engagement framework. The Group reviewed and challenged the research methodologies and materials for the individual elements of the engagement framework and discussed these with the company. This was done within meetings with the company and remotely with feedback from members provided by email. The Group members with research expertise, in particular, provided detailed scrutiny of the research.

The company responded to all the Group's challenges and made changes to research methodologies and materials in many cases.

The Group considered that it was contributing to the research in a challenging but collaborative way.

Members of the Group also attended several engagement events as observers and fed back their experiences to the company.

The Group reviewed the results from the research and the company's interpretation of them and their use in the Business Plan.

The following sections of this Report describe the Group's review and challenge of the PR24 engagement methodologies and its opinions on them.

### 3.2 Routine research

#### The routine customer research undertaken by WW during 2022/23 included its Image Tracking Survey, the Young People's Panel, the online 'Have your Say' Panel, Home Check and research engagement with unitary authorities.

The company presented its research methodologies and results to the Group at regular intervals during the year. The Group reviewed and challenged these.

The Group welcomed the company's engagement with local authorities in its area, particularly with Bath and North East Somerset (BANES). It is aware that local authorities are progressively more engaged with the climate and ecological emergencies and noted

the good work by Wessex Water to achieve this. There are four major environmental proposals being promoted in the Bristol Avon catchment. All the local authorities, the West of England Combined Authority (WECA) and the West of England Nature Partnership are involved with these. Promotion has also been happening in other parts of the Wessex region.

Members of the Group found the outcomes from the Young People's Panel interesting, particularly the ideas about the waste water campaign and 'one drop at a time'. It noted that the company has taken some of these on board.

Overall, the Group was content with the company's routine engagement activities undertaken during the year.

The Group was mindful that Ofwat expects companies to make better use of sources of ongoing data available to them, such as contacts, complaints and feedback, in order to reveal customer preferences. It challenged the company to show how these data sources were

utilised and triangulated with the results from the company's research for the PR24 Business Plan. The Group's findings are given in Section 3.10 of this Report.

### 3.3 Customer willingness to pay for outcomes

**The company's approach to its research into customers' willingness to pay (WTP) was developed in early 2022 and was undertaken during the rest of that year.**

The research explored willingness to pay through a mixture of qualitative and quantitative means for the ten priority outcomes (five service and five environmental) defined by the company's earlier Strategic Direction research. The work was peer reviewed by Professor Cherchi of Newcastle University and confirmed to be in line with Ofwat's standards for high quality research.

Through its work, the Group was reassured that WW was using experienced consultants to undertake its WTP research. Its detailed findings on the proposed research methodology were reported in its Annual Report 2022.

Overall, the Group considered that the proposed WTP research methodology was fit for purpose and a significant improvement over that used at the last Price Review.

The company shared the Stage 1 qualitative research materials and the results from the research with the Group in late summer 2022. The Group scrutinised these and was comfortable that the materials used were sound.

The Group reviewed and commented on the results of the Stage 1 willingness to pay research in the company's PR24 Business Plan and its triangulation with information from the company's other sources of research.

The Group also reviewed and commented on the quantitative element of the company's research into intergenerational fairness. It felt that the research material would be an overload on people and wondered how meaningful the results would be. The company agreed and paused the study. It later included it within the Ofwat/CCW prescribed Affordability and Acceptability testing of Business Plans. It also formed part of the wider public consultation by Wessex Water on its Business Plan (see Sections 3.8 and 3.9 of this Report).

As mentioned above, the Stage 2 element of the company's willingness to pay research drilled down into preferences to deliver the company's sustainable abstraction outcome for PR24. The company sought comments from the Group on its proposed research methodology for the Stage 2 sustainable abstraction research. The Group's views on this are described in Section 3.4 of this Report below.

### 3.4 Willingness to pay for Sustainable Abstraction

**The company's research covered willingness to pay for delivering the company's sustainable abstraction outcome for PR24 and linked with the associated Ofwat common PR24 Performance Commitments. These preferences included leakage reduction, per capita consumption (PCC) and non-household water efficiency.**

A pilot study was used with the learning from this incorporated into the main research exercise.

The Group reviewed and commented on the company's proposed research methodology for the sustainable abstraction willingness to pay research.

It asked how the outcomes from the research would be determined and if the parameters had been set correctly. The company said

that the definitions/scope of the options to reach the sustainable abstraction outcome were developed for the draft WRMP. They would be simplified for customers involved in this research, which is essentially a theoretical exercise to explore how customers would address the issues.

The Group considered that the research would have usefully fed into the draft Water Resources Management Plan (dWRMP) and so could have been undertaken earlier. It was pleased to hear that some of the qualitative sustainable abstraction research would inform the final WRMP.

The Group expressed concerns about the 'don't knows' from the pilot survey and that 25% of respondents found it a difficult exercise. NERA felt that the pilot ran well and that sensible answers were obtained from participants. It pointed out that the sample used wasn't representative, simply a pilot for the main survey.

The Group noted the relatively high numbers of respondents to the pilot survey who said they regularly struggled to pay their bills. The Group was reassured that the company would be monitoring this further in the main research and comparing it to the findings of its WW Tracker Survey.

The results from the main survey were presented to the Group and were included in the triangulation of all its PR24 research results for use in its Business Plan. The Group reviewed and challenged

these results. It found that customers have a low awareness of the importance of water conservation and don't know or underestimate their water usage. They generally prefer leakage reduction as a means of reducing water taken from the environment and would like to see vulnerable water sources protected. Customers also recognise the benefits of smart meters as a way to save water and money.

### 3.5 Social Tariff Cross Subsidy research

**WW undertook joint research with Pennon (Bristol Water and Bournemouth Water) to understand customer acceptability for cross-subsidies. The research did not cover tariff design. The driver for the research is that companies must seek customer acceptability for the cross subsidy they will need moving into AMP8 in order to fund the growth in social tariff customers.**

The research included online and face to face quantitative studies and follow up qualitative interviews to further investigate responses and attitudes.

The Group reviewed and challenged the proposed research methodology and the results from it.

The Group did not raise any material concerns on the proposed research methodology. However, it was interested to know if the research included how social tariffs are used and who benefits

from them. The company advised that participants would be told about current schemes and who gets them and then asked if they would like to pay for more support. They will not be asked about the individual tariffs or about eligibility for them.

The research showed some willingness to pay for more cross-subsidy.

The Group monitored the evolution of a possible Single Social Tariff (SST) for the industry and was very keen to understand how this might compare with the company's current social tariff offerings. The SST development has now stalled, however.

### 3.6 Outcome Delivery Incentive rates

**The Group broadly supported Ofwat's proposed goals for customer engagement for future price reviews. These include the principles to use nationwide research for ODI marginal benefit rates and the acceptability/affordability testing of company plans, and for consistent methodologies to be used for local engagement.**

The Group considered there was a risk that some voices would be excluded by national research. It strongly urged WW to undertake more deliberative or qualitative research of its own to help ensure that results overall are informed and reflect local customers' views. The Group was pleased that the company did this.

The Group relied on the company for information on the methodologies used for the national research and the results coming from it.

Ofwat, working with CCW, undertook national collaborative research into Outcome Delivery Incentive (ODI) rates at a company-specific level for 26 common Performance Commitments (PCs) for PR24. Ofwat stipulated that companies must use these indicative rates in their business plans or provide compelling evidence to support alternatives.

### 3.7 Your Water, Your Say

**In spring 2023 Ofwat and CCW required each company to hold a “Your Water, Your Say” (YWYS) meeting to allow customers and stakeholders to question them and challenge their future plans. The associated guidance from Ofwat and CCW prescribed that companies provide a 15-minute presentation on their business plans and Long-Term Delivery Statements (LTDS). This had to include the issues addressed in these documents, the actions the companies intend to take and their intended outcomes, and the resulting impacts on customer bills.**

The presentations had to cover:

- › Customer service priorities
- › Long-term outcomes and how the five-year plan delivers the first part of the LTDS
- › Environmental outcomes, and
- › Bills/affordability.

The events were chaired by an Ofwat/CCW-appointed individual.

The company invited comments from the Group on its presentational material. The Group reviewed this and, apart from suggesting a minor change to some technical wording around nutrients and pollution, considered it to be appropriate and in line with the Ofwat/CCW guidance. The company acted upon the Group’s suggestion.

WW’s YWYS online event took place on 28 April. There were around 100 attendees and members of the Group attended as observers.

The Group observed that the event ran well and positive feedback on it has been received by the company.

The Group noted that some of the participants raised issues concerning budgeting and sewage treatment in rural areas. There was also less challenge on bills than expected, but more on current issues such as environmental pollution. Overall, both the Group and the company felt the session may not have provided much new information to shape the Business Plan.

The company has published a record of the YWYS on its website.

The Group also noted that the publicising of the session had been prescribed by Ofwat. The company promoted the event widely. CCW has gathered information from companies about this in order to compare approaches and look at results and demographics. This information has been used to identify best practice and inform the next YWYS session.

This event is scheduled for November 2023 and the Group has arranged a session with the company to review the materials to be presented before they are finalised for use.

### 3.8 Affordability and acceptability testing of the draft Business Plan

**Ofwat and CCW issued guidance for water companies on the testing of customers’ views of the acceptability and affordability (A&A) of PR24 business plans. This included a requirement for ICGs to play a key role in the assurance process for affordability and acceptability testing. This requirement was discussed with the company and it was agreed that the Group would:**

- › Advise on sampling approach for the quantitative, qualitative and deliberative research alongside the research supplier
- › Help determine relevant sample sizes for the quantitative phase i.e. Ofwat’s minimum or beyond
- › Help define the approach for including future bill payers in the research using the options set out in the guidance
- › Agree approach for any qualitative re-testing if required
- › Comment on the company’s proposed approach to recruitment of the household and future bill payer samples
- › Discuss how the company has made the delivery of the pre-read content and taking part in any research as accessible as possible for more vulnerable customers
- › Help decide the best format for the main deliberative discussions, i.e. face to face and/or online with at least one Group member observing the discussions
- › Input into wording used in the research materials where possible within the Ofwat/CCW guidance e.g. describing statutory

programmes, and agree content of any additional or tailored stimulus a company may choose to use to summarise and describe the business plan

- › Consider what piloting and testing is needed in the research, taking account of Ofwat/CCW’s suggestions in the guidance. Review outputs of piloting and agree any subsequent changes to research materials
- › Receive a record of any responses provided by a company representative during the qualitative research as part of the assurance process
- › Attend a debrief of the deliberative research findings.

The Group has followed this guidance in its review and challenge of WW’s acceptability and affordability testing of the PR24 Business Plan.

The company and Blue Marble shared the A&A research methodology and the development of the research materials with the Group at regular intervals. The Group was given the opportunity to challenge these and feedback on its thoughts and opinions.

The Group is pleased to report that its challenge and feedback were carefully considered by the company and Blue Marble and that changes made to the research approach and materials were agreed. Members of the Group also attended several of the deliberative and qualitative engagement events as observers.



## CUSTOMER AND COMMUNITY ENGAGEMENT FOR THE BUSINESS PLAN

The Group received a debrief of the qualitative research findings from WW's research consultant (Blue Marble). The Group agreed with the company that a second stage of qualitative research would not yield further meaningful information.

The Group reviewed the testing material for the quantitative stage of the research and recommended some changes which the company adopted.

A briefing of the results from the quantitative research was provided to the Group in mid-September. It noted that acceptability hadn't changed significantly between the qualitative and quantitative stages of this research.

It was noted that acceptability of the proposed business plan at both the qualitative and quantitative stages was similar. Overall, 62% of customers accept the plan in the quantitative research (58% of household customers).

The Group was advised that the lack of acceptance of the PR24 Plan was associated with issues of the cost of the Plan and a feeling that water companies' profits are too high, and that they should be paying for more of the investments.

The Group notes that acceptability was much higher at the last price review, but the company was then proposing a slight decrease in bills. This time bills are going to have a much more serious financial impact and people are also looking at where their money is going more widely. The Group found it interesting that customers are now looking at parts of the plan that really matter to them. Work such as achieving carbon neutrality is seen as business as usual. Customers are making these finer judgments.

The Group suggested the company needed to say more on acknowledging and responding to the lower levels of acceptability but warned against trying to explain away a lower acceptability level. Customers are better informed this time and are feeling very stretched financially. The company's Plan will stretch them further and its social tariffs will be critical to help deal with this. The company took on board the Group's recommendations on articulating acceptability in its Business Plan narratives.

The Group's detailed findings against the Ofwat requirements on ICGs is provided in Appendix 6.

A summary of the main findings is as follows:

- › Ofwat and CCW have prescribed the methodology to be used for the testing of the acceptability and affordability (A&A) of companies' PR24 business plans. The Group is mindful that it has not been required to comment on the prescribed research methodology, but to confirm that the company has followed it and that decisions have been made sensibly. However, the Group had several significant concerns with the methodology, mainly that it was unclear around sampling, that the recommended sample sizes were inconsistent, and the recruitment of some participants groups was going to be challenging. The company raised several of them with Ofwat and CCW and the Group was pleased to see that some aspects of the methodology were

clarified as a result. Overall, the professional researchers in the Group would have preferred a more robust methodology for the A&A testing

- › The Group challenged the sample sizes, segments and recruitment process used for the A&A research and recommended that changes were made in several areas. These included issues with achieving a random probability sample, the recruitment of vulnerable customers, the representation of deprived customers, putting people from different socio-economic groups together, sending reminders to invitees and accepting additional responses once the required sample number had been achieved. The Group was pleased that the company took on board many of its recommendations and made changes to its approach within the scope of the research required by Ofwat and CCW
- › The Group noted that the Ofwat/CCW guidance was very prescriptive in terms of content for pre-reading and stimulus including the way information is displayed. However, it raised several challenges on the proposed testing materials including the volume, clarity and format of information and the need to test if participants had digested and understood the pre-read materials. The Group was pleased with the company's responses to its challenges and considered the final research materials used to be as clear as allowable within the Ofwat/CCW requirements
- › The Group recommended that a pilot session was held or, if time did not allow this, that the first session became a de facto pilot with a pause for reflection and revision before other sessions are held. It welcomed the company's subsequent decision to run a pilot with staff and their friends and families to test the timing and format of the deliberative research materials
- › Group members attended several of the household face to face deliberative events and two of the online session with non-householders. The Group considered that the events were well run and met the objectives set for them
- › The Group discussed with the company whether it should push forward on a second round of qualitative A&A testing because the Business Plan was still evolving and has agreed that this was unlikely to yield further meaningful information
- › A close interest was taken into the qualitative samples, the weightings that had been applied to them and the impact the reminders had on response rates. These were regarded by the Panel as areas of deficiency in the Ofwat methodology. The Group encouraged the company to fully detail these in its Business Plan documents, which it subsequently did
- › The Group reviewed the company's initial interpretation of the qualitative results. It cautioned over breaking down the research results unless there was specific evidence to justify this and making sure any conclusions around customers suffering serious financial strain were soundly based on evidence from the research. The Group worked with the company on this and was happy with the information reported by the company in its Business Plan.

### 3.9 Public consultation on the Business Plan

**WW undertook several public consultation sessions on its emerging PR24 Business Plan. Ten in-person sessions were held across its region and there were 224 attendees.**

The Group was informed that there was a good spread of customers by demographics but the profile for each was location dependent.

An online stakeholder event was also held involving in-depth interviews with stakeholders from councils, environmental groups, education facilities and consumer organisations.

An associated survey was advertised in WW’s customer magazine and on its intranet. This garnered 21 responses (7 customer, 14 staff).

The Group confirmed that the findings from this research project were considered and triangulated alongside other sources of related customer insight to shape the Business Plan.

### 3.10 Triangulation and synthesis of research findings

**The company developed a methodology to triangulate its various sources of customer engagement information for use in its Business Plan. It shared its approach with the Group and confirmed through its third-party specialists (Sia) that it aligned with the CCW publication on best practice in triangulation. The Group took a keen interest in the triangulation methodology and welcomed and accepted this assurance.**

The Group took comfort from the peer review the company undertook on its triangulation methodology used at PR19. It considered that such a peer review would also add value to and strengthen the PR24 methodology and encouraged the company to do this. It was later agreed that this wasn’t necessary as the triangulation work was being undertaken by the third party specialists who helped CCW produce its best practice guide.

The company kept the Group updated on its triangulation work as it developed. The Group saw how the work synthesised the insights from research by the company and third parties and provided

a triangulated view of the key insights per outcome. The Sia triangulation and synthesis report was a key information source for the Group’s PR24 Report.

The Group raised a number of concerns on the clarity of how information was being summarised, particularly the assessments of customer priority rankings, divergence of views and robustness of views. It was initially unclear how these related to the assessment of the quality of the research methodologies and the results. The company reviewed its narratives as a result and the Group considered that the final versions were much clearer.

The Group welcomed the use of insight from stakeholders in the triangulation and synthesis work. However, it noted that the stakeholders involved were likely self-selecting and certain groups were being consulted more than others. There are probably far more challenging stakeholders who haven’t been consulted. The company accepted this challenge from the Group and made sure its Business Plan narrative reflected this.

### 3.11 Overall quality of research

**The Group has reviewed and challenged the company’s customer research for its PR24 Business Plan using the approach described in Section 3.1 of this Report.**

The Group also assessed the engagement for PR24 as a whole against Ofwat’s standards for high quality research, customer challenge and assurance. These requirements state that research should be:

- › Useful and contextualised
- › Neutrally designed
- › Fit for purpose
- › Inclusive
- › Continual

- › Independently assured
- › Shared with others
- › Ethical.

The Group’s findings against the individual Ofwat requirements are given in Appendix 5.

As mentioned in Section 3.8 of this report, while the Group was not required to comment on the Ofwat/CCW methodology for the affordability and acceptability (A&A) of the Business Plan, it had significant reservations around it. Because of this, the Group cannot say that the A&A methodology represented industry best practice. However, the Group can confirm that the company followed the prescribed research methodology.

The methodology for the Your Water, Your Say event was also prescribed by Ofwat, and the session was chaired independently. The Group reviewed the research materials and, apart from suggesting a few minor changes which the company addressed, considered them to be appropriate and in line with the Ofwat/CCW guidance. The Group considered the event went well.

The Group welcomed that the company commissioned experienced specialist market research agencies to undertake the research and

to synthesise the results. It was also pleased that its challenges and recommendations were listened to and taken on board.

The Group has concluded from its work that the areas of research it reviewed, other than the A&A testing, met Ofwat's standards for high quality research.

## 4. THE PR24 INVESTMENT PLAN

### 4.1 The Group's review and challenge

**One of the Group's key objectives is to confirm that customers' priorities and needs have been considered and accounted for in the development of the WW PR24 Business Plan.**

The company kept the Group updated on the development and content of its PR24 investment plan. This included the associated strategic submissions (the Water Resources Management Plan (WRMP), the Drainage and Wastewater Management Plan (DWMP), the Water Industry National Environment Programme (WINEP) and the Drinking Water Quality Programme).

The Group notes that the investment programme for PR24 is significantly greater than at PR19 and is being driven primarily by statutory requirements for maintaining and improving drinking water quality, for increasing water supply resilience and for environmental protection and improvements. The WINEP is the largest programme by

value. The overall PR24 investment programme results in significant bill increases and challenges around affordability and deliverability.

Customers support much of the statutory work in principle. However, the scope and timing of this investment is set by the regulatory bodies. The Group notes that customers have been clear about their desire for environmental improvements and for affordable bills. The Group sees that the company has worked hard with regulators and government to find the best way of delivering these improvements. It has had some success in getting government to consider changing the requirements on nutrient neutrality to enable this, based on the feedback from its customers.

The Group reviewed the trade-offs WW made between what customers wanted and what can be delivered affordably. It also assessed the evidence from the customer engagement to support these.

### 4.2 Key investment drivers

#### 4.2.1 Statutory obligations

**Water and sewerage companies in England and Wales are bound by regulatory and statutory obligations for 2025-2030 and beyond to deliver high drinking water quality and environmental protection and improvement. These obligations are found in:**

- › The Drinking Water Quality Programme
- › The Draft Water Resources Management Plan (dWRMP)
- › The Drainage Water Management Plan (DWMP)
- › The Water Industry National Environment Programme (WINEP).

Companies have prepared and consulted stakeholders on these programmes in accordance with prescribed methodologies, with the exception of drinking water quality, where formal undertakings are assessed and set by the Drinking Water Inspectorate.

The Group reviewed at high level the investment associated with the company's statutory obligations including the dWRMP, the

DWMP and the WINEP. The company informed the Group of the methods and results of the associated public consultations (where undertaken) and the content of the final strategic plans submitted to the government and the regulators.

The Group received feedback and advice on the water resource and environmental programmes from its members who are specialists in these fields, i.e., the EA and the Chair of the WW Catchment Panel.

The Group received assurance from the company's Technical Auditor that the statutory investment programmes are reflected accurately in the company's PR24 Business Plan and are consistent with government targets and statutory requirements.

The Group notes that the investment associated with statutory obligations has a significant effect on bills.

## 4.2.2 Customer priorities

**The Group confirmed that customers' priorities for services obtained from the company's strategic research were obtained from the company's synthesis of its research. They are listed below and are expressed in priority order (with the company's assessment of the robustness of evidence in brackets).**

- › Safe and reliable water supply (medium evidence robustness)
- › Affordable bills (high)

- › An effective sewerage system (medium)
- › Excellent river and coastal water quality (medium)
- › Excellent customer experience (medium)
- › Increased biodiversity (high)
- › Net zero carbon (medium)
- › Sustainable abstraction (high).

The Group was satisfied that WW reflected these in its eight outcomes for its Business Plan.

## 4.3 The reflection of customer's views and wishes in the draft Business Plan

### 4.3.1 Customer experience

**The Group noted from the research that customers placed an excellent experience as their fifth highest priority.**

The company considers that it has mature communications and community engagement strategies and that it will continue to implement these over the next five years. It aims to remain top or upper quartile on the key regulatory customer service metrics C-Mex, D-Mex and BR-Mex.

The Group has confirmed through its scrutiny that WW has been a strong performer on customer service in recent years. It welcomes the company's plans to invest in data and systems to make the customer experience easier and in line with public expectations across the service sector.

The Group notes that WW intends to extend its support to customers in vulnerable circumstances. The Group welcomes this and considers it to be essential particularly because of the current cost-of-living crisis. Further comment from the Group on the company's plans to address customer vulnerability is provided in Section 7 of this report.

The Group is pleased that the company recognises that it has to rebuild trust and reputation from both customers and communities. This follows recent public and political criticism of the industry on environmental performance and dividend payments and some negative WW-specific publicity around environmental pollution. In addition to significant investment to reduce sewage spills, the company intends to increase its community engagement work.

The Group sees that WW is planning to directly invest around £8m for improving customer service in AMP8. There are no statutory drivers for this investment. Investment in improving areas such as sewer flooding will also improve customer service.

From its review, the Group considers that the company has taken on board feedback on customer service and has developed a reasonable plan to address this within the bounds of overall investment needs and considerations of affordability.

### 4.3.2 Water safety and reliability

**The company's research shows that customers regard a safe and reliable water supply as their top priority. The Group notes that customers see it as a core service the company should be providing. Customers would like to see the company reduce the risk of severe drought causing restrictions on water use, but in an affordable manner.**

The Group is pleased to see that WW intends to maintain its industry leading Compliance Risk Index (CRI) score, and on supply interruptions performance, as it aligns with customers' priority for a safe and reliable water supply. The company's WRMP also includes measures to ensure supplies are maintained in line with its projections of climate change, customer demand, water efficiency, and leakage. The Group saw that WW considered the affordability of its water supply schemes using its best value approach, but it has not reviewed this work in detail.

### 4.3.3 Sustainable abstraction

**The Group has confirmed that WW's customers placed sustainable abstraction as their eighth highest priority.**

It saw that the customer research on sustainable abstraction covered customer water usage, demand management, network leakage and the vulnerability of some water sources. It confirmed that customers generally have low awareness of the importance of water usage and conservation and the benefits of smart metering in helping to improve these. They prefer leakage management as a means of reducing water abstraction from the environment and would like to see reduced reliance on vulnerable water sources.

WW intends that its strategies for demand management, smart meter installation, leakage reduction, in conjunction with increased and more effective engagement on water efficiency and conservation, will reduce

### 4.3.4 Sewerage

**The Group sees that an effective sewage system was placed third in customers' list of priorities. They regard it as "business as usual" for the company in terms of providing safe methods of sewage collection and disposal and for protecting public health. Improvements to treatment works, preventing internal sewage flooding and, particularly, dealing with unsatisfactory storm overflows (preventing sewage from entering streams, rivers and the sea), are all important to customers. Educating customers in the correct use of sewers was also seen as beneficial in reducing operational and pollution incidents.**

The company has responded to these customer wishes by including increased investment in reducing blockages and pollution incidents, increasing the capacity of sewers (including more storage tanks),

The Group notes that WW intends to invest £0.24bn in providing safe and reliable water supplies in AMP8. Meeting statutory water resource and drinking water quality obligations accounts for £80m of this. The level of expenditure in AMP8 is broadly similar to the current five-year period.

The Group sought and received reassurance from the company that its water quality investment programme has the support of the Drinking Water Inspectorate (DWI). The Group has not had direct contact with the DWI on this.

From its review and challenges, the Group considers that WW has accommodated the priorities of its customers for water quality and reliability appropriately, given that most of the planned investment is non-statutory.

water consumption, reduce customer bills (for those on meters) and protect the environment. The company will also implement a number of water supply schemes to protect vulnerable sources. The Group considers this to be an appropriate approach.

The company will invest £0.53bn in AMP8 to achieve these. Statutory and regulatory obligations account for £175m of this. Around £0.2bn is being spent on the current five-year period on work related to sustainable abstraction so the Plan reflects a significant increase.

From its review, the Group is satisfied that the company has accommodated the wishes of its customers regarding sustainable abstraction through its plans to meet its statutory obligations through the majority discretionary expenditure in this area.

further reducing the risk and incidence of internal flooding from sewers, and undertaking major expenditure on dealing with unsatisfactory storm overflows. Its plan also includes increasing customer awareness of the issues around flushing wet wipes and putting fat into sewers.

The Group was very concerned to see recent media coverage of the company spilling sewage at one of its overflows during dry weather. The company proactively explained to the Group that this was due to groundwater entering the sewerage network and the effluent spilled had a much higher dilution than normal sewage. The Group recognises that ideally customers do not want to see such publicity regardless of any inaccuracies in media coverage. The Group will continue to scrutinise and challenge the company's performance on pollution incidents.

The Group notes that around 70% of the proposed £0.74bn enhancement and capital maintenance investment in the sewerage network is intended to meet statutory and regulatory obligations set out in the DWMP and the WINEP. The 70% is all enhancement expenditure. Expenditure on the sewerage system in the current five-year period is around £0.4bn so the Plan represents an almost doubling of spend.

### 4.3.5 River and coastal water quality

**Customers regard good river and coastal water quality as their fourth highest priority. There is increased awareness of sewage pollution in rivers and the sea as a result of recent publicity, both national and local. Customers want the company to address the issues and are willing to pay for improvements to achieve this.**

The Group is pleased to see that the company recognises that its current performance and future plans carry significant reputational risk.

The Group sees that the company plans to invest £2.0bn in AMP8 to improve river and coastal water quality. Statutory and regulatory obligations account for £1.6bn of this. Around £0.8bn is being spent on the current five-year period on related work so the Plan reflects a significant increase. The Group recognises that this reflects the significantly increased statutory requirements for environmental improvement.

### 4.3.6 Biodiversity and net zero carbon

**The Group has seen that improving nature and wildlife and achieving net zero carbon emissions are ranked sixth and seventh respectively in the list of customer priorities. The Group recognises that concerns about the impact of climate change is growing, especially amongst younger customers. Although lower than other priorities, customers said they want the company to reduce its carbon emissions.**

WW has responded to this by including plans to improve biodiversity across its region. It intends to do this through creating and restoring habitats, catchment management, tree planting and working collaboratively with partners and stakeholders. The Group welcomes this but notes that much of this work is part of the company's obligations under the WINEP.

The Group has noted that carbon emissions will be reduced by the company over the next five years through addressing emissions from energy, transport and sewage and sludge treatment processes. These

The Group sees that many of the wishes of customers for an effective sewerage system are to be dealt with through meeting statutory obligations. The scope and phasing of this investment has been agreed with Defra, Natural England and the EA.

The Group notes £900m of the £2.0bn is to be spent on reducing nutrients (chiefly phosphorus) in treated wastewater discharges. The Group notes that the government requirements for this work will be confirmed after the Business Plan is submitted so the actual planned expenditure may be different.

The Group welcomes that £400m will be invested to reduce spills from storm overflows using engineering solutions, and wetland treatment and rainwater separation where possible.

From its review and challenges, the Group considers that WW has accommodated the priorities of its customers for improving river and coastal water quality appropriately, noting that the vast majority of the planned investment is to meet statutory obligations.

will be delivered through a combination of base maintenance and enhancement investment.

The company intends to spend around £40m in AMP8 on increasing biodiversity and reducing carbon emissions. £31m of this is to meet statutory obligations. There is little expenditure in these areas in the current five-year period.

The Group can see that the company had addressed the wishes of its customers regarding biodiversity and net zero through its plans to meet its statutory obligations and through additional discretionary expenditure, all within the affordability constraints of the overall investment plan for AMP8.

### 4.3.7 Affordable bills

#### **Customers placed affordable bills as their second highest priority behind a safe and reliable water supply.**

Through its annual reviews and scrutiny of the company's performance, the Group has seen in recent years that customers are fairly satisfied that the services they receive from WW represent value for money. However, it is also aware through the work of its members in the advice sector and on the company's Vulnerability Action Panel, that, in the current cost-of-living crisis, more customers are struggling financially and becoming increasingly concerned about the cost of utility bills, including water.

The company's response to this, and the Group's comments on it (particularly on WW's affordability and vulnerability strategies) based on

its scrutiny and the review and challenge of the Vulnerability Advisory Panel (VAP) are given in Sections 6 and 7 of this Report.

The investment associated with dealing with affordability and vulnerability is operating rather than capital expenditure. However, the Group accepts that the operating expenditure directly related to administering affordable bills schemes doesn't reflect the actual scale of support. That is captured by the degree of cross-subsidy available to the customer. The company currently has support from customers for a c.£8 cross subsidy per year to help those struggling with their bills. Going forward, it has consulted customers and has gained support to increase this to c.£20. This will enable it to offer a greater level of support over 2025-30 and means that social tariffs will not have to increase in line with average bills.

## 4.4 Trade-offs and bill impacts

#### **With bills set to rise significantly as a result of the company's plans for 2025 to 2030, the Group requested that the company illustrated proposed level and profile of investment and the impact it had on bills.**

The Group was pleased to see that the company had smoothed bill increases as much as possible as this aligns with customer wishes.

The Group was also assured that the company was meeting its statutory investment obligations in doing this.

The Group considers that a reasonable balance has been struck by the company between the profile of investment and the resulting bill impact.

## 4.5 Environmental ambition

#### **The Group sees that climate change and biodiversity are high on the political agendas – most local authorities have declared both climate and ecological emergencies.**

There is ongoing media and public scrutiny over the quality of rivers and the sea, with a strong scrutiny of the water industry. The public want to see an end to storm sewer overflows, no pollution or water leakage and the Government and environmental regulators want nutrients in rivers tackled.

The Group considers that the external expectation of ambition is well beyond both what the industry can deliver, and the public can afford, in the next five years.

Initially the companies were asked to cost everything, but affordability and delivery considerations have seen a steady pulling back of requirements from Government.

In his context the Group finds it difficult to comment on WW's environmental ambition, because the external ambition has been almost overwhelming.

However, the Group considers that WW has shown ambition in trying to push for innovative ways to deliver more at a lower cost, for example catchment permitting and catchment-based solutions. We agree with the company that the latter, if allowed, will enable it to deliver wider environmental benefits than just the primary drivers. We also consider that these approaches are less carbon intensive.

The Environment Agency has informed the Group that it is looking for a balance between ambition and confidence in the company's regulatory compliance. It is about to discuss with the company its draft Water Resources Management Plan and one area it will focus on is whether the reductions in abstraction proposed will go far enough and be adopted soon enough to prevent harm to sensitive catchments such as the Hampshire Avon.



## 4.6 Deliverability

**While not strictly within its remit, the Group's Performance Commitment and Investment Sub-Group (PCISG) wished to hear from the company how it intends to deliver its AMP8 capital investment programme, given the significant increase over the current period, and whether it is gearing up to do this. It wanted to be assured that customers would not be facing additional risks because of the size of the programme.**

The Group received a presentation on this from the company and reviewed and challenged its proposals.

The Group was particularly interested to understand if the company was satisfied there is sufficient capacity and appetite in the consulting and contracting market, given that all water companies are ramping up their investment programmes, as are other sectors. It was also keen to hear about the progress the company is making on procuring its supply chain for AMP8.

The company assured the Group that it is in a strong position because of its large internal engineering team. The Group was also assured that WW has been engaging with its prospective partners for some time and the procurement process is progressing well. The company plans to adopt more collaboration with partners and increased risk management to deliver its AMP8 programme.

The Group also asked if the company intends to leverage apprenticeships and use local companies as well as national contractors. It was pleased to hear that the company will do so on the smaller elements of the programme.

The Group also notes Ofwat's intended use of Price Control Deliverables (PCDs) to protect customers from the risk of non-delivery of the large, particularly enhancement programmes, of work expected in AMP8. These are described further in Section 5.4 of this Report.

## 5. BESPOKE PCS AND PRICE CONTROL DELIVERABLES

### 5.1 The Group's review and challenge

The company kept the Group's PCISG informed about its work on bespoke Performance Commitments (PCs) and Price Control Deliverables (PCDs) as it was developed. The Group reviewed and challenged this throughout the process.

### 5.2 Bespoke PCs

**The Group recognises that Ofwat uses performance commitments (PCs) to measure the outcomes that water companies deliver for customers and the environment and has defined a suite of common PCs that apply to all companies for the 2025-2030 period.**

Ofwat accepts that extra (bespoke) PCs could help to deliver extra benefits for customers. The bespoke PCs would not apply to all

companies but might address issues of specific local importance or to protect customers from specific issues.

Ofwat invited companies to propose bespoke PCs to them in April 2023. WW did not propose any.

### 5.3 Outcome Delivery Incentives

**The company initially informed the Group that it would not be using the marginal benefit rates, derived from Ofwat's research, in its PR24 investment appraisal. It would instead be using the results from its own willingness to pay research, alongside other research (both WW-driven and wider external research), EA metrics stipulated in the WINEP, etc.**

The company later told the Group that, while it considered Ofwat's rate setting methodology to have shortcomings, (noting also that the methodology changed significantly during the process), it had decided that the marginal benefit rates were close enough to the company's rates not to challenge them. The company has however informed Ofwat of its reservations with them and the way in which they were derived.

The Group supported the company's decision.

### 5.4 Price Control Deliverables

**The Group notes that Price Control Deliverables (PCDs) have been introduced by Ofwat as part of the PR24 process as an additional mechanism to performance commitments (PCs) to protect customers from the risk of non-delivery of the large, particularly enhancement, programmes of work expected in AMP8.**

Ofwat state that PCDs should be used in the following circumstances:

- › For areas of enhancement spend where the financial value is 0.5% or more of the price control totex
- › For the WINEP
- › For areas related to supply demand balance in the WRMP
- › Work related to reducing embedded carbon emissions
- › Smart metering
- › Multi-AMP schemes.

The Group sought clarity on its role in reviewing the PCDs and the possible interaction/interface with the company's Technical Auditor. It

was later confirmed that the Technical Auditor, rather than the Group, would be assuring the company's PCD submission.

The company informed the Group that it believes while PCDs are designed to protect customers, they are likely to drive incentives that might lead to worse outcomes for the environment and for bills. The Group is unable to comment on this at this stage. However, it noted there could be a problem with delivery because of getting partners to commit to long term programmes. Most local authorities and NGOs budget on a short-term basis and so there needs to be some flexibility in the PCDs.

At the time of writing this Report, the Group notes that the company had sought clarification from Ofwat on a number of points, as well as a proposal to defer some of the detailed work, particularly given the uncertainty in the enhancement programme. The Group also notes that further guidance on PCDs has been promised by Ofwat and it understands PCDs will be considered by Ofwat at the Draft Determination stage.

## 6. AFFORDABILITY

### 6.1 The Group's involvement

**The Group is made directly aware of the impact of the cost-of-living crisis on consumers through its members who work in the advice sector and those who are researching the impact independently from the company. Levels of anxiety around the affordability of basic services have been rising over the last 12 – 18 months, as shown by WW's ongoing tracker survey, and confirmed by the Group's members. However, the Group noted that the company's figures on arrears do not align with the general picture of the cost of living having a big impact on lower-income households, and levels of arrears on other commitments which are rising. Therefore, it may only be a matter of time before arrears on water bills rise as well.**

The customer perception that WW's current charges represent value for money, while marginally below the regulatory target set by Ofwat, has been relatively stable in the current five-year period. The Group has seen that payments have held up but isn't sure exactly why, given the continuing adverse national press coverage of the industry's performance on environmental pollution and the ongoing cost of living crisis and rising inflation. The Group is also aware that public trust in the water sector has been falling and that some of WW's data also indicates this.

However, the Group's experts see that customers have been just managing with their household bills and there is a tangible risk that a tipping point will be reached shortly. The Group asked for some management information and welcomed receipt of it. As a result, it was pleased to see that WW has been monitoring this and is not being complacent.

The VAP has endorsed WW's suite of tariffs and changes being made to tackle the crisis. It was pleased to see the company's

communications around bill increases for both metered and non-metered households. It noted some associated innovative work around this but considered the challenge for the company is knowing where these communications are landing. The VAP was most worried about people on Universal Credit and whether overall the communications planned will reach the people affected such as disabled people and lone parents. The company has welcomed the Group's ideas for specific groups and the best communication methods to use.

One of the areas of focus of the Group has been on the company's monitoring and management of customer payment data, particularly the timing of payments, the numbers of missed payments and changes in methods of payment being used. The Group suggested some trends that ought to be monitored closely as they could indicate the start of an up-tick in arrears. The company agreed to look into this.

WW's bills will rise significantly as a result of its investment plans over the next five years.

The Group wished to be assured by the company that it would be doing all it could to ensure bills remain affordable for as many customers as possible. The VAP intends to review and challenge the company's plans on this later this year, including understanding the yardstick against which to assess the company's target for the number of people to be recruited to social tariffs. The VAP has also been encouraging the company to monitor the extent to which people know that a big increase in bills is coming in AMP8.

### 6.2 Affordability strategies and the Group's opinions

**WW plans to enhance the affordability of its services in AMP8 through the following:**

- › Reducing the revenue recovered as fast money
- › Setting RCV Run-off rates in relation to CCD indexed by CPIH
- › Making operational efficiency savings
- › Smoothing revenues to create a stable and affordable bill profile
- › Using uncertainty mechanisms to ensure that customers pay the right amount
- › Adopting progressive tariffs
- › Helping customer to save water
- › Helping customers who are financially vulnerable
- › Using social tariff cross subsidies.

The Group does not have sufficient financial expertise to comment on the design or benefits of the first five initiatives but notes many of

them are being developed or are being used in the current five-year period. The Group may have to consider acquiring these skills from a wider membership.

The Group notes that the installation of smart meters is a key enabler of increasing affordability alongside the company's social tariff. However, it also noted limited customer appetite and acceptance of smart metering, possibly due to poor experience with smart electricity meters or a lack of understanding of the full financial and environmental benefits of such technology. The company recognises that such consumption data is key to tariff design and testing and so plans to achieve 40% coverage of smart meters by 2030. The Group supports this.

The Group and the VAP welcomed the nimble way that WW adapted the conditions for access to Assist during the pandemic (delaying

## AFFORDABILITY

the need for a full financial statement) and its decision to maintain this. It was also pleased to hear that WW intends to assess water and wastewater tariffs that create incentives for customers, such as efficient water usage and separation of surface water from sewers.

The Group is pleased to see that the company's other water efficiency initiatives (audits and visits) are being increased in AMP8. The company has informed the Group that 60,000 new homes will be visited for AMP8 in the plan (86,000 when revisits for leak fixes are included). It is currently averaging 4,500 visits a year in AMP7 plus 750 leak fixes a year.

The Group welcomes the company's ambition to ensure no one is in water poverty by 2030 at the latest. Water poverty is defined by Ofwat as a householder's water bill being no more than 5% of their household disposable income. WW plans to achieve this by increasing the number of customers who receive a reduced bill tailored to meet their individual financial circumstances, through social tariffs, to around 140,000 from the current level of around 55,000.

The Group's review and opinion of the company's Vulnerability Strategy for AMP8 and social tariff cross subsidies is provided in Section 7 of this Report.

The Group has questioned the company on a number of occasions for assurance that it has considered all options for financing the Business Plan have been explored, particularly whether additional shareholder contributions to keep bill increases to a minimum or to contribute to the company's assistance schemes have been considered. The company provided this assurance.

## 7. VULNERABILITY

### 7.1 The Group's review and challenge

**The Group is fortunate that two of its members independently co-chair the company's Vulnerability Advisory Panel (VAP) and have been involved with the VAP for several years. This has created a direct link between the Group and the VAP and enabled the Group to be informed and assured of WW's performance and policies on financial and non-financial vulnerability.**

The VAP meets twice a year and provides a summary of its work and findings at the Group's meetings.

The Group has taken a close interest in the company's current Vulnerability Strategy, (known as "Every Customer Matters"), particularly the take up of WW's various customer assistance schemes (including numbers on the Priority Services Register) and the company's responses to the ongoing cost of living crisis. It has also reviewed how the company plans to evolve this strategy during the period 2025 – 2030.

The Group was informed that its VAP members consulted their colleagues and commented extensively on the first draft of "Every Customer Matters". The Group also understands the VAP made the point that, as the company's document acknowledges, people need to be treated as individuals as vulnerabilities are personal. The bulk of the report refers to the provision to assistance for specific groups of people. The VAP felt that greater clarity was needed over what the 'vulnerable' are actually vulnerable to. The Group welcomes that the VAP and the company will continue to work together on this.

The Group also reviews and challenges the company's tariffs each year.

Both the VAP and the Group have reviewed the evolution of the company's Vulnerability Strategy for 2025 – 2050.

### 7.2 Vulnerability strategies and the Group's opinions

**The company's Vulnerability Strategy for 2025 – 2050 includes:**

- › Providing its social tariffs to customers who need them (increasing such support from around 55,000 customers today to 140,000 by 2030)
- › Working with the independent debt advice sector and other partners (including the funding of the former) to raise awareness of the support on offer and to reach customers who need it most
- › Improving the application process for social tariffs to make it as easy and quick as possible to apply for the support on offer
- › Using data to automatically apply bill reductions to customers where possible without the need to complete an application
- › Using the Vulnerability Advisory Panel (VAP) to ensure the affordability support continues to meet the needs of customers. The VAP will also look at the expansion of existing schemes, creation of new tariffs, improvements to the application process and new initiatives to raise awareness and increase uptake
- › Increasing awareness and increase uptake of the affordability support
- › Funding local community projects across the region through the Wessex Water Foundation to improve access to services and build financial capability
- › Working with CCW, Defra and the industry to increase consistency in the affordability support available to customers regardless and to implement any changes required to the current suite of support based on if the legal guidance on social tariff changes
- › Complying with Ofwat's paying fair guidelines or any other relevant guidance around supporting customers to pay their bills, access help and repay debts.

While not a criticism, the Group considers that the focus on water poverty represents a major shift in focus for the company and the existing social tariffs were not designed with this in mind. They have been there to help people who struggle to pay their bills because they have an income shock or have very high expenses on other items and not only because they are poor.

As previously mentioned, the VAP advised the Group that it will be looking for more information on who is judged to be in water poverty, how numerous they are and therefore, how close the company's target comes to meeting the need.

The Group welcomes the company's plans for better communications around bills and bill increases for both metered and non-metered households. There has been some associated innovative work on this undertaken by WW recently, but the challenge will always be where communications are landing. The VAP intends to look at this in future. The Group commends and has supported WW's communications work generally and especially the way that the company is implementing policies to accommodate people with special communication needs, including people who are hearing or sight impaired, people with mental health problems or who are neurodiverse.

If an uptick is coming relating to applications for assistance because of bill increases, then issues such as capacity and payment rates will need close consideration.

The company's recent vulnerability training of its staff has looked to be very positive. Staff will have to monitor closely whether people know that a big increase in bills is coming in AMP8.

## VULNERABILITY

The Group has noted that WW is working with local councils on opportunities for data sharing. It enquired about the scope for data sharing on the disabled and those with long term health problems. It was pleased to hear that the company is actively looking at this.

The Group welcomes the company's intention to inject additional funding for the debt advice sector. Its members have noticed a decrease in people paying utility bills by cash. A large proportion of WW's customers pay by direct debit, particularly those on water meters. The Group considers WW may see customers switching away from using direct debit payments and more credit card use. The number of customers using credit cards to pay essential bills is on the rise. Early warnings of missed payments may come from credit card payments.

The Group expressed concern that arrears in other utilities are growing at a worrying rate. Other measures are showing increasing hardship. It has questioned whether WW's suite of assistance measures is adequate going forward and the appropriateness of the communication channels it is using to reach certain groups of customers. It was reassured to see the company is planning for an increase in customer support contact and increasing the promotion of the support on offer to customers across multiple channels. The VAP informed the Group that it will be encouraging the company to stress test the current schemes against the projected increases in water bills.

The Group noted that WW's tracker survey has been showing the level of worry over costs to be growing and that other stakeholders

saying that more middle-income customers are now starting to become concerned. This is a customer group that's unlikely to have sought help before.

The Group is most worried about people receiving state benefits and whether overall the communications planned will reach the people affected such as disabled people and lone parents. The VAP informed the Group that it was consulted on whether there were specific groups that ought to be targeted directly to offer them automatic reductions in water bills in the same way as pensioners. It discussed a number including carers, people with mental health conditions, cancer patients and people with health problems necessitating high levels of water use.

In addition, the Group understands that the company has informed the VAP that it considers that too much of the VAP's attention is on affordability and not on other needs of 'vulnerable people'. The VAP agrees and looks forward to broadening its discussions and reaching an agreement on the kinds of other vulnerabilities it and WW should be concerned about.

The company has welcomed the Group's ideas for specific groups and the best communication methods to use.

## 8. CONCLUSIONS

### 8.1 The Group's review and challenge

The Group is independently chaired, and its membership includes representatives from various customer and stakeholder groups including charities, academic specialists in customer engagement and social policy, the Consumer Council for Water (CCW) and the Environment Agency (EA).

The Group's Chair was in post for the last Price Review so has provided leadership and continuity since then. Several members of the Group have been involved in the independent challenge of water company business plans and company performance against regulatory obligations for many years and have been through several Price Reviews. Members have been recruited specifically for their knowledge of research methods, in view of the large body of research that would be commissioned.

Two sub-groups were established by the Group to enable it to review and scrutinise the customer engagement and the PR24 investment programme in detail.

The chairmanship of the company's long-standing Vulnerability Advisory Panel (VAP) is shared by two members of the Group, both previously sitting on the Panel.

Interaction between the Group and the company was mainly through meetings, both on line and face to face. There has been a total of 23 meetings of the Group and its Sub-Group with the company. The Group also reviewed information off line and fed back its findings to the company.

The Group used its Challenge Diary process to document the challenges, key questions and information requests made to WW and the company's responses to these. Around 260 challenges and the company's responses to them were logged. The Group regards its Challenge Diary as strong evidence of its independence and the extent of its challenge.

The Group has received full co-operation from the company throughout the process. Access to personnel from the company and its consultants was good and all information requests have been met.

There are no material areas of challenge outstanding.

### 8.2 The quality of customer and community engagement

**The Group received regular updates from the company on the implementation of its PR24 engagement framework. It reviewed and challenged the research methodologies for the individual elements of the engagement framework and discussed these with the company, both in meetings and off line.**

The company responded to all the Group's challenges and made changes to research methodologies and materials in many cases. The Group considered that it was contributing to the research in a challenging but collaborative way.

Members of the Group also attended several engagement events as observers and fed back their experiences to the company.

The Group reviewed the results from the research and the company's interpretation of them and their use in the Business Plan.

Most of the research undertaken for the Business Plan was company commissioned and specified. The affordability and acceptability testing of the Plan and the format and content of the Your Water, Your Say engagement were specified by Ofwat.

The Group has followed the Ofwat and CCW guidance for water companies on the testing of customers' views of the acceptability

and affordability of PR24 business plans. It suggested some amendments to the guidance that were accepted by Ofwat.

It also assessed the engagement for PR24 against Ofwat's standards for high quality research, customer challenge and assurance.

The Group welcomed that the company commissioned, experienced, specialist market research agencies to undertake the research and to synthesise the results. It was also pleased that its challenges and recommendations were listened to and taken on board.

While only required to confirm that the company followed the regulator-prescribed methodology for the affordability and acceptability testing of the Business Plan (which it did), the Group had significant reservations around it. Because of this, the Group cannot say that the methodology represented industry best practice, only that the guidance issued was followed.

The Group has concluded from its work that the areas of research it reviewed, other than the affordability and acceptability testing, met Ofwat's standards for high quality research, customer challenge and assurance.

## 8.3 The reflection of customers' needs and wishes in the draft Business Plan

**The company kept the Group updated on the development and content of its PR24 investment plan. The Group reviewed and challenged the components of the investment plan and their justification for inclusion throughout the process.**

The Group notes that the investment programme for PR24 is significantly greater than at PR19 and is being driven primarily by statutory requirements for maintaining and improving drinking water quality, for increasing water supply resilience, and for environmental protection and improvements. The WINEP is the largest programme by value. The Group held extensive discussion on this both when company staff were present and afterwards. It recommended that the company more strongly reflected in its Business Plan narratives the extent to which customer views played a part in shaping the Plan as opposed to regulatory requirements. It was pleased that the company did this.

Customers support much of the statutory work in principle. However, the scope and timing of this investment is set by the regulatory bodies.

Customers' priorities for services were gleaned from the company's PR24 research. The top three priorities are:

- › A safe and reliable water supply
- › Affordable bills
- › An effective sewerage system.

Other priorities include excellent river and coastal water quality, customer experience and other environmental improvements.

The Group considers WW has appropriately reflected these priorities in its eight outcomes for its Business Plan.

Each outcome as reflected in the 2025 – 2030 investment plan was reviewed by the Group in terms of the level of expenditure, the proportion that customers genuinely had a say in and a comparison with the level of similar expenditure in the current five-year period (which in many areas is significantly less than planned in future).

The Group also reviewed the trade-offs WW made between what customers wanted and what can be delivered affordably, and also the evidence from the customer engagement to support these.

Overall, the Group considers that the company has taken on board the feedback from its customers and has developed an investment plan to reflect this within the bounds of overall investment needs, government targets and other statutory obligations, and considerations of affordability.

## 8.4 The acceptability and affordability of the Plan

**The PR24 investment programme results in significant bill increases and challenges around affordability and deliverability.**

The Group is concerned with the relatively low acceptability of the Business Plan. Acceptability at both the qualitative and quantitative stages of research was similar. Overall, 62% of both household and non-household customers accepted the Plan in the quantitative research. The figure for household customers was 58%.

The lack of acceptance of the PR24 Plan is associated with issues of the cost of the Plan (and the corresponding bill increases) and a feeling that water companies' profits are too high, and that they should be paying for more of the investments (driven in part by recent adverse publicity). The Group pressed the company for greater clarity on how the costs of the Plan have been distributed between customers and investors and was pleased to see the company did this in its Business Plan narratives.

WW plans to enhance the affordability of its services in AMP8 through better revenue and other financial management, adopting progressive tariffs, helping customers to save water, assisting customers who are financially vulnerable and using social tariff cross subsidies.

The Group welcomes the company's ambition to ensure no one is in water poverty by 2030 at the latest. WW plans to achieve this by increasing the number of customers who receive a reduced bill tailored to meet their individual financial circumstances, through social tariffs, to 140,000 around 55,000 currently. The Group welcomes the aspiration but is unable to comment at this point if the target of 140,000 will be reached. The VAP will be exploring this with the company later in the year and that other customers in need will also be adequately covered.

The Group and the VAP welcome the continued use and further development of the company's Assist social tariff scheme. It is also pleased to hear that WW intends to investigate water and wastewater tariffs that create incentives for customers, such as efficient water usage and separation of surface water from sewers.

The Group (through the VAP) looks forward to working with the company on tariff innovation and challenging its social tariff offering. The Group recognises that the installation of smart meters is a key enabler of affordability, alongside the company's social tariff. However, there is limited customer appetite for and acceptance of smart metering. Despite this the Group supports the company's plans to achieve 40% coverage of smart meters by 2030.



## 8.5 Addressing customer vulnerability

**The VAP made considerable input to the company's Vulnerability Strategy for 2025 – 2050 and provided detailed comment on drafts.**

The Group welcomes the Vulnerability Strategy.

The Strategy is founded primarily on the company's social tariffs and the offering of these to a much greater number of customers. WW also plans to increase the awareness of the social tariffs and improve the associated application process.

In addition, the company intends to work more extensively with the debt advice sector and other partners, including increasing funding to the former, in order to identify customers who would benefit from the social tariffs. The Group welcomes this and notes that WW is already working with local councils on opportunities for data sharing.

The company will fund local community projects across the region through the Wessex Water Foundation to improve access to services and build financial capability.

The Group welcomes the company's plans for better communications around bills and bill increases for both metered and non-metered

households. It commends and has supported WW's communications work generally and especially the way that the company is implementing policies to accommodate people with special communication needs. The Group was reassured to see the company is planning for an increase in customer support contacts and increasing the promotion of the support on offer to customers across multiple channels. The company has embraced the Group's ideas for specific groups and the best communication methods to use.

WW will also continue to use the VAP, independently chaired by two of the Group's members, to ensure the affordability support continues to meet the needs of customers. The VAP will also look at the expansion of existing schemes, creation of new tariffs, improvements to the application process and new initiatives to raise awareness and increase uptake.

Both the Group and WW have concerns that VAP has, perhaps, focussed too much on affordability and that going forward it needs to have more of a focus on the wider initiatives from the company.

# APPENDICES

## APPENDIX 1: Glossary

<b>A&amp;A</b>	Acceptability and affordability
<b>AMP7 and AMP8</b>	Asset Management Plan periods 7 (2020 – 2025) and 8 (2025 – 2030)
<b>CCG</b>	Customer Challenge Group
<b>CCW</b>	The Consumer Council for Water
<b>COG</b>	Company Oversight Group
<b>CSO</b>	Combined Sewer Overflow
<b>DWI</b>	Drinking Water Inspectorate
<b>DWMP</b>	Drainage Water Management Plan
<b>EA</b>	The Environment Agency
<b>FD19</b>	Final Determination (Ofwat December 2019)
<b>ICG</b>	Independent Challenge Group
<b>ODI</b>	Outcome Delivery Incentive. Delivery of each Performance Commitment was assigned a financial or reputational incentive by Ofwat in the Final Determination
<b>Ofwat</b>	Water Services Regulation Authority – the economic regulator of the water sector in England and Wales
<b>PCC</b>	Household per capita consumption
<b>Performance Commitment</b>	Performance measures supporting the Outcomes.
<b>PR19</b>	Price Review 2019
<b>PR24</b>	Price Review 2024
<b>PSR</b>	Priority Services Register
<b>WaSC</b>	Water and Sewerage Company
<b>WINEP</b>	Water Industry National Environment Programme
<b>WRMP</b>	Water Resources Management Plan
<b>WW</b>	Wessex Water

For information on the economic regulation of the water industry in England and Wales, including the setting of prices, the reader is directed to the regulator's website [www.ofwat.gov.uk](http://www.ofwat.gov.uk).

## APPENDIX 2: List of Group members

<b>Dan Rogerson</b>	Chair
<b>Richard Cresswell</b>	Chair of WW Catchment Panel
<b>Declan Smyth</b>	CCW
<b>Mike Short</b>	CCW
<b>Kevin Ward</b>	Environment Agency
<b>Elaine Kempson</b>	University of Bristol
<b>Joy Mhonda</b>	NatCen Social Research
<b>Sarah Cardy</b>	Age UK Wiltshire
<b>Suzanne Wigmore</b>	Wiltshire Citizens Advice
<b>Jeremy Hawkins</b> (Report Writer)	Creoda Consulting

## APPENDIX 3: List of meetings

## Customer Challenge Group meetings

Date	Topics discussed
27 June 2022	Feedback from the CRSG, VAP and CP Customer engagement update Regulatory and topical updates PR24 developments 2021/22 PC and ODI performance
5 October 2022	Regulatory and topical updates (PR24 methodology, water resources and leakage) 2023/24 charges Feedback from the CRSG, PCISG, VAP and CP Industry comparative performance 2021/22
7 December 2022	PR24 update Feedback from the VAP and CP Customer engagement update Mid-year 22/23 PC & ODI performance Customer complaints analysis Information Assurance Plan
29 March 2023	Feedback from CP Customer engagement update Affordability update PR24 update Environmental performance deep dive
7 June 2023	22/23 performance review Customer engagement update PR24 update (investment plan, bill impacts and the Group's PR24 Report) The Group's Annual Report 2023
18 September 2023	The WW PR24 Business Plan In camera review and finalisation of the Group's PR24 Report

## APPENDIX 3: List of meetings

## Customer Research Sub-Group meetings

Date	Topics discussed
7 March 2022	Update on Ofwat/CCW collaborative research plans for PR24 WW PR24 research update Continuous engagement updates
8 June 2022	Willingness to Pay research – NERA and QA Update on Ofwat/CCW national engagement programme WW PR24 research and continuous engagement
23 September 2022	Willingness to Pay research National engagement programme Draft PR24 methodology – customer engagement PR24 research and continuous engagement
11 January 2023	Ofwat/CCW national engagement programme WW PR24 research and continuous engagement
29 March 2023	CCG challenges on A&A testing A&A qualitative pre reading and stimulus materials
24 May 2023	Sustainable abstraction research Triangulation and synthesis Your Water Your Say Update on other engagement Update on Ofwat/CCW national ODI research
14 June 2023	Interim report on A&A qualitative research Additional qualitative testing Quantitative stage
5 July 2023	Triangulation and synthesis Social tariff research
12 September 2023	Quantitative affordability and acceptability results Triangulation and synthesis

## APPENDIX 3: List of meetings

## Performance Commitment and Investment Sub-Group meetings

Date	Topics discussed
22 July 2022	Comparative performance 21/22 Reflections on AMP7 PCs Review of Ofwat's draft PR24 methodology The role of the PCISG
13 January 2023	Final PR24 methodology overview WINEP Performance commitment summary LTDS overview Transition expenditure Asset management strategy Timelines and future meetings
3 March 2023	Summary plan discussion Full suite of PCs Wider investment programme AMP8 transition and delivery
4 April 2023	CCW affordability questions Summary of cost adjustment claims Bespoke PC review Full set of PCs with customer evidence
10 May 2023	Revised totex plan Performance commitments Asset management overview Assurance requirements
30 June 2023	Revised totex plan including PCs National ODI rates Price Control Deliverables AMP8 deliverability and transition investment CCG PR24 report
25 July 2023	WINEP update and revised totex plan Price Control Deliverables ODI rates update PC targets CCG PR24 report
12 September 2023	The company's revised totex plan ODI rates from Ofwat Price Control Deliverables AMP8 transition and deliverability The CCG's PR24 Report

## APPENDIX 4: The Group's assessment of its compliance against Ofwat's independent customer challenge requirements

### **INDEPENDENCE – people involved in the challenge process and the process of challenge to be independent of the company, public sharing of challenges**

All members of the CCG are independent of the company.

The CCG Chair, the Catchment Panel Chair and the Report Writer receive a remuneration from the company for their work, but the extent and timing of this work is not determined by WW.

CCG members, other than from the national regulators/statutory organisations, may receive a donation to their organisations from the company.

The Chair is free to identify the need for and recruit new CCG members as necessary, keeping the company informed.

The agendas for CCG meetings are set by the Group in discussion with the company.

Meeting facilities are provided by the company.

Meetings begin and end with in-camera sessions from which the company is excluded.

Notes and minutes of meetings are produced by the Group.

The CCG's reports are drafted and approved by the Group. WW may provide support in the production of the reports.

### **BOARD ACCOUNTABILITY – mechanism in place for, and listening to, customer challenge. Demonstrate how plans and decision-making take account of matters important to customers**

A company INED attends the meetings of the CCG and contributes to its challenge.

The Chair and Report Writer present the CCG's Annual Report to the Risk and Assurance Committee of the WW Board.

They have also discussed the CCG's findings and report on the PR24 Business Plan with the WW Non-Executive Director Board who acts as the CCG's liaison point with the WW Board.

### **ONGOING – addresses both development and delivery of plans, welcome and respond to challenges on day-to-day performance as well as development of plans and longer-term strategies**

The CCG's Terms of Reference include review and challenge of the company's customer engagement, the use of the engagement results in the PR Business Plan and other long-term strategies, the company's affordability and vulnerability strategies and the company's performance against its current regulatory performance commitments and ODIs.

These are standing items on the CCG meeting agendas and form the basis and content of the CCG's Reports.

### **INFORMED – informed by high-quality, comparative information and trends. Access to information, data and evidence**

The CCG requests and the company provides comparative data and trend data when required.

The CCG Chair also attends the independent Challenge Co-ordination Group (COG) which is facilitated by CCW and is intended to provide comparative performance data, both on companies and CCGs.

### **TRANSPARENT – transparent about nature of challenges raised, company response and company's relative performance. Explain evaluation of different business plan options, publish evidence of customers view, record of challenges, identification of areas of disagreement**

The CCG maintains an independent Challenge Diary which records the key questions and challenges it raises, the company's response to them (including whether the company has changed its approach as a result) and whether the matter has been closed satisfactorily or otherwise.

### **REPRESENTATIVE – range of customers and open to all relevant local or national stakeholders**

The CCG membership currently includes CCW, the EA, Citizens Advice, Age UK, three specialists in customer research, and the independent Chair of the WW Catchment Panel.

The CCG Chair and CCG members are free to identify the need for and recruit further expertise if needed and in discussion with the company.

### **COMPREHENSIVE – focused on full range of areas where customers can have meaningful views including water and wastewater, customer services, large one-off schemes, performance levels and bill impacts**

The CCG's Terms of Reference includes the review and challenge of the company's regulatory and operational performance in water and wastewater, customer services, large one-off schemes (where appropriate) and on bill impacts.

### **TIMELY – challenge is timely. Company response within a reasonable period of time**

The CCG and its sub-groups meet in accordance with a schedule agreed each year with the company.

Meeting minutes and actions are published by the CCG within a week of each meeting.

Meeting actions are generally completed before the next meeting takes place.

The CCG's Challenge Diary and the company's responses to it are updated at least quarterly and a summary of challenges and any outstanding issues is provided in the CCG's Annual Report and its report on the company's PR24 Business Plan.



## APPENDIX 5: The Group's assessment of the WW's customer engagement against Ofwat's standards for high quality research

Wessex Water CCG PR24 Customer Engagement Assurance Tracker	
High quality research – minimum standards	
<b>USEFUL AND CONTEXTUALISED</b>	
<b>Ofwat/CCW requirement</b>	Research should have practical relevance. It should be clear why the research has been undertaken, to what it will contribute and how. The research should be designed with quality rather than quantity as a priority (in other words, a better quality of research, rather than a larger quantity of research). As much as possible, research findings should be presented alongside a wider evidence base – including research conducted by others. The analysis should contextualise the findings and explain how they will be used.
<b>Overview of the CCG's approach</b>	<p>The CCG sought confirmation and other evidence from the company and/or its market research partners that each item of PR24 research has had practical relevance. This evidence and justification was found in the reports of each piece of research or through verbal confirmation from the company and/or its market research partners.</p> <p>The CCG assessed this evidence alongside the discussions it's had with the company, its review of the research methodologies, the challenges it has raised and logged and the company's responses to these. The CCG also reviewed the results from each piece of PR24 research and its use by the company in the PR24 Business Plan.</p>
<b>The CCG's findings</b>	<p>The CCG has reviewed, challenged and commented on each research methodology at a high level as it was developed by the company and its research partners. The PR24 specific research were:</p> <p>Strategic Direction, Willingness to Pay, Water Efficiency and Smart Metering, Sustainable Abstraction, Affordability &amp; Acceptability (mandated by Ofwat/CCW), Social Tariff Cross Subsidy, Your Water, Your Say (mandated by Ofwat/CCW), Public consultation on the Business Plan.</p> <p>The methodology for the affordability and acceptability (A&amp;A) testing of the Business Plan was mandated by Ofwat and CCW. The CCG's views on the A&amp;A methodology are reported separately.</p> <p>The company reviewed the CCG's feedback and took it on board where it agreed with it and provided its justification where it didn't. Most of the CCG's feedback was adopted and the CCG had no material residual concerns where it wasn't. Through this approach the CCG became aware of and has understood the purpose of each piece of company research. Apart from the A&amp;A methodology (reported elsewhere) it didn't identify any material issues to date in this respect.</p> <p>The company shared the results of each piece of research with the CCG. The use of the research results by the company in its Business Plan was reviewed at high level by the CCG.</p> <p>The company complied its research reports and set out why each piece of research was undertaken and why and how it contributed to the PR24 Business Plan. The CCG reviewed these reports.</p>
<b>NEUTRALLY DESIGNED</b>	
<b>Ofwat/CCW requirement</b>	Research should be designed and delivered in a way that is neutral and free from bias. The potential for bias and the ways to negate this should be considered at every stage of a project, and evidenced – including set up, question wording, question ordering, stimulus materials, selective use of quotes or data in reporting and interpretation of findings. If there is some inherent bias that is unavoidable or was an unintentional outcome of the research, this should be acknowledged and explained in the research findings.
<b>Overview of the CCG's approach</b>	<p>The CCG sought confirmation or other evidence from the company and/or its market research partners that each item of PR24 research was designed and delivered in a way that was neutral and free from bias. This evidence and justification was found in the reports of each piece of research or through verbal confirmation from the company and/or its market research partners.</p> <p>The CCG assessed this evidence alongside the discussions it had with the company, its review of the research methodologies, the challenges it has raised and logged and the company's responses to these. The CCG also reviewed the results from each piece of PR24 research and its use by the company in the PR24 Business Plan.</p>
<b>The CCG's findings</b>	<p>The CCG reviewed, challenged and commented on each research methodology and the associated research materials as they were developed by the company and its research partners. The CCG's views on the A&amp;A methodology and samples are reported separately.</p> <p>Through this approach the CCG was able to look for issues of neutrality and bias in the company's methodologies and research materials.</p> <p>It challenged the presentation of stimulus that was part of the sustainable abstraction research which presented different options for reducing abstraction in a 'top trumps' style. Changes were made to ensure the options were being fairly presented and 'rated' and to avoid the risk of the stimuli leading customers to agree with a method more preferable for the company.</p> <p>The CCG did not identified any residual material issues with the neutrality of the research materials.</p> <p>The CCG has attended a sample of research events. It did not identify any material issues with neutrality or bias in the research it observed.</p> <p>The company shared the results of the qualitative and quantitative research with the CCG. The use of the research results by the company in its Business Plan was reviewed at high level by the CCG.</p> <p>The company compiled its research reports and set out why each piece of research was undertaken and why and how it contributed to the PR24 Business Plan. The CCG reviewed these reports.</p>

## APPENDIX 5: The Group's assessment of the WW's customer engagement against Ofwat's standards for high quality research

Wessex Water CCG PR24 Customer Engagement Assurance Tracker	
High quality research – minimum standards	
<b>Ofwat/CCW requirement</b>	<b>FIT FOR PURPOSE</b>
	The research sample and methodology should be appropriate for the research objectives. Participants should be able to understand the questions they are being asked and surveys should limit the use of forced choice options. A research approach that has previously been challenged should not be repeated unthinkingly. Innovation is welcome if it is likely to lead to meaningful and trusted insight and learning.
<b>Overview of the CCG's approach</b>	<p>The CCG sought confirmation and other evidence from the company and/or its market research partners that the research sample and methodology for each item of PR24 research is appropriate for the research objectives. This evidence and justification was found in the reports of each piece of research or through verbal confirmation from the company and/or its market research partners.</p> <p>The CCG assessed this evidence alongside the discussions it had with the company, its review of the research methodologies, the challenges it has raised and logged and the company's responses to these. The CCG also reviewed the results from each piece of PR24 research and its use by the company in the PR24 Business Plan.</p>
<b>The CCG's findings</b>	<p>The CCG reviewed, challenged and commented on each research methodology and the associated samples used as they were developed by the company and its research partners. The CCG's views on the A&amp;A methodology and samples are reported separately.</p> <p>Through this approach the CCG was able to assess the company's methodologies and samples. It did not identify any material issues other than with the Ofwat affordability and accepting testing methodology.</p> <p>The CCG attended a sample of research events.</p> <p>Robust challenges were made on a number of important aspects, including the testing around sustainable abstraction, the affordability and acceptability of the Plan and the willingness to pay for it. The company considered and addressed these challenges to the Group's satisfaction where it was able to and within the boundaries set by the prescribed Ofwat/CCW methodologies for certain area of research.</p> <p>The Group did not identify any residual material issues on the engagement it reviewed although it expressed significant concerns over the sampling methodology and sample sizes associated with the prescribed Ofwat/CCW A&amp;A testing methodology and the volume, clarity and format of the information provided to participants for this research (both of which the company has little control over).</p> <p>The company shared the results of each piece of research with the CCG. The use of the research results by the company in its Business Plan was reviewed at high level by the CCG.</p> <p>The company complied its research reports and set out why each piece of research was undertaken and why and how it contributed to the PR24 Business Plan. The CCG reviewed these reports.</p>
<b>Ofwat/CCW requirement</b>	<b>INCLUSIVE</b>
	<p>Research should include different audiences and socio-demographics, considering local or regional or national populations, business customers and business retailers. Where possible, research findings should identify and report on variances by socio-demographics and consumer types (for example, bill payers, future customers).</p> <p>Research findings should provide details of those who may have been excluded or under-represented in the research. Where possible, research should use mix-method approaches to provide a more inclusive set of findings. While the range of representation may vary from project to project, the research programme as a whole should be demonstrably inclusive.</p>
<b>Overview of the CCG's approach</b>	<p>The CCG sought confirmation or other evidence from the company and/or its market research partners that different audiences and socio-demographics had been included in each item of PR24 research and that local or regional or national populations, business customers and business retailers have been considered. The CCG also checked that each set of research findings report on variances by socio-demographics and consumer types and provided details of those who may have been excluded or under-represented in the research, and that the research had been demonstrably inclusive.</p> <p>This evidence and justification was found in the reports of each piece of research or through verbal confirmation from the company and/or its market research partners.</p> <p>The CCG assessed this evidence alongside the discussions it's had with the company, its review of the research methodologies, the challenges it has raised and logged and the company's responses to these. The CCG also reviewed the results from each piece of PR24 research and its use by the company in the PR24 Business Plan.</p>
<b>The CCG's findings</b>	<p>The CCG has reviewed, challenged and commented on each research methodology and the associated samples used as they were developed by the company and its research partners.</p> <p>Through this approach the CCG has been able to assess whether different audiences and socio-demographics have been included in each item of PR24 research and that local or regional or national populations, business customers and business retailers have been considered. It has not identified any material issues to date.</p> <p>The CCG has attended a sample of research events. It did not identify any material issues with audience composition or demographics in the research it observed.</p> <p>The company shared the results of each piece of research with the CCG. The use of the research results by the company in its Business Plan was also shared.</p> <p>The company compiled its research reports in which it described the methodology for each piece of research that has been undertaken, the samples used and the basis of these. The CCG reviewed these to check that each set of research findings reports on variances by socio-demographics and consumer types and provides details of those who may have been excluded or under-represented in the research, and that the research has been demonstrably inclusive.</p>

## APPENDIX 5:

## The Group's assessment of the WW's customer engagement against Ofwat's standards for high quality research

<b>Wessex Water CCG PR24 Customer Engagement Assurance Tracker</b>	
<b>High quality research – minimum standards</b>	
	<b>CONTINUAL</b>
<b>Ofwat/CCW requirement</b>	Companies' research programmes should be continual, enabling day-to-day insight gathering, as well as specific and relevant research for informing business plans and long-term delivery strategies. This will allow areas of concern or change to be more easily identified and acted on.
<b>Overview of the CCG's approach</b>	<p>The company's routine engagement includes:</p> <p>The Wessex Water Image Tracking Survey, Young People's Panel, Unitary authority engagement, Home Check, Have Your Say Panel (online)</p> <p>The CCG reviewed the results at high level from each piece of routine customer research and its use by the company in the PR24 Business Plan.</p>
<b>The CCG's findings</b>	<p>The company presented its routine engagement methodologies and results to the Group at regular intervals during the year. The Group reviewed and challenged these.</p> <p>The Group welcomed the company's engagement with local authorities in its area, particularly with Bath and North East Somerset (BANES).</p> <p>Members of the Group found the outcomes from the Young People's Panel interesting, particularly the ideas about the waste water campaign and 'one drop at a time'. It noted that the company has taken some of these on board.</p> <p>Overall, the Group was content with the company's routine engagement activities undertaken during the year.</p> <p>The Group was mindful that Ofwat expects companies to make better use of sources of ongoing data available to them e.g. from contacts, complaints and feedback, to reveal customer preferences. It challenged the company to show how these data sources have been utilised and triangulated with the results from the company's research being undertaken for the PR24 Business Plan. This was done to the Group's satisfaction.</p>
	<b>INDEPENDENTLY ASSURED</b>
<b>Ofwat/CCW requirement</b>	Whether the research has been reviewed by individuals or groups independent of water companies. Reviewers should have range of relevant skills and experience and confident to challenge.
<b>Overview of the CCG's approach</b>	The CCG is independent of Wessex Water and members have specialist knowledge on consumer behaviour and engagement, customer vulnerability and social welfare, and water industry regulation and consumer rights. Many members have been involved with the CCG for several years and have been through a number of Ofwat Price Reviews.
<b>The CCG's findings</b>	<p>The CCG reviewed and challenged the research methodologies for the individual elements of the PR24 engagement framework and discussed these with the company. The company responded to all the CCG's challenges and made changes to research methodologies and materials in many cases. The Group considered that it was contributing to the research in a challenging but collaborative way.</p> <p>The CCG maintained an independent Challenge Diary which recorded the key questions and challenges it raises, the company's response to them (including whether the company has changed its approach as a result) and whether the matter has been closed satisfactorily or otherwise. Some 260 challenges on the PR24 engagement were logged.</p> <p>Members of the Group also attended several engagement events as observers and fed back its experiences to the company.</p>

## APPENDIX 5: The Group's assessment of the WW's customer engagement against Ofwat's standards for high quality research

Wessex Water CCG PR24 Customer Engagement Assurance Tracker	
High quality research – minimum standards	
<b>Ofwat/CCW requirement</b>	<b>SHARED IN FULL WITH OTHERS</b>
	<p>Research findings should be published and shared in full, as early as possible with as wide an audience as possible. This will add value to the evidence base on customers:</p> <ul style="list-style-type: none"> <li>by allowing research approaches to be understood and improved on;</li> <li>by building the shared knowledge base about customers' views, preferences and experiences;</li> <li>by allowing research findings to be considered in a comparative way – meaning water companies can better understand their own customer base, by comparison with the findings from other areas.</li> </ul> <p>Research findings should always be accompanied by clear and detailed information on the methodology for the research. This should include, for example, recruitment screeners, questionnaires, discussion guides, and copies of any stimulus materials.</p>
<b>Overview of the CCG's approach</b>	The CCG confirmed that each set of PR24 research findings had been published and shared in full, and had been accompanied by clear and detailed information on the methodology used for the research.
<b>The CCG's findings</b>	The CCG reviewed the company's compilation of its research reports in which it described the methodology for each piece of research that was undertaken. This enabled the CCG to check to its satisfaction that each included clear and detailed information on the methodologies for each piece of research.
	<b>ETHICAL</b>
<b>Ofwat/CCW requirement</b>	Research should be conducted in line with the ethical standards of a widely recognised research body – such as the Market Research Society or the Social Research Association.
<b>Overview of the CCG's approach</b>	<p>The CCG will seek confirmation or other evidence from the company and/or its market research partners that each item of PR24 research has been conducted in line with recognised industry ethical standards. This evidence and justification may be found in the reports of each piece of research or through verbal confirmation from the company and/or its market research partners.</p> <p>The CCG will assess this evidence alongside the discussions it's had with the company, its review of the research methodologies, the challenges it has raised and logged and the company's responses to these. The CCG will also review the results from each piece of PR24 research and its use in by the company in the PR24 Business Plan.</p>
<b>The CCG's findings</b>	The CCG reviewed the company's compilation of its research reports in which it described the methodology for each piece of research that was undertaken. This enabled the CCG to review these to check to its satisfaction that each included a statement that the PR24 research has been conducted in line with recognised industry ethical standards.

## APPENDIX 6: Role of ICGs in the acceptability and affordability testing of the business plan – summary of key tasks identified in the Ofwat/CCW guidance and the Group’s findings

Task	The Group’s findings
<p><b>Advise on sample segments for the qualitative research alongside the research supplier</b></p>	<p>Ofwat and CCW prescribed the methodology to be used for the testing of the acceptability and affordability (A&amp;A) of companies’ PR24 business plans. The Group was mindful that it was not required to comment on the prescribed research methodology, but to confirm that the company has followed it and that decisions have been made sensibly. However, the Group had several significant concerns with the methodology (see <i>Tasks below</i>). The company raised several of them with Ofwat and CCW and the Group was pleased to see that some aspects of the methodology were clarified as a result. Overall, the professional researchers in the Group would have preferred a more robust methodology for the A&amp;A testing.</p> <p>The CCG noted that the Ofwat/CCW methodology required over-recruitment of vulnerable customers as they are proven to be less likely to volunteer to participate. It accepted this.</p> <p>The CCG challenged the proposed composition of the ‘vulnerable’ group, which was originally to be primarily older people. This was acted on and a wider range of people on lower incomes of all ages attended.</p> <p>The Group had concerns over the representation of deprived customers in the A&amp;A research, but these were not borne out in practice.</p> <p>The Group advised against putting people from different socio-economic groups together but acknowledged that this was the company’s decision. The Group suggested a compromise in ensuring people are confident in speaking in a workshop environment when recruiting and was pleased to see the company adopt this approach.</p> <p>The CCG’s concerns were primarily around ‘working the sample’ to get the maximum number of respondents (of which using reminders is a part). With a random probability sample, the anticipated response rate is estimated and used to determine the number of contacts that need to be drawn from the records and seek to get completed questionnaires from as many of these as possible so that the sample is as representative as possible, using reminders, and stopping the fieldwork when replies have slowed to a trickle rather than when a set number has been reached. The recognised approach for a random probability sample is to maximise response rates and therefore a robust engagement approach is required to ensure that every person sampled has an equal opportunity to participate (i.e. using several reminders to boost response rates). This did not appear to be included in the Ofwat/CCW methodology. A random sample survey without any reminders would result in a very low response rate and therefore require a much larger sample to be issued initially. By maximising response rate, non-response bias would be minimised. When fieldwork is complete, any biases in the sample have to be identified and corrected using weighting. This will have the effect of reducing the ‘effective’ sample size from the number of responses actually achieved. It is clear that Ofwat hasn’t thought any of this through, especially the need for weighting, when it prescribed a random probability sample.</p> <p>The company agreed to add a reminder step as some way towards addressing the issue of obtaining a random probability sample. The Group welcomed this. Ofwat later said that a reminder would be good in all company areas, but they couldn’t prescribe it at this late stage.</p> <p>The CCG recommended that the issue of weighting be explored with Ofwat but accepted that the company had to do what everyone else does. However, it felt it would be highly undesirable if this meant not doing any weighting at all. It will be important that Ofwat co-ordinates the characteristics on which the sample is weighted.</p>
<p><b>Help define the approach for including future bill payers in the research using the options set out in the guidance</b></p>	<p>The company’s research consultants defined the proposed approach to engage future bill payers in its A&amp;A methodology.</p> <p>The proposed approach for the first round of qualitative testing included two three-hour face to face deliberative groups each comprising eight participants with a 20-minute pre read. The events were to be held in Bath and Bristol.</p> <p>The Group reviewed the proposed approach and considered it to be appropriate for the purpose and in line with the Ofwat/CCW guidance.</p> <p>The Group received a debrief from the company and its consultant of the results from these sessions.</p> <p>The Group will be reviewing the approach for including future bill payers in the forthcoming quantitative research.</p>
<p><b>Agree approach for any qualitative retesting if required</b></p>	<p>The Group discussed with the company whether it should push forward on a second round of qualitative A&amp;A testing because the Business Plan is still evolving and agreed that this would be unlikely to yield further meaningful information.</p>

## APPENDIX 6: Role of ICGs in the acceptability and affordability testing of the business plan – summary of key tasks identified in the Ofwat/CCW guidance and the Group’s findings

Task	The Group’s findings
<b>Tailoring of research materials</b>	<p>The research materials describing the plan need to be relevant to the audience in question and fit the methodology being used (whether deliberative discussion or in-depth interview). Companies should consult with their chosen supplier and ICG on the tailoring of research materials.</p> <p>The Group reviewed the testing material for the quantitative stage of the research and recommended some changes which the company adopted.</p>
<b>Comment on the company’s proposed approach to recruitment of the household and future bill payer samples</b>	<p>The Group raised several challenges to the proposed participant recruitment process for the qualitative A&amp;A research (including household and future bill payers). These are reported under ‘determine sample sizes’ below.</p>
<b>Discuss how the company has made the delivery of the pre-read content and taking part in any in-depth interviews as accessible as possible for more vulnerable customers</b>	<p>The Group reviewed the proposed format for the qualitative testing and attended a sample of events. The proposed format included face-to-face deliberative events held at several locations across the company’s supply area. These included household customers, vulnerable customers on low incomes and future bill payers. Separate online deliberative events were held for micro non-households, SMEs and vulnerable customers with health issues (PSR customers).</p> <p>The Group noted that the Ofwat/CCW guidance is very prescriptive in terms of content for pre-reading and stimulus including the way information is displayed. However, it raised several challenges on the proposed testing materials.</p> <p>The Group had real concerns about to volume, clarity and format of the stimulus materials. The company’s research consultants dealt with this on the day, and briefed participants orally and focused on the key points, re-iterating these in the break out discussion groups. The Group observed that some participants turned up on the day and had not registered or received the briefing materials. However it was considered that they were not disadvantaged in any way by not having read the briefing.</p> <p>The Group was pleased with the company’s responses to its challenges, including holding a pilot study for ‘family and friends’ of the company where the research materials were tested.</p> <p>From its review and attendance at a sample of event, the Group considered the final research materials used for the deliberative events to be as clear for all customer groups (including the vulnerable) as allowable within the Ofwat/CCW requirements.</p> <p>The Group reviewed the accessibility for vulnerable customers of any pre-read content and in-depth interviews for the quantitative research stage and found it to be appropriate.</p>
<b>Help decide the best format for the main deliberative discussions i.e. F2F and/or online – at least one CCG member to observe discussions</b>	<p>The Group was happy with the proposed format although, given the required scope of the research and the matecan trial that had to be covered (<i>see below</i>), it felt that the three hours planned for the face-to-face deliberative events would be challenging for participants and possibly not long enough. It was pleased to learn that breaks during the sessions would be included which may help combat information over-load. Group members attended several face-to-face events including the Wessex Water household face to face events in Bath, Salisbury and Taunton and the Wessex Water/Bristol Water event in Bristol.</p> <p>They also attended two of the online session with non-householders.</p> <p>The Group considered that the events were well run and met the objectives set for them.</p>

## APPENDIX 6: Role of ICGs in the acceptability and affordability testing of the business plan – summary of key tasks identified in the Ofwat/CCW guidance and the Group’s findings

Task	The Group’s findings
<p><b>Input into wording used in the research materials where needed e.g. describing statutory programmes, and agree content of any additional or tailored stimulus a company may choose to use to summarise and describe the business plan. Ofwat have provided a film for companies to include to describe the business plan process but the CCG can agree an alternative with the company</b></p>	<p>The Group noted that the Ofwat/CCW guidance was very prescriptive in terms of content for pre-reading and stimulus including the way information is displayed.</p> <p>The Group reviewed the company’s proposed material for the deliberative and qualitative testing before it was finalised. The Group had real concerns about the volume, clarity and format of the qualitative research information and strongly recommended that it should be piloted before it was used. The Group raised several questions and concerns on the proposed materials including:</p> <ul style="list-style-type: none"> <li>› This was going to be a challenging task for everyone – designers, presenters, moderators and participants. It will be very important to ensure that everyone participates, regardless of how closely they read the documents.</li> <li>› In general, the proposed material contained far more information than the average consumer needs to know. The company was encouraged to work hard to reduce the amount of information given in both the pre-task pack and the workshop slides to the key points, otherwise people will be overwhelmed by the detail and give up</li> <li>› Some information appeared to be overly complicated</li> <li>› Improvements should be made to improve the visual presentation of some information to aid understanding</li> <li>› Graphics should be used where they convey information better than words</li> <li>› Participants need to be able to understand the material and the company needs to know they have read it in advance</li> <li>› There is a risk that few participants will have read the one-page plan beforehand. The pre task slides may also cause people to drop out</li> <li>› Participants should be asked in the session if they have skim read the pre-test material or read it in detail</li> <li>› It was recommended that a pilot session is held or, if time does not allow this, that the first session becomes a de facto pilot with a pause for reflection and revision before other sessions are held.</li> </ul> <p>The company and its consultants welcomed the Group’s comments and challenges and reviewed and acted on all of them. The subsequent pilot led to substantial changes in the materials. Many other changes were made as a result of the challenges. The Group was pleased with the company’s response to its challenges and considered the final research materials used in the qualitative sessions to be in line with the Ofwat/CCW requirements and as clear as these would allow. It noted that some materials were further refined in minor terms as the testing progressed.</p> <p>The Group reviewed the materials for the quantitative A&amp;A research stage. It recommended a reminder be sent to participants and that ages of the participants were recorded (in bands) on the survey questionnaire. The Group was pleased that the company adopted these recommendations.</p>
<p><b>Consider what piloting and testing is needed in the research, taking account of Ofwat’s suggestions in the guidance. Review outputs of piloting and agree any subsequent changes to research materials</b></p>	<p>The Group strongly recommended that a pilot test of the qualitative research material was undertaken and recommended not screening out everyone that declines to give an age, but first screen them to see if they are over 18 – and so eligible. This was cleared by Ofwat and included.</p> <p>A pilot study was held for ‘family and friends’ of the company where the deliberative research materials were tested. The Group very much welcomed this.</p> <p>The Group reviewed whether piloting and testing is needed for the quantitative research and agreed with the company’s approach not to do so.</p>
<p><b>Receive a record of any responses provided by a company representative during the qualitative research as part of the assurance process</b></p>	<p>No responses were provided by company representatives during the qualitative research.</p>

## APPENDIX 6: Role of ICGs in the acceptability and affordability testing of the business plan – summary of key tasks identified in the Ofwat/CCW guidance and the Group’s findings

Task	The Group’s findings
<b>Attend a debrief of the deliberative research findings</b>	<p>The de-brief meeting with WW and Blue Marble on the deliberative testing was held on 14th June. A full report was provided to the Group. The Group noted the main outcomes from the qualitative A&amp;A testing (as reported by Blue Marble). A wide range of views had been obtained.</p> <p>The Group noted that it’s very hard to summarise such a wide range of views. At one of the sessions the Group attended there was debate about the acceptability and support for plan elements but also about the rollout speed.</p> <p>The Group understood that the next iteration of the Plan to be used in the quantitative testing would be different, reflecting the feedback received during the qualitative phase.</p>
<b>Help determine relevant sample sizes for the quantitative phase i.e. Ofwat’s minimum or beyond</b>	<p>The Group reviewed the planned sample sizes and the make-up of these with the company. It was happy with them and was pleased to see that the actual samples obtained were in line with the Plan and above the minimum required by Ofwat.</p> <p>The Group took a close interest in the qualitative samples, the weightings that had been applied to them and the impact the reminders had on response rates. These were regarded by the Panel as areas of deficiency in the Ofwat methodology. The Group encouraged the company to fully detail these in its Business Plan documents, which it subsequently did.</p> <p>Overall, the Group was content with the samples and sample sizes used in the quantitative research.</p>
<b>Overall statement of whether the company has followed</b>	<p>See above for the Group’s comments on the Ofwat/CCW guidance, particularly the use of reminders and other means such as weighting to achieve a random probability sample.</p> <p>The Group was satisfied that the company followed the guidance set out by Ofwat/CCW.</p>



## APPENDIX 7: Challenge Log

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
1	COVID-19	Chair	Question	11.06.20	WW	Business use is down by 25% over the last two months. There has been some increase in household use but this may be due to the warm weather in May.	Completed	08.10.20	No
2	COVID-19	Wiltshire Citizens Advice	Question	11.06.20	WW	WW is unaware of any specific discussions on this matter. Home working costs may be more of an issue between employees and employers.	Completed	08.10.20	No
3	COVID-19	EA	Question	11.06.20	WW	WW considers there will be a potential increase in social tariff applicants in the longer term. Changes have been made to fast track some customers onto its Assist tariff.	Completed	11.06.20	No
4	COVID-19	CCW	Question	11.06.20	WW	There were no obvious hotspots and no indication that any additional local asset-based investment is necessary.	Completed	11.06.20	No
5	COVID-19	Chair	Question	11.06.20	WW	The number of failures was in line with recent performance. Three were due to third party actions. Of the two that were within WW's control, improvements have been introduced to avoid further failures.	Completed	11.06.20	No
6	Value for Money	Age UK South Glos	Question	11.06.20	WW	VFM is a measure of customer perception and WW is not able to predict what its VFM score will be.	Completed	11.06.20	No
7	Water use	Catchment Panel Chair	Question	11.06.20	WW	Business use is down by 25% over the last two months. There has been some increase in household use but this may be due to the warm weather in May.	Completed	11.06.20	No
8	Affordability	Wiltshire Citizens Advice	Question	11.06.20	WW	WW is unaware of any specific discussions on this matter. Home working costs may be more of an issue between employees and employers.	Completed	11.06.20	No
9	Affordability	Age UK South Glos	Question	11.06.20	WW	WW considers there will be a potential increase in social tariff applicants in the longer term. Changes have been made to fast track some customers onto its Assist tariff.	Completed	08.10.20	No
10	Water quality	Chair	Question	11.06.20	WW	There were no obvious hotspots and no indication that any additional local asset-based investment is necessary.	Completed	11.06.20	No
11	Environmental quality	Report Writer	Question	11.06.20	WW	The number of failures was in line with recent performance. Three were due to third party actions. Of the two that were within WW's control, improvements have been introduced to avoid further failures.	Completed	11.06.20	No
12	Incentive sharing	Chair	Question	11.06.20	WW	WW said that funding would be provided fairly across all areas of the region rather than being linked to the out-performance of specific performance commitments on sewerage or water supply.	Completed	11.06.20	No
13	COVID-19	Chair	Question	08.10.20	WW	Ofwat and CCW were pleased with WW's initiative. Bristol saw the merits in the approach and also adopted it. Welsh Water has a similar scheme.	Completed	08.10.20	No
14	COVID-19	Advice UK	Question	08.10.20	WW	"WW aims to provide as much support as it can through its debt recovery process and affordability expert advisors. It is not aware that digital exclusion is causing major problems and is fully "warm voice"."	Completed	08.10.20	No

APPENDICES

	Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
15	COVID-19	Does WW have special Covid procedures in place to undertake its Searchlight visits.	Advice UK	Question	08.10.20	WW	WW has completed full risk assessments for these visits and all of its fieldwork activities to ensure they are Covid-safe.	Completed	08.10.20	No
16	COVID-19	Is WW aware of any non-pandemic related customer assistance issues being temporarily 'lost' by the company's system?	Money Advice Trust	Question	08.10.20	WW	Anyone identified to be in arrears still goes down the normal Assist route and is signposted to debt advice agencies in the usual way. The social tariff is available to everyone who qualifies for it.	Completed	08.10.20	No
17	Pension Credit Discount	Will WW be targeting some of its Foundation funding to further promote its PCD?	Age UK South Glos	Question	08.10.20	WW	The company is keen to increase the take up of its PCD and has added an incentive to the funding of its debt advice partners to apply for the discount on behalf of their clients.	Completed	04.03.21	No
18	Vulnerability	How is WW is assessing the effectiveness of the initiatives set out in its vulnerability strategy?	Chair	Challenge	08.10.20	WW	"The initiatives do not follow a standard method for assessing effectiveness. WW will review how to bring the information together for evaluating 2021/22 initiatives."	Completed	04.03.21	No
19	Water quality	Why did WW discuss changing perceptions around water hardness with its Young People's Panel?	Chair	Challenge	04.11.20	WW	WW receives many customer contacts on water hardness. It wants to increase understanding that hardness is a function of the region's geology and is not an issue for water quality.	Completed	04.11.20	No
20	COVID-19	At least a 60% increase in debt advice is anticipated in 2021 due to the pandemic.	Citizens Advice & Advice UK	Challenge	04.11.20	WW	WW is fast-tracking its Covid Assist scheme. The company's new assistance triage arrangements for financial support will go live on the website by end of the week and will be widely publicised.	Completed	04.11.20	No
21	Mid-year performance	How is WW dealing with new and potentially long-term risks such as unusual weather, Brexit and Covid -19?	Chair	Challenge	04.11.20	WW	"WW is looking at longer term risks including their effects on the capital programme. Some of the risks are not within the company's control such as frailty in supply chains."	Completed	04.11.20	No
22	Customer engagement	WW's intention to use new customer insight methods, including social media for PR24 was noted.	EA	Challenge	25.01.21	WW	WW will be using its large amount of data in a bigger and more structured way rather than a one-off point in time analysis.	Completed	25.01.21	No
23	Customer engagement	WW was asked how it will undertake its community engagement in light of its revision of social purpose.	Report Writer	Question	25.01.21	WW	WW and BM responded to the challenges and took them on board in the final stimulus materials.	Completed	25.01.21	No
24	Customer engagement	WW was asked how the informed research for PR24 will come out of the ongoing research.	CCW	Question	25.01.21	WW	"WW has to asses if its panel with its informed audience remains fit for purpose or needs to be expanded. WW is also keen to do more longitudinal qualitative work and the use of citizens' assemblies."	Completed	25.01.21	No
25	Trym Tunnel	WW was asked what will happen to the money that's saved on the project.	EA	Question	25.01.21	WW	Any saving will be used to deliver more customer benefit elsewhere or given back through the totex regime.	Completed	25.01.21	No
26	Priority Services Register	WW was asked how widespread the use of BS18477 is.	Chair	Question	03.03.21	WW	WW considers it to be the best external endorsement of accessibility and inclusivity. Performance against the standard is audited externally each year.	Completed	03.03.21	No
27	Priority Services Register	WW was asked if it had mapped local community connection sites in order to use these to communicate incident information.	Wiltshire Citizens Advice	Question	03.03.21	WW	WW has such information. It is also using WW colleagues who are involved with local community groups to repost information on community sites. WW also pays for Facebook advertising.	Completed	03.03.21	No
28	Priority Services Register	Do WW's vulnerability initiatives compares to the 95% PSR satisfaction target from CCW?	Advice UK	Question	03.03.21	WW	T Current performance measured by C-mex and its own feedback surveys is well over 90%. Current satisfaction from SMS feedback is 91% and 94% from phone contacts.	Completed	03.03.21	No
29	COVID-19	Has WW discussed with Bristol Water their decision not to participate in WW's COVID version of the Assist tariff.	Chair	Question	03.03.21	WW	Bristol Water was originally looking to participate but had become wary of not complying with the wording in its charges scheme.	Completed	03.03.21	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
30	COVID-19	Chair	Challenge	03.03.21	WW	WW believe it was due to government support delaying the need for customers to seek help. WW wants to signpost the right customers to the tariff but MWV said the impact of Covid-19 is becoming less clear now.	Completed	03.03.21	No
31	COVID-19	Citizens Advice, Age UK & Advice UK	Question	03.03.21	WW	The company uses the Standard Financial Statement guidelines. WW also funds two food banks in Bristol. One of these indicated demand is stable, but the other is overwhelmed.	Completed	03.03.21	No
32	COVID-19	Advice UK	Question	03.03.21	WW	WW wants to work with Advice UK and Money Advice Trust as insight from its debt advice partners will be invaluable in managing the peak when it comes.	Completed	03.03.21	No
33	Vulnerability	Age UK South Glos	Question	03.03.21	WW	WW are in the second tranche of companies to go live in the next financial year. A contract has been drafted and is with the DWP. WW confirmed this will be data matching rather than data sharing.	Completed	03.03.21	No
34	Vulnerability	Report Writer, Chair and Age UK	Question	03.03.21	WW	The company continues to develop this but presented an outline of its approach in the slide. For 2021-22 it intends to identify the business-as-usual activities and take these out of its monitoring regime.	Completed	03.03.21	No
35	Vulnerability	Chair	Question	03.03.21	WW	This is worth exploring and WW may consider it for the future. There may be technical or licensing issues, however. May 22 update. WW consider this is not achievable.	Completed	18.05.22	No
36	Education	Wiltshire Citizens Advice	Question	09.03.21	WW	There has been much work going on including talking to schools to ensure pupils can be engaged. WW obtains feedback with teachers but would check if similar feedback is gathered from pupils.	Completed	09.03.21	No
37	Education	Chair	Challenge	09.03.21	WW	Fairs are not considered to be a substitute for school engagement. To ensure trust and confidence, WW suggests removal of the element relating to educational fairs.	Completed	09.03.21	No
38	Education	Catchment Panel Chair	Question	09.03.21	WW	The whole education team have continued to work throughout the period with a focus on online learning and this will continue into the future.	Completed	09.03.21	No
39	Education	Chair	Challenge	09.03.21	WW	WW agreed to include such wording.	Completed	09.03.21	No
40	Leaks fixed within a day	Chair	Challenge	09.03.21	WW	If the definition doesn't change, it has no incentive to fix leaks or attempt to achieve the target.	Completed	09.03.21	No
41	Leaks fixed within a day	Catchment Panel Chair	Challenge	09.03.21	WW	WW agreed and said the company should be careful how it positions this. WW is still doing leak detection and fixing work and that, if the exceptions were in place, it would be meeting its target.	Completed	09.03.21	No
42	Water resources	Report Writer & Chair	Question	09.03.21	WW	The water resource engagement is co-ordinated with the other WCWRG companies. The work is currently out to tender. There is ongoing dialogue particularly on giving water back to the environment.	Completed	09.03.21	No
43	Drainage and wastewater management plans	Chair	Question	09.03.21	WW	WW is looking to extend its 'Coast Watch' service to inland areas.	Completed	09.03.21	No

APPENDICES

Topic		Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
44	Climate change	Is there a point at which WW expects more extreme weather to happen more frequently and should the company's underlying assumptions on business as usual be changed?	Chair	Challenge	14.06.21	WW	WW is responding to the new weather patterns through different tactical and operational measures and adopting new asset management assumptions. More strategic issues are also being reviewed.	Completed	14.06.21	No
45	Climate change	All the water companies have had to deal with similar weather challenges and more focus on long term planning and resilience is needed.	EA	Challenge	14.06.21	WW	"WW agreed and will prepare a summary of the industry's performance in 2020/21 once the information is published on 15th July. Update. This data was provided."	Completed	09.02.23	No
46	COVID-19	WW was asked if water quality contacts had risen because more people had been working at home.	Chair	Question	14.06.21	WW	WW replied there is no evidence of this.	Completed	14.06.21	No
47	Pollution incidents	WW was asked if it has information on the environmental impact of pollution incidents caused by extreme rainfall.	Catchment Panel Chair	Question	14.06.21	WW	WW replied that four were category 2 incidents and the remainder category 3. The company hasn't yet seen the benefits from its five-year pollution reduction plan and is looking again at its strategy.	Completed	18.05.22	No
48	PR24 reform	What is preventing WW from including catchment-based approaches to achieving environmental improvement now?	Chair	Question	14.06.21	WW	MG replied that the initiatives to date have only been on a small scale. The current regulatory regime with its short-term focus doesn't allow long term catchment approaches	Completed	14.06.21	No
49	PR24 reform	"Catchment working is complex in that all the players need to play their part. The water industry cannot pay for others. Central government must take the lead."	EA and Catchment Panel Chair	Challenge	14.06.21	WW	WW believe that "The polluter pays" principal is important. WW should pay for its share, undertaking the more efficient solutions first whilst waiting for other players, such as farming, to come onboard.	Completed	14.06.21	No
50	Leakage	How do customers currently view leakage?	Chair	Question	03.11.21	WW	WW's customers are less interested in leakage this time than at PR19 but WW considers leakage is one of the most important levers available to achieve sustainable abstraction.	Completed	03.11.21	No
51	Environmental quality	"Why are bacterial levels not monitored along with phosphorous and nitrates when measuring environmental outcomes?"	Catchment Panel Chair	Challenge	03.11.21	WW	"P&N are the two biggest contributors to good ecological status and are within the company's control. Natural capital is higher level but is not easy to measure and does not have an agreed approach."	Completed	03.11.21	No
52	Supply chain	Are supply chain issues being experienced at local as well as national levels?	Report Writer	Question	03.11.21	WW	They are, but WW can mitigate many of the risks. However, the national and international issues do require government action.	Completed	03.11.21	No
53	Vulnerability	Is the proportion of successful versus unsuccessful applications for financial assistance changed?	Wiltshire Citizens Advice	Question	03.11.21	WW	There had been a drop in applications, but the rejection rate hasn't changed. Very few applications were actually rejected.	Completed	03.11.21	No
54	Customer engagement	WW should undertake more deliberate qualitative as well as quantitative, research to make sure the results overall are informed.	Bristol University	Challenge	03.11.21	WW	WW agreed with this and said CCW is looking at the right blend of qualitative and quantitative research combines with overall sense checking.	Completed	03.11.21	No
55	Customer engagement	There is a risk that some voices will be excluded by national research.	NatCen	Challenge	03.11.21	CCW	The customer groups engaged have to be representative of all different communities and groups within a company's area and it will be fundamental for companies to demonstrate this.	Completed	03.11.21	No
56	Environmental quality	What research is going on into the main contributors to the lack of recovery of the aquatic environment?	Catchment Panel Chair	Question	03.11.21	WW	There is a large amount of research underway.	Completed	03.11.21	No
57	Customer engagement	"Is the company planning to issue any customer communications on how they can help reduce pollutions?"	Bristol University	Question	03.11.21	WW	WW agreed with this. It already publicises sewer misuse and misconnections. However, a challenge is the current media coverage making effective communication and building partnerships difficult.	Completed	03.11.21	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
58	Customer engagement	Does the WTP research also include 'ability to pay'?	Wiltshire Citizens Advice	Question	08.12.21	WW	The segmentation of participants will cover all customer groups, but the result will be an overall WTP for each outcome as it's not possible to build in differential bills for different customer groups.	Completed	08.12.21	No
59	Customer engagement	"Does WW have the capacity to do another round of WTP research after 2022 if considered necessary?"	Wiltshire Citizens Advice	Question	08.12.21	WW	Once the Plan is finalised it is fixed for five years but it may be appropriate to revisit and potentially repeat some elements of the PR24 research as the submission of the Plan nears.	Completed	08.12.21	No
60	Customer engagement	How much WTP will be informed by the Strategic Direction research?	Chair	Question	08.12.21	WW	The outcomes of the strategic research will be built into the WTP research so there is a golden thread from the Purpose to the Outcomes to the WTP survey.	Completed	08.12.21	No
61	Customer engagement	"It is important that both willingness and ability to pay for improvements are both picked up on."	Catchment Panel Chair & CCW	Challenge	08.12.21	WW	This is a good challenge and WW will confirm ability to pay is included appropriately in the research. This was confirmed in May 2022.	Completed	18.05.22	No
62	Customer engagement	Customers pay a cross subsidy to support those who cannot afford their bills and they may be prepared to pay more.	Catchment Panel Chair	Question	08.12.21	WW	WW had done customer research in the past to determine acceptable levels of cross subsidy. WW is currently not near its cross-subsidy levels so numbers on the assistance schemes could be increased.	Completed	08.12.21	No
63	Customer engagement	It is frustrating to see that 18% of customers are worried about their bills and that subsidies are offered but not taken up.	Catchment Panel Chair	Challenge	08.12.21	WW	The data matching with the DWP will be invaluable as it will allow direct passporting of support to complement WW's promotion of its schemes. Government will be consulting on national versus regional funding in January.	Completed	08.12.21	No
64	Customer engagement	Are water efficiency assistance schemes targeted with affordability in mind?	Catchment Panel Chair	Question	08.12.21	WW	"Update. Jan 23. There is signposting between water efficiency and affordability support services. WW currently targets Home Check on the basis of usage rather than affordability but is looking to integrate the high consumption process with a referral to Home Check."	Completed	09.02.23	No
65	Customer engagement (strategic direction)	"SD research - Will WW give thought to how far support mechanisms for those who struggle to pay can go?"	Surrey University	Question	08.12.21	WW	Once mandatory obligations have been accommodated, the rest of the business plan has to be a balance of competing demands for investment, including regulatory and political issues.	Completed	08.12.21	No
66	Customer engagement (strategic direction)	Can SD research get underneath what people want CSO investment to achieve?	Catchment Panel Chair	Question	08.12.21	Accent	A few related outcomes were explored in the research.	Completed	08.12.21	No
67	Customer engagement (strategic direction)	Are the generational findings of the SD research to be reflected in the intergenerational research planned for next year?	Chair & Report Writer	Question	08.12.21	WW	WW said they would form part of the intergenerational research together with the issue of short term versus long term investment and who should pay.	Completed	08.12.21	No
68	Customer engagement (strategic direction)	SD research - The young are very aware of their energy consumption. Will WW's research get disaggregated into people on meters and those not?	Surrey University	Question	08.12.21	WW	This is a standard question in most research projects and was used in the Accent research.	Completed	08.12.21	No
69	Customer engagement (strategic direction)	"How will WW deliver the message around demand management to the three different customer segments identified in the SD research?"	Chair	Question	08.12.21	Accent	Different messages are likely to be required with each of the different customer groups to reach/ resonate with them.	Completed	08.12.21	No
70	Customer engagement (WTP)	"How will a potentially lower WTP driven by current cost of living concerns be dealt with in the initial phase of the research?"	Bristol University	Challenge	17.01.22	NERA & QA	The influence of the timing of the research will emerge from the quantitative research. NERA agrees that results can be coloured by short term effects, but these can be dealt with.	Completed	18.05.22	No
71	Customer engagement (WTP)	We should look at how the research is carried out and note the circumstances at the time.	EA and Bristol University	Challenge	17.01.22	NERA & WW	Information on how current circumstances were affecting participants' answers can be gleaned at the end of surveys and also by superimposing data on attitudes to bills obtained from WW's Image Tracker. Ofwat will be also be doing its own surveys.	Completed	18.05.22	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
72	Customer engagement (WTP)	Bristol University	Challenge	17.01.22	NERA & QA	The proposal is the best it can be within the constraints of three sessions. The research is not trying to get a fully representative sample from this initial phase, rather to test comprehension of the attributes.	Completed	18.05.22	No
73	Customer engagement (WTP)	Report Writer & Bristol University	Challenge	17.01.22	NERA & WW	"NERA and WW agreed this would be appropriate to report this subtlety. Update. Covered in WTP report page 30."	Completed	09.02.23	No
74	Customer engagement (WTP)	Bristol University	Question	17.01.22	NERA & QA	"1. The vulnerable group is likely to be primarily the digitally engaged plus those with long term health and financial difficulties. 2. The sample has still to be agreed. 3. Historically response rates have been in single figures. Tens of thousands of emails will need to be sent out to address this. 4. The option exists to do some weighting, possibly using demographic information plus other data sources."	Completed	18.05.22	No
75	Customer engagement (WTP)	Bristol University	Question	17.01.22	NERA & WW	QA response May 22 - These respondents are included but there's a field within the contact database whereby those on Assist and Pensions Credits can be identified. This means Nera can see if this variable has influenced WTP.	Completed	18.05.22	No
76	Customer engagement (WTP)	Surrey University	Question	28.01.22	WW	"Participants will be selected from a sample WW sends over from its billing system. The sample includes various data fields such as postcode, metering, their tariff etc. WW can't provide all of the data QA need for each customer so some of it will come from asking the respondent questions as part of the survey."	Completed	02.02.22	No
77	Customer engagement (WTP)	Bristol University & NatCen	Challenge	01.02.22	QA	"WW would follow BU's suggestions to look at ONS General Household Survey or the Living Costs and Food Survey to identify bill payers and characteristics of the head of household. BU added that it is important to ensure that the achieved sample looks like the original one to correct for biases as a result of response rate."	Completed	02.22.22	No
78	Customer engagement (WTP)	Bristol University	Question	01.02.22	QA	"WW will merge the 'Top-up' sample with the main online dataset as these respondents are similar to the main sample. For the 'Vulnerable customers boost' it may be necessary to apply weighting to this sample to adjust the proportion of these respondents in the overall combined sample. A decision of this would be made at the analysis stage and in consultation with NERA. Boost survey respondents will not be selected from the Wessex customer database and will be double checked to ensure they have not completed the survey already online."	Completed	02.02.22	No
79	Customer engagement (WTP)	Bristol University & NatCen	Challenge	02.02.22	QA	Bristol Water was originally looking to participate but had become wary of not complying with the wording in its charges scheme.	Completed	02.02.22	No
80	Customer engagement (WTP)	Advice UK	Challenge	09.02.22	QA	Agreed - Therefore, the description of this attribute has been revised so the link between raising bills and helping struggling customers is clearer.	Completed	14.02.22	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
81	Customer engagement (WTP)	Advice UK	Question	09.02.22	QA	These are included to enable analysis by different sub-groups. It's clear to respondents why we are asking these questions and that they can say 'Prefer not to say' to any they are not happy to answer.	Completed	14.02.22	No
82	Customer engagement (WTP)	Surrey University	Challenge	09.02.22	QA	The reference to changes being permanent has been removed as it was felt that is potentially misleading.	Completed	14.02.22	No
83	Customer engagement (WTP)	Surrey University	Challenge	09.02.22	QA	This reference to OFWAT at this point in the survey has been removed as the cognitive interviews also highlighted that wasn't necessary or helpful.	Completed	14.02.22	No
84	Customer engagement (WTP)	Surrey University	Challenge	09.02.22	QA	All the explanatory pages have been revamped so the information we are required to give to respondents before they start the choice exercise is provided in a more logical and sequential way.	Completed	14.02.22	No
85	Customer engagement (WTP)	Surrey University	Challenge	09.02.22	QA	A clearer reference to this has been included in the revamped explanatory pages.	Completed	14.02.22	No
86	Customer engagement (WTP)	Surrey University	Challenge	09.02.22	QA	Agreed – Therefore, the description of this attribute has been revised so the link between raising bills and helping struggling customers is clearer.	Completed	14.02.22	No
87	Customer engagement (WTP)	Wiltshire Citizens Advice	Challenge	09.02.22	QA	We've added a note in the explanatory pages to explain that they will see a summary after making their choices and they can change them if they wish.	Completed	14.02.22	No
88	Customer engagement (WTP)	Wiltshire Citizens Advice	Challenge	09.02.22	QA	After much debate, we've removed references to 'service' and 'service levels' and now refer to 'responses' as this is a better fit with the broad range of topics we're asking about.	Completed	14.02.22	No
89	Customer engagement (WTP)	Wiltshire Citizens Advice	Challenge	09.02.22	QA	This is Q6 and it only comes up if you give a low score at Q5. We've now added a tick box option for 'Don't know' at Q6 to make it easier to progress without needing to leave a verbatim comment.	Completed	14.02.22	No
90	Customer engagement (WTP)	Catchment Panel Chair	Challenge	09.02.22	QA	All the explanatory pages have been revamped so the information we are required to give to respondents before they start the choice exercise is provided in a more logical and sequential way.	Completed	14.02.22	No
91	Customer engagement (WTP)	Catchment Panel Chair	Challenge	09.02.22	QA	This has been tested in the qualitative, which has established that this is understood well enough by respondents for them to make a choice. It didn't cause a problem in the cognitive testing.	Completed	14.02.22	No
92	Customer engagement (WTP)	Catchment Panel Chair	Challenge	09.02.22	QA	WW agreed that it was not clear enough to respondents that the cumulative impact of all their choices would be shown to them and that they'd be able to amend their choice if they wished. Therefore, a note about this has been added in.	Completed	14.02.22	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
93	Customer engagement (WTP)	NatCen	Challenge	09.02.22	QA	<p>"1. Prize Draw - There are 2 additional questions at the very end of the survey where respondents can opt-in to the prize draw and leave their contact details.</p> <p>2. Bill increase information - We've opted not to do this, to minimise the amount of numbers shown on screen. It wasn't brought up as a problem in the cognitive testing.</p> <p>3. Sewer flooding information - this was an error that we'd spotted but didn't have time to amend in the test version. It has now been updated.</p> <p>4. Net zero definition - On balance it has been decided not to include this.</p> <p>5. Supply interruption information - In the cognitive this didn't seem to add clarity, so we don't propose to include it.</p> <p>6. Decimatisation of bill information - Agreed - all bill figures will be shown to 2 decimal places throughout the survey."</p>	Completed	14.02.22	No
94	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Helping customers experiencing financial difficulty' - the description has been updated to make this link clearer.	Completed	14.02.22	No
95	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Reducing lengthy water supply interruptions' - it is felt that the inclusion of lengthy is an important qualifier here.	Completed	14.02.22	No
96	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Improving river and coastal water quality' - The levels included in the survey reflect the current situation and what could be achieved in 2025-30. Additional explanation has been included to flag that some chemicals are out of its control.	Completed	14.02.22	No
97	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Reducing wastewater pollution incidents' - Agreed. Amended as suggested.	Completed	14.02.22	No
98	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Achieving net zero carbon emissions' - we've added units to add more clarity and removed references to 20-35 which were proving confusing.	Completed	14.02.22	No
99	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Improving water quality' - It hasn't been possible add any further detail to this. However, the cognitive testing demonstrated that respondents were able to make a choice here without additional detail.	Completed	14.02.22	No
100	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Supporting nature & wildlife' - the responses have been amended to now refer to 'wetlands and woodlands'.	Completed	14.02.22	No
101	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Reducing Internal & External Sewer flooding' - it has been decided that this amend is not necessary.	Completed	14.02.22	No
102	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	"N change made after discussion. Decided that knowing where WW currently is and what the current bill buys is really important in customers' decisions on whether to pay more in this area."	Completed	14.02.22	No



APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
103	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	This refers to 'Taking water out of rivers & streams' – after significant discussion it's been agreed that this wording is the best fit and most accurately reflects what Wessex can deliver.	Completed	14.02.22	No
104	Customer engagement (WTP)	Chair	Challenge	09.02.22	QA	These responses have been updated to now refer to 'wetlands and woodlands'.	Completed	14.02.22	No
105	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	Services received from Wessex and other water companies are included as a field on the contact sample which allows us to include some text substitutions at appropriate points. The analysis will reflect differences by services received.	Completed	14.02.22	No
106	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	We'll know this from a field on the contact sample provided by Wessex, so there's no need to ask it.	Completed	14.02.22	No
107	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	After considerable debate, these have now been renamed as 'topics'.	Completed	14.02.22	No
108	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	All the explanatory pages have been revamped so the information we are required to give to respondents before they start the choice exercise is provided in a more logical and sequential way.	Completed	14.02.22	No
109	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	QA response - The explanatory screens were substantially revamped after these and other comments. There was a debate about the suggestion that any changes would be permanent and it was agreed to drop this reference.	Completed	18.05.22	No
110	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	We've opted not to do this as the cognitive testing didn't flag this as necessary.	Completed	14.02.22	No
111	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	The calibration has been discussed in detailed and agreed by Wessex & NERA. The large differential between Option 3 and Option 4 is deliberate.	Completed	14.02.22	No
112	Customer engagement (WTP)	CCW	Challenge	09.02.22	QA	Services received from Wessex and other water companies are included as a field on the contact sample which allows us to include some text substitutions at appropriate points. The analysis will reflect differences by services received.	Completed	14.02.22	No
113	Customer engagement (WTP)	Bristol University	Challenge	09.02.22	QA	The calibration has been discussed in detail and agreed by Wessex & NERA, so there's no appetite to amend it. The large differential between Option 3 and Option 4 is deliberate and required to generate the modelling.	Completed	14.02.22	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
114	Customer engagement (WTP)	Bristol University	Challenge	09.02.22	QA	Services received from Wessex and other water companies are included as a field on the contact sample which allows us to include some text substitutions at appropriate points. The analysis will reflect differences by services received.	Completed	14.02.22	No
115	Customer engagement (WTP)	Bristol University	Challenge	09.02.22	QA	This has been updated so the choices refer to 'wetlands and woodlands' to better align with the attribute description.	Completed	14.02.22	No
116	Customer engagement (WTP)	Bristol University	Challenge	09.02.22	QA	It has been decided not to include a definition of Net Zero because there is sufficient understanding about carbon emissions for respondents to make a choice here. Removing the reference to 2035 (which caused confusion) and adding units for emissions has made the description easier to understand.	Completed	14.02.22	No
117	Customer engagement (WTP)	Bristol University	Challenge	09.02.22	QA	This was not flagged up as a problem in the cognitive interviews and after discussion regarding this, it has been agreed not to amend the descriptions.	Completed	14.02.22	No
118	Customer engagement (WTP)	Bristol University	Challenge	07.03.22	WW	"WW referred to para (5.1) in the report published by Accent for the Ofwat ODI rates research. WW agreed to provide assurance the sample was representative of its customers. Update: Challenge addressed in WTP report page 29."	Completed	09.02.23	No
119	Customer engagement (WTP)	Catchment Panel Chair	Question	07.03.22	WW	EA and DWI are members of the Steering Group but haven't raised any material points as yet. The current research is designed to set the ODI rates for the common PCs.	Completed	07.03.22	No
120	Customer engagement (WTP)	Bristol University	Challenge	07.03.22	WW	WW fully understands that the overall sample has to match the company's overall customer profile. NERA have reworked the sample profiles where available in response to BU's concerns.	Completed	07.03.22	No
121	Customer engagement (WTP)	Bristol University	Question	07.03.22	WW & QA	"WW confirmed that there will be 100 face to face with more vulnerable customers including the digitally excluded and 100 top ups to fill any gaps in the overall profile. The 1,500 household sample includes both. Update; Question addressed in WTP report pages 29/30."	Completed	09.02.23	No
122	Customer engagement (WTP)	NatGen & Bristol University	Challenge	07.03.22	WW	"WW referred to para (5.1) in the report published by Accent for the Ofwat ODI rates research. Below is the summarised content of a slide they've presented previously at a steering group. WW agreed to provide assurance the sample was representative of its customers. Update: Challenge addressed in WTP report page 29."	Completed	07.03.22	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
123	Customer engagement (water efficiency and metering)	BU asked who within each household would be participating in the metering/efficiency research.	Bristol University	Challenge	07.03.22	WW	"WW said that anyone can join in but often there is a lead person in a household who might drive behavioural change. WW agreed that more understanding is needed in order to use the right language to target specific customer segments including within households. Update. Research completed successfully, shared with CCG at sub group and published. Expert research agency took this comment on board in their approach."	Completed	07.03.22	No
124	Customer engagement (water efficiency and metering)	The link between consumption at home and embedded water in other services was mentioned. How is the industry bringing water use in the round into its thinking?	Catchment Panel Chair	Question	07.03.22	WW	WW replied that it wants to bring non-household consumption into its planning and not have a household per capita consumption regulatory target. It is uncertain whether smart metering would in fact help this.	Completed	07.03.22	No
125	Customer engagement (WTP)	It was noted there had been a positive WTP for environmental improvements. This may have been swayed by the recent publicity relative to other service elements (including pollution from CSOs).	Catchment Panel Chair	Question	08.06.22	NERA	It is considered to be representative as respondents had been asked how they had made discussions when choosing options. On wastewater pollution there was no evidence of a particular strength of feeling as compared to other environmental attributes.	Completed	08.06.22	No
126	Customer engagement (WTP)	The CCG's previous concerns over contacting certain groups, for example the digitally disengaged, and then combining the results with the rest were raised.	Chair	Challenge	08.06.22	QA	"Making the choice exercises self-completion aims to limit the differences between the face to face and online research methodologies. Preliminary analysis of the results shows that, any differences between the vulnerable sample and others, seem likely to be related to vulnerability."	Completed	08.06.22	No
127	Customer engagement (WTP)	The results from the questions posed to householders show that most customers don't struggle to pay their bill. Had the vulnerable groups differed on this?	Wiltshire Citizens Advice	Question	08.06.22	QA	There had been some difference in responses from the vulnerable groups, but these were not significantly. The water bill seems to be less problematic than electricity or gas.	Completed	08.06.22	No
128	Customer engagement (WTP)	"Responses to email questions posed to the CCG by NERA & QA. Six participants is too small a number to achieve an adequate demographic mix for the groups to be genuinely "deliberative workshops."" There should be some sort of access to 'expert' speakers or evidence for the workshops to be considered deliberative at all. Combining status quo and bill profiling is absolutely fine, as long as the sessions are long enough to allow for covering both."	NatCen	Challenge	17.06.22	WW	"WW agrees these aren't deliberative so it'll rename as focus groups. Originally WW had intended to explore some of the environmental attributes further as part of some stage 2 work and that was deliberative with presentations and members of the team there etc. WW has delayed that until Ofwat publish their PR24 methodology and understands more about the common performance commitments."	Completed	17.06.22	No
129	DWP data sharing	Has there been progress on direct engagement with DWP over data sharing? How will WW confirm whether a customer is receiving a certain benefit?	Age UK South Glos	Question	27.06.22	WW	Eight water companies (not including WW) are now live having completed a successful pilot exercise. DWP are now engaging with the remaining nine. However, companies will only be able to ask DWP for confirmation of whether a customer is receiving a certain benefit based on their own data. Other companies are getting good success with data matching.	Completed	27.06.22	No
130	Single Social Tariff	Will the plan for a single social tariff (SST) be for a maximum or minimum tariff or harmonisation across all companies.	Bristol University	Question	27.06.22	WW	WW said Defra, CCW and the Welsh Government expect that the SST will replace all local company schemes.	Completed	27.06.22	No
131	Sewage flooding	How have the five WW customers involved had responded. How many customers suffer sewage flooding each year?	Chair	Question	27.06.22	WW	Customers were chiefly concerned about communication around longer-term solutions. Around 200 properties have internal flooding (only 20 of these are due to sewer capacity issues). Typically, some 2,000 external property flooding incidents occur each.	Completed	27.06.22	No

APPENDICES

	Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
132	21/22 PC performance	Is WaterUK is assessing the chemical supply risk? Are there competition issues preventing companies working together on chemical production?	Chair	Question	27.06.22	WW	WW confirmed that WaterUK is coordinating the industry response. There may be opportunities for the industry to collaborate on chemical procurement but it's a national and international issue.	Completed	27.06.22	No
133	21/22 PC performance	It was noted that people working from home are using more water there, but less elsewhere.	Wiltshire Citizens Advice	Question	27.06.22	WW	WW agreed and said that overall water into supply is a better measure and has fallen in 21/22 (possibly due to the weather).	Completed	27.06.22	No
134	21/22 PC performance	WW's performance in 21/22 was its best ever but the weather in the year had been generally benign. Where is performance most concerning across the reds and ambers?	Chair	Challenge	27.06.22	WW	External sewage flooding is a particular area where the company is not where it wants to be.	Completed	27.06.22	No
135	21/22 PC performance	Why can't WW increase its school activities to recover the ground lost during the pandemic? It was suggested WW should record the numbers of pupils addressed in assemblies.	Chair/CCW	Challenge	27.06.22	WW	Logistical issues often mean schools don't want to do class sizes of 30. Addressing school assemblies doesn't qualify against this measure. WW has already decided to record the numbers of pupils addressed in assemblies.	Completed	27.06.22	No
136	21/22 PC performance	"There is a staff recruitment and retention crisis in the advice sector which is impacting the number of clients seen. Face to face activities are not recovering post-pandemic."	Wiltshire Citizens Advice & Advice UK	Question	27.06.22	WW	WW is assuming advice agencies' throughput will increase. WW is happy to look at any areas where members feel processes are hindering activity.	Completed	27.06.22	No
137	21/22 PC performance	The slippage in the Value for Money (VFM) PC performance was noted. CCW said WW is about average on VFM, but it has one of the highest bills.	Bristol University	Challenge	27.06.22	WW	The sample size used by Ofwat for this PC is 200 as it comes from the annual CCW tracking survey. The PC survey result is different to WW's own image tracker. CCW publishes national data on Value for Money.	Completed	27.06.22	No
138	21/22 PC performance	"Are pollution incidents in 2021/22 clustered or isolated?"	Chair & Catchment Panel Chair	Question	22.07.22	WW	They were all different with some related to traders' activities, some to isolated bursts on the network for example.	Completed	22.07.22	No
139	21/22 PC performance	Does the two-star EPA rating affects EA's 'favoured status' view of WW's catchment work.	Catchment Panel Chair	Question	22.07.22	EA	The company's serious pollution incident performance won't affect the EA's opinion on WW's good catchment work.	Completed	22.07.22	No
140	PR24 methodology	"How would outcomes be measured in cases where water companies are not the sole contributors? For example, river nutrient quality."	Catchment Panel Chair	Challenge	22.07.22	WW	There is now much more science and modelling in the measurement of nutrients in rivers and identifying the source of them. Determining baselines would come first, then looking at actions taken.	Completed	22.07.22	No
141	Customer engagement (WTP and bill phasing (intergenerational fairness))	"Email response dated 25.08.22 to WW's request for comments on the draft survey and quantitative report.  CCW raised nine challenges on the wording of the survey materials."	CCW	Challenges (9)	25.08.22	WW	"WW thanked CCW for its comments on the quantitative element of the research into intergenerational fairness. These were helpful. The study has been paused for now as it is a complicated topic for customers to understand with no understanding of bills and investment, the ongoing media scrutiny on storm overflows, profits and the cost-of-living crisis. WW may decide to launch the survey at a later date or do a broader qualitative exercise where there is the opportunity to properly deliberate the topic and explain to customers how industry investment works. Update. Research did not progress. Included within Ofwat's guidance for Affordability and Acceptability testing of Business Plans. Also to form part of wider public consultation by Wessex Water."	Completed	09.02.23	No
142	Customer engagement (WTP and bill phasing (intergenerational fairness))	BU raised a number of challenges on the qualitative survey including the reliability of the results, participant understanding of the information and recommending a pilot of cognitive interviews to ensure the findings are likely to be meaningful and reliable.	Bristol University	Challenge	26.08.22	WW	"As for 141 above, the study is currently paused. Update. Research did not progress. Included within Ofwat's guidance for Affordability and Acceptability testing of Business Plans. Also to form part of wider public consultation by Wessex Water."	Completed	09.02.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
143	Customer engagement (WTP Stage 2)	Bristol University & NatCen	Challenge (3)	23.09.22	WW	<p>"This needs careful consideration but WW is keen to ensure the research carried out is robust and will be considered by Ofwat.</p> <p>Videos of a minute, perhaps a minute and a half long, with animation are being considered to get the points across in a clear, concise way. Further discussions with the research agency are planned and WW will pass on the CCG's points.</p> <p>A pilot may be worthwhile. It would share the Stage 2 research proposal with the CCG once it's further developed.</p> <p>Update. Research did not progress. Included within Ofwat's guidance for Affordability and Acceptability testing of Business Plans. Also to form part of wider public consultation by Wessex Water."</p>	Completed	09.02.23	No
144	Customer engagement (national engagement)	CCW	Question	23.09.22	WW	<p>Opportunities will be limited as the methodology has been independently peer reviewed and found to be sound for ODI rate setting. It is unclear in the PR24 methodology what Ofwat wants companies to use the ODI rates for compared to their own local research.</p>	Completed	23.09.22	No
145	Customer engagement (national engagement)	Bristol University	Question	23.09.22	WW	<p>It is best to wait until the raw data is received and the modelling code shared. WW has NERA on standby to do analysis if needed.</p>	Completed	23.09.22	No
146	Customer engagement (water efficiency and metering)	NatCen	Question	23.09.22	WW	<p>This sort of insight is fed continuously into the company's BAU engagement and the PR teams. This kind of study is quite intensive and expensive. WW is not sure that it's going to continue with it without trying to apply some of the learning first.</p>	Completed	23.09.22	No
147	Customer engagement (water efficiency and metering)	NatCen	Question	23.09.22	WW	<p>There may be some long-term change such as hot water and showering. WW is now weaving the cost of certain behaviours into more of its messaging.</p>	Completed	23.09.22	No
148	Customer engagement (Image Tracker)	Age UK South Glos	Challenge	23.09.22	WW	<p>The company has the affordability question data going back over time, but the water use question was asked for the first time last quarter. It might be difficult to disaggregate because it is likely to be a combination of the two.</p>	Completed	23.09.22	No
149	Customer engagement (Image Tracker)	Catchment Panel Chair	Challenge	23.09.22	WW	<p>The wording in the Tracker question was considered after a couple more quarters of results at the end of the year when we sometimes make changes. There was evidence that customers had understood the meaning of 'plentiful supplies' because there had been a change in results during the quarter with the driest weather and drought issues in some areas which would be the expectation.</p>	Completed	20.09.23	No
150	Single Social Tariff	Bristol University	Question	05.10.22	WW	<p>It is likely that some of WW's Assist tariff customers may no longer be eligible for help or may get much smaller discounts. CCW and Defra consider that an SST should be stand alone and if there is a need for a local scheme then this should not be funded through a cross subsidy.</p>	Completed	05.10.22	No
151	23/24 charges	Chair	Question	05.10.22	WW	<p>Wages are linked to CPI (which is slightly higher than CPIH). The next wage settlement is currently under negotiation. Power cost increases have been higher than inflation as have chemicals and materials (many of which are linked to energy costs). There have also been increases in debt interest costs.</p>	Completed	05.10.22	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
152	23/24 charges	Bristol University	Challenge	05.10.22	WW	"WW is planning for an increase in customer contact over the coming months and would welcome BU's ideas for specific groups and the best communication methods to use. Update. Separate meeting held with EK and SW. CCG members generally comfortable with what WW were doing and had some useful suggestions of partners we could also work with. Agreed to further the discussion at the VAP meeting 06.12.22. This was done."	Completed	09.02.23	No
153	23/24 charges	Advice UK	Question	05.10.22	WW	WW noted this.	Completed	05.10.22	No
154	23/24 charges	CCW	Question	05.10.22	WW	The PR24 target was 86,000 by 2025 but this number has been changed in light of the cost-of-living crisis and increases in water bills. The growth in tariffs may mean that the company needs to seek additional cross subsidy support.	Completed	05.10.22	No
155	21/22 PC performance	Report Writer, Bristol University & Chair	Challenge	05.10.22	WW	"WW noted that some targets may have changed over that (five -year) period. WW will bring trend data to the next CCG meeting when the 22/23 mid-year performance will be reviewed. Comparative PCC performance can also be reviewed at this meeting. Update. Information shared at following meeting."	Completed	09.02.23	No
156	Affordability	Bristol University	Challenge	07.12.22	WW	Pelican are contacting customers to explore the reasons why their payments are bouncing. This may lead to those customers changing their payment date or method or additional numbers on social tariffs.	Completed	07.12.23	No
157	PR24 Business Plan	EA	Challenge	07.12.22	WW	WW agreed that such a holistic view is needed and is happening.	Completed	07.12.23	No
158	Tariffs	Age UK South Glos	Question	07.12.22	WW	"WW is concerned that support offered by SST may be insufficient. Defra and CCW have said that local social tariffs will not be allowed. WW is supporting the SST on the assumption it will not be inferior to its current social tariffs. On the second point, WW suggested this could happen when the consultation is published."	Completed	07.12.23	No
159	Vulnerability	Bristol University. Age UK s& Citizens Advice	Challenge	07.12.22	WW	The potential could be large. Councils don't move quickly, however. WW is working well with one council and others are interested.	Completed	07.12.23	No
160	Customer engagement	Chair	Question	07.12.22	WW	SL said the sessions will be in public venues, eg town halls. WW will make them inviting by offering hot drinks. SW suggested the advice sector could host some sessions.	Completed	07.12.23	No
161	Environmental performance	EA	Challenge	07.12.22	WW	The company noted EA's views.	Completed	07.12.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
162	Customer engagement (affordability and acceptability)	NatCen & Chair	Challenge	11.01.23	WW	WW replied that the proposed sampling strategy has been used effectively by Ofwat in the ODI research it has undertaken. It is attempting to achieve a random sample of each water company's customers. WW will have to apply weighting to the results to reflect its customer profile. It may be easier for the CCG to see the detail once Blue Marble's proposal is available.	Completed	11.01.23	No
163	Customer engagement (sustainable abstraction)	Chair	Question	11.01.23	WW	The definitions/scope of the options to reach the sustainable abstraction outcome were developed for the draft WRMP. This will be simplified for customers in this research, which is essentially a theoretical exercise to explore how customers would address the issues.	Completed	11.01.23	No
164	Customer engagement (sustainable abstraction)	Catchment Panel Chair	Challenge	11.01.23	WW	Adaptive planning is the way to address this and WW intends to investigate this in the next AMP. The challenge is translating this into material that customers can understand.	Completed	11.01.23	No
165	Customer engagement (Young People's Panel)	Chair	Challenge	11.01.23	WW	It had been intended to mean 'expect to find' and WW hadn't considered the alternative. WW would review the future use of the term as a result. The company is running another YPP at the moment and when it looks at the wording for the survey, which will run in November 2023, it'll consider this feedback at that time.	Completed	20.09.23	No
166	Customer engagement (Young People's Panel)	Catchment Panel Chair	Challenge	11.01.23	WW	This is an ongoing discussion point for the whole industry. Explaining to customers that the runoff from their properties is part of the wider wastewater and storm overflow situation is regularly woven through our comms and engagement activities.	Completed	20.09.23	No
167	Environmental investment	Catchment Panel Chair	Question	13.01.23	WW	"WW replied that it does and so it will need to find even more money to offset concrete carbon intensive solutions. WW flagged that the challenges presented are not solely an EA issue; Defra and DLUHC (Department for Levelling Up, Housing and Communities) are also creating additional legislation."	Completed	13.01.23	No
168	Environmental investment	CCW	Question	13.01.23	WW	WW replied that this is not how the regulatory funding model works.	Completed	13.01.23	No
169	21/22 PC performance	Chair	Challenge	13.01.23	WW	WW agreed to present the metrics Ofwat compares in future, and the Ofwat service delivery reports were added in post meeting.	Completed	13.01.23	No
170	Long Term Delivery Strategy	Report Writer	Question	13.01.23	WW	Customers will have been consulted on the company's longer-term ambitions. The trigger points will be determined internally due to the complexity of developing the LTDS and the need to follow statutory requirements.	Completed	13.01.23	No
171	Transition expenditure	Report Writer	Question	13.01.23	WW	There will be no effect on bills in this period. The expenditure will be accounted for at the next price review.	Completed	13.01.23	No
172	Customer engagement (sustainable abstraction)	Bristol University	Challenge (9)	19.01.23	WW, NERA & QA	"Qa and Nera took on board most of the CCGs and Wessex Water's comments on the guides. There were a few that they didn't make and they explained the rationale for these."	Completed	02.03.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
173	Customer engagement (sustainable abstraction)	CCW raised four challenges and observations via email on the draft research materials."	CCW	Challenge (4)	19.01.23	WW, NERA & QA	"Qa and Nera took on board most of the CCGs and Wessex Water's comments on the guides."	Completed	02.03.23	No
174	Customer engagement (sustainable abstraction)	"EA raised two challenges and observations via email on the draft research materials."	EA	Challenge (2)	19.01.23	WW, NERA & QA	"Qa and Nera have taken on board most of the CCGs and Wessex Water's comments on the guides. The final wording is in the discussion guides and the workings of the numbers were provided for clarification."	Completed	02.03.23	No
175	Customer engagement (sustainable abstraction)	"Who will independently audit the figures on outcomes for each option or is it all set by the company? The reference to dropping pressure in the leakage option may cause customers to think they will get a poorer service. Could this be presented in such a way that gives customers some assurance of minimum pressure at their tap? Agree with EA that the way disruption is presented seems unbalanced in leakage programme vs new reservoir."	Chair	Challenge	19.01.23	WW, NERA & QA	"These discussions are being used to help us shape the materials we will use in the main quantitative survey so in effect we're testing out different ways of presenting information to see what customers best understand. We have made sure they're more balanced which I know the CCG were keen for us to do. After these discussions the infographics will be amended in line with the customers' comments. Qa and Nera have taken on board most of the CCGs and Wessex Water's comments on the guides."	Completed	02.03.23	No
176	A&A testing	AUK asked how the hard to reach, hard of hearing, older customers and those who are unable to attend in person will be included in the research.	Age UK Wiltshire	Question	02.03.23	Blue Marble	BM said that material can be sent to those who cannot attend in person. Accessibility is an important issue. Arrangements are flexible to allow for communication requirements, limited availability and the need for carers to be present.	Completed	07.03.23	No
177	A&A testing	BU recommended that, where two tables are being held at a venue, social groups A, B and C1 be arranged on one table and C2, D and E on another in order to avoid the highly educated dominating the engagement.	Bristol University	Challenge	02.03.23	Blue Marble	BM later responded deliberative events are designed so that respondents are exposed to different views, which is why tables tend to include a mix of people. This helps people to answer as citizens rather than just focus on their own circumstances.	Completed	07.03.23	No
178	A&A testing	Why is there an emphasis on health issues in the categorisation of vulnerability? People could be vulnerable for other reasons.	Bristol University	Challenge	02.03.23	Blue Marble	BM agreed but said the focus on health aligns with Ofwat's requirements but agreed to respond more fully after the meeting.	Completed	07.03.23	No
179	A&A testing	BU asked why, in Group B, there are two under 45s and six over 45s. She would advocate an equal split.	Bristol University	Challenge	02.03.23	Blue Marble	BM said this is fair challenge that it would consider. WW added it is happy to go with BU's suggestion if it is feasible.	Completed	07.03.23	No
180	A&A testing	CA asked why it is not planned to engage with vulnerable customers in Salisbury.	Wiltshire Citizens Advice, Bristol University	Challenge	02.03.23	Blue Marble	BM replied that Ofwat set attendance numbers and so engagement with the vulnerable had been planned in one area only. The company is confident that the locations chosen will pull in sufficient samples of participants.	Completed	07.03.23	No
181	A&A testing	BU noted there were to be no face-to-face interviews so how can participants with sight impairment, mental health or literacy problems be engaged?	Bristol University	Challenge	02.03.23	Blue Marble	We think the approach proposed is the right method. We are required to include 8 respondents with health vulnerabilities and proposed that most of these would be in the older age bracket, reflecting the older profile of people with chronic illness and disability in the population as a whole.	Completed	07.03.23	No
182	A&A testing	More detail is needed on how the company intends to recruit non-household participants. The CCG will have to acknowledge in its report that the sample may not be representative.	Bristol University	Challenge	02.03.23	Blue Marble	BM later provided more detail on the non-household recruitment process, consider the extra costs and time implications of adopting increased samples and whether sending reminders to applicants can be built into timetable.	Completed	07.03.23	No
183	A&A testing	EK asked about the statistical effects of over sampling and at what stage BM will cut off applications.	Bristol University	Challenge	02.03.23	Blue Marble	"BM replied that the results will be weighted. BM will not be turning down applications after a certain point. The minimum numbers must be achieved in each of the areas. The Ofwat guidance is clear on this and is based on an expectation that we will, as a result, achieve some 500 completes."	Completed	07.03.23	No



APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
184	A&A testing	BU said that not proposing to send reminders to applicants will introduce bias in the sample. BM must maximise the response rate, otherwise skews will occur.	Bristol University	Challenge	02.03.23	Blue Marble	BM later took on board BU's comments about reminders and accepting all responses.	Completed	07.03.23	No
185	A&A testing	"BU said it had fed back previously that the questionnaire is flawed in some cases.. As there will not be a pilot, the company should take stock after say 100 responses to see if the anticipated problems are materialising."	Bristol University	Challenge	02.03.23	Blue Marble	BM said it will be interested to see where BU's concerns lie but there will be early cut off to see that everything is working as intended. The company later ran a pilot study with staff and friends to test the questionnaire. BU later said that it had looked at these and agreed with most of the points made.	Completed	07.03.23	No
186	WINEP & Affordability	In order to keep bills as low as possible, CCW would like to see the company using financial outperformance to offset some of the costs of WINEP and to use nature-based solutions where possible.	CCW	Challenge	03.03.23	WW	"The company is very keen to use nature-based solutions as well as catchment-based solutions. The company is still pushing the regulators hard for these and its advanced WINEP is based on them. The company is doing a lot of work in providing further support for customers. Its proposed outcome target is to have no one in water poverty."	Completed	03.03.23	No
187	Affordability	MS suggested water companies should use some of their profits to fund social tariffs.	CCW	Challenge	03.03.23	WW	This is an ongoing debate within the industry and government.	Completed	03.03.23	No
188	Affordability	CA noted the current reputational risk in the water industry around CSOs and cost and profit in other utility sectors.	Wiltshire Citizens Advice	Challenge	03.03.23	WW	WW agreed the cost and profit issue point was a risk. The company is very nervous about reputational impacts. Investment in statutory obligations and other regulatory expectations total £3bn. There is capital maintenance on top of this.	Completed	03.03.23	No
189	Affordability	There is a need to consider changing the eligibility rules for support. Perhaps there is a KPI to monitor this, in addition to the water poverty PC.	Chair	Challenge	03.03.23	WW	The company wants the eligibility process to improve but data, as well as process improvement, is needed. It believes the water poverty metric is the right one. A good baseline can be set once good data is available.	Completed	03.03.23	No
190	Carbon footprint	CPC questioned the carbon footprint of the various means of delivery and what the company is doing in assessing the carbon impacts of different solutions.	Catchment Panel Chair	Challenge	03.03.23	WW	WW is doing a lot of work in this area. It is looking at the climate, nature, and cost of living crises in the round.	Completed	03.03.23	No
191	Pollution incidents	CPC noted that WW's storm overflow cost per customer is the third highest in the industry and asked what is driving this.	Catchment Panel Chair	Challenge	03.03.23	WW	The cost is arrived at by taking the investment needed and divided by the number of customers. WW has 1,300 overflows (10% of the total) but only 3% of customers. It also has more SSSIs than other areas. WW also considers that it has constructed for future capacity which other companies may not have.	Completed	03.03.23	No
192	Smart meters	What difference will smart metering make to water management, leaks in properties and bills reductions? Does WW helps customers with the cost of dealing with their own leaks?	Chair	Question	03.03.23	WW	The company replied there will be multiple benefits from smart metering. WW also provides financial assistance to customers for fixing their pipework.	Completed	03.03.23	No
193	Leakage	EA asked for confirmation that WW is now targeting meeting government expectations on PCC and leakage.	EA	Challenge	03.03.23	WW	The company confirmed this.	Completed	03.03.23	No
194	Pollution incidents	EA asked if the targeted reduction in pollution incidents, as indicated in the proposed PR24 PC, matches with the company's Pollution Reduction Plan.	EA	Question	03.03.23	WW	WW replied that it's not identical but that the Pollution Reduction Plan is being revised.	Completed	03.03.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
195	A&A testing	"Email from the CCG to WW dated 7 March 23. The CCG had raised a number of challenges on the proposed A&A testing methodology including grouping of participants, accepting additional responses from invitees, sending reminders, sampling and health vulnerability quotas."	Bristol University, NatCen, Chair	Challenge	29.03.23	WW & Blue Marble	WW and BM responded to the challenges and took them on board in the final stimulus materials.	Completed	29.03.23	No
196	A&A testing	"Email from BU to WW discussed at meeting on 29 March 23. BU had raised a number of challenges on the proposed A&A stimulus materials including on the pre-task slides and the deliberative workshop."	Bristol University	Challenges (5)	29.03.23	WW & Blue Marble	WW and BM responded to the challenges and took them on board in the final stimulus materials.	Completed	29.03.23	No
197	Sustainable Abstraction research	BU has real concerns about the 'don't knows' from the survey and that 25% of respondents found it a difficult exercise. BU asked if NERA was concerned about these.	Bristol University	Question	29.03.23	WW	NERA felt that the pilot ran well and that sensible answers were obtained from participants. WW will update the table from the NERA report to show the response to each of the seven questions. WW is also happy to have an offline discussion with BU if there are any residual concerns.	Completed	29.03.23	No
198	Sustainable Abstraction research	CA noted the numbers of respondents who said they regularly struggled to pay their bills.	Wiltshire Citizens Advice	Question	29.03.23	WW	WW noted this and NERA will monitor this further in the main research, which is now live. They are able to compare it to the findings of the ongoing WW tracker survey.	Completed	29.03.23	No
199	PR24 Investment Programme	The RW asked if the proposed £1.1bn capital maintenance is similar in value to that being spent in the current AMP.	Report Writer	Question	29.03.23	WW	WW replied £750m was allowed at PR19. Capital maintenance requirements are increasing because of better asset data and understanding of assets, the need to replace assets built in the last 20-30 years and new technologies generally shortening asset lives.	Completed	29.03.23	No
200	Pollution incidents	It would be useful to know the breakdown of the causes of the serious pollutions and also the category 2s and 3s.	Catchment Panel Chair	Question	29.03.23	WW	WW provided this information on 07.06.23	Completed	07.06.23	No
201	Financing	CCW asked if WW would be expanding its PR19 financial sharing arrangements in PR24.	CCW	Question	04.04.23	WW	WW replied that its existing arrangements would continue as it believes it is already sharing its outperformance fairly with customers through the WW Foundation. Any outperformance arising from debt assumptions made at the price review is already shared through the regulatory rules.	Completed	04.04.23	No
202	Financing	"CPC wondered if there is a way of clarifying company financing, profits, dividends and outperformance sharing for the benefit of customers and pressure groups."	Catchment Panel Chair	Question	04.04.23	WW	MG agreed to see if something could be prepared on this. This was done at the next meeting.	Completed	10.05.23	No
203	Cost Adjustment Claims	When would the work at water recycling centres necessary to meet growth be done? Would it be proactive or responsive?	CCW	Question	04.04.23	WW	WW said it would have to be done before housing development took place but responsive to when housing developments are planned.	Completed	10.05.23	No
204	PR24 PCs	Would the proposed 20% reduction in distribution input by 2037/38 be from savings on PCC and leakage? Would reservoir and other water source options also contribute to DI reduction?	Catchment Panel Chair	Question	04.04.23	WW	These points were discussed further and agreed at subsequent CCG meetings.	Completed	20.09.23	No
205	PR24 PCs	The proposed £1.0m investment in biodiversity seemed to be remarkably low.	Catchment Panel Chair	Challenge	04.04.23	WW	LM agreed this needed review and said that the company is looking again at this. This was discussed again at the next meeting on 10.05.23 and closed out.	Completed	10.05.23	No
206	Pollution incidents	Would there be a separate focus on serious pollution incidents or would the overall reduction plan tackle them?	EA	Challenge	04.04.23	WW	LM replied that serious pollutions were often caused by third parties but agreed to report back to the CCG. This was done at the next meeting on 10.05.23.	Completed	10.05.23	No

APPENDICES

Topic		Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
207	Pollution incidents	"Why has the number of incidents caused by human error gone up in recent years? EA has also asked the company for a root cause analysis of pollution incidents."	Catchment Panel Chair, EA	Challenge	04.04.23	WW	Discussed and closed out with information provided at the next meeting on 10.05.23.	Completed	10.05.23	No
208	Cost Sharing	DS considered that companies should be in a position on WINEP in the next few weeks to share costs and the impact on bills.	CCW	Challenge	10.05.23	WW	WW is concerned there is still so much uncertainty and large areas of outstanding confirmation from the EA. The advanced WINEP had been rejected by EA but discussions with EA remain ongoing.	Completed	10.05.23	No
209	WINEP	EA considers that WW's plans relating to nutrient neutrality are not ambitious enough and that the company needs to adopt a best value planning approach to its WINEP proposals.	EA	Challenge	10.05.23	WW	The nutrient neutrality requirements were subsequently revised and the EA will review and comment on them in due course.	Completed	20.09.23	No
210	ODIs	There are significant differences between Ofwat's and the company's marginal benefit rates for water quality contacts. Would the company be referring to its own customer contact rates in the triangulation process.	Chair	Question	10.05.23	WW	WW replied that in the triangulation exercise the company would use its own research alongside Ofwat's marginal benefits to see the impact that it has.	Completed	10.05.23	No
211	Sustainable Abstraction research	Why had randomly generated prices been used in Exercise 1 and what were the range of these?	Catchment Panel Chair	Question	24.05.23	NERA	NERA replied that this was to show the range and variability in the price. All methods have different unit costs plus variables in terms of quantity saved. Costs estimates had been stretched by 50%.	Completed	24.05.23	No
212	Sustainable Abstraction research	Has actual WW-generated costs had been used and whether there had been triangulated to confirm accuracy.	CCW	Question	24.05.23	NERA, WW	NERA replied that costs had been provided by WW. WW added that the costs had come from its optioneering process being used for the Business Plan and audited as part of the overarching assurance process.	Completed	24.05.23	No
213	Sustainable Abstraction research	Had the impacts on communities and local businesses had been accounted for in the costs.	Chair	Question	24.05.23	WW	WW replied that the optioneering includes the assessment of environmental and social benefits.	Completed	24.05.23	No
214	Sustainable Abstraction research	"Had participants perceived the reservoir option differently because it reflects a water take from the environment rather than water saving covered by the other four options."	Catchment Panel Chair	Question	24.05.23	WW	NH replied that such a difference of perception hadn't been found in the qualitative research.	Completed	24.05.23	No
215	Triangulation and Synthesis	CCW considered that a peer review on the work would carry more weight with Ofwat than the CCG's report on it. The Chair agreed but said it is up to the Board to decide.	CCW, Chair	Challenge	24.05.23	WW	Ofwat expects all companies to use their ODI rates, or a company must provide robust and compelling evidence as to the rates that they wish to use, if proposing their own. As Wessex Water is now proposing to use Ofwat's rates, then Ofwat's need for the supporting evidence and any associated assurance is less. Wessex Water has however sought assistance through SIA Partners, the company used by Ofwat to develop the best practice framework and approach to triangulation.	Completed	04.09.23	No
216	Your Water, Your Say	The Chair asked about how the session had been publicised and had this been prescribed by Ofwat.	Chair	Question	24.05.23	WW	Timelines and wording had been prescribed together with some suggestions on channels. CC will compare approaches and look at results and demographics to identify best practice and inform the next sessions.	Completed	24.05.23	No
217	Social Tariff Cross Subsidy	Had the research included information on how social tariffs are used and who benefits from them?	Chair	Question	24.05.23	WW	WW replied that participants were told about current schemes and the eligibility criteria. Participants were asked if they would like to pay for more support. They weren't asked about the tariff design.	Completed	24.05.23	No
218	Pollution incidents	CPC asked if the company reconsiders the provision of standby pumps and auxiliary power supplies in the light of near miss pollution incidents.	Catchment Panel Chair	Challenge	07.06.23	WW	The company takes a risk-based approach to the provision of back up pumping and power supplies. WW has reviewed its power strategy following last year's storms and is increasing the provision on onsite power generation.	Completed	07.06.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
219	22/23 PC performance	Chair	Challenge	07.06.23	WW	WW replied that the industry needs more years' experience to be able to ascertain this. The company's LTDS (Long Term Delivery Strategy) and WRMP (Water Resource Management Plan) consider the effects of climate change.	Completed	07.06.23	No
220	22/23 PC performance	Catchment Panel Chair	Challenge	07.06.23	WW	WW replied that it understands the point that is being made however, in this case WW achieved a good balance as demonstrated by outperforming its leakage target, delivered the water efficiency improvements and outperforming the two AIM PCs.	Completed	07.06.23	No
221	22/23 PC performance	Chair	Challenge	07.06.23	WW	WW replied that it is above the industry average.	Completed	07.06.23	No
222	Young Peoples' Panel	Wiltshire Citizens Advice	Challenge	07.06.23	WW	The topic of where the young people are getting their news and information from (i.e., trusted sources and voices) will be covered in a discussion session with the YPP during their Day 1 activities with us.	Completed	04.09.23	No
223	A&A testing	CCW	Question	14.06.23	WW	Blue Marble said that the main issues for people were the size of the investment in smart meters and storm overflows as well as the pace of eliminating poverty. The company must take the findings from this research into account when developing its proposed Plan further.	Completed	14.06.23	No
224	A&A testing	Report Writer, Chair	Question	14.06.23	WW	Blue Marble replied that it was quite hard to know how people got on with the pre-read material. It felt the balance between pre-read and in-session information was about right and that the sessions went well.	Completed	14.06.23	No
225	A&A testing	Report Writer	Question	14.06.23	WW	BM replied that overall, the sample was as good as the Ofwat methodology would allow. Age bias is always a problem, with fewer younger people participating. There were no issues with mixing up income levels on the tables.	Completed	14.06.23	No
226	WRMP	CCW	Question	14.06.23	WW	The modelling indicates that 450,000 installations in AMP8 and further rollouts in AMP9 and beyond would satisfy the challenges and still be on course to the meet the long-term targets. Leakage is still targeted to be reduced by 50% by 2050. The smart meter installation programme would now be more back-end loaded.	Completed	14.06.23	No
227	Social Tariffs	CCW	Challenge	14.06.23	WW	Profit levels are regulated, and the company already returns outperformance payments to customers through the Wessex Water Foundation.	Completed	14.06.23	No
228	A&A testing	Chair	Challenge	14.06.23	WW	All previous research, prior to AAT, has influenced the plan contents and creates that golden thread to the proposed plan that was tested in the qualitative phase of AAT. The AAT results are then used to tweak this proposed plan.	Completed	14.06.23	No
229	Biodiversity	Catchment Panel Chair	Challenge	30.06.23	WW	The company is still reviewing the BAP and will be firming it up over the next couple of weeks. It will look again at the presentation within the document. It subsequently did this.	Completed	20.09.23	No
230	Business Plan	Chair	Challenge	30.06.23	WW	The executive summary and draft main narrative along with some of the key appendices has been shared with the CCG. As documents are updated, fresh versions are being shared.	Completed	04.09.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
231	Greenhouse gases	"In the light of the changes in the rules for reporting greenhouse gases, could a metric be presented as if the rules hadn't changed?"	Catchment Panel Chair	Challenge	30.06.23	WW	The company plans to report three different GHG measures, including against the previous definition, so comparisons can be made.	Completed	30.06.23	No
232	Business Plan	How does the company's plans to scale back some investment because of the A&A testing feedback sit with government requirements?	CCW	Challenge	30.06.23	WW	The revised CSO plan meets statutory requirements (the original plan went beyond them) and revised smart metering programme meets government requirements and is still a large increase compared to current activity.	Completed	30.06.23	No
233	Smart meters	Is the cost of smart metering to the company the main consideration or has the company considered the customer perspective?	Wiltshire Citizens Advice	Question	30.06.23	WW	Data show that in a drought, smart meter customers have been using more water. The company is looking at whether it can re-purpose dumb meters to provide customers with usage information to reduce consumption.	Completed	30.06.23	No
234	Smart meters	The revised smart metering programme reduces proactive installations in rural areas. Would a vulnerable customer in a rural area get a smart meter if requested?	Chair	Question	30.06.23	WW	The company will review such requests on a case-by-case basis. There are a variety of technologies that can be used in rural areas and the company will have to consider bespoke approaches where possible.	Completed	30.06.23	No
235	Water quality contacts	Customer contacts about water quality 2030 target is now less ambitious despite investment plans increasing from £20m to £40m. Why is this?	CCW	Challenge	30.06.23	WW	There are new DWI requirements to meet and the need to be more proactive on dealing with contacts.	Completed	30.06.23	No
236	Sewer flooding	The 2030 target for internal sewer flooding is now less ambitious, whereas the external sewer flooding is now more ambitious. Is this in response to the Ofwat ODI rates?	CCW	Question	30.06.23	WW	External sewer flooding is seen as a higher priority than before. The latest ODI rates also have an impact, for example the rates for external flooding are now much higher.	Completed	30.06.23	No
237	Pollution incidents	Total pollution incidents target is now less ambitious, but expenditure proposed has increased from £20m to £80m. Why is this?	CCW	Challenge	30.06.23	WW	Discussions are ongoing on this. The company is now more certain of the costs (£80m more reliable than £20m). The increased cost partly reflects the requirement to do continuous river water quality monitoring.	Completed	30.06.23	No
238	Sewer collapses	Sewer collapses target is now less ambitious – why is this?	CCW	Challenge	30.06.23	WW	The company is happy with the revised number as the previous value was an early estimate and may have been derived on a different basis.	Completed	20.09.23	No
239	C-Mex	The Chair referred to C-Mex and asked if the company has investigated where investment is needed.	Chair	Question	30.06.23	WW	This work is still in its early stages. It's clear that customers generally want more information and control over contacts, for example like parcel deliveries.	Completed	30.06.23	No
240	PCC	How confident is WW in achieving its PCC targets, given that the PCC of smart-metered customers is rising during droughts.	Catchment Panel Chair	Question	30.06.23	WW	Large savings from smart metering are not being assumed. Compulsory metering will have more impact. Most of the benefit to PCC will come from mobilising customers to be part of the solution.	Completed	30.06.23	No
241	Deliverability	CA asked if the company intends to leverage apprenticeships and use local companies as well as national contractors.	Wiltshire Citizens Advice	Question	30.06.23	WW	The company will do so on the smaller elements of the programme.	Completed	30.06.23	No
242	Deliverability	The Report Writer asked about the capacity and appetite of contractors given that all water companies are ramping up programmes, as are other sectors.	Report Writer	Question	30.06.23	WW	WW is in a strong position because of its large internal engineering team.	Completed	30.06.23	No
243	Triangulation and Synthesis	BU asked how many engagement data sources were used and whether it is usual to have so many sources.	Bristol University	Question	05.07.23	WW	Sia replied that 17 different internal research sources were being used for the first iteration, plus nine additional sources from CCW and Ofwat research. Sia confirmed that it is usual to have this number of sources.	Completed	05.07.23	No

APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?	
244	Triangulation and Synthesis	BU noted the apparent poor level of engagement evidence relating to vulnerable customers.	Bristol University	Question	05.07.23	WW	Data from WW's stakeholder engagement will also be fed in.	Completed	05.07.23	No
245	Triangulation and Synthesis	Would meetings such as VAP class as non-robust evidence in this context?	Bristol University	Challenge	05.07.23	WW	Sia accepted this is a fair challenge and perhaps such evidence has been under-weighted. Update - The use of stakeholder engagement and how it can feed into the triangulation was discussed with Sia. It has now been included and reference is made to it in the Sia report provided as an appendix to the business plan.	Completed	04.09.23	No
246	Triangulation and Synthesis	"Is the company going to be able to get more information on the amber and reds on the evidence chart associated with environmental matters in the time available?"	Catchment Panel Chair	Question	05.07.23	WW	The company hopes to, particularly through the A&A work. The Catchment Panel is an excellent engagement source, similar to the VAP.	Completed	05.07.23	No
247	ODI rates	It is important that the Group satisfies itself of the approach so it may support the company if it chooses to challenge the Ofwat ODI rates.	Chair	Challenge	05.07.23	WW	The company commissioned the Sia work so it can challenge Ofwat if necessary. WW also has another company looking critically at Ofwat's methodology.	Completed	05.07.23	No
248	Triangulation and Synthesis	"There is concern over the potential downgrading of some data sources, e.g. the VAP and CP. Perhaps it could be included without assigning a RAG rating. BU added that it's the rating of the engagement that's important."	Bristol University & NatCen	Challenge	05.07.23	WW	The methodology is the best practice published by CCW but perhaps it could be included in the narrative. Update: The use of stakeholder engagement and how it can feed into the triangulation was discussed with Sia. It has now been included and reference is made to it in the Sia report provided as an appendix to the business plan.	Completed	04.09.23	No
249	Social tariff research	BU asked if there has been reweighting for the apparent oversampling of Bristol Water customers.	Bristol University	Challenge	05.07.23	WW	The company checked this and BU was content with the outcome.	Completed	05.07.23	No
250	Social tariff research	Can feedback from the A&A research around affordability be compared with the social tariff research?	Chair	Challenge	05.07.23	WW	All research that includes customers' views on their finances and affordability of bills is feeding into the triangulation exercise. Customers' views are differing over time often linked to the timing of government support, changes in energy bills etc.	Completed	04.09.23	No
251	Pollution incidents	How would a smaller CSO programme would sit with customers? Would WW be making it clear to them that it is the government and EA that are directing this. ?	Catchment Panel Chair	Challenge	25.07.23	WW	Customers had some nervousness that £550m was going to be spent on CSOs. The reduction is a phasing exercise with the total programme being done over a longer timeframe. The partnership work will be retained.	Completed	25.07.23	No
252	Price Control Deliverables	Why have PCDs have been introduced?	Catchment Panel Chair	Challenge	25.07.23	WW	Ofwat is concerned companies may not deliver because of the scale of the investment programmes are going to be much larger. It sees PCDs as a means of protecting customers.	Completed	25.07.23	No
253	PC targets	How will the CCG will be able to assess the degree of stretch and ambition in the targets?	Report Writer	Question	25.07.23	WW	The company will explain this in its accompanying narrative.	Completed	25.07.23	No
254	Investment programme	Does the company believe it had set the investment at a level that will maintain current asset health and levels of service.	Catchment Panel Chair	Challenge	12.09.23	WW	"It had but there is always a risk of deterioration. Investment will have to be increased steadily over the longer term. While investment in sewerage looks to be at an appropriate level, water mains replacement rate needs to be higher."	Completed	12.09.23	No
255	Investment programme	CCW asked for clarification on the lifting of restrictions on housing development contained in the Defra guidance letter.	CCW	Question	12.09.23	WW	Local authorities now don't have to assume that the development will make things worse but that any additional pollution will be removed sometime in the future.	Completed	12.09.23	No

## APPENDICES

Topic	Issue	Raised by	Challenge, Question or Request	Date Raised	Respondent	Outcome, Comments, Responses	Progress	Date Completed	Follow up action required?
256	Deliverability	Report Writer	Question	12.09.23	WW	The company has been engaging with its prospective partners for some time and things are progressing well.	Completed	12.09.23	No
257	Deliverability	CCW	Challenge	12.09.23	WW	WW is not doing this but that there will be more collaboration with partners and increased risk management.	Completed	12.09.23	No
258	Draft Business Plan narratives	Wiltshire Citizens Advice	Challenge	18.09.23	WW	The company has been very challenged by this. It has been adopting alternative approaches within its statutory requirements wherever possible to make the programme more affordable but the tension still remains that there is a lot required in law.	Completed	18.09.23	No
259	Investment programme	Bristol University	Challenge	18.09.23	WW	The company noted this view.	Completed	18.09.23	No

### PROGRESS KEY:

Green = No further action required

Blue = Change made as result of challenge

## **A4-1 Wastewater Treatment**





**CHANDLERKBS**

A CUMMING AFFILIATE

Waste Water Treatment  
PR24 Cost Estimating Methodology

Wessex Water

14 September 2023



## Contents

	Page
1. Introduction	1
2. Source Data	3
2.1. Construction Costs	3
2.2. Difficult Works Adjustments	4
2.3. Non-Construction Costs	6
2.4. Normalisation	8
3. Capex Estimating Methodology	9
3.1. Construction Cost Estimating	9
3.2. Difficult Works Adjustments	9
3.3. Non-construction Cost Estimating	9
3.4. Cost Estimate Assurance	10
3.5. Reporting	10
4. Benchmark Results	11

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	Draft for comment	W. Heap	G. Maidment	21.08.2023
2	Revision	W. Heap		13.09.2023
3	Final	W.Heap	J. Gavigan	14.09.2023
4				

## 1. Introduction

ChandlerKBS was requested to provide Capex estimates for Waste Water Treatment sites' scopes for cost assurance benchmarking of Wessex Water's PR24 Business Plan submission to Ofwat.

The Waste Water Treatment sites had several design solution options consisting of the following:

Bishops Cannings Option 1	North Petherton
Bishops Cannings Option 2	Langport
Cannington	Wool
Crewkerne	Wick St Lawrence
Gillingham Option 1	Amesbury
Gillingham Option 3	Martock
Gillingham Option 4	Wishford
Hindon Option 1	Wareham
Hindon Option 2	Burton
Hindon Option 3	Longburton
Hindon Option 4	Butleigh
Hindon Option 5	Butleigh Option 2
Ratfyn	Thornford
Shaftesbury	Dorchester Option 1
Hurdcott	Dorchester Option 2
Lytchett Minster Option 1	Glastonbury
Lytchett Minster Option 2	Wellington
Lytchett Minster Option 3	BlackHeath
Maiden Bradley	Fordingbridge Opt1
Milborne Port	Fordingbridge Opt2
Ringwood	Fordingbridge Opt3
Taunton	Fordingbridge Opt4
Tisbury	Fordingbridge Opt5
Warminster Option 1	Fordingbridge Opt6
Warminster Option 2	Salisbury Option 1
Warminster Option 3	Salisbury Option 2
Warminster Option 4	Salisbury Option 3
Warminster Option 5	Salisbury Option 4
Warminster Option 6	Salisbury Option 5
Wells	Salisbury Option 6
Upavon	Salisbury Option 7

Wessex Water optioneering reduced the number of sites to 14 to be included in the PR24 Business Plan as follows:

Fordingbridge (6 options)  
Bishops Cannings (2 options)  
Hindon (5 options)  
Upavon (1 option)  
Warminster (6 options)  
Hurdcott (1 option)  
Maiden Bradley (1 option)  
Lytchett Minster (3 options)  
Shaftsbury (1 option)  
Cannington (1 option)  
Taunton (1 option)  
Wells (1 option)  
Milborne Port (1 option)  
Longburton (1 option)

## 2. Source Data

The project Capex estimates have been generated using ChandlerKBS' Cost Intelligence Database (CID). The CID is a system of integrated cost databases and costing tools that was specifically designed to provide costing support for regulatory Price Reviews, allowing users to review and compare multiple cost curves, project data and indices to normalise and derive industry average costs for a range of asset drivers.

The CID comprises data obtained from ChandlerKBS clients over the past 20 years, including tens of thousands of cost curves and capital projects. Due to our involvement on several long-term cost management and capital allowances frameworks and commissions with water companies, contractors and regulators, we have captured the cost, design and specification data on all types of assets, processes, projects, programmes and technologies used within the industry.

ChandlerKBS has been involved with the design, creation and management of unit-cost-databases and Work Breakdown Structures (WBS) for several water companies. The CID system takes advantage of this knowledge and expertise to fully utilise captured cost data allowing a bottom-up or top-down estimating approach to suit the design maturity.

### 2.1. Construction Costs

The CID system presents costs categorised by the trade type anticipated to be delivering the work. The trade type identifies the proportions of costs that can be adjusted to suit the specifics of the scope. The CID trade types are:

- Civil
- Mechanical
- Electrical
- ICA

For the purpose of aligning benchmark costs with the project scopes, the CID trade outputs can be adjusted to produce a civil cost and a combined mechanical, electrical and ICA cost as MEICA.

Civil works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific civil works.
- First principle cost estimate build up for bespoke items not covered by CID Cost Curves.

MEICA works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific MEICA works.

Generally, it is not possible to provide first principle cost estimates for MEICA scope due to the design complexities involved and level of design detail requirement which would create a very low confidence and potentially low accuracy cost.

The CID also contains a comprehensive list of engineering cost factors specific to water industry assets that can be utilised to derive proportional cost curve costs for civil, mechanical, electrical and ICA elements.

Direct construction cost estimates consist of multiple cost sources from the CID. The most appropriate source is selected with the highest confidence in cost accuracy to align with each scope item. To achieve robust consistency of scope coverage and costing accuracy, the preferred source of cost data is CID cost curves which have had several stages of cost assurance by both our clients and ourselves prior to use in the CID estimating system.

## 2.2. Difficult Works Adjustments

Scope items that identify the potential for difficult construction issues can have Difficult Works Adjustments applied. The adjustments represent the estimated costs to mitigate the construction issues over and above an industry average cost to deliver the scope. The adjustments are derived from CID projects that incurred similar construction issues and an assessment of the severity of the issue. Where appropriate, the adjustments are benchmarked against the upper and lower bounds of the cost curve outputs.

The table below presents the list of Difficult Works Adjustment categories that were available to be applied to the estimates. The assessments derive efficiency percentages that are applied to labour, plant and materials cost estimates for civil and MECIA categories.

Known Construction Issues (Not Included in Risk %)	Description	Cost Impact
Construction Access Constraints;	Programme impact / reduced productivity due to; congested ground, restricted construction area, dealing with obstacles.	No material impacts. High impact on civil programme. Additional civil and MEICA plant requirement.
Site Access Issues;	Programme impact due to; restricted access to site, difficult access, environmental reinstatement. (Temporary access road construction priced separately.)	Minor civil material impact. Impact on civil programme. Minor impact to MEICA programme.
Significant Temporary Works;	Programme and cost impact due to; construction of temporary assets, removal and reinstatement.	Impact on civil materials. Minor impact on MEICA materials. Minor impact on programme.
Temporary Process Plant;	Programme and cost impact due to; hire, set up and operation of temporary process assets for treatment.	Minor impact on civil materials. Impact on MEICA materials. Minor impact on programme.
Construction Sequencing;	Programme impact due to; restricted construction programme, seasonal working leading to reduced programme efficiency.	No material impacts. Impact on civil programme. Additional civil and MEICA labour and plant requirement.
Removal of Existing Assets;	Programme and cost impact due to; safe decommissioning, demolition and removal of above and below ground structures, disposal of materials.	Minor impact on material costs for disposal. Additional civil and MEICA plant and labour for decommissioning, demolition and removal from site.
Lack of Delivery Experience;	Programme and cost impact due to; unforeseen design complexities in design solution or early programme quick-win/simplicity cost bias. Additional / more-complex design solution required for civil and MEICA supporting assets.	Minor to significant impact to civil and MEICA materials, plant and labour. Impact assessed on case-by-case basis.

### 2.3. Non-Construction Costs

The construction cost is categorised by asset type to aid in identifying the specific non-construction uplifts that can be applied. The CID asset types are as follows:

- Water Pipelaying
- Water Network Assets (excluding pipelaying)
- Water Treatment
- Raw Water Reservoirs
- Waste Water Pipelaying
- Waste Water Network Assets (excluding pipelaying)
- Waste Water Treatment
- Sludge Treatment
- General Assets

Uplifts specific to each asset type are derived from CID cost curves and projects for multiple cost stages to align with various Ofwat reporting requirements.

The following table presents the full breakdown of non-construction cost uplifts that are available to be applied from the CID and which uplifts have been included in the ChandlerKBS cost estimates, to align with the Wessex Water estimates.



CID Non-Construction Cost Uplifts	Utilised in Wessex Water's PR24 Estimates
Site specifics (not included in construction costs)	Included
Contractor design	Excluded
Contractor prelims	Included
Construction management	Included
Contractor risk	Included
Insurance	Included
Contractor overheads and profit	Included
Outturn Adjustment	Included
Land	Excluded
DNO	Excluded
Pilot projects	Excluded
Planning	Excluded
Public consultation	Excluded
Legal	Excluded
Environmental	Excluded
Design	Excluded
Operations	Excluded
Passthroughs, if any	Excluded
Client management	Excluded
Client Corporate Overhead	Excluded

#### 2.4. Normalisation

To adjust CID data to account for its age, a factor has been applied that represents the industry's variance in construction costs from the cost data's base date to the estimate base date of Q3 2022. The adjustment factor used is determined by a construction cost index. The index that has been used to adjust Capex costs is the Civil Engineering cost index (reference 1191) published by Building Cost Information Services (BCIS). This index has cost components that align specifically with the UK water industry.

Over a period of circa ten years, we have learned that cost data reliability gradually reduces and cannot be improved by applying base date adjustments. Therefore, to produce a relevant cost estimate, cost data from the most recent decade is prioritised.

To adjust cost data for UK regional differences, a factor has been applied to adjust the cost data's base region to reflect the Wessex Water region. The factor is determined by an index of UK regions (Regional Index) which is published by Building Cost Information Service.

### 3. Capex Estimating Methodology

ChandlerKBS utilised the CID to provide Capex estimates for Wessex Water to benchmark the design options for the PR24 Business Plan submission.

ChandlerKBS Capex estimates were derived from the scope details provided by Wessex Water.

Capex estimates were derived by combining construction cost estimates with multiple uplift percentages for difficult works, non-construction activities and normalisation.

The completed Capex estimates were submitted to Wessex Water for comparison with their internal Capex estimate.

#### 3.1. Construction Cost Estimating

Expert estimator judgement was used to interpret the scope to be costed, align CID cost data and derive an overall cost estimate. The construction Capex estimates were built up from a suite of our highest confidence modelled cost data derived from sources that have well defined cost models.

Where a scope exceeded the coverage of a single cost data source, multiple data sources were combined to estimate the cost of the scope requirements. Similarly, where a scope item required a partial cost of a data source or sub process, we examined our CID for similar scopes to determine an appropriate adjustment to apply to the data source.

Capex estimates were provided separately for civil costs and combined mechanical, electrical and ICA costs (MEICA) for each scope item.

#### 3.2. Difficult Works Adjustments

Where the scope identified risks or construction issues, the estimator assessed the type of works required to mitigate the issue and the potential impact on the delivery programme and the delivery cost. The issues for each scope items were aligned with the Difficult Works Adjustments and the resulting adjustments applied to the Capex estimates.

#### 3.3. Non-construction Cost Estimating

Non-construction costs were included in the Capex estimates. The CID automatically applied the asset relevant non-construction uplifts, pre-selected to align with the Wessex Water estimating requirements.

### 3.4. Cost Estimate Assurance

Prior to reporting to Wessex Water, assurance of comprehensive scope coverage and CID alignment was provided by senior and peer estimators. Additional reviews were completed to identify the scope items that had a significant impact on the Capex estimate and require additional cost assurance to provide a robust estimate. Where possible, the estimates were compared to similar asset costs in CID projects, estimates and other industry cost models to provide additional confidence.

### 3.5. Reporting

To facilitate the transfer of cost estimates and estimate analysis, ChandlerKBS created and shared the PR24 Estimating Tracker with Wessex Water using SharePoint. The tracker contained copies of the scopes provided by Wessex Water and the ChandlerKBS estimated Civil and MEICA costs aligned with each scope item.

#### 4. Benchmark Results

There were 14 Waste Water Treatment sites, some of which had multiple design solution options estimated by Wessex Water and benchmarked by ChandlerKBS. The table below presents the total value of all options for each site and the benchmark variances.

Project Name	Options	Wessex Water Estimate (£)	ChandlerKBS Benchmark (£)	Variance to Benchmark (£)	Variance to Benchmark %
Fordingbridge	6	8,802,700	9,807,384	-1,004,684	-10.2%
Bishops Cannings	2	7,200,549	7,410,093	-209,544	-2.8%
Hindon	5	5,453,376	5,836,533	-383,157	-6.6%
Upavon	1	2,787,112	3,025,077	-237,965	-7.9%
Warminster	6	114,020,200	131,049,796	-17,029,596	-13.0%
Hurdcott	1	13,124,864	12,456,804	668,060	5.4%
Maiden Bradley	1	9,570,071	11,404,571	-1,834,500	-16.1%
Lytchett Minster	3	81,899,229	113,453,237	-31,554,008	-27.8%
Shaftsbury	1	18,346,915	18,309,563	37,352	0.2%
Cannington	1	5,492,530	5,751,967	-259,437	-4.5%
Taunton	1	11,744,363	14,211,607	-2,467,244	-17.4%
Wells	1	15,368,845	14,779,541	589,304	4.0%
Milborne Port	1	5,422,448	5,077,152	345,296	6.8%
Longburton	1	4,444,955	4,942,172	-497,217	-10.1%
<b>Total</b>	<b>31</b>	<b>303,678,157</b>	<b>357,524,497</b>	<b>-53,837,340</b>	<b>-15.1%</b>

The total variance of the Wessex Water option estimates to the ChandlerKBS benchmark estimates was -15.1%. The variances of two high value scheme sites, Warminster and Lytchett Minster, account for 90.2% of the total variance. This is due to the number of

options, the high value of the works and the difficult works costs included in these estimates. Excluding these sites from the analysis reduces the total variance to -4.6%.

Due to the level of scope definition provided at Business Planning stage, we would identify the estimate class, as defined by the Association for the Advancement of Cost Engineering (AACE), as a Budgetary Estimate or Class 3 and, therefore, an expected accuracy range of between -20% and +30% to the outturn cost.

Based on the AACE classification, the ChandlerKBS and Wessex Water accuracy ranges overlap which indicates a high probability of the outturn costs falling in this range. Therefore, the estimates can be deemed to be robustly efficient for Business Planning.

Only the ChandlerKBS Lytchett Minster estimate falls outside of the Wessex Water Class 3 accuracy range. However, the ChandlerKBS benchmark included conservative estimates for mitigating the construction risks which will become firmer as the design progresses for the preferred solution.

## Contact sheet

This document was prepared by:  
William Heap

Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA

T +44 (0)29 20352300

E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)

## **A4-2 P-Removal, WINEP and Growth Programmes**





**CHANDLERKBS**

A CUMMING AFFILIATE

Review of Costing Methodology for  
P-Removal, WINEP and Growth Programmes

PR24 Costing Assurance

Wessex Water

21 September 2023



## Contents

		Page
1.	Introduction	1
2.	Methodology	2
	2.1. Investigation Process	2
	2.2. Review Meeting	2
	2.3. Capex Cost Model Reviews	2
	2.4. Opex Cost Model Review	3
3.	Investigation Review	4
	3.1. Cost Model Source Data	4
	3.2. Project Scenarios	4
	3.3. Complexities and Adjustments	4
	3.4. Non Construction Costs	4
	3.5. Risk and Optimism Bias	4
	3.6. Final Cost Model	5
4.	Conclusion	6

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	PR24 Costing Assurance Draft	W. Heap	J. Gavigan	19.09.2023
2	PR24 Costing Assurance Final	J.Gavigan	G.Davies	21.09.2023
3				
4				

## **1. Introduction**

ChandlerKBS was requested to provide a statement of robustness for the cost modelling process and methodology utilised by Wessex Water (WSX) to estimate the P-Removal, Water Industry National Environment Programme (WINEP) and Growth programmes for the regulatory PR24 Business plan submission to Ofwat.

## 2. Methodology

ChandlerKBS has been supporting clients in the water sector with unit cost database development, project and programme estimating and cost assurance activities for Business Planning for more than 20 years. We have expert knowledge of the regulator's assurance requirements and extensive experience of Capex and Opex estimating for Business Planning purposes. ChandlerKBS is well qualified to provide assurance on the robustness of processes and methodologies used to derive programme costs for PR24 Business Plans.

### 2.1. Investigation Process

The methodology for assessing the robustness of the Wessex Water estimates followed the processes used by ChandlerKBS to derive programme estimates. This process focusses on providing evidence for efficient costs and ensuring that design requirements are well considered. The following steps are used to derive a robust programme estimate:

- Identify the highest confidence costs to use.
- Assess the requirements of all Civil, Mechanical, Electrical and ICA trades.
- Assess supporting asset requirements.
- Assess design and site complexities and difficulties.
- Assess the non-construction cost requirements.
- Normalise costs using appropriate cost indices.

### 2.2. Review Meeting

A meeting was held on 20 July 2023 with Jonathan Rayers (Wessex Water) to review the methodologies used to derive cost estimates for the P-Removal, WINEP and Growth PR24 programmes.

### 2.3. Capex Cost Model Reviews

Using the ChandlerKBS steps identified in section 2.1 as a basis, the Capex estimating process was investigated and the following processes were queried and reviewed:

- Where the Capex data had been sourced from.
- What project scenarios were considered.
- What adjustments had been applied to account for;
  - Scheme design complexities.
  - Site characteristics.
  - Early programme delivery, 'quick-win' cost bias.
- What 'economy-of-scale' efficiencies had been considered.
- What non-construction costs had been considered.

- What Early stage design risk (Optimism Bias) was considered.

#### 2.4. Opex Cost Model Review

Opex cost model reviews followed a similar process to the Capex review. The processes of deriving operating costs were investigated and covered the following reviews:

- Where the Opex data was sourced from.
- What operating regimes had been considered.
- What 'economy-of-scale' efficiency has been considered.

### 3. Investigation Review

#### 3.1. Cost Model Source Data

Evidence for all Capex and Opex calculations was provided and reviewed in the meeting. It was evident that all cost estimates were derived from the most recent Wessex Water project costs and supplier quotes.

#### 3.2. Project Scenarios

Each site had multiple solutions estimated, where appropriate, enabling the programmes' summary to utilise the most efficient and effective solutions for each site.

#### 3.3. Complexities and Adjustments

Design solutions that needed to be priced from quotes had reasonable adjustments applied to account for the additional and supporting asset works to deliver the project.

The individual sites within each programme had been individually assessed for permit requirements, design solution complexities and known site complexities and had reasonable adjustment factors applied to account for the anticipated costs of mitigating the complexities.

Where costs were derived from projects that were delivered early in a previous or existing delivery programme, an uplift was applied to account for the lower cost bias of delivering the easier 'quick win' projects with lower design complexities.

The Capex and Opex unit cost efficiencies that can be expected for delivering larger schemes was considered and an appropriate adjustment was applied to reduce the basic unit rates.

#### 3.4. Non Construction Costs

The project and quote costs that were utilised in the programme models did not require any further non-construction cost adjustments.

#### 3.5. Risk and Optimism Bias

No further adjustments were made for risk or Optimism Bias at this stage in the cost models. This was consistent across the three programmes.

### 3.6. Final Cost Model

Due to the number of different adjustments that were being applied to each site's cost estimate, there was a risk that costs for complexities could be over-estimated or double-counted. However, it was evident that each site had been carefully considered. Using the design and site characteristics information that was available, the best estimate for each site has been produced.

#### 4. Conclusion

The review meeting with Jonathan Rayers highlighted a consistent, well-considered approach taken by Wessex Water to derive programme cost estimates for Capex and Opex.

The Waste Water Treatment cost models should be treated as having a moderate confidence in their cost output, particularly for the design stage. The cost models are based upon historical costs incurred by Wessex Water which may not reflect future costings. As the programme and solution designs progress, the cost models should be revised following the same methodology to maintain the high cost confidence and efficiency.

The processes and methodologies used to derive the cost models for the Waste Water Treatment programmes were evidently robust and considered to be appropriate for producing efficient costs for the PR24 Business Plan.



## Contact sheet

This document was prepared by:  
William Heap

Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA

T +44 (0)29 20352300

E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)

## **A4-3 Storm overflows**



**CHANDLERKBS**

A CUMMING AFFILIATE

Stormwater Schemes

PR24 Cost Estimating Methodology

Wessex Water

14 September 2023



## Contents

		Page
1.	Introduction	1
2.	Source Data	2
	2.1. Construction Costs	2
	2.2. Difficult Works Adjustments	3
	2.3. Non-Construction Costs	5
	2.4. Normalisation	7
3.	Capex Estimating Methodology	8
	3.1. Construction Cost Estimating	8
	3.2. Difficult Works Adjustments	8
	3.3. Non-construction Cost Estimating	8
	3.4. Cost Estimate Assurance	9
	3.5. Reporting	9
4.	Benchmark Results	10

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	Draft for comment	W. Heap	G. Maidment	13.09.2023
2	Final	W. Heap	J. Gavigan	14.09.2023
3				
4				

## 1. Introduction

ChandlerKBS was requested to provide Capex estimates for four Stormwater scheme scopes and an additional twenty unnamed Water Industry National Environment Programme (WINEP) Storm Overflow scopes in a table format listed below for cost assurance benchmarking of Wessex Water's PR24 Business Plan submission to Ofwat.

1. Storm Overflow 101001
2. Storm Overflow 101013
3. Storm Overflow 101022
4. Storm Overflow 111006
5. Storm Overflow 111008
6. Storm Overflow 111014
7. Storm Overflow 120164
8. Storm Overflow 120176
9. Storm Overflow 120182
10. Storm Overflow 120221
11. Storm Overflow 135114
12. Storm Overflow 135123
13. Storm Overflow 135129
14. Storm Overflow 135147
15. Storm Overflow 135174
16. Storm Overflow 135186
17. Storm Overflow 145204
18. Storm Overflow 145210
19. Storm Overflow 145225
20. Storm Overflow 145231
21. Lambridge Rugby Ground CSO
22. C00435 - Nightingales Bridge CSO
23. C00439 - Watleys End FSO FINAL
24. C00477 - St Peters Church FSO

## 2. Source Data

The project Capex estimates have been generated using ChandlerKBS' Cost Intelligence Database (CID). The CID is a system of integrated cost databases and costing tools that was specifically designed to provide costing support for regulatory Price Reviews, allowing users to review and compare multiple cost curves, project data and indices to normalise and derive industry average costs for a range of asset drivers.

The CID comprises data obtained from ChandlerKBS clients over the past 20 years, including tens of thousands of cost curves and capital projects. Due to our involvement on several long-term cost management and capital allowances frameworks and commissions with water companies, contractors and regulators, we have captured the cost, design and specification data on all types of assets, processes, projects, programmes and technologies used within the industry.

ChandlerKBS has been involved with the design, creation and management of unit-cost-databases and Work Breakdown Structures (WBS) for several water companies. The CID system takes advantage of this knowledge and expertise to fully utilise captured cost data allowing a bottom-up or top-down estimating approach to suit the design maturity.

### 2.1. Construction Costs

The CID system presents costs categorised by the trade type anticipated to be delivering the work. The trade type identifies the proportions of costs that can be adjusted to suit the specifics of the scope. The CID trade types are:

- Civil.
- Mechanical.
- Electrical.
- ICA.

For the purpose of aligning benchmark costs with the project scopes, the CID trade outputs can be adjusted to produce a civil cost and a combined mechanical, electrical and ICA cost as MEICA.

Civil works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific civil works.
- First principle cost estimate build up for bespoke items not covered by CID Cost Curves.

MEICA works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific MEICA works.

Generally, it is not possible to provide first principle cost estimates for MEICA scope due to the design complexities involved and level of design detail requirement which would create a very low confidence and potentially low accuracy cost.

The CID also contains a comprehensive list of engineering cost factors specific to water industry assets that can be utilised to derive proportional cost curve costs for civil, mechanical, electrical and ICA elements.

Direct construction cost estimates consist of multiple cost sources from the CID. The most appropriate source is selected with the highest confidence in cost accuracy to align with each scope item. To achieve robust consistency of scope coverage and costing accuracy, the preferred source of cost data is CID cost curves which have had several stages of cost assurance by both our clients and ourselves prior to use in the CID estimating system.

## 2.2. Difficult Works Adjustments

Scope items that identify the potential for difficult construction issues can have Difficult Works Adjustments applied. The adjustments represent the estimated costs to mitigate the construction issues over and above an industry average cost to deliver the scope. The adjustments are derived from CID projects that incurred similar construction issues and an assessment of the severity of the issue. Where appropriate, the adjustments are benchmarked against the upper and lower bounds of the cost curve outputs.

The table below presents the list of Difficult Works Adjustment categories that were available to be applied to the estimates. The assessments derive efficiency percentages that are applied to labour, plant and materials cost estimates for civil and MECIA categories.

Known Construction Issues (Not Included in Risk %)	Description	Cost Impact
Construction Access Constraints;	Programme impact / reduced productivity due to; congested ground, restricted construction area, dealing with obstacles.	No material impacts. High impact on civil programme. Additional civil and MEICA plant requirement.
Site Access Issues;	Programme impact due to; restricted access to site, difficult access, environmental reinstatement. (Temporary access road construction priced separately.)	Minor civil material impact. Impact on civil programme. Minor impact to MEICA programme.
Significant Temporary Works;	Programme and cost impact due to; construction of temporary assets, removal and reinstatement.	Impact on civil materials. Minor impact on MEICA materials. Minor impact on programme.
Temporary Process Plant;	Programme and cost impact due to; hire, set up and operation of temporary process assets for treatment.	Minor impact on civil materials. Impact on MEICA materials. Minor impact on programme.
Construction Sequencing;	Programme impact due to; restricted construction programme, seasonal working leading to reduced programme efficiency.	No material impacts. Impact on civil programme. Additional civil and MEICA labour and plant requirement.
Removal of Existing Assets;	Programme and cost impact due to; safe decommissioning, demolition and removal of above and below ground structures, disposal of materials.	Minor impact on material costs for disposal. Additional civil and MEICA plant and labour for decommissioning, demolition and removal from site.
Lack of Delivery Experience;	Programme and cost impact due to; unforeseen design complexities in design solution or early programme quick-win/simplicity cost bias. Additional / more-complex design solution required for civil and MEICA supporting assets.	Minor to significant impact to civil and MEICA materials, plant and labour. Impact assessed on case-by-case basis.



### 2.3. Non-Construction Costs

The construction cost is categorised by asset type to aid in identifying the specific non-construction uplifts that can be applied. The CID asset types are as follows:

- Water Pipelaying
- Water Network Assets (excluding pipelaying)
- Water Treatment
- Raw Water Reservoirs
- Waste Water Pipelaying
- Waste Water Network Assets (excluding pipelaying)
- Waste Water Treatment
- Sludge Treatment
- General Assets

Uplifts specific to each asset type are derived from CID cost curves and projects for multiple cost stages to align with various Ofwat reporting requirements.

The following table presents the full breakdown of non-construction cost uplifts that are available to be applied from the CID and which uplifts have been included in the ChandlerKBS cost estimates, to align with the Wessex Water estimates.

CID Non-Construction Cost Uplifts	Utilised in Wessex Water's PR24 Estimates
Site specifics (not included in construction costs)	Included
Contractor design	Excluded
Contractor prelims	Included
Construction management	Included
Contractor risk	Included
Insurance	Included
Contractor overheads and profit	Included
Outturn Adjustment	Included
Land	Excluded
DNO	Excluded
Pilot projects	Excluded
Planning	Excluded
Public consultation	Excluded
Legal	Excluded
Environmental	Excluded
Design	Excluded
Operations	Excluded
Passthroughs, if any	Excluded
Client management	Excluded
Client Corporate Overhead	Excluded

#### 2.4. Normalisation

To adjust CID data to account for its age, a factor has been applied that represents the industry's variance in construction costs from the cost data's base date to the estimate base date of Q3 2022. The adjustment factor used is determined by a construction cost index. The index that has been used to adjust Capex costs is the Civil Engineering Cost Index (reference 1191) published by Building Cost Information Services (BCIS). This index has cost components that align specifically with the UK water industry.

Over a period of circa ten years, we have learned that cost data reliability gradually reduces and cannot be improved by applying base date adjustments. Therefore, to produce a relevant cost estimate, cost data from the most recent decade is prioritised.

To adjust cost data for UK regional differences, a factor has been applied to adjust the cost data's base region to reflect the Wessex Water region. The factor is determined by an index of UK regions (Regional Index) which is published by the Building Cost Information Service.

### 3. Capex Estimating Methodology

ChandlerKBS utilised the CID to provide Capex estimates for Wessex Water to benchmark the design options for the PR24 Business Plan submission.

ChandlerKBS Capex estimates were derived from the scope details provided by Wessex Water.

Capex estimates were derived by combining construction cost estimates with multiple uplift percentages for difficult works, non-construction activities and normalisation.

The completed Capex estimates were submitted to Wessex Water for comparison with their internal Capex estimate.

#### 3.1. Construction Cost Estimating

Expert estimator judgement was used to interpret the scope to be costed, align CID cost data and derive an overall cost estimate. The construction Capex estimates were built up from a suite of our highest confidence modelled cost data derived from sources that have well defined cost models.

Where a scope exceeded the coverage of a single cost data source, multiple data sources were combined to estimate the cost of the scope requirements. Similarly, where a scope item required a partial cost of a data source or sub process, we examined our CID for similar scopes to determine an appropriate adjustment to apply to the data source.

Capex estimates were provided separately for civil costs and combined mechanical, electrical and ICA costs (MEICA) for each scope item.

#### 3.2. Difficult Works Adjustments

Where the scope identified risks or construction issues, the estimator assessed the type of works required to mitigate the issue and the potential impact on the delivery programme and the delivery cost. The issues for each scope items were aligned with the Difficult Works Adjustments and the resulting adjustments applied to the Capex estimates.

#### 3.3. Non-construction Cost Estimating

Non-construction costs were included in the Capex estimates. The CID automatically applied the asset relevant non-construction uplifts, pre-selected to align with the Wessex Water estimating requirements.

#### 3.4. Cost Estimate Assurance

Prior to reporting to Wessex Water, assurance of comprehensive scope coverage and CID alignment was provided by senior and peer estimators. Additional reviews were completed to identify the scope items that had a significant impact on the Capex estimate and require additional cost assurance to provide a robust estimate. Where possible, the estimates were compared to similar asset costs in CID projects, estimates and other industry cost models to provide additional confidence.

#### 3.5. Reporting

To facilitate the transfer of cost estimates and estimate analysis, ChandlerKBS created and shared the PR24 Estimating Tracker with Wessex Water using SharePoint. The tracker contained copies of the scopes provided by Wessex Water and the ChandlerKBS estimated Civil and MEICA costs aligned with each scope item.

#### 4. Benchmark Results

There were four named Stormwater CSO scheme scopes provided by Wessex Water to be estimated by ChandlerKBS for benchmarking the Wessex Water internal estimates. The scopes provided low level, component details for estimating.

The table below presents the total value for each estimate and the benchmark variances.

Project Name	Wessex Water Estimate (£)	ChandlerKBS Benchmark (£)	WSX Variance to Benchmark (£)	Variance % to Benchmark
Lambridge Rugby Ground CSO	1,237,228	1,581,920	-344,692	-21.8%
C00435 – Nightingales Bridge CSO	1,373,503	1,886,450	-512,947	-27.2%
C00439 – Watleys End FSO FINAL	1,713,518	2,139,602	-426,084	-19.9%
C00477 – St Peters Church FSO	1,152,600	1,195,654	-43,054	-3.6%
<b>Total</b>	<b>5,476,849</b>	<b>6,803,626</b>	<b>-1,326,777</b>	<b>-19.5%</b>

The Wessex Water estimates were between 3.6% and 27.2% lower than the ChandlerKBS benchmark estimates with a total variance of -19.5%.

In addition to the four named scheme scopes, Wessex Water provided a table of twenty unnamed scopes, each with four options for estimating. The estimates included the following options.

1. CSO storage with 200 mm diameter pipework.
2. CSO storage with 300 mm diameter pipework.
3. CSO storage with 400 mm diameter pipework.
4. CSO storage with 500 mm diameter pipework.

•

The tabulated scopes provided less component detail than the named schemes but were sufficiently detailed to enable a cost estimate to be produced for each option.

ChandlerKBS provided estimates for each of the unnamed Storm overflow schemes comprising various sized CSO shaft storage volumes and pipe diameters.

The unnamed scheme estimates were used by Wessex Water to generate comparable benchmark estimates for 102 additional CSO schemes. The table below presents the variance in the total Capex estimates.

Project Name	Wessex Water Estimate (£)	ChandlerKBS Benchmark (£)	WSX Variance to Benchmark (£)	Variance % to Benchmark
Total of 102 Schemes	137,281,821	141,322,271	-4,040,450	-2.9%

Wessex Water reported that the total estimate variance of the 102 CSO schemes was -2.9% compared to the ChandlerKBS benchmark estimates.

Due to the level of scope definition provided at Business Planning stage, we would identify the estimate class, as defined by the Association for the Advancement of Cost Engineering (AACE), as a Budgetary Estimate or Class 3 and, therefore, an expected accuracy range of between -20% and +30% to the outturn cost.

Based on the AACE classification, the ChandlerKBS and Wessex Water accuracy ranges overlap which indicates a high probability of the outturn costs falling in this range. Therefore, the estimates can be deemed to be robustly efficient for Business Planning.

## Contact sheet

This document was prepared by:  
William Heap

Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA

T +44 (0)29 20352300

E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)



## **A4-4 Smart meters**



**CHANDLERKBS**

A CUMMING AFFILIATE

Smart Metering  
PR24 Cost Estimating Methodology

Wessex Water

19 September 2023



## Contents

		Page
1.	Introduction	1
2.	Source Data	2
	2.1. Construction Costs	2
	2.2. Difficult Works Adjustments	3
	2.3. Non-Construction Costs	5
	2.4. Normalisation	7
3.	Capex Estimating Methodology	8
	3.1. Construction Cost Estimating	8
	3.2. Difficult Works Adjustments	8
	3.3. Non-construction Cost Estimating	8
	3.4. Cost Estimate Assurance	9
4.	Benchmark Results	10

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	Final	W. Heap	J. Gavigan	19.09.2023
2				
3				
4				

## 1. Introduction

ChandlerKBS was requested to provide capex rates for a smart metering programme for assurance benchmarking of Wessex Water's PR24 Business Plan submission to Ofwat.

Wessex Water provided details of the planned AMP8 programme of smart meter installations. The table below presents the installation type and quantities for delivery in AMP8.

Meter Type	New meter fitted	Basic to smart - new meter pit excavation	Basic to smart - Internal plumbing	Basic to smart - screw-in
Half Hourly	26,500	109,846	18,249	85,400
Non Half Hourly	862	8,150	1,354	6,336

Wessex Water requested that the benchmark rates are representative of costs for delivering a programme of 256,700 smart meter installations incorporating any cost drivers related to the programme including communication, network costs and startup costs.

## 2. Source Data

The project Capex estimates have been generated using ChandlerKBS' Cost Intelligence Database (CID). The CID is a system of integrated cost databases and costing tools that was specifically designed to provide costing support for regulatory Price Reviews, allowing users to review and compare multiple cost curves, project data and indices to normalise and derive industry average costs for a range of asset drivers.

The CID comprises data obtained from ChandlerKBS clients over the past 20 years, including tens of thousands of cost curves and capital projects. Due to our involvement on several long-term cost management and capital allowances frameworks and commissions with water companies, contractors and regulators, we have captured the cost, design and specification data on all types of assets, processes, projects, programmes and technologies used within the industry.

ChandlerKBS has been involved with the design, creation and management of unit-cost-databases and Work Breakdown Structures (WBS) for several water companies. The CID system takes advantage of this knowledge and expertise to fully utilise captured cost data allowing a bottom-up or top-down estimating approach to suit the design maturity.

### 2.1. Construction Costs

The CID system presents costs categorised by the trade type anticipated to be delivering the work. The trade type identifies the proportions of costs that can be adjusted to suit the specifics of the scope. The CID trade types are:

- Civil
- Mechanical
- Electrical
- ICA

For the purpose of aligning benchmark costs with the project scopes, the CID trade outputs can be adjusted to produce a civil cost and a combined mechanical, electrical and ICA cost as MEICA.

Civil works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific civil works.
- First principle cost estimate build up for bespoke items not covered by CID Cost Curves.

MEICA works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific MEICA works.

The CID also contains a comprehensive list of engineering cost factors specific to water industry assets that can be utilised to derive proportional cost curve costs for civil, mechanical, electrical and ICA elements.

Direct construction cost estimates consist of multiple cost sources from the CID. The most appropriate source is selected with the highest confidence in cost accuracy to align with each scope item. To achieve robust consistency of scope coverage and costing accuracy, the preferred source of cost data is CID cost curves which have had several stages of cost assurance by both our clients and ourselves prior to use in the CID estimating system.

## 2.2. Difficult Works Adjustments

Scope items that identify the potential for difficult construction issues can have Difficult Works Adjustments applied. The adjustments represent the estimated costs to mitigate the construction issues over and above an industry average cost to deliver the scope. The adjustments are derived from CID projects that incurred similar construction issues and an assessment of the severity of the issue. Where appropriate, the adjustments are benchmarked against the upper and lower bounds of the cost curve outputs.

The table below presents the list of Difficult Works Adjustment categories that were available to be applied to the estimates. The assessments derive efficiency percentages that are applied to labour, plant and materials cost estimates for civil and MECIA categories.

Known Construction Issues (Not Included in Risk %)	Description	Cost Impact
Construction Access Constraints;	Programme impact / reduced productivity due to; congested ground, restricted construction area, dealing with obstacles.	No material impacts. High impact on civil programme. Additional civil and MEICA plant requirement.
Site Access Issues;	Programme impact due to; restricted access to site, difficult access, environmental reinstatement. (Temporary access road construction priced separately.)	Minor civil material impact. Impact on civil programme. Minor impact to MEICA programme.
Significant Temporary Works;	Programme and cost impact due to; construction of temporary assets, removal and reinstatement.	Impact on civil materials. Minor impact on MEICA materials. Minor impact on programme.
Temporary Process Plant;	Programme and cost impact due to; hire, set up and operation of temporary process assets for treatment.	Minor impact on civil materials. Impact on MEICA materials. Minor impact on programme.
Construction Sequencing;	Programme impact due to; restricted construction programme, seasonal working leading to reduced programme efficiency.	No material impacts. Impact on civil programme. Additional civil and MEICA labour and plant requirement.
Removal of Existing Assets;	Programme and cost impact due to; safe decommissioning, demolition and removal of above and below ground structures, disposal of materials.	Minor impact on material costs for disposal. Additional civil and MEICA plant and labour for decommissioning, demolition and removal from site.
Lack of Delivery Experience;	Programme and cost impact due to; unforeseen design complexities in design solution or early programme quick-win/simplicity cost bias. Additional / more-complex design solution required for civil and MEICA supporting assets.	Minor to significant impact to civil and MEICA materials, plant and labour. Impact assessed on case-by-case basis.

### 2.3. Non-Construction Costs

The construction cost is categorised by asset type to aid in identifying the specific non-construction uplifts that can be applied. The CID asset types are as follows:

- Water Pipelaying
- Water Network Assets (excluding pipelaying)
- Water Treatment
- Raw Water Reservoirs
- Waste Water Pipelaying
- Waste Water Network Assets (excluding pipelaying)
- Waste Water Treatment
- Sludge Treatment
- General Assets

Uplifts specific to each asset type are derived from CID cost curves and projects for multiple cost stages to align with various Ofwat reporting requirements.

The following table presents the full breakdown of non-construction cost uplifts that are available to be applied from the CID and which uplifts have been included in the ChandlerKBS cost estimates, to align with the Wessex Water estimates.



CID Non-Construction Cost Uplifts	Utilised in Wessex Water's PR24 Estimates
Site specifics (not included in construction costs)	Included
Contractor design	Excluded
Contractor prelims	Included
Construction management	Included
Contractor risk	Included
Insurance	Included
Contractor overheads and profit	Included
Outturn Adjustment	Included
Land	Excluded
DNO	Excluded
Pilot projects	Excluded
Planning	Excluded
Public consultation	Excluded
Legal	Excluded
Environmental	Excluded
Design	Excluded
Operations	Excluded
Passthroughs, if any	Excluded
Client management	Excluded
Client Corporate Overhead	Excluded

#### 2.4. Normalisation

To adjust CID data to account for its age, a factor has been applied that represents the industry's variance in construction costs from the cost data's base date to the estimate base date of Q3 2022. The adjustment factor used is determined by a construction cost index. The index that has been used to adjust Capex costs is the Civil Engineering Cost Index (reference 1191) published by Building Cost Information Services (BCIS). This index has cost components that align specifically with the UK water industry.

Over a period of circa ten years, we have learned that cost data reliability gradually reduces and cannot be improved by applying base date adjustments. Therefore, to produce a relevant cost estimate, cost data from the most recent decade is prioritised.

To adjust cost data for UK regional differences, a factor has been applied to adjust the cost data's base region to reflect the Wessex Water region. The factor is determined by an index of UK regions (Regional Index) which is published by Building Cost Information Service.

### 3. Capex Estimating Methodology

ChandlerKBS utilised the CID to provide Capex estimates for Wessex Water to benchmark the design options for the PR24 Business Plan submission.

ChandlerKBS Capex estimates were derived from the scope details provided by Wessex Water.

Capex estimates were derived by combining construction cost estimates with multiple uplift percentages for difficult works, non-construction activities and normalisation.

The completed Capex estimates were submitted to Wessex Water for comparison with their internal Capex estimate.

#### 3.1. Construction Cost Estimating

Expert estimator judgement was used to interpret the scope to be costed, align CID cost data and derive an overall cost estimate. The construction Capex estimates were built up from a suite of our highest confidence modelled cost data derived from sources that have well defined cost models.

Where a scope exceeded the coverage of a single cost data source, multiple data sources were combined to estimate the cost of the scope requirements. Similarly, where a scope item required a partial cost of a data source or sub process, we examined our CID for similar scopes to determine an appropriate adjustment to apply to the data source.

Capex estimates were provided for civil costs for each scope item.

#### 3.2. Difficult Works Adjustments

Where the scope identified risks or construction issues, the estimator assessed the type of works required to mitigate the issue and the potential impact on the delivery programme and the delivery cost. The issues for each scope items were aligned with the Difficult Works Adjustments and the resulting adjustments applied to the Capex estimates.

#### 3.3. Non-construction Cost Estimating

Non-construction costs were included in the Capex estimates. The CID automatically applied the asset relevant non-construction uplifts, pre-selected to align with the Wessex Water estimating requirements.

### 3.4. Cost Estimate Assurance

Prior to reporting to Wessex Water, assurance of comprehensive scope coverage and CID alignment was provided by senior and peer estimators. Additional reviews were completed to identify the scope items that had a significant impact on the Capex estimate and require additional cost assurance to provide a robust estimate. Where possible, the estimates were compared to similar asset costs in CID projects, estimates and other industry cost models to provide additional confidence.

#### 4. Benchmark Results

The Capex estimated rates were derived from CID rates of delivering smart meter roll-out programmes for the following meter install types:

- Basic to smart - new meter pit excavation.
- Basic to smart - Internal plumbing.
- Basic to smart -screw-in.

Wessex Water confirmed that the meter install type for New Meter Fitted was the same installation type as Basic to smart – New Meter Pit Excavation. Therefore, the same rates are used for both installation types.

The benchmark estimate rates obtained from the delivery programmes are presented in the table below with the Wessex Water rates for comparison. Wessex Water was unable to provide rates for the Basic to Smart Screw In install type so this rate has been excluded from the total comparison.

Meter Install Type	Smart Meter Quantity	WSX Rate	Benchmark Rate	WSX Estimate	Benchmark Estimate	Variance to Benchmark
New Meter Fitted	27,362	£375	£710	10,260,750	19,427,020	-47%
Basic to Smart - New Meter Pit Excavation	117,996	£375	£710	44,248,500	83,777,160	-47%
Basic to Smart - Internal Plumbing	19,603	£421	£368	8,252,863	7,213,904	14%
<b>Totals</b>	<b>164,961</b>			<b>62,762,113</b>	<b>110,418,084</b>	<b>-43%</b>

The Wessex Water rates for New Meter Fitted and Basis to Smart - New Meter Pit Excavation are 47% lower than the benchmark rates and account for 93.5% of the programme costs. Wessex Water did not provide any cost details to back up the lower delivery rate.

The Basic to Smart – Internal Plumbing rates varied by 14% and account for 6.5% of the programme costs.

The Wessex Water estimate of the total programme costs was 43% lower than the benchmark estimate. There were no details available from Wessex Water to support the explanation for this variance.

Wessex Water estimated that communication and network costs for smart meters in AMP8 would be £8m for Half Hourly meters and £561k for Non Half Hourly meters with initial start-up costs of £1.6m. Comparable rates for these items were not available in the CID for benchmarking the Wessex Water estimate.

Due to the level of scope definition provided at Business Planning stage, we would identify the estimate class, as defined by the Association for the Advancement of Cost Engineering (AACE), as a Budgetary Estimate or Class 3 and, therefore, an expected accuracy range of between -20% and +30% to the outturn cost.

The probability of the outturn costs falling outside of the AACE class range is high indicating a high risk of cost variance to the estimates. The reason for this variance is not understood.

We recommended that the key material and delivery prices are investigated to reduce the risk of inefficient or unrealistic prices.

Therefore, due to the high variances in the key installation rate, there is a low confidence in the smart metering programme costs for Business Planning.

## Smart Metering

### PR24 Cost Estimating Methodology

## Contact sheet

This document was prepared by:  
William Heap

Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA

T +44 (0)29 20352300

E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)

## **A4-5 Sludge Storage (barns)**





**CHANDLERKBS**  
A CUMMING AFFILIATE

Bioresources Sludge Barn Capex Estimate  
PR24 Cost Estimating Methodology  
Wessex Water  
19 September 2023



## Contents

		Page
1.	Introduction	1
2.	Source Data	2
	2.1. Construction Costs	2
	2.2. Difficult Works Adjustments	3
	2.3. Non-Construction Costs	5
	2.4. Normalisation	7
3.	Capex Estimating Methodology	8
	3.1. Construction Cost Estimating	8
	3.2. Non-construction Cost Estimating	8
	3.3. Cost Estimate Assurance	8
4.	Benchmark Results	10

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	Final	W. Heap	J. Gavigan	19.09.2023
2				
3				
4				

## 1. Introduction

ChandlerKBS was requested to provide a Capex estimate for a new sludge barn for cost assurance benchmarking of Wessex Water's Bioresources PR24 Business Plan submission to Ofwat.

Wessex Water provided design drawings for the following sludge barn sections:

- Barn steel frame and roof structure.
- Internal concrete slab.
- Hardstanding.

The design was based on the existing barn constructed at Wimborne, and was to be used as a basis for scoping the storage requirements for AMP8. Wessex Water planned to construct seven identical barns in AMP8 in the following locations:

- Avonmouth - 1 site.
- Trowbridge - 2 sites.
- Malmesbury - 4 sites.

Each set of barns needed to have odour control to comply with the industrial Emissions Directive (IED) and the Environmental Permitting Regulations (EPR). The design specifications of the odour control units were not available, hence Wessex Water instructed ChandlerKBS to exclude odour control from Capex estimate.

## 2. Source Data

The project Capex estimates have been generated using ChandlerKBS' Cost Intelligence Database (CID). The CID is a system of integrated cost databases and costing tools that was specifically designed to provide costing support for regulatory Price Reviews, allowing users to review and compare multiple cost curves, project data and indices to normalise and derive industry average costs for a range of asset drivers.

The CID comprises data obtained from ChandlerKBS clients over the past 20 years, including tens of thousands of cost curves and capital projects. Due to our involvement on several long-term cost management and capital allowances frameworks and commissions with water companies, contractors and regulators, we have captured the cost, design and specification data on all types of assets, processes, projects, programmes and technologies used within the industry.

ChandlerKBS has been involved with the design, creation and management of unit-cost-databases and Work Breakdown Structures (WBS) for several water companies. The CID system takes advantage of this knowledge and expertise to fully utilise captured cost data allowing a bottom-up or top-down estimating approach to suit the design maturity.

### 2.1. Construction Costs

The CID system presents costs categorised by the trade type anticipated to be delivering the work. The trade type identifies the proportions of costs that can be adjusted to suit the specifics of the scope. The CID trade types are:

- Civil
- Mechanical
- Electrical
- ICA

For the purpose of aligning benchmark costs with the project scopes, the CID trade outputs can be adjusted to produce a civil cost and a combined mechanical, electrical and ICA cost as MEICA.

Civil works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific civil works.

- First principle cost estimate build up for bespoke items not covered by CID Cost Curves.

MEICA works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific MEICA works.

Generally, it is not possible to provide first principle cost estimates for MEICA scope due to the design complexities involved and level of design detail requirement which would create a very low confidence and potentially low accuracy cost.

The CID also contains a comprehensive list of engineering cost factors specific to water industry assets that can be utilised to derive proportional cost curve costs for civil, mechanical, electrical and ICA elements.

Direct construction cost estimates consist of multiple cost sources from the CID. The most appropriate source is selected with the highest confidence in cost accuracy to align with each scope item. To achieve robust consistency of scope coverage and costing accuracy, the preferred source of cost data is CID cost curves which have had several stages of cost assurance by both our clients and ourselves prior to use in the CID estimating system.

## 2.2. Difficult Works Adjustments

Scope items that identify the potential for difficult construction issues can have Difficult Works Adjustments applied. The adjustments represent the estimated costs to mitigate the construction issues over and above an industry average cost to deliver the scope. The adjustments are derived from CID projects that incurred similar construction issues and an assessment of the severity of the issue. Where appropriate, the adjustments are benchmarked against the upper and lower bounds of the cost curve outputs.

The table below presents the list of Difficult Works Adjustment categories that were available to be applied to the estimates. The assessments derive efficiency percentages that are applied to labour, plant and materials cost estimates for civil and MECIA categories.

Known Construction Issues (Not Included in Risk %)	Description	Cost Impact
Construction Access Constraints;	Programme impact / reduced productivity due to; congested ground, restricted construction area, dealing with obstacles.	No material impacts. High impact on civil programme. Additional civil and MEICA plant requirement.
Site Access Issues;	Programme impact due to; restricted access to site, difficult access, environmental reinstatement. (Temporary access road construction priced separately.)	Minor civil material impact. Impact on civil programme. Minor impact to MEICA programme.
Significant Temporary Works;	Programme and cost impact due to; construction of temporary assets, removal and reinstatement.	Impact on civil materials. Minor impact on MEICA materials. Minor impact on programme.
Temporary Process Plant;	Programme and cost impact due to; hire, set up and operation of temporary process assets for treatment.	Minor impact on civil materials. Impact on MEICA materials. Minor impact on programme.
Construction Sequencing;	Programme impact due to; restricted construction programme, seasonal working leading to reduced programme efficiency.	No material impacts. Impact on civil programme. Additional civil and MEICA labour and plant requirement.
Removal of Existing Assets;	Programme and cost impact due to; safe decommissioning, demolition and removal of above and below ground structures, disposal of materials.	Minor impact on material costs for disposal. Additional civil and MEICA plant and labour for decommissioning, demolition and removal from site.
Lack of Delivery Experience;	Programme and cost impact due to; unforeseen design complexities in design solution or early programme quick-win/simplicity cost bias. Additional / more-complex design solution required for civil and MEICA supporting assets.	Minor to significant impact to civil and MEICA materials, plant and labour. Impact assessed on case-by-case basis.

### 2.3. Non-Construction Costs

The construction cost is categorised by asset type to aid in identifying the specific non-construction uplifts that can be applied. The CID asset types are as follows:

- Water Pipelaying
- Water Network Assets (excluding pipelaying)
- Water Treatment
- Raw Water Reservoirs
- Waste Water Pipelaying
- Waste Water Network Assets (excluding pipelaying)
- Waste Water Treatment
- Sludge Treatment
- General Assets

Uplifts specific to each asset type are derived from CID cost curves and projects for multiple cost stages to align with various Ofwat reporting requirements.

The following table presents the full breakdown of non-construction cost uplifts that are available to be applied from the CID and which uplifts have been included in the ChandlerKBS cost estimates, to align with the Wessex Water estimates.

CID Non-Construction Cost Uplifts	Utilised in Wessex Water's PR24 Estimates
Site specifics (not included in construction costs)	Included
Contractor design	Excluded
Contractor prelims	Included
Construction management	Included
Contractor risk	Included
Insurance	Included
Contractor overheads and profit	Included
Outturn Adjustment	Included
Land	Excluded
DNO	Excluded
Pilot projects	Excluded
Planning	Excluded
Public consultation	Excluded
Legal	Excluded
Environmental	Excluded
Design	Excluded
Operations	Excluded
Passthroughs, if any	Excluded
Client management	Excluded
Client Corporate Overhead	Excluded



#### 2.4. Normalisation

To adjust CID data to account for its age, a factor has been applied that represents the industry's variance in construction costs from the cost data's base date to the estimate base date of Q3 2022. The adjustment factor used is determined by a construction cost index. The index that has been used to adjust Capex costs is the Civil Engineering Cost Index (reference 1191) published by Building Cost Information Services (BCIS). This index has cost components that align specifically with the UK water industry.

Over a period of circa ten years, we have learned that cost data reliability gradually reduces and cannot be improved by applying base date adjustments. Therefore, to produce a relevant cost estimate, cost data from the most recent decade is prioritised.

To adjust cost data for UK regional differences, a factor has been applied to adjust the cost data's base region to reflect the Wessex Water region. The factor is determined by an index of UK regions (Regional Index) which is published by Building Cost Information Service.

### 3. Capex Estimating Methodology

ChandlerKBS utilised the CID to provide Capex estimates for Wessex Water to benchmark the design options for the PR24 Business Plan submission.

ChandlerKBS Capex estimates were derived from the scope details provided by Wessex Water.

Capex estimates were derived by combining construction cost estimates with multiple uplift percentages for difficult works, non-construction activities and normalisation.

The completed Capex estimates were submitted to Wessex Water for comparison with their internal Capex estimate.

#### 3.1. Construction Cost Estimating

Expert estimator judgement was used to interpret the scope to be costed, align CID cost data and derive an overall cost estimate. The construction Capex estimates were built up from a suite of our highest confidence modelled cost data derived from sources that have well defined cost models.

Where a scope exceeded the coverage of a single cost data source, multiple data sources were combined to estimate the cost of the scope requirements. Similarly, where a scope item required a partial cost of a data source or sub process, we examined our CID for similar scopes to determine an appropriate adjustment to apply to the data source.

Capex estimates were provided for civil costs for each scope item.

#### 3.2. Non-construction Cost Estimating

Non-construction costs were included in the Capex estimates. The CID automatically applied the asset relevant non-construction uplifts, pre-selected to align with the Wessex Water estimating requirements.

#### 3.3. Cost Estimate Assurance

Prior to reporting to Wessex Water, assurance of comprehensive scope coverage and CID alignment was provided by senior and peer estimators. Additional reviews were completed to identify the scope items that had a significant impact on the Capex estimate and require additional cost assurance to provide a robust estimate. Where possible, the estimates were

compared to similar asset costs in CID projects, estimates and other industry cost models to provide additional confidence.

#### 4. Benchmark Results

The Capex estimates were derived from the CID projects with a significant weighting on cost rates from recent tenders for the South West region.

Steel materials are a significant proportion of the cost of constructing a steel frame building such as a sludge barn. The supply chain costs of steel products, including steel frame building materials, have been volatile since 2020 and have presented increases in costs higher than consumer and general construction inflation indices.

CID projects for the South West region have also presented increases in costs for steel frame building construction, aligning with the same period of increases in the supply cost of steel products.

The following table presents the variances in inflation recorded by various cost indices between the Wimborne Sludge Barn base date of January 2020 to the PR24 base date of September 2022.

Cost Index	January 2020 Index	September 2022 Index	Cost Variance
ONS CPIH	108.3	122.3	+12.9%
BCIS 1191 Civil Engineering	163.2	205.5	+25.9%
BCIS 1171 Building Materials	285.5	396.1	+38.7%
BCIS PAFI 90/14 Metal Sections	237	521	+120%
BCIS PAFI 4/CE/18 Steel for Reinforcements / Sections	109	214	+96.3%

The above table demonstrates the unprecedented volatility of the key sludge barn construction material costs. Metal Sections for construction increased by 120% compared to consumer index CPIH increase of only 12.9% and the Civil Engineering index of 25.9% in the same period.

Wessex Water provided the Wimborne sludge barn actual construction costs from January 2020 for comparison. The standard CID normalising methodology was used to adjust the Wimborne actual cost to the PR24 (Q3 2022) for comparison with the benchmark estimate.

The Capex benchmark for the Sludge Barn design is as follows.

Design Component	Wimborne Actual Costs (Jan 2020)	Wimborne Normalised Actual Costs (PR24)	ChandlerKBS Capex Benchmark Estimate (PR24)	Variance to Benchmark %
Sludge Barn Internal Concrete Base Slab	£619,487	£780,052	£771,927	1%
Sludge Barn Steel Frame Building	£2,069,942	£2,606,453	£4,895,246	-47%
Hardstanding	£253,500	£319,205	£221,121	44%
<b>Total Estimate</b>	<b>£2,942,929</b>	<b>£3,705,710</b>	<b>£5,888,294</b>	<b>-37%</b>

The Wimborne costs present an overall variance of -37% compared to the ChandlerKBS benchmark estimate for PR24.

The sludge barn steel frame building cost variance of 47% demonstrates the impact of the high volatility experienced in steel prices compared to construction inflation in the period between the Wimborne sludge barn construction and the PR24 base date of Q3 2022.

The benchmark estimate has been derived from similar projects constructed during the period of high volatility and may represent the highest costs of the period.

The sludge barn base slab benchmark estimate aligns well with the Wessex Water normalised cost with a variance of only 1%.

The Wimborne costs for hardstanding are 44% higher than the benchmark estimate. This difference suggests that the benchmark estimate is not based on the same design specifications as the actual Wimborne construction. However, this section is only 3.8% of the total cost and therefore, any changes to this section will have a low significance to the overall cost.

Due to the level of scope definition provided at Business Planning stage, we would identify the estimate class, as defined by the Association for the Advancement of Cost Engineering (AACE), as a Budgetary Estimate or Class 3 and, therefore, an expected accuracy range of between -20% and +30% to the outturn cost.

The probability of the outturn costs falling outside of the AACE class range is high indicating a high risk of cost variance to the estimates. This is due to the unprecedented cost volatility of the key material prices for steel in the design.

We recommended that the key material prices are monitored throughout the delivery programme to reduce the risk of inefficient prices.

Therefore, due to the high volatility of key material costs, there is low confidence in the current Wessex Water Sludge Barn cost estimates for Business Planning.

### Contact sheet

This document was prepared by:  
William Heap  
Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA  
T +44 (0)29 20352300  
E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)

## **A4-6 Mains replacement**





**CHANDLERKBS**

A CUMMING AFFILIATE

Mains Replacement  
PR24 Cost Estimating Methodology  
Wessex Water  
14 September 2023



## Contents

		Page
1.	Introduction	1
2.	Source Data	2
	2.1. Construction Costs	2
	2.2. Difficult Works Adjustments	3
	2.3. Non-Construction Costs	5
	2.4. Normalisation	7
3.	Capex Estimating Methodology	8
	3.1. Construction Cost Estimating	8
	3.2. Difficult Works Adjustments	8
	3.3. Non-construction Cost Estimating	8
	3.4. Cost Estimate Assurance	9
	3.5. Reporting	9
4.	Benchmark Results	10

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	Draft for comment	W. Heap	G. Maidment	21.08.2023
2	Final	W. Heap	J. Gavigan	14.09.23
3				
4				

## **1. Introduction**

ChandlerKBS was requested to provide Capex estimates for several Mains Replacement projects for cost assurance benchmarking of Wessex Water's PR24 Business Plan submission to Ofwat.

The Mains Replacement estimates consisted of the following projects:

- Dropping Lane
- Corfe Castle
- Glitney Farm
- Kingston St Michael
- Windmill Hill
- Church Street
- Pretwood
- Yatton

## 2. Source Data

The project Capex estimates have been generated using ChandlerKBS' Cost Intelligence Database (CID). The CID is a system of integrated cost databases and costing tools that was specifically designed to provide costing support for regulatory Price Reviews, allowing users to review and compare multiple cost curves, project data and indices to normalise and derive industry average costs for a range of asset drivers.

The CID comprises data obtained from ChandlerKBS clients over the past 20 years, including tens of thousands of cost curves and capital projects. Due to our involvement on several long-term cost management and capital allowances frameworks and commissions with water companies, contractors and regulators, we have captured the cost, design and specification data on all types of assets, processes, projects, programmes and technologies used within the industry.

ChandlerKBS has been involved with the design, creation and management of unit-cost-databases and Work Breakdown Structures (WBS) for several water companies. The CID system takes advantage of this knowledge and expertise to fully utilise captured cost data allowing a bottom-up or top-down estimating approach to suit the design maturity.

### 2.1. Construction Costs

The CID system presents costs categorised by the trade type anticipated to be delivering the work. The trade type identifies the proportions of costs that can be adjusted to suit the specifics of the scope. The CID trade types are:

- Civil
- Mechanical
- Electrical
- ICA

For the purpose of aligning benchmark costs with the project scopes, the CID trade outputs can be adjusted to produce a civil cost and a combined mechanical, electrical and ICA cost as MEICA.

Civil works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific civil works.
- First principle cost estimate build up for bespoke items not covered by CID Cost Curves.

MEICA works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific MEICA works.

Generally, it is not possible to provide first principle cost estimates for MEICA scope due to the design complexities involved and level of design detail requirement which would create a very low confidence and potentially low accuracy cost.

The CID also contains a comprehensive list of engineering cost factors specific to water industry assets that can be utilised to derive proportional cost curve costs for civil, mechanical, electrical and ICA elements.

Direct construction cost estimates consist of multiple cost sources from the CID. The most appropriate source is selected with the highest confidence in cost accuracy to align with each scope item. To achieve robust consistency of scope coverage and costing accuracy, the preferred source of cost data is CID cost curves which have had several stages of cost assurance by both our clients and ourselves prior to use in the CID estimating system.

## 2.2. Difficult Works Adjustments

Scope items that identify the potential for difficult construction issues can have Difficult Works Adjustments applied. The adjustments represent the estimated costs to mitigate the construction issues over and above an industry average cost to deliver the scope. The adjustments are derived from CID projects that incurred similar construction issues and an assessment of the severity of the issue. Where appropriate, the adjustments are benchmarked against the upper and lower bounds of the cost curve outputs.

The table below presents the list of Difficult Works Adjustment categories that were available to be applied to the estimates. The assessments derive efficiency percentages that are applied to labour, plant and materials cost estimates for civil and MECIA categories.

Known Construction Issues (Not Included in Risk %)	Description	Cost Impact
Construction Access Constraints;	Programme impact / reduced productivity due to; congested ground, restricted construction area, dealing with obstacles.	No material impacts. High impact on civil programme. Additional civil and MEICA plant requirement.
Site Access Issues;	Programme impact due to; restricted access to site, difficult access, environmental reinstatement. (Temporary access road construction priced separately.)	Minor civil material impact. Impact on civil programme. Minor impact to MEICA programme.
Significant Temporary Works;	Programme and cost impact due to; construction of temporary assets, removal and reinstatement.	Impact on civil materials. Minor impact on MEICA materials. Minor impact on programme.
Temporary Process Plant;	Programme and cost impact due to; hire, set up and operation of temporary process assets for treatment.	Minor impact on civil materials. Impact on MEICA materials. Minor impact on programme.
Construction Sequencing;	Programme impact due to; restricted construction programme, seasonal working leading to reduced programme efficiency.	No material impacts. Impact on civil programme. Additional civil and MEICA labour and plant requirement.
Removal of Existing Assets;	Programme and cost impact due to; safe decommissioning, demolition and removal of above and below ground structures, disposal of materials.	Minor impact on material costs for disposal. Additional civil and MEICA plant and labour for decommissioning, demolition and removal from site.
Lack of Delivery Experience;	Programme and cost impact due to; unforeseen design complexities in design solution or early programme quick-win/simplicity cost bias. Additional / more-complex design solution required for civil and MEICA supporting assets.	Minor to significant impact to civil and MEICA materials, plant and labour. Impact assessed on case-by-case basis.

### 2.3. Non-Construction Costs

The construction cost is categorised by asset type to aid in identifying the specific non-construction uplifts that can be applied. The CID asset types are as follows:

- Water Pipelaying
- Water Network Assets (excluding pipelaying)
- Water Treatment
- Raw Water Reservoirs
- Waste Water Pipelaying
- Waste Water Network Assets (excluding pipelaying)
- Waste Water Treatment
- Sludge Treatment
- General Assets

Uplifts specific to each asset type are derived from CID cost curves and projects for multiple cost stages to align with various Ofwat reporting requirements.

The following table presents the full breakdown of non-construction cost uplifts that are available to be applied from the CID and which uplifts have been included in the ChandlerKBS cost estimates, to align with the Wessex Water estimates.

CID Non-Construction Cost Uplifts	Utilised in Wessex Water's PR24 Estimates
Site specifics (not included in construction costs)	Included
Contractor design	Excluded
Contractor prelims	Included
Construction management	Included
Contractor risk	Included
Insurance	Included
Contractor overheads and profit	Included
Outturn Adjustment	Included
Land	Excluded
DNO	Excluded
Pilot projects	Excluded
Planning	Excluded
Public consultation	Excluded
Legal	Excluded
Environmental	Excluded
Design	Excluded
Operations	Excluded
Passthroughs, if any	Excluded
Client management	Excluded
Client Corporate Overhead	Excluded



#### 2.4. Normalisation

To adjust CID data to account for its age, a factor has been applied that represents the industry's variance in construction costs from the cost data's base date to the estimate base date of Q3 2022. The adjustment factor used is determined by a construction cost index. The index that has been used to adjust Capex costs is the Civil Engineering Cost Index (reference 1191) published by Building Cost Information Services (BCIS). This index has cost components that align specifically with the UK water industry.

Over a period of circa ten years, we have learned that cost data reliability gradually reduces and cannot be improved by applying base date adjustments. Therefore, to produce a relevant cost estimate, cost data from the most recent decade is prioritised.

To adjust cost data for UK regional differences, a factor has been applied to adjust the cost data's base region to reflect the Wessex Water region. The factor is determined by an index of UK regions (Regional Index) which is published by Building Cost Information Service.

### 3. Capex Estimating Methodology

ChandlerKBS utilised the CID to provide Capex estimates for Wessex Water to benchmark the design options for the PR24 Business Plan submission.

ChandlerKBS Capex estimates were derived from the scope details provided by Wessex Water.

Capex estimates were derived by combining construction cost estimates with multiple uplift percentages for difficult works, non-construction activities and normalisation.

The completed Capex estimates were submitted to Wessex Water for comparison with their internal Capex estimate.

#### 3.1. Construction Cost Estimating

Expert estimator judgement was used to interpret the scope to be costed, align CID cost data and derive an overall cost estimate. The construction Capex estimates were built up from a suite of our highest confidence modelled cost data derived from sources that have well defined cost models.

Where a scope exceeded the coverage of a single cost data source, multiple data sources were combined to estimate the cost of the scope requirements. Similarly, where a scope item required a partial cost of a data source or sub process, we examined our CID for similar scopes to determine an appropriate adjustment to apply to the data source.

Capex estimates were provided for civil costs for each scope item.

#### 3.2. Difficult Works Adjustments

Where the scope identified risks or construction issues, the estimator assessed the type of works required to mitigate the issue and the potential impact on the delivery programme and the delivery cost. The issues for each scope items were aligned with the Difficult Works Adjustments and the resulting adjustments applied to the Capex estimates.

#### 3.3. Non-construction Cost Estimating

Non-construction costs were included in the Capex estimates. The CID automatically applied the asset relevant non-construction uplifts, pre-selected to align with the Wessex Water estimating requirements.

#### 3.4. Cost Estimate Assurance

Prior to reporting to Wessex Water, assurance of comprehensive scope coverage and CID alignment was provided by senior and peer estimators. Additional reviews were completed to identify the scope items that had a significant impact on the Capex estimate and require additional cost assurance to provide a robust estimate. Where possible, the estimates were compared to similar asset costs in CID projects, estimates and other industry cost models to provide additional confidence.

#### 3.5. Reporting

To facilitate the transfer of cost estimates and estimate analysis, ChandlerKBS created and shared the PR24 Estimating Tracker with Wessex Water using SharePoint. The tracker contained copies of the scopes provided by Wessex Water and the ChandlerKBS estimated Civil costs aligned with each scope item.

#### 4. Benchmark Results

There were eight Mains Replacement estimated by Wessex Water and ChandlerKBS. The table below presents the total value for each estimate and the benchmark variances.

Project Name	Wessex Water Estimate (£)	ChandlerKBS Benchmark (£)	Variance to Benchmark £	Variance to Benchmark %
Dropping Lane	122,186	177,107	-54,921	-31.0%
Corfe Castle	642,140	627,476	14,664	2.3%
Glitney Farm	51,541	80,490	-28,949	-36.0%
Kingston St Michael	548,767	592,359	-43,592	-7.4%
Windmill Hill	164,787	276,555	-111,768	-40.4%
Church Street	124,089	134,188	-10,099	-7.5%
Pretwood	255,347	376,306	-120,959	-32.1%
Yatton	551,206	766,592	-215,386	-28.1%
<b>Total</b>	<b>2,460,063</b>	<b>3,031,073</b>	<b>-571,010</b>	<b>-18.8%</b>

The total variance of the Wessex Water estimates to the ChandlerKBS benchmark estimates was -18.8%. The Wessex Water Capex estimate variances were not consistent across the eight project estimates and ranged from 2.3% to 40.4% of the ChandlerKBS Capex estimates.

Four of the estimates had a variance greater than 30%. Three of the estimates had a variance of less than 7.5%. The reason for the wide range of variances could be due to the specifics of individual cost models used for different installation techniques.

With the exception of Corfe Castle, the ChandlerKBS Capex estimates were higher than the Wessex Water Capex estimates. The pipelaying cost models used by ChandlerKBS are designed for use in Business Planning and generally derive costs higher than low level, bottom-up estimates.

Due to the level of scope definition provided at Business Planning stage, we would identify the estimate class, as defined by the Association for the Advancement of Cost Engineering (AACE), as a Budgetary Estimate or Class 3 and, therefore, an expected accuracy range of between -20% and +30% to the outturn cost.

Based on the AACE classification, the overall ChandlerKBS accuracy range overlaps with the Wessex Water range which indicates a high probability of the outturn costs falling in this range. Therefore, the estimates can be deemed to be robustly efficient for Business Planning.

## Contact sheet

This document was prepared by:  
William Heap

Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA

T +44 (0)29 20352300

E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)

## **A4-7 Bioresource IED**



**CHANDLERKBS**

A CUMMING AFFILIATE

Bioresources IED

PR24 Cost Estimating Methodology

Wessex Water

14 September 2023





## Contents

	Page
1. Introduction	1
2. Source Data	2
2.1. Construction Costs	2
2.2. Difficult Works Adjustments	3
2.3. Non-Construction Costs	5
2.4. Normalisation	7
3. Capex Estimating Methodology	8
3.1. Construction Cost Estimating	8
3.2. Difficult Works Adjustments	8
3.3. Non-construction Cost Estimating	8
3.4. Cost Estimate Assurance	9
3.5. Reporting	9
4. Benchmark Results	10

## Appendices

No Appendices

Version		Prepared by	Checked by	Issue date
1	Draft for comment	W. Heap	G. Maidment	21.08.2023
2	Revision	W. Heap		13.09.2023
3	Final	W. Heap	John Gavigan	14.09.2023
4				

## **1. Introduction**

ChandlerKBS was requested to provide a Capex estimate for the Trowbridge Bioresources Industrial Emissions Directive (IED) for cost assurance benchmarking of Wessex Water's PR24 Business Plan submission to Ofwat.

## 2. Source Data

The project Capex estimates have been generated using ChandlerKBS' Cost Intelligence Database (CID). The CID is a system of integrated cost databases and costing tools that was specifically designed to provide costing support for regulatory Price Reviews, allowing users to review and compare multiple cost curves, project data and indices to normalise and derive industry average costs for a range of asset drivers.

The CID comprises data obtained from ChandlerKBS clients over the past 20 years, including tens of thousands of cost curves and capital projects. Due to our involvement on several long-term cost management and capital allowances frameworks and commissions with water companies, contractors and regulators, we have captured the cost, design and specification data on all types of assets, processes, projects, programmes and technologies used within the industry.

ChandlerKBS has been involved with the design, creation and management of unit-cost-databases and Work Breakdown Structures (WBS) for several water companies. The CID system takes advantage of this knowledge and expertise to fully utilise captured cost data allowing a bottom-up or top-down estimating approach to suit the design maturity.

### 2.1. Construction Costs

The CID system presents costs categorised by the trade type anticipated to be delivering the work. The trade type identifies the proportions of costs that can be adjusted to suit the specifics of the scope. The CID trade types are:

- Civil
- Mechanical
- Electrical
- ICA

For the purpose of aligning benchmark costs with the project scopes, the CID trade outputs can be adjusted to produce a civil cost and a combined mechanical, electrical and ICA cost as MEICA.

Civil works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific civil works.
- First principle cost estimate build up for bespoke items not covered by CID Cost Curves.

MEICA works costs are estimated from the following CID cost sources.

- CID cost curves.
- Cost curves built from CID projects including aggregated labour, plant and material costs.
- Supplier quotes for specific MEICA works.

Generally, it is not possible to provide first principle cost estimates for MEICA scope due to the design complexities involved and level of design detail requirement which would create a very low confidence and potentially low accuracy cost.

The CID also contains a comprehensive list of engineering cost factors specific to water industry assets that can be utilised to derive proportional cost curve costs for civil, mechanical, electrical and ICA elements.

Direct construction cost estimates consist of multiple cost sources from the CID. The most appropriate source is selected with the highest confidence in cost accuracy to align with each scope item. To achieve robust consistency of scope coverage and costing accuracy, the preferred source of cost data is CID cost curves which have had several stages of cost assurance by both our clients and ourselves prior to use in the CID estimating system.

## 2.2. Difficult Works Adjustments

Scope items that identify the potential for difficult construction issues can have Difficult Works Adjustments applied. The adjustments represent the estimated costs to mitigate the construction issues over and above an industry average cost to deliver the scope. The adjustments are derived from CID projects that incurred similar construction issues and an assessment of the severity of the issue. Where appropriate, the adjustments are benchmarked against the upper and lower bounds of the cost curve outputs.

The table below presents the list of Difficult Works Adjustment categories that were available to be applied to the estimates. The assessments derive efficiency percentages that are applied to labour, plant and materials cost estimates for civil and MECIA categories.

Known Construction Issues (Not Included in Risk %)	Description	Cost Impact
<b>Construction Access Constraints;</b>	Programme impact / reduced productivity due to; congested ground, restricted construction area, dealing with obstacles.	No material impacts. High impact on civil programme. Additional civil and MEICA plant requirement.
<b>Site Access Issues;</b>	Programme impact due to; restricted access to site, difficult access, environmental reinstatement. (Temporary access road construction priced separately.)	Minor civil material impact. Impact on civil programme. Minor impact to MEICA programme.
<b>Significant Temporary Works;</b>	Programme and cost impact due to; construction of temporary assets, removal and reinstatement.	Impact on civil materials. Minor impact on MEICA materials. Minor impact on programme.
<b>Temporary Process Plant;</b>	Programme and cost impact due to; hire, set up and operation of temporary process assets for treatment.	Minor impact on civil materials. Impact on MEICA materials. Minor impact on programme.
<b>Construction Sequencing;</b>	Programme impact due to; restricted construction programme, seasonal working leading to reduced programme efficiency.	No material impacts. Impact on civil programme. Additional civil and MEICA labour and plant requirement.
<b>Removal of Existing Assets;</b>	Programme and cost impact due to; safe decommissioning, demolition and removal of above and below ground structures, disposal of materials.	Minor impact on material costs for disposal. Additional civil and MEICA plant and labour for decommissioning, demolition and removal from site.
<b>Lack of Delivery Experience;</b>	Programme and cost impact due to; unforeseen design complexities in design solution or early programme quick-win/simplicity cost bias. Additional / more-complex design solution required for civil and MEICA supporting assets.	Minor to significant impact to civil and MEICA materials, plant and labour. Impact assessed on case-by-case basis.

### 2.3. Non-Construction Costs

The construction cost is categorised by asset type to aid in identifying the specific non-construction uplifts that can be applied. The CID asset types are as follows:

- Water Pipelaying
- Water Network Assets (excluding pipelaying)
- Water Treatment
- Raw Water Reservoirs
- Waste Water Pipelaying
- Waste Water Network Assets (excluding pipelaying)
- Waste Water Treatment
- Sludge Treatment
- General Assets

Uplifts specific to each asset type are derived from CID cost curves and projects for multiple cost stages to align with various Ofwat reporting requirements.

The following table presents the full breakdown of non-construction cost uplifts that are available to be applied from the CID and which uplifts have been included in the ChandlerKBS cost estimates, to align with the Wessex Water estimates.

CID Non-Construction Cost Uplifts	Utilised in Wessex Water's PR24 Estimates
Site specifics (not included in construction costs)	Included
Contractor design	Excluded
Contractor prelims	Included
Construction management	Included
Contractor risk	Included
Insurance	Included
Contractor overheads and profit	Included
Outturn Adjustment	Included
Land	Excluded
DNO	Excluded
Pilot projects	Excluded
Planning	Excluded
Public consultation	Excluded
Legal	Excluded
Environmental	Excluded
Design	Excluded
Operations	Excluded
Passthroughs, if any	Excluded
Client management	Excluded
Client Corporate Overhead	Excluded

#### 2.4. Normalisation

To adjust CID data to account for its age, a factor has been applied that represents the industry's variance in construction costs from the cost data's base date to the estimate base date of Q3 2022. The adjustment factor used is determined by a construction cost index. The index that has been used to adjust Capex costs is the Civil Engineering cost index (reference 1191) published by Building Cost Information Services (BCIS). This index has cost components that align specifically with the UK water industry.

Over a period of circa ten years, we have learned that cost data reliability gradually reduces and cannot be improved by applying base date adjustments. Therefore, to produce a relevant cost estimate, cost data from the most recent decade is prioritised.

To adjust cost data for UK regional differences, a factor has been applied to adjust the cost data's base region to reflect the Wessex Water region. The factor is determined by an index of UK regions (Regional Index) which is published by BCIS.



### 3. Capex Estimating Methodology

ChandlerKBS utilised the CID to provide Capex estimates for Wessex Water to benchmark the design options for the PR24 Business Plan submission.

ChandlerKBS Capex estimates were derived from the scope details provided by Wessex Water.

Capex estimates were derived by combining construction cost estimates with multiple uplift percentages for difficult works, non-construction activities and normalisation.

The completed Capex estimates were submitted to Wessex Water for comparison with their internal Capex estimate.

#### 3.1. Construction Cost Estimating

Expert estimator judgement was used to interpret the scope to be costed, align CID cost data and derive an overall cost estimate. The construction Capex estimates were built up from a suite of our highest confidence modelled cost data derived from sources that have well defined cost models.

Where a scope exceeded the coverage of a single cost data source, multiple data sources were combined to estimate the cost of the scope requirements. Similarly, where a scope item required a partial cost of a data source or sub process, we examined our CID for similar scopes to determine an appropriate adjustment to apply to the data source.

Capex estimates were provided separately for civil costs and combined mechanical, electrical and ICA costs (MEICA) for each scope item.

#### 3.2. Difficult Works Adjustments

Where the scope identified risks or construction issues, the estimator assessed the type of works required to mitigate the issue and the potential impact on the delivery programme and the delivery cost. The issues for each scope items were aligned with the Difficult Works Adjustments and the resulting adjustments applied to the Capex estimates.

#### 3.3. Non-construction Cost Estimating

Non-construction costs were included in the Capex estimates. The CID automatically applied the asset relevant non-construction uplifts, pre-selected to align with the Wessex Water estimating requirements.

### 3.4. Cost Estimate Assurance

Prior to reporting to Wessex Water, assurance of comprehensive scope coverage and CID alignment was provided by senior and peer estimators. Additional reviews were completed to identify the scope items that had a significant impact on the Capex estimate and require additional cost assurance to provide a robust estimate. Where possible, the estimates were compared to similar asset costs in CID projects, estimates and other industry cost models to provide additional confidence.

### 3.5. Reporting

To facilitate the transfer of cost estimates and estimate analysis, ChandlerKBS created and shared the PR24 Estimating Tracker with Wessex Water using SharePoint. The tracker contained copies of the scopes provided by Wessex Water and the ChandlerKBS estimated Civil and MEICA costs aligned with each scope item.

#### 4. Benchmark Results

The Trowbridge Bioresources IED scope Capex Cost estimate was follows:

- ChandlerKBS £3,361,643
- Wessex Water £3,192,433

The Wessex Water estimate varied by -5.0% to the ChandlerKBS Capex estimate.

Due to the level of scope definition provided at Business Planning stage, we would identify the estimate class, as defined by the Association for the Advancement of Cost Engineering (AACE), as a Budgetary Estimate or Class 3 and, therefore, an expected accuracy range of between -20% and +30% to the outturn cost.

Based on the AACE classification, the ChandlerKBS and Wessex Water accuracy ranges overlap which indicates a high probability of the outturn costs falling in this range. Therefore, the estimates can be deemed to be robustly efficient for Business Planning.

## Contact sheet

This document was prepared by:  
William Heap

Chandlers House, Terra Nova Way,  
Penarth Marina, Cardiff CF64 1SA

T +44 (0)29 20352300  
E [wheap@chandlerkbs.com](mailto:wheap@chandlerkbs.com)

## **A5-1 Financial resilience**

# Review of Wessex Water WSX33 financial resilience PR24 business plan submission

22 September 2023

---

## 1 Introduction and scope

Ofwat expects Wessex Water's (WSX) PR24 Board to provide assurance and supporting evidence that their plans maintain financial resilience with the actual company structure for 2025-30 and in the long term.<sup>1</sup>

As part of this, WSX wants to provide its Board with confidence that the financial values related to financial resilience for PR24 which are being presented within the relevant business plan chapter are consistent with the values being produced by WSX's own internal modelling.

Frontier Economics has therefore been commissioned to provide this review of the relevant model and check this for consistency with the numerical financial values and their accompanying descriptors presented within the WSX33 business plan chapter, as shared with the Board. The primary focus of the numerical financial values is on the outputs of regulatory gearing and the adjusted interest cover ratio (AICR), but the chapter also describes the quantum of the cost and revenue shocks that have been applied within the model.

## 2 Our process

The work was carried out on site and online on Wednesday 20th September and in the remainder of that week.

On Wednesday 20<sup>th</sup> the WSX Head of Regulation shared the most recent versions of:

- the Viability Statement model PR24 (Excel model)
- WSX33 - Financial resilience and financeability (Word document)<sup>2</sup>

The workings of the Viability Statement model PR24 were demonstrated and the relevance to the numerical values in the WSX33 draft chapter were provided.

---

<sup>1</sup> Ofwat, PR24 Final Methodology, December 2022. [https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24\\_final\\_methodology\\_main\\_document.pdf](https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_main_document.pdf)

<sup>2</sup> The version as reviewed by the WSX Executive Director of Finance and Regulation

We then independently reviewed the Viability Statement model PR24, checking the numerical values from the WSX33 draft chapter and the surrounding narrative descriptions of these were accurate to the model and that we were able to reproduce the numerical values using the model.

Where there were inconsistencies and ambiguities, we questioned the Head of Economic Regulation to understand the reasons for these and made recommendations for changes to the board documentation and/or highlight remaining inconsistencies within a report that will be made available to the Board. Revised versions of the WSX33 draft chapter following our recommendations were shared by the Head of Economic Regulation which we subsequently reviewed.

### 3 Limitations of our review

Our review did not include the underlying calculations nor the base model input values in the Viability Statement model PR24. These were taken as given. It was also taken as given that the scenarios modelled to meet Ofwat's Final Methodology specifications were correct.<sup>3</sup>

Where narrative statements identified particular areas of impact beyond the gearing and AICR metrics, for instance RCV growth, we have reviewed whether these impacts are evident in the workings of the model. We have not identified whether other areas have had greater impacts than those specified in the narrative.

Our scope was focused on the financial resilience assessment. We did not review the financeability elements (section 1) in the WSX33 draft chapter.

Our review of the financial values and narrative was focused on the 12 models presented in section 2.2 for the RR17 business plan table as the scenarios required by Ofwat and two further scenarios identified as WSX as plausible and stretching. We did not assure all scenarios modelled for the annual performance reports and general use, which we understand WSX has modelled. We did not assure these RR17 values were accurately replicated in the RR17 table submitted as part of the business plan table submission.

### 4 Our findings

Our review process through Wednesday 20<sup>th</sup> and Thursday 21<sup>st</sup> identified minor inconsistencies and ambiguities. These were raised with the Head of Economic Regulation

---

<sup>3</sup> For instance, we did not check that the totex overspend scenario specified by Ofwat is a 10% overspend as modelled by WSX.

along with our recommendations for addressing these. Two subsequent drafts were shared with us, implementing our recommendations.

Based on the final draft of WSX33 chapter, we do not find any inconsistencies compared to the Viability Statement model PR24<sup>4</sup>. We note that a reference is made to the relative impact on retail costs in section 2.2.6 from the increased bad debts scenario: retail costs were not separated out from total appointee costs in the Viability Statement model PR24 and therefore we could not directly review this, however the logic of the statement made is reasonable given that retail costs are a subset of Appointee costs. Our conclusions

In conclusion, we find that the numerical financial values and their accompanying descriptors presented within the final draft of the WSX33 chapter (as shared morning of September 21<sup>st</sup>) are consistent with the Viability Statement model PR24 (as shared morning of Wednesday 20th September 2023).

---

<sup>4</sup> Version as shared with us morning of Wednesday 20<sup>th</sup> September 2023



## **A6-1 Affordability review**

Matt Greenfield  
Operations Centre  
Claverton Down Road  
Claverton Down  
Bath  
BA2 7WW

12 August 2023

## Letter of assurance regarding the affordability of Wessex Water's PR24 Business Plan

### *Instructions*

Wessex Water Services Ltd (WSX) has instructed Economic Insight Ltd (EI) to undertake an assurance review regarding the affordability of its PR24 Business Plan. Specifically, we have reviewed Wessex's PR24 Business Plan to consider whether: (i) the full implication of the 2025-30 Business Plan for customers was considered and the Plan achieves value for money; and (ii) the long-term delivery strategy protects customers' ability to pay their water bill in the long term and delivers fairness between what existing customers will pay and what is paid for by future customers.<sup>1</sup>

### *Wessex's approach to considering affordability*

Due to the significant investment it requires over AMP8, WSX is proposing bill increases of around 30% in its PR24 Business Plan. WSX's approach to considering the affordability of its Plan is described below.

- To ensure its Plan is affordable for the majority of its customers, WSX has set its pay-as-you-go (PAYG) rates equal to the "natural rate", which it calculates as net opex / net capex.
- To support financially vulnerable customers, WSX has committed to eradicating water poverty by 2050 (which it defines as no one spending more than 5% of their disposable income (i.e. income net of taxes) on their water bill) and expects to reach this target by 2030, by increasing the number of customers who receive a social tariff by at least an additional 100,000 customers by 2030 (which equates to around 8% of customers).<sup>2</sup>

### *Our findings*

We consider there to be four key components to affordability: (i) the ability of all customers to afford to pay their bills; (ii) protecting financially vulnerable customers on the lowest incomes, who are likely to struggle to pay; (iii) fairness between current and future generations; and (iv) value for money. We consider how WSX's PR24 Business Plan performs against each of these in turn below.

#### *Ability of all customers to pay their bills*

Whilst households have been severely stretched over the last few years with the Covid-19 pandemic and the ongoing cost of living crisis, evidence indicates that WSX's Plan remains affordable for its customers. More

---

<sup>1</sup> PR24 Final Methodology; Table 10.2.

<sup>2</sup> This estimate is based on WSX serving around 1.246 million residential customers in 2022/23 (source: APR data).

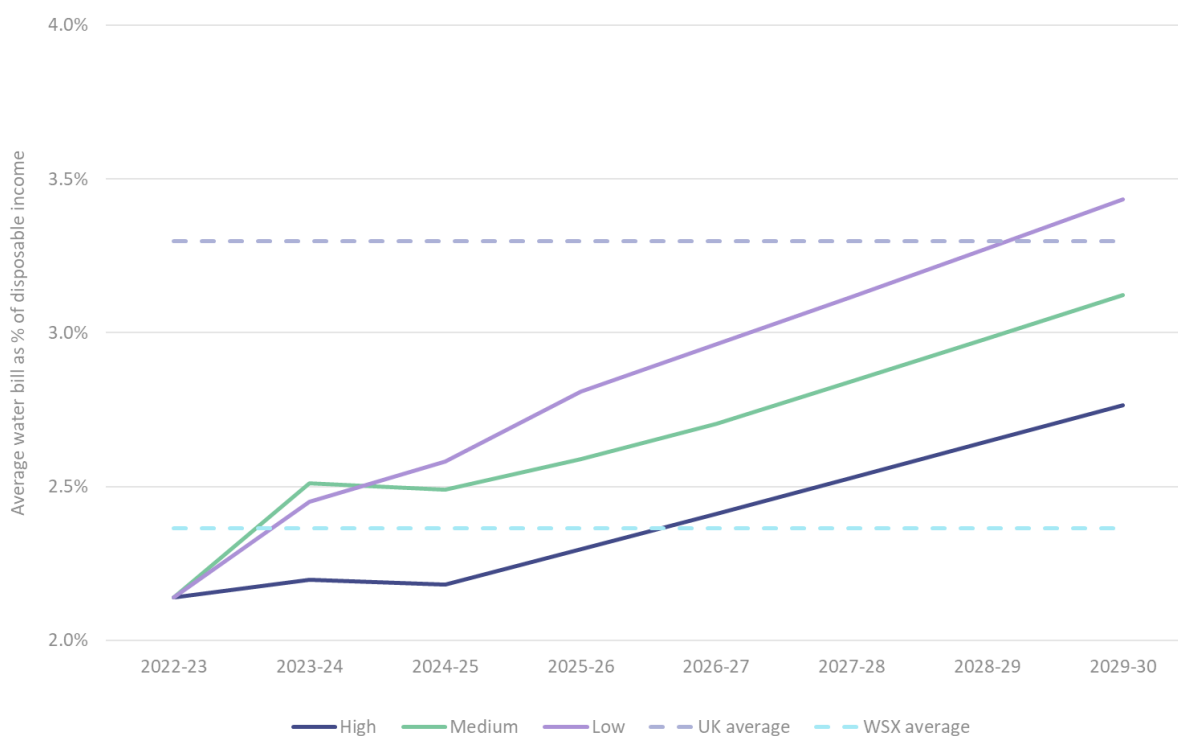
specifically, water bills are expected to remain a relatively low proportion of average household disposable income (after housing costs) in the Wessex region over PR24.

Figure 1 presents (real) water bills<sup>3</sup> as a percentage of average household disposable income (after housing costs) in the Wessex region over the PR24 period, under three projected household income scenarios:

- 'Low' represents a worst-case scenario, where disposable income is assumed to fall in line with the decline experienced during the financial crisis period;
- 'Medium' represents a realistic scenario, where disposable income is assumed to fall in the short-term and then recover, in line with forecasts from OBR; and
- 'High' represents an optimistic scenario, where disposable income is assumed to increase in line with the historical trajectory.

As can be seen, water bills are expected to represent between 2.30% and 3.43% of average household disposable income (after housing costs) in the Wessex region over PR24. This is in line with historical levels, including: (i) the average proportion of household disposable income (after housing costs) spent on water bills across the UK, which was 3.30% between 2013 and 2021; and (ii) the average proportion of household disposable income (after housing costs) spent on water bills in the Wessex region, which was 2.37% between 2013 and 2021. This is also well below the industry definition of water poverty (which CCW define as households spending more than 5% of their income (after housing costs) on their water bill). This implies that Wessex's customers are not in water poverty, and therefore, their water bills should be affordable for them.<sup>4</sup>

Figure 1: Water bills as a percentage of projected household disposable income (after housing costs) in Wessex region, over PR24



Source: Economic Insight analysis of OBR data; ONS data; Ofwat data; and Discover Water data.

<sup>3</sup> This analysis assumes (real) water bills increase by 30% over the PR24 period, in line with WSX's Business Plan.

<sup>4</sup> 'Independent review of water affordability.' CCW (May 2021).

### *Protecting financially vulnerable customers*

In addition to ensuring customers are able to afford their water bills, WSX's Business Plan also provides support and protection to financially vulnerable customers. In particular:

- In their independent review of water affordability, CCW concluded that households spending more than 5% of their income (after housing costs) on their water bill can be considered to be facing water poverty and in need of help with their water bills.<sup>5</sup> WSX's definition of water poverty (no one spending more than 5% of their disposable income on their water bill) is therefore consistent with best practice.
- It is estimated that around 6.5% of households in the Wessex region face water poverty (as defined by CCW).<sup>6</sup> WSX's commitment to increase the number of customers who receive a social tariff by at least 8% by 2030 is therefore consistent with its pledge to eradicate water poverty by 2050 and its expectation of reaching this target by 2030.

### *Fairness between generations*

WSX's PR24 Business Plan also delivers fairness between what existing customers will pay for and what is paid for by future customers. More specifically, as explained above, WSX have proposed PAYG rates for PR24 that are equal to the "natural rate".

Ofwat defines the "natural" PAYG rate as the rate "*which reflect the economic reality of the expenditure which [the company] are incurring and the long term nature of their investments*".<sup>7</sup> Companies can choose to set a PAYG rate which is different from the natural rate, however, this will affect the balance of recovery of costs between current and future customers. For example, if a company chooses to increase the PAYG rate, this will increase bills for current customers, but reduce bills for future customers.

In considering whether to set a PAYG rate which is different from the "natural" rate, companies should consider whether it is fair for different generations of customers to pay 'more' or 'less' for investments. For instance, if the current generation of customers are expected to benefit 'more' from investments than future generations, it may be appropriate to increase the PAYG rate and for the current generation to pay 'more'.

However, at present, there is no reason to expect that current or future customers would benefit differently from WSX's investments, and so there is no reason to deviate from the "natural" PAYG rate. As such, setting the PAYG rate equal to the "natural" rate can be considered a fair allocation of costs between existing and future customers.

### *Value for money*

Finally, WSX's PR24 Business Plan also delivers value for money for customers, as its Plan meets the price, quality and delivery dimensions of value for money.

A report by CCW indicates that there are three key dimensions to value for money – price; quality; and delivery.<sup>8</sup> Below, we explain how WSX's PR24 Business Plan meets each of these three dimensions and therefore provides value for money.

- As explained in 'ability of customers to pay their bills', evidence indicates that WSX's Plan is affordable for its customers. It therefore meets the price dimension of value for money.
- WSX's Business Plan also ensures quality for its customers, by delivering what its customers care about. For example, WSX have committed to delivering 100% compliance with drinking water

<sup>5</sup> ['Independent review of water affordability.'](#) CCW (May 2021).

<sup>6</sup> ['Quantitative analysis of water poverty in England and Wales.'](#) CEPA (March 2021); Figure 4.1.

<sup>7</sup> ['PAYG summary tables.'](#) Ofwat (December 2019).

<sup>8</sup> ['Value for money – A report on Drivers of Satisfaction in the Water and Sewerage Industry.'](#) CCW (2013); p.33-34.

standards and to ensuring that no supply interruption is longer than three hours, by 2050. It therefore meets the quality dimension of value for money.

- Finally, WSX's Plan includes a robust long-term delivery strategy, underpinned by a deliverability strategy and a financeability assessment assured by its Board, which ensures it can deliver and finance high-quality and affordable services for customers in the long run (so long as the proposals in its Business Plan are accepted). It therefore meets the delivery dimension of value for money.

***Assurance statement***

Following from the above, EI is able to assure that Wessex's PR24 Business Plan is affordable.

I am happy to confirm that the above is the independent opinion of EI, having undertaken our review.

Yours sincerely,

Aastha. Mantri

Aastha Mantri, Associate Director

## **A6-2 Financeability**

SEPTEMBER 2023



# NOTIONAL FINANCEABILITY

Assessment of Wessex Water's PR24 Business Plan

Legally privileged and commercially confidential

# CONTENTS

Executive summary	3
Assessing notional financeability	7
Financeability of Wessex's PR24 Business Plan	14
Annexes	20





# EXECUTIVE SUMMARY

# IT IS IMPORTANT TO ENSURE THAT A 'NOTIONALLY EFFICIENT' FIRM CAN ATTRACT AND RETAIN THE INVESTMENT IT REQUIRES TO FINANCE ITS FUNCTIONS.

- It is important to ensure that a 'notionally efficient' firm can attract and retain the investment it requires to finance its functions, as this ensures the water industry in England and Wales will be able to meet the needs of customers, and environmental and societal goals, both over the near- and long-term.
- Wessex Water have therefore commissioned Economic Insight to provide:
  - a) an independent evaluation of the appropriate approach to assessing notional financeability, reflecting best practice and in line with finance theory; and
  - b) an independent assessment of whether Wessex Water's PR24 Business Plan is financeable under such an approach.
- Consistent with this, Ofwat has a primary (financing) duty to ensure that water companies can finance the proper carrying out of their statutory functions. In line with accepted regulatory precedent, Ofwat (and other sectoral regulators) interprets this duty so as to apply to a notional (hypothetically efficient) company, and under a notional capital structure.\*
- At PR24, Ofwat requires company Boards to provide assurance that their business plans are financeable on the basis of the notional structure. Specifically, Ofwat explains that company Boards are to give assurance that:
  - *“the business plan is financeable on the basis of the notional capital structure. This assurance should take account of all components of the business plan, including our early view on the allowed return on capital for PR24.”*
  - And that, again on a notional basis, plans are: *“consistent with maintaining target credit ratings at least two notches above the minimum of the investment grade”* (which Ofwat defines as being BBB+/Baa1).\*\*

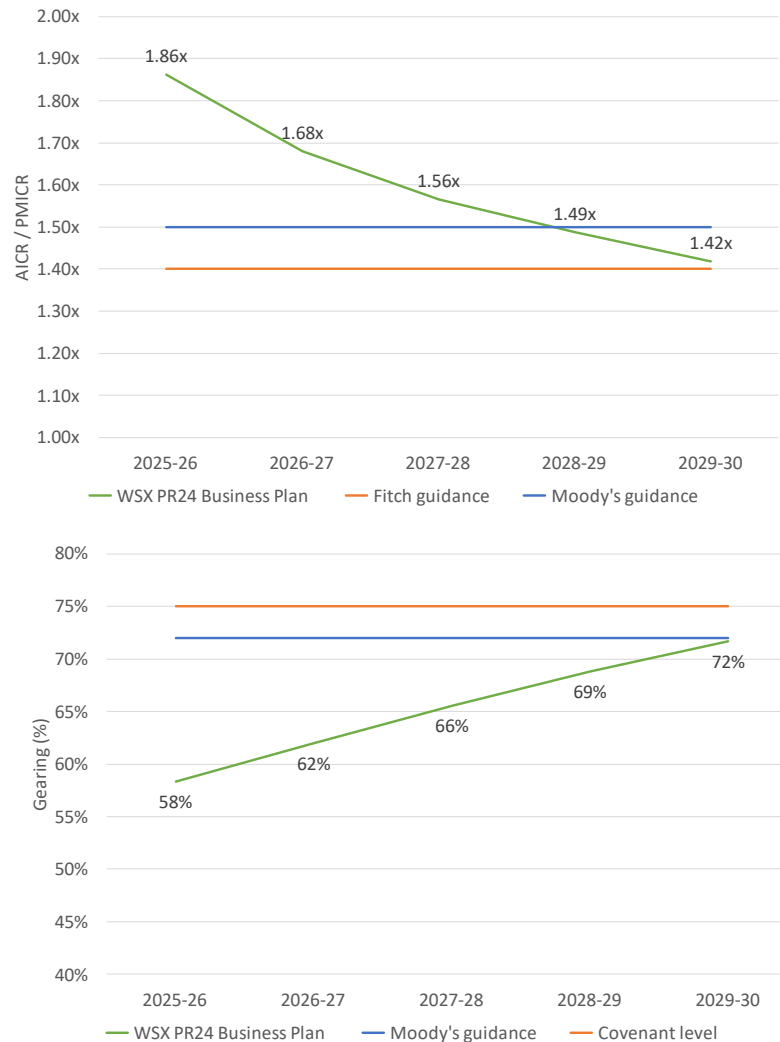
\* *'Our final methodology for PR24.'* Ofwat (December 2022); p.115.

\*\* *'Our final methodology for PR24.'* Ofwat (December 2022); Table 10.2.

# WESSEX'S PR24 BUSINESS PLAN MEETS THE NOTIONAL FINANCEABILITY ASSURANCE STATEMENT REQUIREMENT IN RELATION TO DEBT FINANCE.

- In keeping with Ofwat's method and assurance requirement, Wessex Water have modelled the credit metrics implied under their PR24 Business Plan and found that these are consistent with securing the target investment grade rating *for debt finance*, as shown in the adjacent figure.
- In doing so, and also as per Ofwat's method and assurance statement requirement, Wessex adopt Ofwat's early view of the WACC and its proposed notional capital structure (gearing of 55%), and only undertake the analysis for a base case scenario.
- Wessex's PR24 Business Plan therefore meets the notional financeability assurance statement requirement *in relation to debt finance*.

Figure: Credit metrics for Wessex's PR24 Plan, under Ofwat's method



Source: Wessex Water.

## HOWEVER, UNDER AN APPROPRIATE APPROACH TO NOTIONAL FINANCEABILITY, WESSEX'S PR24 BUSINESS PLAN IS NOT FINANCEABLE (USING OFWAT'S EARLY VIEW OF THE WACC).

- The preceding analysis does not provide a sufficient basis for concluding that an (appropriately characterised) notional firm is, in fact, financeable. More specifically, and as explained further in the remainder of this pack, established best practice and finance theory says that an appropriate approach to notional financeability should:
  - a) include both debt finance and the equity return (specifically, ensuring that appropriate weight is placed on the equity side and including an assessment of how risk impacts expected equity returns); and
  - b) be based on an appropriately characterised notional firm.
- We have therefore tested whether Wessex's PR24 Business Plan is financeable under such an approach and find that Wessex's Plan is not notionally financeable (using Ofwat's early view of the WACC).
- The remainder of this pack is structured as follows:
  - In Section 2, we discuss the appropriate approach to assessing notional financeability.
  - In Section 3, we test whether Wessex Water's PR24 Business Plan is financeable under such an approach (using Ofwat's early view of the WACC).
  - In Section 4, we present the following accompanying Annexes:
    - ▶ Annex A provides a discussion of the theory and empirical evidence behind efficient capital structures;
    - ▶ Annex B presents details of our cross-industry gearing analysis;
    - ▶ Annex C explains how we have identified the notional firm for the purposes of our notional financeability assessment;
    - ▶ Annex D details our independent RoRE risk modelling; and
    - ▶ Annex E sets out our independent financial modelling.

The background features a large white arrow pointing right, set against a dark blue background. In the top right, there are overlapping purple and blue triangles. In the bottom left, there are overlapping light green and dark green triangles. A thin white line is positioned in the upper right quadrant.

# ASSESSING NOTIONAL FINANCEABILITY

## AN APPROPRIATE APPROACH TO FINANCEABILITY SHOULD INCLUDE BOTH DEBT FINANCE AND THE EQUITY RETURN (WITH THE LATTER TAKING INTO ACCOUNT THE IMPACT OF RISK ON EXPECTED EQUITY RETURNS).

- Established finance theory and best practice say that, for a firm to be financeable, it is necessary that it is both able to: (a) earn a reasonable return (on its capital); and (b) raise finance on reasonable terms. More specifically:
  - a) The **ability to earn a reasonable return** includes ensuring that: (i) the overall return (the WACC) is set at the appropriate (market) level\*; and (ii) the 'expected' equity return, which factors in the impact of risk, is equal to the allowed cost of equity (for an efficient firm).
  - b) The **ability to raise finance on reasonable terms** involves ensuring that the notional firm is able to meet the target investment grade rating for debt finance. Ofwat indicates that companies should target a credit rating of at least two notches above minimum investment grade (which Ofwat defines as being BBB+/Baa1) for the notional firm in their PR24 Business Plans.
- The second limb of financeability (b) exists because, even if the overall return (WACC) were set at the appropriate level, the financial metrics of the notional firm in individual years (which are taken into account by credit rating agencies when issuing debt ratings) may mean it is not financeable in practice (due, for example, to timing mismatches between cash inflows and outflows).
- Ofwat's statements regarding financeability in its PR24 Final Methodology are, at face value, consistent with this approach in broad terms.

*"We interpret our financing duty as a duty to secure that an efficient company with the notional capital structure can finance its functions, in particular by securing reasonable returns on its capital. In doing so, it will be able to raise finance on reasonable terms while protecting the interests of current and future customers (emphasis added)."*

*'Our final methodology for PR24.'* Ofwat (December 2022); p.115.

*\*And thus, both the allowed cost of debt and cost of equity must be set appropriately.*



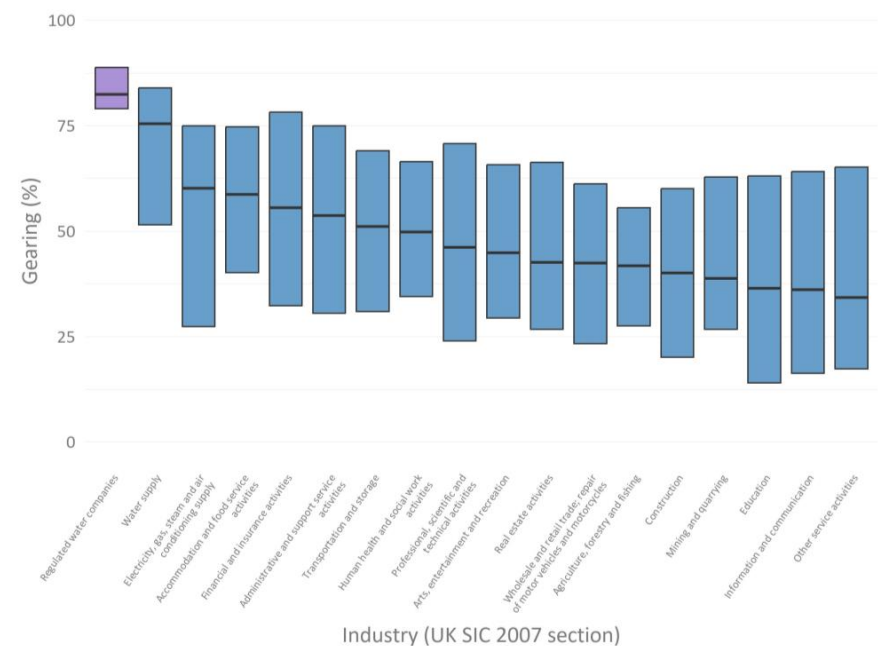
## IT IS ALSO IMPORTANT TO BASE THE ASSESSMENT OF NOTIONAL FINANCEABILITY ON AN APPROPRIATELY DEFINED NOTIONAL FIRM.

- In line with its duties under the Water Industry Act (1991), as well as established best practice, Ofwat assesses financeability with respect to a 'hypothetical' (or notional) efficient firm, with the notional capital structure. This reflects the fact that economic regulation is intended to incentivise outcomes consistent with a competitive market; and that therefore, regulators do not have a duty to ensure that an actual (potentially inefficient) firm is financed.
- Relatedly, the economic rationale for setting a notional capital structure is that it allows regulators to leave 'actual' capital structure decisions to companies, such that any risks associated with adopting inefficient capital structures are borne by shareholders (rather than customers).
- For the assessment of notional financeability to be robust, it is important that it be based on an appropriately characterised notional firm. More specifically, and explained further on the subsequent slides, it is important that:
  - the level of notional gearing be set at the efficient level and be evidence-based; and
  - the level of notional gearing be internally consistent with other assumptions.

## THE LEVEL OF NOTIONAL GEARING SHOULD BE SET AT THE EFFICIENT LEVEL AND BE EVIDENCE BASED.

- The Modigliani-Miller theorem states that the enterprise value of a firm (i.e. the value of a firm's debt and assets) is unaffected by its capital structure. However, as explained further in Annex A, other finance theories explain that there likely are efficient capital structures (i.e. firm value does vary with capital structure) and empirical studies support this.
- Indeed, as shown in the adjacent figure, in the real world, we observe variations in average gearing (capital structure) by industry in the UK. Specifically, the median industry gearing ranged from 82% to 34% across the UK in 2022, with higher gearing typically observed in more capital-intensive industries (as illustrated in Annex B). Intuitively, that observable variation strongly suggests that the efficient (optimal) capital structure in one industry is not necessarily efficient in another. It is therefore important to ensure that the level of notional gearing is set at the efficient level and is evidence-based.

Figure: Gearing comparison across UK industries, 2022



Source: Economic Insight analysis of FAME database. Please see Annex B for further details.



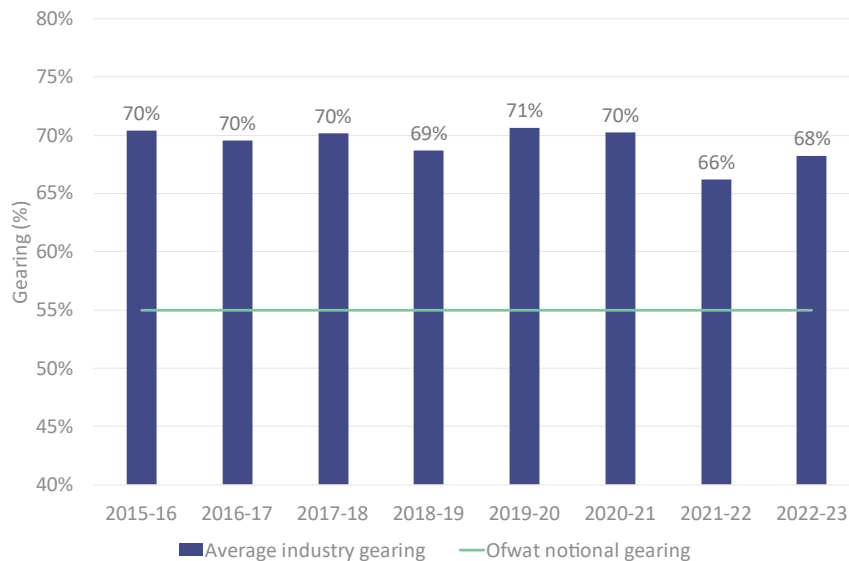
## THE LEVEL OF NOTIONAL GEARING SHOULD BE INTERNALLY CONSISTENT WITH OTHER ASSUMPTIONS.

- It is also important that assumptions regarding the notional firm (including notional gearing) are internally consistent with other assumptions employed in setting the price control, as this increases the robustness and reliability of the (notional) financeability assessment.
- In this regard, we are concerned that (at present) Ofwat's assumed notional gearing is inconsistent with: (i) its stated target investment grade; and (ii) its proposed cost of equity. More specifically:
  - Ofwat states that water companies should target an investment grade of BBB+/Baa1 for the notional firm. However, Moody's rating guidance for UK water companies presents a gearing range of 65%-72% for the Baa1 investment grade.\* Ofwat's notional gearing assumption of 55% is therefore inconsistent with its target credit rating.
  - At PR24, Ofwat has *decreased* its assumed notional gearing (reduced from 60% to 55% and thus, is 'assuming' more equity finance). At the same time, it has *decreased* its cost of equity (from 4.19% to 4.14%, CPIH real), relative to PR19. In addition, on our assessment, equity risk is increased for investors at PR24 for a number of reasons, including the large increase in the capital programme and regulatory method changes. Thus, Ofwat's proposed notional gearing is inconsistent with its proposed cost of equity and expected profile of equity risk.

\* *'Regulator's proposals undermine stability and predictability of the regime.'* Moody's (May 2018).

# AVERAGE GEARING LEVELS IN THE WATER INDUSTRY HAVE HISTORICALLY BEEN CONSISTENTLY HIGHER THAN OFWAT'S 55% NOTIONAL GEARING ASSUMPTION.

**Figure:** Comparison of average industry gearing and Ofwat notional gearing, 2015-16 to 2022-23



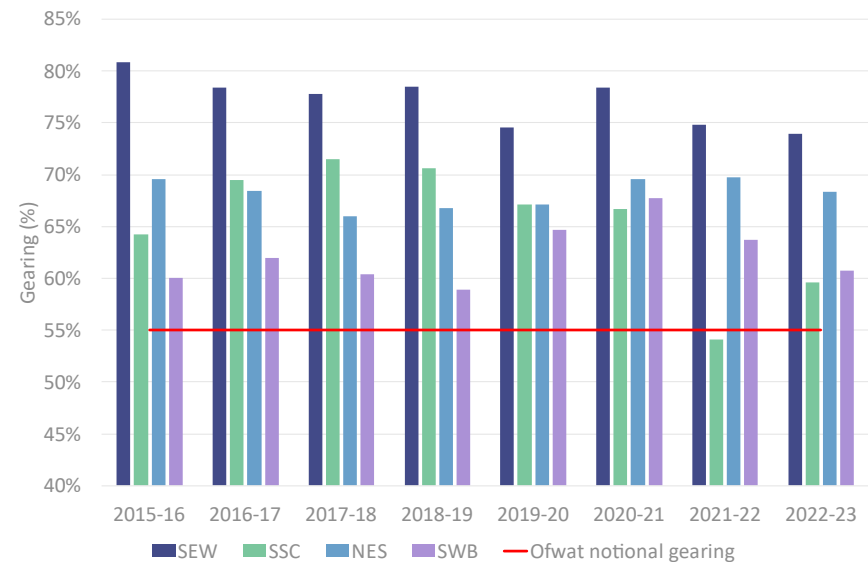
Source: APR data.

- As explained on slide 10, it is important to ensure that the level of notional gearing be data-based, as evidence indicates that there are clear variations in efficient capital structures by industry.
- The adjacent figure therefore compares average annual industry gearing in the water sector between 2015-16 and 2022-23, with Ofwat's notional gearing assumption at PR24. As can be seen, average gearing levels in the water industry have historically been consistently higher than Ofwat's 55% notional gearing assumption.

# ONE WAY OF ENSURING THAT THE LEVEL OF NOTIONAL GEARING IS INTERNALLY CONSISTENT IS TO DRAW ON EVIDENCE ON THE ACTUAL GEARING OF FIRMS THAT OFWAT ITSELF HAS PREVIOUSLY IDENTIFIED AS BEING NOTIONALLY EFFICIENT.

- For the reasons set out on slide 11, it is also important to ensure that the level of notional gearing is internally consistent with other assumption regarding the notional firm. One way of achieving this would be to draw on evidence on the actual gearing of firms that Ofwat itself has previously identified as being notionally efficient. As explained further in Annex C, these firms are: (i) Northumbrian Water; (ii) South Staffordshire Cambridge; (iii) South West Water; and (iv) South East Water.
- The adjacent figure therefore compares the actual company gearing of these four firms between 2015-16 and 2022/23, with Ofwat's assumed notional gearing. As can be seen, the 'notionally efficient' firms have historically had actual levels of gearing which are well above Ofwat's currently proposed notional gearing assumption of 55%.

Figure: Comparison of 'notionally efficient' firm actual company gearing and Ofwat notional gearing, 2015-16 to 2022-23



Source: APR data.



# FINANCEABILITY OF WESSEX'S PR24 BUSINESS PLAN

## USING OFWAT'S EARLY VIEW OF THE WACC, AND UNDER AN APPROPRIATE APPROACH TO NOTIONAL FINANCEABILITY, WESSEX'S PR24 BUSINESS PLAN IS NOT NOTIONALLY FINANCEABLE.

- As explained in the previous section, an appropriate approach to notional financeability should: (i) place sufficient weight on the equity return (and take the impact of risk on equity returns into account) *in addition* to assessing the ability to raise debt; and (ii) be based on an appropriately characterised notional firm.
- In this section, we test whether Wessex Water's PR24 Business Plan is financeable under such an approach (and under Ofwat's early view of the WACC). More specifically:
  - Our approach assesses whether the notional firm is both able to: (a) earn a reasonable return, once equity risk is taken into account; and (b) raise finance on reasonable terms.
  - We also base our assumed notional firm on firms that Ofwat itself has previously identified as being notionally efficient. These are: (i) Northumbrian Water; (ii) South Staffordshire Cambridge; (iii) South West Water; and (iv) South East Water. We provide an explanation of how these firms have been identified in Annex C.
- Overall, we find that **Wessex's Plan is not notionally financeable, under an appropriate approach to notional financeability and using Ofwat's early view of the WACC.** As explained in greater detail in the following slides, this is because:
  - Ofwat's early view of the WACC is insufficient to compensate investors for the risks they face;
  - RoRE risk modelling indicates that the (equity) risk faced by the notionally efficient firm at PR24 is skewed to the downside; and
  - Financial metrics implied under Wessex's PR24 Business Plan are not consistent with securing the target investment grade rating, *when using an appropriate level of notional gearing* (i.e. based on the actual gearing of firms that Ofwat itself has previously identified as being notionally efficient) and Ofwat's early view of the WACC.

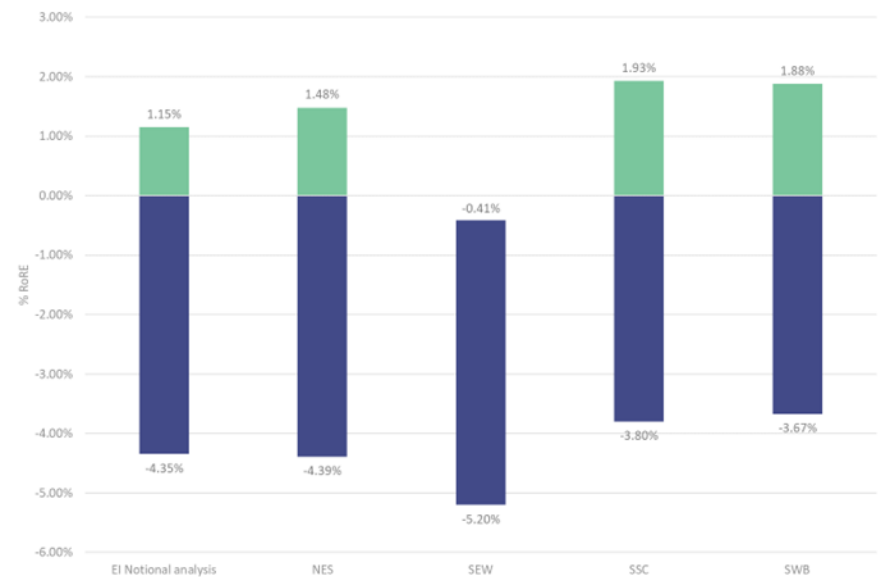
## (A) ABILITY TO EARN A REASONABLE RETURN (1)

- The ability to earn a reasonable return includes ensuring that:
  - (i) the overall return (the WACC) is set at the appropriate (market) level; and (ii) the 'expected' equity return is equal to the allowed cost of equity (for an efficient firm).
- In relation to (i), **Ofwat's early view of the WACC is insufficient to compensate investors for the risks they face in practice.** In particular, there are factors which increase the risk faced by investors at PR24, such as the increase in size of the capital programme and the material changes to the wider design of the regulatory framework.
- In relation to (ii), for the expected equity return to be equal to the allowed cost of equity, it is necessary that financial incentives are set such that the 'most likely' outcome for an efficient (notional) firm is one whereby it neither earns net penalties, nor net rewards.
- To assess whether the notional firm's expected equity return is equal to the allowed cost of equity, we have modelled the RoRE risk profile of firms identified by Ofwat as being notionally efficient. We find that **the distribution of risk is consistent with notionally efficient firms having expected equity returns (RoRE) below their allowed cost of equity.** The next slide explains this in further detail.
- This implies that, all else equal (i.e. without a change in Ofwat's approach, or without the above being compensated for in some other way), the notional firm would not be expected to earn its allowed cost of equity at PR24. In other words, **Wessex's PR24 Business Plan is not notionally financeable on the equity-side.**
- As can be seen, our results indicate that the (equity) risk faced by the notional firm is skewed to the downside.

## (A) ABILITY TO EARN A REASONABLE RETURN (2)

- For each firm previously identified by Ofwat as being notionally efficient, we have undertaken an analysis of the risk range for each building block of PR24, relying predominantly on historical analysis. This includes: totex; retail costs; revenue incentive mechanisms; financing; as well as ODIs and Measures of Experience (MeX).
- In the adjacent figure, we aggregate our risk modelling results across the PR24 building blocks for each 'notionally efficient' firm. As can be seen, our results indicate that the (equity) risk faced by the notional firm is skewed to the downside.
- We provide a detailed explanation of our RoRE risk modelling in Annex D.

*Figure: Overall RoRE risk ranges for 'notionally efficient' firms*



*Source: Economic Insight analysis. Please see Annex D for further details.*

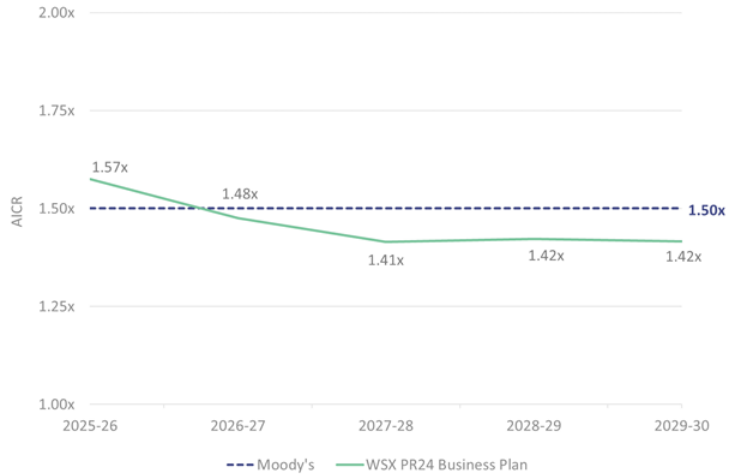
## (B) ABILITY TO RAISE FINANCE ON REASONABLE TERMS (1)

- The ability to raise finance on reasonable terms involves ensuring that the notional firm is able to meet the target investment grade rating for debt finance. Ofwat indicates that companies should target a credit rating of at least two notches above minimum investment grade (which Ofwat defines as being BBB+/Baa1) for the notional firm.
- To assess whether Wessex's PR24 Business Plan is consistent with the notional firm meeting the target credit rating, we have modelled the financial metrics ratings implied under Wessex's Plan and tested whether these are consistent with ratio guidance issued by credit rating agencies. In doing so:
  - We employ our own independent financial model, which is aligned with credit rating agency guidance, as they determine company credit worthiness in practice (please see Annex E for more details);
  - We use Ofwat's early view of the WACC; and
  - We assume *an appropriate level of notional gearing*. More specifically, we present three notional gearing scenarios:
    - ▶ We assume an opening level of notional gearing of 66%, which is equal to the average actual gearing of the four firms identified by Ofwat as being notional efficient (SEW, SSC, NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
    - ▶ We assume an opening level of notional gearing of 65%, which is equal to the average actual gearing of the two WASCs identified by Ofwat as being notional efficient (NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
    - ▶ We assume an opening level of notional gearing of 60%, which is equal to the level of notional gearing set by the CMA at PR19 redeterminations.
- As detailed further on the next slide, under all three notional gearing scenarios, we find that the **financial metrics implied under Wessex's PR24 Business Plan are not consistent with securing the target investment grade rating**, when using Ofwat's early view of the WACC.
- This implies that, all else equal, the notional firm would not be able to raise finance on reasonable terms at PR24. In other words, **Wessex's PR24 Business Plan is not notionally financeable on the debt-side (once the notional firm is appropriately characterised, based on evidence).**



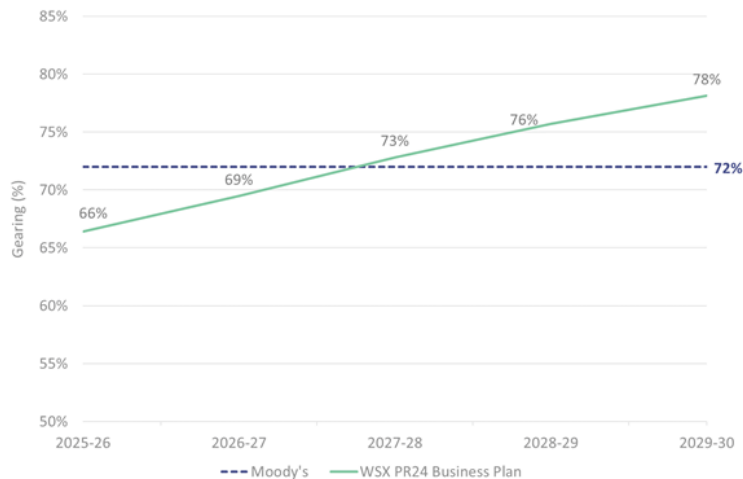
## (B) ABILITY TO RAISE FINANCE ON REASONABLE TERMS (2)

*Figure: Moody's AICR under Wessex's Plan, over PR24 period*



Source: Economic Insight analysis. Please see Annex E for further details.

*Figure: Moody's gearing under Wessex's Plan, over PR24 period*



Source: Economic Insight analysis. Please see Annex E for further details.

- The adjacent figures present Moody's AICR and gearing metrics under Wessex's Plan over the PR24 period, based on a notional gearing assumption of 66%. As explained on the previous slide, this is equal to the average actual gearing of the four firms identified by Ofwat as being notional efficient (SEW, SSC, NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
- As can be seen, under this notional gearing scenario (and using Ofwat's early view of the WACC), the credit metrics implied under Wessex's Plan are no longer consistent with Moody's ratio guidance for the BBB+/Baa1 credit rating over the PR24 period.
- This is consistent with our findings under the two other notional gearing scenarios (i.e. 65% and 60%). Results under these modeling scenarios are detailed in Annex E.

The background features a large white arrow pointing right, set against a dark blue background. In the top right, there are overlapping purple and blue triangles. In the bottom right, there are overlapping light green and dark green triangles. A thin white line is positioned in the upper right area.

# ANNEXES



ANNEX A: EFFICIENT CAPITAL  
STRUCTURES

## CONTRARY TO THE MODIGLIANI-MILLER THEOREM, IN PRACTICE, THERE ARE CLEAR VARIATIONS IN OPTIMAL CAPITAL STRUCTURES ACROSS INDUSTRIES.

- The Modigliani-Miller theorem states that the enterprise value of a firm (i.e. the value of a firm's debt and assets) is unaffected by its capital structure. If this theory were to hold true, the level of notional gearing set by Ofwat would not matter.
- In practice, however, this theory does not hold and there are various factors which determine efficient capital structures. This is supported by empirical evidence, which indicates that there are clear variations in capital structures across industries. It is therefore important to ensure that the level of notional gearing be set at the efficient level and be evidence-based.
- The rest of this annex is structured as follows.
  - We first discuss the theory behind efficient capital structures and provide an overview of: (i) the Modigliani-Miller theorem and why it does not hold in practice; and (ii) the factors which determine efficient capital structures in practice.
  - We then present a review of the empirical literature on optimal capital structures.



# THEORY

# MODIGLIANI-MILLER THEOREM – PROPOSITIONS

The Modigliani-Miller theorem states that the enterprise value of a firm is unaffected by how that firm is financed (whether through equity or debt). The theorem is derived from two propositions, which are implicitly underpinned by a number of assumptions. The theorem's two propositions are outlined below, and the assumptions behind the theorem (and why these break down in practice) are outlined in the following slide.

## PROPOSITION 1

Proposition 1 states that the following equation holds:

$$V_U = V_L$$

Where:

- $V_U$  is the value of an unlevered firm (price of buying a firm composed only of equity); and
- $V_L$  is the value of a levered firm (price of buying a firm that is composed of some mix of debt and equity).

The rationale behind this first proposition is as follows. Consider an investor who can buy either of the two firms, U or L. Suppose they are interested in purchasing the levered firm L. Instead of purchasing shares of the levered firm L, they could purchase shares of the unlevered firm U, and borrow the same amount of money, X, that firm L does. Then, assuming the investor's cost of borrowing is identical to the firm's, the eventual returns to the investments in either of the two firms should be the same (in an efficient market). Therefore, the price of L must be the same as the price of U minus the money borrowed X, which is the value of L's debt.

## PROPOSITION 2

Proposition 2 states that the following equation holds:

$$r_E = r_0 + \frac{D}{E}(r_0 - r_D)$$

Where:

- $r_E$  is the expected rate of return on equity of a leveraged firm, or cost of equity.
- $r_0$  is the company cost of equity capital with no leverage (unlevered cost of equity, or return on assets with  $\frac{D}{E} = 0$ )
- $r_D$  is the expected rate of return on borrowings, or cost of debt
- $\frac{D}{E}$  is the gearing ratio

The second proposition states that a company's cost of equity is directly proportional to its leverage ratio, such that the greater the leverage a company has (as indicated by  $\frac{D}{E}$ ), the greater the costs/return required from equity ( $r_E$ ). The intuition is that, as a company increases its level of debt, and thus in turn its leverage ratio, the probability of default is increased, and therefore the firm is considered a riskier investment. Equity investors expect and require greater compensation for this risk in the form of a higher rate of return (cost of equity),  $r_E$ ; hence, the expected rate of return on / cost of equity is positively related to its leverage ratio.

# MODIGLIANI-MILLER THEOREM – ASSUMPTIONS

The Modigliani-Miller theorem is implicitly underpinned by three key assumptions. Below, we outline these assumptions and explain why these assumptions (and therefore the Modigliani-Miller theorem itself) do not hold in practice.

## **ASSUMPTION 1: THE INVESTOR'S COST OF BORROWING IS THE SAME AS THAT OF THE FIRM**

- The Modigliani-Miller theorem assumes that the investor's cost of borrowing is the same as that of the firm.
- However, in practice, these are unlikely to be the same due to, for example:
  - The presence of asymmetric information;
  - Inefficient markets; and
  - Different risk profiles between investors and firms.

## **ASSUMPTION 2: NO TAX SHIELDING**

- The Modigliani-Miller theorem does not account for the reality of corporation tax, and tax-deductible interest on debt.
- The presence of such 'tax shielding' effects of debt, ignoring other frictions, implies the value of the company should increase in proportion to the amount of debt used (where the additional value equals the total discounted value of future taxes saved by issuing debt instead of equity).

## **ASSUMPTION 3: NO TRANSACTION COSTS**

- The Modigliani-Miller theorem assumes there are no transaction costs.
- However, in reality, transaction costs do exist, with implications for the trade-off between investing in equity and debt.

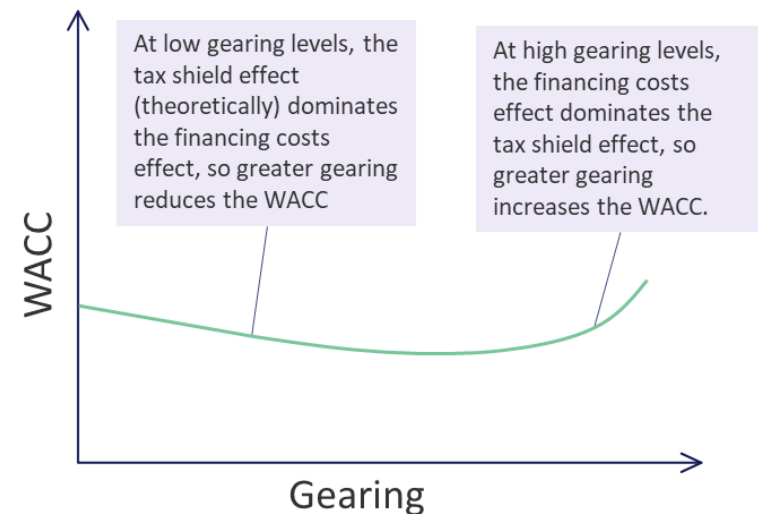
## EFFICIENT FIRM-LEVEL CAPITAL STRUCTURES – WACC MINIMISATION THEORY

The following slides 26 to 28 outline the theory surrounding which factors determine a firm's (and also an industry's) efficient capital structure in practice (given the failure of the Modigliani-Miller theorem). At the centre of optimal gearing ratio theory is the concept that there is a level of gearing for a given sector at a point in time that minimizes the WACC for a firm (which is desirable for minimizing financing costs). This is a result of two competing effects:

- (i) **The 'tax shield effect'**. This effect is the benefit associated with a firm increasing their gearing ratio (using debt to raise finance, instead of equity). The effect comes from the fact debt is an allowable deduction from taxable income, so firms enjoy lower taxes from raising finance via debt as opposed to equity.
- (ii) **The 'financing costs effect'**. This effect is the cost associated with a firm increasing their gearing ratio. This effect comes from the fact that increasing levels of debt makes equity more risky for equity holders (as debt is paid before equity), thus increasing the cost of equity. In addition, at very high levels of gearing, serious bankruptcy risk worries both equity and debt holders alike, resulting in an increase in both the cost of debt *and* capital.

The relationship between the level of gearing and the WACC resulting from these conflicting effects is illustrated in the adjacent figure. As shown, the constant tax shielding effect (assumed to initially dominate the financing cost effect at 0% gearing), coupled with an increasing financing cost effect, result in an optimal gearing ratio (minimizing the WACC), where these two effects are in balance.

Figure: Relationship between gearing and WACC



*Source: Economic Insight.*



# EFFICIENT FIRM-LEVEL CAPITAL STRUCTURES – EXTERNAL FACTORS AFFECTING THE OPTIMAL GEARING RATIO

The precise shape of the relationship outlined in the figure on the previous slide, along with the gearing level at which the WACC is minimized, depend upon a number of factors. These factors can be grouped into two types: (i) **external factors**, which are discussed below; and (ii) **behavioural factors**, which are discussed on the following slide.

**External factors** influencing the optimal gearing ratio for a given sector/firm can be further divided into: (a) sector risks; (b) financial market conditions; and (c) economic policy. Some examples of these factors are outlined below.

## SECTOR RISKS

Recall the upward slope of the gearing curve in the figure on slide 26 is driven by the default premium on debt. This premium depends upon two components: the probability of default at a given gearing level; and the expected recovery rate in the event of default. Both of these will be influenced by the nature of the risks facing the sector, which will vary by industry. Some examples of these include:

- **Cost risk.** Volatility in costs translates into volatility in profitability, thus affecting the probability of default.
- **Operational and service risks.** These could be related to providing water services, or the treatment/disposal of wastewater, which may result in penalties)
- **Environmental / climate-related risk.** Changes in environmental targets and obligations, or changes in climate patterns may affect both cost and service risk.

## FINANCIAL MARKET CONDITIONS

These factors determine the overall supply and demand conditions for equity and debt financing. For example, an increase in the demand for equity financing of infrastructure would increase the cost of equity financing relative to debt financing and therefore influence the optimal gearing range. Some examples of these include:

- **Rules and regulations (e.g. Basel regulations and solvency rules).** These may affect the demand from institutional investors for equity and debt (hence affecting their relative prices).
- **Trends in the investment policies of financial institutions and sovereign fund.** These trends may be significant enough to affect the demand (and hence the relative price and cost) of debt and equity of types of firms / industries.
- **Any other factors influencing supply or demand of capital for investment in infrastructure assets.**

## ECONOMIC POLICY

Economic policy factors can affect all firms in an economy or be industry-specific. These factors cover:

- **The tax regime** (i.e. the main rate of corporation tax and system of capital allowances). A higher corporation tax rate increases the tax shield benefits of debt, thus raising the optimal gearing ratio.
- **The level of corporate tax relief for debt interest payments.** Greater tax relief would also increase the tax shield benefit, raising the optimal gearing ratio.
- **Monetary policy with respect to interest rates.** An increase in interest rates will also increase the value of tax shield benefits, but at the same time could be associated with an increase in the cost of debt relative to the cost of equity, which would act in the opposite direction.

# EFFICIENT FIRM-LEVEL CAPITAL STRUCTURES – BEHAVIOURAL FACTORS AFFECTING THE OPTIMAL GEARING RATIO

Behavioural factors, in the context of regulated industries, can be further sub-divided into two categories: (i) effects on the behaviour of **company management** in relation to risk and performance arising from gearing decisions; and (ii) effects on the behaviour of **regulators** in relation to risk and performance resulting from gearing decisions.

## EFFECTS ON CORPORATE MANAGEMENT

Following Jensen and Meckling (1976)\*, the relationship between gearing and management behaviours relates to the following points:

- Investors have imperfect information about the decisions and performance of management;
- The incentives of management may not align to the long-term interests of investors; and
- Default has a relatively greater negative impact on management.

By imposing a higher level of gearing, the investors impose a discipline on management, since management will be keen to avoid the costs associated with default. This managerial discipline could include a reduction in risk-taking activities. This would result in a shift of the WACC curve in the figure on slide 26, therefore alter the optimal gearing range.

\* *'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure.'* Jensen M.C. and W.H. Meckling (1976).

## EFFECTS ON REGULATORS

The relationship between gearing and regulators is similar to that with company management. Regulatory decisions should reflect the long-term interests of investors and customers, but the nature of regulation means:

- Regulators cannot commit to long-term decisions, and face pressure from other stakeholders to make decisions in the short-term that may not align with the long-term interests; and
- Default by a regulated company would be seen as a regulatory failure (as well as imposing costs on customers), and therefore the regulator has an incentive to manage the risk of default.

Consequently, there is an argument that a higher level of gearing encourages the regulator to take decisions that put less risk on the company. This reduction in risk results in a shift of the WACC curve in the figure on slide 26, with an increase in the optimal gearing range.



# EMPIRICAL EVIDENCE

## Schwartz and Aronson (1967)\*

- This study looks to empirically test the hypothesis that firms' optimal financial structures differ significantly across industry classifications, and insignificantly within an industry classification. The authors suggest that *"various classes of firms have developed typical financial structures that are optimal for their operational risks and asset structures"*.
- The authors test this idea by way of a one-way analysis of variance (ANOVA) to examine the effect of industry classification on the ratio of common equity to total assets (therein, financial structure) for both: (i) two given points in time (1928 and 1961); and (ii) across a 40-year period. Firms were divided into four broad industrial classes, namely; (i) railroads; (ii) electric and gas utilities; (iii) mining; and (iv) industrials.
- The results of the first test *"showed no significant statistical differences in the financial structures of a given class of firms either in 1928 or 1961"*, whilst also demonstrating a statistically significant difference in the financial structures of firms in different industry classes. The authors find the results from the second analysis are consistent with the first, however note that structural changes over the 40-year period had the effect of *sharpening* the difference in leverage ratios among industry classes.
- This work concludes that the *"various classes of industries have developed optimum financial structures conditioned by the intensity of their operational risks and by the characteristic of the industry asset nature"*.

\* *'Some Surrogate Evidence in Support of the Concept of Optimal Financial Structure.'* Schwartz, E., & Aronson, J. R. (1967). The Journal of Finance, Vol. 22, No. 1; pp 10-18.

## Bradley, Jarrell and Kim (1984)\*\*

- This study investigates the variations in firms' leverage ratios brought about by both its 'industry classification' as a single factor, but also by three firm-specific determinants of optimal capital structure. These determinants are the: (i) variability of firm value; (ii) level of non-debt tax shields; and (iii) magnitude of the costs of financial distress.
- With regards to industry classification as a single factor alone, the authors examined the cross-sectional relation between 20-year average firm leverage ratios\*\*\* and industrial classification from a sample of 851 firms, covering 25 industries. Their results showed that *"almost 54% of the cross-sectional variance in firm leverage ratios can be explained by industrial classification"* and subsequently, that there existed more variation in mean leverage ratios *across* industries than *within* industries. The findings are consistent with the notion that firms' leverage ratios are industry related.
- On the second issue, the authors regressed firms' leverage ratios on chosen empirical proxies for the aforementioned factors of optimal capital structure. The results from the cross-sectional regressions show the proxies for the variability of firm value and level of non-debt tax shields to be significantly and negatively related to firm leverage ratios, whilst the proxy for magnitude of the costs of financial distress was positively related to firm leverage ratios.

\*\* *'On the Existence of an Optimal Capital Structure: Theory and Evidence.'* Bradley, M., Jarrell, G. A., & Kim, E.H. (1984). The Journal of Finance, Vol. 39, No. 3; pp 857-878.

\*\*\* Whereby, the leverage ratio is defined as the ratio of the mean level of long-term debt (book value) to the mean level of long-term debt plus market value of equity.

## Scott (1972)\*

- This study investigates the evidence surrounding the hypothesis that various industries have developed notably different financial structures as a result of their varying degrees of business risk. The authors propose that *“if the financing decision is critical with respect to the valuation of the firm, then decision makers in various industry groups have recognised this fact and developed financial structures suited to their particular business risk”*.
- The study looked at 12 different unregulated industries, of which contained 77 firms in total, and generated a sample that spanned across a 10-year period (1959-1968). The percent of common equity as a share of total assets (therein, its financial structure) was calculated for each firm and the ANOVA test was employed to *“test for significant differences in the mean equity ratios among industry groups”*.
- The results led to a *rejection* of the null hypothesis, which implied that the variability of sample means *among* industry classes was greater than *within* industry classes and thus such industry differences were deliberate. These findings were consistent with that of Schwartz and Aronson (1967).

\* *‘Evidence on the Importance of Financial Structure’*. Scott, D. F. (1972). Financial Management, Vol. 1, No. 2; pp 45-50.

## Scott and Martin (1975)\*\*

- This work proposes further evidence that is in contrast to the notion that a relationship between industry classifications and financial structures do not exist.
- The study focuses on 12 industries, comprised solely of US-based firms, with data spanning over the period 1967-1972. The sample size increases from 159 firms in 1967 to 277 firms in 1972. Differing from the previous works, such as Schwartz and Aronson (1967) and Scott (1972) who solely employ a parametric test, this study also makes use of a nonparametric test.
- The results of the parametric analysis of variance of the equity ratios *“indicate that industry class is indeed a determinant of financial structure”*. The findings of the nonparametric test is also supportive of this conclusion; with the null hypothesis of ‘no significant differences in equity ratio ranks’ being rejected for each year of the data.
- The authors therefore concluded that it was *“unwise to disregard industry class as a determinant of financial structure because financial structures are not, in fact, identical across a wide array of industries”*.

\*\* *‘Industry Influence on Financial Structure’*. Scott, D. F., & Martin, J. D. (1975). Financial Management, Vol. 4, No.1; pp 67-73.

## Kim and Sorensen (1986)\*

- This study investigates the presence of agency costs and their relation to the debt policy of corporations, whilst also empirically testing for the relations between firm leverage ratios and variables such as (i) business risk\*\*; (ii) growth rate; and (iii) size of the firm.
- Data was gathered from 168 large industrial firms, not belonging to regulated industries, between 1970-1980. The authors used the data to run a regression in which the debt ratio (which is defined as the ratio of long-term debt to total capitalization) is regressed on the following explanatory variables: (i) annual growth rate in EBIT; (ii) the coefficient of variation in EBIT; (iii) the coefficient of variation in market value of equity; (iv) the average level of total assets; (v) the average federal tax rate; (vi) tax liability divided by EBITDA; (vii) the average rate of depreciation; and (viii) a one-zero dummy with one for firms heavily owned by insiders.
- Notably, the regression results show the annual growth rate in EBIT to have a significantly negative coefficient; the authors highlight that “*As annual EBIT growth increases by 1 percent, the debt ratio decreases by approximately one-third of a percent...*”. This suggests that firms with large growth opportunities will use *less debt* in optimality.

\* [‘Evidence on the Impact of the Agency Costs of Debt on Corporate Debt Policy’](#) Kim, W. S., & Sorensen, E. H. (1986). The Journal of Financial and Quantitative Analysis, Vol 21, No. 2; pp 131-144.

\*\* Whereby industry class and size are viewed as proxies for business risk.

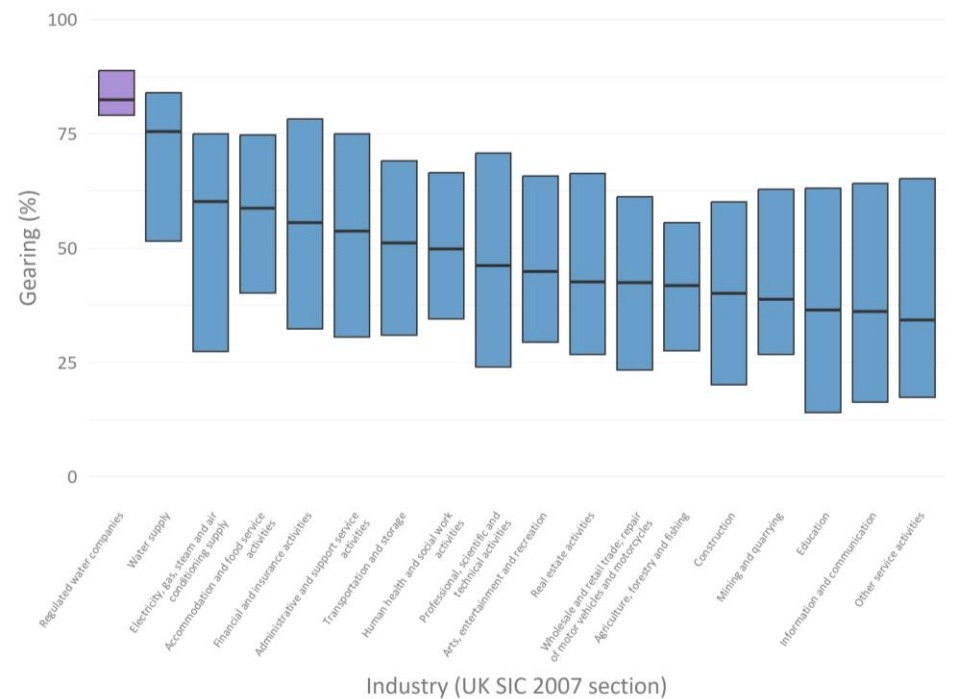


ANNEX B: CROSS-INDUSTRY GEARING  
ANALYSIS

## EVIDENCE FROM FAME INDICATES THAT THERE IS CLEAR VARIATION IN CAPITAL STRUCTURES BY INDUSTRY.

- Having established that there is empirical support for efficient capital structures, we are indeed able to observe variation in gearing (capital structure) across industries, as shown in the adjacent figure.
- This analysis considers firms with a sufficient turnover in 2022, excluding dormant and micro-entity firms, and includes firms based primarily in the UK. Industries were identified using UK SIC classifications, specifically the highest-level 'section' codes. After cleaning the data for anomalous entries, industries comprised of less than 100 firms were removed.
- Industry gearing was calculated as the proportion of capital employed attributed to long-term liabilities.

*Figure: Gearing comparison across UK industries, 2022*

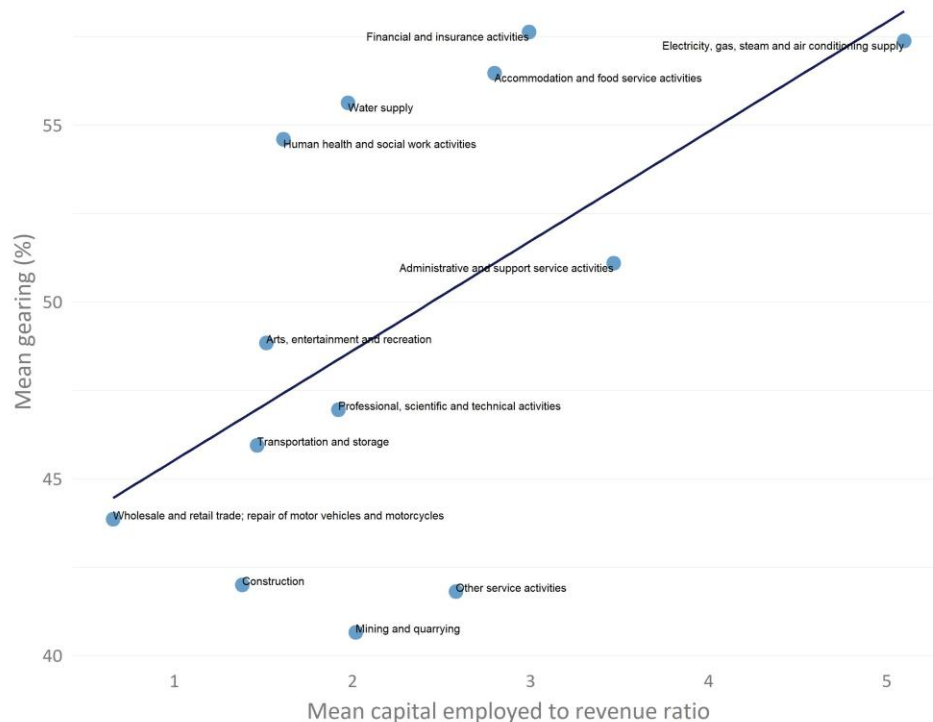


Source: Economic Insight analysis of FAME database.



## EVIDENCE FROM FAME ALSO SHOWS A POSITIVE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND CAPITAL INTENSITY.

*Figure: Gearing-capital intensity relationship across UK industries, 2022*



Source: Economic Insight analysis of FAME database.

- Further analysis indicates that the diversity in capital structure observed varies by the capital-intensity of industries. As shown in the adjacent figure, there is a positive relationship between the mean ratio of capital employed to revenue and mean gearing, across selected UK industries. This suggests that the optimal capital structure in an industry is determined, in part, by the proportion of capital employed. The more capital-intensive an industry, the higher both the mean level of gearing and the efficient level of gearing.

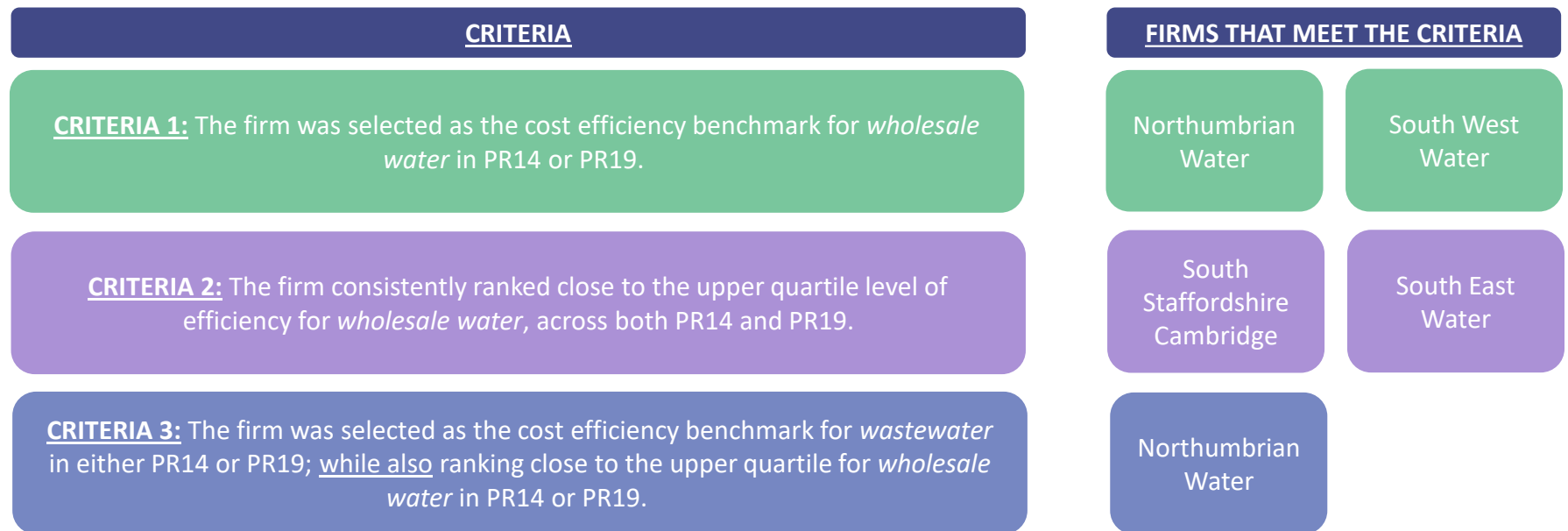
This analysis was undertaken using the selection of firms from the cross-industry gearing analysis on the previous slide, where data was available.



ANNEX C: IDENTIFYING THE NOTIONAL  
FIRMS

## WE HAVE SELECTED THE 'NOTIONALLY EFFICIENT' FIRMS ACCORDING TO THREE CRITERIA. NORTHUMBRIAN WATER, SOUTH WEST WATER, SOUTH STAFFORDSHIRE CAMBRIDGE AND SOUTH EAST WATER MEET THESE CRITERIA.

- As Ofwat takes a view of the firms it deems to be cost efficient in both wholesale water and wastewater at each price control, there are a number of ways in which we could arrive at a view of the 'notionally efficient' firm, for the purposes of our notional financeability assessment. To limit our selection of firms, we have developed a set of three criteria, shown in the figure below.



- As shown, there are four firms that meet at least one of these criteria. These are: (i) Northumbrian Water; (ii) South West Water; (iii) South Staffordshire Cambridge; and (iv) South East Water.



## ANNEX D: EI RORE RISK MODELLING

## OFWAT'S ASSERTION THAT RISK IS BALANCED FOR THE NOTIONAL FIRM AT PR24 IS NOT SUPPORTED BY EVIDENCE.

- The ability to earn a reasonable return includes ensuring that: (i) the overall return (the WACC) is set at the appropriate (market) level; and (ii) the 'expected' equity return is equal to the allowed cost of equity (for an efficient firm).
- For the expected equity return to be equal to the allowed cost of equity, it is necessary that Ofwat sets its various financial incentives such that the 'most likely' outcome for an efficient (notional) firm is one whereby it neither earns net penalties, nor net rewards.
- **Under its final methodology for PR24, Ofwat has stated that it considers risk to be broadly symmetrical for the notional firm, ranging from -4.85% to 4.80% (RoRE).**\* That is to say, Ofwat's position is that the notional firm would be expected to earn its allowed cost of equity, under Ofwat's method.
- However, in our view, Ofwat's position is not well-supported. This is because (in the main) Ofwat's approach is to simply 'impose' symmetrical risk ranges around the price control parameters it sets (which is self-fulfilling). Instead, Ofwat should have identified the 'most likely' outcome for each parameter by using risk analysis as an input in determining said parameters in the first place (i.e. selecting the P50 for each parameter).
- Prior to knowing Ofwat's determinations, a logical way to obtain a provisional view of notional risk is to utilise data in relation to the performance of companies that Ofwat has taken as the efficiency benchmark over prior price controls (i.e. firms Ofwat has deemed to be 'notionally efficient').
- This is because, had Ofwat successfully balanced notional risk under its previous determinations, we would expect the data / evidence to be consistent with those same firms: (i) having an expected equity return in line with their allowed cost of equity; and (ii) for their risk to be symmetrical (and vice-versa).
- Following from the above, the approach we have adopted is to: (a) identify firms Ofwat has previously identified as being the benchmark for the notional firm; and (b) examine their RoRE risk profile, *under Ofwat's method for PR24*.

\* 'Creating tomorrow, together: Our final methodology for PR24 – Appendix 10: Aligning risk and return', Ofwat (2022), page 10.

## OUR ANALYSIS INDICATES THAT THE LEVEL OF RISK FACED BY THE NOTIONALLY EFFICIENT FIRM AT PR24 IS SKEWED TO THE DOWNSIDE.

- Under the approach set out on the previous slide, we have analysed the RoRE risk faced by the following four companies: (i) Northumbrian Water; (ii) South Staffordshire Cambridge; (iii) South West Water; and (iv) South East Water. As explained in Annex C, this is because:
  1. Northumbrian and South West were selected as the efficiency benchmark firms for wholesale water in PR14 and PR19 respectively.
  2. Both South Staffordshire Cambridge and South East Water consistently ranked close to the upper quartile cost efficiency level for wholesale water, across both PR14 and PR19.
  3. Northumbrian Water was selected as the efficiency benchmark for wastewater in PR19; and ranked close to the upper quartile cost efficiency level for wholesale water in PR19.
- For the above firms, we have undertaken an analysis of the risk range for each building block of PR24, relying predominantly on historical analysis. This includes: totex; retail costs; revenue incentive mechanisms; financing; as well as ODIs and Measures of Experience (MeX).
- After determining the risk ranges for each building block of PR24 (and for each of the four notional firms), we have aggregated these into one overall range. To do this, we used a weighted average approach, weighting the firms by their wholesale water RCV.
- As set out in greater detail in the following slide, the risk range resulting from this analysis is:
  - **Between -5.64% and 2.46%** when using a Monte Carlo approach to aggregating the ODI and MeX risk; and a simple aggregation approach to aggregating the risk ranges of each building block.
  - **Between -4.35% and 1.15%** when using a Monte Carlo approach to aggregating both the ODI and MeX risk; and the individual risk ranges of each building block (we consider this approach to be more robust).
- **These results therefore indicate that the (equity) risk faced by the notionally efficient firm at PR24 is likely skewed to the downside, under Ofwat's method.**

## OUR PRELIMINARY VIEW OF THE RISK FACED BY THE NOTIONALLY EFFICIENT FIRM AT PR24 IS A RANGE BETWEEN –4.35% AND 1.15% RORE (UNDER A MONTE CARLO AGGREGATION APPROACH).

- The table below details the weighted average RoRE risk range for Northumbrian Water, South East Water, South West Water, and South Staffordshire Cambridge, across each of the building blocks of PR24.
- We compare these results to the view Ofwat put forward in its Final Methodology.

Risk area	Ofwat FM results for the notional firm		Results for our calculated 'notional' firm	
	Reasonable downside (P10)	Reasonable upside (P90)	Reasonable downside (P10)	Reasonable upside (P90)
Quality and ambition assessment	-0.30%	0.30%	N/A	N/A
Totex	-1.00%	1.00%	-2.57%	1.19%
Retail costs	-0.20%	0.20%	-0.29%	0.10%
Revenue incentive mechanisms	-0.05%	0.00%	-0.05%	0.00%
Financing	-0.65%	0.70%	-1.71%	1.27%
ODIs and MeX (Monte Carlo aggregation)	-2.65%	2.50%	-1.03%	-0.11%
<b>Total (simple aggregation)</b>	<b>-4.85%</b>	<b>4.80%</b>	<b>-5.64%</b>	<b>2.46%</b>
<b>Total (Monte Carlo Aggregation)</b>	<b>N/A</b>	<b>N/A</b>	<b>-4.35%</b>	<b>1.15%</b>

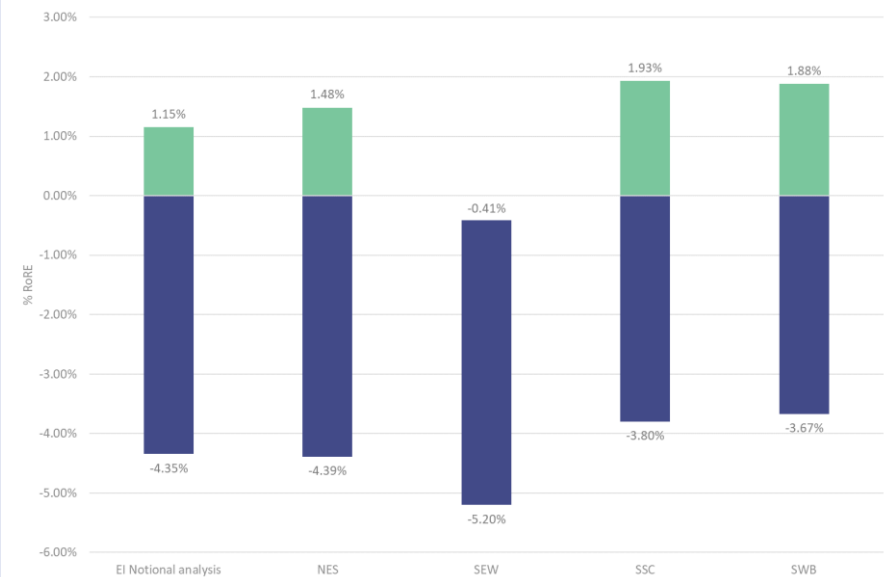
Source: Economic Insight analysis; and 'Creating tomorrow, together: Our final methodology for PR24 – Appendix 10: Aligning risk and return', Ofwat (2022), page 10-12.

As shown, the risk range is narrower when using the Monte Carlo aggregation approach, as this approach reflects the idea that it is unlikely that the more 'extreme' scenarios will be realised across all building block areas simultaneously.

## THE IMPLICATION OF THIS EARLY VIEW OF NOTIONAL RISK IS THAT OFWAT'S INCENTIVE PACKAGE IS UNLIKELY TO RESULT IN THE NOTIONALLY EFFICIENT FIRM'S EXPECTED RETURN BEING IN-LINE WITH ITS COST OF EQUITY.

- As illustrated in the adjacent figure, the evidence we have gathered on the distribution of risk is consistent with firms that are considered 'efficient' by Ofwat having expected equity returns (RoRE) below their allowed cost of equity. Risk is also skewed to the downside.
- **This implies that, all else equal (i.e. without a change in Ofwat's approach, or without the above being compensated for in some other way) the notional firm would not be expected to earn its allowed cost of equity at PR24. It would therefore not be financeable, under what we would consider to be an appropriate definition of financeability.**

*Figure: Overall RoRE risk ranges for our chosen 'efficient' firms*



*Source: Economic Insight analysis*





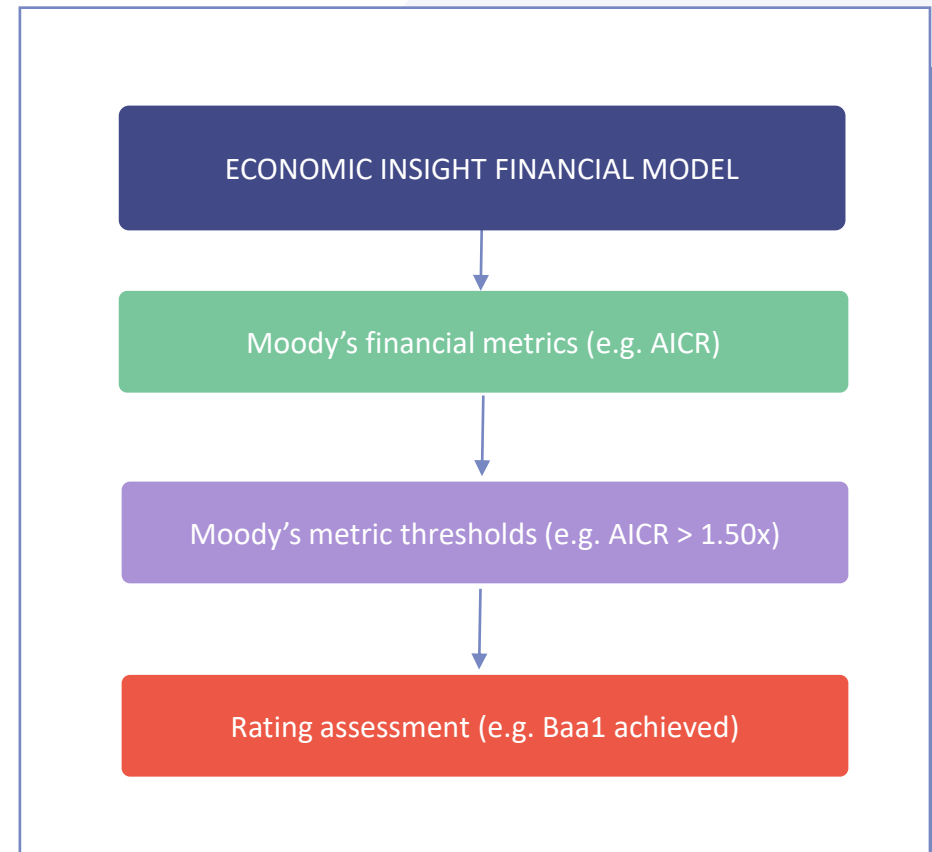
## ANNEX E: EI FINANCIAL MODEL

## OUR ANALYSIS INDICATES THAT THE FINANCIAL METRICS IMPLIED UNDER WESSEX'S PR24 BUSINESS PLAN ARE NOT CONSISTENT WITH SECURING THE TARGET INVESTMENT GRADE RATING.

- The ability to raise finance on reasonable terms involves ensuring that the notional firm is able to meet the target investment grade rating for debt finance. Ofwat indicates that companies should target a credit rating of at least two notches above minimum investment grade (which Ofwat defines as being BBB+/Baa1) for the notional firm.
- To assess whether Wessex's PR24 Business Plan is consistent with the notional firm meeting the target credit rating, we have modelled the financial metrics ratings implied under Wessex's Plan and tested whether these are consistent with ratio guidance issued by credit rating agencies. In doing so:
  - We employ our independent financial model, which is aligned with credit rating agency guidance, as they determine company credit worthiness in practice;
  - We use Ofwat's early view of the WACC; and
  - We assume an appropriate level of notional gearing. More specifically, we present three notional gearing scenarios:
    - ▶ We assume an opening level of notional gearing of 66%, which is equal to the average actual gearing of the four firms identified by Ofwat as being notional efficient (SEW, SSC, NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
    - ▶ We assume an opening level of notional gearing of 65%, which is equal to the average actual gearing of the two WASCs identified by Ofwat as being notional efficient (NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
    - ▶ We assume an opening level of notional gearing of 60%, which is equal to the level of notional gearing set by the CMA at PR19 Redeterminations.
- As detailed further on the subsequent slides, under all three notional gearing scenarios, we find that the **financial metrics implied under Wessex's PR24 Business Plan are not consistent with securing the target investment grade rating** (using Ofwat's early view of the WACC). This implies that, all else equal, the notional firm would not be able to raise finance on reasonable terms at PR24. In other words, **Wessex's PR24 Business Plan would not be notionally financeable on the debt-side.**

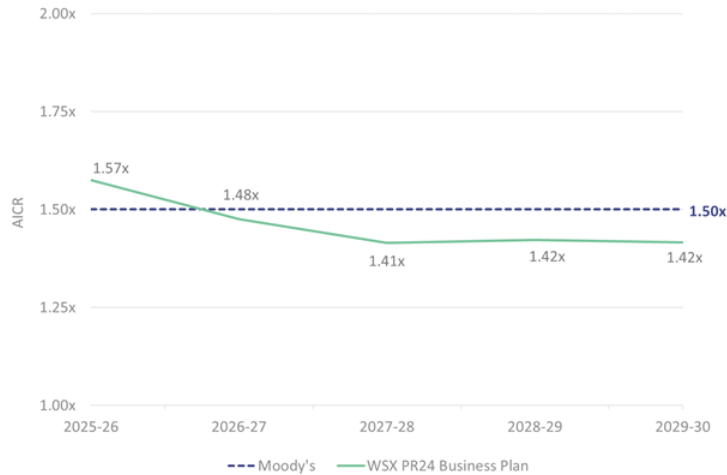
## OUR FINANCIAL MODEL IS ALIGNED WITH CREDIT RATING AGENCY GUIDANCE, AS THEY DETERMINE COMPANY CREDIT WORTHINESS IN PRACTICE.

- It is important to align with credit rating agencies' guidance when assessing financeability, as they determine company credit worthiness in practice.
- We have therefore developed an independent EI financial model, based on the rating methodology employed a leading credit rating agency. We employ Moody's rating methodology, as it provides the most transparency regarding its approach to determining credit ratings for companies in the water sector.
- More specifically, as illustrated in the adjacent diagram, our model computes financial metrics based on Moody's calculation approach (which is different from Ofwat's) and then applies Moody's metric thresholds to assess whether the target credit rating has been met.



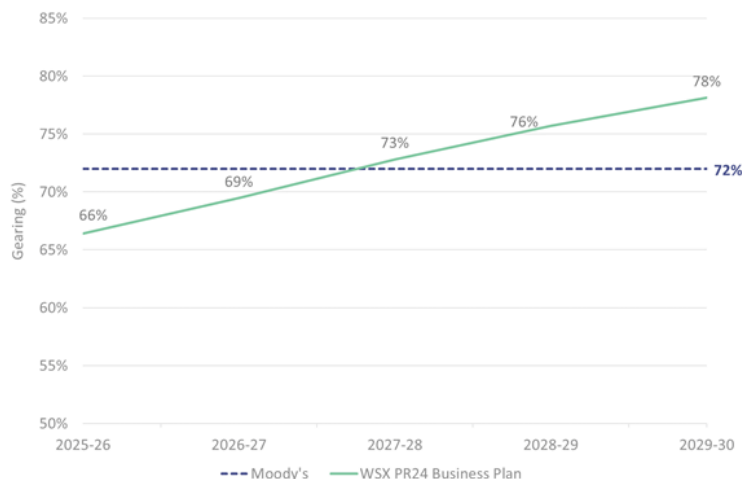
# MODELLING RESULTS – 66% NOTIONAL GEARING SCENARIO

**Figure:** Moody's AICR under Wessex's Plan, over PR24 period



Source: Economic Insight analysis.

**Figure:** Moody's gearing under Wessex's Plan, over PR24 period



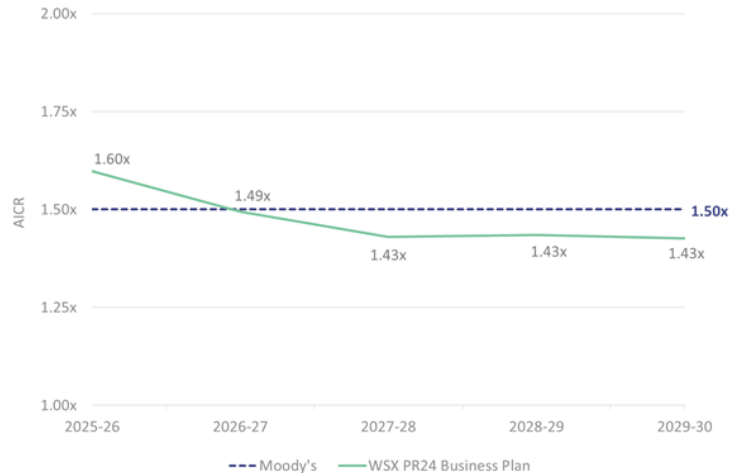
Source: Economic Insight analysis.

- Ofwat defines the target investment grade for the notional firm as BBB+/Baa1. Ratio guidance issued by Moody's for the UK water sector indicates that the thresholds it requires for a Baa1 credit rating are as follows:
  - AICR 1.5x-1.7x; and
  - Gearing 65%-72%.\*
- The adjacent figures present Moody's AICR and gearing metrics under Wessex's Plan over the PR24 period, based on a notional gearing assumption of 66%. As explained on slide 44, this is equal to the average actual gearing of the four firms identified by Ofwat as being notional efficient (SEW, SSC, NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
- As can be seen, the financial metrics implied under Wessex's PR24 Business Plan are **not consistent with securing the target investment grade rating of BBB+/Baa1 over PR24**, when using a notional gearing assumption of 66% and Ofwat's early view of the WACC.

\*'Regulated water utilities – UK: Regulator's proposals undermine the stability and predictability of the regime.' Moody's (May 2018).

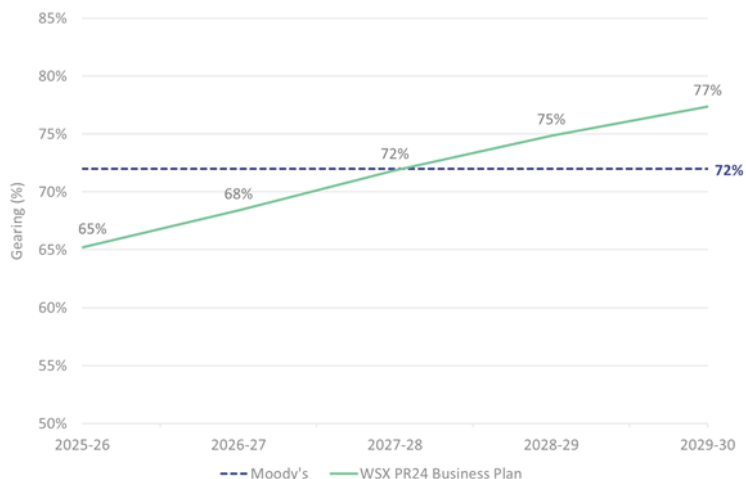
# MODELLING RESULTS – 65% NOTIONAL GEARING SCENARIO

*Figure: Moody's AICR under Wessex's Plan, over PR24 period*



Source: Economic Insight analysis.

*Figure: Moody's gearing under Wessex's Plan, over PR24 period*



Source: Economic Insight analysis.

- The adjacent figures present Moody's AICR and gearing metrics under Wessex's Plan over the PR24 period, based on a notional gearing assumption of 65%. As explained on slide 44, this is equal to the average actual gearing of the two WASCs identified by Ofwat as being notional efficient (NES and SWB) in 2022/23, weighted by their RCV in 2022/23.
- As can be seen, the financial metrics implied under Wessex's PR24 Business Plan are **not consistent with securing the target investment grade rating of BBB+/Baa1 over PR24**, when using a notional gearing assumption of 65% and Ofwat's early view of the WACC.

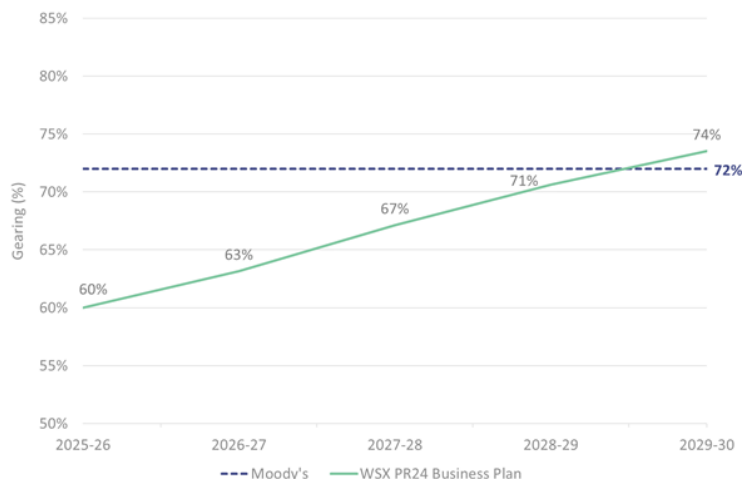
# MODELLING RESULTS – 60% NOTIONAL GEARING SCENARIO

*Figure: Moody's AICR under Wessex's Plan, over PR24 period*



Source: Economic Insight analysis.

*Figure: Moody's gearing under Wessex's Plan, over PR24 period*



Source: Economic Insight analysis.

- The adjacent figures present Moody's AICR and gearing metrics under Wessex's Plan over the PR24 period, based on a notional gearing assumption of 60%. As explained on slide 44, this is equal to the level of notional gearing set by the CMA at PR19 Redeterminations.
- As can be seen, the financial metrics implied under Wessex's PR24 Business Plan are **not consistent with securing the target investment grade rating of BBB+/Baa1 over PR24**, when using a notional gearing assumption of 60% and Ofwat's early view of the WACC.



Economic Insight Limited

125 Old Broad Street  
London  
EC2N 1AR  
T: +44 207 100 37 46  
[www.economic-insight.com](http://www.economic-insight.com)

## **A7-1 Willingness to pay**



Newcastle, 15 February 2023

## **Estimating Customers' Willingness to Pay for Changes in Service at PR24**

This report provides a peer review of the document “Estimating Customers’ Willingness to Pay for Changes in Service at PR24” prepared by NERA for Wessex Water, in particular with reference to Ofwat’s standards of high-quality research and customer challenge and engagement.

The document consists of 93 pages. Of these, nine pages constitute the Executive Summary and eight pages constitute the Appendices. The content of the Appendices C and D is listed but included in separate documents. The remaining 74 pages include the description of the entire work conducted.

Overall, this is a high-quality research, which fulfils the Ofwat’s standards in terms of customer challenge and engagement. The document includes a section 2.8.1 specifically dedicated to address Ofwat’s customer engagement policy. This section provides clear evidence of how the research has addressed each of the points in Ofwat “PR 24 and beyond” document. The following points are satisfactorily covered: Useful and contextualised; Neutrally designed; Fit for purpose; Inclusive; Continual; Independently assured; Shared in full with others; Ethical.

### **Peer review**

The objective of the research consists in designing, implementing and analysing a stated preference (SP) survey to estimate customers’ willingness to pay (WTP) for improvements in the service provided by Wessex Water. A novel methodology is proposed to collect consumers preferences for specific attributes of interest and to measure the consumers’ willingness to pay (WTP) for these attributes. The new methodology is proposed to overcome the problem experienced in the previous work where evidence suggested that respondents struggled in evaluating and choosing between scenarios defined by several different attributes and a fixed bill amount, as in the typical stated preferences settings.

The motivation to set up this new methodology is correct. Individuals have limitations in their capacity to process information, and when presented with a complex task, it is then likely that they show disengagement, adopting simplifying strategies to reduce the mental effort required to solve the problem. On the other hand, simplifying the survey tasks to reduce the cognitive burden for respondents can be seemingly perceived as unrealistic and lead to disengagement. The methodology proposed takes into consideration both aspects allowing respondents to build their preferred complex package by evaluating first each attribute alone and then re-evaluating them all together, once the package is defined. The methodology proposed is appropriate for the objective of estimating WTP for improvements in the WW services, in line with Ofwat standards.

The design of the stated preference survey is developed ensuring a strong involvement from the customers. This is in line with Ofwat standards and in line with the recommended practice

#### **Elisabetta Cherchi**

Professor of Transport, Newcastle University  
Adjunct Professor, Beijing Jiaotong University, China  
Editor in Chief *Transportation Research Part A: Policy and Practice* (Elsevier)  
Past Chair *International Association of Travel Behaviour Research* (IATBR)

in scientific research. The initial design is defined paying particular attention to attributes that respondents consider useful from them. A series of co-developed workshops or in-depth interviews is then organised to test that the attributes and their definition are correctly understood and to understand customers opinions with regard to the attributes and the factors that affect these opinions. Clear evidence is provided that their views has been properly incorporated. A wide range of demographic characteristics are represented in this initial qualitative research, for the relevant segments of household, vulnerable household and non-household customers. Particular attention is paid to vulnerable household customers, where a specific process is designed to ensure inclusiveness. A series of post-hoc cognitive interviews were also conducted on the first draft of the survey, again ensuring inclusiveness and usefulness. Evidence is provided of how results from this step have been incorporated in the research. In addition to that, a qualitative research is conducted after the survey to better understand customers' preferences for the status quo. Reference to scientific literature is provided to support this discussion and the recommendations provided.

In line with the state of the art in the scientific community, the stated preference experiment is customised to customers' current experience. All attributes have been defined against the status quo. A methodology is defined to identify the current water bill and who is responsible for paying the bill in the household. This is critical because realism can be jeopardised by contacting respondents who are not the right persons to interview. Possible bias in the measurement of the current bill is investigated in depth and corrected.

The protocol followed in collecting the data is in line with Ofwat's recommendation. It is carefully designed to reduce possible bias mainly due to different survey formats and representativeness of the WW's customers. These effects are also controlled in the WTP estimation and research includes a transparent discussion around the potential impact of these effects and the extent to which these effects have been controlled. The response rate achieved is particularly high compared to previous similar studies (between 1.9 and 4 times higher) and the overall sample size allows for segmentation of the results based on customers' socio-economic characteristics and attitudes.

A series of qualitative techniques and other validity tests are employed to assess and correct for customers protest attitudes, status quo bias, hypothetical bias, under/over-representation of some population segments, disadvantages groups. These tests confirm the accuracy of the methodology used and the results obtained.

It is also worth noting, how all concerns raised by both the customers and relevant organisations involved in the co-creation of the survey have been considered, handled by implementing specific tests and/or analyses, and corrected or ruled out based on evidence.

**Elisabetta Cherchi**

Professor of Transport, Newcastle University  
Adjunct Professor, Beijing Jiaotong University, China  
Editor in Chief *Transportation Research Part A: Policy and Practice* (Elsevier)  
Past Chair *International Association of Travel Behaviour Research* (IATBR)

## 2. Detailed comments and some questions

This section includes some detailed comments and questions on specific parts of the documents.

### 2.1 Service Attributes Selected for Evaluation

1. The definition of the attributes E and F is very generic. It has been tested that respondents understood all attributes, but it can still be difficult for the respondents to evaluate them. Attribute F also includes interventions in different areas, one is the leakage that is WW responsibility, another is customers' misuse of the water, etc. It is not possible to know if respondents evaluate all these aspects or only some of them.
2. Attributes C: this seems something that depends on how customers behave. It might not be relevant to all customers. If a customer believes that s/he does not flush wrong things in the toilet, s/he might not experience flooding.

### 2.3 Structure of Survey Questionnaire

3. An initial screening section was set up to ensure to record only responses from billpayers. How was the billpayer in the family identified? The actual billpayer might not be the only person who takes decision with respect to the water usage.
4. After the stated preference (SP) exercise, questions were asked to assess whether the sample was representative of the WW customer base. This means that if there is an over representation of some groups it is not possible to screen them out. For example, in section 3.2.2. it is mentioned that Metered customers are over-represented. This could be avoided if this question was asked before the SP.

#### 2.4.1. Overview of the stated preference exercise

5. Regarding the new SP methodology proposed, it seems that there is not an experimental design, but for modelling purpose, all possible combinations are considered. Were dominant/dominated alternatives also included?
6. In the new methodology proposed, it seems that respondents do not make a trade-off between attributes. Unless respondents go above their budget, the trade-off should be only between each single attribute and the price, not between attributes. This is relevant because only 7 per cent of the sample opted to change their decision (in page 40).

#### 3.1.1.1. Main survey

7. The size of the sample collected is good and the response rate higher than similar studies. Representativeness was tested based on socio-economic information. It is mentioned that data from APS are used to construct an age and gender profile. It is also

#### **Elisabetta Cherchi**

Professor of Transport, Newcastle University  
Adjunct Professor, Beijing Jiaotong University, China  
Editor in Chief *Transportation Research Part A: Policy and Practice* (Elsevier)  
Past Chair *International Association of Travel Behaviour Research* (IATBR)

mentioned that data from Census 2011 are used to construct the SE profiles, but it is not specified which data exactly.

### **3.1.1.2. Top-up survey**

8. The top-up survey was conducted in parallel with the main survey. However, the under-representation anticipated might not be confirmed once the sample is gathered. For example, later in page 36 it is mentioned that the sample suffers from under-representation of working-age C2DE individuals. This could have been corrected if the top-up survey was conducted after the main survey is completed and the sample characteristics checked.
9. Is the distribution of the socio-economic groups between the sample and the population, statistically different?

### **3.4. Conclusions on Survey Performance**

10. In the fourth paragraph, it is mentioned that the willingness to pay analysis can accurately identify differences in customers' attitudes across demographic groups. Do you mean "customer' preferences"?

### **4.1. Methodological Approach**

The methodological approach is clearly described, in particular it is appreciated the effort to explain it in simple terms and with a simple example. Some questions:

11. In section 4.1.4. only the incremental improvement is mentioned. How are large improvements dealt with?
12. The discussion on the negative WTP is not perfectly clear. It is explained that negative WTP can occur when respondents are more likely, on average, to choose packages with lower service levels for those attributes than packages with higher service levels, even when the total cost of the package is controlled for. In this new SP proposed, is the assumption that respondents make a trade-off still valid?

#### **4.2.1.2. Customers prefer the status quo service level for many attributes**

13. The following comment would require some clarification: "Although on aggregate our WTP results suggest that the average customer requires compensation for improvements in service, no individual survey respondent has actually expressed a desire to be paid to receive improvements in service." Does this mean that the aggregate WTP is negative but no single respondent has a negative WTP?

#### **Elisabetta Cherchi**

Professor of Transport, Newcastle University  
Adjunct Professor, Beijing Jiaotong University, China  
Editor in Chief *Transportation Research Part A: Policy and Practice* (Elsevier)  
Past Chair *International Association of Travel Behaviour Research* (IATBR)

#### **4.2.1.4. Findings from qualitative research on status quo preference**

14. The last bullet point in page 57 suggests that a no marginal number of customers have changed choices after seeing the full budget for all the ten attributes. But in page 40 it is said that only 7 per cent of the sample opted to change their decision.

#### **4.2.2.2. Adjusted model with controls for demographic and billing characteristics**

15. Does the location of the houses have an impact on the WTP? Those living in cities might be less interested in flooding.
16. It could be (or have been) important to check if participants have experienced in their life the problems listed in Table 2.3, or have heard of people they care of or people in their area who have experienced this problem.

#### **4.2.2.3. Simple model for sample sub-groups**

17. It is found that the top-up sample respondents have lower WTP across the board than respondents in the main sample. The top-up samples has specific socio-economic characteristics. Was the WTP of the top-up sample compared with the WTP of the respondents in the main survey with the same characteristics of the top-up sample? The same for the Wessex panel.
18. The methodology used to measure differences in WTP between those who hold protest attitudes and the remaining of the sample is not clear. The protest attitude is measured using two statements evaluated on a Likert scale. If the WTP varies as a function of the protest attitudes, this should be a function of the latent variable.

## **5.2 Summary of Willingness to Pay Estimates**

19. It is mentioned that only the results statistically significant are included in the final model. The level of significance adopted is not mentioned, but I assume this is 5% or lower. The WTP are computed and discussed with details. Many results and related comments suggest that there might be income effect (e.g. comment on the social tariff recipients, on those who struggle to pay or on the relatively “advantaged” groups). In Appendix A it is mentioned that 24% of the respondents did not answer the question about income and it is likely that these are mostly in the high range of income. Nevertheless, since the sample is quite large, even excluding this 24% it should be possible to run some tests to measure the effect of income.

**Elisabetta Cherchi**

