Appendix A39

PR19 Data table and financial model commentary

1. Business Plan Tables

Validation checks

There are some validation checks showing on the data tables submission. We believe that these are valid and we set these out in the table below:

App 2	Line 42 is asking for all cells to be completed. They are populated with minutes and seconds and we think the validation is looking for a number.
App 4	Line 20 is asking for all cells to be completed. Some cells are populated with text and we think the validation is looking for a number.
App 18	Validation that lines 8 or 9 &10 or 11 should be populated. We have populated line 8 but the validation error is still showing.
App 24	Validation errors in block F but this relates to business retail which is not applicable.
App 26	Number of validation errors but all relate to sewerage or business retail.
App 33	Number of validation errors but all relate to sewerage
WS17	This table has not been completed as it is not applicable.
Wr4	Line 15 shows a validation error that not all cells have been completed even though they have.
Wr6	'Validationflags' says there is a validation error but there is no error on the Wr6 sheet.
Wr7	Validation is that all numbers should be positive. The data in the

	relevant lines is positive, however the validation is still showing.
R5	This table has not been completed as it is not applicable.
R7	Validation error relates to Business Wales which is not applicable.

We have prepared the following commentary for the PR19 Business Plan Tables where we believe supplementary explanation is required.

Table App1: SSC

This table contains all 28 of our performance commitments.

Column 4 - contains the company ID number which links to other documents which discuss detailed performance commitment information.

Column 7 - shows the basis we have used for calculating price control allocation:

- Most of the measures are 100% water resources, network plus or retail.
- Performance commitment C7 has been specified as 50% water resources and 50% network plus, which is an estimate based on the expected amount of catchment activity and non-catchment activity. The real mix will only materialise as we implement our programme.
- Performance commitment C8 has been allocated based on operational costs split, as carbon is most directly related to power use and other opex activities.
- Performance commitment D5 has been allocated based on totex expenditure, as unplanned outage primarily reflects opex and capex across the two price controls.
- Performance commitment E3 has been allocated based on FTE count between price controls.
- Performance commitment E4 has been allocated based on totex expenditure in wholesale.

Column 17 – all of our ODIs are revenue except for D8 which has an RCV component related to the capex element of our cost adjustment claim.

Column 18 – in our early submission of performance commitments we envisaged that all incentives would be in-period. However we since engaged with our customers on the subject and they had a strong preference for certainty and stability of their bill in nominal

terms. In order to achieve this, we will need all of our ODIs to be end of period. This proposal is explained in full in our business plan.

Columns 25 – 29 – we have allocated one measure to NEP, one measure to AIM and one measure supports our cost adjustment claim. There are several measures allocated in full or part to asset health; our appendix on asset health provides more information.

Column 30 – we did not have a single mechanistic priority ranking that could be directly used however we have looked across all of our research programme and identified themes. Water quality consistently came out top of customers' priorities and so we have allocated 'very high' to our water quality metrics. Other hygiene factors also consistently came out strongly so we have allocated 'high' to these related metrics. We have allocated areas which did not feature as directly to 'medium'. There are no low scoring areas because throughout our research we have taken forward only those areas customers care about and are willing to support.

Column 31 - contains our historical data where applicable. As many measures are new there is no historical data but for some we have back calculated. Where the performance commitment is a three year average we have also expressed the historical data as a three year average.

Column 41 - is our AMP7 performance commitment levels. The only performance commitment which does not have an annual level is C6 which has an end of period level only.

Column 46 - contains our future projections. These are indicative for some measures into the future however all measures have a generally improving trend over time; there are significant unknowns going out to 2045.

Column 67 - 92 – we are only proposing dead bands and standard caps and collars for performance commitments D1, D2 and D4. We have identified that where a penalty collar is specified for performance commitment D2, and where a reward cap and penalty collar are specified for performance commitment D4, columns 114 and 120 do not appear to be working correctly. We think this could be because these calculated columns are expecting a dead band as well as a cap and/or collar, however only one of the performance commitments (D1) has a dead band proposed.

For performance commitments D2 and D4, the correct values for columns 114 and 120 should be as follows:

Column 114: maximum standard underperformance penalties.

PC	2020/21	2021/22	2022/23	2023/24	2024/25	AMP7 max

D2	-1.2218	-1.2442	-1.2666	-1.2889	-1.1771	-6.1986
D4	-0.5235	-0.5235	-0.5235	-0.5235	-0.5235	-2.6176

Column 120: maximum standard outperformance payments.

PC	2020/21	2021/22	2022/23	2023/24	2024/25	AMP7 max
D4	1.0470	1.0470	1.0470	1.0470	1.0470	5.2350

Columns 97 and 101 – these contain our incentive rates. Performance commitment D8 has several components to its incentive rate because the cost adjustment claim is comprised of three separate components. This is covered in our performance commitments appendix, and the components are as follows:

Scheme		
	Fail to deliver	**Late delivery rate**
Seedy Mill	£31.4m RCV adjustment	£254k per year delay
	£1m revenue adjustment	
Hampton Loade	£25.6m RCV adjustment	£282k per year delay
	£2m revenue adjustment	
Mains cleaning	£1m RCV adjustment	£204k per year delay
	£3 revenue adjustment	

Column 105 - specifies that only our AIM measure and our cost adjustment claim measures are non-standard forms. The AIM measure (C5) is expected, table App3 provides this information. Performance commitment D8 is covered in our performance commitments appendix in our business plan.

Columns 132 and 138 - specify the p10 and p90 levels for each performance commitment. The AMP7 max column for each is the highest absolute value in each group. These cannot be summed to reach our overall p10 and p90 range, for which we have carried out a Monte Carlo analysis.

Columns 144 to 154 - specify the information we have available on marginal costs and benefits. Our performance commitments appendix provides further information on this subject and the challenges that we had in specifying this information for all measures. Due to top down adjustment factors, again discussed in the appendix, the values in these columns cannot be directly used to derive the incentive rates specified in columns 97 and 101.

Table App3: Abstraction incentive mechanism

PR19 sites selection
Background

In October 2013 Ofwat provided the Company a list of abstraction sites considered to meet the criteria for consideration within the AIM, derived from those abstraction sites which the Environment Agency considered may have an impact on Water Framework Directive (WFD) surface water bodies that are non-compliant in environmental flow Bands 1, 2 or 3. All sites considered to be non-compliant in flow Bands 1, 2 or 3 are potential candidates to be included in AIM, where reductions in abstractions may have a positive environmental effect. Through the application of defined filters in the Ofwat guidance to this list, South Staffs Water proposed 3 AIM sites for AMP6.

Ofwat expect all companies to include AIM sites for PR19, continuing with any AMP6 sites, or justifying why this is not case, and to use the Environment Agency's Water Industry Environmental Programme (WINEP) lists as a starting point for identification and selection of PR19 AIM sites.

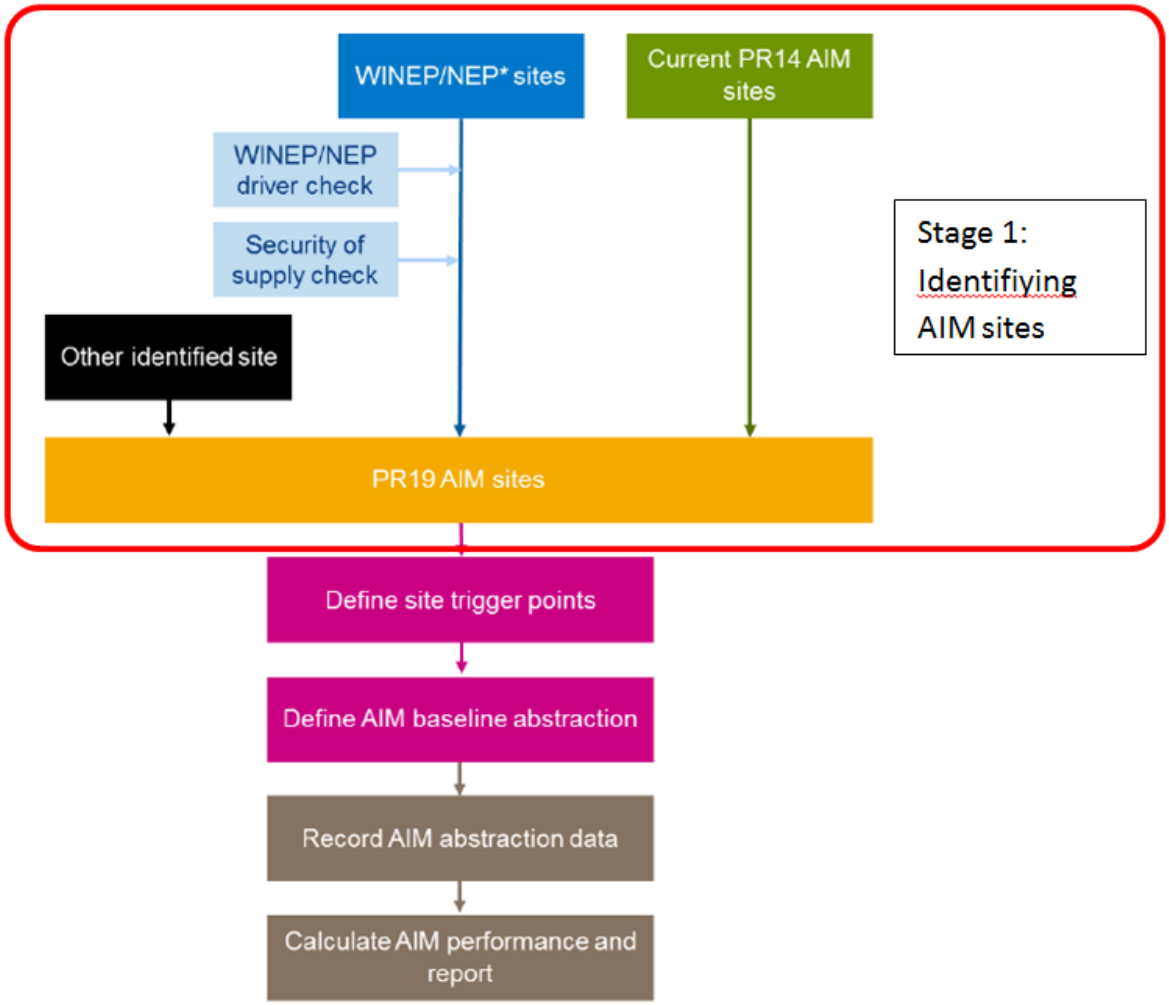
Selection of Sites
The first stage of the process for AIM, for site selection, is shown in Figure 1. We have used the WINEP3 tables provided by the Environment Agency as the starting point for screening AIM sites, we have discussed this with the Environment Agency and the Agency have confirmed this approach is appropriate.

The sites included in the initial WINEP3 list provided were filtered by applying conditions as per the AMP6 AIM site selection;

Filter 1: Sites could at times be causing a potentially unacceptable impact on the environment. All WINEP sites where abstraction and low flows could cause an environmental impact were included, according to WINEP drivers.
Filter 2: Scope to manage the abstraction – alternative sources or supplies are available or other means to reduce abstraction from site. Sites were filtered to ensure peak licence capability, zonal transfers and demand management measures were available alternatives for AMP7.
Filter 3: Additional sub filters to reflect local operational or environmental considerations. In order to be a measurable AIM site, gauged flows, and abstraction data should be available and continue to be available.

Current AMP6 AIM sites were also reviewed if they did not come out of the suitability screening of WINEP3. In the Cambridge region, the existing AIM sites Linton and Rivey were no longer suitable for AIM as we have made abstraction licence variations to protect rivers flows, and this in effect replaces the benefits of AIM from 2020. In the South Staffs region, the existing AIM site Hagley remains suitable as an AIM site.
We were unable to identify any other sites where our abstractions could be the cause of environmental harm that would meet the AIM criteria.

Figure 1. The process for AIM



Identified sites

For AMP7 we have identified the following AIM sites;

- Cambridge region – Horseheath
- South Staffs Region - Hagley

Table App4: Customer Metrics

Line A1 - Customers finding the level of their water bills affordable: (a) for companies who charge for water only (WoCs)

We have used the weighted average of the Cambridge Water and South Staffs Water figures from the CCWater 'Water Matters' survey up to 2017-18. We have then entered the uninformed affordability score from our recent PR19 engagement for 2018-19. From 2019-20 onwards, we have developed a realistic improvement profile up to 2025 which reflects the forecasted on-going financial pressures on households.

Line A3 - Customers finding the level of their combined bills affordable: (c) for companies who charge for water only (WoCs)

We have used a weighted average of the Cambridge Water and South Staffs Water figures from the CCWater 'Water Matters' survey up to 2017-18. We have then entered the combined bill uninformed affordability scores for 2018-19, however we have included the neutral scores as a fairer reflection that in the acceptability research we layer in RoRE and inflation. Then from 2019-20 onwards we have developed an achievable improvement profile showing an increase in the figure up to 2025.

Line A4 - Customers finding their water bills acceptable: (a) for companies who charge for water only (WoCs)

We have used figures from our acceptability engagement undertaken at 2013. Figures are the same each year as we haven't tracked acceptability during AMP6. We then entered the combined bill informed affordability scores for 2018-19. From 2019-20 onwards we have presented a steady increase in the figure up to 2025.

Line A6 - Customers finding their combined bills acceptable: (c) for companies who charge for water only (WoCs)

We have taken the same approach as line A3 on the basis that there are similar methodology challenges as the questions were not specifically researched over the full period. It is reasonable that the results in the early years would align.

Line A7 - Benefits of applying affordability assistance measures and Line A8 Costs of applying affordability assistance measures

These figures are based on four areas of assistance namely Assure (our social tariff), Charitable Trust, WaterSure and the general dedicated support provided for our vulnerable customers.

- Assure - is our social Tariff and in 2017-18 was funded by our paying customers at the rate of £1.50 per household (the excess amount distributed in 2017-18 was as

a result of carry forward from 2016-17). This was then redistributed across those customers who applied and met the criteria, which is a simple, but clear, household income level determination. This is administered by our contact centre which accounts for the charge of £129.6k. This charge was tested against the market and is for contracted a service provided at cost by a group company. The design of the scheme provides support not only to those customers who are in debt but also those most likely to find themselves subject to financial stress. We expect the bad debt provision to reduce as a result of this tariff, however we have not yet experienced this benefit as many customers who are under financial stress have previously paid their full water bill. We know that these customers can end up in water debt and so, by applying financial support in this way, we are alleviating water poverty. We also think that this scheme encourages customers to pay by granting up to an 80% reduction in their bill (average across the customers to date is 75%; the maximum from April 2018 is reduced to 60% to allow access for more customers). The outstanding balance (25% on average) is recovered in full. This is a recovery that would not happen otherwise and we consider this as a component of the total benefit of £1.2m.

- Charitable Trust - is a grant scheme which provides 100% bill reduction for the most financially vulnerable members of our community. The customer can be nominated as opposed to having to make an application and the bill reduction is covered in full by the Trust. This means that we will also see a reduction in the bad debt provision. The cost is £196k and this matches the benefit.
- WaterSure - is a tariff designed to help families save money if they use a lot of water, for example if they have a particular medical condition and receive certain income-related benefits. It is applied as a reduced bill and we recover 95.82% of the reduced bill amount which we treat as a benefit reduction. The cost is £200k and the benefit is £192k.
- Vulnerable support - in order to ensure that we can reach our vulnerable customers we have a team of individuals who support our initiatives and ensure that we access our “hard to reach” customers by being physically in their communities. The team also operate in our community hub where we deliver our services, face to face from a physical building where we also encourage other organisations to join us. This helps to encourage those who are, for example, in debt and simply too frightened to engage with us using other channels. The cost is £82k.

Line A9 - Customers aware of affordability assistance measures

The figures for 2013-14 and 2014-15 are from CCWater’s tracker and are a weighted average of the Cambridge Water and South Staffs Water positions. The figures for 2015-16 to 2017-18 are from our customer service tracker. We recognise that this mixes data sources however the results show a stable trend which we think is reflective of the levels expected.

The CCWater survey shows both Social Tariff and Other Support Services separately. We combined these by assuming that 50% of people who were aware of Other Services are also aware of the Social Tariff. This mitigates the risk of duplication.

Our initial review shows the current score as 38%; however, this is 42% among our DE Social Economic Grouping, which will include most customers in need of financial support.

According to the Ad Watch survey, the very best adverts in 2017 received a recall score of 67%. As these are high profile commercial brands backed with TV/radio advertising we are unlikely to match these levels. The other products/services we have tracked awareness of (e.g. metering communications) achieved a 40-45% cut through.

From 2018-19 onwards we have assumed a steady increase in the figure up to 2025 which we think shows that we are continuing to improve levels of awareness whilst recognising that we need to reach those customers most in need.

Line A10 - Customers who are in debt who have a repayment plan

These numbers are sourced from debt information held on our behalf by Echo Managed Services where the definition of debt is in line with RAG 2.07 which references debt outstanding for more than 30 days. This data is based on actuals up to and including 2017-18. We think that with our improved debt management system and best practice implementation we can deliver an improved number of customers who are on a repayment plan as a percentage of all those customers who are in arrears. We will also reduce the number of customers in arrears by changing our debt policies which will see us writing off bad debt and potentially selling off finalised debt. Rather than a single exercise we think that the changes will take place over time and have accordingly smoothed the delivery over the period 2020-2025 towards 85%, a target based on calculated reductions.

Line A11 - Customers who have a repayment plan and who are continuing to pay

These numbers are sourced from debt information held on our behalf by Echo Managed Services where the definition of debt is in line with RAG 2.07 which references debt outstanding for more than 30 days. This data is based on actuals up to and including 2017-18. We think that by reducing the numbers of customers in arrears by changing our debt policies (which will see us writing off bad debt and potentially selling off finalised debt) we will see a marked improvement in the percentage continuing to pay. We currently only write-off small amounts of debt and do not sell debt, which means that we have a continually growing number of customers in debt. Rather than a single exercise we think that the changes will take place over time and have accordingly smoothed the delivery over the period 2020-2025 to reflect a close to 9 percentage point improvement each year.

Line B12 - Customers aware of the non-financial vulnerability assistance measures offered

We have used a weighted average of the Cambridge Water and South Staffs Water figures from the CCWater ‘Water Matters’ survey up to 2017-18 which asks the question about

awareness of PSR/Other Services. In a previous CCWater tracker we achieved a score in the high 50%s (2014-15). However, this appears to be a spurious result and has never been achieved before or since. We are also aware that we are checking for PSR awareness recall amongst customers who are receiving an increasing number of daily notifications across many channels. We have therefore set an achievable but challenging outcome for 2024-25.

Line B13 - Customers on Special Assistance Register/ Priority Service Register (SAR/PSR)

We have used the actual results from the period 2013-14 through to 2017-18. The forecasted figures reflect an increase to the end of the period 2018-19 based on the expected growth in the volume of customers requiring help paying their water bill as per the numbers in table WS18, line C4. This then builds further to an expected c45,000 based on work carried out to establish the number of our customers likely to require assistance. The Extra Care (our new additional assistance proposition) numbers have then been factored in with Extra Care representing 5% of the customers on the PSR. This has been added on a linear basis from 2020-21 through to 2024-25.

Line B14 - Customers on Special Assistance Register/ Priority Service Register (SAR/PSR)

Using the actuals and forecast from line B13, we have considered the table guidance and used the latest version of the household numbers to create this percentage.

Line B15 –B19 - Customers receiving services through the SAR/PSR

Using the actuals and forecast from line B13, we have considered the table guidance and used actual proportions from 2017-18. We do not anticipate material changes in proportions based on the guidance notes provided.

Line B20 - Customers satisfied that the services are easy to access

We have populated the 2018-19 figure based on a sample of 136 customers giving feedback through our tracker survey, Community Hub and Echo Managed Services. This is based on combining all the satisfaction data from these three channels about the ease of access and the range of services we offer. We did not record this number, or any equivalent, prior to 2018-19. As satisfaction scores do not alter much based on both our own and CCWater's tracker, from 2018-19 onwards we think that we can continue to improve the levels of awareness and have reflected what we think is a stretching but achievable figure to 2025.

Line B21 - Customers on SAR/PSR contacted over the previous two years to ensure they are still receiving the right support

We have considered the table guidance and used this to determine the total number of relevant contacts which we identified as 10,749. The appropriate percentage was created by using the PSR number in line B13.

Table App7: Proposed Price Limits and Average Bills

For line 21, we used the total revenue projections for the water resources control (with the 19/20 revenue deflated to 17/18 CPIH) reported in table Wr3/line27 to calculate the k values as below.

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Price base	Outturn (nominal)	2017-18 FYA (CPIH deflated)				
WR revenue (Wr3 line 27)	10.69	9.37	9.49	9.90	10.03	10.05
WR revenue (Wr3 line 27, 17/18 CPIH price)	10.22	9.37	9.49	9.90	10.03	10.05
WR k (%)		-8.4%	1.4%	4.3%	1.3%	0.2%

Similarly, for line 22, we used the total revenue projections for the water network plus control (with the 19/20 revenue deflated to 17/18 CPIH) reported in table Wn3/line27 to calculate the k values as below.

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Price base	Outturn (nominal)	2017-18 FYA (CPIH deflated)				
WN+ revenue (Wn3 line 27)	101.44	111.23	109.81	106.91	101.20	99.79
WN+ revenue (Wn3 line 27, 17/18 CPIH pric	96.95	111.23	109.81	106.91	101.20	99.79
Wn K (%)		14.7%	-1.3%	-2.6%	-5.3%	-1.4%

In line 39, the 2018-19 and 2019-20 average residential bills are our updated forecasts which reflect relevant WRFIM adjustments and customer numbers.

Table App10: Financial Ratios

Lines 1-11 and 23-33 are ratios calculated in Ofwat's financial model under the notional structure with revenue smoothing and post-financeability switches turned off in the InpOverride tab. For reference the table below shows the metrics if both revenue smoothing and post-financeability switches were turn on for the notional structure.

Line description	Item reference	Units	DPs	2020-21	2021-22	2022-23	2023-24	2024-25
A	Financial ratios ~ Notional capital structure							
1	Gearing	A8007	%	2	59.89%	60.46%	61.91%	62.37%	62.75%
2	Interest cover	A8013	ratio	2	5.29	4.96	4.38	4.02	3.84
3	Adjusted cash interest cover	A8003	Ratio	2	2.05	1.94	1.45	1.20	1.06
4	Adjusted cash interest cover (alternative calculation)	A8004	Ratio	2	2.05	1.94	1.45	1.20	1.06
5	FFO/Net Debt	A8005	Ratio	2	15.44%	14.16%	12.13%	11.29%	10.58%
6	FFO/Net Debt (alternative calculation)	A8005A	Ratio	2	14.54%	13.31%	11.34%	10.51%	9.80%
7	Dividend cover	A8008	Ratio	2	2.20	1.84	1.09	0.58	0.23
8	RCF/Net Debt	A8006	Ratio	2	13.50%	12.33%	10.42%	9.57%	8.86%
9	RCF/Capex	A8014	Ratio	2	64.79%	58.20%	52.29%	84.87%	73.03%
10	Return on capital employed	A8001	%	2	5.36%	4.89%	4.08%	3.63%	3.26%
11	RORE	A8002	%	2	5.19%	5.25%	5.28%	5.32%	5.38%
12	Target Credit Rating	A8012	Text	0	Moody's Baa2	Moody's Baa2	Moody's Baa2	Moody's Baa2	Moody's Baa2

As explained in Chapter 7 of our main Business Plan, we are targeting a Moody's rating of Baa1 under the actual structure and Baa2 under the notional structure. We have used gearing (based on covenant net debt, which is how it is calculated by our lenders, credit rating agencies, investors and Board) and Adjusted Interest Cover Ratio as the main metrics which underpins this rating.

In line 35, we have added a calculation of the AICR which follows Moody's methodology. This methodology adds back the interest income, yielding a slightly lower ratio than Ofwat's version as expected.

App 11a: Income statement based on a notional company structure

Figures in this table are outputs from the notional financial model, with the revenue smoothing and post-financeability switches turned on in the InpOverride tab.

Table App12: Balance Sheet Based on the Actual Company Structure

We have used outputs from the financial model with the actual capital structure to populate the balance sheet from 2020-21 onwards.

At 2019-20, our indexed linked debt will have a variance of roughly £20m between the covenant debt (basis for values in App19) and the book debt (values used in App12 following the RAGs). The variance is due to the premium at issuance included in the book debt, as well as the difference in annual RPI inflation rate applied historically (covenant debt has reflected actual RPI inflation whereas book debt has been inflated by a fixed assumed RPI inflation). As Ofwat's financial model uses values from App19 (i.e. covenant debt) to construct the appointee balance sheet, we have adjusted for the £20m difference as "Other Liabilities" in the InpOverride tab cell F576 to ensure that the total borrowing figures in the modelled outputs align to the expected book balance sheet.

This adjustment also ensures that the sums of lines 15 and 22 in App22 equal the sums of lines 1-10 in App19 as instructed in the table guidance.

Table App12a: Balance Sheet Based on a Notional Company Structure

We have used outputs from the financial model with the notional capital structure to with the revenue smoothing and post-financeability switches turned on in the InpOverride tab.

The residential cash and cash equivalents balance at 2019-20 has been shifted into wholesale in the model in order for the model to churn out a gearing of 60% at the appointee level (otherwise, gearing will be lower).

Table App13: Trade Receivables

Line 6 measured income accrual for years 2020-21 to 2024-25 will not align to the model outputs as the wholesale charge apportioned to measured and unmeasured residential

customers is calculated as a proportion of measured/unmeasured retail revenue in the Ofwat model (as supposed to using the tariff allocation, as calculated in table block E of App 17).

Table App14: Trade and Other Payables

All figures in this table are inputs into the Ofwat financial model, except for years 2020-21 to 2024-25 of line 1.

In terms of the validation check, line 14 equals line 13 of App 12 for the year 2019-20, however the following years do not align. This is due to the same reason explained above regarding App13. Lines 8-9 (residential retail advance receipts) which we have calculated off line as they are used as inputs into the Ofwat model, are calculated as different figures in the Ofwat financial model. We were not able to use figures calculated from the Ofwat model due to circular references, in addition to the issue where using the Ofwat calculated figures resulted in residential retail creditor days being lower than expected in lines 21-22 (calculation lines).

App 15a: Cashflow based on a notional company structure

Figures in this table are outputs from the notional financial model, with the revenue smoothing and post-financeability switches turned on in the InpOverride tab.

Table App16: Tangible Fixed Assets

In order to keep consistency with the Ofwat financial model, the figures in this table represent the net fixed assets of the Company, with grants and contributions netted off.

Table App18: Share Capital and Dividends

Our dividend policy for AMP7 is to maintain a dividend yield between 2-3% based on the Company's regulated equity of the actual capital structure using covenant net debt, as stated in the Chapter 7 of our main business plan. Actual forecast nominal dividends were calculated on this basis to input into line 8. As instructed in the table guidance, lines 9/10/11 were left blank (an error for completion is shown on this table but we have followed the table guidance and kept these lines blank).

Table App19: Debt and Interest Costs

For the indexed linked debt, this table was completed based on the covenant debt to ensure that the cash payment was calculated correctly in the financial model.

For the sum of lines1-10 to equate to the sum of lines 15 & 22 in App12, an adjustment to convert the indexed linked debt from covenant debt to book debt was populated in line 25.

Although this line has been formatted by Ofwat to input a percentage, we have followed the table guidance to include an absolute figure, in order for the summation to work.

For line 1, the fixed rate debt (opening), £30m of this existing debt (2 loans of £15m) is reported to mature in 2020 in App 20 lines 1-2. However, because we have a £30m swap agreement in place for this debt that matures in Dec 2025, effectively, the refinanced debt will have a very similar cost structure as the existing debt throughout AMP7, due to the longer maturity of the related swap. Therefore, we have kept this figure consistent throughout AMP7 as existing fixed debt.

Table App23: Inflation Measures

RPI: For years 2018-19 to 2021-22, we used the treasury forecast as at February 2018. For the following years, we have assumed the long term inflation rate of 3%.

CPIH: For years 2018-19 to 2021-22, we used the treasury forecast as at February 2018 published for CPI. For the following years, we have assumed the same rate as the long term CPI inflation rate of 2%.

Table App24a: Real Price Effects (RPEs) and Efficiency Plans

Sections B and C - Real Price Effects

Operating costs (water resources and network plus)

In order to assess the RPE, we have compared the historic change in CPIH over the last three years to the index of prices for both average earnings and electricity prices published by the Office for National Statistics (ONS); these two cost components make up over half of our operating costs.

Rather than using forecasts, we have selected this latest three-year period of actual data in order to eliminate the current uncertainty in most projections, particularly given the proximity of Brexit. We recognise the limitations of this choice and that there are multiple forecasts available but believe this analysis is broadly acceptable at a high-level.

Over the period, average earnings have increased at a rate 0.4% above CPIH and electricity costs have increased at a rate of 1.3% higher.

A significant proportion of the remaining operating costs are expected to increase in line with CPIH (before efficiency), for example rates and abstraction charges. This has some regulatory precedent (see First Economics (2014), 'PC15 Annex O – The Rate of Frontier Shift Affecting Water Industry Capital Costs', prepared for the Northern Ireland Utility Regulator)

Therefore, in order to determine the RPE for operating costs, a weighted average has been taken (0.4%*25%)+(1.3%*25%)+(0%*50%) = 0.42%. As the water resources price control is a small proportion of our overall cost base, we have assumed that the RPE is the same as for Network plus.

The efficiencies we have made in the operating cost arena are primarily driven by tightly managed procurement of services and materials, and by new ways of working for example within our "Bounty" contract for repair and maintenance and related activities.

Capital expenditure (water resources and network plus)

In order to determine the RPE for capital expenditure, CPIH has been compared to the ONS 'All construction output prices index' over the last three years. This original construction price Index, COPI, was used to inflate capital expenditure in price reviews prior to PR14 and is still considered to be a good indicator of how costs move in the water sector. We recognise that this is an output price measure for the construction industry but as a user of these services consider it to reflect our input prices.

We have not used regional data as the relative change in costs is assumed to mirror the wider national picture.

Over the last three years, the construction output prices index has been 0.33% above CPIH. We have assumed that construction costs change in the same way irrespective of whether they relate to base or enhancement expenditure.

It is also assumed that construction costs change in the same way for network plus and water resources.

The efficiencies within our capital expenditure are also driven by how we procure services and materials, in particular the use of mini-tenders within framework contracts to secure the best and most innovative outcomes. Specific examples include 5% savings on the cost of loggers, 6% on the cost of PE pipe, 0.5% on mains rehabilitation rates and 7% from mini-tendering – in total nearly £12.5 million.

Section F -Input Price Pressure (IPP) – Retail

The vast majority of costs in retail are related to staffing and the growth in average earnings. A key exception is bad debt costs which is difficult to link directly to an index but could be considered to align to CPIH (approximately 25% of total retail costs). Therefore, the estimate overall IPP has been calculated as (0.4%*75%) + (0%*25%) = 0.3% above CPIH.

Peer review

We have incorporated a number of thoughts following peer review by Oxera who accept that our analysis is broadly acceptable at a high level. We have recognised some of the

limitations of our initial analysis and made a number of improvements following this peer review.

Sections H and I - Efficiency

Assumed efficiency gains – water resources and network plus operating costs.

The assumed efficiency gains from operating costs have been calculated by comparing our base operating costs for 2019-20 to our AMP7 projections. We have removed IRE from these costs due to their year on year variability due to the different volume and mix of work which distorts the level of true efficiency. In real terms, our costs are falling by 1.1% per annum over the period. With a RPE of 0.4% as described above, the overall efficiency is 1.6% per annum as set out in the table.

Assumed efficiency gains – water resources and network plus capital expenditure.

In real terms, our costs are forecast to reduce by 0.8% per annum over the period. With an RPE of 0.3% described above, the overall efficiency is 1.1% per annum.

Section L - Assumed efficiency gains – Residential Retail

The assumed efficiency gains from residential retail operating costs have been calculated by assessing the year on year change in cost projections from 2019-20. This shows an average cost increase over the period of 0.8%. However, once input price inflation is taken into account (with no automatic uplift in retail costs for inflation), the average efficiency in real terms is 1.5%. The year on year efficiency varies each year as a result of movements on a relatively small total cost base. We have therefore populated the table using a smoothed average as this is the likely profile of efficiency once one off cost movements are ignored.

It is assumed that retail capital expenditure achieves the same level of efficiency.

The overall efficiency is towards the top end of the range set out by KPMG in the Ofwat workshop on PR19 Innovation and Efficiency Gains (held on 15 March 2018) of between 0.8% and 1.8% per annum.

Table App26: RoRE Scenarios

Outcome delivery incentives

P90	**1.1%**	**above base case**
P10	**-1.1%**	**below base case**

We have used Monte Carlo scenario analysis to derive the RoRE range on our outcome delivery incentives. We discuss this in detail in appendix A26 – Performance Commitments.

Revenues

Water resources and network+ price controls

P90	**0.9%**	**above base case**
P10	**-0.9%**	**below base case**

Examples of risk in this area: weather, housing growth, void properties, business consumption.

Mitigations considered: Water Resources Framework Incentive Mechanism (WRFIM), increased void property inspections, reduction in dividends

To derive the p10/p90 ranges for revenue, we have looked back over the last ten years to consider how our income has compared with that allowed by Ofwat each year. We set this out in the table below.

How our income compares with that allowed by Ofwat 2010/15

		2010/11	2011/12	2012-13	2013-14	2014-15
Final determination	2007/08 prices	92.5	91.6	93.8	94.6	94.4
Actual	2007/08 prices	90.5	90.2	92.1	92.7	94.1
(Under-)/over-recovery		-2.0	-1.4	-1.7	-1.9	-0.4
% difference		-2.2%	-1.5%	-1.8%	-2.0%	-0.4%

How our income compares with that allowed by Ofwat 2015/20

		2015/16	2016/17	2017/18	2018/19	2019/20
Final determination	Outturn prices	101.991	102.185	103.968	106.265	109.256
Actual/forecast	Outturn prices	102.191	101.300	103.958	106.952	109.066
(Under-)/over-recovery		0.2	-0.9	0.0	0.7	-0.2
% difference		0.2%	-0.9%	0.0%	0.6%	-0.2%

Note: 2015/20 excludes variances on developer contributions, which we set out in PR14 reconciliation submission to Ofwat.

2010/11 shows the largest under-recovery of 2.2% of revenue; a similar amount of under-recovery continued for the following three years. This under-recovery was because of:

- the impact of the economic recession of 2009 and the length of time it took to recover;

- demand in some years being lower for household customers as a result of cooler and wetter than normal weather;
- a lower than expected number of new property connections, which had a particularly large impact in the last three years of the period; and
- a significant difference, especially in 2010/11 and 2011/12, between the November RPI figure used to increase tariffs and the annual average RPI.

The combination of all of these factors is exceptional and we do not consider that it is representative of a p10 position.

So, we have considered the variances from 2014/15 onwards where the under-recovery has varied from -0.2% to -0.9% and has been predominantly as a result of lower new connections or lower water usage because of a cool summer, which we consider is more representative, and have used revenue of 0.9% below the base case for p10.

2015-16 and 2018-19 show over-recovery of revenue of 0.2% and 0.6%. But we see no reason why p90 would not be as likely as p10. This is because the variance is as a result of weather patterns, which is equally likely to generate an over-recovery as is it an under-recovery. So, we have also used 0.9% for over-recovery.

We have not distinguished between water resources and network+ in p90/p10 ranges as we bill customers for both services, so the variance would be broadly similar for each price control.

Water trading export revenue and incentive revenue

After careful analysis and dialogue with our neighbouring water companies, our water resources management plans have not selected any new water trades. But we are continuing to explore opportunities with Severn Trent Water and Anglian Water, and with other third parties that may have a supply of water available.

So, we do not think that water trading scenarios apply in our case.

Household retail revenue

P90	**3.6%**	**above base case**
P10	**-3.6%**	**below base case**

Examples of risk in this area: weather, housing growth, void properties
Mitigations considered: increased void property inspections, reduction in dividends

Household retail revenue has only been a separate price control since 2015/16. In addition, as we outline above, we do not think overall revenues for 2010/11 to 2013/14 are representative of a p10 position.

We have looked at the current period and how actual/forecast retail revenues compared with allowed revenues. We set this out in the table below.

Actual/forecast revenues compared with allowed revenues

		2015/16	2016/17	2017/18	2018/19	2019/20
Expected revenue	Outturn prices	14.938	15.156	15.794	16.782	17.256
Actual	Outturn prices	14.934	14.679	15.218	16.782	17.256
(Under-)/over-recovery		0.0	-0.5	-0.6	0.0	0.0
% difference		-0.0%	-3.2%	-3.6%	-0.0%	-0.0%

Retail revenues in 2016/17 and 2017/18 were below expectation as a result of lower residential consumption. We have taken p10 as the 3.6% under-recovery, as in 2017/18. We have not had a situation where we have over-recovered household retail revenue but see no reason why p90 would not be as likely to result in a 3.6% over-recovery. This is because the variance is as a result of weather patterns, which is equally likely to generate an over-recovery as is it an under-recovery.

Totex

Water network+ and water resources

Examples of risk in this area: expenditure to ensure asset resilience or address water quality issues, additional investment to reduce leakage, cyber-attacks, GDPR breach, power costs, inflation

Mitigations considered: re-prioritising totex while maintaining service, reductions in operating costs reduction in dividends

P90	**2.0%**	**below opex base case**
P10	**-4.0%**	**above opex base case**

Our starting point for assessing the p10/p90 position for totex was to consider our costs compared with those allowed over the past ten years and split between capital expenditure and operating costs.

How our costs compare with those allowed by Ofwat 2010/15

		2010/11	2011/12	2012-13	2013-14	2014-15
Final determination	2012/13 prices	98.900	98.331	98.771	97.137	97.529
Actual	2012/13 prices	86.753	91.389	98.037	93.318	94.718
Difference		-12.15	-6.94	-0.73	-3.82	-2.81
% difference		-12.3%	-7.1%	-0.7%	-3.9%	-2.9%

How our costs compared with those allowed by Ofwat 2015/20

		2015/16	2016/17	2017/18	2018/19	2019/20
Final determination	2012/13 prices	76.7807	77.514	77.804	77.947	76.889
Actual/forecast	2012/13 prices	72.753	76.024	81.931	78.631	77.849
Difference		-4.207	-1.489	4.127	0.684	0.960
% difference		-5.5%	-1.9%	5.3%	0.9%	1.2%

Over the past ten years there have been variances between -12.3% and +5.3%, although some of these are the result of the timing of delivery of our capital programme.

We have good track record of delivering on our capital programme. Even where there has been an unexpected investment requirement, we have been able to take mitigating actions to reprioritise our overall programme to ensure we can offset these costs and still deliver for our customers.

Variances on totex that are not because of timing tend to be in relation to operating costs and this is where we have focused in determining our p10/p90 position.

In terms of operating expenditure (or 'opex') performance, we have seen an outperformance in each year of AMP5 of between 3.3% and 6.6%. We made significant savings in our personnel costs as a result of removing a number of posts and closing our final salary pension scheme to future accrual.

During AMP 5 we locked into competitive prices for our power and have maximised its efficiency through both a pump efficiency programme and by optimising the cheapest mix of sources available. We have also been able to achieve below RPI increases in contract rates from many key suppliers – for example, with the chemicals we need to carry out our day-to-day operations.

In 2015/16, we saw an underperformance of 4%. This is because of the upward pressure on power costs driven by higher pass through rates. The following two years saw cost savings from laboratory costs and rates which have helped to offset further power cost increases.

As power costs have been the most significant cost variance for us, we think it is reasonable to take the 4% overspend as our p10. The overspend already includes mitigation to offset power costs, which included the reductions in personnel, for example, to realign the cost base to that allowed in our final determination.

Our plan already includes further challenging efficiency savings and we do not think that the previous scale of outperformance is a likely p90 position. We believe that a range of 1-2% is more realistic and so for the purposes of the RORE scenario we have assumed a 2% outperformance at the p90 level.

We are proposing a flat nominal bill for customers over the period. So, if inflation is higher than we have assumed, we will not seek to recover this from customers until after 2025.

To understand the level of risk we are taking, we have modelled a RoRE scenario based on CPIH being 0.5% higher on our cost base than our core assumption of 2.0% a year so we can understand the impact. Our operating costs would on average be 1.25% higher, which is below the p10 value we have modelled in the totex scenario of 4.0%. We are confident this inflation risk is covered within the overall totex scenario.

We have not distinguished between water resources and network+ in p90/p10 ranges as power is a significant component in both price controls.

Uncertainty mechanisms

We are not proposing any uncertainty mechanisms and so we have not modelled this scenario. All other scenarios are not of a size that would trigger other mechanisms.

Residential retail costs

Examples of risk in this area: increase in bad debt, increased customer contact

Mitigations considered: investment in new debt management system, offshoring our back office functions, reduction in dividends

P90	**3.9%**	**below base case**
P10	**-2.6%**	**above base case**

Household retail has only been a separate price control since 2015/16. Over this period, we have made significant cost savings resulting in an outperformance against our final determination of between 13% and 18% in the current period.

Savings at this level are unlikely to be achieved going forward, so we have not used it as the starting point to determine p10/p90.

Instead, we have focused on the most significant area that is subject to volatility, which is our bad debt cost. We have reviewed the level of bad debt charge since 2011/12, which we set out in table below.

Bad debt costs 2011/12 to 2017/18

£m	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Ave.
Bad debt charge	2.326	2.650	3.071	3.638	2.048	3.114	3.221	2.867
Variance to average	-0.541	-0.217	0.204	0.771	-0.819	0.247	0.355	

We had the highest bad debt charge in 2014/15 at £0.7 million (or around 5.6% of total retail costs) above average; 2015/16 had the lowest at £0.8 million (or around 6.0%) below average. However, we believe that these two years are exceptional, being more than a 25% variance to the average. We have therefore taken 2011/12 variance as our p90 and 2017/18 as our p10.

Financing

Examples of risk in this area: Brexit, inflation forecasts

Mitigations considered: hedging arrangements, reduction in dividends

	2020-21	2021-22	2022-23	2023-24	2024-25
P90	**0.291**	**0.534**	**0.788**	**0.893**	**0.931**
P10	**-0.291**	**-0.534**	**-0.788**	**-0.893**	**-0.931**

We have used a scenario of interest rates on new debt financed at 2% above or below expectation to generate the p10/p90 position for each year. This value grows as more new debt is raised. This is consistent with our stress testing scenarios used to demonstrate financial resilience. We have considered the possible impact of the indexation of the cost of new debt mechanism on the p10/p90 range. We think that to forecast this separately in

a robust way is difficult and so we have assumed that the 2% range already incorporates any likely indexation adjustment.

C-MeX

Examples of risk in this area: deterioration in customer service performance

Mitigations considered: customer insight to understand cause, additional investment frontline services, reduction in dividends

		2020-21	2021-22	2022-23	2023-24	2024-25
Retail revenue projections	**£m**	12.524	12.655	12.764	12.891	13.001
P90 % reward	**%**	2.40%	2.40%	2.40%	2.40%	2.40%
P10 % penalty	**%**	-1.20%	-1.20%	-1.20%	-1.20%	-1.20%
P90	**£m**	**0.301**	**0.304**	**0.306**	**0.309**	**0.312**
P10	**£m**	**-0.150**	**-0.152**	**-0.153**	**-0.155**	**-0.156**

We have had a good track record over the years in terms of our customer service performance – at PR14, we were joint first in the sector. We are forecasting upper quartile performance for the Service Incentive Mechanism at PR19. So, we have considered the p10/p90 position based on this historic performance.

We consider that our p90 would allow us to be not only upper quartile in the sector but also a high performer across the sector and hence achieve the 2.4% of retail revenue reward.

We do not envisage that we would be lower quartile at the p10 level but potentially below average. Although we do not yet know the specific bandings for the level of reward or penalty, we have assumed a penalty of 1.2% of retail revenue.

D-MeX

Examples of risk in this area: deterioration in developer service performance

Mitigations considered: customer insight to understand cause, additional investment in frontline services

		2020-21	2021-22	2022-23	2023-24	2024-25
Developer contributions	**£m**	**10.096**	**9.712**	**9.477**	**8.365**	**8.180**
P90 % reward	**%**	1.25%	1.25%	1.25%	1.25%	1.25%
P10 % penalty	**%**	-2.50%	-2.50%	-2.50%	-2.50%	-2.50%
P90 % reward	**£m**	**0.126**	**0.121**	**0.118**	**0.105**	**0.102**
P10	**£m**	**-0.252**	**-0.243**	**-0.237**	**-0.209**	**-0.205**

Our performance on developer services has improved from lower quartile in 2015/16 and 2016/17 to near average in 2017-18. We are continuing to look at ways to improve our service and consider we can move further.

Based on our performance so far we have taken p90 to be a reward of 1.25% of developer services revenue (being half the maximum reward) and the p10 to be a penalty of the 2.5% (being half of the maximum penalty).

Table App28: Developer Services (Wholesale)

We have encountered a number of challenges with the prediction of developer charges in AMP 6; these have been the subject of extensive discussions with Ofwat and are set out in detail in our PR14 Reconciliation submission. We have therefore given this area of our PR19 business plan particularly close attention including multiple reviews internally and with Jacobs.

Section A - Activity forecasts - wholesale water service

Our forecast activity levels are taken directly from our draft Water Resources Management Plan (dWRMP). This document is thoroughly researched and provides a considered and accurate measure of future development.

The information for this plan is obtained from strategic planning group leads within county councils for our operating regions with support from related planning officers.

Particular focus is given to growth plans including infrastructure investment, housing and non-household growth forecasts.

The number of new connections assumed in 2018-19 and 2019-20 is also taken from our dWRMP. However, these are different to the number of connections used in our PR14 reconciliation submission for WRFIM in relation to the over recovery of developer contributions. This submission uses a more up to date projection for these two years and has been derived using the average of the final quarter of 2017-18 and the first two months of 2018-19, which has then been annualised. This has then been grossed up using the three-year average percentage of company connections to arrive at a total number of connections including self-lay. This calculation is set out below:

	Jan-18	Feb-18	Mar-18	Apr-18	May-18	5 month average	12 month projection
No of connections by the Company	283	303	256	196	451	298	3,574
3 year average % undertaken by the Company							64%
Forecast number of total connections							5,574

This projection has been used as the basis for the level of developer contributions for 2018-19 and 2019-20 set out in section B.

Section B - Infrastructure network reinforcement expenditure forecasts - wholesale water service

The data in this section is based around predictions for upcoming new housing developments within the region and the likely new infrastructure needed to service them.

Forecasts have been prepared using detail from the local authority planning departments and historical trends from developer services requests.

The required infrastructure in this category includes a new reservoir at Bourn (partially funded from developer services), trunk/reinforcement mains and a number of booster stations across both operating regions.

The amounts for these (excluding the new Bourn reservoir) have been split equally across the new AMP, as currently accurate phasing information for new development is not available.

We have predicted and validated infrastructure reinforcement spend as accurately as possible, but are fully aware that this will not directly correlate with the construction of new properties. The date for the construction of the new reservoir at Bourn is known so our forecast expenditure has been included in specific years.

Section C - Grants and contributions received - wholesale water service

For data in section C we have started from the average connection charge from AMP 6, this has then been scaled using the number of connections anticipated in each year of AMP 7. We have not assumed any increase in charges for AMP 7.

Our infrastructure charge is collected based upon full recovery of the reinforcement costs from section B with the income offset deducted. This offset is now applied against infrastructure charges on line 8; it was previously applied to mains requisitions (line 9).

We have assumed that some projects will overlap the two methods of income offset as the way in which the new method of offsetting comes into effect is likely to be phased. We have assumed 70% uptake of the new method in 2020-21, 80% in 2021-22, 90% in 2022-23 and 100% in subsequent years.

Subject to the above, full recovery of main-laying costs has been assumed for AMP 7. By using historic data, we have calculated a cost per metre for main-laying and also derived the average length of main per connection.

We have taken the total number of new connections each year from the dWRMP and multiplied this by the AMP6 average cost for new connections in order to calculate a total cost each year.

Contributions received for diversions have also been calculated based on data from AMP 6 and have been split between those under NRSWA (line 12) and those that are not (line 11).

Line 10 (other contributions – price control) relates to contributions received from Severn Trent for their share of the capital investment at our Hampton Loade treatment works. This is a shared resource for which they contribute one-third. Therefore, these costs do not relate to developers but are included to ensure that line 13 (total grants and contributions) ties into table WS1 line 20.

Section D - Infrastructure charges / adopted assets

Following detailed analysis of our main-laying schemes carried out over the past five years, we have established that the percentage of income offset discount offered to developers was on average 77%.

Our published charges scheme provides water efficiency incentives and for the next AMP we have assumed that overall this will be applied to 3% of the connections undertaken.

The efficiency discount is based on the above 3% uptake across the AMP. With larger discounts being realised each year as awareness increases, we have anticipated the following levels of discount on the 3% of connections annually; in 2020-21 10%, 2021-22 15%, 2022-23 20%, 2023-24 25% and 2024-25 30%. As awareness increases we predict demand for the benefits to increase.

We have assumed that there will be no assets adopted at nil value.

Section I - Revenue correction inputs – wholesale water services

Our approach has been to split section I into three common developer services project categories, these are presented based on the number of connections within each scheme; Band A 1-5, Band B 6-100 and Band C 101+. The allocation of connections into each type of scheme is based on historic data.

We have assumed that the level of non-contestable works will be an average for each main laying scheme within each band, the number of main laying projects has been identified from historical averages.

An income offset has been applied across each band dependant on the volume of main-laying within that band (i.e. the number of connections within the band on projects which include main-laying). The higher the volume of main laying activity, the larger the value of the income offset within that band.

Infrastructure spend within each band has been determined using the forecast of projects to be undertaken within the AMP. Band A is representative of the smaller infill projects, a high proportion of connections undertaken in this band will require highways excavation with a high level of traffic management often necessary. These projects do not typically involve any main-laying

Self-lay activity in this band is currently extremely limited, with very low activity recorded for the last 3 years in our operating regions.

This combination of factors makes connections in this band distinctive, therefore requiring a particular set of considerations.

Band B is representative of medium size projects/development with a high percentage of main-laying being required. This is also the band with the highest level of self-lay provider activity.

Projects in Band B are less likely to require network reinforcement than those in Band C due to the lower demands placed on the network. The percentage of highways connections is also considerably lower than Band A.

Band C relates to larger development projects, in this category the self-lay percentage has historically been lower than for projects in Band B. Our analysis has identified that customers tend to opt for Water Company delivered projects where there is a high proportion of non-contestable costs and a higher probability that an element of network reinforcement is required.

The percentage of service connections including highways works in this band is very low, with the vast majority of connections being in unmade ground.

Band C represents by far the largest volume of network reinforcement costs due to the higher demands that projects of this scale put on the network.

Table App29: Wholesale Tax

For blocks A/B, the brought forward capital allowance pools, we separated the pools into Water Resources and Network Plus using the March 2020 RCV percentage reported in WS12.

Table App30: Void Properties

Line A1 – Residential

By using historic void numbers, we were able to establish that in the past voids have shown little consistency of movement with significant year on year movement. In part, this has been as a result of changing policies regarding the level of focus whilst the consolidation of different regions (each region potentially monitoring the voids numbers in different ways) has also generated variances.

When we reviewed past performance over 5 year blocks 2017-18 – 2013-14 and 2015-16 – 2011-12 we saw an increase of +42% and a decrease of -5% respectively. The increase has largely been attributed to reduced void activity; however, there was little clear evidence of trending.

It was therefore appropriate that we should apply our newly proposed void process to the forecasting process which has involved trialling credit reference agency (CRA) data to provide strong segmented evidence of home occupation.

When a sample was run through the CRA it showed strong evidence that 23% (5k) were immediately able to be moved to a chargeable state. Of the remaining 77% (c17k) we issued (c10k) a named letter to the property and received a response that enabled us to move 10% (1k) to bill and out of a void status.

We also lettered (c7.5k) and received a response that enabled a further 15% (1k) to be moved into a billable status and out of a void status. The remaining c15k will be visited and experience has shown this to generate a further 10% (c1.5k) billable and out of void customers leaving c13.5k voids.

It is important to note that there will be an initial gain largely driven by the re-focus of activity as well as the addition of new enhanced data which has been purchased.

It is also worth noting the level of growth in households over the 2020-25 period.

We believe that this improvement can be both sustained and improved upon and believe that we can deliver an improvement which will see SSC in line with the top performing companies as reflected in the PWC report of September 2017.

The performance improvement will see the previous void percentage met around 2022-23 with a further improvement thereafter of around 0.4%.

Line A2 – Business

We have back populated App30 with historical information from previously compiled June Returns or APRs. From 2017-18 we have exited the business retail market and therefore our latest view of business voids comes from the market systems. The industry currently recognises the challenges associated with accurate vacancy data and a "Retail Wholesale Group" has been formed to work on these issues. The group is still very early in this process and overall timelines have not been confirmed. Based on a brief period of void inspection activity carried out during the Beast from the East event (with the objective of minimising leakage from unoccupied premises) we think that business could be reduced to approximately half the current level by 2024-25, and we will be implementing market incentives, and allocating resource to encourage retailers to address the issue.

Table App31: Past Performance

We have considered the table guidance and used actual data across the entire period.

Table App32: Weighted Average Cost of Capital for the Appointee

For Block A, based on the notional structure, we reported figures cited in Ofwat's PR19 Final Methodology Appendix 12: Aligning Risk and Return (pgs. 16-17). We would like to highlight that when Ofwat's suggested values for the cost of debt are inputted into the App32, the notional equity beta is calculated as 0.78, instead of 0.77 cited in the Final Methodology, most likely due to rounding effects. This causes the notional cost of debt to be calculated as 4.37% rather than 4.36%, and the wholesale WACC to be calculated as 5.38% rather than 5.37%.

We have accounted for this variance in tables Wr5 and Wn5, in calculating the asset beta at the wholesale level to ensure that the wholesale nominal WACC is 5.37% as Ofwat recommends.

For Block B, based on the actual structure, we have reported the projected AMP7 average figures and forecast AMP8 figures for lines 21/31/33 (actual gearing/cost of embedded debt/ratio of embedded to new debt). For other components of the WACC, we have kept Ofwat's suggested figures. As we have explained in section 7.1.3.3 of our main business plan, our embedded debt cost, which was competitive at the time of issuance, has led us to

have a higher cost of debt compared to water and sewerage companies and larger water only companies.

Table App33: Wholesale Operating Leases Reclassified Under IFRS16

We have considered the table guidance along with Information Note IN 18/09. We do not have any operating leases as we purchase all assets and therefore all entries within App33 are zero.

Table WS1: Wholesale Water Operating and Capital Expenditure by Business Unit

Line 5/6 Renewals expensed in year (infra/non infra): We have reported the gross IRE figures, consistent with the guidance for past APRs.

Line 20 Grants and contributions: We have included the grants and contributions related to IRE to ensure that this line equals line 13 of App28.

To make sure figures reported in WS1 are used appropriately in the Ofwat financial model, we have deducted the grants and contributions associated to IRE from Water network plus operating expenditure and Water network plus grants and contributions on the F_inputs tab (line 249 and line 272). For more detail, please refer to section 1.2 Financial model.

(17/18 CPIH prices)	20/21	21/22	22/23	23/24	24/25	Total
Total adjustment in lines 249/272	2.150	4.207	2.050	0.913	0.868	10.188

Table WS1a: Wholesale Water Operating and Capital Expenditure by Business Unit Including Operating Leases Reclassified Under IFRS16

We have considered the table guidance along with Information Note IN 18/09. We do not have any operating leases as we purchase all assets and therefore table WS1a is the same as table WS1.

Table WS3: Wholesale Water Properties and Population

We have completed this table in line with the final WRMP property forecasts; however, our WRMP uses the historical definition of household and non-household property types. This is not aligned with the current Ofwat definition which supports the business market

eligible and non-eligible designations. Table WS3 has been adjusted to account for this definition difference. This also means that 2017-18 is not directly comparable to reported data in previous APRs from 2016-17 and earlier as these were also compiled based on the previous definition. We have had some APR queries on this issue prior to business plan submission.

Table WS4: Wholesale Water Other (Explanatory Variables)

Line 1 – our lead replacement forecast is in line with our lead replacement strategy, this is classified as enhancement costs and is discussed in more detail in our business plan.

Lines 2 to 6 – our supply and demand side enhancement forecasts are made in line with our final WRMP projections for resource needs, leakage reduction and water efficiency improvements.

Lines 6 to 8 - presented in kWh as per the table requirements however these are showing as hashed out in our version, we think because they are set to have too many decimal places. The values should display as (please note this is formatted vertically so as to fit on the page):

	Energy consumption ~ network plus	**Energy consumption ~ water resources**	**Energy consumption ~ wholesale**
Item reference	BM902ECWW	BM902ECNP	BM102ECWR
Units	kWh	kWh	kWh
DPs	0	0	0
2017-18	107,336,534	20,724,863	128,061,397
2018-19	105,515,277	20,373,209	125,888,486
2019-20	106,286,138	20,522,049	126,808,187
2020-21	105,519,961	20,374,113	125,894,074
2021-22	104,757,273	20,226,851	124,984,125
2022-23	104,013,440	20,083,229	124,096,669
2023-24	103,338,110	19,952,835	123,290,945
2024-25	102,659,896	19,821,883	122,481,779

Lines 10 and 11 – these are both difficult to forecast. For CRI we have a performance commitment level of zero however due to an element of random variation this is unlikely. We have therefore set our expected performance at the average of the 3 years from 2015-16 to 2017-18 which is 3.9. ERI is even more volatile, we have therefore also set the future performance at the average of our last three years, which is 55 points.

Line 12 - a calculation based on our leakage projects in App1 and the SELL projections in App2.

Table WS7: Wholesale Water Local Authority Rates

The 5 years to 2022-23 have been populated based on our current ratings valuation. The reduction in our rates from the 2017 valuation is subject to transitional relief for the first three years to 2020. The final two years of AMP7 have been kept at an unchanged level, this reflects both the uncertainty of these charges and that we were one of very few companies able to secure a rates reduction during AMP6.

There are three reconciling items from our actual rates bill to that included in table WS1:

- We recharge a proportion of our bill to Severn Trent Water to reflect the shared use of Hampton Loade treatment works. This equates to one-third of the rates relating to the site.
- A small amount is capitalised to reflect the proportion of our head office site which is used by staff who are delivering our capital programme.
- We cross charge Echo who are located on our head office site for their share based on the square footage of the building they occupy.

In section B, the first year reflects the total prior year charge rather than a movement. The year 2020-21 also shows a movement, this is as a result of the change in price base as 2019-20 is in outturn prices and 2020-21 is in CPIH prices.

Table WS12: RCV Allocation in the Wholesale Water Service

The percentage of RCV allocation to Water Resources at April 2020 has slightly decreased from the percentage calculated in January 2018 (3.71% to 3.67%). The break down for the change is reported in table WS12a. For the avoidance of doubt, we have maintained our approach to base the RCV allocation on the proportions of net MEAV at March 2020.

As the large user discount we offer is based on the avoided operating expenditure of the distribution network, consistent with our analysis in the January 2018 RCV allocation submission, we believe that the slight change in the allocation in the September 2018 submission will not put any customers at risk of unintended bill impacts.

Table WS18: Explaining the 2019 Final Determination for the Water Service

Line B3 – Number of catchment management schemes

The number of catchment schemes in each year is defined as the WINEP catchment measures that have a catchment management delivery scheme commencing in that year. (If a catchment scheme commences in year x, it is counted in that year only, even though the delivery of the scheme itself may continue in subsequent years, including those into

the next AMP where a NEP/WINEP "line" may no longer apply and the delivery becomes BAU. Therefore, the number of schemes is equal to the number of catchment measures WINEP "lines" in any AMP).

Line C4 – Number of people receiving help paying their water bill

We have used actuals up to 2017-18 and then used our original target numbers up to 2019-20 which reflects Assure funding limits. The forecast reflects the increase in Assure funding capped at the funding level determined by our customer research regarding the number of people requiring assistance. A cap has been applied due to the limited available funding. This has also been reflected in the ODI and performance commitment.

Table Wr1: Water Wholesale Resources (Explanatory Variables)

Our forecasts for volumes, number of sites and capacities which form the bulk of this table have taken account of the distribution input forecast used for the final WRMP and also reported in table Wn2. They also take account of any plans to reintroduce sites over the AMP7 period.

Line 21 – we have restated the 2017-18 value for this line as we identified post APR that this did not include standby pumping plant in our Cambridge region.

Line 23 – for average pumping head we have averaged the historic years from 2011-12 as it is not possible to accurately forecast this; it depends on the mix of sites used across the year and demand conditions.

Table Wr4: Cost Recovery for Water Resources

For both the PAYG rate and the runoff rates, we have used the natural rates, without applying any adjustments.

For Water Resources, the natural PAYG rate for each year has been calculated as the Water Resources operating expenditure divided by the net Totex for Water Resources as reported in table WS1.

(17/18 CPIH prices, £m)	20/21	21/22	22/23	23/24	24/25
WR opex	6.95	6.95	7.26	7.25	7.26
WR IRE	0.00	0.00	0.00	0.00	0.00
WR net capex	5.60	3.80	2.95	3.03	3.50
Water Resource net totex	12.55	10.75	10.21	10.29	10.76
WR PAYG %	55.39%	64.67%	71.08%	70.53%	67.46%

To calculate the natural runoff rates for the existing March 2020 RCV, we forecasted the current cost depreciation figures (CCD) for Water Resources from 2020-21 to 2024-25. We then divided 50% of the CCD by the RPI linked pre2020 RCV and the remainder by the CPIH linked pre2020 RCV to obtain natural runoff rates based on a reducing balance.

To calculate the natural runoff rate for the post 2020 investment, we calculated the depreciation for the additions (assuming 50% of the asset is capitalised in year and an average asset life of 19.6 years). We then divided this depreciation figure by the post 2020 Water Resources RCV to obtain a natural runoff rate based on a reducing balance.

(outturn prices)	20/21	21/22	22/23	23/24	24/25
WR CCD on assets existing at March 2020	1.92	1.76	1.73	1.71	1.54
Existing pre -2020 WR RCV	14.63	13.04	11.56	10.07	8.57
WR runoff rate on pre-2020RCV linked to RPI	13.03%	13.35%	14.69%	16.53%	17.40%
WR runoff rate on pre-2020RCV linked to CPIH	13.15%	13.63%	15.20%	17.38%	18.66%
WR depreciation on post 2020 investments	0.15	0.41	0.60	0.78	0.97
WR new additions RCV	5.98	10.09	13.15	16.24	19.83
WR new additions runoff rate	2.56%	4.09%	4.59%	4.77%	4.88%

As a cross check, we ensured that the sum of the runoff on pre-2020 RCV and depreciation on new additions at the wholesale level were equal to the sum of the runoffs from Water Resources and Water network plus. For reference, below is a table of the total wholesale depreciation figures we used for this validation.

(outturn prices)	20/21	21/22	22/23	23/24	24/25
Wholesale CCD on assets existing at March 2020	28.06	25.92	25.36	23.99	22.82
Wholesale depreciation on new additions	1.34	4.19	7.26	9.75	11.69

Table Wr5: Weighted Average Cost of Capital for the Water Resources Control

As the Ofwat financial model takes the inputs from block B, the actual company structure, as components to calculate the return on RCV, and because we are accepting Ofwat's early view of the WACC, we have reported the same inputs for both the actual and notional structure.

As instructed in the table guidance, we have calculated the asset beta to incorporate the removal of the retail margin at the wholesale level. Therefore, the asset beta in lines 6/16 is 0.35, as opposed to 0.37 at the appointee level. This input yields an overall wholesale nominal WACC of 5.37%, which is in line with Ofwat's early view.

Table Wr6: Water Resources Capacity Forecasts

Our company wide data was simply formed by adding the data from our two geographically distinct WRZs together.

In both our Cambridge and South Staffs zones we calculated the pre-2020 capacity for DYAA and DYCP scenarios by adding the capacities or yields of all the sources in the zone. We derived the individual capacities following the guidance in terms of only constraining values based on assets in the water resources price control. In most cases the constraint was average licence or daily/ peak week licence maximum.

We have produced our post-2020 incumbent capacity values for both DYAA and DYCP by referring to our draft WRMP tables (as published for public consultation in March 2018). For the supply side options in our preferred WRMP we have used the DO as stated in our dWRMP tables because this is the same as the water resources yield for these options

We have then applied either the Ml/d reductions (due to WFD or climate change) to the pre-2020 capacity or, for the post 2020 incumbent capacity we have applied factors that are based on the dWRMP tables to reduce the capacity over time.

Although this might seem different in that we didn't reduce the DO of our options in our dWRMP tables, this was raised by regulators during the WRMP consultation and we will be taking this approach for our final WRMP19. We have stated that this is our approach in our statement of response (SoR) and also shown the factors we will use in our revised draft WRMP.

We reduced the capacities after referring to the Ofwat query log about this point (to clarify the 'any change' referenced in the table guidance).

Another point from our dWRMP is that we have been asked to be consistent with Severn Trent Water in our assessment of the Perry Barr transfer. We have agreed that this potable import is a resilience option that we could not call upon in DYAA or DYCP scenarios but could call upon in other (lower demand) periods.

We have no post-2020 third party bilateral capacity in either WRZ.

Table Wr7: New Water Resources Capacity – Forecast Cost Options Beginning in 2020-25

In our WRMP we do not have any supply side options being selected until 2025-26 so we did not need to fill in the RECKON model to produce annualised unit costs.

Therefore, the only options that we have provided data for are the three options in our Cambridge zone CW4, CW5 and CW6 and one option in our South Staffs zone. We used these names in our decision making framework (DMF) but we describe the options as SIPW, CRPW and KIPW respectively in our WRMP.

As described above, we have reduced the yield/ DO provided by these schemes in a way that is consistent with our WRMP.

We have retained the pre populated asset types that were in the RECKON model but have not allocated any costs to 'control equipment' as these costs are included within our M&E costs.

We used Atkins to develop costs for our WRMP and Atkins has also split the costs between water resources and network plus so that we could fill in Wr7 appropriately.

When comparing the data in Wr6 and Wr7 with that in WS4 it is important to note that WS4 contains both demand and supply schemes as well as some activity that is included in the baseline

For example, there is a 2.3Ml/d supply side scheme in our Cambridge zone which completes in AMP6 so is in our 2020 baseline DO and also within the pre-2020 capacity.

We note that, when we used the RECKON model to generate the AUC, we had to multiply the model output by 1,000 to convert from £'000s/yr/Ml/d to the £/Ml/d requested in Wr7.

Table Wn1: Wholesale Network Plus Raw Water Transport and Water Treatment (Explanatory Variables)

Our forecasts for volumes, number of sites and capacities which form the bulk of this table have taken account of the distribution input forecast used for the final WRMP and reported in table Wn2. They also take account of our plans to upgrade treatment processes at sites over AMP7 which are explained in our business plan. This causes a general trend for sites to move to more complex treatment categories.

Line 39 – this is showing as hashed on the tables, though we have followed the table format requirement of population to zero decimals. The values should display as (please note this is formatted vertically so as to fit on the page):

	Zonal population receiving water treated with orthophosphate
Item reference	BN10901
Units	nr
DPs	0
2017-18	1,669,155
2018-19	1,712,639
2019-20	1,734,474
2020-21	1,753,975
2021-22	1,772,277
2022-23	1,789,451
2023-24	1,807,894
2024-25	1,825,861

Line 40 - for average pumping head we have averaged the historic years from 2011-12 as it is not possible to accurately forecast this; it depends on the mix of sites used across the year and demand conditions.

Table Wn2: Wholesale Water Network Plus Raw Water Distribution (Explanatory Variables)

Lines 1 to 8 and 34 to 41 – our mains length forecasts align with our business plan activity projections for mains renewal and growth.

Lines 13 to 20 – these align with tables Wn1 and Wr1 where site volume data has been utilised.

Line 12, and 21 to 27 – these align with our final WRMP projections.

Line 42 - for average pumping head we have averaged the historic years from 2011-12, as it is not possible to accurately forecast this; it depends on the mix of sites used across the year and demand conditions.

Wn3: Wholesale revenue projections for the water network plus price control

Inputs into Block A are outputs from the Ofwat financial model under the Company's actual capital structure. As a cross check, line 24 of this table is consistent with row 441 from the "Summary_Calc" tab. However, line 27 of this table with not align to row 20 of the "Summary_Calc" tab due to the adjustment we have made for the IRE contributions of roughly £10m in the Ofwat financial model (please refer to the Financial Model section or Table WS1 of this appendix for further explanation regarding this adjustment).

We have used line 27 of this table to calculate the annual K values for water network in App7 line 22.

Table Wn4: Cost Recovery for Water Network Plus

For both the PAYG rate and the runoff rates, we have used the natural rates, without applying any adjustments.

Consistent with section Wr4 above, the natural PAYG rate for each year has been calculated as the Water network plus operating expenditure (including net IRE) divided by the net Totex for Water network plus as reported in table WS1 (the net IRE figures do not align to WS1 lines 5/6 as these lines are reported as gross IRE figures).

(17/18 CPIH prices, £m)	20/21	21/22	22/23	23/24	24/25
WN+ opex	41.42	41.36	42.96	42.93	42.93
WN+ net IRE	15.27	14.24	12.63	12.50	12.45
WN+ net capex	43.29	49.94	52.16	28.41	30.99
WN+ net totex	99.98	105.54	107.75	83.84	86.37
WN+ PAYG %	56.70%	52.68%	51.59%	66.11%	64.12%

To calculate the natural runoff rates for the existing pre-2020 RCV, we forecasted the current cost depreciation figures (CCD) for Water network plus from 2020-21 to 2024-25.

To calculate the natural runoff rate for the post 2020 investment, we calculated the depreciation for the additions (assuming 50% of the asset is capitalised in year and an average asset life of 19.6 years).

(outturn prices)	20/21	21/22	22/23	23/24	24/25
WN+ CCD on pre 2020 assets	26.14	24.16	23.63	22.29	21.28
WN+ depreciation on post 2020 investment	1.19	3.77	6.66	8.97	10.72

In principle, we followed the same methodology described under section Wr4 to calculate the natural runoff rates. However, as Ofwat's table assigned the same runoff rate for the pre2020 CPIH linked RCV and the post 2020 investment, we have had to adjust the runoff rates between RPI linked RCV and CPIH linked RCV to ensure that that the total wholesale runoff rate on pre2020 RCV and post 2020 investment aligned with the below expected total runoff.

(outturn prices)	20/21	21/22	22/23	23/24	24/25
Wholesale CCD on assets existing at March 2020	28.06	25.92	25.36	23.99	22.82
Wholesale depreciation on new additions	1.34	4.19	7.26	9.75	11.69

As a result, we have arrived at the below natural runoff rates for pre-2020 RPI linked RCV runoff rate, and the CPIH linked RCV runoff rate.

(outturn prices)	20/21	21/22	22/23	23/24	24/25
WN+ RPI liked RCV runoff rate	7.80%	7.83%	8.10%	8.00%	7.80%
WN+ CPIH linked RCV runoff rate	5.80%	5.30%	5.30%	5.34%	5.48%

Table Wn5: Weighted Average Cost of Capital for the Water Network Plus Control

As the Ofwat financial model takes the inputs from block B, the actual company structure, as components to calculate the return on RCV, and because we are accepting Ofwat's early view of the WACC, we have reported the same inputs for both the actual and notional structure.

As instructed in the table guidance, we have calculated the asset beta to incorporate the removal of the retail margin at the wholesale level. Therefore, the asset beta in lines 6/16 is 0.35, as opposed to 0.37 at the appointee level. This input yields an overall wholesale nominal WACC of 5.37%, which is in line with Ofwat's early view.

Table R1: Residential Retail

Section A - Expenditure

Our reported actual costs have been used to populate section A up to 2017-18, these are consistent with our Annual Performance Repot (APR).

Prior to 2015-16, retail costs were reported in the APR split between household (HH) and non-household (NHH). From 2015-16 the APR included a further breakdown of HH costs split between measured and unmeasured customers. Therefore, in completing table R1 from 2012-13 through to 2014-15, the reported data has been allocated between unmeasured and measured.

The cost driver allocation methodologies used in 2015-16, 2016-17 and 2017-18 have been replicated for 2012-13 through to 2014-15. These methodologies are as set out in our Accounting Separation Methodology Statement (available on the Company's Website), which complies with the relevant Regulatory Accounting Guidelines (RAGs).

For example, billing costs are allocated using the number of bills raised split between unmeasured and measured customers. When restating prior year data for billing costs, we have used the number of bills raised split between measured and unmeasured households for each of the reporting years and used this as the cost driver. This approach (using different cost drivers) has been replicated for all cost categories. A check has then been undertaken to ensure unmeasured and measured values equal the original reported household value.

Where historic costs have moved significantly (defined as greater than 10%) year on year, we have reported this within our Accounting Separation Methodology Statement for the year in question.

Future forecast costs from 2018-19 to 2024-25 reflect our three strategic programmes as referenced in chapters 2 and 6 of our business plan which cover putting customers at the heart of our plan and being a reliable and trusted business. The three programmes are for customer support, customer service and retail development. These costs have been allocated between unmeasured and measured using the same cost driver allocation methodology; however, the allocation proportions have also had to be forecasted to reflect the changes in customer numbers.

Section B – Customer numbers

The cost driver allocation methodologies referred to above reflect the changes in our customer base year on year and are consistent with the customer numbers reported in table R9.

Table R3: Residential Retail – Further Information on Bad Debt and Customer Services

Section A – Bad debt information

Line A1 - (Debt management –residential) is taken from Table R1. The costs include and reflect the use of our new debt management system, and the use of third party data as part of the company's new debt strategy.

Line A2 - (Debt written off – residential) relates to residential water charges that have been written off or are expected to be written off in each year. Revenue of all ages that has been written-off in each year has been included or will be included for future years.

Any revenue written-off in relation to court or other debt recovery costs has not been included in the revenue written off line, as this is held separately within our billing system.

Our policy on bad debt is to provide where the debt is unlikely to be to be recovered, but to only write-off the debt when either the customer is no longer resident in our area and cannot be traced or the debt is uneconomic to collect. Therefore, the level of write off can fluctuate year on year.

The level of revenue written off from 2019-20 will increase as we seek to further improve the management of our debt, and to broaden our customer support strategy. This will involve the introduction of a new debt management system, and the use of third party data, both of which were identified within the best practice debt management matrix (which we have developed), and help to reflect a truer position of current live debt. We are also considering the sale of some debt, the financial and write off impact of this has not been included in this plan (it would accelerate some write offs).

Lines A3 to A15 - (Residential revenue outstanding) relate to water debt at the end of each year that has been billed, but has not been collected. Any unmeasured revenue billed in the year but relating to charges for services to be delivered in the following year, has not been included.

Any revenue written off has not been included in the revenue outstanding lines.

We undertake sewerage revenue collection and billing on behalf of Severn Tent and Anglian Water, this has been excluded as we only perform a collection service for this revenue.

Section B – Forecast assumption

This section shows the proportion of cash collected in each year (including that related to previous years) as a percentage of the billing in the year. Our forecast shows an improving trend as the impact of our new processes and systems take effect. Our long-term collection target reflects that 96.82% of our billed revenue will be collected in 2024/25. Our collection target for the final year of AMP7 is 96.71% which is lower because the additional impact of historic uncollected cash which will take the full collection lifecycle of 7 years to unwind. We intend to outperform both of these in order to achieve our ODI target.

Section C – Customer service metrics

We have followed the guidance provided when completing this table however please note that in order to show realistic costs for each channel we have not taken a flat volume of contacts, but have instead used our weighted volume.

By using this approach, we have considered the time taken and the volume of each interaction by channel. This reduces the skew created by taking the same base cost number (section C, line 28) without any apportionment and dividing it by low volume interactions.

A good example is web-chat where we are report £5.66 per transaction in 2018-19; if we were to simply take the line 28 cost and divide by volume, the cost would be roughly £2,095 per transaction.

All costs within section C, lines 17 to 21 have been completed on the same basis.

Section C, lines 22 to 27 reflects how we have developed our forecast profile based on current volumes and the strategies being used by customers to make contact via alternative channels, which we are now enabling. These lines also reflect the work being done to simplify our customer processes as well as the development of our self-serve capability. We expect customers to change contact channels with percentage decreases in some channels and increases in others.

We do not expect overall volumes to remain neutral but rather anticipate an overall reduction in transactions as an outcome of our strategies and the investments we are making through PR19.

Section C, line 28 is the total cost of our contact centre which is part of our “at cost” out-sourced contract provided by another Group company.

Table R10: PR14 Service Incentive Mechanism

We followed the guidance provided for the areas which were not pre-populated (2015-16 to 2016-17 will be pre populated). Actual results were used for 2015-16, 2017-18 and known components of 2018-19. Forecast results, based on current known performance, were applied for the remainder of 2018=19 and these were replicated for 2019-20 as the best reflection of targeted expectations.

2. Financial Models

We have submitted to Ofwat two versions of the financial model ver. "PR19-14h-for-publication" for the Company's actual structure and "PR19-14h-for-publication-notional-final" for the notional structure. These models have been used to populate the relevant business plan tables.

2.1 Adjustments in the Model

We have had to make some adjustments in the submitted models in order for the model to work as expected. Below is a table of manual changes we made in both models:

Tab Reference	Cell Reference	Changes/Reason
F_inputs	Rows 249/272	Grants and contributions related to infrastructure renewals expenditure was deducted from water network plus operating expenditure and grants and contributions. Otherwise, the G&C's associated to IRE was deducted from capex rather than opex, and led to incorrect financial statements. This adjustment has resulted in no change in wholesale revenues/RCV, as this calculation was based on net totex and the PAYG ratios. Table WS1 in lines 5 and 9 are thus still inclusive of grants and contributions for infrastructure renewals, consistent with the RAGs.
F_inputs	Row 265	We have inputted the sum of all PR14 reconciliation wholesale revenue adjustments (ODI, WRFIM, Totex menu) calculated from the [PR19-Revenue-adjustments-feeder-model-June-2018-update.xlsm]Summary_Output'!tab. This is because the revenue reconciliation model calculates the profiled adjustment as a sum of wholesale revenue adjustments, rather than individually for each incentive.
F_inputs	N448	Wholesale creditors - Residential b/f – nominal, which is from the table, App14'!G11, was inputted with the opposite sign for modelling purposes.

F_input	Row 72	This line includes the sum of lines 12&13 from table R1 (Total depreciation on assets acquired between 1 April 2015 and 31 March 2020, and Total depreciation on assets acquired after 1 April 2020) deflated to 17/18 CPIH price.
F_input	Row 447	This line includes the sum of forecast SIM reward and HH retail reconciliation adjustments, calculated by the PR19-Revenue-adjustments-feeder-model-June-2018-update.xlsm feeder model.
InpOverride	Row 562	This row adjusts for the investments (loans to group companies) of £40m reported in line 3 of App12.
InpOverride	F576	This cell adjusts for the Deferred income from G&C's reported in line 26 of App12 and the difference between book debt and covenant debt for the indexed linked bonds, reported in App 19 line 25.
Sensi tab	Row 65	We have used the Sensi tab to adjust the CPIH/RPI wedge to adjust for 31st March 2021, as without this adjustment, the RPI inflation for the year was calculated as 2.63% rather than the forecasted 3.03%. without this adjustment, there would have been a year on year compounded impact on RCV growth.
Wholesale global	Cell K181	The Forecast flag switch was set to 1 so that K182 came out as 100% (Exited company residential retail)

For the model "PR19-14h-for-publication" which is based on our actual capital structure, the revenue smoothing function was used to achieve a nominal flat average bill of £144. For the discount rate, we have used 3.305% which is Ofwat's suggested nominal WACC of 5.37% expressed as real CPIH. We have ensured that the Water Resources & Water Network Plus revenues pre/post profiling arrive at the same NPV value.

For the model "PR19-14h-for-publication-notional-final" which is based on the notional capital structure, we have followed Ofwat's guidance on the "User guide" tab for values to input into the "Override" tab for nationalisation. For dividend yield, we have used 3%, similar to levels at PR14 and have calculated the dividend growth as a difference between

the notional real cost of equity and the dividend yield. Although not stated into the "User guide" tab, we have assumed that the notional percentage of indexed linked debt is 33%, as stated in Ofwat's PR19 Final Methodology appendix.

For the actual structure model, the Company has used the same cost of capital as the notional structure as the Company accepts Ofwat's view of the cost of capital. The cost of capital for the actual structure is directly linked to tables Wn5 and Wr5 from the Business Plan Tables. The only variance is the slight difference in the allowed nominal cost of debt of 4.37% vs. 4.36%, as when Ofwat's suggested inputs for the cost of debt (quoted in the PR19 Final Methodology Appendix 12 (pg. 16)) are inputted into App 32, the table automatically calculates 4.37% as the notional nominal cost of debt. We have however adjusted the asset beta figure in tables Wn5 and Wr5 to ensure that the nominal cost of capital is equal to Ofwat's early view of the WACC, 5.37%.

In addition, for the notional structure model, we have shifted the opening cash position in retail into wholesale, in order for the target gearing function in the "InpOverride" tab to correctly outtput an opening gearing of 60% at the Appointee level (otherwise, the opening gearing would be calcualted as 58%). This adjustment was made in lines 115/462.

2.2 Verification Checks

We were not able to resolve the below verification checks in the model, however we believe these checks do not have material impact on the key model outputs.

Verification checks	Model actual structure "PR19-14h-for-publication"	Model notional structure "PR19-14h-for-publication-notional-final"	Comment
Global, margin type check	Check	Check	Irrelevant
Water network NPV check reprofiling	Check	-	Have goal seeked to set difference to zero. Cell F1345 on InpOverride tab shows 0.000
Movement in deferred tax provision	Check	Check	Due to deferred tax calculation continuing into AMP8
Retained earnings appointee total	Check	Check	Not able to resolve, potentially a formula error

Corporation tax due check	Check	-	Not able to resolve, but not present in the model with the actual structure

2.3 RORE scenario graphs

The financial model does not pull through the correct RORE ranges. The formulas in rows 102, 111 and 147 calculate the incorrect difference. For example the ODI range for the appointee of +1.08%/-1.08% on the dashboard cell Q219 shows as +0.4%/-0.5% on the graph.

We have submitted a version of the financial model called 'PR19-14h-for-publication-notional-final with RORE graph amended' which has amended the formulas in rows 102, 111 and 147 to prodcue a correct graph. This is the graph used in section 7 of our main narrative.