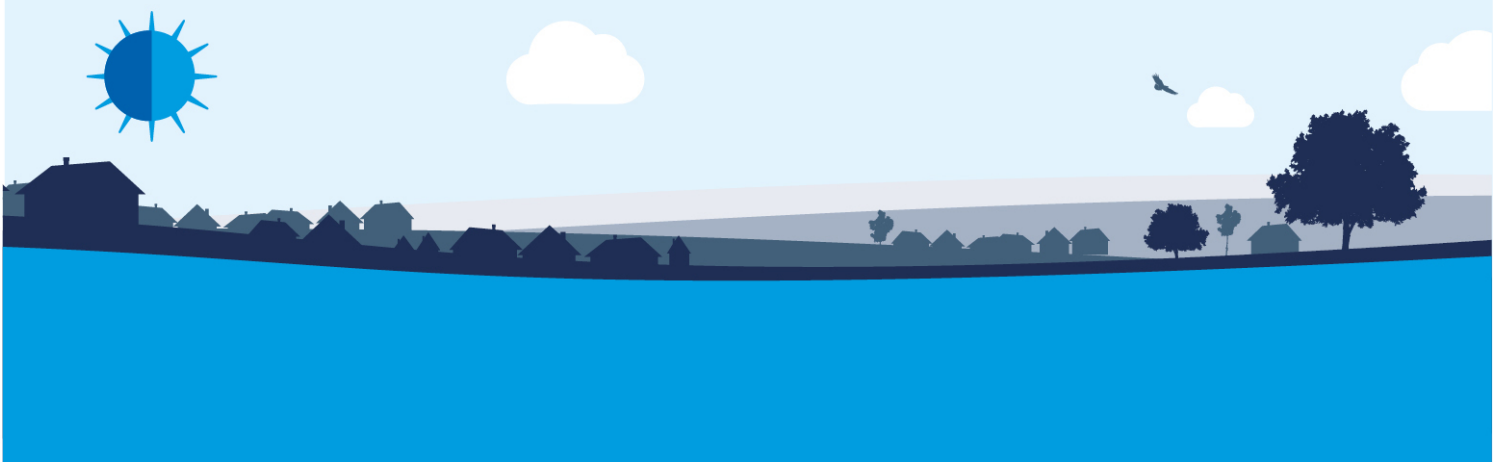


# Appendix RA06

## Growth and new development enhancement modelling

1 April 2019



## Water Service growth and new development enhancement modelling

### 1.1 Introduction

Ofwat's approach to modelling growth and enhancement cost allowance for the IAP used a simple unit cost approach weighted equally between historic and forecast data. This was based on the gross capital expenditure in table WS2 for new developments (line 11) and new connections (line 12).

The area of new development is complex and companies will have different challenges in delivering these services which ultimately impacts on the costs incurred. This includes:

- The level of off-site network reinforcement
- The level of connections through company schemes compared to those by Self Lay Providers (SLPs)

In addition, the rules around charging developers is open to interpretation and the data submitted may not be consistent across the industry. This is both in respect of the current charging regime and the new approach applicable to English companies from 2020-21.

Specific areas to highlight are:

- Some companies have associated operating costs not included in WS2 lines 11 and 12
- Four companies may have expressed connection costs on net basis
- The treatment of asset value payments is different across companies. Whilst we have included self-lay asset payments in WS2, we think that some companies have netted them off against income/contributions so is not reported in the gross costs in WS2.

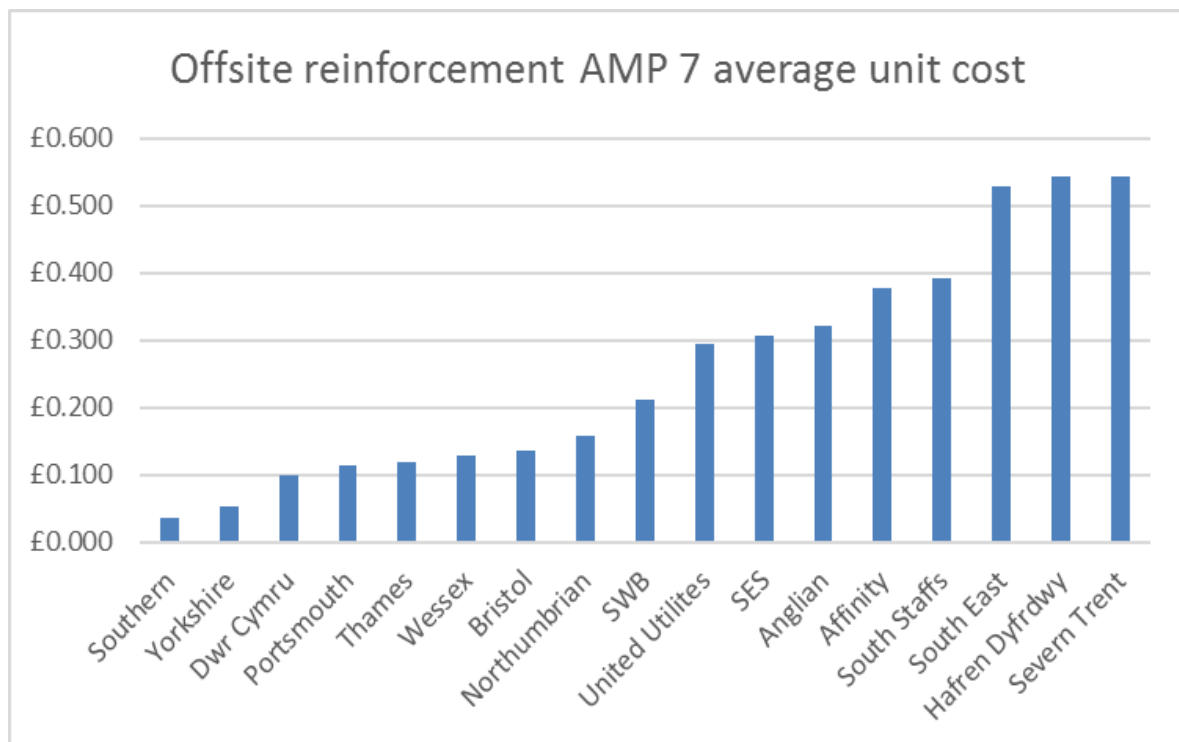
Finally, Ofwat published a benchmarking report for connection costs in 2017 which set out the maximum, minimum and median across the industry for different scenarios. Ofwat uses this report in its determination of connection costs cases. This report can be used as a useful cross-check to Ofwat's unit cost model and shows that the allowed median unit cost is actually below the minimum cost in the report.

In this section we set out in more detail some of these points and suggest ways in which Ofwat's growth modelling could be refined to make them more accurate.

Ultimately, due to possible inconsistencies in how companies have completed both WS2 and App28, it may be necessary for Ofwat to clarify with companies how these two tables have been completed by all companies in advance of draft and final determinations.

### 1.2 Off-site reinforcement

Off-site reinforcement costs are part of gross costs included in lines 11 and 12 of table WS2. These are also identified separately within line 6 of App28 and below is an analysis of this data showing the significant range in unit costs.



Source: Unit costs calculated from App 28 as Line 6 / (Line 1 + Line2)

Offsite reinforcement is company specific and depends on the not just the level of housing growth but the location of the development. It will also be reflective of the level of past expenditure and the current capacity of the network. We therefore think that this type of spend is not appropriate for unit cost modelling. A better approach would be for this to be assessed separately by Ofwat using 'deep dives' to assess the robustness of the expenditure.

In the graph above we have the fourth highest unit cost reflecting some significant reinforcement costs we have in AMP 7 in relation to some large developments we are expecting. These developments are in greenfield sites and are not in the vicinity of our current network. We also need increased capacity to supply a new development site in Cambridge which will require a new booster station.

We have set out in detail our projected reinforcement costs in section 3 of the appendix '[RA02 Addendum to Appendix A29 – Wholesale water enhancement cost allowance.](#)'

### 1.3 Company connections v SLPs

The Ofwat unit cost model uses the total number of connections as the denominator when calculating the unit. However, this includes connections undertaken by SLPs. A more appropriate way to calculate the unit cost would be using the number of company connections undertaken. Again, this information is included in App 28 block I 'number of properties to which contestable services were provided during the year'.

We have analysed this data for all companies to determine the proportion of company connections as a percentage of total connections and this is set out below:

Company	Total new connections - AMP7 period (2020/21 to 2024/25)	Company only connections- AMP7 period (2020/21 to 2024/25)	% Company only connections
WSH	45	2	5%
SES	13	1	10%
SEW	46	12	25%
TMS	167	77	46%
SRN	65	38	59%
BRL	29	19	65%
SSC	41	30	72%
SVE	154	119	77%
HDD	3	3	89%
WSX	33	30	90%
SWB	46	42	92%
NES	90	84	92%
ANH	180	180	100%
YKY	110	110	100%
AFW	81	81	100%
NWT	139	139	100%
PRT	10	10	100%

Source: App28 block I

The analysis shows that there is a significant range of assumptions with five companies inferring that there will be no self-lay development in their area. This suggests that there are inconsistencies on how table App28 block I has been populated.

This is supported when analysing unit connection costs, where the reported data for three companies infers no self-lay connections (United Utilities, Yorkshire and Portsmouth) are in the lowest quartile for unit cost rates. This could be as a result of dividing the cost of company only connections by the total number of connections (both company and self-lay).

This could have a significant impact on the comparative unit costs of company connections.

## 1.4 Classification of developer costs

The unit cost models assume that all developer cost has been recorded within WS2 lines 11 and 12.

There are four companies who have reported zero connection costs in line 12. We have identified that three of these companies have classified developer costs within operating cost enhancement lines 50 and 51. One other company has costs classed both in capex and opex. We also think that the transition to IFRS may have resulted in some companies changing their

accounting treatment and that therefore some operating costs have not been reported in WS2.

## 1.5 Treatment of asset value payments

Asset value payments relate to the cost of adopting the infrastructure undertaken by self-lay providers. Historically, we have treated this as a cost within totex and would be included with line 11 of WS2. In our submission, these costs are in both the historic costs and the forecast costs on a consistent basis.

Following a review, it would appear that companies have taken different approaches to reporting these costs. This may be down to the change in charging rules for English companies where companies may have interpreted the new rules differently in the reported forecast numbers. For AMP 7, some companies may have included this as a rebate offsetting the infrastructure charge so do not appear in gross costs at all. The value of these asset payments appear to be reflected in line 16 'value of assets adopted at nil value'. There are nine companies with such costs. This results in lower gross costs reported in table WS2 and lower contributions in App28.

## 1.6 Ofwat benchmarking report

Ofwat published an independent comparison of monopoly water companies' new water supply connection costs (IN 17/02) in February 2017. This set out the range of maximum, minimum and median charges for different connection scenarios. This information provides a way of sense checking the unit cost models to actual costing information.

The summary of costs from this report are set out below:

	Verge			Footway			Carriageway		
	2m	4m	9m	2m	4m	9m	2m	4m	9m
Median	£ 633.42	£ 713.35	£ 913.19	£ 773.84	£ 1,009.06	£ 1,597.10	£ 779.34	£ 1,020.67	£ 1,623.99
Maximum	£ 1,029.41	£ 1,175.82	£ 1,541.85	£ 1,144.98	£ 1,419.20	£ 2,104.75	£ 1,188.50	£ 1,510.86	£ 2,316.74
Minimum	£ 354.52	£ 409.34	£ 546.40	£ 458.47	£ 627.11	£ 1,048.73	£ 468.73	£ 648.60	£ 1,098.28

The median for connection costs used in Ofwat unit cost model is £429 per connection. This is significantly below the median from the cost modelling. In fact, only the minimum cost for shorter verge connections is lower. This suggests that once the mix of work is taken into account that the allowance is beyond the frontier position and well below that which Ofwat would consider when determining disputes with developers.

## 1.7 Improvements to Ofwat's unit cost models for growth

Having set out a number of areas above, we believe that using data in both WS2 and App28, Ofwat's unit cost model can be improved so that it more accurately represents the costs faced by companies. To this end we have added additional data into the model and we have included this within our submission.

The improvements we have made are as follows:

- Modelled connection costs and other developer costs separately
- Included new connection costs classed as enhancement opex
- For connection costs, take the number of company laid connections, hence removing self-lay connections that companies do not undertake the work for.
- Excluded network reinforcement costs which we think should be assessed separately
- Added back asset value payments for companies who we think have treated them as a rebate within contributions. This has been taken from table App28 line 16 (assets adopted at nil value).

Unfortunately, some of the data required is not available historically, for example the proportion of self-lay connections. Therefore, it has only been possible to undertake the modelling using company projections for 2020-25. We have also had to make assumptions on how companies have completed their data tables.

We therefore would suggest that Ofwat issue a data request to companies to collect the required data in a consistent manner both historically and for future projections.

The outputs from our models are set out below. The data is as per business plan submissions and before our review and revision of developer costs included in our resubmission:

## Modelled Costs (Unit Cost Approach)

### Connection costs

Company	Total new connections costs (2020/21 to 2024/25) per WS2 line 12	Total new connections costs (2020/21 to 2024/25) per WS2 line 51	Total new connections costs	Total new connections - AMP7 period (2020/21 to 2024/25)	Total new connections Company only - AMP7 period (2020/21 to 2024/25)	Unit cost - Forecast Company connections	Modelled allowance	Capex allowance
ANH	79		79	184	180	0.437	95	79
NES	42		42	91	84	0.498	44	42
NWT	46		46	139	139	0.333	73	46
SRN	45		45	65	38	1.177	20	20
TMS	93		93	216	77	1.208	40	40
WSH	9	23	32	45	2	15.057	1	1
WSX	0	10	10	33	30	0.326	16	10
YKY	30		30	110	110	0.275	58	30
AFW	0	47	47	81	81	0.582	43	43
BRL	10		10	29	19	0.526	10	10
PRT	0	3	3	10	10	0.308	5	3
SES	0		0	13	1	0.000	1	0
SEW	31		31	46	12	2.633	6	6
SSC	28		28	41	30	0.947	16	16
SVT	0		0	0				
DVW	0		0	0				
SVE	73		73	130	119	0.616	63	63
HDD	1		1	2	3	0.532	1	1
SWT	0		0	0				
BWH	0		0	0				
SWB	21		21	46	42	0.493	22	21

Unit cost view

0.526

We have compared this to a weighted average from the benchmarking report. We have assumed that 42% of developments will be brownfield and 58% will be greenfield, in line with our own AMP 7 projections as set out below:

Updated mix	%	Median from Ofwat report
Verge 2m	51%	£633
Verge 4m	5%	£713
Footway 2m	13%	£774
Footway 4m	5%	£1,009
Footway 9m	26%	£1,597
<b>Weighted average</b>		<b>£925</b>

*Note: we have assumed the cost of non-standard connections is equivalent to the cost of footway 9m*

This is 75% higher than the unit cost derived from the unit cost models of £526 and supports the assertion that the data submitted by companies has not been completed on a consistent basis.

We therefore think that Ofwat should clarify the data on connection costs submitted by companies to ensure that unit costs are robust.

### Modelled Costs (Unit Cost Approach)

#### Developer costs (excluding new connections)

Company	Total developer costs (2020/21 to 2024/25) per WS2 line 11	Asset value payments not included in WS2 (App28 line 16)	Less Network reinforcement (App2 8 line 15)	Total developer costs excl network reinforcement	Total new connections - AMP7 period (2020/21 to 2024/25)	Unit cost - Forecast all connections	Modelled allowance	Capex allowance
ANH	140	0	56	84	184	0.458	132	84
NES	33	1	14	19	91	0.211	66	19
NWT	95	105	41	160	139	1.149	100	100
SRN	58	0	2	55	65	0.853	47	47
TMS	158	74	25	206	216	0.958	155	155
WSH	43	0	4	39	45	0.850	33	33
WSX	17	0	4	13	33	0.380	24	13
YKY	11	7	6	12	110	0.114	79	12
AFW	54	0	31	23	81	0.285	59	23
BRL	17	8	4	21	29	0.720	21	21
PRT	5	0	1	4	10	0.395	7	4
SES	6	2	4	3	13	0.268	9	3
SEW	53	7	22	38	46	0.816	33	33
SSC	47	0	16	31	41	0.755	30	30
SVT	0				0			
DVW	0				0			
SVE	185	33	70	147	130	1.135	93	93
HDD	4	0	1	3	2	1.135	2	2
SWT	0				0			
BWH	0				0			
SWB	26	13	10	29	46	0.632	33	29

Unit cost view 0.720

This model does not encounter the same data issues as the connection model. The costs are recorded by all companies as capex and it uses the total number of connections rather than requiring a split between company/self-lay. Overall, it gives a sensible range of unit costs.