

**PR24**

# Supporting information for UUW's response to Ofwat's Draft Methodology

**September 2022**

**Private**

**Version FINAL**

This document should be read alongside the Microsoft Excel template containing UUW's response to the PR24 Draft Methodology. It supports UUW's response by presenting all supporting tables and figures referenced in the PR24 methodology response.

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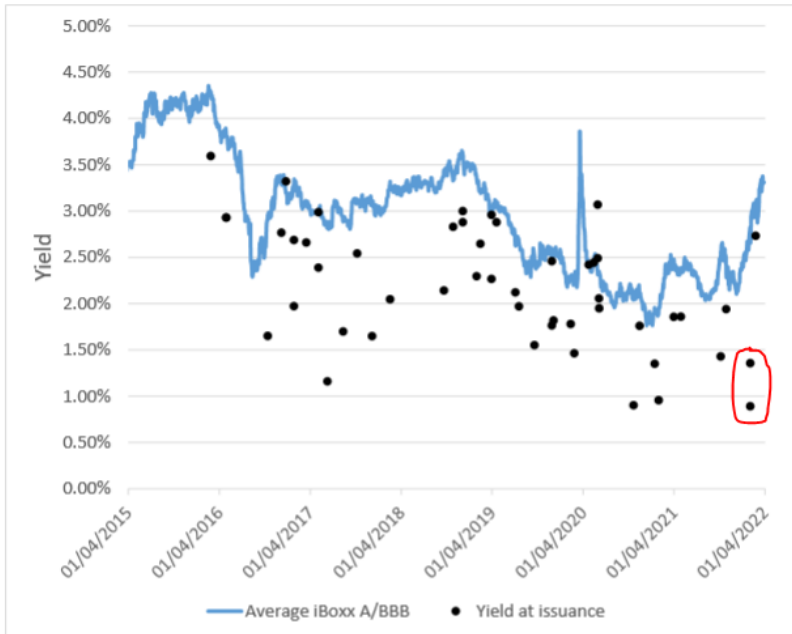
## 1. Table 1 - Academic evidence of yield adjustments

Study	Market	Time-period	Estimate (bps)
van Binsbergen et.al (2022)	US	2004-2018	40bps
Diamond & van Tassel (2021)	UK	2005-2020	38bps
Diamond & van Tassel (2021)	US	2005-2020	35bps
Diamond & van Tassel (2021)	Euro area	2005-2020	24bps

*van Binsbergen et al (2022), Diamond & van Tassel (2021)*

## 2. Figure 1 – Ofwat's assessment of sector performance versus the iBoxx A/BBB indices may not reflect actual performance

Figure 1.2: Fixed rate bonds since 2015.

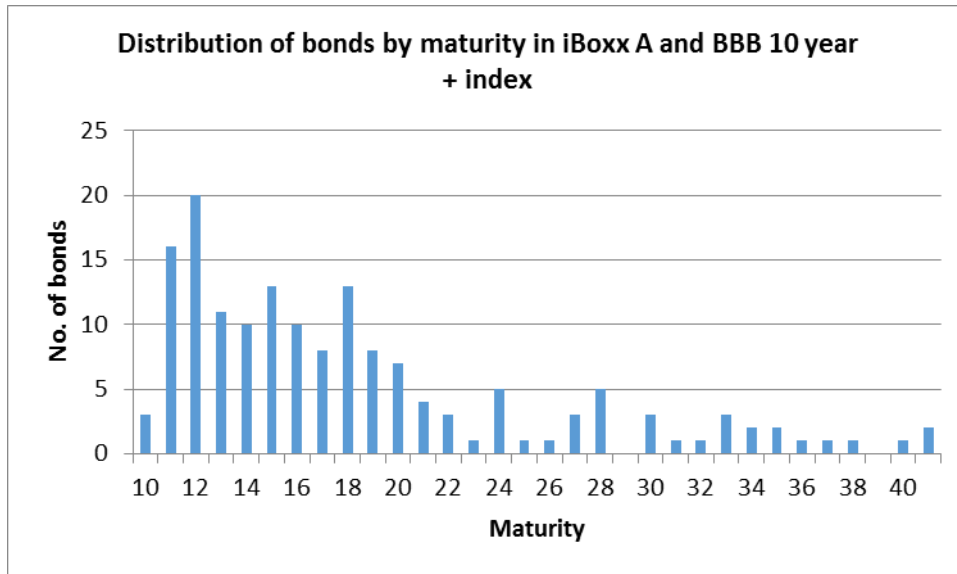


Source: Refinitiv Data

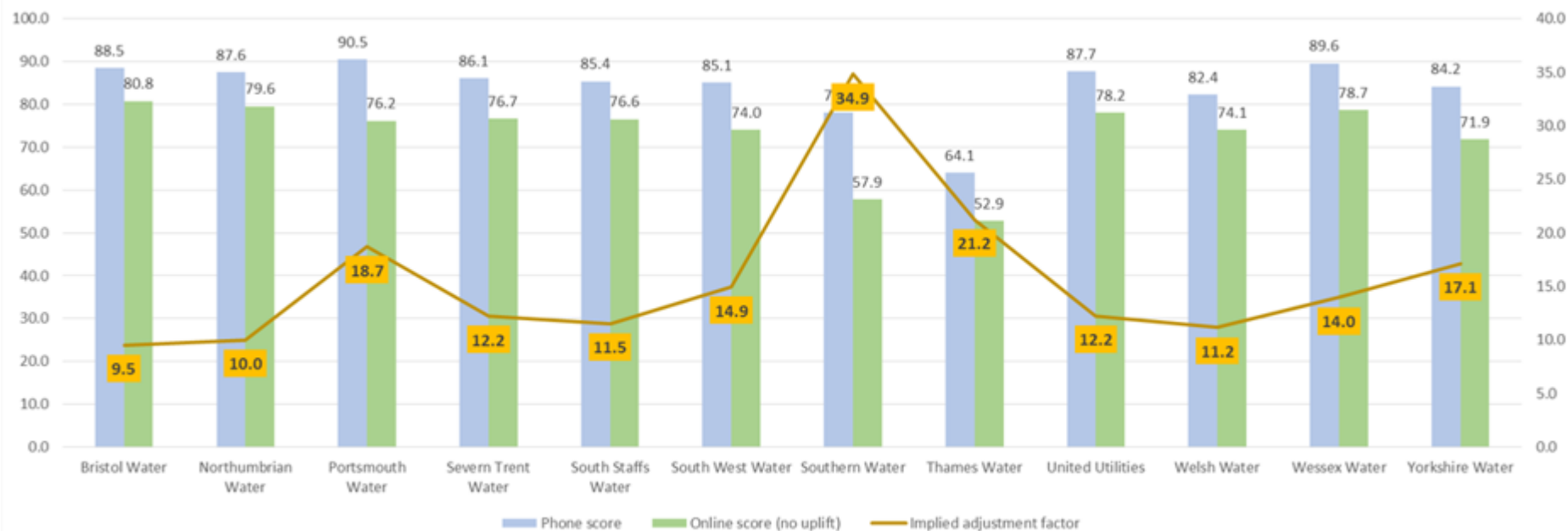
### 3. Table 2 – Perceived outperformance is offset by liquidity costs

	Maturity	Yield	Deposit rate (Bank of England base rate on 31 Jan 2022)	Assume d liquidity policy	Liquidity costs	Residual bond life	Annualised liquidity costs	Effective yield including liquidity costs
	A	B	C	D	$E=(B-c)*D$	$F=A-D$	$G=E/F$	$H=B+G$
6 year bond	6yrs	2.18%	0.25%	1.5yrs	2.90%	4.5yrs	0.64%	2.82%
10 year bond	10yrs	2.422%	0.25%	1.5yrs	3.26%	8.5yrs	0.38%	2.81%

#### 4. Figure 2 – Distribution of bonds by maturity in iBoxx A and BBB 10 year + index



## 5. Figure 3 – Billing scores, % gap between phone and online satisfaction (source: APR 2021-22)



## 6. Figure 4 – Comparison of approaches with and without CML restriction

Rehab Mains Replacement under CML Restriction			
Shutoff	3 hours (max)		
Scope	100mts 4"/90mm slip line with circa 15 Short side service transfers		
Environment	Flagged footpath in an inner city terraced street		
Resources	5 man Rehab Team plus 2 man Part Time Grab Team		
Timeline	Activity	Description of activity	
07:30-08:00	Team mobilise on Site	Team arrive on site and set up ready for shutoff	
08:00-08:15	Shut-off Existing Main	Rehab Inspector/NT operates controlling valves and notifies team when water is isolated	Period in which customers supply is affected
08:15-08:45	Cut & Cap	Team cut into main, dewater and install temporary or permanent connections to facilitate new main and temporary overland connections	
08:45-09:00	Turn on Existing Main	Reintroduce water to existing main up to temporary or permanent connections to facilitate new main and temporary overland connections	
09:00-10:30	Commission overland connection	Commission temporary overland main by way of temporary or permanent connection points, transferring the service connections from existing main onto temporary overland connection	
10:30-11:00	Clean Main	Remove existing pipe work within main and service connection pits, pull winch rope through existing main with cobra reel , clean main by winching scrappers and plungers back through main for the number of passes as required.	

Rehab Mains Replacement without CML Restriction			
Shutoff	8 hours (max)		
Scope	100mts 4"/90mm slip line with circa 15 Short side service transfers		
Environment	Flagged footpath in an inner city terraced street		
Resources	5 man Rehab Team plus 2 man Full Time Grab Team		
Timeline	Activity	Description of activity	
07:30-08:00	Team mobilise on Site	Team arrive on site and set up ready for shutoff	
08:00-08:15	Shut-off Existing Main	Rehab Inspector/NT operates controlling valves and notifies team when water is isolated	Period in which customers supply is affected
08:15-08:45	Cut & Cap	Team cut into main, dewater and install temporary or permanent connections to facilitate new main	
08:45-09:00	Turn on Existing Main	Reintroduce water to existing main up to temporary or permanent connections to facilitate new main connections	
09:00-09:30	Clean Main	Remove existing pipe work within main and service connection pits, pull winch rope through existing main with cobra reel , clean main by winching scrappers and plungers back through main for the number of passes as required.	
09:30-10:00	Install New Main	Winch new main (pre-chlorinated) from pipe trailer into the host main	
10:30-11:00	Pressure Test	Install temporary end connections to facilitate 10min test	



11:00-11:30	Install New Main	Winch new main (pre-chlorinated) from pipe trailer into the host main		11:00-13:30	Commission New Main	Commission new main by way of permanent connection points, transferring the service connections transferring service connections from temporary overland connection onto newly installed main. All connections undertaken using the control point app.	
11:30-12:30	Pressure Test	Install temporary end connections to facilitate 10min test		13:30-16:00	Backfill	2 Man Grab Team will commence with the backfill of all open excavations	
12:30-14:00	Commission New Main	Commission new main by way of permanent connection points. All connections undertaken using the control point app.		13:30-16:00	Preparation for Next Day	Rehab Team will commence with the excavation works for the following day	
14:00-15:30	De-commission overland connection	Transferring service connections from temporary overland connection onto newly installed main, customers advised "on the knock", affected for circa 5-10mins. All connections undertaken using the control point app.	Period in which	16:00-16:30	Team demob from Site	Team will demob from site ensuring that all water is restored, open excavations are fully secured and site is tidy	Prep time for next day
15:30-16:30	Team demob from Site	Team will demob from site ensuring that all water is restored, open excavations are fully secured and site is tidy		<b>Benefits/ Restraints:</b>			
Typically the above will entail <b>3 pipe pulls Monday-Wednesday-Friday</b> with Saturday used as a prep day. <b>Output circa 300m per week as oppose to 500m with the 8hr shutoff option (a 40% reduction in output per week).</b>				Typically the above will entail <b>5 pipe pulls Monday-Friday</b> with Saturday used as a prep day. <b>Output circa 500m per week as oppose to 300m with the 3hr shutoff option.</b>			
There is additional materials used in this option in setting up the overland connection which has a cost impact but more <b>significantly there is more disruption to the customers and risk of trip hazards and vandalism with the overland pipework.</b>				No additional materials in setting up the overland connection and <b>reduced risk of trip hazards and vandalism.</b>			
This option minimises the timescales in which the customers are interrupted but they will be affected twice during the day.				This option increases the timescales in which the customers are interrupted but they will only be affected once during the day.			
This option does not allow for any unnecessary delays in isolating the mains (passing valves/incorrect mains records), locating any known missing supplies due to insufficient investigation time therefore <b>likely to lead to more aborted shutoffs</b> than an 8 hr shutoff.				This option allows for any unnecessary delays in isolating the mains (passing valves/incorrect mains records), locating any known missing supplies therefore <b>less likely to lead to aborted shutoffs</b> as a 3 hr shutoff may do.			
This option <b>increases the Backfill, Reinstatement and Site Clearance timescales from 2 days to 3 days</b> ; the backfill will be completed the following day with the Reinstatement and Site Clearance being completed on the 3rd day.				This option <b>reduces the Backfill, Reinstatement and Site Clearance timescales from 3 days to 2 days</b> ; the backfill will be completed the same day with the Reinstatement and Site Clearance being completed on the 2nd day .			
This option reduces shut off period for the customer but has <b>greater impact to the customer as the works are outside the customers' property for at least a day longer.</b> Perhaps even more if they are located at the change point between pipe pulls.				This option increases shut off period for the customer but has <b>lesser impact as the works are outside the customers' property.</b>			

The above way of working does not allow time within the shut off window to react to changes. This ultimately means the overland connection is left overnight until the next day which is then often subject to vandalism and additional out of hours reactive call outs.

The above way of working allows additional time within the shut off window to react to changes on site such as missed services or blockages within the main causing extensive cleaning to be undertaken. Generally it is an exception if the process cannot be completed in the same day.

## 7. Table 3 – Total planned mains repairs and other planned work on the water network

	FY2020	FY2021	FY2022
Total no. of Planned jobs *	1430	1892	2751
Total no. >= 3 hours	67	32	95

**United Utilities Water Limited**  
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Lingley Green Avenue  
Great Sankey  
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WA5 3LP  
[unitedutilities.com](http://unitedutilities.com)



**Water for the North West**