

Is6LS1- Forecast outcomes		
Line description		Commentary
	Common PCs	
1	Water supply interruptions	<p>Please see our SRN18: Performance Commitments Methodologies technical annex for a detailed explanation of our approach and methodology.</p> <p>WINEP Update Feb 24: The following PCs have been revised to match the February draft WINEP plan</p> <ul style="list-style-type: none"> Operational greenhouse gas emissions (wastewater) Storm overflows <p>In addition, the following have been updated to reflect other changes since submission:</p> <ul style="list-style-type: none"> Biodiversity Operational greenhouse gas emissions (water) Unplanned outage
2	Compliance risk index (CRI)	
3	Customer contacts about water quality	
4	Internal sewer flooding	
5	External sewer flooding	
6	Biodiversity	
7	Operational greenhouse gas emissions (water)	
8	Operational greenhouse gas emissions (wastewater)	
9	Leakage	
10	Per capita consumption	
11	Business demand	
12	Total pollution incidents	
13	Serious pollution incidents	
14	Discharge permit compliance	
15	Bathing water quality	
16	River water quality (phosphorus)	
17	Storm overflows	
18	Mains repairs	
19	Unplanned outage	
20	Sewer collapses	
	Regional PCs	Rows 21 – 26 No Regional PCs to report
	Bespoke PCs	
27	Abstraction Incentive Mechanism (AIM)	Please see our SRN18: Performance Commitments Methodologies technical annex for a detailed explanation of our approach and methodology.
28	Embedded greenhouse gas emissions	[Not used]
29	Low carbon concrete	[Not used]



30	Low pressure	[Not used]
31	Streetworks collaboration	[Not used]
32	Water softening	[Not used]
	Forecast other outcomes	
	Outcome	
33	Supply-side scheme benefit	<p>The benefit has been calculated from Table 5 of the dWRMP24. This is the cumulative summation of the capacity of all supply-side schemes to be delivered in the preferred plan.</p> <p>The following categories have been included: External potable bulk supply/transfer, Water treatment works capacity increase, New groundwater, Aquifer recharge/Aquifer storage recovery, Internal raw water transfer, Water reuse, Desalination, New reservoir, Conjunctive use, External raw water bulk supply/transfer, Water treatment works loss recovery, Catchment management, Internal potable transfer</p> <p>The calculation excludes the benefit of existing transfers and only counts reversible transfers once.</p>
34	Wastewater network storage volume delivered or avoided	<p>Totals calculated using the same methods used in CWW20.36, CWW20.37, CWW20.41 and CWW20.43.</p> <p>Assumed that Implementations of solutions are expected to be completed in the final year of individual AMPs, therefore values are only entered for that year for 2029-30 and 2034-35</p> <ul style="list-style-type: none"> The storage volume required is estimated based on that required for modelled overflows with similar properties to the overflow considered. This estimate is made by comparing spill counts and durations, as well as estimated pass forward flows and number of properties upstream of the overflow.

LS2- Forecast outcomes from base expenditure		
Line description		Commentary
	Common PCs	For each performance commitment, we follow Ofwat's Methodology and calculate the Performance from base as the performance that we would achieve without enhancement expenditure as follows: If direction is up (i.e. higher value is better performance): Performance from base = overall performance + performance from enhancement If direction is down (i.e. lower value is better performance): Performance from base = overall performance - performance from enhancement
1	Water supply interruptions (base expenditure)	Please see our SRN18: Performance Commitments Methodologies technical annex for a detailed explanation of our approach and methodology.
2	Compliance risk index (CRI) (base expenditure)	
3	Customer contacts about water quality (base expenditure)	
4	Internal sewer flooding (base expenditure)	
5	External sewer flooding (base expenditure)	
6	Biodiversity (base expenditure)	
7	Operational greenhouse gas emissions (water) (base expenditure)	
8	Operational greenhouse gas emissions (wastewater) (base expenditure)	
9	Leakage (base expenditure)	
10	Per capita consumption (base expenditure)	
11	Business demand (base expenditure)	
12	Total pollution incidents (base expenditure)	
13	Serious pollution incidents (base expenditure)	
14	Discharge permit compliance (base expenditure)	
15	Bathing water quality (base expenditure)	
16	River water quality (phosphorus) (base expenditure)	
17	Storm overflows (base expenditure)	
18	Mains repairs (base expenditure)	
19	Unplanned outage (base expenditure)	
20	Sewer collapses (base expenditure)	



	Regional PCs	Rows 21 – 26 No Regional PCs to report
	Bespoke PCs	
27	Abstraction Incentive Mechanism (AIM)	Not expected to be used beyond 2035. Please see our SRN18: Performance Commitments Methodologies technical annex for a detailed explanation of our approach and methodology.
28	Embedded greenhouse gas emissions	[Not used]
29	Low carbon concrete	[Not used]
30	Low pressure	[Not used]
31	Street works collaboration	[Not used]
32	Water softening	[Not used]
	Forecast other outcomes	
	Outcome	
33	Supply-side scheme benefit	WRMP24 schemes are being delivered through enhancement investment, so zero has been included in this row.
34	Wastewater network storage volume delivered or avoided	The overflow schemes and storage solutions for flooding schemes are being delivered through enhancement investment, so zero has been included in this row.

LS3 - Wholesale water totex enhancement expenditure by purpose, core pathway

Line description		Commentary
	Price base 2022-23 FYA (CPIH deflated) - Water enhancement expenditure by purpose ~ totex	
1	Water enhancement totex (core pathway); Biodiversity and conservation	AMP8 WINEP included, enhancement spend for Biodiversity PC included from AMP9 onwards. There are investigations in AMP8 that will inform future AMPs schemes
2	Water enhancement totex (core pathway); Eels/fish entrainment screens	None planned for AMP8. There are investigations in AMP8 that will inform future AMPs schemes
3	Water enhancement totex (core pathway); Eels/fish passes	
4	Water enhancement totex (core pathway); Invasive Non Native Species	AMP8 WINEP included and an estimate for AMP9 as catchment management can be implemented over 2 AMP cycles.
5	Water enhancement totex (core pathway); Drinking Water Protected Areas	
6	Water enhancement totex (core pathway); Water Framework Directive	AMP8 WINEP only, there is an investigation assessing the requirement from AMP9 onwards but not defined yet
7	Water enhancement totex (core pathway); Wetland creation	There are ongoing AMP7 investigations that may result in AMP8 and beyond schemes, but these are ongoing throughout AMP7
8	Water enhancement totex (core pathway); Trade effluent discharge flow monitoring	AMP8 WINEP only shown
9	Water enhancement totex (core pathway); 25 year environment plan	None planned for AMP8. There are investigations in AMP8 that will inform future AMPs schemes
10	Water enhancement totex (core pathway); Investigations (WINEP/NEP) - desk based study only	AMP8 WINEP only shown
11	Water enhancement totex (core pathway); Investigations (WINEP/NEP) - survey, monitoring or simple modelling	
12	Investigations; (WINEP/NEP) - multiple surveys, and/or monitoring locations, and/or complex modelling water totex	
13	Water enhancement totex (core pathway); Supply-side improvements	Our programme of supply side improvements is significant and includes our commitments to the regional Strategic Resource Options (SROs) and our own new supplies. The SROs include our elements and contributions to Havant Thicket Transfer and WRP, SESRO and T2ST. In addition we need to deliver additional water in Sussex and Kent from other sources such as WRPs and desalination. See our dWRMP and our plans for AMP8 in SRN26 Water Resources – Supply Enhancement Business Case and SRN29 Water Resources – Strategic Resource Options Enhancement Business Case..

14	Water enhancement totex (core pathway); Demand-side improvements (excl leakage and metering)	Our demand side strategy to achieve our PCC targets and Business demand targets is detailed in our dWRMP and our plans for AMP8 in SRN27 Water Resources – Demand Enhancement Business Case.
15	Water enhancement totex (core pathway); Leakage improvements	Achieving the our leakage target of over 50% reduction is a key part of our demand strategy. We have moved mains replacement to line LS3.42 and the remaining elements of our leakage reduction programme are within these costs. Eg communications pipe replacement, advanced find and fix, digital networks and advanced pressure management. Details are in our dWRMP and our plans for AMP8 in SRN27 Water Resources – Demand Enhancement Business Case.
16	Water enhancement totex (core pathway); Internal interconnectors	Our dWRMP requires additional interconnectors between our Water Resource Zones to enable transfer from areas that may be water stress from other areas, these include a number of link mains. Details of these are in dWRMP and our plans for AMP8 in SRN26 Water Resources – Supply Enhancement Business Case.
17	Water enhancement totex (core pathway); New meters requested by existing customers (optants)	Meters and smart meters will be delivered through alternative delivery. See SRN24 Meter Replacement Enhancement Business Case and SRN17 Direct Procurement for Customers & Alternative Delivery Model for details.
18	New meters introduced by companies for existing customers; metering totex	
19	Water enhancement totex (core pathway); New meters for existing customers - business	
20	Water enhancement totex (core pathway); Replacement of existing basic meters with AMR meters for residential customers	
21	Water enhancement totex (core pathway); Replacement of existing basic meters with AMI meters for residential customers	
22	Water enhancement totex (core pathway); Replacement of existing AMR meters with AMI meters for residential customers	
23	Water enhancement totex (core pathway); Replacement of existing basic meters with AMR meters for business customers	Meters and smart meters will be delivered through alternative delivery. See SRN24 Meter Replacement Enhancement Business Case and SRN17 Direct Procurement for Customers & Alternative Delivery Model for details.
24	Water enhancement totex (core pathway); Replacement of existing basic meters with AMI meters for business customers	
25	Water enhancement totex (core pathway); Replacement of existing AMR meters with AMI meters for business customers	
26	Water enhancement totex (core pathway); Smart meter infrastructure	



27	Water enhancement totex (core pathway); Improvements to taste, odour and colour (grey solutions)	£0. No known taste, odour and colour issues expected for core pathway.																		
28	Water enhancement totex (core pathway); Improvements to taste, odour and colour (green solutions)	£0. No known taste, odour and colour issues expected for core pathway. All future green solutions assume to be funded via WINEP.																		
29	Water enhancement totex (core pathway); Addressing raw water quality deterioration (grey solutions)	Funding expected to continue at current level through to AMP12.																		
30	Water enhancement totex (core pathway); Addressing raw water quality deterioration (green solutions)	£0. No known raw water deterioration issues expected for core pathway. All future green solutions assume to be funded via WINEP.																		
31	Water enhancement totex (core pathway); Conditioning water to reduce plumbosolvency	£0. No schemes planned.																		
32	Water enhancement totex (core pathway); Lead communication pipes replaced or relined	Assumes all 125,000 Lead communication pipes are removed from the network by 2050. <table border="1"> <thead> <tr> <th></th> <th>AMP8 2025-30</th> <th>AMP9 2030-35</th> <th>AMP10 2035-40</th> <th>AMP11 2040-45</th> <th>AMP12 2045-50</th> </tr> </thead> <tbody> <tr> <td>Number of comm pipes replaced</td> <td>1,100</td> <td>25,400</td> <td>29,000</td> <td>35,000</td> <td>34,490</td> </tr> <tr> <td>cost to replace comm pipes (£m)</td> <td></td> <td>56.617</td> <td>64.642</td> <td>78.016</td> <td>76.879</td> </tr> </tbody> </table>		AMP8 2025-30	AMP9 2030-35	AMP10 2035-40	AMP11 2040-45	AMP12 2045-50	Number of comm pipes replaced	1,100	25,400	29,000	35,000	34,490	cost to replace comm pipes (£m)		56.617	64.642	78.016	76.879
	AMP8 2025-30	AMP9 2030-35	AMP10 2035-40	AMP11 2040-45	AMP12 2045-50															
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cost to replace comm pipes (£m)		56.617	64.642	78.016	76.879															
33	Water enhancement totex (core pathway); External lead supply pipes replaced or relined	External supply pipe volumes are based on assumption that 75% of customers allow us to replace their external supply pipe when we replace their comm pipe. <table border="1"> <thead> <tr> <th></th> <th>AMP8 2025-30</th> <th>AMP9 2030-35</th> <th>AMP10 2035-40</th> <th>AMP11 2040-45</th> <th>AMP12 2045-50</th> </tr> </thead> <tbody> <tr> <td>Number of external supply pipes replaced</td> <td>825</td> <td>19,050</td> <td>21,750</td> <td>26,250</td> <td>25,868</td> </tr> <tr> <td>cost to replace external supply pipes (£m)</td> <td></td> <td>26.975</td> <td>30.798</td> <td>37.170</td> <td>36.629</td> </tr> </tbody> </table>		AMP8 2025-30	AMP9 2030-35	AMP10 2035-40	AMP11 2040-45	AMP12 2045-50	Number of external supply pipes replaced	825	19,050	21,750	26,250	25,868	cost to replace external supply pipes (£m)		26.975	30.798	37.170	36.629
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cost to replace external supply pipes (£m)		26.975	30.798	37.170	36.629															
34	Water enhancement totex (core pathway); Internal lead supply pipes replaced or relined	Internal supply pipe volumes are based on assumption that 25% of customers agree to replace their internal supply pipe when we replace their comm pipe. <table border="1"> <thead> <tr> <th></th> <th>AMP8 2025-30</th> <th>AMP9 2030-35</th> <th>AMP10 2035-40</th> <th>AMP11 2040-45</th> <th>AMP12 2045-50</th> </tr> </thead> <tbody> <tr> <td>Number of internal supply pipes replaced</td> <td>275</td> <td>6,350</td> <td>7,250</td> <td>8,750</td> <td>8,623</td> </tr> <tr> <td>cost to replace internal supply pipes (£m)</td> <td></td> <td>8.992</td> <td>10.266</td> <td>12.390</td> <td>12.210</td> </tr> </tbody> </table>		AMP8 2025-30	AMP9 2030-35	AMP10 2035-40	AMP11 2040-45	AMP12 2045-50	Number of internal supply pipes replaced	275	6,350	7,250	8,750	8,623	cost to replace internal supply pipes (£m)		8.992	10.266	12.390	12.210
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Number of internal supply pipes replaced	275	6,350	7,250	8,750	8,623															
cost to replace internal supply pipes (£m)		8.992	10.266	12.390	12.210															

35	Water enhancement totex (core pathway); Other lead reduction related activity	£0. All Lead removal included in LS3.34, LS3.35, LS.36.																								
36	Water enhancement totex (core pathway); Resilience	Expenditure to enhance resilience at £100m per AMP. Expenditure continues in this area to enhance resilience.																								
37	Water enhancement totex (core pathway); Security - SEMD	Following significant investments post AMP9, low level of physical security measures required to respond to changing threat level.																								
38	Water enhancement totex (core pathway); Security - Cyber	Following significant investments post AMP9, low level of cyber security measures required to respond to changing threat level.																								
39	Water enhancement totex (core pathway); Greenhouse gas reduction (net zero)	<p>GHG emission reduction to meet UK Net Zero targets based on removal of remaining emissions through process interventions or other methods. See SRN46 Net Zero Carbon for more details.</p> <table border="1"> <thead> <tr> <th></th> <th>AMP8</th> <th>AMP9</th> <th>AMP10</th> <th>AMP11</th> <th>AMP12</th> </tr> <tr> <th></th> <th>2025-30</th> <th>2030-35</th> <th>2035-40</th> <th>2040-45</th> <th>2045-50</th> </tr> </thead> <tbody> <tr> <td>GHG Reductions ktCO2e</td> <td>0</td> <td>0</td> <td>9</td> <td>9</td> <td>9</td> </tr> <tr> <td>Cost to reduce emissions (£m)</td> <td>0</td> <td>0</td> <td>135</td> <td>135</td> <td>135</td> </tr> </tbody> </table>		AMP8	AMP9	AMP10	AMP11	AMP12		2025-30	2030-35	2035-40	2040-45	2045-50	GHG Reductions ktCO2e	0	0	9	9	9	Cost to reduce emissions (£m)	0	0	135	135	135
	AMP8	AMP9	AMP10	AMP11	AMP12																					
	2025-30	2030-35	2035-40	2040-45	2045-50																					
GHG Reductions ktCO2e	0	0	9	9	9																					
Cost to reduce emissions (£m)	0	0	135	135	135																					
40	Water enhancement totex (core pathway); Corporate overheads for Alternative delivery	See SRN17 Direct Procurement for Customers & Alternative Delivery Model for details.																								
41	Water enhancement totex (core pathway); Havant Thicket payments to PW, Reservoir safety, Emerging contaminants, Climate Change Adaptation; enhancement water Totex	Emerging Contaminant and climate change studies in future AMPs. Interventions in these areas are covered by Water enhancement totex (core pathway); Addressing raw water quality deterioration (grey solutions), and Water enhancement totex (core pathway); Addressing raw water quality deterioration (green solutions), and WINEP programme. It is assumed that payments PW will be incorporated within our Base Allowances after AMP8.																								
42	Water enhancement totex (core pathway); Mains replacement	The mains replacement is a key element of our dWRMP to achieve the target of 50% leakage reduction by 2050. We have separated this line out from LS3.15 to give a clear view of the requirement. The forecast and benefits are detailed in our dWRMP and the requirement for AMP8 in SRN27 Water Resources – Demand Enhancement Business Case.																								
43	Water enhancement totex (core pathway); WRMP mitigation	Value for 25-30 is based on forecast spend related to developing a mitigation plan for delays associated with our SRO in Hampshire and the Recycling; Littlehampton WwTW (Ford) scheme in Sussex. This mitigation plan is still in development and has not yet been finalised with our regulators. Please see SRN26- Water Resources - Supply enhancement business case for further details.																								
44	Water enhancement totex (core pathway); Top down efficiency	For AMP8 we have challenged the efficiency of our enhancement costs beyond our benchmarks and applied a further efficiency challenge to our enhancement plan of 1% per year. See SRN04: Costs and Outcomes Approach Technical Annex for details. For the future, we will review this on an AMP by AMP basis.																								
45	Total water enhancement totex - core pathway	Sum of core pathway.																								



LS3a - Wholesale water totex enhancement expenditure by purpose, alternative pathway 1		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 1 is a Wastewater only

LS3b - Wholesale water totex enhancement expenditure by purpose, alternative pathway 2		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 2 is a Wastewater only

LS3c - Wholesale water totex enhancement expenditure by purpose, alternative pathway 3		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 3 is a wastewater only

LS3d - Wholesale water totex enhancement expenditure by purpose, alternative pathway 4		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 4 is a wastewater only



LS3e - Wholesale water totex enhancement expenditure by purpose, alternative pathway 5

Line description		Commentary
	Timing and likelihood	
1	Decision year	From dWRMP adaptive plan
2	Most likely trigger year	From dWRMP adaptive plan
3	Likelihood	Based on dWRMP and WRSE likelihood for Situation 5
	Price base 2022-23 FYA (CPIH deflated) - Water enhancement expenditure by purpose ~ totex	
4	Water enhancement totex (alternative pathway 5); Biodiversity and conservation	We report no difference to the core pathway
5	Water enhancement totex (alternative pathway 5); Eels/fish entrainment screens	
6	Water enhancement totex (alternative pathway 5); Eels/fish passes	
7	Water enhancement totex (alternative pathway 5); Invasive Non Native Species	
8	Water enhancement totex (alternative pathway 5); Drinking Water Protected Areas	We report no difference to the core pathway
9	Water enhancement totex (alternative pathway 5); Water Framework Directive	
10	Water enhancement totex (alternative pathway 5); Wetland creation	
11	Water enhancement totex (alternative pathway 5); Trade effluent discharge flow monitoring	
12	Water enhancement totex (alternative pathway 5); 25 year environment plan	
13	Water enhancement totex (alternative pathway 5); Investigations (WINEP/NEP) - desk based study only	
14	Water enhancement totex (alternative pathway 5); Investigations (WINEP/NEP) - survey, monitoring or simple modelling	
15	Water enhancement totex (alternative pathway 5); Investigations; (WINEP/NEP) - multiple surveys, and/or monitoring locations, and/or complex modelling water totex	



16	Water enhancement totex (alternative pathway 5); Supply-side improvements	Additional schemes 2 desalination and 1 WTW-transfer, see dWRMP Situation 5 for details
17	Water enhancement totex (alternative pathway 5); Demand-side improvements (excl leakage and metering)	We report no difference to the core pathway
18	Water enhancement totex (alternative pathway 5); Leakage improvements	
19	Water enhancement totex (alternative pathway 5); Internal interconnectors	Additional transfer in Kent required, see dWRMP Situation 5 for details
20	Water enhancement totex (alternative pathway 5); New meters requested by existing customers (optants)	We report no difference to the core pathway
21	Water enhancement totex (alternative pathway 5); New meters introduced by companies for existing customers; metering totex	We report no difference to the core pathway
22	Water enhancement totex (alternative pathway 5); New meters for existing customers - business	
23	Water enhancement totex (alternative pathway 5); Replacement of existing basic meters with AMR meters for residential customers	
24	Water enhancement totex (alternative pathway 5); Replacement of existing basic meters with AMI meters for residential customers	
25	Water enhancement totex (alternative pathway 5); Replacement of existing AMR meters with AMI meters for residential customers	
26	Water enhancement totex (alternative pathway 5); Replacement of existing basic meters with AMR meters for business customers	
27	Water enhancement totex (alternative pathway 5); Replacement of existing basic meters with AMI meters for business customers	
28	Water enhancement totex (alternative pathway 5); Replacement of existing AMR meters with AMI meters for business customers	
29	Water enhancement totex (alternative pathway 5); Smart meter infrastructure	
30	Water enhancement totex (alternative pathway 5); Improvements to taste, odour and colour (grey solutions)	
31	Water enhancement totex (alternative pathway 5); Improvements to taste, odour and colour (green solutions)	



32	Water enhancement totex (alternative pathway 5); Addressing raw water quality deterioration (grey solutions)	We report no difference to the core pathway
33	Water enhancement totex (alternative pathway 5); Addressing raw water quality deterioration (green solutions)	
34	Water enhancement totex (alternative pathway 5); Conditioning water to reduce plumbosolvency	
35	Water enhancement totex (alternative pathway 5); Lead communication pipes replaced or relined	
36	Water enhancement totex (alternative pathway 5); External lead supply pipes replaced or relined	
37	Water enhancement totex (alternative pathway 5); Internal lead supply pipes replaced or relined	
38	Water enhancement totex (alternative pathway 5); Other lead reduction related activity	
39	Water enhancement totex (alternative pathway 5); Resilience	
40	Water enhancement totex (alternative pathway 5); Security - SEMD	
41	Water enhancement totex (alternative pathway 5); Security - Cyber	
42	Water enhancement totex (alternative pathway 5); Greenhouse gas reduction (net zero)	
43	Water enhancement totex (alternative pathway 5); Corporate overheads for Alternative delivery	
44	Water enhancement totex (alternative pathway 5); Havant Thicket payements to PW, Reservoir safety, Emerging contaminants, Cimate Change Adaptation; enhancement water Totex	
45	Water enhancement totex (alternative pathway 5); Mains replacement	
46	Water enhancement totex (alternative pathway 5); WRMP mitigation	
47	Water enhancement totex (alternative pathway 5); Top down efficiency	
48	Total water enhancement totex - alternative pathway 5	Sum of relevant lines.



LS3f - Wholesale water totex enhancement expenditure by purpose, alternative pathway 6

Line description		Commentary	
	Timing and likelihood		
1	Decision year	From dWRMP adaptive plan	
2	Most likely trigger year	From dWRMP adaptive plan	
3	Likelihood	Based on dWRMP and WRSE likelihood for Situation 4	
	Price base 2022-23 FYA (CPIH deflated) - Water enhancement expenditure by purpose ~ totex		
4	Water enhancement totex (alternative pathway 6); Biodiversity and conservation	We report no difference to the core pathway	
5	Water enhancement totex (alternative pathway 6); Eels/fish entrainment screens		
6	Water enhancement totex (alternative pathway 6); Eels/fish passes		
7	Water enhancement totex (alternative pathway 6); Invasive Non Native Species		
8	Water enhancement totex (alternative pathway 6); Drinking Water Protected Areas		
9	Water enhancement totex (alternative pathway 6); Water Framework Directive		
10	Water enhancement totex (alternative pathway 6); Wetland creation		
11	Water enhancement totex (alternative pathway 6); Trade effluent discharge flow monitoring		We report no difference to the core pathway
12	Water enhancement totex (alternative pathway 6); 25 year environment plan		
13	Water enhancement totex (alternative pathway 6); Investigations (WINEP/NEP) - desk based study only		
14	Water enhancement totex (alternative pathway 6); Investigations (WINEP/NEP) - survey, monitoring or simple modelling		
15	Water enhancement totex (alternative pathway 6); Investigations; (WINEP/NEP) - multiple surveys, and/or monitoring locations, and/or complex modelling water totex		



16	Water enhancement totex (alternative pathway 6); Supply-side improvements	Additional schemes 4 desalination works, 1 WTW-transfer, 1 WRP, a bulk transfer and a spur to T2ST . see dWRMP Situation 4 for details.
17	Water enhancement totex (alternative pathway 6); Demand-side improvements (excl leakage and metering)	We report no difference to the core pathway
18	Water enhancement totex (alternative pathway 6); Leakage improvements delivering	
19	Water enhancement totex (alternative pathway 6); Internal interconnectors	Additional transfer in Central Sussex required, see dWRMP Situation 4 for details
20	Water enhancement totex (alternative pathway 6); New meters requested by existing customers (optants)	We report no difference to the core pathway
21	Water enhancement totex (alternative pathway 6); New meters introduced by companies for existing customers; metering totex	
22	Water enhancement totex (alternative pathway 6); New meters for existing customers - business	
23	Water enhancement totex (alternative pathway 6); Replacement of existing basic meters with AMR meters for residential customers	We report no difference to the core pathway
24	Water enhancement totex (alternative pathway 6); Replacement of existing basic meters with AMI meters for residential customers	
25	Water enhancement totex (alternative pathway 6); Replacement of existing AMR meters with AMI meters for residential customers	
26	Water enhancement totex (alternative pathway 6); Replacement of existing basic meters with AMR meters for business customers	
27	Water enhancement totex (alternative pathway 6); Replacement of existing basic meters with AMI meters for business customers	
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29	Water enhancement totex (alternative pathway 6); Smart meter infrastructure	
30	Water enhancement totex (alternative pathway 6); Improvements to taste, odour and colour (grey solutions)	
31	Water enhancement totex (alternative pathway 6); Improvements to taste, odour and colour (green solutions)	



32	Water enhancement totex (alternative pathway 6); Addressing raw water quality deterioration (grey solutions)	We report no difference to the core pathway	
33	Water enhancement totex (alternative pathway 6); Addressing raw water quality deterioration (green solutions)		
34	Water enhancement totex (alternative pathway 6); Conditioning water to reduce plumbosolvency		
35	Water enhancement totex (alternative pathway 6); Lead communication pipes replaced or relined		
36	Water enhancement totex (alternative pathway 6); External lead supply pipes replaced or relined		
37	Water enhancement totex (alternative pathway 6); Internal lead supply pipes replaced or relined		
38	Water enhancement totex (alternative pathway 6); Other lead reduction related activity		
39	Water enhancement totex (alternative pathway 6); Resilience		
40	Water enhancement totex (alternative pathway 6); Security - SEMD		
41	Water enhancement totex (alternative pathway 6); Security - Cyber		
42	Water enhancement totex (alternative pathway 6); Greenhouse gas reduction (net zero)		
43	Water enhancement totex (alternative pathway 6); Corporate overheads for Alternative delivery		
44	Water enhancement totex (alternative pathway 6); Havant Thicket payements to PW, Reservoir safety, Emerging contaminants, Cimate Change Adaptation; enhancement water Totex		
45	Water enhancement totex (alternative pathway 6); Mains replacement		
46	Water enhancement totex (alternative pathway 6); WRMP mitigation		
47	Water enhancement totex (alternative pathway 6); Top down efficiency		We report no difference to the core pathway
48	Total water enhancement totex - alternative pathway 6		Sum of relevant lines.



LS3g - Wholesale water totex enhancement expenditure by purpose, alternative pathway 7		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 7 is a wastewater only

LS3h - Wholesale water totex enhancement expenditure by purpose, alternative pathway 8		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 8 is a wastewater only

LS3i - Wholesale water totex enhancement expenditure by purpose, alternative pathway 9		
Line description		Commentary
All	[Not used for water]	This table is not applicable to Wholesale Water as alternate pathway 9 is a wastewater only



LS4 - Wholesale wastewater totex enhancement expenditure by purpose, core pathway		
Line description	Commentary	
	Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement expenditure by purpose ~ totex	
1	Wastewater enhancement totex (core pathway); Event duration monitoring at intermittent discharges	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30.
2	Wastewater enhancement totex (core pathway); Flow monitoring at sewage treatment works	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30.
3	Wastewater enhancement totex (core pathway); Continuous river water quality monitoring	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have assumed an £8m charge per annum for every year 2030-2050 for a third party to provide continuous water quality data.
4	Wastewater enhancement totex (core pathway); MCERTs monitoring at emergency sewage pumping station overflows	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. In line with the Secretary of State's steer we have assumed costs for 75% of our emergency overflow monitoring programme are in AMP9. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP9 so have assumed no costs for 2035 onwards.
5	Wastewater enhancement totex (core pathway); Increase flow to full treatment	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme.
6	Wastewater enhancement totex (core pathway); Increase storm tank capacity at STWs - grey solution	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme.
7	Wastewater enhancement totex (core pathway); Increase storm system attenuation / treatment on a STW - green solution	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme.
8	Wastewater enhancement totex (core pathway); Storage schemes to reduce spill frequency at CSOs etc - grey solution	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme.
9	Wastewater enhancement totex (core pathway); Storage to reduce spill frequency at CSOs etc - green solution	Schemes for this are funding under DPC, therefore not included.
10	Wastewater enhancement totex (core pathway); Storm overflow - discharge relocation	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. Post AMP8 there are not proposed discharge relocation schemes, therefore zero values.
11	Wastewater enhancement totex (core pathway); Storm overflow - increase in combined sewer / trunk sewer capacity	There are no proposed schemes for combined sewer / trunk sewer capacity, therefore zero values across all AMPs.



12	Wastewater enhancement totex (core pathway); Storm overflow - sustainable drainage / attenuation in the network	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme.
13	Wastewater enhancement totex (core pathway); Storm overflow - source surface water separation	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond costs are taken from our Regional Storm Overflow Programme. No factors for climate change have been applied.
14	Wastewater enhancement totex (core pathway); Storm overflow - infiltration management	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond costs are taken from our Regional Storm Overflow Programme. No factors for climate change have been applied.
15	Wastewater enhancement totex (core pathway); Storm overflow - sewer flow management and control	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. Post AMP8 there are not proposed discharge relocation schemes, therefore zero values.
16	Wastewater enhancement totex (core pathway); Storm overflow - new / upgraded screens	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. For AMP9 and beyond costs are taken from our Regional Storm Overflow Programme. No factors for climate change have been applied.
17	Wastewater enhancement totex (core pathway); Treatment for chemical removal	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP9 so have assumed no costs for 2035 onwards.
18	Wastewater enhancement totex (core pathway); Chemicals and emerging contaminants monitoring, investigations, options appraisals	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
19	Wastewater enhancement totex (core pathway); Treatment for total nitrogen removal (chemical)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP9 so have assumed no costs for 2035 onwards.
20	Wastewater enhancement totex (core pathway); Treatment for total nitrogen removal (biological)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
21	Wastewater enhancement totex (core pathway); Nitrogen technically achievable limit monitoring, investigation or options appraisal	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
22	Wastewater enhancement totex (core pathway); Treatment for phosphorus removal (chemical)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP10 so have assumed no costs for 2040 onwards.
23	Wastewater enhancement totex (core pathway); Treatment for phosphorus removal (biological)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP10 so have assumed no costs for 2040 onwards.
24	Wastewater enhancement totex (core pathway); Treatment for nutrients (N or P) and / or sanitary determinands, nature based solution	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP9 so have assumed no costs for 2035 onwards.



25	Wastewater enhancement totex (core pathway); Treatment for tightening of sanitary parameters	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP10 so have assumed no costs for 2040 onwards.
26	Wastewater enhancement totex (core pathway); Catchment management - chemicals source control	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
27	Wastewater enhancement totex (core pathway); Catchment management - nutrient balancing	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
28	Wastewater enhancement totex (core pathway); Catchment management - catchment permitting	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
29	Wastewater enhancement totex (core pathway); Catchment management - habitat restoration	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
30	Wastewater enhancement totex (core pathway); Microbiological treatment - bathing waters, coastal and inland	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
31	Wastewater enhancement totex (core pathway); Septic tank replacements - treatment solution	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP9 so have assumed no costs for 2035 onwards.
32	Wastewater enhancement totex (core pathway); Septic tank replacements - flow diversion	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
33	Wastewater enhancement totex (core pathway); Fish outfall screens	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
34	Wastewater enhancement totex (core pathway); 25 year environment plan	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
35	Wastewater enhancement totex (core pathway); Investigations, other (WINEP/NEP) - desk-based studies only	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
36	Wastewater enhancement totex (core pathway); Investigations, other (WINEP/NEP) - survey, monitoring or simple modelling	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30.
37	Wastewater enhancement totex (core pathway); Investigations, other (WINEP/NEP) - multiple surveys, and/or monitoring locations, and/or complex modelling	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have proposed to phase into AMP9 three bathing water investigations at non-designated locations. The costs for these are shown in 2030-35.



38	Wastewater enhancement totex (core pathway); Contribution to third party schemes under WINEP/NEP only (not covered elsewhere)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
39	Wastewater enhancement totex (core pathway); River connectivity (e.g. for fish passage)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
40	Wastewater enhancement totex (core pathway); Restoration management (marine conservation zones etc)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
41	Wastewater enhancement totex (core pathway); Access and amenity for WINEP/NEP only (not covered elsewhere)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
42	Wastewater enhancement totex (core pathway); Advanced WINEP (not covered elsewhere)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
43	Wastewater enhancement totex (core pathway); Sludge storage -Tanks (pre-thickening, pre-dewatering or untreated)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
44	Wastewater enhancement totex (core pathway); Sludge storage - Tanks (thickened/dewatered or treated)	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. We have no indication of what future regulatory requirements may be for this WINEP driver beyond AMP8 so have assumed no costs for 2030 onwards.
45	Wastewater enhancement totex (core pathway); Sludge storage - Cake pads / bays /other	Our core pathway matches the February 2024 draft AMP8 WINEP plan for the years 2025-30. Post AMP9 there are no enhancement solutions, therefore zero values.
46	Wastewater enhancement totex (core pathway); Sludge treatment - Anaerobic digestion and/or advanced anaerobic digestion	Our core pathway will carry on with the development of Advanced Digestion across our operation in AMP9 and 10. It will also include the development of Advanced Thermal Conversion technologies. For more information, please refer to SRN36 Bioresources Strategy Technical Annex.
47	Wastewater enhancement totex (core pathway); Sludge treatment - Thickening and/or dewatering	Our core pathway has no enhancement solutions, therefore zero values.
48	Wastewater enhancement totex (core pathway); Sludge treatment -Other	Our core pathway matches our AMP8 Bioresources plan for the years 2025-30. Post AMP9 there are no enhancement solutions, therefore zero values.
49	Wastewater enhancement totex (core pathway); Sludge investigations and monitoring	Our core pathway does not include enhancement solutions, therefore zero values.
50	Wastewater enhancement totex (core pathway); Growth at sewage treatment works (excluding sludge treatment)	Our core pathway matches our projects commencing in AMP8 for WTW growth (which continue into AMP9). In addition, post AMP8 costs use DWF compliance taken from the DWMP and a benign demand scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to the AMP8 costs.
51	Wastewater enhancement totex (core pathway); Reduce flooding risk for properties	Our core pathway does not include enhancement solutions, therefore zero values.

52	Wastewater enhancement totex (core pathway); First time sewerage	The cost for AMP8 has been repeated to AMP12.																								
53	Wastewater enhancement totex (core pathway); Sludge enhancement (growth)	Our core pathway does not include enhancement solutions, therefore zero values.																								
54	Wastewater enhancement totex (core pathway); Odour and other nuisance	Our core pathway does not include enhancement solutions, therefore zero values.																								
55	Wastewater enhancement totex (core pathway); Resilience	Our core pathway																								
56	Wastewater enhancement totex (core pathway); Security - SEMD	£0. No current requirements so assume £0 in core.																								
57	Wastewater enhancement totex (core pathway); Security - cyber	£0. No current requirements so assume £0 in core.																								
58	Wastewater enhancement totex (core pathway); Greenhouse gas reduction (net zero)	<p>GHG emission reduction to meet UK Net Zero targets based on removal of remaining emissions through process interventions or other methods. See SRN46 Net Zero Carbon for more details.</p> <table border="1"> <thead> <tr> <th></th> <th>AMP8</th> <th>AMP9</th> <th>AMP10</th> <th>AMP11</th> <th>AMP12</th> </tr> <tr> <th></th> <th>2025-30</th> <th>2030-35</th> <th>2035-40</th> <th>2040-45</th> <th>2045-50</th> </tr> </thead> <tbody> <tr> <td>GHG Reductions ktCO2e</td> <td>0</td> <td>0</td> <td>25</td> <td>25</td> <td>25</td> </tr> <tr> <td>Cost to reduce emissions (£m)</td> <td>0</td> <td>0</td> <td>365</td> <td>365</td> <td>365</td> </tr> </tbody> </table>		AMP8	AMP9	AMP10	AMP11	AMP12		2025-30	2030-35	2035-40	2040-45	2045-50	GHG Reductions ktCO2e	0	0	25	25	25	Cost to reduce emissions (£m)	0	0	365	365	365
	AMP8	AMP9	AMP10	AMP11	AMP12																					
	2025-30	2030-35	2035-40	2040-45	2045-50																					
GHG Reductions ktCO2e	0	0	25	25	25																					
Cost to reduce emissions (£m)	0	0	365	365	365																					
59	Wastewater enhancement totex (core pathway); Corporate overheads for Alternative	See CWW3.181 and CWW3.182																								
60	Wastewater enhancement totex (core pathway); Top down efficiency	See CWW3.183 and CWW3.184																								
61	Wastewater enhancement totex (core pathway); Additional line 3	No additional data to populate, therefore zero values.																								
62	Wastewater enhancement totex (core pathway); Additional line 4																									
63	Wastewater enhancement totex (core pathway); Additional line 5																									
64	Total wastewater enhancement expenditure - core pathway		Cells are pre-populated with a formula from the template																							



LS4a - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 1		
Line description		Commentary
	Timing and likelihood	
1	Decision year	See SRN12: Long Term Delivery Strategy for details
2	Most likely trigger year	See SRN12: Long Term Delivery Strategy for details
3	Likelihood	Engineering judgement was used to create a low likelihood estimate.
	Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement expenditure by purpose ~ totex	
		For rows 4-48 we report no difference to the core pathway
49	Wastewater enhancement totex (alternative pathway 1); Sludge treatment - Anaerobic digestion and/or advanced anaerobic digestion	Under this pathway, the enhancement cast would be to build incineration plants instead of carrying on with our current core strategy of implementing Advanced Digestion across our operation. Not included in these lines are the significant operational costs associated with incineration and the potential costs related to carbon mitigation/capture required to meet the UK Net Zero targets. Refer to SRN12 Long Term Delivery Strategy for additional details.
		For rows 50 – 66we report no difference to the core pathway
67	Total wastewater enhancement expenditure - alternative pathway 1	Sum of relevant lines.

LS4b - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 2			
Line description		Commentary	
	Timing and likelihood		
1	Decision year	See SRN12: Long Term Delivery Strategy for details	
2	Most likely trigger year	See SRN12: Long Term Delivery Strategy for details	
3	Likelihood	Engineering judgement was used to create a low likelihood estimate.	
	Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement expenditure by purpose ~ totex		
4	Wastewater enhancement totex (alternative pathway 2); Event duration monitoring at intermittent discharges	No difference to core pathway	
5	Wastewater enhancement totex (alternative pathway 2); Flow monitoring at sewage treatment works		
6	Wastewater enhancement totex (alternative pathway 2); Continuous river water quality monitoring		
7	Wastewater enhancement totex (alternative pathway 2); MCERTs monitoring at emergency sewage pumping station overflows		
8	Wastewater enhancement totex (alternative pathway 2); Increase flow to full treatment		
9	Wastewater enhancement totex (alternative pathway 2); Increase storm tank capacity at STWs - grey solution		This solution classification uses the Storm Overflows least cost solution i.e costs from CWW14. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP.
10	Wastewater enhancement totex (alternative pathway 2); Increase storm system attenuation / treatment on a STW - green solution		No difference to core pathway
11	Wastewater enhancement totex (alternative pathway 2); Storage schemes to reduce spill frequency at CSOs etc - grey solution		This solution classification uses the Storm Overflows least cost solution i.e costs from CWW14. For AMP9 and beyond a benign climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP.
		For rows 12 – 66 we report no difference to the core pathway	
67	Total wastewater enhancement expenditure - alternative pathway 1	Sum of relevant lines.	

LS4c - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 3		
Line description		Commentary
	Timing and likelihood	
1	Decision year	See SRN12: Long Term Delivery Strategy for details
2	Most likely trigger year	See SRN12: Long Term Delivery Strategy for details
3	Likelihood	Engineering judgement was used to create a high likelihood estimate. This is part of our preferred plan.
	Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement expenditure by purpose ~ totex	For rows 4 – 52 we report no difference to the core pathway
53	Wastewater enhancement totex (alternative pathway 3); Growth at sewage treatment works (excluding sludge treatment)	Post AMP8 costs use DWF compliance taken from the DWMP and a moderate demand scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to the post AMP8 costs.
		For rows 54 – 66 we report no difference to the core pathway
67	Total wastewater enhancement expenditure - alternative pathway 1	Calculated Cells

LS4d - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 4		
Line description		Commentary
	Timing and likelihood	
1	Decision year	See SRN12: Long Term Delivery Strategy for details
2	Most likely trigger year	See SRN12: Long Term Delivery Strategy for details
3	Likelihood	Engineering judgement was used to create a low likelihood estimate.
	Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement expenditure by purpose ~ totex	For rows 4 – 52 we report no difference to the core pathway
53	Wastewater enhancement totex (alternative pathway 4); Growth at sewage treatment works (excluding sludge treatment)	Post AMP8 costs use DWF compliance taken from the DWMP and an adverse demand scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to the post AMP8 costs.
		For rows 54 – 66 we report no difference to the core pathway

LS4e - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 5		
Line description		Commentary

All	[Not used for Wastewater]	This table is not applicable to Wholesale wastewater as alternate pathway 5 is a Water only
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LS4f - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 6

Line description		Commentary
All	[Not used for Wastewater]	This table is not applicable to Wholesale wastewater as alternate pathway 6 is a Water only



LS4g - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 7

Line description		Commentary
1	Decision year	See SRN12: Long Term Delivery Strategy for details
2	Most likely trigger year	See SRN12: Long Term Delivery Strategy for details
3	Likelihood	Engineering judgement was used to create a high likelihood estimate. This is part of our preferred plan.
Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement expenditure by purpose ~ totex		
4	Wastewater enhancement totex (alternative pathway 7); Event duration monitoring at intermittent discharges	No difference to core pathway
5	Wastewater enhancement totex (alternative pathway 7); Flow monitoring at sewage treatment works	
6	Wastewater enhancement totex (alternative pathway 7); Continuous river water quality monitoring	
7	Wastewater enhancement totex (alternative pathway 7); MCERTs monitoring at emergency sewage pumping station overflows	
8	Wastewater enhancement totex (alternative pathway 7); Increase flow to full treatment	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond a moderate climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
9	Wastewater enhancement totex (alternative pathway 7); Increase storm tank capacity at STWs - grey solution	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond a moderate climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
10	Wastewater enhancement totex (alternative pathway 7); Increase storm system attenuation / treatment on a STW - green solution	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond a moderate climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
11	Wastewater enhancement totex (alternative pathway 7); Storage schemes to reduce spill frequency at CSOs etc - grey solution	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond a moderate climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm



		Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
12	Wastewater enhancement totex (alternative pathway 7); Storage to reduce spill frequency at CSOs etc - green solution	No difference to core pathway
13	Wastewater enhancement totex (alternative pathway 7); Storm overflow - discharge relocation	
14	Wastewater enhancement totex (alternative pathway 7); Storm overflow - increase in combined sewer / trunk sewer capacity	
15	Wastewater enhancement totex (alternative pathway 7); Storm overflow - sustainable drainage / attenuation in the network	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond a moderate climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
		For rows 16 – 53 we report no difference to the core pathway
54	Wastewater enhancement totex (alternative pathway 7); Reduce flooding risk for properties	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond a moderate climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. In addition, a percentage of Annualised Flood Risk cost used in DWMP (see page 16 of above document) is included for AMP9 and beyond.
		For rows 55 – 67 we report no difference to the core pathway

LS4h - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 8

Line description		Commentary
	Timing and likelihood	
1	Decision year	See SRN12: Long Term Delivery Strategy for details
2	Most likely trigger year	See SRN12: Long Term Delivery Strategy for details
3	Likelihood	Engineering judgement was used to create a low likelihood estimate.
	Price base 2022-23 FYA (CPH deflated) - Wastewater enhancement totex by purpose ~ totex	
4	Wastewater enhancement totex (alternative pathway 8); Event duration monitoring at intermittent discharges	No difference to core pathway
5	Wastewater enhancement totex (alternative pathway 8); Flow monitoring at sewage treatment works	
6	Wastewater enhancement totex (alternative pathway 8); Continuous river water quality monitoring	
7	Wastewater enhancement totex (alternative pathway 8); MCERTs monitoring at emergency sewage pumping station overflows	
8	Wastewater enhancement totex (alternative pathway 8); Increase flow to full treatment	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond an adverse climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
9	Wastewater enhancement totex (alternative pathway 8); Increase storm tank capacity at STWs - grey solution	
10	Wastewater enhancement totex (alternative pathway 8); Increase storm system attenuation / treatment on a STW - green solution	
11	Wastewater enhancement totex (alternative pathway 8); Storage schemes to reduce spill frequency at CSOs etc - grey solution	
12	Wastewater enhancement totex (alternative pathway 8); Storage to reduce spill frequency at CSOs etc - green solution	No difference to core pathway
13	Wastewater enhancement totex (alternative pathway 8); Storm overflow - discharge relocation	No difference to core pathway
14	Wastewater enhancement totex (alternative pathway 8); Storm overflow - increase in combined sewer / trunk sewer capacity	No difference to core pathway



15	Wastewater enhancement totex (alternative pathway 8); Storm overflow - sustainable drainage / attenuation in the network	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond an adverse climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
16	Wastewater enhancement totex (alternative pathway 8); Storm overflow - source surface water separation	No difference to core pathway
		For rows 16 – 53 we report no difference to the core pathway
54	Wastewater enhancement totex (alternative pathway 8); Reduce flooding risk for properties	This pathway matches our core pathway for AMP8 years 2025-30. For AMP9 and beyond an adverse climate change scenario factor based on Southern Water's DWMP page 15 b0050-technical-summary-on-approaches-to-uncertainty.pdf (southernwater.co.uk) is applied to costs from our Regional Storm Overflow Programme. In addition, the 1 in 50-year storm cost used in DWMP (see page 16 of above document) is included for AMP9 and beyond. This has been changed to reflect the February 2024 draft AMP8 WINEP which changes the profile of Regional Storm Overflow Programme.
		For rows 55 – 66 we report no difference to the core pathway
67	Total wastewater enhancement expenditure - alternative pathway 1	Calculated Cells

LS4i - Wholesale wastewater totex enhancement expenditure by purpose, alternative pathway 9

Line description		Commentary
All	[Not used for Wastewater]	[Not used]

LS5 - Wholesale water totex enhancement expenditure under common reference scenarios

Line description		Commentary
	Price base 2022-23 FYA (CPIH deflated) - Water enhancement expenditure by common reference scenario ~ totex	
1	Water enhancement totex - Abstraction reductions common reference scenario - low	Our Core water pathway (LS3) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
2	Water enhancement totex - Abstraction reductions common reference scenario - high	Our Alternate water pathway 6 (LS3f) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
3	Water enhancement totex - Climate change common reference scenario - low	Our Core water pathway (LS3) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
4	Water enhancement totex - Climate change common reference scenario - high	Our Alternate water pathway 5 (LS3e) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
5	Water enhancement totex - Demand common reference scenario - low	Our Core water pathway (LS3) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
6	Water enhancement totex - Demand common reference scenario - high	Our Core water pathway (LS3) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
7	Water enhancement totex - Technology common reference scenario - low	Our Core water pathway (LS3) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
8	Water enhancement totex - Technology common reference scenario - high	Our Core water pathway (LS3) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy
9	Water enhancement totex – company-specific scenario 1	[Not used]
10	Water enhancement totex – company-specific scenario 2	[Not used]
11	Water enhancement totex – company-specific scenario 3	[Not used]



LS6 - Wholesale wastewater totex enhancement expenditure under common reference scenarios		
Line description		Commentary
	Price base 2022-23 FYA (CPIH deflated) - Wastewater enhancement expenditure by common reference scenario ~ totex	
1	Wastewater enhancement totex - Abstraction reductions common reference scenario - low	Our Core wastewater pathway (LS4) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy . This version reflects the scope of the February 2024 draft WINEP.
2	Wastewater enhancement totex - Abstraction reductions common reference scenario - high	Our Core wastewater pathway (LS4) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy This version reflects the scope of the February 2024 draft WINEP.
3	Wastewater enhancement totex - Climate change common reference scenario - low	Our Core wastewater pathway (LS4) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy This version reflects the scope of the February 2024 draft WINEP.
4	Wastewater enhancement totex - Climate change common reference scenario - high	Our Alternate wastewater pathway 7 (LS4g) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy This version reflects the scope of the February 2024 draft WINEP.
5	Wastewater enhancement totex - Demand common reference scenario - low	Our Core wastewater pathway (LS4) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy This version reflects the scope of the February 2024 draft WINEP.
6	Wastewater enhancement totex - Demand common reference scenario - high	Our Alternate wastewater pathway 4 (LS4d) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy. This version reflects the scope of the February 2024 draft WINEP.
7	Wastewater enhancement totex - Technology common reference scenario - low	Our Core wastewater pathway (LS4) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy. This version reflects the scope of the February 2024 draft WINEP.
8	Wastewater enhancement totex - Technology common reference scenario - high	Our Core wastewater pathway (LS4) has been followed for this reference scenario based on our testing in SRN12: Long Term Delivery Strategy. This version reflects the scope of the February 2024 draft WINEP.
9	Wastewater enhancement totex – company-specific scenario 1	[Not used]
10	Wastewater enhancement totex – company-specific scenario 2	[Not used]
11	Wastewater enhancement totex – company-specific scenario 3	[Not used]

LS7 - Average total water, wastewater and combined bills under core and alternative pathways

Line description		Commentary																																								
A	Average total bill - water																																									
	General	<p>The bill impacts for this calculated based on the approach set out t in Appendix 1 of our guidance on long-term delivery strategies. We have used the following assumptions when calculating the bills.</p> <table border="1"> <thead> <tr> <th>Assumption</th> <th>Units</th> <th>Water Network</th> <th>Wastewater Network</th> </tr> </thead> <tbody> <tr> <td>Inflation</td> <td>%</td> <td>0%</td> <td>0%</td> </tr> <tr> <td>- Run-off Life</td> <td>%</td> <td>3.90%</td> <td>5.20%</td> </tr> <tr> <td>Allowed Return (real)</td> <td>%</td> <td>3.82%</td> <td>3.82%</td> </tr> <tr> <td>Return on Equity (real)</td> <td>%</td> <td>4.96%</td> <td>4.96%</td> </tr> <tr> <td>Notional Gearing</td> <td>%</td> <td>55%</td> <td>55%</td> </tr> <tr> <td>Statutory Tax Rate</td> <td>%</td> <td>25%</td> <td>25%</td> </tr> <tr> <td>Retail Margin</td> <td>%</td> <td>1%</td> <td>1%</td> </tr> <tr> <td>Household Proportion of Total Revenue</td> <td>%</td> <td>77%</td> <td>77%</td> </tr> <tr> <td>Actual Gearing</td> <td>%</td> <td>62%</td> <td>62%</td> </tr> </tbody> </table> <p>For DPC schemes we have included them within the enhancement spend as per the guidance, as the forecast capex and opex for in-house delivery. The bill impacts have only been calculated from the enhancement spend from the relevant LS tables.</p> <p>Our pathways do not align for water and wastewater, for the combined bill impact we have used the relevant alternative pathway and the core for the other area. For example</p> <p>LS7.26 = the Water alternative path 5 (LS7.6) + Wastewater core path (LS7.11)</p> <p>as there is no corresponding Wastewater pathway for Alternative pathway 5.</p>	Assumption	Units	Water Network	Wastewater Network	Inflation	%	0%	0%	- Run-off Life	%	3.90%	5.20%	Allowed Return (real)	%	3.82%	3.82%	Return on Equity (real)	%	4.96%	4.96%	Notional Gearing	%	55%	55%	Statutory Tax Rate	%	25%	25%	Retail Margin	%	1%	1%	Household Proportion of Total Revenue	%	77%	77%	Actual Gearing	%	62%	62%
Assumption	Units	Water Network	Wastewater Network																																							
Inflation	%	0%	0%																																							
- Run-off Life	%	3.90%	5.20%																																							
Allowed Return (real)	%	3.82%	3.82%																																							
Return on Equity (real)	%	4.96%	4.96%																																							
Notional Gearing	%	55%	55%																																							
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Retail Margin	%	1%	1%																																							
Household Proportion of Total Revenue	%	77%	77%																																							
Actual Gearing	%	62%	62%																																							
1	Average water bill - Core pathway	This has been calculated from LS3 enhancement spend. We have included a bill calculation in the supporting documentation.																																								
2	Average water bill - Alternative pathway 1	This pathway was not used for wholesale water																																								
3	Average water bill - Alternative pathway 2	This pathway was not used for wholesale water																																								



4	Average water bill - Alternative pathway 3	This pathway was not used for wholesale water
5	Average water bill - Alternative pathway 4	This pathway was not used for wholesale water
6	Average water bill - Alternative pathway 5	This has been calculated from the combined LS3 and LS3e enhancement spend. We have included a bill calculation in the supporting documentation.
7	Average water bill - Alternative pathway 6	This has been calculated from the combined LS3 and LS3f enhancement spend. We have included a bill calculation in the supporting documentation.
8	Average water bill - Alternative pathway 7	This pathway was not used for wholesale water
9	Average water bill - Alternative pathway 8	This pathway was not used for wholesale water
10	Average water bill - Alternative pathway 9	[Not used]
B	Average total bill - wastewater	
11	Average wastewater bill - Core pathway	This has been calculated from LS4 enhancement spend. We have included a bill calculation in the supporting documentation.
12	Average wastewater bill - Alternative pathway 1	This has been calculated from the combined LS4 and LS4a enhancement spend. We have included a bill calculation in the supporting documentation.
13	Average wastewater bill - Alternative pathway 2	This has been calculated from the combined LS4 and LS4b enhancement spend. We have included a bill calculation in the supporting documentation.
14	Average wastewater bill - Alternative pathway 3	This has been calculated from the combined LS4 and LS4c enhancement spend. We have included a bill calculation in the supporting documentation.
15	Average wastewater bill - Alternative pathway 4	This has been calculated from the combined LS4 and LS4d enhancement spend. We have included a bill calculation in the supporting documentation.
16	Average wastewater bill - Alternative pathway 5	This pathway was not used for wholesale wastewater
17	Average wastewater bill - Alternative pathway 6	This pathway was not used for wholesale wastewater
18	Average wastewater bill - Alternative pathway 7	This has been calculated from the combined LS4 and LS4g enhancement spend. We have included a bill calculation in the supporting documentation.
19	Average wastewater bill - Alternative pathway 8	This has been calculated from the combined LS4 and LS4h enhancement spend. We have included a bill calculation in the supporting documentation.
20	Average wastewater bill - Alternative pathway 9	[Not used]
	Average total bill - combined	
21	Average combined bill - Core pathway	This combines lines LS7.1 and LS7.11 for a combined core pathway bill impact.
22	Average combined bill - Alternative pathway 1	Equals Water core path (LS7.1) + Wastewater alternate path 1 (LS7.12) (as no water alternate pathway 1)
23	Average combined bill - Alternative pathway 2	Equals Water core path (LS7.1) + Wastewater alternate path 2 (LS7.13) (as no water alternate pathway 2)
24	Average combined bill - Alternative pathway 3	Equals Water core path (LS7.1) + Wastewater alternate path 3 (LS7.14) (as no water alternate pathway 3)
25	Average combined bill - Alternative pathway 4	Equals Water core path (LS7.1) + Wastewater alternate path 4 (LS7.15)



		(as no water alternate pathway 4)
26	Average combined bill - Alternative pathway 6	Equals Water alternate path 5 (LS7.6) + Wastewater core path (LS7.11) (as no wastewater alternate pathway 5)
27	Average combined bill - Alternative pathway 5	Equals Water alternate path 6 (LS7.7) + Wastewater core path (LS7.11) (as no wastewater alternate pathway 6)
28	Average combined bill - Alternative pathway 7	Equals Water core path 5 (LS7.1) + Wastewater alternate path 7 (LS7.18) (as no water alternate pathway 7)
29	Average combined bill - Alternative pathway 8	Equals Water core path 5 (LS7.1) + Wastewater alternate path 8 (LS7.19) (as no water alternate pathway 8)
30	Average combined bill - Alternative pathway 9	[Not used]

