

Wastewater WINEP

Addendum to SRN39 WINEP

– Enhancing Wastewater Treatment Enhancement Business Case

28 February 2024
Version 1.0



from
**Southern
Water** 

1. Introduction

We have prepared this addendum to SRN39 Enhancing Wastewater Treatment Enhancement Business Case in response to Ofwat’s query OFW-OBQ-SRN-205 (Query 205). It describes changes proposed to our WINEP in the light of discussions between Southern Water, Defra, the Environment Agency and Ofwat with respect to the scope of a WINEP which meets the latest understanding of statutory requirements. This is an interpretation of requirements and reflects the discussions with regulators in December 2023 and January 2024. We refer to this as the “February 2024 draft WINEP” in this addendum. It is not the final signed-off WINEP as this is yet to be agreed with the regulators and there remains a high degree of uncertainty on the final scope of activity that could be phased into AMP9.

This document should be read in conjunction with the October 2023 version of the enhancement business case which describes the comprehensive process we have carried out to appraise a range of options and develop efficiently costed solutions. Such processes are no different between the scope of the business plan submission and the scope of this February 2024 draft WINEP.

All costs provided in this document are in 2022/23 CPIH financial year average prices.

2. Improvements in sanitary determinands

To meet the latest understanding of the timing and scope of the WINEP, the following changes are made to our WINEP regarding sanitary determinands since the initial PR24 business plan submission in October 2023:

- Inclusion of WFD_IMP improvements at Felbridge and Paddock Wood in AMP8 (our business plan proposes WFD_ND improvements only)
- Inclusion of an additional sanitary determinand scheme, Newnham Valley Preston

These changes are captured in the business plan tables submitted to Ofwat on 16 February 2024. Changes to Section 2 of SRN39 Enhancing Wastewater Treatment Enhancement Business Case to reflect the changes are described as follows.

In our October 2023 business plan, we identified a total of 26 sites needing investment to meet tighter sanitary determinand or DO permit levels, in accordance with the following primary WINEP drivers:

- 21 sites with WFD_ND drivers for which we propose sanitary determinand permit tightening
- Two sites with WFD_IMP drivers for which we propose improved DO in the river
- Three sites with SSSI_IMP drivers for which we propose to reduce sanitary determinands in the wastewater effluent resulting from detailed AMP7 investigations and water quality sampling.

Felbridge and Paddock Wood are affected by both WFD_ND and WFD_IMP drivers. The investment required under the WFD_IMP driver for these sites is considerably more significant than the investment required under the WFD_ND driver. Due to affordability and

deliverability concerns, we had proposed to address WFD_ND requirements for these sites in AMP8 and defer the more onerous and non-cost beneficial WFD_IMP upgrades to AMP9. Following discussions with Defra and the EA, we have captured the implications of requiring all WFD_IMP actions to be completed in AMP8, without at this stage factoring in the possible outcome of a cost-benefit assessment, to derive the scope and costs of the latest understanding of the draft WINEP.

Sanitary improvements under the WFD_IMP driver at Newnham Valley Preston were not included in our October 2023 business plan. However, we have costed a single solution at this site to meet WFD_IMP and HD_IMP_NN drivers for 5mg/l BOD, phosphorus and nitrogen removal to TAL (rebuild to ASP). All of these actions remain on the WINEP as “clarify” rather than “proceed” due to an unresolved query with Natural England around the boundary of the nutrient neutrality area and because the site discharges to transitional waters. We have asked for confirmation and await a response from Natural England, and for the decision to be reflected on the WINEP spreadsheet held by the EA. Assuming that sanitary improvements are required at Newnham Valley Preston in AMP8, the total number of sanitary schemes in our enhancement business case increases to 27. Should either the WFD_IMP or HD_IMP_NN requirement fall away but the other remain, then the solution is likely to remain substantially unchanged and all costs associated would be allocated to the remaining driver(s).

The costs associated with upgrading Felbridge, Paddock Wood and Newnham Valley Preston to meet WFD_IMP requirements have been included in our updated data tables and are presented in Table 1 below. These changes result in a TOTEX increase of £30.5m for sanitary determinand schemes in AMP8. The full list of sanitary schemes for the latest understanding of an AMP8 WINEP is provided in Table 2.

Table 1 Changes to October 2023 submission for sanitary determinand schemes (£m)

Scheme	Business plan submitted to Ofwat October 2023			Draft WINEP submitted to Ofwat February 2024			Note
	CAPEX, £m	OPEX, £m	TOTEX, £m	CAPEX, £m	OPEX, £m	TOTEX, £m	
Felbridge	0.241	0.050	0.291	11.171	0.158	11.329	October included WFD_ND actions only.
Paddock Wood	6.807	0.625	7.432	9.905	0.665	10.570	February includes WFD_IMP actions.
Newnham Valley Preston	-	-	-	16.177	0.187	16.364	October phased investment to AMP9. February includes WFD_IMP
Total	7.048	0.675	7.723	37.253	1.010	38.263	

Table 2 Full list of AMP8 sanitary parameter schemes for the latest understanding of WINEP¹

Site name	Primary driver	AMP8 TOTEX, £m	Enhanced BOD permit level (mg/l)	Enhanced ammonia permit level (mg/l)	Solution type
Appledore	WFD_ND	1.172	N/A	4.7	Additional biological capacity
Barcombe New	WFD_ND	3.396	10	2.0	Additional biological capacity
Battle	WFD_ND	0.000	8	N/A	Optimisation of existing assets
Bidborough	WFD_ND	8.922	8	N/A	Tertiary treatment for both biological treatment and solids removal
Fairlight	WFD_ND	0.611	N/A	8.0	Improved recirculation of flow
Felbridge	WFD_IMP	11.329	N/A	1.0	Modification of existing ASP process, and provision of alkalinity dosing.
Godstone	WFD_ND	0.292	18	N/A	Optimisation of existing assets
Hailsham South	WFD_ND	9.119	N/A	1.0	Additional PST and control
Hawkhurst South	WFD_ND	0.287	15	N/A	Optimisation of existing assets
Headcorn	SSSI_IMP	4.208	5	N/A	Combined solution for P and BOD, includes chemical dosing and tertiary treatment
Henfield	WFD_ND	4.361	18	2.8	Additional biological capacity
Hooe	WFD_ND	0.287	14	N/A	Optimisation of existing assets
Horsham New	WFD_ND	5.324	N/A	1.5	Addition of NSAF and additional liquor treatment
Lidsey	WFD_ND	0.318	14	N/A	Optimisation of existing assets
Lingfield	WFD_ND	0.298	10	N/A	Optimisation of existing assets
May Street Herne Bay	WFD_ND	6.181	5	N/A	Additional tertiary (physical separation)
Newbury Lane Cuckfield	WFD_ND	0.290	15	N/A	Optimisation of existing assets
Newick	WFD_ND	1.851	20	N/A	Alkalinity dosing and additional secondary settlement
Newnham Valley Preston	WFD_IMP	16.364	5	N/A	Complete works replacement
Oxted	WFD_ND	0.301	9	N/A	No additional treatment capacity
Paddock Wood	WFD_IMP	10.570	N/A	1.0	Complete works replacement

¹ Data sourced from Compliant sanitary parameters.xlsx submitted in response to Ofwat query 126.

Site name	Primary driver	AMP8 TOTEX, £m	Enhanced BOD permit level (mg/l)	Enhanced ammonia permit level (mg/l)	Solution type
Smarden	SSSI_IMP	1.035	N/A	3.54	Additional tertiary (physical separation) only
Staplehurst	SSSI_IMP	4.933	N/A	2.4	Additional tertiary (physical separation)
Ticehurst	WFD_ND	10.169	5	N/A	Complete works replacement
Ulcombe	WFD_ND	5.867	9	1.5	Additional biological capacity
Biddenden	WFD_IMP	1.569	N/A	N/A	Aeration. Local river DO sag unrelated to BOD, ammonia or solids in effluent
Bethersden	WFD_IMP	1.302	N/A	N/A	Aeration. Local river DO sag unrelated to BOD, ammonia or solids in effluent

3. Nutrient removal

The following changes to our October 2023 PR24 business plan are required regarding nutrient removal to reflect scope and costs of the latest understanding of the draft WINEP:

- Inclusion of 31 Phosphorus (P) removal schemes in AMP8 which were originally phased to AMP9 (WFD_IMP and EnvAct_IMP1 drivers)
- Phasing of 14 P removal schemes to AMP9 that were originally included in AMP8 (SSSI_IMP drivers)
- Inclusion of 15 Nitrogen (N) removal schemes in AMP8 which were originally phased to AMP9 (HD_IMP_NN drivers).
- A new catchment permitting approach which meets nutrient neutrality requirements but removes the need to invest in 9 N removal schemes.

These changes have been captured in the business plan tables submitted to Ofwat on 16 February 2024. Changes to Section 3 of SRN39 Enhancing Wastewater Treatment Enhancement Business Case to describe scope and costs of the latest understanding of the AMP8 WINEP are as follows.

Phosphorus removal:

Our October 2023 business plan proposes a phased P removal programme comprised of 78 P removal schemes for delivery in AMP8 (excluding Newnham Valley Preston). These sites were prioritised based on statutory dates and benefit to cost ratios to maximise benefits delivered in AMP8. Since the Environment Act target date for P reduction is beyond AMP8, we proposed phasing all schemes with EnvAct_IMP1 as the primary driver. Furthermore, we phased to AMP9 WFD_IMP schemes if their benefit to cost ratio was below 1.5.

Following steer from the Secretary of State that some phasing of WINEP actions into AMP9 would be permitted, we submitted and explained our phasing proposal on 19 July to Defra and the EA. Our approach of phasing 31 P removal WFD_IMP schemes based on cost benefit analysis was rejected. For the latest WINEP we are showing below the implications of these schemes being required in AMP8. However, in December 2023 another meeting was held with Defra, the EA and Ofwat where it was agreed that P removal sites could be phased to AMP9 but only where there were no secondary drivers that require completion in AMP8. This included in particular schemes with SSSI_IMP driver.

The costs associated with including WFD_IMP and EnvAct_IMP1 P removal sites in AMP8, and phasing 14 agreed sites to AMP9, have been included in the data tables we submitted on 16 February as part of the response to Query 205, and are presented in Table 3 below. These changes result in a TOTEX increase of £194.5m for P removal schemes in AMP8 compared to our October 2023 submission.

The full list of P removal schemes for the latest AMP8 WINEP is provided in Table 4. Schemes we propose in our business plan for investment in AMP8 that are allowed for phasing to AMP9 are listed in Table 5.

Table 3 Changes to October 2023 submission for P removal schemes (£m)

P removal programme	AMP8		
	CAPEX, £m	OPEX, £m	TOTEX, £m
Original phased programme (CWW19 submitted to Ofwat October 2023)	266.774	6.755	273.529
Unphased programme (CWW19 allowable phasing only.xlsx)	530.339	10.265	540.604
Revised programme with 14 agreed sites phased to AMP9 (CWW19 submitted to Ofwat February 2023)	454.711	13.294	468.005

Table 4 Full list of P removal schemes for the February 2024 draft WINEP²

Site name	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced P permit level (mg/l)	Solution type
Ashford	HD_IMP	HD_IMP_NN	5.817	0.25	Chemical treatment only
Barns Green	WFD_IMP		0.251	0.25	Chemical treatment only
Battle	WFD_ND		0.292	0.30	Chemical treatment only
Berwick	WFD_IMP		1.598	1.50	Chemical treatment only
Biddenden	SSSI_IMP	WFD_IMP	2.925	0.25	Chemical treatment only
Burwash Common	WFD_IMP		1.600	0.90	Chemical treatment only
Canterbury	HD_IMP	HD_IMP_NN	17.074	0.25	Biological treatment only
Charing	HD_IMP	HD_IMP_NN	2.947	0.25	Chemical treatment only
Chartham	HD_IMP	HD_IMP_NN	5.086	0.25	Chemical treatment only
Cherry Gardens Goudhurst	WFD_IMP		3.237	0.40	Chemical treatment only
Chickenhall Eastleigh	HD_IMP	HD_IMP_NN	4.086	0.25	Chemical treatment only
Chiddingfold	WFD_IMP_MOD		0.270	0.25	Chemical treatment only
Chilham	HD_IMP		4.436	0.25	Biological treatment only
Clapham	WFD_ND		1.516	4.00	Chemical treatment only
Coldwaltham	SSSI_IMP		3.539	0.25	Chemical treatment only
Coolham	WFD_IMP		1.501	1.00	Chemical treatment only
Cowden	WFD_IMP	WFD_ND	4.586	0.50	Chemical treatment only
Cowfold	WFD_IMP		0.462	0.40	Biological treatment only

² Data sourced from AMP8 WINEP compliant.xlsx and CWW19 compliant plan 160224.xlsx

Site name	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced P permit level (mg/l)	Solution type
Cranbrook	SSSI_IMP		3.416	0.40	Chemical treatment only
Crouch Farm Mayfield	WFD_IMP		0.269	0.30	Chemical treatment only
Dial Post	WFD_IMP		0.833	1.50	Chemical treatment only
East Hoathly	WFD_IMP	WFD_ND	4.682	0.25	Chemical treatment only
Fernhurst	WFD_IMP		0.287	0.30	Chemical treatment only
Frant	WFD_IMP		1.600	1.50	Chemical treatment only
Frittenden	SSSI_IMP	WFD_IMP	4.502	0.25	Chemical treatment only
Fullerton	SSSI_IMP		0.403	0.25	Chemical treatment only
Guestling Green	WFD_IMP		6.187	0.25	Chemical treatment only
Harestock	HD_IMP_NN		0.000	0.25	Chemical treatment only
Headcorn	SSSI_IMP	WFD_IMP	4.234	0.25	Chemical treatment only
Itchingfield	WFD_IMP		3.972	0.50	Combined chemical dosing and integrated constructed wetland
Kirdford	WFD_IMP		4.143	0.60	Chemical treatment only
Lenham	HD_IMP	HD_IMP_NN	3.993	0.25	Chemical treatment only
Linton	SSSI_IMP	WFD_IMP	2.760	0.25	Chemical treatment only
Lower Beeding	WFD_IMP		1.598	1.00	Chemical treatment only
Lurgashall	WFD_IMP		0.833	2.50	Chemical treatment only
May Street Herne Bay	HD_IMP_NN		2.580	0.25	Chemical treatment only
Morestead Road Winchester	HD_IMP_NN		10.008	0.25	Chemical treatment only
New Alresford	HD_IMP_NN		7.204	0.25	Chemical treatment only
Newnham Valley Preston	HD_IMP_NN		9.758	0.25	Biological treatment only
Nutley	WFD_IMP		4.531	0.50	Chemical treatment only
Oxted	WFD_IMP_MOD		0.277	0.20	Chemical treatment only
Penshurst	WFD_IMP		3.348	0.50	Pump away
Petworth	WFD_IMP		1.861	1.00	Chemical treatment only

Site name	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced P permit level (mg/l)	Solution type
Romsey	SSSI_IMP		0.234	0.25	Chemical treatment only
Sellindge	HD_IMP	HD_IMP_NN	4.510	0.25	Chemical treatment only
Shipley	WFD_IMP		1.207	3.50	Chemical treatment only
Sissinghurst	SSSI_IMP	WFD_IMP	2.397	0.25	Chemical treatment only
Slaugham	WFD_IMP	EnvAct_IMP1	3.972	0.30	Combined chemical treatment and wetland
Smarden	SSSI_IMP	WFD_IMP	3.104	0.40	Chemical treatment only
Staplecross	WFD_IMP		9.253	0.25	Biological treatment only
Staplehurst	SSSI_IMP	WFD_IMP	4.949	0.25	Chemical treatment only
Steyping	WFD_IMP		5.776	0.30	Chemical treatment only
Stone Hill Road, Egerton	SSSI_IMP		2.869	0.25	Chemical treatment only
Stubbs Lane Brede	WFD_ND	WFD_IMP	11.172	0.25	Biological treatment only
Summer Lane Paghams	U_IMP2		0.000	2.00	No investment needed
Sutton Valence	SSSI_IMP	WFD_IMP	6.244	0.25	Biological treatment only
Tillington	WFD_IMP		1.796	1.00	Chemical treatment only
Vines Cross	WFD_IMP		4.515	0.25	Chemical treatment only
Washwell Lane Wadhurst	WFD_IMP		0.251	0.40	Chemical treatment only
Wateringbury	U_IMP1	WFD_ND	2.095	2.00	Chemical treatment only
Westbere	HD_IMP	HD_IMP_NN	7.342	0.25	Chemical treatment only
Westwell	HD_IMP		1.363	0.25	Pump away
Wilmington	WFD_IMP		1.026	4.00	Chemical treatment only
Windmill Hill Herstmonceux	WFD_IMP		0.269	0.30	Chemical treatment only
Wisborough Green	WFD_IMP		4.728	0.40	Chemical treatment only
Wye	HD_IMP	HD_IMP_NN	3.541	0.25	Chemical treatment only
Bidborough	EnvAct_IMP1	WFD_IMP	4.534	0.25	Chemical treatment only
Blackham	EnvAct_IMP1		4.429	0.50	Pump away
Brookland	WFD_IMP		2.115	1.00	Chemical treatment only

Site name	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced P permit level (mg/l)	Solution type
Coxheath	WFD_IMP	WFD_ND	11.170	0.40	Biological treatment only
Ditchling	WFD_IMP		2.913	0.30	Chemical treatment only
Ferry Hill Winchelsea	WFD_IMP		4.682	0.30	Chemical treatment only
Fordcombe	EnvAct_IMP1		1.585	4.00	Chemical treatment only
Forest Row	EnvAct_IMP1	WFD_IMP	9.892	0.25	Chemical treatment only
Hadlow	EnvAct_IMP1	WFD_IMP	4.704	0.40	Chemical treatment only
Hartfield	EnvAct_IMP1	WFD_IMP	7.235	0.50	Chemical treatment only
Icklesham	WFD_IMP	WFD_ND	4.456	0.25	Chemical treatment only
Leeds	EnvAct_IMP1	WFD_IMP	8.938	0.25	Biological treatment only
Liss	EnvAct_IMP1		5.715	0.40	Chemical treatment only
Luxfords Lane East Grinstead	EnvAct_IMP1	WFD_IMP	11.274	0.25	Chemical treatment only
Lydd	WFD_IMP		8.140	0.30	Biological treatment only
Paddock Wood	EnvAct_IMP1	WFD_IMP	9.652	0.25	Biological treatment only
Partridge Green	WFD_IMP	EnvAct_IMP1	1.600	4.00	Chemical treatment only
Pembury	EnvAct_IMP1	WFD_IMP	11.811	0.25	Biological treatment only
Plumpton	WFD_IMP	EnvAct_IMP1	3.972	0.40	Chemical treatment only
Redgate Mill Crowborough	EnvAct_IMP1		27.430	0.25	Biological treatment only
Rogate	WFD_IMP		1.641	1.00	Chemical treatment only
Rolvenden Layne	WFD_IMP		5.383	0.25	Pump away
Speldhurst	EnvAct_IMP1	WFD_ND	4.671	0.25	Chemical treatment only
St Johns Crowborough	EnvAct_IMP1	WFD_IMP	9.933	0.25	Chemical treatment only
Tonbridge	EnvAct_IMP1	WFD_IMP	19.386	0.25	Chemical treatment only
Tunbridge Wells North	WFD_IMP	WFD_ND	32.015	0.25	Biological treatment only
Wallcrouch	WFD_IMP	SSSI_IMP	2.663	0.90	Integrated constructed wetland
West Hoathly	WFD_IMP	WFD_ND	6.822	0.25	Biological treatment only
Westfield	WFD_IMP	WFD_ND	6.412	0.25	Biological treatment only

Site name	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced P permit level (mg/l)	Solution type
Winchelsea Beach	WFD_IMP		5.720	0.30	Chemical treatment only

Table 5 Schemes we proposed in our business plan for completion in AMP8 but allowed to be phased to AMP9³

Site name	Primary driver	AMP9 TOTEX, £m	Enhanced P permit level (mg/l)	Solution type
Bank	SSSI_IMP	1.637	1.00	Chemical treatment only
Barton Stacey	SSSI_IMP	1.952	0.25	Chemical treatment only
Boldre	SSSI_IMP	2.790	0.25	Pump away
Brockenhurst	SSSI_IMP	1.949	0.25	Chemical treatment only
Chilbolton	SSSI_IMP	3.357	0.25	Chemical treatment only
Evans Close, Over Wallop	SSSI_IMP	6.002	0.25	Chemical treatment only
Horsmonden	SSSI_IMP	7.824	0.25	Chemical treatment only
Lamberhurst	SSSI_IMP	4.234	0.50	Biological treatment only
Redlynch	SSSI_IMP	0.149	0.25	Chemical treatment only
Stockbridge	SSSI_IMP	3.130	0.25	Chemical treatment only
West Wellow	SSSI_IMP	7.928	0.25	Chemical treatment only
Whitegates Lane Wadhurst	SSSI_IMP	5.402	0.25	Chemical treatment only
Whiteparish	SSSI_IMP	0.149	0.25	Chemical treatment only
Bishops Waltham	EnvAct_IMP1	30.173	0.30	Chemical treatment only

Nitrogen removal:

Our October 2023 business plan proposed a phased N removal programme comprised of new total N permits at 32 sites. Eight of these sites are already operating at or below the TAL of 10 mg/L, meaning we proposed to invest in N removal upgrades at the remaining 24 sites.

As discussed in Section 3.1.1 of SRN39 Enhancing Wastewater Treatment Enhancement Business Case, application of the HD_IMP_NN driver produced a large programme of works and was a key contributor to making our AMP8 investment unaffordable and undeliverable. To mitigate these risks, we proposed a phased investment approach which

³ Data sourced from CWW19 allowable phasing only.xlsx

prioritised higher growth areas. Sites with forecast growth greater than 2% of the current population equivalent, or 200 additional dwellings, by 2040 were included in AMP8, with the remaining sites phased to AMP9.

Our N removal phasing proposal was submitted alongside our P removal phasing proposal in July 2023 to the EA. All the proposed N removal sites were outside the allowable scope for phasing, meaning they were all required for completion in AMP8.

In January 2024, we submitted a nutrient catchment permitting proposal to Defra which intends to make use of new catchment permitting provisions relating to nutrient neutrality regulations. We propose to use a catchment permitting approach to maximise nutrient removal at key sites and avoid less cost beneficial upgrades. We have identified that by operating nine of our largest nutrient-contributing sites at a stretch limit of 9 mg/L total N, we can avoid upgrades at nine other sites whilst still achieving the same load reduction than if all sites were upgraded to achieve TAL (10 mg/L). It is worth noting that six of these nine sites were included in our original phasing proposal to the EA.

The AMP8 costs associated with each version of our N removal programme are presented in Table 2 below. Our latest submission of data tables reflects our proposed catchment permitting approach. We acknowledge that, if this approach is rejected by the EA, we will need to update the data tables to reflect the unphased programme to derive the costs of the latest understanding of the WINEP.

The full list of N removal schemes for the February 2024 draft WINEP under our proposed permitting approach is provided in Table 7.

Table 6 Changes to October 2023 submission for N removal schemes (£m)

N removal programme	AMP8		
	CAPEX, £m	OPEX, £m	TOTEX, £m
Business plan programme (CWW19 submitted to Ofwat 2 October 2023)	195.848	3.644	199.492
Unphased programme (CWW19 allowable phasing only submitted 27 October 2023)	322.516	4.954	327.470
Latest programme with proposed catchment permitting (CWW19 submitted to Ofwat February 2024)	254.322	4.520	258.842

Table 7 Full list of N removal schemes for the February 2024 draft WINEP assuming the proposed catchment permitting approach is accepted⁴

Scheme	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced N permit level (mg/l)	Solution type
Ashford	HD_IMP	HD_IMP_NN	5.817	10.0	Combined chemical and biological
Ashlett Creek Fawley	HD_IMP_NN		20.699	9.0	Combined chemical and biological

⁴ Data sourced from AMP8 WINEP compliant.xlsx and CWW19 compliant plan 160224.xlsx

Scheme	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced N permit level (mg/l)	Solution type
Bosham	HD_IMP_NN		0.000	10.0	Permit change only
Budds Farm Havant	HD_IMP_NN		0.000	9.700	Permit change only
Canterbury	HD_IMP	HD_IMP_NN	17.279	10.0	Combined chemical and biological
Charing	HD_IMP	HD_IMP_NN	2.947	10.0	Combined chemical and biological
Chartham	HD_IMP	HD_IMP_NN	3.390	10.0	Combined chemical and biological
Chichester	HD_IMP_NN		0.000	9.0	Permit change only
Chickenhall Eastleigh	HD_IMP_NN		9.656	9.0	Combined chemical and biological
Chilham	HD_IMP		4.462	10.0	Combined chemical and biological
Coldwaltham	SSSI_IMP		2.359	10.0	Combined chemical and biological
East End	SSSI_IMP		5.203	10.0	Pump away
Harestock	HD_IMP_NN		7.043	10.0	Combined chemical and biological
Lavant	HD_IMP_NN		7.931	10.0	Combined chemical and biological
Lenham	HD_IMP	HD_IMP_NN	3.993	10.0	Combined chemical and biological
Lyndhurst	HD_IMP_NN		9.019	9.0	Combined chemical and biological
May Street Herne Bay	HD_IMP_NN		17.317	10.0	Combined chemical and biological
Millbrook	HD_IMP_NN		0.011	9.0	Permit change only
Morestead Road Winchester	HD_IMP_NN		9.893	10.0	Combined chemical and biological
Newnham Valley Preston	HD_IMP_NN		9.758	10.0	Combined chemical and biological
Overton	HD_IMP_NN		8.774	10.0	Combined chemical and biological
Peel Common	HD_IMP_NN		0.000	9.0	Permit change only
Pennington	HD_IMP_NN		0.003	9.0	Permit change only
Romsey	HD_IMP_NN		6.121	10.0	Combined chemical and biological
Sellindge	HD_IMP	HD_IMP_NN	4.510	10.0	Combined chemical and biological
Slowhill Copse Marchwood	HD_IMP_NN		14.786	9.0	Combined chemical and biological

Scheme	Primary driver	Secondary driver	AMP8 TOTEX, £m	Enhanced N permit level (mg/l)	Solution type
Summer Lane Pagham	U_IMP1		0.100	15.0	Permit change only
Thornham	HD_IMP_NN		0.000	10.0	Permit change only
Westbere	HD_IMP	HD_IMP_NN	4.894	10.0	Combined chemical and biological
Westwell	HD_IMP		1.807	10.0	Combined chemical and biological
Wye	HD_IMP	HD_IMP_NN	2.311	10.0	Combined chemical and biological
Flexford Lane Sway	HD_IMP_NN		7.655	9.0	Combined chemical and biological
Fullerton	HD_IMP_NN		6.743	9.0	Combined chemical and biological
Kings Somborne	HD_IMP_NN		7.553	10.0	Combined chemical and biological
Portswood	HD_IMP_NN		29.885	9.0	Combined chemical and biological
Whitchurch	HD_IMP_NN		6.746	10.0	Combined chemical and biological
Woolston	HD_IMP_NN		12.061	10.0	Combined chemical and biological
Wroxall	HD_IMP_NN		8.116	10.0	Combined chemical and biological

Newnham Valley Preston

As discussed in our business plan and in Section 2 of this document, we are awaiting confirmation of the need to invest at Newnham Valley to meet nutrient neutrality requirements. It is downstream of the Stodmarsh protected area and discharges into a tidal reach of the river. We have included the site in the scope of the February AMP8 WINEP with requirements to meet TAL for both P and N and BOD removal to 5 mg/l, but are awaiting resolution of the “clarify” position that persists in the live WINEP on the EA SharePoint site. Total scheme costs at the site are £35 million across sanitary parameters, P and N removal.

4. Chemicals removal

The changes made to our WINEP regarding chemical removal since our PR24 business plan submission in October 2023 are the removal of three treatment for chemical removal schemes which did not pass cost benefit screening but were included in our PR24 business plan at the EA's request.

We proposed these sites for AMP9 phasing and therefore we did not include them in our AMP8 business plan data tables. Changes to Section 4 of SRN39 Enhancing Wastewater Treatment Enhancement Business Case are described as follows.

In our October 2023 business plan, we were asked by the EA to include three chemical removal schemes that we considered had failed our cost benefit screening (Bidborough, Cranbrook and Tunbridge Wells North). These sites had cost benefit ratios comparable to another site, Wingham (Dambridge), which was removed from the WINEP by the EA based on failed cost benefit test. On this basis, we did not include the three schemes in our AMP8 business plan and instead proposed them to AMP9. The EA has since accepted that these sites are not cost beneficial and agreed to remove them from the WINEP entirely.

There is no change to the costs of our AMP8 WINEP as a result, but the costs of expected WINEP investment needed in AMP9 reduce by £46.5m⁵.

5. Improving bathing and shellfish water quality

There are no changes to SRN39 Enhancing Wastewater Treatment Enhancement Business Case regarding bathing and shellfish waters to reflect AMP8 costs and scope of the February 2024 draft WINEP.

6. Remaining uncertainties

There remain some material uncertainties in the scope and costs of the WINEP that are the subject of on-going analysis and conversation with regulators. We expect the uncertainties relating to treatment works to be resolved in the coming weeks, and we propose to present the outcomes of their resolution in our response to the draft determination. The uncertainties relate to two areas, as explained below.

The iron permit limits at phosphorus removal sites.

We are progressing the recalculation of iron permits using recently provided guidance from the EA. At some sites, a relaxation of the permit level from that previously calculated will cause a change to the preferred solution and a subsequent cost saving. However, there could be a tightening of the iron permit level at other sites which would change the preferred solution but increase the costs compared to those we have included in the set of

⁵ Value represents the AMP9 total TOTEX for treatment for chemical removal, sourced from table LS4 submitted to Ofwat October 2023.

data tables we are submitting alongside this addendum. We have not made any adjustments for iron permits to the costs in CWW3.

Nutrient Neutrality proposals

We have made two proposals to Defra relating to the Levelling Up and Regeneration Act (LURA) and we expect to hear back from Defra as to whether the proposals are accepted in April 2024. The first proposal is for a catchment permitting approach for nitrogen removal across four sub-catchments within the wider Solent area. This has the potential to save investment at nine smaller sites. We have reflected the lower investment in the data tables submitted alongside this addendum. If the catchment permitting proposal is unsuccessful, then AMP8 costs will increase by £67 million to meet the LURA standard upgrade duty.

The second proposal is an extension to the regulatory date when the nitrogen limit at Portswood applies. This is because the site is large, complex and constrained, and investment is needed to repurpose a number of operational assets in sequence to allow for continued operation of the site during construction. We have assumed all costs at Portswood are occurring in AMP8 in the data tables submitted alongside this addendum, but if the extension proposal is successful, a proportion of the investment at Portswood will occur in AMP9.

Transition programme

We are reviewing the full extent of our transition programme for 2024-25, in the light of the WINEP to ensure we focus the funding on delivering the AMP8 investigations, the most immediate treatment works regulatory delivery dates, and getting ahead with the large nutrient removal programme.