

# SRN-DDR-028: Water Resources – Supply Enhancement Cost Evidence Case

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from  
**Southern  
Water** 

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# 1.0 Executive summary

In October, we submitted our supply enhancement business case, outlining that we required £469.5m Totex in AMP8 to allow us to deliver supply and interconnector schemes as set out in our interim revised draft WRMP24, which was developed as part of the Water Resources South East (WRSE) regional plan and submitted to Defra and regulators in August 2023.

Since October we have updated our plan to take account of the revised delivery dates of four major schemes (Havant Thicket Reservoir, the Hampshire Water Transfer and Water Recycling Project, Littlehampton recycling scheme and the Sandown recycling scheme), creating our revised draft WRMP24. We have worked extensively with the Environmental Agency and Natural England to consider and investigate additional options to see if we could mitigate the impact of delays to schemes in the Western and Central areas and reduce reliance on drought permits. This plan includes new and accelerated options identified as part of this work and takes account of the feedback from public consultation on our draft WRMP24, the draft Regional Plan and feedback from the Environment Agency on our Statement of Response to the draft WRMP24 consultation and the interim rdWRMP24. This plan was produced as part of a two-step approach developed by WRSE to ensure that it was in alignment with the draft regional plan.

1. We submitted our revised plan to DEFRA for review in August 2024 and are expecting to begin consultation in September 2024.
2. We have updated our PR24 submission to align with our revised draft WRMP24 and have included updated costs where we have continued to refine the scope and costs in line with market values. We now have market costs for our Andover Link Main (ALM), Southampton Link Main (SLM) and Sandown Recycling schemes and have completed benchmarking analysis to evidence that these costs are robust.
3. We have also updated our construction costs for our Littlehampton recycling and Medway recycling schemes, which are being delivered via alternative delivery.
4. We have reviewed the draft determination and have included additional information to evidence the enhancement costs required related to these schemes.
5. We have updated our proposed enhancement mechanisms to consider feedback in our draft determination and are now proposing that we deliver; two schemes via DPC (Littlehampton and Aylesford recycling schemes), one scheme via the large scheme gated mechanism (Sittingbourne recycling) and two schemes via enhanced engagement (Sandown Recycling and Southampton Link Main). Inclusion of schemes in these enhancement mechanisms ensure that our customers are protected, whilst allowing delivery of significant investment that will improve water supplies to our customers in the southeast. Additionally, we are proposing a supply and interconnector enhanced engagement scheme as part of the updated WRMP24 to protect our customers from uncertainty. Many of these schemes will involve further development and hence fit into a delivery mechanism where there is a gated funding mechanism to ensure best value for customers.

## 2.0 Introduction

### 2.1 What is this document about?

This document follows on from our Water Resources- Supply enhancement business case (SRN26) and is in response to Ofwat’s Draft Determination challenges received in July 2024 for Supply side and Interconnector schemes.

Since our October business plan submission, we have made significant updates to our draft water resources management plan (WRMP). The new proposed plan for has been developed in conjunction with the WRSE regional plan and we have worked with the Environment Agency to finalise the plan with expected consultation in September this year. This document sets out the changes in solutions that have now been selected as part of finalising our revised draft WRMP24, as part of the WRSE best value programme appraisal, as well as providing further justification and evidence of the enhancement we are requesting.

This document addresses the Ofwat allowance of £326.16m versus the amount assessed in the business case submission totalling £590.61m AMP8 totex for both supply and interconnector enhancement (this total includes construction costs for Sandown and Sittingbourne WwTW recycling schemes) and details why we are now requesting £743.74.

This document is structured into the following sections:

**Section 3: Summary of Ofwat’s Draft Determination**

**Section 4: What has changed?**

**Section 5: Where are we providing additional evidence?**

## 3.0 Summary of Ofwat’s Draft Determination

In our PR24 business plan we submitted a total supply request of £207.372m for supply schemes and £170.52m for interconnector schemes totalling £378.372m (not including Sandown and Sittingbourne recycling scheme construction costs).

After reallocations, the total amount assessed for supply schemes was adjusted to £444.16m. This was made up of £237.2m for supply schemes and £206.9m for schemes that were reallocated from DPC (Sandown and Sittingbourne) to large-gated delivery. The amount assessed post reallocations for interconnectors was £146.5m making a grand total assessed for supply and interconnector schemes £590.6m.

**Table 1 – PR24 submission costs compared to draft determination assessment**

PR24 Submission (£m)		Draft Determination Assessed (£m)		Modelled Allowance (£m)	
Supply	Interconnectors	Supply	Interconnectors	Supply	Interconnectors
207.37	170.52	444.2	146.5	190.1	136.5
<b>Total</b>	378.37	<b>Total</b>	590.6	<b>Total</b>	126.6

Following post reallocations, efficiency challenges, and resulting modelled adjustments the draft determination outcome for supply enhancement was reduced to £190m representing a -19.8% decrease in enhancement spend to deliver 71.45Ml/d in benefits in AMP8. For interconnectors, the final allowance was £136m representing a -6.8% reduction in enhancement spend to deliver 101Ml/d in resilience benefits in AMP8. In the

draft determination a total of twenty-one schemes were assessed across both supply (sixteen) and interconnector (five) from the CW8 PR24 submission.

## 4.0 What has changed?

### 4.1 Overview of updates to our WRMP24

Our October submission was based on our draft WRMP24, with schemes and values as uploaded to WRSE in March 2023. We submitted our Statement of Response in August 2023 and at the time of our October business plan submission had identified that it would not be feasible to deliver our SRO scheme in the Western area and our Littlehampton Recycling scheme in the Central area to the deadlines set out in our draft WRMP, requiring the delivery dates to be amended.

For our SRO the feasibility of delivering by the original date and the extension of the forecast delivery timescales were impacted by the interface and consenting risks related to the combination with Havant Thicket Reservoir, planning and consenting risks related to the development consent order. For Littlehampton, our delivery timescales were impacted by the planning and consenting risks related to the discharge consents and assessment of the pipeline route across a National Park. These revised delivery dates are based on a better understanding of the programme and risks associated with the projects, and alignment of our SRO with the delivery of Havant Thicket Reservoir.

Since October, we have also subsequently revised the delivery date for the Sandown recycling scheme on the Isle of Wight in the Western area.

The effect of the revised dates means that we will have to continue to rely on applying for the use of drought orders and permits in our Western and Central areas. The modelling work that we have carried out in conjunction with Water Resources South East (WRSE) group has demonstrated that it is not possible to maintain supplies to our customers in our Western area in all planning scenarios without the use of drought permits and orders. This reliance is longer than we previously planned for in our Water Resources Management Plan 2019 (WRMP19), but we are significantly restricted by a lack of alternative options that can be developed in time to provide the required volumes of water.

We understand that the continued use of drought options presents concern. We have therefore been looking to minimise the level of reliance on those drought permits and orders during the interim period until our longer-term infrastructure is developed. We have been in discussions with and undertaken workshops with the Environment Agency and Natural England to identify potential options that may specifically reduce the level of reliance on drought options in practice.

Changes to dates have required us to update our draft WRMP and re-run our investment models with WRSE. We completed this re-run of the WRSE investment models in December 2023 to create a revised draft WRMP24 (rdWRMP24). Compilation of this plan follows the same processes used to create our previous plan with the addition of further optioneering. We have worked with the Environment Agency and Natural England to finalise the plan, which has now been submitted to DEFRA, with expected consultation in September this year.

We are therefore updating our PR24 submission to align with this revised draft WRMP24. Costs included in our PR24 submission differ from those included in WRMP24, as we utilise different multipliers and price base in our PR24 submission compared to WRMP24. Costs included in our PR24 submission have been reviewed in line with the PR24 costing methodology to ensure appropriate multipliers have been applied. For more

information, please see our Enhancement Cost Estimation and Optioneering Technical Annex as submitted in October 2023. The cost methodology remains the same as at October submission.

As many of our schemes are progressing at pace, we have also revised costs in our PR24 plan to reflect the most up to date cost from our CIT team or delivery partner where available. For more information on updated costs please see Section 5.

This WRSE process seeks to find the optimum option for environmental protections and customer supply. Options are optimised regionally, reflecting each WRSE company's asset base, customer needs as well as those of the natural resources that provide raw water. The regional optioneering process provides significant assurance that the best value options have been selected. Schemes within the WRSE process were required to be cost estimated with a prescribed methodology to safeguard comparison of options. However, our specific PR24 pricing process required us to adjust costs to reflect the holistic approach to project overheads. This approach ensured that project overheads are accurately reflected and recovered in-line with the full scale of our plan. Both WRSE and our PR24 methodology mean standard add-ons are applied to direct cost estimates. As such, this safeguards the integrity of optioneering undertaken through the WRSE process. In addition, the scarcity of water in the southeast of England means that all plausible options have been considered.

As part of our revised WRMP24, we completed additional optioneering by carrying out a targeted re-appraisal exercise. Having already undertaken extensive work alongside WRSE and having considered hundreds of options in developing our plan, this high-level qualitative re-appraisal identified and considered a select number of options that could potentially meet the much narrower objective of reducing the continued reliance on drought options during the period before the larger strategic options are available.

We have set out how our rdWRMP24 has changed and how this impacts our business plan below. This is split into five sections:

- [Overview of new and accelerated schemes included in our plan](#)
- [Update to our Hampshire Grid](#)
- [Revision to AMP7 schemes](#)
- [Schemes we are no longer requesting funding for](#)
- [Schemes that continue to be in our plan](#)

## 4.2 Overview of new and accelerated schemes included in our plan

We updated and re-ran our WRSE investment models to take into account changes to the delivery date of the SRO, Littlehampton Recycling and Sandown Recycling. We also included new options and accelerated the delivery of a number of options, to reduce the reliance of drought permits in our Western and Central areas. Due to this our revised draft WRMP includes schemes that we had previously not requested funding for in our October PR24 submission.

In the updated WRMP24, we are requesting £111.5m for 6 schemes not previously included in our October 2024 submission. These schemes are enhancement schemes as they allow us to provide water provisions to our customers in drought conditions, taking into account the impact of growth, climate change and license reductions. As we have now further developed our plan, we have therefore removed the CW8 WRMP mitigation line, where we previously requested £91m in October 2024, whilst we investigated potential options. This is referenced in section 4.5.

Table 2 shows the new and accelerated schemes included in our rdWRMP24, their delivery date, benefit and funding request. Further details on each scheme are included below.

**Table 2: New and accelerated schemes that now require funding as part of PR24**

Scheme name	Supply/ Interconnector	Delivery date	Benefit (MI/d)	Draft determination allowance (£m)	AMP8 Totex requested (£m)	Revised data table reference	Rational
Groundwater (HRZ): Remove constraints at Horsebridge (2.5MI/d)	Supply	2030-31	2.5	0	1.87	CW8.29	New scheme added to rdWRMP24
Groundwater: Petworth WSW return to service with a new borehole (4.0MI/d)	Supply	2030-31	4.0	0	19.28	CW8.6	Scheme accelerated from 2044- 45 to 2030- 31
Waterlevel Extreme Drought Resilience Service (45MI/d)	Supply	2030-31	45	0	8.21	CW8.1	New scheme added to rdWRMP24
Treatment capacity (HSE): Enhancement for HWTWRP	Supply	2030-31	NA*	0	79.21	CW8.25	New scheme added to rdWRMP24
Recycling (SHZ): Tonbridge to Bewl Reservoir (5.7MI/d)	Supply	2031-32	Planning only	0	0.48	CW8.33	New scheme added to rdWRMP24
Interzonal transfer (HSW-HRZ): Romsey Town and Broadlands valve expansion (5MI/d)	Interconnector	2030-31	5	0	2.47	CW8.27	Scheme accelerated from 2035- 36
<b>Totals</b>			<b>56.5</b>	<b>0</b>	<b>111.52m</b>		

\*Treatment capacity (HSE): Enhancement for HWTWRP is a treatment enhancement scheme that is required to be able to utilise the Otterbourne direct raw water transfer SRO scheme.

We have introduced or accelerated the following schemes to deliver supplies to the Western Area:

- Groundwater (HRZ): Remove constraints at Horsebridge (2.5MI/d)
- Drought option - supply side (HSW): Extreme Drought Resilience Service (45MI/d)
- Treatment capacity (HSE): Enhancement for HWTWRP
- Interzonal transfer (HSW-HRZ): Romsey Town and Broadlands valve expansion (5MI/d)

We have also brought forward the following scheme in our Central area to reduce the need for drought permits and orders in our Sussex North WRZ:

- Groundwater: Petworth WSW return to service with a new borehole (4.0MI/d)

By rerunning our Investment Value model, we now also intend to begin the planning stage of our Recycling (SHZ): Tonbridge to Bewl Reservoir (5.7MI/d) scheme into AMP8 and therefore require funding. This scheme will have a follow-on construction stage, that will bring additional supplies to our Eastern area.



### Groundwater (HRZ): Remove constraints at Horsebridge (2.5MI/d)

We are requesting £1.87m to deliver a Groundwater enhancement scheme at our Horsebridge WSW. This option has been introduced to provide benefit from 2030-31 to reduce reliance on drought permits and orders in the Western area post 2030. This option involves recovering DO through the development of a new borehole and pump capacity to increase the yield from the current 1.5MI/d to the licenced capacity of 4MI/d providing a net benefit of 2.5MI/d.

This scheme has not previously been developed through our WRMP owing to potential Water Framework Directive (WFD) deterioration risks and the relatively small gain in deployable output compared to the degree of asset and network configuration required. This zone has also traditionally been in supply-demand balance surplus as the available deployable output between Romsey and Kings Sombourne exceeds the typical demand in this zone. However, development of our Hampshire Grid options in AMP8 and new links between our Hampshire Rural and Hampshire Southampton West zone mean that this option can now give a benefit to other zones. An overview of this option and what we are requesting can be found in Table 3.

**Table 3: Summary of Horsebridge supply option**

<b>Groundwater (HRZ): Remove constraints at Horsebridge</b>		
<b>Scheme Description</b>	This scheme will increase the capacity to abstract water from our Horsebridge site in our Hampshire Rural WRZ up to 4MI/d, providing a net SDB benefit of 2.5MI/d.	
<b>Proposed assets to be delivered</b>	<ul style="list-style-type: none"> <li>• Construction of a new borehole, including casing and headworks</li> <li>• New borehole pump capable of delivering 2.5MI/d</li> <li>• Construction of additional pipework required to integrate the additional borehole into the site</li> <li>• New MCC, PLC and SCADA to allow the boreholes to integrate with the site</li> <li>• Pipework and valve modifications at the water supply works.</li> </ul>	
<b>MI/d Benefit</b>	2.5MI/d	
<b>Completion year</b>	2030-31	
<b>AMP8 Capex (£m)</b>	<b>AMP8 Opex (£m)</b>	<b>AMP8 Totex (£m)</b>
£1.87	£0	£.1.87

### Drought option - supply side (HSW): Extreme Drought Resilience Service (45MI/d)

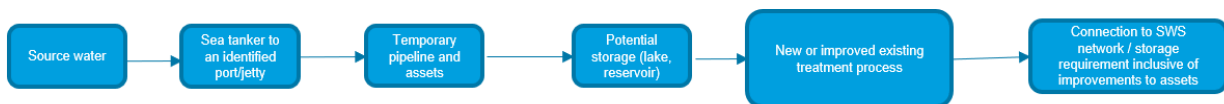
We are requesting £8.21m to cover the set-up costs related to a new option where we utilise tankers from Norway to provide a 45MI/d bulk import into our Testwood WSW in our Western Area in periods of extreme drought. In order to deliver the full benefit of this scheme we will require a further £58.3m in Opex in AMP9. This option was identified and selected via the targeted re-appraisal exercise completed for rdWRMP24 following the consultation on dWRMP. The high-level concept design of this option is that additional deliverable output (DO) from a third-party source (██████, Norway) will be provided in the form of a bulk import via sea tankers. The sea tankers will be offloaded at an identified port and transferred via temporary assets, including pumps and an above ground pipeline, to Testwood WSW for treatment and then onwards supply into the Western Area.

Following investigations and discussions with the commercial supplier, DWI and EA, this option was deemed technically feasible and we have therefore included the 45MI/d option in our rdWRMP24 model to offset the use of drought options in Hampshire by as much as possible.

**Table 4: Overview of Extreme Drought Resilience Scheme**

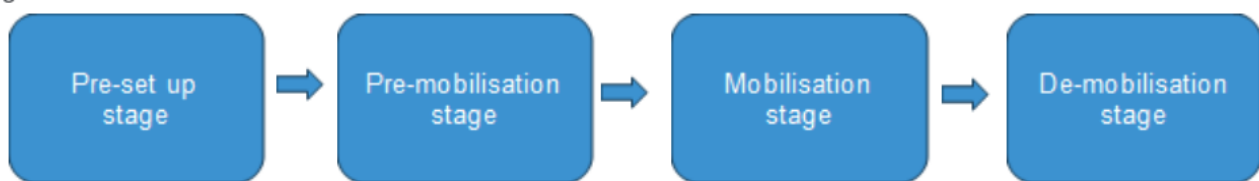
<b>Extreme Drought Resilience Service (45MI/d)</b>		
<b>Scheme Description</b>	This scheme will allow us to mobilize a bulk supply from Norway, should we face extreme drought in our Hampshire Southampton West WRZ. If mobilised this option will provide 45MI/d, by utilising a series of tankers.	
<b>Proposed assets to be delivered</b>	Funding requested is for: <ul style="list-style-type: none"> <li>• Initial purchase of the pipe and joints</li> <li>• an incident response plan</li> <li>• Required treatment work upgrades to allow Testwood WSW to treat the water. This is required because the quality of the water will change the imported water is expected to be considerably different to the current water inflows at the lake.</li> <li>• Include an annual reservation fee</li> </ul>	
<b>MI/d Benefit</b>	45 MI/d when implemented	
<b>Completion year</b>	2030-31	
<b>AMP8 Capex (£m)</b>	<b>AMP8 Opex (£m)</b>	<b>AMP8 Totex (£m)</b>
£8.21	£0	£8.21

**Error! Reference source not found.** provides a high-level overview of the expected option elements as the deliverable output progresses from source to supply.



**Figure 1: Summary of Extreme Drought Resilience Service Option**

The option has been divided into 4 stages for progression, as shown in **Error! Reference source not found.**. Funding will cover the pre-set-up stage, which is detailed below:



**Figure 2: Stages of option progression**

**Stage 1 Pre-set up stage** – this stage is to ensure all agreements with stakeholders are pre-authorized and that procurement and purchase of the essential equipment/assets/contractors are completed ahead of the options’ pre-mobilisation stage.

- The expected triggers that would require an option of this size to be mobilised required to be agreed,
- Agreement with source water provider(s),
- Option sizing agreement,
- Engagement and agreement with stakeholders, including suitable berthing locations, temporary pipeline agreements with landowners, and any additional legal and regulatory agreements and engagements,
- Pre-purchase of pre-mobilisation stage equipment/asset requirements, to include but not limited to; pipeline, pump, safety and associated equipment,

- Location and potential pre-purchase of storage location for pre-mobilisation stage equipment/asset requirements, to include but not limited to; pipelines, pumps, safety and associated equipment,
- Assessment of pre-treatment storage and treatment facility for size of inflow and current and future proposed asset use arrangements in relation to the requirement,
- Assessment of any required network connectivity upgrades from the treatment facility for the additional flows,
- Legal and regulatory review of the option concepts continuously reviewed.

### Treatment capacity (HSE): Enhancement for HWTWRP

Since we consulted on our dWRMP24, we have continued to refine our plans for providing a secure supply of water and maintaining the highest standards in terms of drinking water quality. As a result, we are now including £79.21m as a 2025-30 (AMP8) cost in our rdWRMP24 for funding half of the installation of a ceramics membrane filtration system at our Otterbourne WSW. We have apportioned the spend for this enhancement across the two areas; our strategic resilience enhancement case and WRMP supply enhancement case, to better reflect where the enhancement benefit is.

We have a DWI commitment to provide the system for the half of the works that currently treats surface water from the river Itchen (45.5 MI/d) by 2030. The other half of the site, that currently treats groundwater, requires enhancement spend to enable the treatment of water from the HWTWRP SRO. Hence the ceramic membranes, covering the full 91MI/d treatment capacity at Otterbourne are essential in enabling the commissioning of the HWTWRP SRO from 2032.

Delivering the full 91MI/d upgrade in a single phase is a significantly lower cost than undertaking in two. As well as the cost savings of delivering the upgrade in a single phase it also lowers the risk of outages and possible disruption to customers and to our network of undertaking the works over an extended, multi-phase approach.

**Table 5: Overview of treatment capacity enhancement scheme**

<b>Treatment capacity (HSE): Enhancement for HWTWRP</b>		
<b>Scheme Description</b>	This scheme will deliver enhanced treatment at our Otterbourne WSW by installing ceramic membrane filtration that will enable water from the HWTWRP SRO scheme to be treated and utilised in our Hampshire WRZs.	
<b>Proposed assets to be delivered</b>	High level scope items included in this scheme: <ul style="list-style-type: none"> <li>• Ceramic membrane plant capable of treating 91MI/d</li> <li>• Membrane waste system</li> <li>• GAC contactors, clean backwash system and dirty wash water system</li> <li>• Raw Water Blending, Screening &amp; Flocculation</li> <li>• Chemical dosing systems</li> <li>• Site activities, including power upgrades, upgrade to waste disposal, integration with SCADA and PLCs.</li> </ul> The costs included in our WRMP24 have been split across our resilience enhancement business case and our WRMP Supply Enhancement case.	
<b>MI/d Benefit</b>	NA- Enabler for HWTWRP SRO	
<b>Completion year</b>	2030-31	
<b>AMP8 Capex (£m)</b>	<b>AMP8 Opex (£m)</b>	<b>AMP8 Totex (£m)</b>
£79.21	£0	£79.21

### Groundwater: Petworth WSW return to service with a new borehole (4.0MI/d)

We are requesting £19.28m to drill a new borehole and build a new treatment works at our groundwater source at our Petworth WSW. The present boreholes are out of service due to raw water quality risks associated with their shallow depth and proximity to the River Rother.

This scheme was previously selected in our draft plan to be delivered in 2044, but we now intend to deliver this option in 2029-30 so that it provides benefit earlier in 2030-31 to help provide much needed supplies to our Central area. This scheme was brought forward following engagement and discussions with the Environment Agency, to help mitigate the changes to the delivery date of Littlehampton Recycling.

**Table 6: Overview of Petworth WSW return to service with new borehole scheme**

<b>Groundwater: Petworth WSW return to service with a new borehole</b>		
<b>Scheme Description</b>	This scheme is to bring new supplies to our Sussex North WRZ, by drilling a new borehole at our Petworth WSW and returning the site to service with new treatment processes	
<b>Proposed assets to be delivered</b>	High level scope items included in this scheme: <ul style="list-style-type: none"> <li>• Planning and development costs</li> <li>• Construction of a new borehole, including casing and headworks</li> <li>• New borehole pump/s capable of delivering 4MI/d</li> <li>• Associated pipework</li> <li>• Power supply upgrades</li> <li>• Installation of new treatment</li> </ul>	
<b>MI/d Benefit</b>	4	
<b>Completion year</b>	2030-31	
<b>AMP8 Capex (£m)</b>	<b>AMP8 Opex (£m)</b>	<b>AMP8 Totex (£m)</b>
£19.28	£0	£19.28

### Recycling (SHZ): Tonbridge to Bewl Reservoir (5.7MI/d)

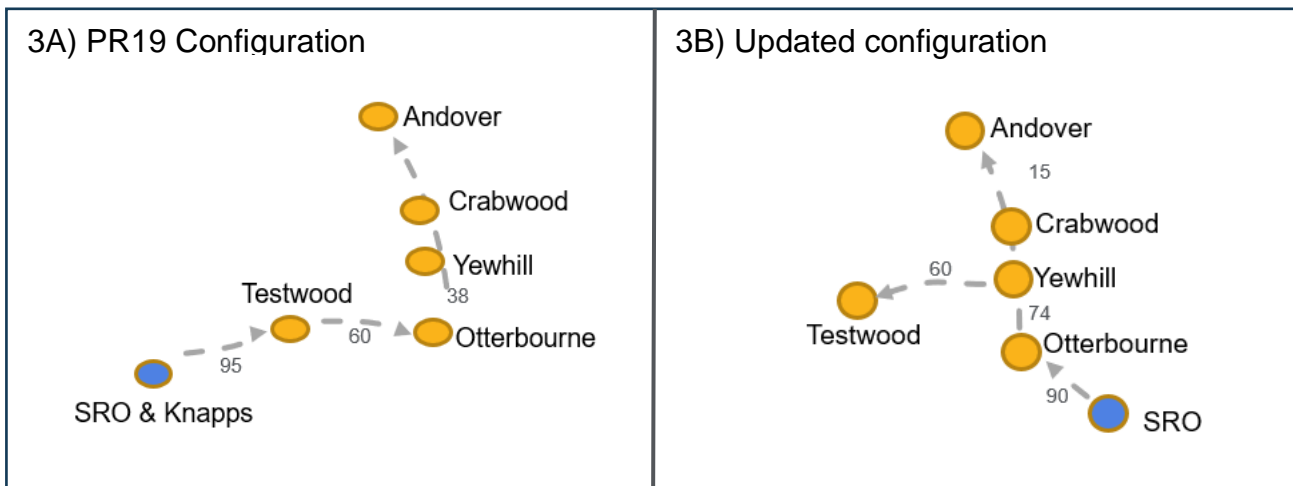
We are requesting £0.48m planning and development funding for a future water recycling scheme that will treat effluent from our Tunbridge Wells WwTW and transfer it to Bewl reservoir. This will provide much needed supplies to Hastings, in our Eastern area from 2031-32. The notional solution at this stage is for additional tertiary treatment at Tunbridge Wells WwTW and a circa 15km pipeline to Bewl reservoir. The planning and development funding will allow us to commence the project and begin early feasibility investigations and permitting activities.

## 4.3 Update to our Hampshire Grid

At PR19, our SRO was located to the west of our western area and therefore the Southampton Link Main at the time was to take water supplied by the SRO from Testwood WSW in Hampshire Southampton West WRZ, to Otterbourne WSW in Hampshire Southampton East WRZ and then our Andover link main was to transfer water from Otterbourne WSW to Andover via Crabwood.

Following revision of our SRO, we have had to reconfigure our planned Hampshire strategic grid. This has led to water from our SRO being transferred from Otterbourne WSW, in Hampshire Southampton East WRZ, up to Yewhill WSR in Hampshire Winchester WRZ. From here water is then transferred to Testwood WSW via Rownhams WSR in Hampshire Southampton West WSZ and Andover WSW via Crabwood WSR

The change can in the configuration of the Hampshire Grid can be seen in Figure 3A and 3B.



**Figure 3: Configuration of the Hampshire Grid at PR19 (A) and in revised WRMP24 (B).**

Since our October submission we have updated the naming convention and associated transfer capacities of our Hampshire Grid mains within our WRMP. We have also continued to progress these schemes and our understanding of the required scope. We now have mature costs, from our delivery partners, and have therefore updated the costs we are requesting. Delivery of these schemes provide a step change in the resilience of the supplies to our customers in the Hampshire region and allow us to better utilise water from our SRO, to provide enhanced and resilient supplies to our customers.

We have provided additional information and evidence on the robustness of these costs in Section 5 below. Table 7 shows how these schemes have been updated.

**Table 7: Update to Hampshire Grid naming convention and transfer capacities**

Scheme name October PR24	Revised scheme name August 2024	Scheme benefit at October PR24 (MI/d)	Scheme benefit rdWRMP24 (MI/d)	Transfer Capacities	Revised funding request (£m)	Revised delivery date	October Data table reference	Revised data table reference
Southampton link main 45 MI/d (HSW-HSE)	Interzonal transfer (HWZ-HSW): Yew Hill to Rownhams, Testwood bi-directional (60MI/d) SLM	45	60	60	90.05	2030-2031	CW8.11	CW8.2
Hampshire grid (reversible link HSE-HW)	Hampshire grid (reversible link HSE-HW) ALM	38	21.8	74	27.72	2030-2031	CW8.4	CW8.16
Hampshire grid (HW-HA)	Hampshire grid (reversible link HW-HA) ALM	15	15	15	84.12	2030-2031	CW8.5	CW8.12
<b>Total</b>		<b>98</b>	<b>96.8</b>		<b>201.89</b>			

## 4.4 Revision to AMP7 schemes

Since WRMP19 the scope and delivery cost of the following schemes has increased. We are therefore asking for AMP8 funding to enable their delivery. This funding request is therefore net of what we received at PR19 is related to an expanded scope and better understanding of the costs. The schemes we are requesting additional funding for are summarised in Table 8.

**Table 8: AMP7 schemes requiring additional funding due to scope and cost increases.**

Scheme name	Supply/ Interconnector	Benefit (MI/d)	Delivery date	Revised data table reference	Funding at PR19 (£m)	AMP8 Capex requested (£m)	AMP8 Opex (£m)	AMP8 Totex requested (£m)
Groundwater (SNZ): Smock Alley	Supply	3.12	31/3/2027	CW8.38	3.75	21.3	0.00	21.3
Groundwater (SNZ): Rogate refurbishment	Supply	1.6	31/3/2027	CW8.39	3.39	12.54	0.00	12.54
Newbury Groundwater	Supply	1.2	31/3/2027	CW8.28	1.25	3.01	0.34	3.35
<b>Total</b>		<b>5.92</b>			<b>8.37</b>	<b>36.85</b>	<b>0.00</b>	<b>37.2</b>

### Smock Alley and Rogate

Our Smock Alley and Rogate schemes were included in our WRMP19 and PR19 plans delivering a 3.12MI/d and 1.6MI/d benefit respectively.

For Smock Alley we were funded £3.75m. This cost was to allow the construction of a new stainless-steel borehole, the replacement of the Rapid Gravity Filters with new pressure filtration plant, the decommissioning of the old RGF plant. This scheme was taken through our risk and value process to determine the best solution to deliver the required volume, this included evaluating the WRMP notional solution alongside other options. Through this process 18 different options were evaluated and then a detailed cost estimate was prepared of the selected option.

As well as the installation of a new borehole, the option selected required demolition, reinstatement, and refurbishment of existing plant to accommodate new treatment processes and installation of new treatment processes. Revised costs for this scheme have been provided by our delivery partner and cost benchmarked against SWS cost data.

For Rogate we were funded £3.37m. This cost was based on a notional solution to rehabilitate a borehole at Rogate WSW and build a transfer pipeline to take this water to our Rotherfield WSW for treatment.

We took this scheme through our risk and value process and determined that it was not feasible to transfer the water back to Rotherfield due to demand constraints. We therefore investigated further options, evaluating 5 different options. The option selected was to rehabilitate the borehole at Rogate WSW and build a new treatment works at Rogate WSW

### Newbury

Our Newbury scheme, also referred to as our East Woodhay scheme was included in our PR19 plan as a multi-AMP scheme, delivering 1MI/d of benefit by 2027. In our October submission, we included this scheme but did not request any AMP8 funding. This however is an active scheme, that still requires funding to complete

by the delivery deadline originally set out by PR19 and included in PR24. We are therefore requesting £3.01m to enable the completion of this scheme. This AMP we have completed borehole tests, confirming that we are able to abstract up to 5MI/d from the boreholes on site East Woodhay WSW, enabling the additional 1MI/d benefit, and are continuing to progress the construction of a new high lift pumping station and transfer pipeline. The project being delivered by SWS’s framework delivery partner MGJV and is expected to start on site in the Summer of 2025 and be commissioned by March 2027. Estimates for this project have been produced by the delivery partner, MGJV, and assured via benchmarking through SWS’s Cost Intelligence Team (CIT). This scheme was challenged as part of the supply deep dive and £1.64m pre-2025-2026 AMP7 expenditure was disallowed. This figure included in CW8 pre 2025 capex was the AMP7 spend and was not a request for transition funding. This is discussed further in section 5.

### Bulk import (SNZ): SES re-zoning extension (4MI/d)

Throughout AMP7 we have continued to investigate viable options to bring water supplies to our Sussex North WRZ. In 2022 we delivered network modifications and reinforcement works to allow a bulk supply from SES Water (SES) into the Crawley area of 1.3MI/d. We have identified that this bulk supply can be extended up to 4MI/d, an increase of 2.7MI/d by completing treatment works upgrades at SES’s water supply works and further network reinforcement activities within the SES network.

We are therefore requesting funding to allow this scheme to be delivered and the current bulk supply to continue, so that a total benefit of 4MI/d is available within the Sussex North WRZ. This scheme is summarised in Table 9.

**Table 9: Summary of SES rezoning scheme**

Scheme name	Supply/ Interconnector	Benefit (MI/d)	Delivery date	Revised data table reference	Funding at PR19 (£m)	AMP8 Capex requested (£m)	AMP8 Opex	AMP8 Totex requested (£m)
Bulk import (SNZ): SES re-zoning extension (4MI/d)	Supply	4	31/3/2025	CW8.5	0m	15	0	15

## 4.5 Schemes we are no longer requesting funding for

Since submission of our business plan in October 2023, we have revised our WRMP24. This has led to several schemes being removed from our business plan submission, as they are either no longer included in our plan or are now selected at a later date and therefore do not require enhancement funding in AMP8. These schemes totalled a request of £114.5m in our October submission and are summarised in Table 10.

**Table 10: Schemes we have removed from our plan**

Scheme	Supply/ Intercon nector	Cost Requeste d (PR24) (£m)	Draft Determination Allowance (£m)	Cost Requested Aug 24	Change (£m)	Rational	October Data table reference
Groundwater: Eastern Yar replacement BH	Supply	0.72	-0.72	0	-0.72	Scheme no longer selected until 2039-40	CW8.2
Groundwater: Newchurch LGS	Supply	2.68	-2.68	0	-2.68	Scheme no longer selected until 2036-37	CW8.3
Storage: River Adur offline Reservoir - Planning	Supply	0.668	-0.668	0	-0.668	Scheme no longer selected until 2037-38	CW8.12
Transfer: Winter transfer stage 1 - Provision of a permanent sludge treatment facility at Pulborough WSW (2Ml/d)	Supply	18.89	11.424	0	-18.89	Scheme no longer selected until 2040-41	CW8.31
WRMP Mitigation	Supply	91.4	-91.4	0	-91.4	Generic mitigation line has been removed. Named schemes are now included in the plan in its place	CW8.24
<b>Total</b>		<b>£114.458</b>	<b>-£84.044</b>	<b>0</b>	<b>-£114.458</b>		

## 4.6 Schemes that remain in our rdWRMP24 plan

Except for the changes detailed in the sections above, all other schemes remain our rdWRMP24 and our business plan submission. A full list of our schemes can be found in CW8. Costs included in our CW8 table reflect the WRSE IVM model output costs for our updated revised draft WRMP24, which have been adjusted to utilise the PR24 cost multipliers and price base inline with our PR24 costing methodology. They will therefore differ from the costs set out in WRMP Table 8. Where we have further progressed schemes and have additional information either from our delivery partners or our CIT team, we have updated our costs to better reflect the most up to date costs. Table 11 shows schemes we continue to include in our plan for which we have updated our costs. It also details where we have included costs for schemes that had previously been excluded from CW8 due to delivery via DPC.

**Table 11: Schemes that remain in our plan and the WRMP24 costs have increased**

Scheme	Cost Requested (Oct 23) (£m)	Revised CW8 table (£m)	Change (£m)	Commentary
Southampton Link Main: Hampshire grid (reversible link HSE- HW)	50.08	27.24	-22.84	See section 4
Southampton Link Main Interzonal transfer (HWZ-HSW): Yew Hill to Rownhams, Testwood bi-directional	56.78	90.005	32.126	See section 4
Andover Link Main: Hampshire grid (HW-HA)	21.37	84.12	62.75	See section 4



Scheme	Cost Requested (Oct 23) (£m)	Revised CW8 table (£m)	Change (£m)	Commentary
Recycling: Littlehampton WwTW	63.370	141.975	78.605	Scheme remains in DPC, as per draft determination this is being delivered as a combined DPC with Recycling; Medway. Costs have been updated based on CIT estimates and programme maturity. These costs have been included in CW8 for completeness
Sittingbourne WwTW	108.615	121.323	12.708	Project costs remain the same as per WRMP24. Costs are now included in CW8, as is being delivered via large gated mechanism rather than DPC. As now in-house delivery the cost includes corporate overhead.
Recycling: Medway WwTW	99.310	155.568	56.258	Scheme remains in DPC, as per draft determination this is being delivered as a combined DPC with Recycling; Littlehampton. Costs have been updated based on CIT estimates and programme maturity. These costs have been included in CW8 for completeness
Recycling: Sandown WwTW	98.345	184.350	86.005	See section 4
<b>Total</b>	<b>448.174</b>	<b>767.979</b>	<b>319.805</b>	

\*Totex costs from SUP12 PR24 October submission

\*\* Totex CW8 reWRMP24

We identified that our submitted construction costs for Recycling: Littlehampton WwTW scheme were incorrect in our October submission (£63.4m), this was due to the WRMP24 spend profile including construction costs in AMP9 after delivery. Through updates to our WRMP24 and associated PR24 plan, this issue has been rectified and the spend profile is now correct.

We have further updated our construction costs for Recycling; Littlehampton WwTW and Recycling: Medway WwTW to reflect costs based on our most recent CIT estimates. These estimates are the result of the continued progression of the scheme and understanding of the complex scope required. Since PR19 scope and technology proposed has dramatically changed, the schemes now include Reverse Osmosis (RO) membranes which are extremely expensive both in Capex and Opex, on top of this inflation, land purchase and site complexities have all contributed to the increase in costs.

We will deliver our Recycling: Littlehampton WwTW and Recycling: Medway WwTW schemes via a combined DPC alternative delivery mechanism. We have continued to progress these schemes since our October submission and now have revised our delivery costs for these schemes. These costs have been used to calculate development costs, which are included in SUP12.8. Total construction costs are included in SUP12 and CW8. Land costs are included in CW3.

## 5.0 Where are we providing additional evidence?

There are six schemes below, where we provide additional evidence to justify the amount of enhancement allowance that is required to deliver these schemes in line with WRMP24. These are detailed in Table 12 and are split into three supply schemes and three interconnector schemes.

All of these schemes continue to be selected by our revised draft WRMP24 and are required to ensure that we maintain a supply and demand balance, protecting our customers from the risk of deficits whilst protecting the environment.

We are challenging a total modelled allowance (including interconnectors) of £138.179m delivering 52.9 MI/d of benefit in AMP8. The primary objective for SLM and ALM is to improve the water supply network's resilience

and flexibility in the Southampton region. For interconnector schemes Andover Main Link and Southampton Link Main, the enhancement request for both schemes have been updated and aligned with their current scope and delivery dates now reflected in our updated rdWRMP24 with delivery expected by 2030-2031. Both schemes have been estimated for A-typical costs to ensure cost efficiency. The aim in delivering both these large interconnector schemes remains aligned to Southern Water’s broader strategy to ensure reliable water supply, especially in the face of needing new water sources to phase out dependence on our historic chalk streams and more stringent drought measures.

For supply schemes Lewes Road and Newbury Groundwater, we’ve provided more evidence on scheme maturity and project development. See sections 4.4.

For Sandown WwTW, we believe that the proposed 6% funding is not sufficient given the current delivery stage the Sandown programme has reached and below we have justified the funding we require for this scheme and that this is delivered via an enhanced engagement mechanism.

**Table 12: Schemes where we are providing additional evidence of enhancement funding required.**

Scheme	Supply/ Interconnector	Status	Cost Requested (PR24) (£m)	Draft Determination Allowance (£m)	Cost Requested Aug 24 Totex (£m)	Change (DD vs Cost Requested) (£m)
<b>Southampton Link Main:</b> Southampton Link Main Interzonal transfer (HWZ-HSW): Yew Hill to Rownhams, Testwood bi-directional	Interconnector	Additional Evidence	56.78	57.879	90.05	32.171
<b>Southampton Link Main:</b> Hampshire grid (reversible link HSE-HW)	Interconnector	Additional Evidence	50.08	28.710	27.72	-0.99
<b>Andover Link Main:</b> Hampshire grid (HW-HA)	Interconnector	Additional Evidence	21.37	37.698	84.12	46.422
Groundwater: Lewes Road	Supply	Additional Evidence	13.35	7.199	12.012	6.151
Recycling: Sandown WwTW	Supply	Additional Evidence	107.52	6.693	179.83	173.137
Newbury Groundwater (East Woodhay)	Supply	Additional Evidence	0.384	0	3.35	3.35
<b>Total</b>			<b>249.484</b>	<b>138.179</b>	<b>397.082</b>	<b>260.241</b>

## 5.1 Basis of cost updates for Sandown, ALM and SLM

The costs provided by the contractors have been via a bottom-up estimating approach, which has allowed the cost estimation process to see all the relevant components (including risks and uncertainties) of the respective projects in one place. Behind the costs and associated build-up for Sandown in Appendix 1, there are more than 1000-line items being priced for the net direct works with quotes for the various MEICA and Process packages from suppliers. In addition, there is breakdown of the contractors’ indirect costs, as well as a monetised risk register. It has enabled Southern Water to make better decisions for the projects in terms of

reviews to validate the desired outcome of the projects. The cost estimation approach has also used the latest design criteria that has been developed by the design team, which is part of the business-as-usual approach. The approach involves estimating the exact details of the projects, as well as time and staff required for respective project executions.

## 5.2 Andover Link Main (ALM)

### 5.2.1 Summary of the Scheme and Progress and progress to date

The scheme will provide a peak transfer of 15Ml/d between water resource zones (WRZ) Hampshire Winchester and Hampshire Andover (HW-HA), specifically the scheme will transfer water from Yew Hill WSR to Crab Wood WSR and onward to Micheldever Road WSR and River Way WSW.

The Andover Link Main is split into two sections:

- The transfer between Yew Hill WSR and Crabwood WSR, which will utilise existing assets.
- A new 22km pipeline between Crabwood WSR and Micheldever Road WSR

Although split into two sections, it is only represented by one line in our WRMP and PR24 submission: *Hampshire grid (reversible link HW-HA)*.

The SLM and ALM schemes are being delivered in parallel via the Southern Water Asset Lifecycle Process (ALP). The concept design phase (R&V3.1/3.2) concluded in August 2022 with agreement on a single solution for each scheme to take forward to outline design. MGjv were initially appointed to provide Early Contractor Engagement (ECE) throughout the concept design phase, providing assurance to the proposals from the Southern Water project team. This has progressed to a Stage 1 Delivery Partner contract within which MGjv are undertaking outline design and significant site investigation works, progressing towards a planned stage 2 design and build contract award in Q1 2025. Outline design by MGJV is c30% complete.

As of August 2024, route alignment has been agreed, and archaeological, ground investigation and environmental studies have commenced, revealing that archaeological mitigations are required to be developed.

ALM progress update:

- We have completed a total of 280 out of 325 planned archaeology trial trenches. Figure 4 shows an aerial view of the archaeological works underway for ALM.
- Significant archaeological finds have been unearthed (22nr Iron Age bodies). An example is shown in Figure 5.
- We have completed all planned geotechnical pits, 128 in total and have so far completed 29 of the 31 planned geotechnical borehole.
- Trunk Mains Monitoring – We have completed the 7 planned trunk main monitoring schemes
- We have also completed extensive ecological and environmental surveys. Completing 325 surveys to date.

Environmental Impact Assessment (EIA) for ALM has taken place. The ALM screening opinion was received back, and a full Planning Application is required.



**Figure 4: Aerial photo of ALM archaeology works**



**Figure 5: Archaeology finding on ALM**

### 5.2.2 Updated scope and costs

Since the October PR24 submission, further development project scope has been undertaken. The previous scope was based on our initial understanding and had not been market tested. The project has matured and the costs we are now requesting have therefore been updated based on this revised scope and costs from our delivery partners. SWS's delivery partner MGJV have been engaged with proposed supply chain partners (pipework, valves, tunnels), and have built the estimate that is used for our updated cost. This has also been checked across their parent organisations and is supported by further market testing by obtaining multiple quotes for elements of scope such as pipelaying, tunnelling and work at the relevant WSR's.

We have updated the scope and associated costs as follows:

- The pipeline from Crabwood WSR to Micheldever WSR is now further developed and costs have been updated to include estimates for tunnelling, open cuts, and enabling works. This length of pipework has increase by 1.3km and we have revised the pipe material from HDPE to ductile iron.
- Funding covering land drainage works has been included
- Other costs for ecological and environmental surveys and mitigations, connections, and disinfect works have now also been included.
- The Olivers Battery WBS upgrade has now increased to a full MEICA upgrade
- River Way WSW HLPS MEICA Upgrade / Connection

Having further developed the project scope with our delivery partners the following changes have caused the largest deviation in cost:

- An increase of 1.3km of pipework, pipe material changes from HDPE to ductile iron
- Increased depth requirement of 2 meters spanning 7.3km aligned with updated pipeline design
- Requirement for directional drilling of main size ~3x larger from 630mm to 1800mm in updated design where 800mm diameter pipe is required
- Increased requirement to upgrade Olivers Battery WBS
- Land drainage is large 64.01km in the area

**Table 13: Revised costing to deliver ALM**

Components	Cost Estimate (Capex) (£m)
Olivers Battery WBS (Existing) ICA Upgrade	5.190
River Way WSW HLPS (Existing) MEICA Upgrade	4.856
Crabwood WSR to Micheldever WSR	56.395
Micheldever to WSR to Riverway	12.058
Other costs	5.162
<b>Total</b>	<b>83.661</b>

## 5.3 Southampton Link Main (SLM)

### 5.3.1 Summary of the Scheme and progress to date

The Southampton Link Main project is an internal transfer scheme that is composed of two large scale pipeline transfers:

- A bidirectional transfer between Hampshire Southampton East and Hampshire Winchester that will allow a peak transfer capacity of 74MI/d. This 74MI/d will be achieved using an existing main capable of a peak transfer of 28MI/d and the construction of a new 4.3km main capable of transferring 46MI/d. This interzonal transfer will transfer water from Otterbourne WSW to Yew Hill WSR.
- A new 14.6km potable transfer between Hampshire Winchester and Hampshire Southampton West with a transfer capacity of 60MI/d. Specifically, this option will transfer water from Yew Hill WSR to Rownhams WSR and Testwood WSW.

As detailed above the SLM and ALM schemes are being delivered in parallel via the Southern Water Asset Lifecycle Process (ALP) and have progressed through the concept design phase (August 2022). The single selected solution for SLM has progressed to a Stage 1 Delivery Partner contract within which MGjv are undertaking outline design and significant site investigation works, progressing towards a planned stage 2 design and build contract award in Q1 2025.

As of August 2024, route alignment has been agreed, and archaeological, ground investigation and environmental studies are ~90% complete, with archaeological mitigations ongoing. EIA screening opinion for SLM was received and it was assessed that works can continue under permitted development with the need for discrete planning applications for above ground infrastructure. Please see Appendix 2 for our project programme for SLM. This represents a baseline programme pre risk for weather, permitting and other delays, which excludes commissioning and handover and hence our WRMP available for use date of 2030-31.



The amount we are requesting for Hampshire grid (reversible link HSE-HW) SLM has been revised to £27.72m Totex and the amount requested for Interzonal transfer (HWZ-HSW): Yew Hill to Rownhams, Testwood bi-directional - potable (60MI/d) SLM has been revised to £90.05m Totex, totalling £117.77m. More detail on the cost development for both sections of SLM are provided below.

### Scope profile for Hampshire grid (reversible link HSE-HW) SLM (Otterbourne WSW to Yew Hill WSR)

To deliver the connection from Otterbourne to Yew Hill we are requesting £27.72m to deliver 60MI/d in benefit by 2030. We developed the scope requirement over the past 10 months, which now includes the following scope items:

- Otterbourne WSW to Yew Hill pipeline development of 4.3km, including tunnelling, open cuts, and enablement works
- High Lift Pumping station at Otterbourne
- Land drainage
- Disinfect works
- Ecological and Environmental and Mitigation works

In the deep dive assessment in the draft determination for this scheme, the PR19 funding was added back and included in the assessment for the modelled allowance. The amount requested to deliver this scheme is below the modelled allowance from the draft determination.

**Table 14: Revised costing to deliver HSE-HW**

Components	Cost Estimate Capex (£m)
Otterbourne WSW to Yew Hill	£20.189
Otterbourne HLPS	£6.100
Land drainage	£0.325
Other Costs	£0.919
<b>Total</b>	<b>£27.224</b>

### Scope profile for Interzonal transfer (HWZ-HSW): Yew Hill to Rownhams, Testwood bi-directional - potable (60MI/d) SLM (Yew Hill WSR to Rownhams WSR)

To deliver the connection from Yew Hill WSR to Rownhams WSR we are now requesting £89.425m to deliver 60MI/d in benefit by 2030. The connection from Yew Hill to Rownhams is 14.3kms and requires extensive enabling works in the region which were not included the initial estimation. The components that are included in the scope of this project:

- Yew Hill WSR to Rownhams WSR pipeline development for 14.3km including tunnelling, open cuts, and enabling works
- A new reservoir at Yew Hill
- Land drainage
- Disinfect works
- Ecological and Environmental works

**Table 15: Revised costing to deliver HWZ-HSW**

Components	Cost Estimate Capex (£m)
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Yew Hill to Rownhams WSR	£68.548
Yew Hill new Reservoir	£16.648
Land drainage	£1.437
Other Costs	£4.063
<b>Total</b>	<b>£89.425</b>

*\*Rounding error based on CIT estimates*

The previous cost estimate, at the time of our PR24 submission, was based on, high-level scope. Whilst strategic project scope has not changed since the October 2023 submission, the project detail has been refined and matured following availability of hydraulic modelling outputs, as per the project plan. The scope of the projects and the accompanying estimates have been improved by engaging contractors, maturing design, and market testing activities to come to the most efficient cost now seen in the updated WRMP24 lines Ref CW8: Hampshire grid reversible link HSE-HW and Interzonal transfer (HWZ-HSW): Yew Hill Rownhams, Testwood bi-directional – portable (60MI/d).

The commercial and delivery strategy for this project followed an expression of interest and market engagement approach, eventually concluding with an award of contract to one of SWS's framework delivery partners, MGJV. We are confident in the robustness of the costs for this scheme as MGJV have been engaged with proposed supply chain partners (pipework, valves, tunnels), and have built the estimate supplied here. This has also been checked across their parent organisations and is supported by further market testing by obtaining multiple quotes for elements of scope such as pipelaying, tunnelling and work at the relevant WSR's.

Having further developed the project maturity, the following areas have required an increase in enhancement spend since October PR24 submission:

- For both connections, a change in pipeline from HDPE to Ductile Iron. The distance required has changed from 3.5km to now requiring 4km at a greater depth
- Connection from Otterbourne to Yew Hill, scope increased from 300m to 500m tunnelling requirement and increased tunnelling length from 805m to 1.4km at a 10m depth
- The reservoir at Yew Hill has been redesigned to include 34 deep chambers for valves (not in original design) and the cost requirement for NDW increased ~3x from £3.4m to £9.7m
- Greater permanent power requirements for Otterbourne WSW and use of temporary power sources during construction
- Land drainage is large covering 52.8km of area

In the draft determination deep dive challenge for this scheme, the PR19 costs were added back and included in the in the assessment for the modelled allowance resulting in £57.879 to deliver in AMP8. The rationale provided was to accurately assess full scheme cost efficiency including scheme cost increases. Since our October submission we have updated our expected benefit. The benefit used in the model was 45MI/d, we have since increased the expected benefit in the updated WRMP24 is 60MI/d which is based on the changes to the grid formation in WRMP. We have also revised our scope requirements for tunnelling, upgrading pipe dimensions and materials, and increased distance of 0.3km to account for environmental and regional ecological challenges.

## 5.4 Lewes Road

### 5.4.1 Ofwat's Draft Determination Deep Dive



For ‘Groundwater: Lewes Road (3.5MI/d)’ a concern for base overlap with maintenance activities because the scheme scope is associated with existing infrastructure. Resulting in a 20% efficiency challenge to the company’s supply enhancement request. The efficiency challenge has been applied to the schemes total cost stated by the company (£2.669m reduction applied to ‘Groundwater: Lewes Road (3.5MI/d)) which is then inputted into the cost model for benchmarking.

### 5.4.2 Our response

Lewes Road was originally selected in WRMP19, to be operational in 2030 to provide 3.5MI/d. We asked for £13.35m in our October PR24 business plan submission to deliver scheme. Capex expenditure proposed to start in 2028-2029.

We acknowledge that we need to provide more evidence for the 20% efficiency challenge for the Lewes Road scheme as per our business plan with concerns of base overlap for maintenance amounting to - £2.669m. The modelled allowance in the draft determination of £7.199 (post efficiency challenge) is not sufficient to deliver this scheme as per our WRMP24.

The modelled allowance was applied after the efficiency challenge and was based on a scheme complexity of medium. It is our view that this scheme is not base, as we are delivering new assets that provide water required by our customers as per WRMP, and that this scheme is of higher complexity than assessed as part of the draft determination. This enhancement request for Lewes Road is not base as it is a new scheme, chosen based on adaptive planning optioneering aligned with WRMP24 planning process. The scope of this enhancement scheme is to build new assets to return Lewes Road to service as a raw water source, rather than build a treatment facility on site as originally planned. The Lewes Road site is highly constrained in terms of access and sits in a difficult location which has guided our decision to develop a return to water scheme which requires enhancement capex.

**Table 16: Lewes Road cost estimates**

Oct 23 Requested (£m)	New Enhancement Components	Allowance DD (£m)	Aug 24 Requested (£m)
13.35	<ul style="list-style-type: none"> <li>• Booster Station</li> <li>• Nitrate Removal Plant</li> <li>• Power upgrades</li> <li>• Borehole Refurb</li> <li>• SEMD upgrade costs</li> <li>• RTW Storage &amp; Pumping at New treatment works</li> <li>• RTW Pipeline to new treatment works</li> </ul>	7.199	12.012

The new assets required to deliver this scheme includes: a booster station, nitrate removal plant, power upgrade, borehole refurb, SEMD upgrades, RTW storage and pumping at treatment works, RTW pipeline at new treatment works.

Whilst we do not consider £7.19m is sufficient to deliver this scheme as per our WRMP24, we have challenged ourselves in the delivery of this scheme and proposing a 10% efficiency. We are therefore revising our enhancement request to £12.012m.

We are also proposing a similar 10% efficiency against our Groundwater: Petworth WSW return to service with a new borehole scheme. The AMP8 cost for this scheme has therefore been revised to £19.28m. These efficiencies have been assigned in recognition of the challenges received to our Water Programme.

## 5.5 Newbury Groundwater



### 5.5.1 Ofwat's Draft Determination Deep Dive

Ofwat concluded that we had not provided sufficient and convincing evidence to demonstrate that there no overlap with base planning activity expenditure for Newbury. Scheme scope presented in our business plan suggested that the activity only included option planning and development, with full option scope and costs not proposed until PR29, despite benefit being presented for the preferred plan. We have disallowed £1.64m from scheme for supply enhancement. The amount was seen as pre-2025-2026 AMP7 expenditure.

*Related: At Draft Determination we had £5.438m deducted for the following schemes:*

- 'Additional import from Portsmouth Water (Additional 21MI/d)'
- 'Newbury Groundwater'
- 'Import: SEW Kingston to KTZ Near Canterbury (2MI/d)'

### 5.5.2 Our response

As discussed in section 4.4 above, our Newbury Groundwater scheme, also referred to as East Woodhay, was included and approved in our PR19 WRMP submission as a multi-AMP scheme delivering benefit by 2027. This remains the case in our rdWRMP24 and our associated PR24 submission. We have since updated our AMP8 costs for this scheme and the associated enhancement expenditure required for Newbury in AMP8 is £3.35m, which is associated with delivering 1.2M/d by 2027 as part of our revised WRMP24. This is not a base planning activity as it will enable us to deliver the following assets that enable additional water supplies to be provided to our customers in our Hampshire Kingsclere WRZ:

- New high lift pumping station capable of delivering 5MI/d
- Construction of a new 7.1km 300mm diameter pipeline from our Newbury site to our Beacon Hill WSR.
- Pipework and valve modifications at both the water supply works and water service reservoir.

At PR19 a total scheme cost of £5.96m was assessed, with £1.25m of funding provided to allow the scheme to commence and progress in AMP7.

The £1.64m that has been disallowed, was composed of £1.26m from the pre-2025-26 column of CW8 and £0.38m AMP8 Opex. The £1.26m included in the pre-2025-26 column represented the AMP7 spend on this scheme, in line with PR19 allowances, and was not a request for transition funding. Our transition spend is highlighted in CW12 and we have updated associated commentary for our CW8 table to identify where we are requesting transition funding.

The values included the pre-2025-26 column of CW8 for Additional import from Portsmouth Water (Additional 21MI/d) and 'Import: SEW Kingston to KTZ Near Canterbury (2MI/d)' were also not requests for transition funding and instead represented the AMP7 spend for these schemes. Therefore, we request that this be considered when assessing these schemes.

## 5.6 Recycling: Sandown WwTW

### 5.6.1 Ofwat's Draft Determination Deep Dive

For Sandown, Ofwat has included the scheme under the large scheme gated process and calculated an initial development allowance as part of this gated funding process as £6.693m. This is calculated as 6% of the requested total scheme cost plus freeform request (£111.549m). This assumes no more than 6% of the company's proposed total delivery cost is needed for development cost up to the final (gate three) submission, prior to moving to delivery phase.

### 5.6.2 Our response

Southern Water believes that this is not an appropriate enhancement mechanism for this scheme as it is an active multi-AMP scheme that has already passed development stage. We are requesting an additional £177.66m on top of the £6.693m in the draft determination allowance for a total of £184.35m to be funded through Enhanced Engagement. We have set out below why we believe that this scheme should not progress as a large-gated scheme:

- The large scheme gated mechanism is intended for schemes where there are high levels of uncertainty related to optioneering, scope and cost uncertainties or where the technology is novel. We have already progressed the scheme to the stage where we have completed optioneering, chosen the preferred option and defined the scope. Therefore, the highest degree of uncertainty is not related to optioneering and scope and where the programme will mature during AMP8 will be increased clarity for cost estimates. It is our contention that Sandown is most appropriate for the Enhanced Engagement delivery mechanism.
- The mechanism requires a combined gate 1 and 2 submission on the 3 November 2025 and a gate 3 submission on the 4<sup>th</sup> of May 2026. It is indicated that draft decisions will be made in Summer 2026 and will be conclude in December 2026 when the agreed scheme and cost will be approved for delivery. The timeline associated with the gate submissions for this engagement mechanism does not align with our project programme. The combined gate 1 and 2 submission covers initial concept design and multi-solution decision making and design confirmation. We have completed multi-level optioneering, both as part of WRMP and our R&V process. More information can be found on this in section 4.6.3 below. We also intend to have outline design completed by August 2024.
- WRMP24 requires this project to complete by 2030. The project is on track to meet this deadline, however if we are not able to progress at pace this will put the delivery deadline as set out by WRMP24 at risk. If it is delayed it impact our supply and demand balance for the Isle of Wight and affect our customers by putting them at risk of loss of supplies during drought. We have selected supply options in the Western Area to reduce our reliance on drought permits and orders, delays to schemes prolongs the use of these permits.
- This scheme is appropriate for Enhanced Engagement delivery mechanism to reduce adverse impacts of cost uncertainty for project development. The project is past the development stage and the scope has been defined through our ALP process. We are currently on site carrying out site surveys and currently progressing plans with the framework delivery partner CMPD.
- This scheme has been formally communicated to OfWat and other key stakeholders (EA/DWI). Adding the additional process of submission and approval of the Large Gated schemes, will cause a further delay to the project and therefore further impact the completion date further. Additionally, this will increase the overall project spend due to delayed time and increased cost in passing through the gates.

- Through OCF337, Long Term Supply and Demand commitment, we are reporting the current forecast completion date and associated MI/d output to be achieved. Any change to the current schedule relating to a change in delivery arrangements at this stage, will risk this commitment and require the business to update the reporting against this regulatory output as this carries significant financial and reputational damage in respect of ODI's.

### 5.6.3 Progress to date and activities underway

Sandown Recycling scheme was first selected in WRMP19 and has continued to be selected as a preferred scheme in our WRMP24. In developing WRMP19 and WRMP24 extensive optioneering is undertaken to select both supply and demand options that fulfil our obligations to within our region.

The Sandown Recycling scheme commenced in AMP7, progressing through our APL and is now at the stage of having a preferred solution that is being progressed through the next stages of our Risk and Value (R&V) process.

To get to this stage the scheme has progressed through R&V1, 2, to validate the need and root cause, and has completed Risk and Value 3 'Preferred Option Identification' where extensive optioneering to review and shortlist options, followed by preferred solution selection.

Nine different options were considered during our optioneering process to then short list and get down to final selection. Procurement of the Main Works Contractor slated for July 2025:

- Shortlisted options were reviewed in our RV process to include scope, location, process, risk, constraints, environmental concerns, power supply, value for money.
- Each option to produce recycled water for 15MI/d
- Whole life cost and CIT estimate build ups: Capex, Opex, and carbon assessments
- New technologies and scenario testing
- WLCM build up and assessment

Documentation of our R&V process to date is available upon request.

We are now progressing activities to get to the next Risk & Value Stage, R&V 4 'Design and Cost Value Management'. The following activities are underway:

- Outline Design and GI Works
- Enabling Works (Environmental Survey)
- EIA Scoping report preparation
- SW are under contract with our Delivery Partner CMDP to progress the project for development of the scheme to MLOC.

Based on the work completed on this scheme to date and the activities currently underway the project is considered too mature in the project lifecycle to warrant introduction of Large Gated Development mechanism. This is given it has been through our governance regime of R&V gates to confirm the problem, identify a solution long list, short list and preferred solution. Scheme development has to all intents and purpose been concluded. Main works contract award is scheduled for July 25, 2025. All complex elements that require long lead order are scheduled and delivery will commence imminently once contract is awarded. Project completion scheduled for March 2030.

Based on the work completed on this scheme to date and the activities currently underway the project is considered too mature in the project lifecycle to warrant introduction to Large Gated Schemes.

#### 5.6.4 Update to cost

Since our October submission we have continued to develop the scope of this project, based on the preferred option selected. The following scope and/or cost challenges have been encountered and reflected in our revised costs:

- Site for the recycling plant has now been identified. This is on an old landfill. Complexities around landfill remediation (given the proposed site is former wasteland) have been matured in the scope and estimate. The estimate now includes £7.9m allowance for earthworks/remediation.
- Ecological and environmental constraints have also been matured and updated, as has the Bio-Diversity Net Gain consideration. The cost estimate now includes £1.9m for BNG and EIA allowance.
- Ecological surveys undertaken since October 2023 have also discovered significantly more badger sets than previously known in the vicinity of the proposed water recycling plant site. As badgers and their sets are protected by law (The Protection of Badgers Act 1992), advice on relocation and/or methods to protect resident badgers to the effects of vibration during project construction and ongoing operation has also had a serious influence on revised costs.
- Additionally, since October 2023, customer engagement along the proposed pipeline route has uncovered a potential need to mitigate impacts on a cherry orchard.
- DNO power requirements to support the WRP have also been developed and continue to mature. This is currently still evolving, hence covered part in baseline cost and part in risk.
- Through further development of the option, we have now included scope related to the change from an initial final effluent WRP to a full crude effluent WRP.
- We now have an estimated cost for this scope produced by the supply chain and tested by Southern Water’s Cost Intelligence Team. Use of SWS’s Delivery Partner framework has meant that the supplier (CMDP) has already been subject to a competitive evaluation process and have been assured as established suppliers. In awarding this contract, SWS went to great lengths to engage our supplier to safeguard their levels of interest, discuss and rationalise risks and assure that they have the right capability.

A breakdown of our costs is included in Appendix 1.

Sandown recycling is currently in the concept design stage and cost estimates are based around a class estimate giving a range (+ and -) around a mid-point base cost forecast. As the project matures through outline design and onto submission of MLOC (most likely outturn cost) costs forecast associated with detail design and delivery will be locked and approval sought for award of contract and commencement of construction. Our revised cost is built up from the following net direct costs included in Table 17.

**Table 17: Details of Sandown net direct cost estimate**

Scope Area	Nett Direct Costs (£m)
Site Wide Elements	20.144
WRP Feed Flows	0.935
WRP Return Flows	0.788
Primary Treatment	20.413
Secondary Treatment	21.261

Scope Area	Nett Direct Costs (£m)
Advanced Treatment Area	12.508
Final WPS/Remineralisation Area	3.912
Transfer Pipe	2.270
<b>Total</b>	<b>82.231</b>

### 5.6.5 Summary of Benchmarking

Benchmarking was conducted with data from 8 comparable companies as part of the analysis. Resulting cost outputs were normalised based on regional construction location using BCIS factors and overall costs indexed for CPIH for inflation. The resulting cost estimate prepared through benchmarking standard components and additionally including quotes do give >90% cost confidence for our estimate.

Our benchmarking report is included in Appendix 3.

## 6.0 Alternative delivery mechanism update

In our October submission we put forward four schemes for alternative delivery via direct procurement for customers. Following our draft determination, we have continued to include Littlehampton Recycling and Medway Recycling as DPC. We have updated the delivery mechanism for Sittingbourne Recycling to Large scheme gated process in line with draft determination

We are proposing that our Sandown Recycling scheme and Southampton Link Main Schemes are delivered under an Enhanced engagement mechanism. As discussed above, Sandown Recycling has progressed to a stage where the 6% allowance for development costs is insufficient.

We are also proposing that the remaining supply and interconnector schemes within the WRMP supply enhancement case are covered by the delivery mechanism enhancement mechanism. We have allocated the combined Supply programme (with the exception of the schemes in table 18 below) to this mechanism as all of these schemes are part of our adaptive WRMP24 plan, which is yet to be approved by DEFRA. Many of these schemes will involve further development and hence fit into a delivery mechanism where there is a gated funding mechanism to ensure best value for customers.

These schemes also pose a deliverability challenge associated with the requirement to upgrade or integrate with our existing facilities, that will need to be managed around any potential drought events.

For further information on alternative delivery mechanisms please see the Delivery Mechanism Proposal section of our risk chapter (SRN-DDR-003).

**Table 18: Alternative Deliver Summary**

Scheme name (October PR24/WRMP24)	Delivery mechanisms October	Proposed delivery mechanism	Delivery date	October Data table reference	Revised data table reference	Revised AMP8 Totex (£m)
Recycling: Sandown WwTW	DPC	Enhanced engagement mechanism	2030-31	CW3.131, SUP12.9	CW8.23	184.35
Recycling: Littlehampton WwTW (Ford)	DPC	DPC	2030-31	CW3.131, (SUP12.9)	CW8.7	141.975

Scheme name (October PR24/WRMP24)	Delivery mechanisms October	Proposed delivery mechanism	Delivery date	October Data table reference	Revised data table reference	Revised AMP8 Totex (£m)
Recycling: Sittingbourne industrial reuse	DPC	Large project gated mechanism & Market based delivery	2031-31	CW3.131 CW8.22	CW8.17	121.323
Recycling: Medway WwTW (Aylesford)	DPC	DPC	2030-31	CW3.131 SUP12.9	CW8.19	158.018
SLM	NA	Enhanced engagement mechanism	2030-31	CW8.4 & CW8.11	CW8.2 CW8.16	117.773
Supply programme	NA	Delivery mechanism	Various	All remaining CW8 lines	All remaining CW8 lines*	231.6*

\* Treatment capacity (HSE): Enhancement for HWTWRP has been excluded as this will be delivered as part of the Otterbourne Resilience scheme

## 7.0 Customer protection

Following from our reply to your Query SRN220, below is our revised Water resources – supply PCD corresponding to our AMP8 cost proposals for water resources, table CW8. These proposals are aligned with our revised draft WRMP24 submitted to DEFRA in August. It also includes schemes and costs of schemes that had previously been allocated to DPC delivery, which are now being delivered in house (Recycling: Sandown and Recycling: Sittingbourne).

The majority of the proposed schemes are multi-AMP meaning that the benefits will only materialise beyond 2030 while some of the investment will take place in AMP8. The schedule of benefits attached to the proposed PCD reflects the profile of benefits funded in AMP8. Independent third-party assessment will provide assurance of completed milestones and forecast of likely outturn position at 31 March 2030.

We have excluded the following SRO supply schemes listed in table CW8 from this PCD because the deliverables are monitored through the RAPID route:

- Import: Havant Thicket - Otterbourne direct raw water transfer, 90MI/d;
- New Reservoir - SESRO (150Mm3)
- Thames to Southern Transfer
- Recycling: Recharge of Havant Thicket reservoir from Budds Farm and new WRP (60MI/d)

The following costs listed in table CW8 are also excluded from this PCD, because they refer to planning costs that need to be incurred in AMP8 ahead of water supply scheme design in AMP9 and, therefore, are not linked to a MI/d benefit:

- Recycling (SHZ): Tonbridge to Bewl Reservoir (5.7MI/d)
- Test MAR - Planning & Development

We have excluded Waterlevel Extreme Drought Resilience Service, as in AMP8 we are only requesting an enabling cost to deliver this scheme in 2030-31 and an opex cost to deliver the full benefit is included in AMP9.

We have also excluded the following scheme as it is an enabler of our SRO scheme and customers are protected through the Water Resources - Supply Enhancement Cost Evidence Case (SRN-DDR-028) and see also SRN-DDR-032 Water Resources - Strategic Resource Options Enhancement Cost Evidence Case:

- Treatment capacity (HSE): Enhancement for HWTWRP

We have also excluded from this PCD the following water supply schemes, because we are not proposing any costs in AMP8 against any of these:

- Transfer: Romsey Town & Broadlands valve (HRZ-HSW) (3.1MI/d)
- Import: SEW Kingston to KTZ Near Canterbury (2MI/d)
- Transfer: Bi-directional transfer (SWZ-SNZ) (15MI/d)
- Transfer: KTZ-KME (14MI/d)
- Import: PWC at Pulborough extension (15MI/d)
- Import from Portsmouth Water (additional 30MI/d)

We have excluded the following schemes. Our rationale is included below:

- Bulk import (SNZ): SES re-zoning extension (4MI/d): This scheme is excluded as it is reliant on another company for delivery
- Transfer: Winter transfer Stage 2: New main Shoreham/North Shoreham and Brighton A: This scheme has been excluded due to uncertainty related to its delivery, it is currently not required by WRMP24 until 2050.
- Recycling: Medway WwTW (12.8MI/d): This has been excluded from the PCD as it is being delivered via DPC  
Recycling: Littlehampton WwTW (15MI/d): This has been excluded from the PCD as it is being delivered via DPC

**Table 19: Water resources – supply PCD**

Component	Output based on MI/d benefits
Description	Supply-side improvements and internal interconnectors to deliver water to meet our supply-demand balance in line with our revised draft WRMP24.
Output – MI/d	Output: 181.16 MI/d delivery of Water Available for Use (WAFU)
Total Cost	£605.39
Unit cost	£3.34m per MI/d (total cost/MI/d benefits)
Penalty rate	£3.34m per MI/d (no cost sharing assumed)
Materiality of future scope alterations	£6.05m (1% of Total costs)
Output delivery date with current scope	Benefits delivery according to the deliverables schedule in the table below.
Conditions on allowance	Should we receive confirmation from a regulator of a necessary change to the timing or scope of a scheme, or in fact the change of scheme design to address the core issue being it, either change in the benefit delivered or the solution being more expensive, the implication of this change would be reflected in the PCD. Where this change leads to a material variance greater than 1% of the original enhancement investment, then the PCD would symmetrically account for this change in a reconciliation at the end of the AMP.
Assessment of PCD	In the event of not delivering the output by the end of AMP8 (i.e., by 31 March 2030), but the need is still required, this PCD remains in place until the end of AMP9 (i.e.31 March 2035). Ofwat will assess the completion of this PCD by 31 March 2035 as part of the PR34 process.
Late penalty	No late penalty is applicable as being late would mean non-compliance with WRMP statutory requirements.
Measurement	Performance reported in APR and consistent with WRMP annual review process
Conditions on scheme	Changes in benefits and timing of these dependent on other companies will be reflected in our WRMP annual review (as part of the annual WRMP process) and will need to be reflected also in the PCD.



Component	Output based on MI/d benefits
ODIs to be netted off in the event of non-delivery	Water supply interruptions (part) Operational Greenhouse gases (part)
Assurance	Indent third-party assessment and assurance of completed milestones and forecast of likely outturn position on 31 March 2030.

**Table 20: Forecast deliverables**

Deliverable	Unit	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
Delivery of WAFU	MI/d	0.0	0.0	10.2	4.7	0.0	135.2	21.0	0.0	10.0	0.00

## 7.0 Business Plan dependencies

This document follows on from our Water Resources- Supply enhancement business case (SRN26). It links to the following PR24 documents:

Chapters	SRN05 Wholesale Water Costs and Outcomes
Technical annexes	
Enhancement cases	SRN26 Water Resources- Supply
Cost adjustment claims	
Ofwat test areas	
Assurance	
Other – please specify	drWRMP24

Data Tables impacted by the representation:

Table/s Impacted	Data Lines Impacted
CW3	
CW8	All lines
CW4	
CW5	

All documents and tables referenced above can be found on our website here: [Business Plan 2025-30 - Southern Water](#)

## Appendices:

**Appendix 1: Sandown cost breakdown**

**Appendix 2: SLM Project Programme**

**Appendix 3: Sandown bench marking report**