

# SRN33 WINEP – Supporting Water Abstraction Enhancement Business Case

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Version 1.0



from  
**Southern  
Water** 

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## Glossary

Acronym	Term
<b>AMP</b>	Asset Management Plan
<b>BNG</b>	Biodiversity Net Gain
<b>CaBA</b>	Catchment Based Approach
<b>DWI</b>	Drinking Water Inspectorate
<b>DrWPA</b>	Drinking Water Protected Areas
<b>DWMP</b>	Drainage and Wastewater Management Plan
<b>EA</b>	Environment Agency
<b>ENG</b>	Environmental Net Gain
<b>EPA</b>	Environmental Performance Assessment
<b>ICEG</b>	Independent Climate and Environment Group
<b>INNS</b>	Invasive Non-Native Species
<b>KPI</b>	Key Performance Indicators
<b>LTDS</b>	Long Term Delivery Strategy
<b>LNRS</b>	Local Nature Recovery Strategy
<b>NE</b>	Natural England
<b>NERC</b>	National Environment and Rural Communities
<b>NPV</b>	Net Present Value
<b>NS</b>	Non-Statutory
<b>OAR</b>	Options Appraisal Report
<b>ODR</b>	Options Development Report
<b>PC</b>	Performance Commitment
<b>S</b>	Statutory
<b>S+</b>	Statutory Plus
<b>SME</b>	Subject Matter Expert
<b>SSSI</b>	Sites of Special Scientific Interest
<b>SWS</b>	Southern Water Services
<b>WINEP</b>	Water Industry National Environment Programme
<b>WFD</b>	Water Framework Directive
<b>WRMP</b>	Water Resource Management Plan
<b>WRSE</b>	Water Resource South East

## Executive Summary

This document summarises the water WINEP submission in support of the PR24 business case for Enhancement funding.

It sets out the approach we have taken to understand the key water supply challenges for Southern Water, how these affect our customers and the environment and the actions that are needed to ensure SWS is compliant with relevant legislation and government policy.

Throughout the document, we set out how we have worked with others to understand the broader pressures, the key players, and to establish a feasible programme of schemes to address challenges.

The Water WINEP has no phasing adjustments proposed. The WINEP issued to Southern Water on 3<sup>rd</sup> July 2023 includes all of the schemes, monitoring and investigations included in this enhancement case. The agreed WINEP programme represents a step change in SWS ambition for AMP8, reflecting the increase in environmental policy and legislation with the Environment Act, the government's Water Plan and Environmental Improvement Plan, and the updated WISER guidance from the Environment Agency and Natural England. It also reflects the substantial increase in customer scrutiny and expectations over the course of AMP7.

The Environment Agency issued new WINEP guidance in 2021 that has enabled opportunities for Water Companies to pivot from a least-cost to a best-value approach. Through providing a framework to better incorporate a range of benefits into the optioneering and cost benefit assessment, this has facilitated the unlocking of significant potential to collaborate with others and deliver wider benefits for the environment and for society.

Southern Water has embraced the principles embedded in the PR24 WINEP guidance and has prepared an ambitious AMP8 programme, focused on making significant traction on environmental improvements to deliver better outcomes for our customers. The programme we developed was designed to not only meet the regulatory challenges, but to deliver best value solutions that provide wider environmental and social outcomes for customers, reflecting the current climate and biodiversity emergencies and the cost-of-living crises.

Through preparing this WINEP programme, we have built better relationships with the EA, NE and with key stakeholder organisations which has enabled us to establish a forward pathway of collaborative delivery and drive cost efficiency. We have followed the EA regulatory guidance and have co-identified the risks and issues, co-developed the options with stakeholders, and are committed to working in partnership with others to co-deliver the required outcomes over the next five to ten years.

The final water WINEP includes 23 schemes, 2 monitoring plans and 15 investigations, derived from an original long list of 93 options. The catchment and nature-based solutions proposed will deliver both the WINEP requirements and also contribute to the wider environmental outcomes. The water WINEP scheme for biodiversity will also deliver the requirements to fulfil our Biodiversity Performance Commitment.

The proposed WINEP is considered enhancement expenditure on the basis that:

- It goes beyond business as usual to deliver improved service to customers and the environment.
- It reflects the need to protect Southern Water customers from increased hazards and the risk from climate change and growth, providing new solutions and ways of working to help ensure a resilient supply of water into the future.
- We are proposing a focused AMP8 programme that is low / no regrets to inform and align with actions for the longer term. This recognises that managing broader environmental risks cannot always be achieved in a five-year AMP cycle alone and that an adaptive approach is necessary to achieve lasting outcomes. This agile approach also aligns with the approach set out in the Long-Term Delivery Strategy.

- Our approach is reflective of an increase in expectations from customers on our responsibility to the environment, established through customer engagement and focus groups.
- It is the result of a robust options development process that is focused on best value creation and innovative approaches, whilst ensuring costs are efficient for customers through finding new ways of collaborative delivery by working with key stakeholders.
- Finally, it is focused on investment in resilience and long term and broader ranging improvements that align with key strategic plans including the Drainage and Wastewater Management Plans, Water Resources Management Plans and River Basin Management Plans.

The AMP8 budget required to deliver this programme is £74.4m, distributed over the full 5-year period.

Southern Water’s Customer Panel Group are fully supportive of the approach we are taking to use more catchment and nature-based solutions to enhance our environment. We have also consulted with the Independent Climate and Environment Group (ICEG) panel, comprising key representatives from stakeholder organisations, who are in support of the approach and ambition.

Summary of Enhancement Case	
Name of Enhancement Case	Water WINEP
Summary of Case	<ul style="list-style-type: none"> <li>• Delivery of our new statutory environmental obligations.</li> <li>• A blend of investigations and nature-based solutions to address issues impacting drinking water quality and quantity.</li> <li>• A collaborative approach to integrated catchment management, including INNS management and biodiversity net gain.</li> </ul>
Expected Benefits	<p>Headline benefits include:</p> <ul style="list-style-type: none"> <li>• Enhance resilience of water supply, leading to better value services to customers</li> <li>• Environmental protection and improvement, resulting in a more resilient operating environment</li> <li>• Social and environmental outcomes</li> <li>• Reputational enhancement – customer and regulator</li> </ul> <p>More specifically:</p> <ul style="list-style-type: none"> <li>• Reduction in risk to our groundwater sources for drinking water quality (primarily nitrate, additional wider water quality risk reduction benefits).</li> <li>• Reduction in risk to our surface water sources for drinking water quality (primarily from pesticides, turbidity and algae, but also wider water quality risk reduction benefits).</li> <li>• Deliver ecological benefit to rivers and SSSI sites where our abstractions are impacting.</li> <li>• Nutrient reduction and habitat enhancement at Chichester, Langstone and Pagham harbours.</li> <li>• Biodiversity implementation and management plans for SWS estate.</li> <li>• Working with Catchment Partnerships to co-develop an co-deliver a management programme for environmental improvements including invasive non-natives.</li> <li>• Delivering an enhancement programme for the River Anton – a CaBA chalk stream flagship programme.</li> </ul>

Associated Price Control	All wholesale controls
Enhancement TOTEX	<b>£74,358,634 (water WINEP)</b>
Enhancement OPEX	<b>£74,358,634</b>
Enhancement CAPEX	£0
Is this enhancement proposed for a direct procurement for customer (DPC)?	No Below value threshold

# 1. Introduction and Background

## 1.1. Introduction

This document sets out the enhancement business case for our water WINEP programme for the period 2025-2030. It is focused on addressing key water supply and environmental challenges so that we can improve water supply services to our customers in parallel with delivering wider environmental and social value. The programme has been specifically designed to focus on:

- delivering a step-change in Southern Water’s partnership activity to proactively protect and enhance the water environment so that it is fit for the future, and so we are better able to provide customers with a reliable and resilient water supply.
- driving investment in enhancing river condition to protect against customer impacts of drought and floods; and
- allowing Southern Water to appropriately respond to, and meet, the growing environmental obligations under statutory drivers including the Environment Act.

Our regional water environment is under huge pressure from the growing demands of people, industry and agriculture, and there is significant pressure on both the quality and the quantity of water in rivers, lakes and aquifers to meet demand. This is particularly challenging in densely populated areas such as in the South East. To deliver improved services to our customers in the future, we need focus investment on improving the water environment, making it more resilient to the extremes of climate change in parallel with creating a sustainable operational business.

A healthy functioning water environment is critical to Southern Water’s operations, providing the raw product for drinking water and receiving final product in the form of treated wastewater effluent. We have a responsibility to not only protect but to enhance the natural environment to operate a sustainable business into the future.

Our customers have spoken. They want to see Southern Water invest in protecting and enhancing the natural environment, making climate change mitigation a core consideration in our options development and taking a nature-based approach so that we play an important part in mitigating the climate and biodiversity crises.

Subsequently, our water WINEP plan has been established with a clear focus on balancing the needs for energy-intensive treatment in the future with a programme of investigations and nature-based schemes that deliver environmental outcomes and wider value. The final submitted water WINEP has been assessed and agreed by the Environment Agency (EA) and Natural England (NE) and issued to Southern Water on 3<sup>rd</sup> July 2023. It includes 23 schemes, 2 monitoring plans and 15 investigations focused on delivering long term environmental improvements for customers.

The AMP8 budget to deliver this programme of work is £74.4m which has been profiled over the full 5-year Asset Management Plan (AMP) period.

This document sets out why and how we have developed the enhancement investment, including the overarching process for options development, ensuring cost efficiency, and establishing how customers are protected from non- or late delivery in relation to our performance commitments (PCs). The individual Ofwat categories are also represented in tabular form to provide further information/breakdown of budget requirements.

## 2. Needs Case for Enhancement

The enhancement focus for the water WINEP has been driven by three key aspects: a shift in regulatory focus; the need to apply a broader environmental approach to resilience; and customer and stakeholder viewpoints. These driving forces are discussed in the sections that follow.

We are aligning our WINEP with our Catchment First approach. This is Southern Water's commitment to putting the wellbeing of the environment at the centre of the decisions we make and the services we deliver. It represents a shift in focus from relying on traditional engineering solutions alone, to working collaboratively with partners to create long-term sustainable improvements to the environment on which our business and customers depend. This approach complements the regulatory expectation set out by the Environment Agency (EA) and the Drinking Water Inspectorate (DWI).

### 2.1. Regulatory drivers

Our water WINEP has been designed to support the UK government's environmental legislation, including:

- **Environmental Improvement Plan, 2023** ( [Environmental Improvement Plan \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/114122/environmental-improvement-plan-2023.pdf) ), an update of the 25 year Environment Plan ( [25-year-environment-plan.pdf \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/114122/25-year-environment-plan.pdf)) which sets out how the environment will be improved by working together, leaving the environment in a better state than we inherited. The following goals have helped us shape our Water WINEP plan:
  - Goal 1 thriving plants and wildlife, improve nature halting the decline in biodiversity
  - Goal 2 Clean air
  - Goal 3 clean and plentiful water
  - Goal 4 managing exposure to chemicals and pesticides
  - Goal 5 maximise our resources, minimise our waste
  - Goal 6 using resources from nature sustainably
  - Goal 7 mitigating and adapting to climate change
  - Goal 8 Reduced risk of harm from environmental hazards
  - Goal 9 enhancing biosecurity
  - Goal 10 enhanced beauty, heritage and engagement with the natural environment.
- **The Environment Act, 2021** ( [Environment Act 2021 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2021/23/section/1)) which sets out the specific outcomes that are expected from water companies.
- **The Environmental principles policy, 2023** ( [Environmental principles policy statement - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/environmental-principles-policy)) part of the Environment Act that guides opportunities to prevent environmental damage and enhance the environment.
- **The Plan for Water, 2023** ( [Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/plan-for-water) ) brings together the steps that have been taken and the new plan to deliver further and faster, with a focus on a more collaborative nature-based approach alongside infrastructure improvements.

Further to the legislation, the Governments Water Industry Strategic Environmental Requirements (WISER) ( [Water industry strategic environmental requirements \(WISER\): technical document - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/114122/wiser-technical-document.pdf)) sets out the main objectives the EA and NE expect water companies to achieve, in parallel to the legislation:

- **A thriving natural environment** - including protecting our drinking water supplies, habitats and Ramsar sites, Sites of Special Scientific Interest (SSSI), Invasive Non-Native Species (INNS), Local Nature Recovery Strategies (LNRs), Natural Environment and Rural Communities (NERC).
- **Expected performance and compliance** - including Environmental Performance Assessment (EPA).

- **Resilience for the environment and customers** - including resilience of natural assets such as soils, freshwaters and species, climate change including net zero, nature-based solutions for resilience, restoring the natural environment, prevent further damage to the environment, while enabling its recovery and enhancement.

These WISER principles are also embedded through the PR24 WINEP guidance and methodologies issued by the EA. As well as the EA, the DWI, Ofwat, and NE expect us to have a strong focus on catchment management and environmental resilience.

The purpose of the WINEP is to set out what water companies need to do to comply with these regulations. The WINEP is comprised of a number of environmental drivers to reflect the legislation and are categorised as the following obligations:

- **Statutory (S) obligations** arise from legislative requirements and the need to comply with obligations imposed directly by statute or by permits, licences and authorisations granted by the Secretary of State, the Environment Agency or other body of competent jurisdiction.
- **Statutory plus (S+) obligations** are set out in primary or secondary legislation and can include an assessment of benefits and, in some cases, an additional step of affordability testing. Where an action is considered disproportionately expensive to meet statutory plus obligations, alternative objectives, or extended timescales to meet the objectives, may be set.
- **Non-Statutory (NS) obligations** enable water companies to go beyond the minimum legal requirements to deliver an environmental need where there is customer support. Actions to meet non-statutory requirements may be required to meet the UK government’s environmental ambition.

**Table 2-1: Summary of Water WINEP by obligation type and WINEP driver code**

Obligation type	Driver Codes	Summary
Statutory (S)	HD_IMP (x2); INNS_ND (x1); INNS_IMP (x1); DrWPA_ND(x8); WFD_ND_WRFflow (x4); WFDGW_ND (x1); EPR_MON1 (x1); DrWPA_INV (x3); EDWRMP_INV (x3); WFDGW_NDINV (x1); INNS_INV (x1).	£46.4m 26 total (8 investigations, 17 schemes, 1 monitoring)
Statutory Plus (S+)	INNS_MON (x1); SSSI_IMP (x2), NERC_IMP (x3); WFD_IMP_WRHMB (x1); NERC_INV (x2), SSSI_INV (x3)	£27.2 12 total (5 investigations, 6 schemes, 1 monitoring)
Non Statutory (NS)	25YEP_INV (x2)	£0.8m 2 total (2 investigations)

The majority of the proposed water WINEP is comprised of statutory drivers (S), meaning we legally must deliver the outcomes to mitigate our potential impacts on the environment and risks to customer supply. A “do nothing” approach is not an option. How we go about delivering these statutory outcomes however is flexible, and this has been the focus of our options development process. In developing options, we have focused on fulfilling the statutory requirement but also seeking opportunities to enhance the natural environment and deliver best value across a range of ecosystem services. This is a step change from PR19 WINEP, where least cost solutions to solve single issues were proposed. We are now focused on delivering a wider array of outcomes for the environment and society in parallel with the statutory outcome. This approach also reflects regulator, customer and stakeholder expectations.

Successful WINEP signoff is one of six metrics used for the Environmental Performance Assessment (EPA) and the corresponding company performance star rating.

## 2.2. Environmental resilience drivers

The company is faced with a range of significant challenges: the need to be able to serve customers under increased water resource pressures, with a growing population; to be able to supply customers under a range of future climate change scenarios; the challenge to undertake this whilst not only mitigating our past and present environmental impacts, but also improving the environment in which we operate to help mitigate the joint climate and biodiversity crisis.

In response, we have a strong environmental ambition and commitments around carbon neutrality, water neutrality, nutrient neutrality, biodiversity net gain, improving designated sites, and a public responsibility to keep our rivers, coasts and landscape healthy for future generations. Environmental resilience is also critical to a successful water industry moving forwards.

We have made significant progress in our environmental ambition in AMP7 and have used this as a launchpad for success in AMP8 to meet regulator and customer expectations that we deliver more catchment and nature-based solutions and provide wider benefits for the environment and society, in parallel with traditional engineering solutions.

## 2.3. Customer drivers

Throughout 2022, Southern Water undertook a series of focus groups to better understand customer values and expectations, and what the company should stand for moving forwards. The feedback was insightful with a strong environmental support and emphasis that SWS should be an environmental champion Table 2-2. **This was the joint top priority alongside being a provider of essential services.**

Our customers value nature more than ever before. There is an increased awareness of the impact of climate change and the resulting extreme weather events on sewage discharges, communities, flooding and drought related impacts. There has also been an increased appreciation of the natural environment and the role it plays in society's mental and physical wellbeing as a result of the covid-19 pandemic.

The priorities identified by customers are:

Be brilliant at the basics: the here and now, focusing on providing safe, reliable water and wastewater.

Be proactive and focused on the long term: future-proofing now against the challenges ahead, centred on resilience and infrastructure.

Be environmentally responsible: leaving the environment better than we found it, respecting and valuing nature in assessing solutions and caring for rivers and beaches.

Be socially responsible, listening to customers, being accountable and transparent.

This reflects the step-change from PR19, where the key customer insight was “to protect and improve the environment, doing no harm is the absolute minimum”. At PR24, the focus has shifted to “protect and restore the environment and habitats; damage is not tolerated at any level”.

Our proposed water WINEP programme is aligned with all four of these priorities. It recognises that our assets and networks do not operate in isolation from the quality of the broader environment, or communities or other network operators. Understanding the difference between the cost of a solution, and the value that a solution could provide to the environment and society has been fundamental to our WINEP scoping and optioneering approaches, putting natural and social capital at the front and centre of the way we make decisions.

Customers want to see us doing better, and we need to do better in order to ensure a sustainable supply into the future. The key design principles underpinning our water WINEP development process included:

- **Improving Environmental Resilience:** A healthy and resilient environment is fundamental to Southern Water's ability to supply customers into the future. This goes beyond business as usual

and mitigation of our potential impacts and seeks to proactively improve the health of the water environment so that it is then more resilient to natural pressures (such as climate change, droughts, floods) and to man-made pressures from catchment activities (including abstraction, wastewater discharges, farming, urban pollution etc.). Alongside ensuring compliance through engineered solutions, we should work in parallel to improve the natural environment to help ensure supply solutions are sustainable long term. Examples of this include:

- Proactively engaging with farmers to minimise the use of nitrate fertilisers, pesticides and herbicides, reducing the risk of pollution to rivers and groundwater sources so that additional treatment can be avoided in the future. Working with agronomists and farmers to improve soil health and stability to better manage sediment and turbidity entering the river network, this will reduce the risk to abstraction, while improving the environment and reducing flood risk.
- Proactively improving the form and function of rivers so that they can better adapt to climate change and population growth pressures. This is particularly important in rivers that have been altered through the years through over-widening, straightening, or have been disconnected from the natural floodplain.
- Mapping natural capital assets in the catchment and understanding how they could be improved to solve key water quality issues whilst improving and building habitats, thereby enhancing biodiversity, increasing resilience to floods and droughts and providing increased public value.
- **Reduced embedded carbon and emissions:** delivering our net zero plan, incorporating carbon costs into decisions, delivering offsetting over and above reductions.
- **Outcome Focus:** through the options development, consideration of targets for Environmental Net Gain (ENG) and Biodiversity Net Gain (BNG). Monitoring and metrics to support evidence of environment outcome delivery and to feed into Natural Capital and Environment Social Governance (ESG) reporting.
- **Collaborative Planning & Delivery:** co-identification, co-development, co-funding, and co-delivery of the environmental issues and potential solutions with stakeholders and catchment partners. Working with NGOs to provide the best outcomes for customers and the environment.
- **Protecting and Enhancing the Environment:** Our Catchment First programme reflects the environmental and customer priorities, and closely links to key strategic plans, most notably the Drainage and Wastewater Management Plans (DWMPs) and the Water Resources Management Plans (WRMP), River Basin Management Plans (RBMPs) and Flood Risk Management Plans (FRMPs).

Our customers have been clear and outspoken about how they see Southern Water in a position of responsibility with respect to the environment (Table 2-2).

**Table 2-2: Customer feedback on environmental responsibility**

Customer view of environmental responsibility	Examples of Southern Waters approach
<i>Protecting and restoring the natural environment</i>	This is at the core of our catchment programme – implementing nature-based solutions to protect water quality both for drinking water quality and quantity and the wider environment.
<i>Valuing nature; providing social and natural value through our work. Young people in particular frame everything related to our industry around the environment and see this as their top priority. To them, there isn't an</i>	The core principle of our catchment programme is embedding nature-based solutions into Southern Water's asset management strategy. This means that rather than trading off environmental and economic outcomes, we're working with nature to protect the environment and the ecosystem services it provides, and on which the economy relies. By considering natural capital (natural assets and their value inherently and to us) we can protect both nature and the economy. For example, our drinking water quality mitigation programme is focused on environmental and economic "win wins", finding solutions that benefit both farm economics and environmental outcomes,

<i>economic or financial trade-off.</i>	such as improving soil health, and use of precision farming technology and approaches.
<i>Supporting the regional economy, having conversations with farmers, local food growers and large regional employers</i>	Our catchment programme is built upon collaboration with landowners, farmers and food growers. It has a strong element of farm business resilience and economic feasibility – this ensures that not only are our mitigation measures likely to receive good uptake levels, but also that we are supporting the rural economy in terms of both current profitability and long-term sustainability.
<i>Working with NGOs to provide best outcome for customers and environment</i>	We are already working with local partners including the Wildlife Trusts and the Rivers Trusts to scope and deliver solutions. Moving into AMP 8, we are looking to expand our catchment programme, including continuing to work in partnership with environmental NGOs and other stakeholders to integrate multiple objectives and achieve greater overall benefits for the environment. We'll be looking to leverage multiple sources of funding to achieve more, with greater cost effectiveness for our customers
<i>Climate change mitigation and climate resilience being a core consideration.</i>	Catchment management is inherently aligned with this principle by reducing reliance on energy-intensive treatment processes. In addition, the proposed action plan's focus on improving soil health, particularly organic matter levels which will contribute to both climate change mitigation (via increase carbon sequestration and storage) and resilience to extreme weather events, via reduced vulnerability to drought and flood conditions.

This invaluable customer insight has been central to our approach to the WINEP, and therefore underpins this enhancement business case.

## **2.4. Stakeholder collaboration drivers**

Recognising the need to deliver enhanced outcomes for the environment and society, the WINEP development requires the programme to be co-designed and co-developed with wider environmental stakeholders to help shape actions and approaches that Southern Water should undertake to meet defined statutory environmental obligations, whilst delivering wider environmental outcomes.

The scale of the issues to be resolved are substantial and by partnering with our local environmental catchment partnerships we are codeveloping delivery plans that will assess pressures at a catchment scale, to co-deliver solutions linking funding opportunities to maximise delivery of wider environmental benefits.

Not only this, but our key stakeholders such as the Rivers Trusts and Wildlife Trusts, as well as other catchment groups, have an expectation of a more collaborative approach. By collaborating with others, we will not only enhance our ability to deliver but also be contributing to elevating our collective ambition and power to make improvements to customers at scale and pace.

## 2.5. WINEP alignment with enhancement expenditure

This business case sets out the need to invest in long term strategic improvements to facilitate a resilient environment, respond to a step change increase in environmental regulations and deliver on customer expectations. The proposed WINEP is closely aligned with enhancement investment because:

- It goes beyond business as usual to deliver improved service to customers and the environment.
- It reflects the need to protect Southern Water customers from increased hazards and risk from climate change and growth, providing new solutions and ways of working to help ensure a resilient supply of water into the future.
- We are proposing a focused AMP8 programme that is low / no regrets to inform, and align with, actions for the longer term. This recognises that managing broader environmental risks cannot be achieved in a five-year AMP cycle alone and that an adaptive approach is necessary to achieve lasting outcomes. This agile approach also aligns with the approach set out in the Long-Term Delivery Strategy.
- Our approach is closely reflective of an increase in expectations from customers on our responsibility to the environment, established through customer engagement and focus groups.
- It is the result of a robust options development process that is focused on best value creation and innovative approaches, whilst ensuring costs are efficient for customers through finding new ways of collaborative delivery by working with key stakeholders.
- Finally, it is focused on investment in resilience and long term and broader ranging improvements that align with key strategic plans including the Drainage and Wastewater Management Plans, Water Resources Management Plans and River Basin Management Plans.

## 3. Developing Best Value for Customers

The EA issued guidance and methodologies to follow to ensure we fulfil the requirements of the legislation and government policy expectations. This guidance, issued in 2021, sets out a 5-step process which is summarised in Figure 3-1, and is aimed at incorporating Best Value as we develop the WINEP. **“A best value plan is one that considers factors alongside economic cost and seeks to achieve an outcome that increases the overall benefit to customers, the wider environment and overall society. A best value plan should be efficient and affordable to deliver, legally compliant and account for the range of legislation that applies to it”** (definition set out in the new guidance and the EA’s latest Water Resource Planning Guidance)

### 3.1. Options development and assessment process

Our overarching approach to WINEP development is aligned with EA guidance, working in partnership with key environmental stakeholders and specialist consultancies to design and plan the delivery of the programme.

Throughout the process, we have focused on opportunities to deliver best value for customers, recognising the opportunity to enhance wider environmental value alongside providing more sustainable technical solutions for water supply challenges.

Our first step was to identify the environmental risks and issues to be addressed through the WINEP, in collaboration with the EA, NE and local environmental stakeholders (Step 2, Figure 3-1). This enabled us to reach a consensus on the range of issues that need to be considered alongside developing solutions. In this way, we have been able to approach the options development stage that focuses on providing customer solutions that not only provide direct outcomes for the issues most relevant to our water supply challenges, but that align with the wider environmental challenges.

Throughout our options development and appraisal approaches (Stage 3), we have carefully considered the six WINEP principles:

**Catchment and nature-based solutions.** Our approach was to take a catchment and nature-based solution as a priority on all our schemes.

**Environmental net gain** We set up a process to incorporate valuations of BNG, ENG and wider environmental benefits where applicable and possible. Wider benefits considered include: biodiversity and habitat; carbon; resilience (flooding and drought); and access, amenity and engagement.

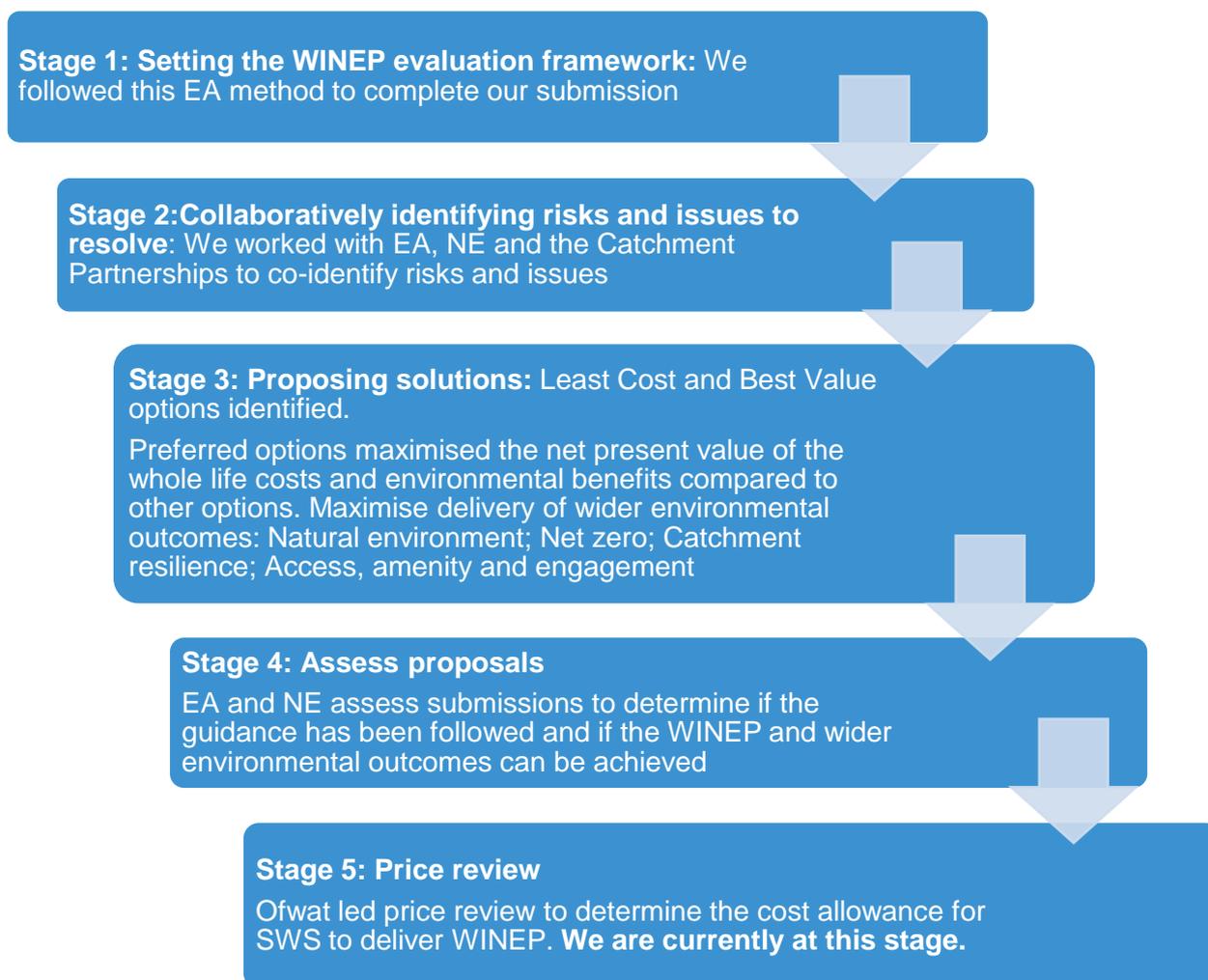
**Natural capital.** We incorporated valuations of natural capital where applicable and possible, to make more robust business cases and to drive cost efficiency.

**Proportionality.** We combined several risks/actions into a single project where similar solutions could be implemented to address the issue(s), this way we considered the scale of the issue(s) to be addressed and designed options that provided appropriate solutions, while delivering wider environmental benefits.

**Evidence.** We ensured that our approach to progressing investigations or schemes are technically robust, and evidence based, using extensive monitoring data and previous investigations to justify the need to deliver improvement schemes or propose new investigations.

**Collaboration.** We worked with EA, NE and environmental stakeholders to gain a shared understanding of environmental issues to be addressed through the WINEP. We held frequent meetings to explore opportunities for schemes to mitigate the risks which helped shape our best value options.

Figure 3-1: WINEP development process



The methodology sets out the requirement to apply these principles to draw up an unconstrained options list, carefully consider the approaches, benefits and potential outcomes before narrowing down to a constrained list of feasible options. This constrained list is then subject to a cost-benefit assessment fully considering the benefits across a range of ecosystem services to arrive at a preferred best value solution. The process is summarised in Figure 3-2 and outlined in more detail as follows:

- i. **Needs and issues identification** – using the outputs from AMP7 investigations, SWS catchment risk assessments, data processing and catchment intelligence to identify the issues that need addressing.
- ii. **Consultation on issues to address** – liaison with stakeholders (EA, NE, Catchment Partnerships, farmers, agronomists, Rivers Trusts) to agree and further identify remaining issues. SWS held a workshop to communicate the issues and to begin to co-develop opportunities (workshops held on 25 & 26th May 2022). 93 options were initially co-identified with the EA and NE through this stage.
- iii. **Options development** – in this phase we assessed the optioneering undertaken as part of AMP7 investigations and enhanced this further through collaboration with EA, NE and catchment partners. We merged /combined options from the initial consultation exercise to focus into more holistic investigations or schemes, where appropriate, to better understand delivery approaches and ensure

sufficient costings. For example, we combined catchment approaches for multiple groundwater sources in a defined geographical area into one scheme. This led to a short list of 40 more logical options, covering multiple sources.

- iv. **Consultation on options** – We re-shared our focused list of 40 options with the EA, NE and our key strategic Catchment Partnership groups to inform and gain their support (July 2022) and requested their further input to support the proposed plan (throughout September 2022).
- v. **Options assessment** – The outputs of the consultation process then entered the **costing and benefits valuation stage**:
  - For each of the issues / needs identified, several scenarios were typically developed that range from a simple and direct “Least Cost” option to a “Best Value” option that includes consideration of the wider issues and include a range of complimentary approaches that not only achieve the primary outcome but that deliver wider benefits.
  - The least cost and best value options were then costed based on AMP7 experience and in collaboration with stakeholders and suppliers.
  - Where data allowed, we included wider social and environmental benefits such as biodiversity, catchment resilience, climate regulation and amenity benefits. For this, we used the suite of research and guidance collated by the EA, alongside consultancy input, to support the monetised valuation of wider benefits.
  - In line with the WINEP guidance where the action was identified through AMP7 investigations, this became the preferred option for AMP8. This is relevant to 20 out of the 23 schemes planned for AMP8. The other 3 schemes proposed are as a result of investigations undertaken in AMP7, but outside of the formal WINEP process.
  - Where AMP7 investigations were still ongoing the options were discussed with the project steering group (including EA, NE and environmental stakeholders) to provide high level options to enable a scheme to be included in the AMP8 WINEP plan.
  - **Costing best value and least cost options** – In this task we developed AMP8 costs and 30-year NPV, facilitated by input from specialist consultants and using our experience from AMP7, alongside SME experience of similar project delivery across the industry. We also undertook further consultation in some cases for example with industry experts, agronomists and farmers.
- vi. **Consultation on preferred options** – This was an ongoing process in many cases, discussed throughout regular meetings with the EA and NE and we presented our final plans in October 2022.
- vii. **WINEP submission process** – We completed our Options Development Reports (ODRs) where relevant, and Options Assessment Reports (OARs) for all schemes and investigations, including calculations of wider environmental benefits where appropriate and possible.

The above process is shown in Figure 3-2.

The output of this process resulted in a list of 23 schemes that adopt nature-based solutions, with a number planned for delivery in collaboration with the local Catchment Partnerships and other local catchment stakeholders. Our solutions include working directly with stakeholders and the agricultural sector to reduce risks to our drinking water supplies, improving soil health, natural flood management, in-river and wetland enhancements, INNS control and enhancements to biodiversity. 15 investigations were also proposed for AMP8 to provide evidence to support scheme development for the AMP9 WINEP programme.

**Remaining areas of uncertainty:** Out of the 23 schemes proposed there are 9 AMP8 schemes that have been accepted by the EA as holding lines due to the ongoing AMP7 investigation that will determine the final AMP8 scheme. There is a clear and agreed need to implement a scheme in AMP8 and not wait until AMP9 due to the nature of the environmental improvement to be implemented. The budget requirement for these schemes have been estimated based on expert experience and similar AMP7 project delivery costs. The ongoing investigations will include a detailed options appraisal with cost benefit and wider environmental

benefits assessment to inform the best value solutions. Once the best value and least cost schemes have been developed, we will complete the required options development and options assessments reports for WINEP, as agreed with the EA. If there is any amendment to the budget requirements we will advise at that time. The majority of the AMP7 investigations are due to complete in 2025, with 1 due in 2027.

**To summarise**, in developing this enhancement case, we have used evidence gathered through AMP6 and AMP7 investigations, sampling, surveys and modelling, to gather a robust and compelling evidence base. We have collaborated with the EA, NE and other key stakeholders such as the Catchment Partnerships, to confirm the issues in the catchments. We have then undertaken options development and optioneering processes, applying the WINEP methodology and driver level guidance from the EA and worked collaboratively with both the EA and NE through workshop environments, and with Catchment Partnership organisations to sense check actions proposed. We have collaborated on proposed approaches and validated costs based on experience through AMP7.

We have designed this WINEP to deliver the statutory obligations required of us in a way that delivers optimal benefit for customers and the environment within an efficient investment envelope, delivering more nature-based solutions and working collaboratively with local catchment partnerships. We have worked more closely with the EA, NE and catchment partners than ever before to ensure we have a robust set of proposals for both schemes and investigations that are well-evidenced and technically governed. Through this collaborative development process, we have gone from a long list of 93 to a technically justified and evidenced short list of 40 actions that made up our AMP8 water WINEP plan. We have aligned a number of needs into single schemes to ensure best value efficient delivery and have discussed and agreed reasons for removal of some actions with the regulator, based on insufficient evidence to proceed.

The output of this process produced a WINEP that addresses issues and challenges at two different scales:

- Overarching / programme level priorities
- Scheme / site specific actions

This reflects the need to take action not only where there is a clear challenge to be tackled in a defined location, but to also take action more broadly to transform the company's approach and ability to embed nature-based solutions in meeting water supply challenges through more innovative approaches, adding value, and truly enhancing our services to customers.

The extent to which we have applied the WINEP options appraisal process has been scaled, as appropriate to these scales of action:

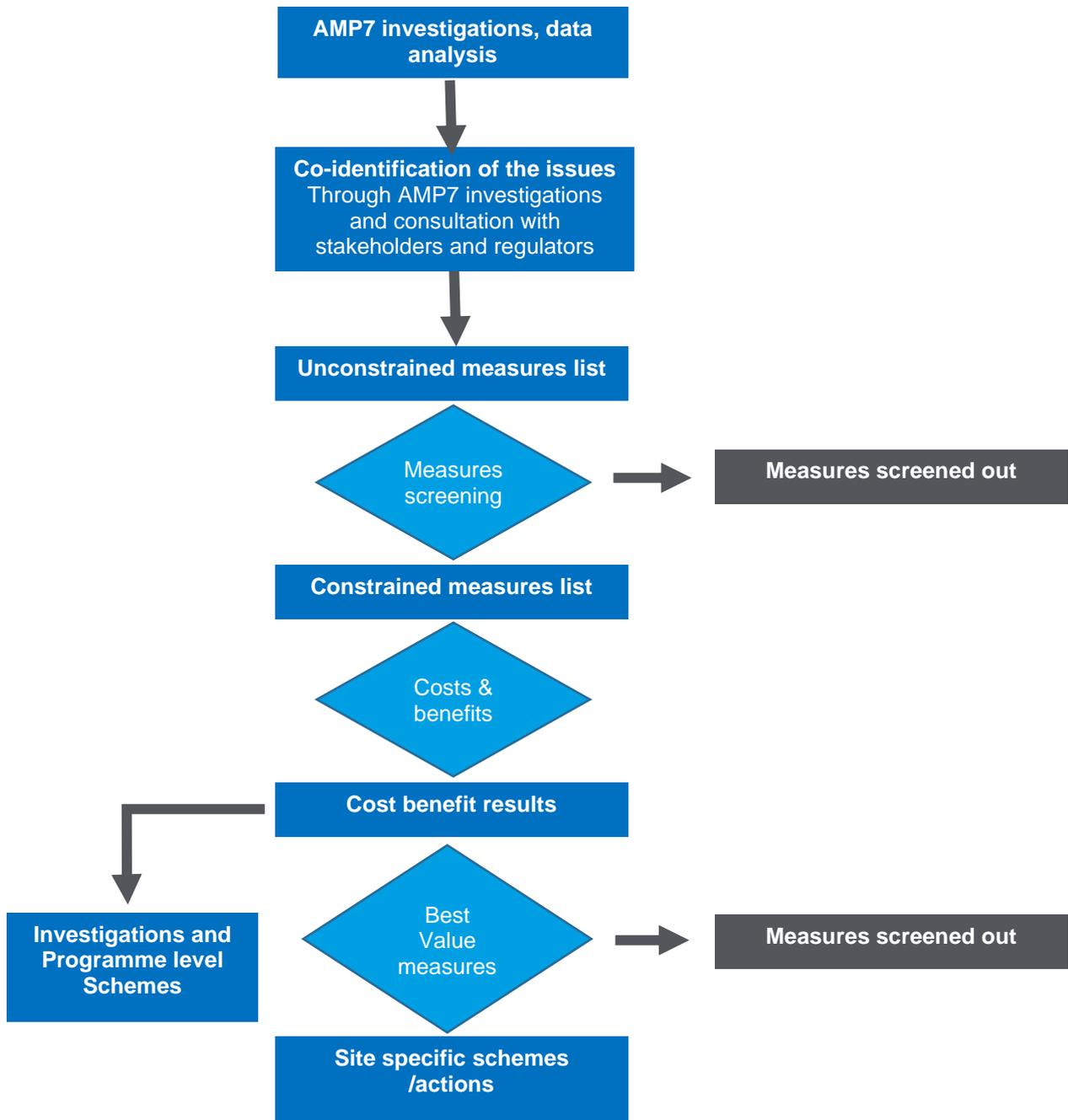
- **In the overarching / programme level category**, we have focused more on new and innovative approaches around natural capital accounting, building trusting and meaningful collaborative approaches in key catchments, and delivering long term strategies to provide climate resilience and enhance biodiversity. Consequently, for this category we have been pragmatic in applying the methodology focusing on where it adds value and drives a meaningful outcome for the business case.
- **At a site specific/action level**, where we have the outputs of an AMP7 investigation we have applied the options development, assessment and appraisal method in full (for example with Drinking Water Protected Areas drivers). Where we are awaiting completion of AMP7 Investigations we have again taken a pragmatic approach to apply the method, in line with the 6 principles outlined previously.

In this way, the programme has been based on robust evidence where available, with catchment and nature-based solutions that are tried and tested, based on no-regrets approaches being promoted to enhance the resilience of our catchments.

This is part of a twin track approach alongside new capital water supply and treatment solutions in the broader Business Plan, to ensure compliance with the regulatory environmental long-term destination, and drinking water quality standards.

Our Customer Panel group and Independent Climate and Environment Group fully supports the approach we are proposing for investing in environmental resilience through nature-based solutions.

Figure 3-2: Options development process



## 3.2. The Water WINEP Programme

The programme level and site-specific options arising from the process described in section 3 have been aligned with Ofwat categories – these are set out in more detail in tables in the Appendix, with a summary provided in the following sections:

### 3.2.1. WINEP- Biodiversity and conservation

Seven implementation schemes are proposed in this category:

**Chichester, Langstone & Pagham Harbours** – habitat enhancement and nutrient reduction measures to protect water quality and enhance biodiversity.

- This scheme follows targeted studies and investigations undertaken in AMP7. These investigations were conducted outside of the regulatory WINEP programme, however there is substantial evidence to support the implementation of this scheme in these highly sensitive catchments.
- Costs were derived from the in-house specialist team supported by consultancy advise.
- The feasible option is a combination of farming measures alongside highly targeted habitat enhancement and social value measures, this will support wastewater treatment solutions within the catchment.

**Biodiversity enhancements (Performance Commitment):** understand biodiversity baseline provided by SWS estate, devise a management plan and implement improvements. The AMP7 investigation assessed 330 sites and identified 12 flagship sites to be improved through 8 biodiversity options on each site.

- This scheme follows an AMP7 investigation, whereby a specialist consultancy undertook an assessment of our estate and the potential for biodiversity improvements. This scheme will also support our Biodiversity Performance Commitment.
- Costs were derived from the in-house specialist team supported by consultancy advise.
- The consultants identified 8 feasible option and of the 330 sites assessed selected 12 flagship sites to target for AMP8 to trial this approach. Sites were selected based on their potential for biodiversity improvements.

**Chalk stream enhancements:** River Anton flagship programme to work collaboratively to enhance chalk stream habitats.

- This scheme follows an AMP7 pilot where phase 1 of a long-term strategy was implemented as part of the national Chalk Stream Restoration flagship programme. The full scope for phase2 of this project is still under investigation which is due to complete by 2025. The investigation is being led by our inhouse technical experts, supported by specialist consultants.
- This scheme has been included in WINEP as a holding line, as agreed by the EA until the investigation completes. A provisional budget has been included based on knowledge from inhouse technical experts, supported by specialist consultants, who are delivering similar nature based schemes in AMP7.
- As part of the investigation specialist consultants will include a fully costed options appraisal, defining the final feasible option(s), which will become our WINEP deliverable for this scheme.

**Weir Wood SSSI ecological enhancements** – INNS management and habitat improvements working collaboratively with catchment partners.

- This scheme follows an AMP7 investigation, in accordance with the WINEP guidance the output from the investigation becomes the preferred option for AMP8.
- Costs were derived from a specialist consultant supporting the WINEP development following the options appraisal from the AMP7 investigation.
- The AMP7 report recommended a phased approach to management of the SSSI with 5 feasible options taken forward for AMP8 implementation.

**Ecological resilience improvement schemes (x3):** wetland SSSI resilience enhancements in Arun Valley, Candover and Itchen Wetlands. The AMP7 investigations and options development work is still ongoing for these schemes to refine the actions and undertake wider benefits assessments.

- These schemes will follow AMP7 investigations which are due to complete in 2025. In accordance with the WINEP guidance the output from the investigations will become the preferred option for AMP8 delivery. The investigations are being led by our inhouse technical experts, supported by specialist consultants.
- These schemes have been included in WINEP as holding lines, as agreed by the EA as mitigation will be required in AMP8, it just hasn't been fully defined yet. A provisional budget has been included based on knowledge from inhouse technical experts, supported by specialist consultants, who are delivering similar nature based schemes in AMP7.
- As part of the investigation specialist consultants will include a fully costed options appraisal, defining the final feasible option(s), which will become our WINEP deliverable for these schemes.

All of these schemes have been developed collaboratively with stakeholders and are focused on partnership working to improve resilience and deliver ecological enhancements, in parallel with solving key water supply challenges, helping us better supply customers into the future. They are also well aligned with customer feedback and regulatory drivers. More detail is provided in



trialled measures and for input on other possible intervention measures going forward, including consideration of payment rates for the measures. An internal literature review was also undertaken which included looking at payments for comparable options offered under Countryside Stewardship (CS). A measures longlist was produced. [REDACTED] modelling was undertaken to look at nitrate leaching reduction by measure (kg/ha/yr) and cost effectiveness at proposed payment rates (£/kgN reduction). A shortlist of measures was then produced and a consultation with farmers undertaken to sense check options, specification detail and proposed payment rates. This information has been used to infer our AMP8 offerings.

More detail is provided in Table 5-4, including high level criteria that have driven cost efficiency.

### 3.2.4. WINEP - Water Framework Directive

Under this Ofwat category 6 schemes have been proposed and accepted under the AMP8 water WINEP. These schemes fall into two categories:

**Improving ecological resilience** – where abstractions may potentially be impacting ecology in nearby chalk streams or wetland habitats, these schemes focus on implementing enhancements to make the habitats more resilient to variations in water level / stream flow regimes. There are 5 schemes falling in this category: North Kent Marshes & White Drain; River Test; River Itchen; Kingsclere Brook; and Lancing Brook & Hammer Stream. The AMP7 investigations and options development processes for these are not due to complete until 2025 and as such the full optioneering and wider benefits assessment process is still ongoing. Costs have been estimated based on previous AMP6 and AMP7 experience and the full options development scope will be completed as part of the final AMP7 Investigations. (These are all WFD no deterioration schemes for water resources and flow)

- These schemes will follow AMP7 investigations which are due to complete in 2025. In accordance with the WINEP guidance the output from the investigations will become the preferred option for AMP8 delivery. The investigations are being led by our inhouse technical experts, supported by specialist consultants.
- These schemes have been included in WINEP as holding lines, as agreed by the EA as mitigation will be required in AMP8, it just hasn't been fully defined yet. A provisional budget has been included based on knowledge from inhouse technical experts, supported by specialist consultants, who are delivering similar nature based schemes in AMP7.
- As part of the investigation specialist consultants will include a fully costed options appraisal, defining the final feasible option(s), which will become our WINEP deliverable for these schemes.

**Preventing deterioration and improving operational performance at Powdermill Reservoir:** through managing flow to better support habitats in the Powdermill Stream via a new compensation release (a WFD Improvement scheme).

- This scheme follows an AMP7 investigation, in accordance with the WINEP guidance the output from the investigation becomes the preferred option for AMP8.
- Costs were derived from the specialist consultants delivering the investigation.
- This was the only option available so no options were discounted.

More detail is provided in Table 5-5, including criteria that have driven cost efficiency.

### 3.2.5. WINEP – Monitoring

Under this Ofwat category 1 monitoring programme has been proposed and accepted under the AMP8 water WINEP. This scheme is to undertake discharge flow monitoring at Rogate WSW under an EPR\_MON driver. More detail is provided in Table 5-6.

### 3.2.6. WINEP - Investigations

Under this Ofwat category 15 investigations have been proposed and accepted under the AMP8 water WINEP. These investigations are focused on better understanding the risk to, and from, SWS water supply assets:

Investigations to better understand the impacts from SWS abstractions, including:

- The impacts of SWS in-river assets on fish and eel passage across the SWS asset base
- The impacts of groundwater abstractions on groundwater status (investigations covering 14 WSW), on groundwater dependent habitats and subsequently SSSI status (3 investigations covering 5 WSW assets)
- The risk of INNS transfers from raw water transfer networks.

Investigations to better understand the risk to SWS assets from the wider environment:

- Catchment investigations into the groundwater risk from agricultural use of nitrogen. One investigation covers 7 WSW catchments and is a desk-based assessment.
- A groundwater “intrusive” investigation that covers 10 groundwater abstractions and is a more thorough investigation involving works on the ground to drill cored boreholes to better understand water levels and quality and to improve our predictive groundwater models.
- Two investigations to understand the impact of in-stream flow targets (CSMG) on groundwater abstraction regimes (long term environmental destination investigations) – two river catchments (Test & Itchen) covering 10 groundwater abstractions.

Overarching investigations into potential to work collaboratively at a broader scale to solve multiple challenges and deliver added value through collaboration:

- An overarching investigation to undertake collaborative planning with catchment stakeholders in key strategic catchments – Test& Itchen, Western Rother, Eastern Yar and Medway (covering 5 WSW collectively).
  - This is a 25 Year Environment Plan investigation which is a non-statutory driver. The investigation is supported by the EA, NE and Catchment Partnerships. Our proposal has been accepted and included in the final WIENP.
- An investigation into climate change and biodiversity risks to, and from, SWS assets.
  - This is a 25 Year Environment Plan investigation which is a non-statutory driver. The investigation is supported by the EA and NE. Our proposal has been accepted and included in the final WIENP.
- Finally, an investigation into the opportunities for SWS to promote regional schemes in parallel with WRSE regional plan.

More detail is provided in Table 5-7, including criteria that have driven cost efficiency.

### 3.3. Our final agreed water WINEP programme

Our resulting AMP8 water WINEP is the largest scale of environmental improvement investment for water we have seen since privatisation. The main reason for the increase in scale of budget is due to the vast number of schemes included in AMP8, compared with a primary focus on investigations through AMP7.

As no further phasing adjustments have been proposed for Water WINEP, the following table and graph show the AMP8 budget required to deliver the plan agreed with the EA, and the spend profile of that budget in AMP8.

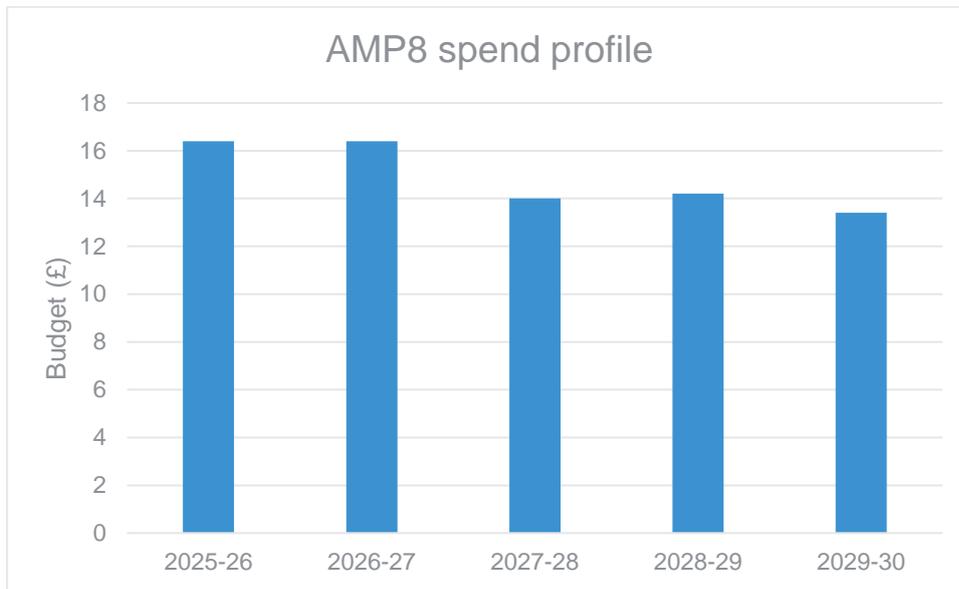
**Table 3-1: AMP8 investment summary**

Ofwat category	AMP8 budget
Biodiversity and conservation	£26,107,506
Invasive Non-native Species	£4,967,315
Drinking Water Protected Areas	£22,777,161



Water Framework Directive	£8,224,640
Monitoring	£234,768
Investigations	£12,047,244
<b>TOTAL</b>	<b>£74,358,634</b>

Figure 3-3: AMP8 budget – spend profile



### 3.4. Consideration of overlap with base and previous enhancement programmes

By its definition, WINEP is about a change in the level of service and therefore is categorised as enhancement rather than base expenditure. The improvements in our plan are driven by legislation meaning the changes we need to make are outside of management control. However, we have considered the overlap with base at the WINEP action level. We have collaborated across the business to support any additional investment needed, for example for treatment compliance or maintenance, to plan a coordinated and optimised investment plan. We have developed our AMP8 WINEP schemes around investigations undertaken in AMP7, ensuring our AMP8 WINEP avoids duplicating any work currently underway in AMP7.

Our starting assumption of what to include in our programme resulted from AMP7 investigations, surveys (water quality and ecological) and modelling, and the direct application of new legislation. During our co-development stage we kept a transparent log of requests for schemes and investigations, agreeing to progress them if supported by available evidence.

### 3.5. Alignment with Ofwat Performance Commitments

The water WINEP programme has been developed to reflect guidance from the Environment Agency and to align with the following Ofwat categories:

- Biodiversity and conservation
- Invasive Non-native Species (INNS)
- Drinking Water Protected Areas (DrWPA)
- Water Framework Directive (WFD)
- Monitoring
- Investigations

A breakdown of the proposed water WINEP investment, relative to the Ofwat categories, is given in Table 3-2 that follows.

**Table 3-2: Water WINEP breakdown relative to Ofwat categories**

OFWAT category	WINEP Driver Code	Number of investigations/ schemes	Related to number of assets/catchments	Sum of AMP8 cost estimate (BV)
Obligation type				
<b>Biodiversity and conservation</b>				<b>£ 26,107,506</b>
S	HD_IMP	2	2	£ 7,283,717
S+	SSSI_IMP	2	2	£ 8,577,097
	NERC_IMP	3	4 plus whole estate	£ 10,246,692
<b>Invasive Non-native Species (INNS)</b>				<b>£ 4,967,315</b>
S	INNS_IMP	1	10	£ 2,550,682
	INNS_ND	1	9	£ 1,248,637
S+	INNS_MON	1	47	£ 1,167,996
<b>Drinking Water Protected Areas (DrWPA)</b>				<b>£ 22,777,161</b>
S	DrWPA_ND	8	45	£ 22,777,161

Water Framework Directive (WFD)				£	8,224,640
S	WFD_ND_WRFflow	4	7	£	4,682,390
	WFDGW_ND	1	20	£	3,121,593
S+	WFD_IMP_WRHMB	1	1	£	420,657
<b>Monitoring</b>				<b>£</b>	<b>234,768</b>
S	EPR_MON1	1	1	£	234,768
<b>Investigations</b>				<b>£</b>	<b>12,047,244</b>
S	DrWPA_INV	3	27	£	2,046,724
	EDWRMP_INV	3	10 plus whole supply area	£	1,355,700
	WFDGW_NDINV	1	13	£	374,339
	INNS_INV	1	9	£	2,550,682
S+	NERC_INV	2	Whole estate	£	1,303,785
	SSSI_INV	3	10	£	2,199,609
NS	25YEP	2	8	£	2,294,371
<b>Water WINEP Total</b>				<b>£</b>	<b>74,358,634</b>

The table that follows, (Table 3-3), references the relevant Ofwat data tables referring to the water WINEP.

**Table 3-3: WINEP links to Ofwat data tables**

Links to data table lines		
Enhancement	Table	Line
WINEP (Water) Transitional expenditure	CW12	11-41
WINEP (Water) Best value	CW13	10-53
WINEP (Water) Alternative option	CW14	10-53
WINEP (Water) Best value benefits	CW15	10-120
WINEP (Water) Alternative option benefits	CW16	10-120

The water WINEP outcomes compliment a broad range of the Ofwat common performance commitments, for example by improving river and bathing water quality, reducing pollution and improving customer service on water quality. The most appropriate and direct alignment is with Performance Commitment 10 for biodiversity enhancements (Table 3-4), however the proposed investment generates environmental and social benefits that are broader than this one common performance commitment.

**Table 3-4: WINEP links to performance commitments**

Links to common/bespoke performance commitments		
Performance commitment name	Unit of measurement of benefit from this investment	Observations
10 - Biodiversity	Biodiversity Units as measured via Biodiversity Metric v4.0	

The purpose of this performance commitment is to incentivise the company to conserve and enhance biodiversity. The benefits of this are: reduced extinction risk, increased resilience to climatic and water resource changes and enhancements in ecosystem service provision such as water quality, localised climate regulation, pollination, clean air, and physical and mental health benefits.

### 3.6. Ensuring cost efficiency

We have considered cost efficiency and affordability at different stages of the options development process:

**Our Catchment First approach:** Catchment management will deliver longer term resilience for our business, through:

- addressing issues at source;
- making catchments more resilient to help reduce future treatment burden and associated costs (capital and maintenance); and
- helping to ensure resilience using green solutions alongside traditional grey solutions to achieve compliance.

We have already taken this hybrid approach for elevated nitrate concentration in our drinking water supplies. The nitrate treatment solutions will ensure our water quality is compliant with the drinking water quality standards and our catchment management solution, working with the agricultural sector, will lead to a reduction of nitrate being lost to the aquifer and contaminating our raw water supplies in the future.

**Our best value methodology:** Cost efficiency has been driven throughout the WINEP scoping process, principally by using experience from AMP7 and collaborating with regulators and stakeholder to understand how to embed additional value into the solutions and how to make them deliverable by working in partnership. The best value and least cost approach has helped ensure that we challenge not only the scope of our proposals, but also the approach to costing and delivering options too. The focus on best value has enabled us to include schemes that have the potential to deliver greatest economic benefit for customers, the environment and society, compared to costs, over the long-term. The majority of AMP8 schemes follow AMP7 investigations which have assessed the evidence with clear governance for the resulting scheme. Wider benefits assessments have been undertaken in line with the WINEP guidance where appropriate.

**Our approach to scoping and delivery:** We currently have an inhouse team of technical experts leading our AMP7 water WINEP delivery, who have developed the AMP8 programme. In AMP8 we hope to build capacity with more specialist headcount to deliver our biodiversity and invasive non-native species programme, which is more cost effective compared to consultancy, retains corporate knowledge, establishes and maintains stakeholder relationships, and connects projects to deliver multiple benefits more efficiently and effectively. Our approach to collaboration with Catchment Partnerships and local environmental groups will also provide an effective and efficient mechanism to deliver, supported by match funding and environmental grants, delivering multiple benefits at a broader catchment scale.

**Our approach to costing and benchmarking:** The following criteria depicts how we have ensured cost efficiency:



- Similar scheme outturn costs: based on in-house subject matter experts (SME) and consultancy experience of delivering similar schemes in AMP7.
- External cost benchmarking: using specialist advice from industry experts, for example from agronomists regarding the kind of measures to offer the agricultural sector and an indication of expected uptake of said measures.
- AMP7 investigations: options assessment forms part of the AMP7 investigation signoff, in line with the WINEP guidance the best value options identified through AMP7 investigations becomes the AMP8 preferred option.
- Nature based solutions focused on resilience: addressing the issue at source (prevention is better than cure), delivering long-term resilience and prevents further deterioration.
- Delivers wider environmental benefits: for natural environment, net zero, catchment resilience and access, amenity and engagement. Where we have been able to provide monetised valuations of these wider benefits we have included that in our WINEP submission.

We have a team of in-house technical specialists who were supported by the consultants currently working on our AMP7 WINEP investigations, to develop and assure the costs for each of the schemes, investigations and monitoring options within the final WINEP submission. We have also worked with agricultural specialists/advisers to support the development of our grant schemes to make sure our offerings would be appropriate for the agricultural sector to reduce risks posed to drinking water supplies.

An example of how we costed our Drinking Water Protected Areas projects is provided below:

First, we considered the kind of measures we could offer to farmers to reduce the risk from nitrate to our drinking water supplies (Table 3-5). Budgets are based on unit costs as confirmed by specialist agricultural advisers, relevant land area and an estimate of uptake of the measure.

**Table 3-5: Development of measures costings for Hampshire groundwater nitrate schemes**

Measure	Unit cost	Hants			
		Eligible area (ha)	% uptake	Implementation area (ha)	Cost
Precision N	█	18,959	15%	█	█
Overwinter cover cropping	█	18,959	15%	█	█
Extended cover cropping	█	18,959	3%	█	█
Grass ley for arable	█	18,959	2%	█	█
Very low input grassland	█	3,223	3%	█	█
				<b>Total cost</b>	<b>£534,170</b>

The annual measures value is then included in the final costing table for farmer incentives as shown below (Table 3-6).

Table 3-6: Budget breakdown for the Hampshire groundwater nitrate scheme

Item	Assumptions / comments	AMP8				
		2025/26	2026/27	2027/28	2028/29	2029/30
Soil health monitoring, awareness raising	Soil health / soil carbon monitoring, awareness raising and upskilling	██████	██████	██████	██████	██████
Farmer incentives	Based on typical uptake rates to date.	██████	██████	██████	██████	██████
New measures / farmer innovation fund	New / innovative measures	██████	██████	██████	██████	██████
PES Development - Whole farm Best Value agreements (N reduction + other targets as developed through collaboration)	Budget for whole farm agreements/targets initially on trial basis	██████	██████	██████	██████	██████
Monitoring for engagement & outcomes (e.g., porous pots, biodiversity)	Budgeted at whole chalk block scale as per AMP 7 work programme	██████	██████	██████	██████	██████
Enhanced WQ monitoring	Cost covered by monitoring plan	█ █	█ █	█ █	█ █	█ █
Trials	Field trials (full scale field trial annual cost █████)	██████	██████	██████	██████	██████
Training	assume part of capacity building budget	█ █	█ █	█ █	█ █	█ █
Communications / website / data visualisation		██████	██████	██████	██████	██████
Measure review; expert input	To keep measures up to date; input on economics to support e.g., whole farm agreements	██████	██████	██████	██████	██████
FCGS, specialist advice visits	Capital grants/specialist farm visits	██████	██████	██████	██████	██████
Farmer engagement / events / cluster contributions	Events, farm cluster facilitation support	██████	██████	██████	██████	██████
Wastewater mitigation	Budgeted for via DWMP					
Urban mitigation	N/A or via Measures budget or DWMP	█ █	█ █	█ █	█ █	█ █
Capacity Building & Knowledge Exchange		██████	██████	██████	██████	██████

Consultancy support						
<b>TOTAL</b>		<b>£861,976</b>	<b>£861,976</b>	<b>£861,976</b>	<b>£861,976</b>	<b>£861,976</b>

During the WINEP development stage we reached out to potential co-funders, while there was a great deal of support to work together, it was too far in advance for financial contributions to be committed. Once we have completed the next stage of the WINEP submission – the Action Specification Forms we will reengage third parties to see if their funding commitment can be confirmed, nearer to the end of AMP7/early AMP8.

Information on the full water WINEP is provided in the Appendix.

## 3.7. Links with other strategic plans

The water WINEP has been developed to align with other key strategic plans:

### 3.7.1. Water Resource Management Plan (WRMP)

The WRMP sets out how Southern Water intend to achieve both a resilient supply of water for our customers and a protected and enhanced environment over the next 50 years. We have embedded our approach to environmental resilience both within the water WINEP catchment programme and into the WRMP. Whilst the two strategic mechanisms align, the scope, costs and governance processes to deliver resilience sit within the WINEP mechanism and not the WRMP. This will help ensure that outcomes for environment, water quantity and water quality are followed through on:

- Taking a holistic view of the catchment, enhancing river morphological resilience, investing in better land stewardship to reduce chemicals used, improve nature and soil health and water retention.
- Ensuring abstraction regimes are sustainable and that we are investing in creating an environment that is more resilient to climate change and population growth is fundamental to both the WRMP and the water WINEP. This is reflected in the focus of the WINEP schemes of key drivers around WFD, Habitats Directive, SSSIs, NERC and 25Year Environment Plan.
- Catchment management schemes to protect the quality of groundwater sources for future generations are similarly reflected in both the WRMP and the water WINEP (focused on Drinking Water Protected Areas drivers).
- Collaboration with stakeholders and partnership working are similarly embedded in both the WINEP and the WRMP, aligned with a range of drivers.

### 3.7.2. Drainage and Wastewater Management Plan

The DWMPs aim to ensure wastewater systems and drainage networks are sustainable, and resilient to future pressures such as climate change and population growth. Southern Water is taking a strategic and coordinated approach to planning the future of drainage, wastewater and environmental water quality, via the development of DWMPs across our entire region. These Plans are currently non-statutory, however the expectation is that the process will be embedded within wastewater companies and set out the strategic direction of wastewater management over a 25-year planning horizon, in line with other strategic plans such as the Water Resource Management Plans. The water catchment team has been working closely with the DWMP team throughout its development. Protecting drinking water catchments has been embedded in the root cause analysis and the action targeting and prioritisation phase of the DWMP development. This has facilitated the prioritisation of wastewater asset investment and focused it to reduce risk to the quality of drinking waters into the future.

### 3.7.3. Drinking Water Safety Plans (WSP)

The DWI requires WSPs for each abstraction that sets out the catchment risks to water quality. The schemes within the water WINEP are focused on both protecting against the risks investigated as significant but are also designed to provide broader protection for water quality as well, by taking a source and pathway

approach. More broadly, the collaborative approaches proposed across the WINEP drivers also facilitate enhanced engagement and relationship building with landowners and NGOs, which also enables a proactive approach to collective protection of drinking water and environmental quality.

#### 3.7.4. Long Term Delivery Strategy

The water WINEP plan is one of a number of AMP8 inputs underpinning the LTDS. The Water WINEP also links to the WRMP and DWMP as described above which are a key focus of the LTDS. The water WINEP plan was developed to align with Southern Waters Environment Strategic Plan which has also shaped our long term delivery strategy.

#### 3.7.5. River Basin Management Plans (RBMP)

The RBMPs set out a catchment-scale framework to protect and enhance natural assets, specifically water resources and environmental water quality within the catchment. This comprises a programme of measures across the rural and urban sectors aiming to achieve multiple environmental benefits through a focus on water quality and quantity, biodiversity, and climate resilience. Water company measures within this enhancement Business Case will ultimately be reflected in the final RBMP.

#### 3.7.6. Flood Risk Management Plan (FRMP)

FRMPs are strategic plans that set out how to manage flood risk in nationally identified flood risk areas (FRAs). The new FRMPs (for the period 2021-2027) are currently being developed, alongside the new RBMPs. The proposed water WINEP has been designed to also contribute to flood risk mitigation via the focus on improving natural assets, soil health, land management and river morphology, to increase water retention in the catchment, reduce run off of pollutants, and provide resilience to flood and drought conditions.

#### 3.7.7. Other Local Plans

The development of the WINEP is aligned with themes in Local Authority Plans, including around growth, nature recovery and biodiversity. Our focus on future resilience and nature-based solutions is aligned with Local Nature Recovery Strategies.

### 3.8. Delivery timeline

The tasks to deliver the Water WINEP AMP8 programme extend across the entire AMP8 cycle between 2025-2030.

- The WINEP investigations all default to a March 2027 delivery date. We have discussed with the EA a requirement to extend the delivery dates of investigations with surveys, monitoring and/or simple modelling to March 2029 and investigations with multiple surveys, and/or monitoring locations, and/or complex modelling to March 2030. The extensions will allow adequate time for the required monitoring and modelling complexities. This approach has been discussed with the EA and the formal EA alteration process will be followed to facilitate these changes.
- The Schemes span the whole AMP with December 2029 deadlines, in the case of WFD drivers or March 2030 for other drivers.

In some cases, work will need to commence at the end of AMP7 to allow for timely delivery of AMP8 WINEP. This includes baseline monitoring to inform investigations or work to build relationships with key stakeholders and landowners to enable AMP8 scheme delivery, particularly where partnerships and collaboration are the preferred approach.

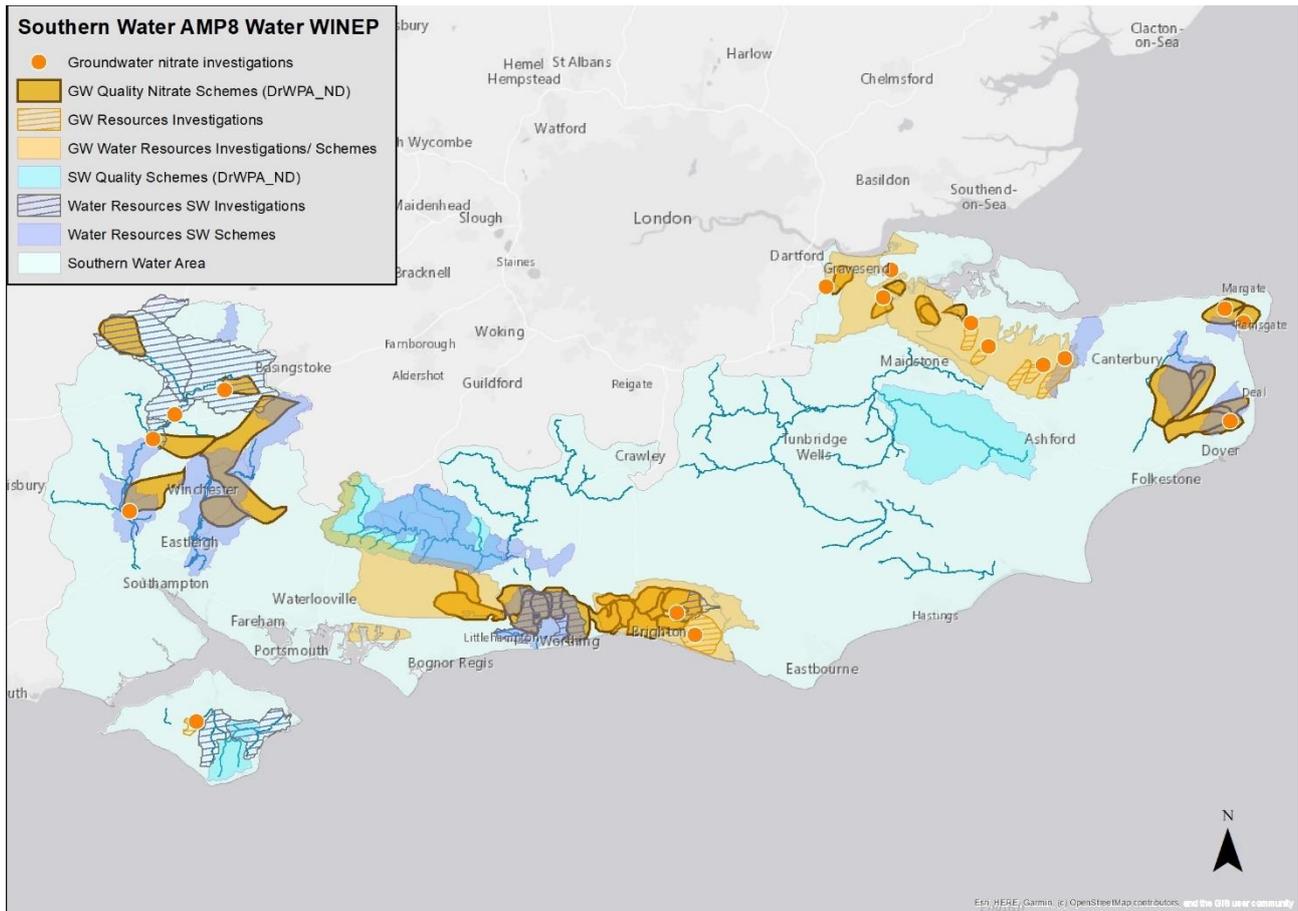
The WINEP has been designed to implement low or no-regrets options up front. This includes stakeholder engagement, co-development and collaboration, monitoring and data gathering and early advice delivery.

Work that requires more in-depth investigations and options development will be extended throughout AMP8.

### 3.9. Geographical extent of delivery

The Water WINEP investment is focused on key drinking water catchments, primarily river catchments and ground water catchment areas. Investment under biodiversity drivers also extends across SWSs whole operating area.

Figure 3-4: Water WINEP geographical extent of delivery



### 3.10. Understanding success, key performance indicators

Whilst the scope of the WINEP is outcome-focused, the measurement of these outcomes is likely to be realised over time. This is due to the time it takes for nature to respond in a way that can be confidently measured.

We therefore propose to set out success criteria, key performance indicators (KPIs) and a programme of monitoring and metrics to ensure we can measure progress along the way to achieving long term resilient outcomes. We propose to split our KPIs and the metrics for success between Activity and Outcome focus.

Activity related metrics are key to understanding success in the short term, both to track and recognise progress but also to inform modelled outcomes. Outcome based metrics are critical to demonstrating success of the programme in the long term.

We will set up a range of KPIs to reflect the different scopes and WINEP drivers. We will continually track these metrics to understand the success of our programme to enable an agile way of working, with adjustments able to be made as needed.

Examples of **activity-based metrics** include:

- Implementation progress against components of individual project / schemes scope (which will be different depending on the schemes and drivers)
- Spend profiles against original budget
- Collaboration agreements established and underway
- Engagement activity – e.g. with farmers, landowners.

Examples of **outcome based metrics** include:

- Specific monitoring – e.g. for water resources, water quality, habitats and biodiversity, soil health, invasive non-natives etc
- Ecosystem Service assessments – re-assess the monetised ecosystem service values delivered as a result of the schemes and how it compares with the original PR24 scope. Align with WINEP scoping to include: climate mitigation, contribution to net zero, biodiversity, flood and drought management, soil health, air quality, wider water quality and quantity and public access and amenity).
- Natural Capital Account reporting – reporting of natural capital benefits into company reporting.
- Stakeholder collaboration satisfaction surveys
- Customer perception surveys.

### 3.11. Managing risk and uncertainty

This is an ambitious programme, requiring more extensive investigations and scheme delivery to be undertaken in a collaborative approach, mostly with stakeholders and landowners, with schemes implemented on 3<sup>rd</sup> party land. Our experience from AMP6 and AMP7 has helped shape the scope of PR24, using lessons learned to inform our approaches. However, some risks remain, and will need careful management in order to reduce uncertainty of outcomes and subsequent risk of non-delivery to customers. For example:

**Budget risk** – we have used AMP7 experience and expert input to cost the AMP8 programme adequately but efficiently. There is a remaining risk that this has been underestimated or that the budget will be cut at Final Determination. We will adapt to mitigate this risk and work closely with the regulators to ensure that the outcomes are maintained.

**Deliverability** – the pace and scale of AMP8 WINEP is unprecedented. There is a risk that there is currently limited capacity in the supply chain, as well as in SWS and the key stakeholder organisations, to resource the plan. We are already reviewing headcount and developing resourcing plans, including the role of partnership approaches with other organisations for example the local Rivers Trusts, Wildlife Trusts and landowners. We are also reviewing skills and resourcing with our supply chain to the end of AMP7, to help ensure appropriate consultancy support will be available.

**Reputation risk impacting collaboration** – there is a risk that the reputation of the water industry and that of Southern Water will impact our ability to achieve buy-in and participation with stakeholders and landowners. As most of the work will need to be undertaken on land not owned by SWS, there is a significant risk that the delivery of the programme and associated outcomes will be dependent on timely 3<sup>rd</sup> party participation, buy in and support. This requires significant investment in time and effort to achieve and relies on timelines outside of our control. We will work in partnership with environmental organisations and land agents to facilitate this approach and carefully track, manage and mitigate key risks as they arise.

**Long term legalities** – to ensure long term continuation of measures and outcomes on 3<sup>rd</sup> party land, we will need to work closely with landowners, river managers, land agents and legal entities to ensure the outcomes are protected over future AMP cycles. This will need to be done as part of the design and implementation and may take time to negotiate. Furthermore, long term legal agreements currently do not exist or are new – both to the Water Industry and to 3<sup>rd</sup> parties. Additional time and resource will be needed to ensure this is done correctly with risks appropriately managed on all sides.

**Regulatory risk and sign off** – if we cannot achieve timely buy in, this may risk achievement of the full scope and long-term outcomes, and as a result the regulatory sign off. We propose to focus on proactive collaboration, relationship building and partnership working with others to deliver the full scope and outcomes. Where this becomes impossible, we will work closely with the regulators to help resolve issues and manage risks to regulatory outcomes.

**Outcome risk and benefits realisation** – the quantification of wider environmental outcomes has only been modelled to date and is dependent on uptake / implementation extent of different nature-based solutions. We propose to re-run the assessments towards the end of AMP8 to validate assumptions and track progress.

A thorough risk identification, management and mitigation process will be undertaken in 2024, including how we will share risks and mitigation actions with other entities. This will allow us to enter AMP8 confidently, working alongside our key partners, regulators and customers.

## 4. Customer Protection

We will be monitored closely for delivery of our AMP8 WINEP by the EA and any late or undelivered actions will have a bearing on our annual environmental performance assessment (EPA). The water WINEP programme will ensure there is a resilient water supply for our customers, at the same time ensure there is the right balance of water available for the environment. The WINEP will support delivery of the Biodiversity performance commitment (PC). The WINEP scheme that will deliver the biodiversity benefits has been codeveloped with Kent Wildlife Trust and is a statutory deliverable with a delivery date of 2025. As the improvements will be on SWSs own estate no third-party funding has been sought.

The Biodiversity PC details are shown in Table 4-1.

**Table 4-1: Biodiversity Performance Commitment details**

	AMP8 year 1	AMP8 year 2	AMP8 year 3	AMP8 year 4	AMP8 year 5	AMP9 year 1	AMP9 year 2	AMP9 year 3	AMP9 year 4	AMP9 year 5	AMP10	AMP11	AMP12
Area of land surveyed (Km <sup>2</sup> )	0.74	2.22	2.76	1.86	1.78	3.30	3.43	2.53	1.78	3.63	9.86	16.07	16.07
Change in biodiversity units (BDUs)	0	0	0	0	0	32.6	32.6	32.6	32.6	65.2	326	489	652
Cumulative change in BDUs	0	0	0	0	0	32.6	65.2	97.8	130.4	195.6	521.6	1010.6	1662.6

In order to protect our customers in case of non-delivery, we are proposing a scheme specific price control deliverable (PCD) based on the delivery of our water WINEP actions. We have set out the PCD in Table 4-2.

**Table 4-2: WINEP Price Control Deliverables**

Component	Output based on Capacity
Output	Delivery of Water WINEP
Total Cost	£74.4m
Unit cost	n/a
Penalty rate	£0.744m
Scheme delivery date	Investigations - Mar 2027, 2029 & 2030. Schemes Dec 2029 & Mar 2030
Gated dates (if required)	n/a
Late penalty (if required)	Not required as delivery is monitored by EA WINEP delivery
Measurement	% Completion of all schemes and investigations
Conditions (if required)	<ul style="list-style-type: none"> <li>Scheme delivery does not include post implementation monitoring.</li> <li>Any formal alterations agreed with the EA regarding scope or delivery dates will supersede what we are assessed against</li> </ul>
Assurance	EA determine if conditions have been met

## 5. Conclusion

The final agreed WINEP is based on the combination of work undertaken throughout AMP7, based on scopes defined at PR19, and enhanced further between 2021 and 2023 to incorporate emerging PR24 WINEP guidance from the EA.

The new guidance reflected a step change in environmental policy and legislation, and has provided the opportunity to pivot from a least cost to a best value approach, unlocking the potential for collaboration to deliver wider benefits for the environment and society. Southern Water has embraced the principles and ambition embedded in the PR24 WINEP guidance and has prepared an ambitious AMP8 delivery programme, focused on making significant traction on environmental improvements to deliver better outcomes for our customers.

Through preparing this WINEP programme, we have built better relationships with the EA, NE and with key stakeholder organisations which has enabled us to establish a forward pathway of collaborative delivery approaches and drive cost efficiency. We have followed the EA regulatory guidance and have codefined the risks and issues, codeveloped the options with stakeholders, and will work in partnership to co-deliver the required outcomes.

The final water WINEP includes 23 schemes, 2 monitoring plans and 15 investigations, derived from a long list of 93 options originally considered at a programme level. The catchment and nature-based solutions proposed will deliver both the WINEP requirements and also contribute to the wider environmental outcomes. The water WINEP scheme for biodiversity will also deliver the requirements to fulfil our Biodiversity Performance Commitment.

The AMP8 budget required to deliver this programme is £74.4m, distributed over the full 5-year period.

Southern Waters Customer Panel Group are fully supportive of the approach we are taking to use more catchment and nature-based solutions to enhance our environment. This longer-term catchment approach is in combination with a treatment solution (if required) to ensure compliance with the drinking water quality standards in the immediate term. The water WINEP programme has been designed to provide the scientific evidence base underpinning our understanding of the water resource and water quality issues in our water body catchments, and addressing the issues identified at source, as well as enhancing the natural environment to develop a sustainable cost-effective programme.

**Table 5-1: WINEP Enhancement business case summary**

Section	Key Commentary	Section
Introduction & Background	There is clear guidance issued by the EA to support the development of the WINEP – ensuring that best value (and least cost) options are developed to deliver against the WINEP requirement but also deliver wider environmental outcomes. Following an investigation focussed AMP7 WINEP, our AMP8 plan focusses on scheme delivery to reduce or mitigate risks/impacts.	Section 1
Need for Enhancement Investment	WINEP is a statutory requirement to deliver our environmental obligations, as translated by our environmental regulators into guidance that we have followed. The enhancement investment is to deliver our new statutory obligations as defined by guidance and legislation.	Sections 2 and 3
Best Option for Customers	We have combined a number of schemes and investigations into a single deliverable. This will ensure that we maximise the environmental output to address multiple risks and issues as co-identified by ourselves, our regulators and environmental stakeholders. Each scheme has been through	Section 3

	an optioneering phase, as part of the AMP7 investigation with the best value options being selected and included in our final WIENP submission.	
Cost Efficiency	Co-development and co-delivery using catchment partnerships and specialist consultancies will result in efficient delivery. Nature based solutions will enhance our natural environment to be able to support our business. In the longer-term catchment management will negate the need for additional or renewed treatment to deal with issues such as nitrate. We have an internal technical specialist team who, supported by specialist consultancies, have costed this programme for AMP8 delivery.	Section 3.6
Customer Protection	The biodiversity WINEP scheme will deliver the requirements of the Biodiversity PC.	Section 4

# Appendix



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**Table 5-2: Biodiversity and Conservation Ofwat Category – WINEP Scheme summary**

Action	Need	Description of best value option	Related to (SWS) Assets:	Optioneering	Optioneering details	Cost efficiency (Green = complete, yellow = in progress)					AMP8 budget
						Similar scheme outturn	External cost benchmarking	AMP7 investigation	Nature based solution	Delivers wider environmental benefits	
Ecological resilience of the Arun Valley sites  HD_IMP / 08SO100012 / S	SWS abstraction potentially having an impact on SSSI integrity	Pending outcome of AMP7 investigation, scheme to improve ecological resilience to Pulborough Brooks SSSI, Waltham Brooks SSSI and Amberley Wild Brooks SSSI.	Hardham	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions		N/A				£5,202,655
Ecological resilience of the Candover Stream  HD_IMP / 08SO100013 / S	SWS abstraction potentially having an impact on the chalk stream	Pending outcome of AMP7 investigation, scheme to improve ecological resilience to the SSSI's, from Totford down to Fobdown.	Andover	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions		N/A				£2,081,062
Ecological resilience of the Itchen Wetlands  SSSI_IMP / 08SO100014 / S+	SWS abstraction potentially having an impact on SSSI integrity	Pending outcome of AMP7 investigation, scheme to provide ecological resilience to the Itchen Wetlands SSSI's, if it is identified that water levels are reduced.	Otterbourne	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions		N/A				£8,324,248
Chichester, Langstone & Pagham Harbours	Evidence of deteriorating habitat condition and conservation status within the estuarine	Scheme to deliver nutrient reduction and habitat enhancement. Investing in natural capital of the Harbours to protect water quality,	Chichester, Langstone & Pagham Harbours	Complete – part of an AMP7 investigation	From the AMP7 investigation 102 unconstrained 17 constrained 12 feasible						£3,255,884

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NERC_IMP / 08SO100023 / S+	habitats of Chichester Harbour	enhance biodiversity, sequester carbon and promote ecological resilience.									
Biodiversity Performance Commitment NERC_IMP / 08SO100024 / S+	Environment Act and Ofwat's new PR24 Biodiversity PC set a new approach to manage biodiversity	Understanding BNG baselines of SWS Estate; devising management plans and delivery of site improvements.	SWS whole estate	Compete – part of an AMP7 investigation	From the AMP7 investigation 330 sites assessed, 12 flagship sites targeted, 8 feasible options to be considered on each site						£3,869,215
River Anton chalk stream enhancement NERC_IMP / 08SO100029 / S+	The Catchment Based Approach (CaBA) chalk stream restoration flagship programme	Working with Catchment Partners to develop a strategy for the restoration of the River Anton as part of and delivery of the phase 2 enhancements (phase 1 delivered in AMP7).	Andover	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions						£3,121,593
Weir Wood SSSI resilience SSSI_IMP / 08SO100033 / S+	Weir Wood SWR is designated as a SSSI, the latest site condition assessment determined that the site is in an Unfavourable condition	Implementation of the management plan, including INNS management and habitat improvements, working with Catchment Partners.	Weir Wood	Complete – part of an AMP7 WINEP investigation	From the AMP7 WINEP investigation 50 unconstrained 12 constrained 5 feasible						£252,849
<b>Total</b>											<b>£26,107,506</b>

**Table 5-3: Invasive Non Native Species (INNS) Ofwat Category – WINEP Scheme summary**

Action WINEP driver/ Action ID/ S, S+, NS	Need	Description of best value option	Related to (SWS) Assets:	Optioneering	Optioneering details	Cost efficiency					AMP8 budget
						Similar scheme outturn	External cost benchmarking	AMP7 investigation	Nature based solution	Delivers wider environmental benefits	
INNS management on SWS assets INNS_ND / 08SO100018 / S	Management of INNS on and upstream of SWS assets	Onsite management plans (review and implement) and work with catchment partners to understand the risks and proactively control INNS upstream of our property/assets to prevent risk of (re)colonisation	Powdermill, Darwell, Bewl, Testwood, Hardham, Brede, Beauport, Burham, Otterbourne, Weir Wood	Complete – part of the AMP7 WINEP investigation	From the AMP7 investigation 18 options were proposed, which were constrained to 16 based on feasibility and deliverability		N/A				£2,550,682
Targeted INNS management trials on raw water transfer sites INNS_IMP / 08SO100020 / S	Refine options identified in AMP7 investigation to roll out in AMP9	This scheme will pilot some of the options identified in the AMP7 investigation, or other innovation available at the time of implementation, to determine the effectiveness of rolling them out across the wider catchments.	Powdermill, Darwell, Bewl, Testwood, Hardham, Brede, Beauport, Burham, Otterbourne	Complete – part of the AMP7 WINEP investigation	From the AMP7 investigation 20 options were proposed, which were constrained to 17 based on feasibility and deliverability		N/A				£1,248,637
INNS monitoring INNS_MON / 08SO100022 / S+	Monitoring/surveillance for INNS in high risk assessed catchments	Monitoring/surveillance for INNS in high risk assessed catchments	<b>47 sites<sup>1</sup></b>	Complete – part of the AMP7 WINEP investigation	The AMP7 investigation identified a total of 47 SWS assets that were classified as		N/A				£1,167,996

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					high risk for INNS.						
Total											<b>£4,967,315</b>

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<sup>1</sup> Sites include: Clean water sites: Powdermill, Darwell (reservoir and transfers), Bewl (reservoir and transfers), Testwood, Hardham, Brede, Beauport, Burham, Otterbourne, Sandown, Wastewater sites: Ashford, Aylesford, Bexhill & Hastings, Broomfield Bank, Budds Farm, Canterbury, Chichester, Chickenhall, East Worthing, Eastbourne, Ford, Fullerton, Goddards Green, Gravesend, Hailsham, Ham Hill, Horsham, Milbrook, Motney Hill, Newhaven, Peacehaven, Peel Common, Portswood, Sandown, Shoreham, Tunbridge Wells, Woolston



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**Table 5-4: Drinking Water Protected Areas Ofwat Category – WINEP Scheme summary**

Action WINEP driver/ Action ID/ S, S+, NS	Need	Description of best value option	Related to (SWS) Assets:	Optioneering	Optioneering details	Cost efficiency					AMP8 budget
						Similar scheme outturn	External cost benchmarking	AMP7 investigation	Nature based solution	Delivers wider environmental benefits	
River Beult catchment scheme  DrWPA_ND / 08SO100001 / S	Propyzamide and carbetamide have been assessed as At Risk substances at Burham	Working with the agricultural sector and catchment partners to protect Burham WSW from deterioration in raw water quality (pesticides)	Burham	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 145 unconstrained 41 constrained 38 feasible						£2,883,010
River Western Rother catchment scheme  DrWPA_ND / 08SO100002 / S	Turbidity, sediment and propyzamide have been assessed as At Risk substances at Hardham	Working with the agricultural sector and catchment partners to protect Hardham WSW from deterioration in raw water quality (pesticides & turbidity/sediment)	Hardham	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 145 unconstrained 41 constrained 38 feasible						£3,027,153
River Eastern Yar catchment scheme  DrWPA_ND / 08SO100003 / S	Turbidity, sediment and algae have been assessed as At Risk substances at Sandown	Working with the agricultural sector and catchment partners to protect Sandown WSW from deterioration in raw water quality (turbidity/sediment & algae)	Sandown	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 145 unconstrained 41 constrained 38 feasible						£2,228,806
Hampshire groundwater catchment schemes	Nitrate has been assessed as an At Risk substance at a 6 groundwater	Working with the agricultural sector and catchment partners protecting drinking water sources from	Chilbolton, Easton, Ibthorpe, Overton,	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 89 unconstrained						£4,309,880

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DrWPA_ND / 08SO100004 / S	sources in Hampshire	deterioration in raw water quality (nitrate) from rural sources	Timsbury, Twyford		29 constrained 18 feasible						
Worthing groundwater catchment scheme  DrWPA_ND / 08SO100005 / S	Nitrate has been assessed as an At Risk substance at a 8 groundwater sources in Worthing (West Sussex)	Working with the agricultural sector and catchment partners protecting drinking water sources from deterioration in raw water quality (nitrate) from rural sources	Arundel, Burpham, Clapham, Findon, Madehurst, Patching, Sompting, Warning Camp	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 89 unconstrained 29 constrained 18 feasible						£2,672,084
Brighton groundwater catchment scheme  DrWPA_ND / 08SO100006 / S	Nitrate has been assessed as an At Risk substance at a 10 groundwater sources in Brighton (East Sussex)	Working with the agricultural sector and catchment partners protecting drinking water sources from deterioration in raw water quality (nitrate) from rural sources	Goldstone, Housedean, Lewes Road, Mile Oak, Mossy Bottom, Newmarket, Patcham, Shoreham, Steyning, Surrenden	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 89 unconstrained 29 constrained 18 feasible						£2,797,988
North Kent groundwater catchment scheme  DrWPA_ND / 08SO100007 / S	Nitrate has been assessed as an At Risk substance at a 7 groundwater sources in North Kent	Working with the agricultural sector and catchment partners protecting drinking water sources from deterioration in raw water quality (nitrate) from rural sources	Capstone (Chalk), Cuxton Dene, Gore, Hazells, Higham, Luton, Strood	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 89 unconstrained 29 constrained 18 feasible						£1,525,419
Thanet groundwater catchment scheme	Nitrate has been assessed as an At Risk substance at a 11 groundwater	Working with the agricultural sector and catchment partners protecting drinking water sources from	Lord of the Manor, Minster B, Sparrow Castle,	Complete – part of the AMP7 WINEP pilot scheme	From the AMP7 WINEP investigation 89 unconstrained						£3,332,821

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DrWPA_ND / 08SO100008 / S	sources in Thanet	deterioration in raw water quality (nitrate) from rural sources	Deal, Flemings, Ringwould, Sutton, Wingham, Woodnesborough, Martin Gorse, Martin Mill		29 constrained 18 feasible						
<b>Total</b>											<b>£22,777,161</b>



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**Table 5-5: Water Framework Directive Ofwat Category – WINEP Scheme summary**

Action	Need	Description of best value option	Related to (SWS) Assets:	Optioneering	Optioneering details	Cost efficiency (Green = complete, yellow = in progress)					AMP8 budget
						Similar scheme outturn	External cost benchmarking	AMP7 investigation	Nature based solution	Delivers wider environmental benefits	
Ecological resilience of Lancing Brook & Hammer Stream  WFD_ND_WR Flow/ 08SO100034 / S	SWS abstraction potentially having an impact on stream flow	Pending outcome of AMP7 investigation, scheme to improve ecological resilience to potentially reduced flows in the named streams.	Hardham	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions	Green	Light Blue	Yellow	Green	Green	Cost included in HD_IMP / 08SO100012
Ecological resilience of Kingsclere Brook  WFD_ND_WR Flow/ 08SO100035 / S	SWS abstraction potentially having an impact on stream flow	Pending outcome of AMP7 investigation, scheme to improve ecological resilience to potentially reduced flows in the named streams.	Kingsclere	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions	Green	Light Blue	Yellow	Green	Green	£1,560,797
Ecological resilience of River Itchen  WFD_ND_WR Flow/ 08SO100037 / S	SWS abstraction potentially having an impact on river flow	Pending outcome of AMP7 investigation, scheme to improve ecological resilience to potentially reduced flows in the river.	Easton, Otterbourne, Twyford	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions	Green	Light Blue	Yellow	Green	Green	Costs included in SSSI_IMP / 08SO100014
Ecological resilience of River Test	SWS abstraction potentially having an	Pending outcome of AMP7 investigation, scheme to improve ecological resilience	Horsebridge, Timsbury	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering	Green	Light Blue	Yellow	Green	Green	£3,121,593

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WFD_ND_WR Flow/ 08SO100038 / S	impact on river flow	to potentially reduced flows in the river.			nature based solutions						
Prevent deterioration and improve operational performance of Powdermill  WFD_IMP_W RHMWB / 08SO100039 / S+	Compliance breaches with respect to compensation releases at Powdermill	A connection will be made into the supply pipe (Powdermill WSR to Brede WSW) and compensation flow will be discharged into Powdermill spillway upstream of the gauging station.	Powdermill	Complete – part of the AMP7 WINEP investigation	From the AMP7 WINEP investigation 10 unconstrained 7 constrained 3 feasible						£420,657
Ecological resilience of North Kent Marshes and the White Drain  WFDGW_ND / 08SO100041 / S	SWS abstraction potentially having an impact on the groundwater ecosystems and the stream flow	Pending outcome of AMP7 investigation, scheme to improve ecological resilience to potentially reduced flows in the marshes and stream.	Capstone Chalk, Cuxton Dene, Gore, Hazells, Higham, Luton, Strood, Belmont, Hockley Hole, Kettle Hill, Selling, Throwley, Danaway, Highstead, Keycol, Matts Hill, Nashenden, Snodhurst, Three Crutches, Fawkham	In progress – part of AMP7 investigation due to complete 2025	Cost estimate based on similar AMP7 scheme delivering nature based solutions						£3,121,593



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Table 5-6: Monitoring Ofwat Category – WINEP Scheme summary

Action WINEP driver/ Action ID/ S, S+, NS	Need	Description of best value option	Related to (SWS) Assets:	Optioneering	Optioneering details	Cost efficiency					AMP8 budget
						Similar scheme outturn	External cost benchmarking	AMP7 investigation	Nature based solution	Delivers wider environmental benefits	
Rogate WSW discharge flow monitoring  EPR_MON1/ 08SO102613 / S	No flow meter on the process discharge flow at Rogate WSW	Install MCERTS certified flow meter on the process discharge.	Rogate	N/A	N/A						£234,768
<b>Total</b>											<b>£234,768</b>



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**Table 5-7: Investigations Ofwat Category – WINEP Scheme summary**

Action WINEP driver/ Action ID/ S, S+, NS	Need	Description of best value option	Related to (SWS) Assets:	Optioneering	Optioneering details	Cost efficiency					AMP8 budget
						Similar scheme /investigation outturn	External cost benchmarking	AMP7 investigation	Nature based solution	Delivers wider environmental benefits	
Groundwater At Risk investigations  DrWPA_INV / 08SO100009 / S	Assessment of "At Risk" substances impacting drinking water supplies	Investigations into risks to groundwater drinking water quality, including: water quality monitoring, catchment risk assessment, source/pathway/root cause analysis, understanding treatment challenges and constraints.	Balsdean, Barton Stacey, Bowcombe, Danaway, Selling, Throwley, Trundlewood	N/A	N/A						£196,660
Groundwater intrusive investigations  DrWPA_INV / 08SO100010 / S	A number of groundwater sources need investigations to improve the calibration of the nitrate trend models	The aim is to investigate the nitrate transport in catchments which have been shown not to follow the standard nitrate trend model processes. The investigation may also include drilling cored boreholes to better understand nitrate pore profile with depth.	Cuxton Dene, Fawkham, Higham, Lord of the Manor, Sparrow Castle, Martin Mill, Overton, Chilbolton, Timsbury, Falmer	N/A	N/A						£1,581,607
Nitrate timebomb  DrWPA_INV / 08SO100011 / S	Enhancing the AMP7 Ofwat Innovation Fund Nitrate Timebomb project	Enhancements to the project to allow it to be used as a decision making tool for the design and implementation of nitrate reduction	Whitchurch, Overton, Barton Stacey, Chilbolton, Ibthorpe,	N/A	N/A						£268,457

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		measures including what wider benefits for nature and society could be secured through this approach	Horsebridge , Timsbury, Easton, Otterbourne , Twyford								
Integrated Catchment Management plans  25YEP_INV / 08SO100026 / NS	Collaborative planning task with other catchment stakeholders – considering the catchment as a whole system.	Investigation focused on collating risks, issues and evolving internal SWS Plans, and working with the Catchment Partnerships and other key stakeholders locally to align future catchment and nature based solutions and actions to achieve wider outcomes for natural capital and social value.	Sandown, Hardham, Burham, Testwood, Otterbourne	N/A	N/A						£1,878,159
Chalk Stream resilience  NERC_INV / 08SO100027 / S+	Chalk stream strategy published by Catchment Based Approach (CaBA)	Working collaboratively with catchment Partners, to review a number of Chalk stream catchments within our operational area, to understand the hydro morphological pressures, and co-develop long term Chalk stream enhancement delivery plans.	Anton, Black Ditch (W Sussex), Burpham Trib (R.Arun), Ferring Rife, Itchen, Kingsclere Brook, Nailbourne and Little Stour, Test, White Drain	N/A	N/A						£1,040,531

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Cridmore Bog SSSI and Wilderness SSSI Investigations  SSSI_INV / 08SO100030 / S+	Impact of augmentation scheme abstraction on SSSI status	Investigation into the groundwater dependence of Cridmore Bog and Wilderness SSSI's and if there is connection between them and the Lower Greensand aquifer.	Isle of Wight augmentation scheme	N/A	N/A						£717,966
Test Long Term Destination Investigation  EDWRMP_INV / 08SO100015 / S	Understanding of the link between CSMG flow targets and the ecology of the river	This investigation is to review Groundwater abstractions in the Test catchment, in the context of the long term destination guidance from the Environment Agency.	Whitchurch, Overton, Barton Stacey, Chilbolton, Ibthorpe, Horsebridge, Timsbury	N/A	N/A						£483,526
Itchen Long Term Destination Investigation  EDWRMP_INV / 08SO100016 / S	Understanding of the link between CSMG flow targets and the ecology of the river	This investigation is to review Groundwater abstractions in the Itchen catchment, in the context of the long term destination guidance from the Environment Agency.	Easton, Otterbourne, Twyford	N/A	N/A						£409,138
Beeding Hill to Newtimber Hill SSSI investigation  SSSI_INV / 08SO100031 / S+	Impact of groundwater abstraction on SSSI status	Investigation into the groundwater dependence of Beeding Hill to Newtimber Hill SSSI's, and if there is a potential connection between the sites and the Chalk Groundwater	Mossy Bottom, Mike Oak	N/A	N/A						£624,319

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		abstractions from the Worthing Chalk.									
Arundel Park SSSI investigation  SSSI_INV / 08SO100032 / S+	Impact of groundwater abstraction on SSSI status	Investigation into the groundwater dependence of the Arundel Park SSSIs, and if there is potential connection between the site and Chalk Groundwater abstractions near the area.	Arundel, Madehurst	N/A	N/A						£779,358
Brighton Chalk WFD investigation  WFDGW_NDI NV / 08SO100036 / S	Impact of groundwater abstraction on groundwater body status	This investigation is to review the Chalk Groundwater abstractions in the Brighton Chalk Groundwater body, and review their interconnectivity to each other, and the Groundwater body as a whole.	Balsdean, Falmer, Goldstone, Housedean, Lewes Road, Mile Oak, Mossy Bottom, Newmarket, Patcham, Shoreham, Southover, Surrenden, Steyning	N/A	N/A						£374,339
Fish passage investigation  NERC_INV / 08SO100025 / S+	Impact of instream structures on fish passage	Investigation to understand if SWS owned and operated instream structures are having a negative impact on fish passage.	Whole SWS area	N/A	N/A						£263,254
INNS management	Reduce the risk of spread of	Detailed feasibility investigation for INNS	Powdermill, Darwell,	N/A	N/A						£2,550,682

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on raw water transfer assets investigation  INNS_INV / 08SO100019 / S	INNS within the existing water transfer network	management on raw water transfer sites, including the successes of the targeted pilots (see the INNS_IMP driver) to inform options for AMP9 implementation	Bewl, Testwood, Hardham, Brede, Beauport, Burham, Otterbourne								
Catchment resilience for climate and biodiversity investigation  25YEP_INV / 08SO100028 / NS	Understanding of the climate change risk to, and from, SWS assets.	Investigation comparing two different river systems assessing environmental quality, wastewater discharges, impounding structures etc to provide conceptual worked examples that can then be applied to other rivers across the SWS area.	Testwood/ Otterbourne , Hardham	N/A	N/A						£416,212
Supporting WRSE regional plan  EDWRMP_INV \ 08SO100042 \ S	Opportunities for catchment solutions within the regional plan (WRSE)	Investigation to identify catchments where regional schemes could work in conjunction with company investigations, or by themselves (where a company scheme isn't being undertaken) to improve the health of catchments	Whole SWS supply area	N/A	N/A						£463,036
<b>Total</b>											<b>£12,047,244</b>

