

Evolving the Water Industry National Environment Programme to deliver greater value

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Introduction

There is widespread agreement that the time is right to evolve the Water Industry National Environment Programme (WINEP) to enable the water industry to deliver greater value for every pound spent. This has led to Defra, Ofwat and the Environment Agency coming together to lead a cross governmental review of the WINEP process. Whilst the current process is effective at delivering statutory requirements, it is not as effective in supporting innovative approaches to enhance the resilience of the ecosystems. The escalating threat of climate change and the need to meet the demands of a growing population mean that this situation must be addressed if it is to be more effective in meeting future challenges.

Building on United Utilities' experience of implementing a Catchment Systems Thinking (CaST) strategy, this discussion paper proposes three key principles to guide the way forward, which aim to better support the industry in delivering greater value. Under each principle there are suggestions for change for the key organisations that have a role in enhancing value – Defra, Ofwat, Environment Agency, the water companies and the environmental non-governmental organisations. The principles are:

Principle 1: Integration of the WINEP process with long term planning

Principle 2: Framing WINEP requirements around a range of relevant outcomes to deliver better value

Principle 3: An economic regulation framework that enhances the delivery of wider public value to customers' society and the environment

By acting together there is an opportunity to make a significant difference to the long term resilience of ecosystems. Such an approach needs to be underpinned by an understanding of natural capital so that value can be optimised overall.

Why does the WINEP need to evolve?

Since the 1990s there has been a WINEP or equivalent. The programme is owned by the Environment Agency and sets out expectation of an environmental outcome in a specific geography, however this is often converted to being output focused by referring to a specific discharge or abstraction. These improvements relate to the requirements arising from EU or UK legislation with a small number of locally driven needs. The majority relate to river or bathing water quality with a lesser number focusing on water resources and biodiversity. Over time great strides have been made improving the water environment from the early days of implementing the Urban Wastewater Treatment Directive which brought first time sewage treatment to many coastal discharges to the current day when 98.3 % of bathing waters met at least the minimum standard. The WINEP has been very successful in achieving delivery of improvements through “end of pipe” engineering schemes with the Environment Agency's Environmental Performance Assessment showing this is near 100% of schemes delivered on time¹. This, however, is not leading to improvement in key metrics such as biodiversity, and has not been as supportive of innovative catchment based solutions.

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922294/Environmental_Performance_Assessment_results_2011_to_2019.pdf

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There is a need to evolve the process as it becomes increasingly challenging to drive improvement in the environment whilst also mitigating and adapting to the impacts of climate change, accommodating a growing population and changing consumer demands. This issue was highlighted recently in the Environment Agency's Challenges and Choices consultation.

“At the current rate of progress it will take over 200 years to reach the government’s 25 Year Environment Plan target of at least 75% of waters to be close to their natural state”.

Source: Environment Agency, Challenges and Choices 2019

The water industry has a fundamental dependency on the resilience of the ecosystems in which it operates - we abstract water from catchments to supply clean, safe drinking water and we clean wastewater to ensure it is safe to be returned to the environment. Additionally, we recycle biosolids back to the land to replenish soils. Some water companies such as United Utilities are also significant owners of catchment land which is often in environmentally sensitive areas such as Sites of Special Scientific Interest. **It is therefore crucial for the resilience of future services and for the benefit of wider society that we turn our focus to the services ecosystems provide for us.** We believe this can be achieved by taking a more holistic approach that takes better account of the wider natural capital benefits that can be delivered by ecosystems rather than just focusing on point source issues.

Furthermore Defra’s 25 year plan signals a fundamental shift to driving environmental improvement through a natural capital approach. This shift is welcomed as it encourages companies to look at the full ecosystem and assess the broader natural capital benefits that can be delivered. This in turn enables companies to identify a better mix of more innovative solutions, combining asset based interventions, catchment delivery and nature based solutions – these can drive broader environmental benefit such as carbon sequestration, nutrient cycling, flood risk management, recreation and amenity. Whilst the industry has already started to evolve in this area there is more potential for it to deliver better environmental outcomes whilst keeping customers’ bills affordable if all aspects of the regulatory environment fully supported it.



The drivers of the key organisations with an interest in evolving the WINEP process

Multiple organisations have a role to play in enabling water companies to deliver greater value for customers for every pound of WINEP expenditure. Table 1 sets out the most pertinent drivers of the organisations involved in the review, many of which are complementary. This table illustrates significant alignment with objectives with a focus on moving towards enhancing ecosystem resilience, greater partnership working and growing natural capital.

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Table 1 Drivers for each organisation with a key role in the WINEP

Organisation	Key drivers with respect to WINEP review
Defra	The government's 25 year Environment Plan sets out to leave our environment in a better state than we found it. Of particular relevance to the water industry is the goal to improve at least three quarters of waters to be close to their natural state as soon as is practicable.
Ofwat	Ofwat has a duty to contribute to the achievement of sustainable development and thus the long term health of ecosystems and the impact on the industry's services is a key driver. Additionally, two of Ofwat's strategic goals link in closely to the review of the WINEP which are: <ul style="list-style-type: none"> • To drive water companies to meet long-term challenges through increased collaboration and partnerships • For water companies to serve a wider public purpose, delivering more for customers, society and the environment.
Environment Agency/Natural England	The Environment Agency and Natural England jointly published the Water Industry Strategy Environmental Requirements (WISER) ahead of the last price review. This set out a number of objectives but the ones most pertinent to the review of the WINEP are to: <ul style="list-style-type: none"> • Ensure statutory environmental requirements are met • Improve long term environmental resilience In addition it set out some good practice approaches, which included <ul style="list-style-type: none"> • Valuing the environment • Seeking partnership • Embracing innovation
Water Companies	Water companies need to: <ul style="list-style-type: none"> • Ensure they can provide resilient services to customers • Put the environment at the core of their businesses • Have a clear purpose, adding public value • Collaborate and work with others • Have a more meaningful relationship with customers • Ensure they can meet their statutory obligations at an affordable cost to customers.
Environmental Non-Governmental Organisations (NGOs)	A group of 18 environmental NGOs came together prior to the last price review to set out their Blueprint for Water. This set out a number of proposals for the water companies which are pertinent to the WINEP including: <ul style="list-style-type: none"> • Enhanced and extended catchment initiatives • Increased ecosystem resilience in vulnerable locations and catchments • Natural Capital to be assessed and grown • Contributing to achieving good environmental status • Green infrastructure and Sustainable Drainage • All abstractions to be within sustainable limits and controls in place to prevent deterioration • The risk of deterioration due to increased abstraction to be addressed

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Unlocking greater value

To support evolution of the WINEP, three principles have been identified that would help unlock the potential to deliver greater value. These are:

1. Integration of the WINEP process with long term planning
2. Framing WINEP requirements around a range of relevant outcomes to deliver better value
3. An economic regulation framework that enhances the delivery of wider public value to customers, society and the environment

Principle 1: Integration of WINEP process with long term planning

The WINEP has historically been a relatively short term process focused on the next five years with a limited look ahead beyond that. This has given rise to regular investment at the same sites to achieve ever tighter permit limits, as illustrated in the example of Altrincham Wastewater Treatment Works (WwTW) shown below. This example illustrates a pattern of successive investment drivers, with limited sight of future direction, which often results in multiple treatment stages and increases in carbon emissions. Where companies have greater sight of the long term direction there is greater potential to develop a more sustainable plan to adapt to that future.

Altrincham WwTW – history of WINEP requirements leading to capital projects

Fact file

Serves population of 44,000 in the town of Altrincham in Greater Manchester

Largely domestic catchment

Discharges to Timperley Brook

AMP	Driver	Requirement
3	River Quality Objective Urban Wastewater Directive	BOD 10mg/l, Ammonia 3mg/l Inlet overflow requires improvement
4	Freshwater Fish Directive	BOD 8mg/l, Ammonia 2mg/l Suspended solids 25mg/l
5	Water Framework Directive	Ammonia 1mg/l
6	Urban Wastewater Treatment Directive	2mg/l Phosphorus
7	Water Framework Directive	None – Phosphorus removal to meet good or moderate status is non cost beneficial
Future	Water Framework Directive	Phosphorus, Priority Substances?

An example of where we have been able drive a more sustainable option is at Failsworth WwTW where we had an AMP6 requirement to address several unsatisfactory intermittent discharges (UIDs) in the catchment. Solution development identified that the flow to full treatment would need to increase from 190l/s to 350 l/s in order to improve the operation of the overflows to meet Water Framework Directive standards. In order to meet this requirement a Nereda² plant was identified as the solution to deliver the additional treatment capacity and would sit alongside the existing trickling filter works. Once future AMP7 drivers were accounted for alongside long term maintenance needs we identified that a total replacement of the works with a full flow Nereda plant offered the best value solution. The key to changing the direction was

² A granular activated sludge process

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the knowledge that phosphorus removal would be required in AMP7 and the Nereda plant would deliver much of this biologically thus avoiding significant amounts of chemical dosing.

More recently, the multiple cycles of the Water Framework Directive have created a slightly longer term view of environmental improvement needs, which has facilitated companies becoming more innovative in their approaches. An example of this is the work United Utilities has done in the Petteril catchment in Cumbria which is described in a case study on page 11.

Innovations, partnerships, integrated and nature based solutions all take time to develop and so adopting a constrained, short-term view will reduce the incentives for companies to investigate (and invest in) alternative approaches as the certainty offered by traditional end of pipe solutions will be preferred. **To maximise the potential for innovation, partnership, integrated and catchment solutions, it will be essential to take a longer term view of our ambition** for the environment and the challenges that need to be addressed. This would enable the WINEP to facilitate the delivery of the near term measures identified in companies long term plans. Importantly, it would allow companies to weave their path to long term ambitions such as net zero carbon emissions in with water quality improvements.

The advent of the Drainage and Wastewater Management Planning process (DWMP) for the first time in the lead up to PR24 and the development of Water Resources Management plans (WRMP) as well as Regional Water Resources Plans will help provide significant long term planning with a focus on resilient services in the context of a resilient environment. **It will be important that the WINEP is aligned to and complements this process rather than setting off down a different path** and adding in significant new requirements late in the process.

In order to keep companies' long term plans and the WINEP closely aligned it will be key that there is:

- A growing capability in water companies to understand the ecosystem resilience they rely upon so they can ensure that long term plans are intervening at a sustainable rate to protect and enhance ecosystem resilience despite the pressures of climate change and population growth.
- A longer term ambition for the environment so that companies can fully integrate this into their long term planning. Longer term targets will allow not only integration of our long term planning but also the scope to maximise partnership and collaboration with other parties. This in turn offers the potential to offer better value for money for customers.

Such an approach would allow us to maximise the opportunity to embed nature based solutions within our urban spaces thereby providing wider benefits, for example, by improving the health and wellbeing of local communities.

In the nearer term, **there is a particular risk that will arise at PR24 that will need to be addressed proactively, which is the presence of a key Water Framework Directive (WFD) delivery date in December 2027, mid-way through the AMP8 period.** This creates two pressing issues:

1. The WFD deadline of December 2027 will leave limited time to explore and deliver partnership/catchment solutions in AMP8.
2. There is likely to be a high level of uncertainty about post 2027 requirements at the time of PR24 determinations. This means a workable solution to managing this uncertainty needs to be found.

The issue of the early WFD deadline in December 2027 would be best dealt with by allowing companies to make an early submission for this particular programme of work, and for that to be agreed to enable it to be started well in advance of the start of AMP8. To address the issue of uncertainty in the post 2027 timeframe an approach similar to the current WINEP uncertainty mechanism may be appropriate.

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In summary we have identified the following actions in table 2 that would be needed to help ensure that companies have confidence of future direction and requirements giving rise to greater opportunity to develop partnerships and nature based solutions

Table 2 Changes that would support delivery of principle 1

Organisation	What needs to change?
Defra	<p>Set a long term ambition for the performance of the industry within which companies can optimise long term plans.</p> <p>Align planning cycles to remove the inefficiency of the misaligned Water Framework Directive and Price Review cycles.</p>
Environment Agency	<p>Ensure that any regulatory steer on the level of ambition and emerging issues is set out as early as possible, with the specific aim of influencing long term planning.</p> <p>Work with the industry to establish common metrics for assessing the resilience of ecosystems.</p> <p>Ensure the WINEP methodology recognises the long term planning frameworks the industry uses and ensures as much consistency as possible between them.</p>
Water companies	<p>Companies will need to increasingly embed ecosystem resilience at the heart of their long term planning and ensure they have a strong understanding of the dependency they have upon it.</p> <p>There is also a need to deliver living plans that continuously evolve rather than static ones that are replaced every 5 years. This will allow clarity of what is being delivered and promote long term partnerships.</p> <p>Work across the industry to define ecosystem resilience metrics.</p>
Ofwat	<p>Ensure that the approach to PR24 recognises the need to mitigate the risk that innovation and partnership working will be stifled by the WFD deadline in the middle of AMP8.</p> <p>Make available uncertainty mechanisms that allow companies to manage the risk of newly arising Water Framework Directive schemes or schemes arising from changes in legislation.</p> <p>Ensure the companies are properly incentivised to deliver the best value outcomes.</p>
Environmental non-governmental organisations	<p>Support development of long term plans through the Catchment Based Approach.</p>

Principle 2: Framing WINEP requirements around a range of relevant outcomes to deliver better value

The WINEP has historically been very focused on outputs rather than outcomes and it has only really targeted water quality and water resources with minimal focus on other natural capital benefits that are important to a resilient society such as flood risk resilience, carbon and nutrient recovery. This leads to solutions that solve a single driver such as chemical phosphorus removal, whilst not supporting recovery of this nutrient, which is essential for plant growth including food production.

Catchments operate as a full ecosystem. There are continuous interactions between the different elements of that ecosystem, and to deliver the greatest results it is important to think about all of those elements and how they interact in the system as a whole - considering how these interactions work rather than focusing on delivering on each element in isolation. In order to do this effectively, United Utilities has developed a

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Catchment Systems Thinking approach which looks to understand the full needs of the catchment from the many stakeholders that interact with it and understand how best to intervene in this system to deliver the best overall results. We believe we have some positive examples that show the progress such an approach can make, whilst recognising that there is much more that could be done, especially if all stakeholders in the sector worked together to achieve it.

A planning process that is focused around delivering wider value as measured through a multi capitals approach would enable a Catchment Systems Thinking approach leading to the delivery of greater value in the long run and a more resilient water service for the communities we serve. This will be particularly important if we are to bring about an increase in nature based solutions which have the potential to deliver wider benefits and have wide customer support³. These schemes struggle to compete with end of pipe solutions when compared on the basis of a single WINEP driver but the picture could be different if companies were able to gain recognition for the wider benefits delivered within regulatory mechanisms such as cost assessment.

Alternatively, there may be schemes that are considered to be non-cost beneficial because drivers are being examined in isolation. By taking a Catchment Systems Thinking approach, a way forward may be found by bringing together multiple risks in a catchment which can be solved by partnership solutions, which deliver greater overall benefits across multiple drivers. A good example of this is the work United Utilities has done in the Petteril catchment which is described in a case study on page 11.

Incentivising delivery of greater natural capital benefits

In order to support delivery of greater value United Utilities included a natural capital Outcome Delivery Incentive (ODI) in its PR19 business plan. This ODI stimulates delivery of additional natural capital benefits over and above those already required by the WINEP. The ODI recognises a limited set of natural capital benefits, including water quality, flooding, climate regulation, biodiversity, recreation/amenity and health & wellbeing. The set of benefits that were in scope were deliberately set conservatively as the ODI was novel at the time. As the WINEP evolves there is scope to include further ones such as nutrient cycling and air quality which would be strong candidates.

As we attempt to deliver more natural capital solutions, barriers are encountered that need to be addressed to maximise value. These include the need to ensure that schemes aren't unnecessarily jeopardised by the desire to seek perfection in one area of performance at the cost of delivering much wider environmental benefits. This can be a particular issue with water quality improvements where the desire to meet very stringent standards at specific locations might exclude the potential for a nature based solution that may be much more sustainable and offer greater benefits than an end of pipe solution. If it is always required that nature based solutions need to match end of pipe solutions for precision of outcome we will severely inhibit their use, and therefore lose out on their potential to deliver greater benefits. **By considering the natural and social value of options we will see the greater potential nature based solutions have to offer and unlock their potential.**

In summary we have identified the following actions in table 3 that would be needed to drive an outcomes based approach underpinned by an understanding of natural capital value.

³ 65% of United Utilities customers are willing to pay a little bit more for land to be managed more sustainably

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Table 3 Changes that would support delivery of principle 2

Organisation	What needs to change?
Defra	<p>Ensure wherever possible environmental legislation focuses on outcomes rather than outputs as this gives the greatest opportunity to improve ecosystem resilience. An example of this would be to allow the Water Framework Directive standards to drive improvements in phosphorus in our rivers and not to designate further stretches of river as sensitive under the Urban Wastewater Treatment Directive.</p> <p>Confirm via the cross governmental review, the range of outcomes that the water industry can be expected to deliver and the basis for accounting for them.</p>
Environment Agency	<p>Set out the outcome of a scheme clearly in the WINEP so that companies, their supply chains and partners can innovate. It should not be constrained any more than is necessary to avoid losing opportunities to deliver much greater value.</p> <p>Establish a common approach for assessing the natural capital value of WINEP interventions.</p>
Water companies	<p>Companies will need to ensure they have access to the capability, data and systems to allow them consistently understand the value of different options using a natural capital approach.</p> <p>Companies need to ensure their supply chain and partnership arrangements have a natural/social capital capability and can develop solutions that deliver a wider range of natural and social capital benefits. Additionally, long term partnership arrangements to help drive towards a catchment system operation approach would be particularly beneficial in driving the changes needed.</p>
Environmental Non-governmental organisations	<p>Support the identification of relevant outcomes and help to diversify the industry's funding streams where it has the potential to deliver outcomes for wider society that go beyond the core water and wastewater service.</p>

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Case Study

The Petteril Catchment, Cumbria

The River Petteril is a tributary of the much larger River Eden, located in Cumbria. United Utilities has 11 wastewater treatment works across the catchment, all of which are very small (serving fewer than 1,000 population each). However, four of these wastewater treatment works were included in the National Environmental Programme (NEP5) as needing a permit for phosphorus removal in order to meet our “fair share” reduction towards achieving good ecological status in water quality by 2027. The scale of capital investment required to deliver conventional end-of-pipe solutions for phosphorus removal at these works was disproportionate when the cost per customer served was considered. When ecosystems resilience is reviewed more broadly a number of other risks in the catchment are also identified including:

- risk to raw water quality at Bowscar borehole due to nitrate pollution from agriculture;
- significant flood risk both locally and a downstream impact on Carlisle;
- diffuse pollution from transport (both the M6 motorway and the West Coast mainline run through the river valley); and
- significant diffuse pollution from agriculture and domestic septic tanks contributing to the phosphorus load in the rivers.

In 2016 we started to apply our Catchment Systems Thinking Strategy to this catchment to arrive at a revised plan which delivers enhanced ecosystem resilience. Key elements of the plan include:

- Leading the newly formed system operation steering group
- Piloting a natural capital methodology to develop an account for the catchment
- Building an enhanced evidence base to ensure the root cause of ecosystem resilience threats was understood thereby leading to effective interventions
- Development of more sustainable solutions for small treatment works
- Trial of flexible permitting
- Trial of nutrient trading
- Delivery of agricultural interventions working in partnership with farmers and landowners
- Education campaigns to target pollution from private septic tanks and misconnections
- Identification of natural opportunities to reduce flood risk such as Melbourne Park in Carlisle

By 2021 we will have delivered the majority of interventions in the catchment. Without our integrated approach interventions in this catchment to address phosphorus would not have been cost beneficial. We will monitor the benefits on completion of the interventions and carry out a benefits realisation review to determine the overall effectiveness which can then feed into our future plans.

Key learning points

- ✓ A catchment scheme was possible because we were looking to meet outcome based standards.
- ✓ Evidence of impact and source apportionment are key to developing value for money solutions. EA monitoring data is insufficient in many cases and may need supplementing.
- ✓ There are others willing to co-invest in improvements where they have the potential to also benefit. Identification of the key organisations who might have a role to play in supplying or demanding interventions is key to setting up these types of schemes.
- ✓ The cost of catchment interventions per kg of P removed was cheaper than a wastewater treatment solution and delivered wider natural capital benefits such as improved soil health.
- ✓ Monitoring costs of flexible permits are significant. Further innovation is needed to drive down the cost.
- ✓ Opportunities to deliver more in the catchment were lost due to the need to ensure every metre of watercourse met Water Framework Directive standards. Greater value could have been achieved if there was a little more flexibility.

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Principle 3: An economic regulation framework that enhances the delivery of wider public value to customers, society and the environment

Removing the remaining capex bias in the way companies are funded

The economic regulatory framework centres around five-yearly AMPs, with Price Reviews that assess the efficient cost of delivering the package of performance expectations that customers will receive from companies in the subsequent five year period. Within each Price Review, Ofwat estimates the cost of delivering environmental outcomes and an estimate of efficient costs is made based on the schemes that are listed within the most recent iteration of the WINEP. This process has been well established in previous AMPs and provided a reasonable amount of transparency over costs, for needs that are recognised as requirements. This has reduced the risk of companies having obligations in their WINEP without commensurate recovery of expenditure to deliver those requirements. Investments that are long life (capital enhancements) are paid for up front by the company and then recovered from customers over the life of that asset - this gives rise to the Regulatory Capital Value (RCV). The RCV is an explicit, long-term regulatory commitment that enables companies to recover from customers the efficient costs of meeting a new environmental obligation over the life of the resulting assets.

The current approach to deriving efficient cost allowances is to benchmark company plans, either top-down by using econometric models or bottom-up through engineering assessments known as deep dives. Even though modelling can be expanded to account for totex, it has historically been solely focussed on the requirement to deliver traditional end of pipe solutions, e.g. models based on capital interventions at treatment works, as this is all that the available data has allowed. In their plans, companies report the population equivalent or the additional storage that a scheme with a specific driver (e.g. Phosphorus removal) will provide in line with what is reported within the WINEP, and Ofwat is then able to benchmark this in order to ensure that only efficient costs are allowed. This expenditure is then added to the RCV and recovered over the life of the asset – the period for which the environmental performance will be enhanced – rather than in the year in which the expenditure is incurred.

The move to totex has largely alleviated the prior capex-bias within botex (costs for delivering base service), however, the approach to cost assessment for enhancements still has an inherent bias towards capital solutions. This is because it only recognises expenditure needs in the same AMP as the enhancement is first required (and the approach tends to focus on historic end of pipe capital solutions), but does not recognise expenditure needed for ongoing management of a nature based solution over multiple AMPs. If this is not addressed, then it will act as a barrier and disincentivise companies to reveal potential nature based solutions and partnerships upfront in their business plans. This will mean that customers will potentially pay a higher price for the environmental improvement than would have been the case if the nature based solution or partnership solution was recognised as part of cost assessment.

The risk with evolving the approach to delivering environmental improvements through the WINEP by facilitating the adoption of more nature based solutions and partnership working is that the current approach to deriving (enhancement) cost allowances is focused on traditional interventions and the protection offered by the RCV only applies to long life assets, rather than long term commitments which may instead be opex in nature. Nature based solutions and partnerships will likely require more operating expenditure interventions than capital enhancements. Whilst operating expenditure can be reported as an enhancement in order to try and disassociate it from routine base expenditure ('botex'), the lack of a separate reported driver means that it can only be grouped with capital interventions and not modelled separately. Additionally, opex is paid for by customers in-year rather than being a commitment to future revenues in future periods as within the RCV. This means that, even if the opex intervention were allowed through, e.g. a deep dive, companies are only assured of recovering the opex in the following AMP, all future

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AMPs are uncertain and would have to be allowed again, which generates future risk for the company in comparison to traditional solutions.

Furthermore, if a company constructs a capital asset, there is also an increased likelihood that the approach to botex modelling (that accounts for treatment complexity) will capture future operating and maintenance requirements in future AMPs also. The same cannot be said of nature based solutions or partnership workings under the current approach. This inconsistency in assessments will therefore increase the likelihood that companies pursue the tried and tested (more risk averse) approaches of seeking to undertake capital interventions as the risk of not being able to recover sufficient expenditure is smaller.

Furthermore, given that investment within a business plan needs to be well evidenced, the timescales between when a need is expected on the WINEP and the submission of the business plan may be insufficient to enable a full bottom up estimating of a nature based solution/partnership – these will take longer to evidence. This, again, may lead companies towards favouring the submission of traditional solutions and to only seek out alternative lower cost interventions as part of its delivery.

If the approach is not updated then this will act as a barrier for companies to reveal upfront any nature based solutions, therefore causing customers to pay additional costs for environmental improvements.

Ensuring that the cost assessment process supports schemes that deliver greater value for money

In addition to the specific issue of opex solutions there is also the need to ensure that the cost assessment process doesn't disadvantage schemes that deliver greater value when compared with a conventional solution that might deliver just a statutory requirement. A proposed approach to address this is set out below.

For nature based solutions, Ofwat could make allowances for totex based on the whole life (NPV) cost, not simply the in-AMP expenditure. If allowed, in-AMP opex is added to cost allowances (to form part of allowed revenues) with the remainder of the NPV added to the RCV, thereby recovering the rest of the expenditure through revenues from customers over time (this is a similar approach to how allowances for existing operating leases were made at PR19). The ongoing cost of managing the nature based solution would then be provided for by moderating RCV run-off assumptions.

Separate reporting of actual nature based solutions/partnerships will enable these costs to be stripped out in future AMPs to prevent companies recovering the money twice (through botex models and/or future customer sharing arrangements).

This would then make cost assessment of nature based solutions more directly comparable to the process for deriving allowances for end of pipe capital schemes, which would be unchanged from current benchmarking for cost allowances and recovery of revenues.

As benchmarking of cost for nature based solutions is likely to be more difficult, the company must therefore evidence why the preferred option delivers the best value, especially where it might be the case that the preferred option is not the lowest cost intervention.

To ensure some consistency of approach to assessing best value, the WINEP methodology could set out a framework within which this is done to allow confidence that companies are taking a similar approach and that approach is considered sufficiently robust. For example, United Utilities is currently using CIRIA's Benefits Estimation Tool (BEST) to assess the natural capital benefits of options to support its AMP7 natural capital ODI as this is an externally recognised approach. Other approaches could be used as BEST was specifically designed with sustainable drainage in mind; however the important point is consistency and that all regulators should have confidence in it. Companies can then evidence this through Ofwat's existing approaches to assessing enhancement programmes.

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If companies were given an additional allowance to recognise a scheme that delivers greater value there would be a need for customer protection to avoid companies benefiting from reverting back to the statutory requirement alone. This could be done through:

- a mechanism such as a natural capital ODI which could include under performance penalties for delivering less natural capital value than the original business plan included and conversely outperformance payments where companies innovate within the AMP and deliver greater value; and
- a true up of the RCV to reflect the actual NPV of nature based solutions once they are known (i.e. to enable a cost sharing incentive).

One key benefit of a system of outperformance benefits for delivery of greater value is it has the potential to allow companies to operate more flexibly within a system of natural capital markets. For such a system to really take off it would need to be less constrained than the current system that only funds named interventions and expects them to be delivered in a set timeframe with penalties for failing to do so. Markets operate best when organisations can seize an opportunity to step in when it is opportune. Natural capital markets is something United Utilities is involved in piloting with some key examples including:

- Nutrient markets in the Petteril catchment in Cumbria
- Wyre Natural Flood Risk Management (NFM) Investment Readiness Project⁴

A further discussion paper is planned to cover the topic of natural capital markets.

In summary, we have identified the following actions in table 4 that would be needed to ensure the economic regulation framework supported the unlocking of greater value for every pound of WINEP expenditure.

Table 4 Changes that would support delivery of principle 3

Organisation	What needs to change?
Ofwat	<p>Provide a framework in which nature based solutions can be assessed and remunerated over the long run within current cost assessment and revenue building blocks.</p> <p>Ensure that the cost assessment process does not disadvantage schemes that deliver greater value than the statutory requirement due to a focus on lowest whole life cost rather than value for money as measured through a capitals approach.</p> <p>Consider the need for a consistent, industry standard natural capital ODI to protect customers and to drive within-AMP innovation.</p>
Water companies	<p>Develop a consistent and appropriate approach to reporting natural capital valuations to enable benchmarking.</p>
Environment Agency	<p>Transparency with Ofwat on the requirements to be delivered and the duration over which commitments are made.</p> <p>Consider how the WINEP methodology could include for a consistent approach to assessing the natural capital value of different interventions to allow for integrated schemes to be put forward which deliver multiple benefits.</p>

⁴ <https://www.therivertrust.org/projects/wyre-nfm-investment-readiness-project/>

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Conclusion

Evolving the WINEP to deliver greater value involves all parties listed in this paper and it goes beyond the WINEP itself to the processes that sit around it including the long term planning frameworks and the approach to economic regulation. The cross governmental review presents an important opportunity to unlock the water industry to deliver greater natural and social capital value. Importantly, the water industry can also act as a catalyst to bring wider funding sources to the table as United Utilities has done in the Petteril catchment, where we have joined forces with Nestle to deliver investment into the catchment for different reasons (phosphorus in rivers and soil health) but through common interventions, thereby delivering greater value. The principles set out in this paper aim to highlight where key changes should make a significant step to unlocking the opportunity to deliver greater value through WINEP expenditure. It may not be feasible to deliver a full evolution of the WINEP processes for PR24, not least because long term planning to inform PR24 is already underway, but the sooner we make changes the sooner we will unlock the opportunities to deliver greater value.