6. Delivering social and environmental value

6.1 Key messages

- **A plan with social and environmental value creation throughout:** We have ensured our plan protects and grows the value we deliver to customers, society and the environment throughout the North West. Our AMP8 investment will drive over £35 billion of value with wide ranging social and environmental benefits to each of Cumbria, Lancashire, Greater Manchester, Merseyside, Cheshire and adjacent areas.
- **Delivering greater social value:** We deliver substantial social value by further improving our core performance, supporting customers with £525 million of affordability support, supporting creating economic growth in the North West and supporting over 30,000 jobs through a combination of direct employment and through our supply chain.
- **Delivering greater environmental value:** We plan to meet our ambitious targets set for improvements to the water environment through our largest ever investment programme, planned and prioritised using value-based decision making and long-term adaptive plans. We will protect the environment for the long term by reducing storm overflow operation by 26.8 per cent, reducing leakage by 13 per cent, improving 386km of rivers and improving 11,728 hectares of SSSI land.
- **Delivering in partnership:** Building on our track record of partnership working we are using our capability to co-create, co-deliver and co-finance an ambitious plan that drives efficiencies and delivers better value. We expect to invest £344m in partnership schemes, unlocking £267m in additional value in the water cycle and more widely. Supporting an effective partnership culture, our partnerships framework supports sound governance of partnerships through a well-considered approach that balances risk and reward.
- **Progress towards net zero greenhouse gas emissions:** We are making bold progress on our carbon commitments and contributing to the national legal requirement for net zero by 2050. We have ensured greenhouse gas emissions have been systematically considered and optimised throughout our decision making for our plan, managing substantial growth pressures and prioritising opportunities to curb and reduce emissions in the short and long term.

6.2 Structure

This chapter highlights how our plan can deliver social and environmental value for the North West both as a whole, and for each of the diverse counties we serve. It also describes how delivering social and environmental value can be maximised through our approach to partnership working and our plan to deliver value, as we work towards our net zero ambitions.

This chapter is structured as follows:

- **Section 6.3** provides an overview of UUWs strategy for delivering for society and the environment, provides the context of our long-term ambitions and introduces the categories of value we deliver;
- **Section 6.4** shows the benefits our plan will deliver for the counties of Cumbria, Lancashire, Greater Manchester, Merseyside, Cheshire and their adjacent areas;
- **Section 6.5** shares detail on our strategies to deliver more social value for the North West, and how we will deliver this in AMP8;
- **Section 6.6** shares detail on our strategies to deliver more environmental value for the North West, including water sufficiency, and how we plan to deliver this in AMP8;
- **Section 6.7** discusses our ambitions for partnership delivery in AMP8, helping to manage the burden on customer bills and deliver more value than we would be able to deliver alone; and,
- **Section 6.8** shows how AMP8 will support progress on our carbon commitments for net zero by 2050.

Further details on how our strategy and AMP8 plan drives more social and environmental value are provided in the supplementary document *UUW39 - How our plan delivers social and environmental value*. Other supplementary documents that support this chapter include:

- *UUW35 – Our Environmental Strategy*, which sets out some of the unique features of UUW's Environmental Strategy, including natural capital accounting, catchment systems thinking, environmental markets and partnership working across catchments.
- *UUW38 – Working in Partnership* – provides our partnerships framework and detailed case studies.
- *UUW37 – Our strategy to Net Zero 2050* shows how we are planning delivery against the 2050 net zero target.
- *UUW36 – Social and Environmental Value of the 2025-30 Plan* – is a report we commissioned from Arup quantifying the benefits of our plan.

6.3 A summary of our strategy for society and the environment

We have a vital role in making the North West stronger, greener and healthier. This is at the heart of everything we do as a water company that is constantly managing its impacts and dependencies on air, land and water environments. We do this to provide affordable and resilient public services to over three million households and 200,000 businesses in the region, every day of the year.

We are proud to serve the North West and its counties. We recognise the great responsibility and opportunity we have to maximise the value we create for society and the environment. This is even more important considering the growing opportunities and challenges we face in AMP8 and the long term. It is in this light that we have built a bold and robust plan to maintain and further enhance the social and environmental services and value that we deliver for the North West.

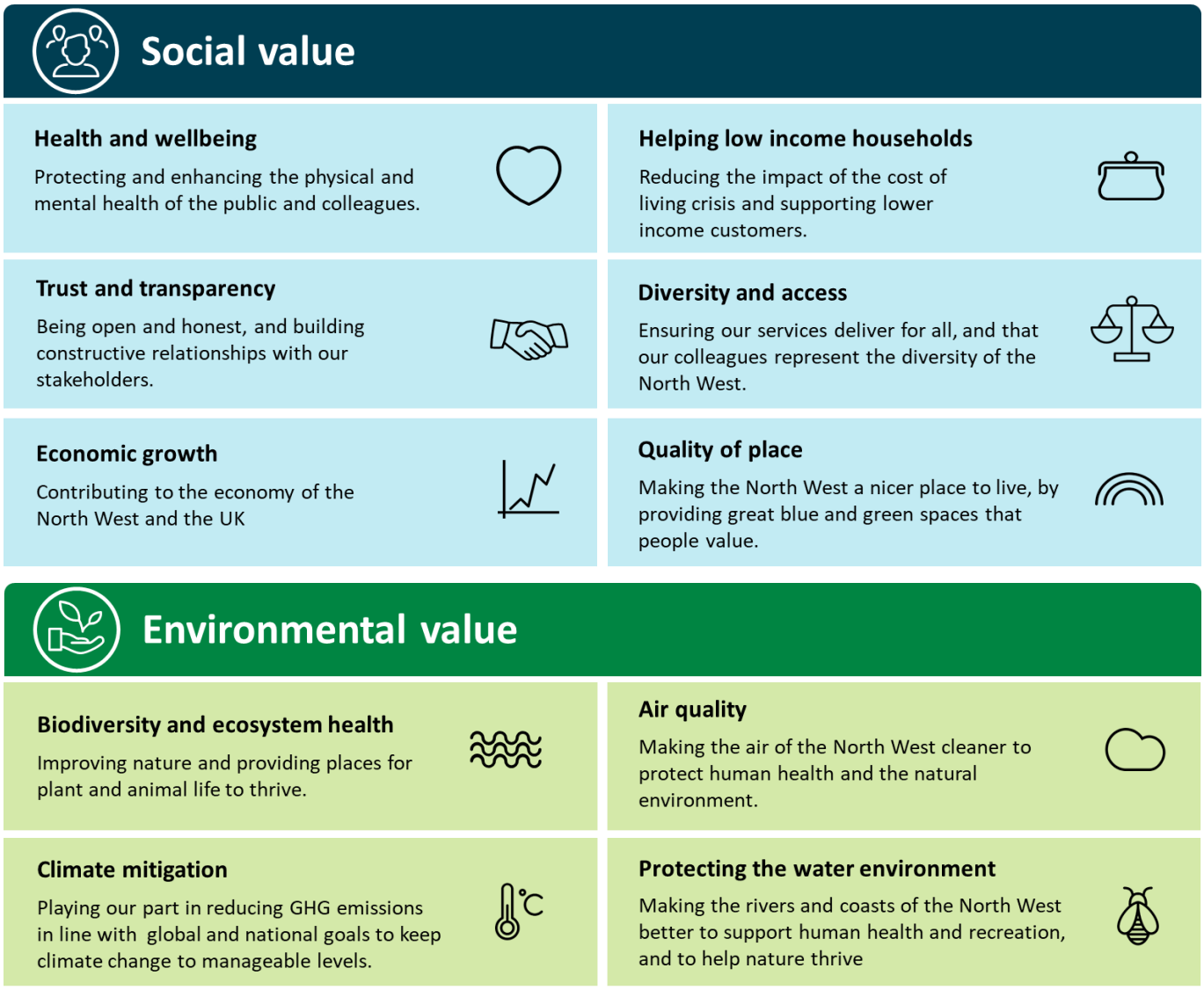
We are proud to submit a plan that will deliver over £35 billion of value for the North West and support 30,000 jobs, including through our supply chain. Further detail on this value can be found in supplementary document *UUW36 - Social and Environmental Value of the PR24 Plan*.

Customers want us to deliver more social and environmental value. This is clear from customer research as shown in Chapter 3 and supplementary document *UUW21 – Customer research methodology*, with customers increasingly placing a higher value on the environment over time. This sentiment is backed up by the investor community, with ESG (environmental, social and governance) having a growing influence on where the most attractive financing will be made available. Communities and NGOs that represent the environment are demanding more from water companies to protect and enhance nature. In addition, politicians, the media and regulators have raised expectations for water companies, including with new legislative requirements. Our AMP8 business plan is an ambitious next step to delivering more of the social and environmental benefits that our stakeholders are demanding, working towards our six strategic priorities set out in Chapter 2 and in Figure 6-1 below.

Figure 6-1 Our six strategic priorities

Our strategic priorities that underpin how we work to make the North West stronger, greener and healthier. Through these ambitions we will drive better value for the North West. This value comes in many different forms, and we have categorised this value as follows:

Figure 6-2 The social and environmental value we create



Our activities will deliver value against all of these categories. In this chapter, we explore the social and environmental value that our business plan will deliver for the region we serve, including for each of the five counties that make up the North West. We separate out social and environmental benefits in the structure of this chapter, but recognise that these two elements are inherently connected. All environmental benefits are ultimately for the benefit of society and social benefits cannot be delivered without a functioning and resilient ecosystem. Much of the social and environmental value we deliver is a result of our core service delivery, and how we deliver these services to offer wider benefits.

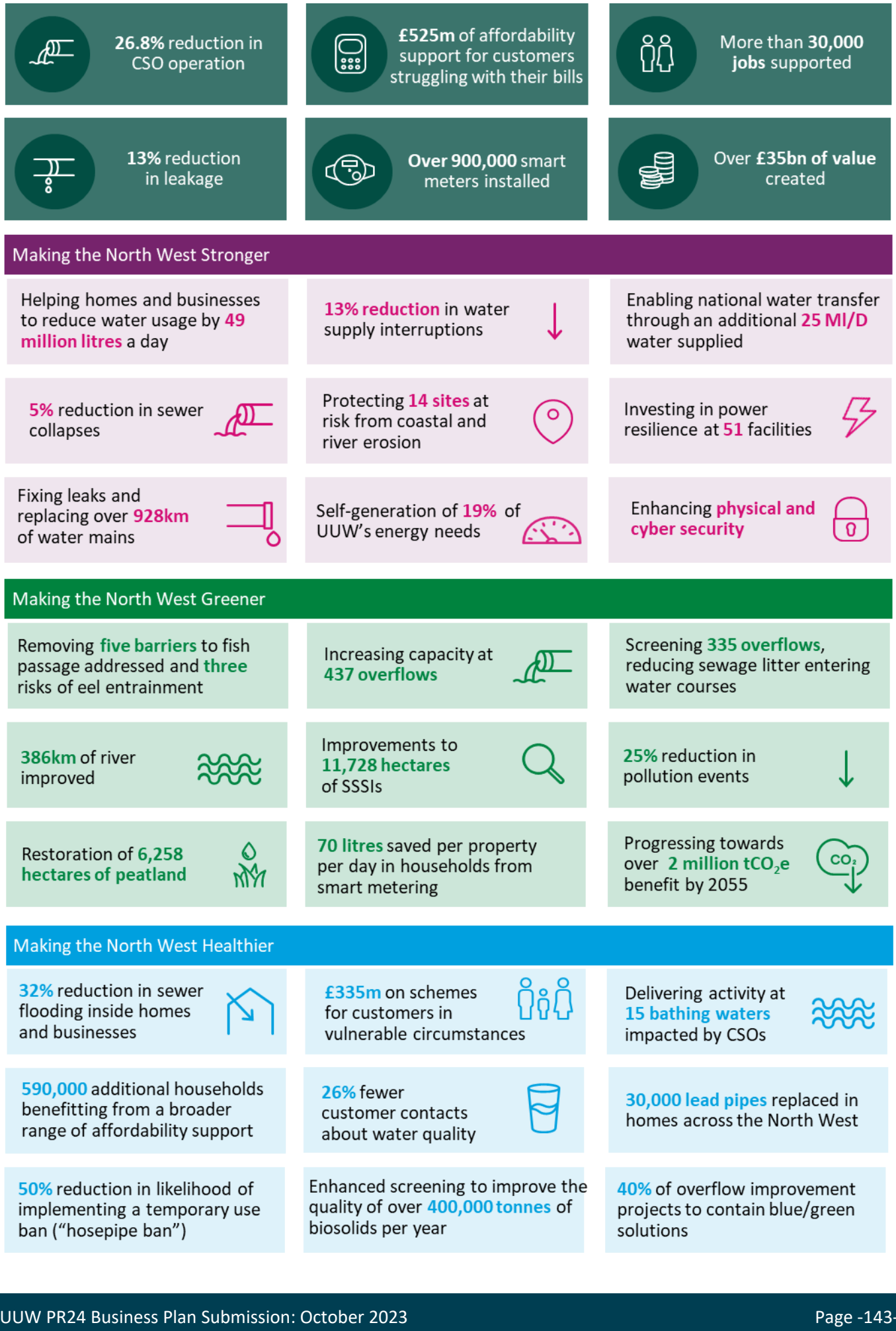
Best value decision making

The interventions we have prioritised in our business plan are those that deliver both social and environmental benefits, and those that represent best value for customers, when taking into account the costs of the scheme. We have a robust and consistent approach to driving best value solutions across our plan that has resulted in the benefits for the North West we discuss in this chapter. For more information on our best value decision-making approach, please refer to supplementary document *UUW45 - Our approach to delivering best value totex.*

6.4 What our plan will deliver for society and the environment in AMP8

We take pride in the plan that we have built and the great benefits it will deliver for the North West. Figure 6-3 below brings together these benefits at a high level in one place to show how our plan is delivering a step change for customers, and how it helps make the North West stronger, greener and healthier. More detail on these headline figures, and how our strategies and plans have driven them, are in sections 6.5 and 6.6 of this chapter and the supplementary document *UUW39 - How our plan delivers social and environmental value*.

Figure 6-3 Delivering a step change for customers



6.4.1 Our five counties approach

Delivering for customers in the places that mean the most to them is at the heart of what we do and developing plans locally based on the specific needs of the region has formed a key part of our business plan. The North West is diverse and is made up of five distinct counties with different social and environmental needs. In order to meet these needs in the most effective manner and to allow stakeholders and customers to engage in the plans that are most relevant to them we have built our plan for the next five years around these five counties.

Complex, long-term and system-level challenges cannot be addressed in organisational silos so through AMP7 we have trialled the use of place based planning with specific leads identified to engage with other statutory bodies and support in the development of integrated spatial plans. This has maximised opportunities to work in partnership and supports cost effective investment and planning within local areas. The success of this approach has been demonstrated by the creation of the Greater Manchester Integrated Water Management plan that has been delivered through our trilateral partnership with Greater Manchester Combined Authority and the Environment Agency. This has influenced us to start embedding place-based planning across the region to identify and develop tailored outcomes that deliver for local people and the environment. Place-based planning aims to develop diverse, tailored solutions, including a combination of traditional hard engineering approaches, nature-based solutions and behavioural change initiatives.

As a result of this approach we have developed our AMP8 plans with a focus on what they mean in the five counties that largely comprise the North West service area, as well as adjacent communities. This has allowed us to engage effectively with local stakeholders through the development of the plans and convene groups representing local NGOs, local authorities and regulators to discuss the plans and their impact on local issues as well as identifying opportunities for partnership working.

This approach also facilitates more effective information sharing with customers and through this, we have been able to host events to share our long term plans on a county-by-county basis, facilitating better customer engagement and opportunities to feedback. We intend to continue this approach to ensure that future plans represent the evolving needs of customers and meet the rightly high expectations they have of the service provided and the environment of the North West.

In the following sections we have summarised the benefits that our plans will have for each of the five counties of the North West and how we've tailored our plans for these areas. Our five county level plans make our investment programmes and the benefits that they deliver more meaningful to customers.

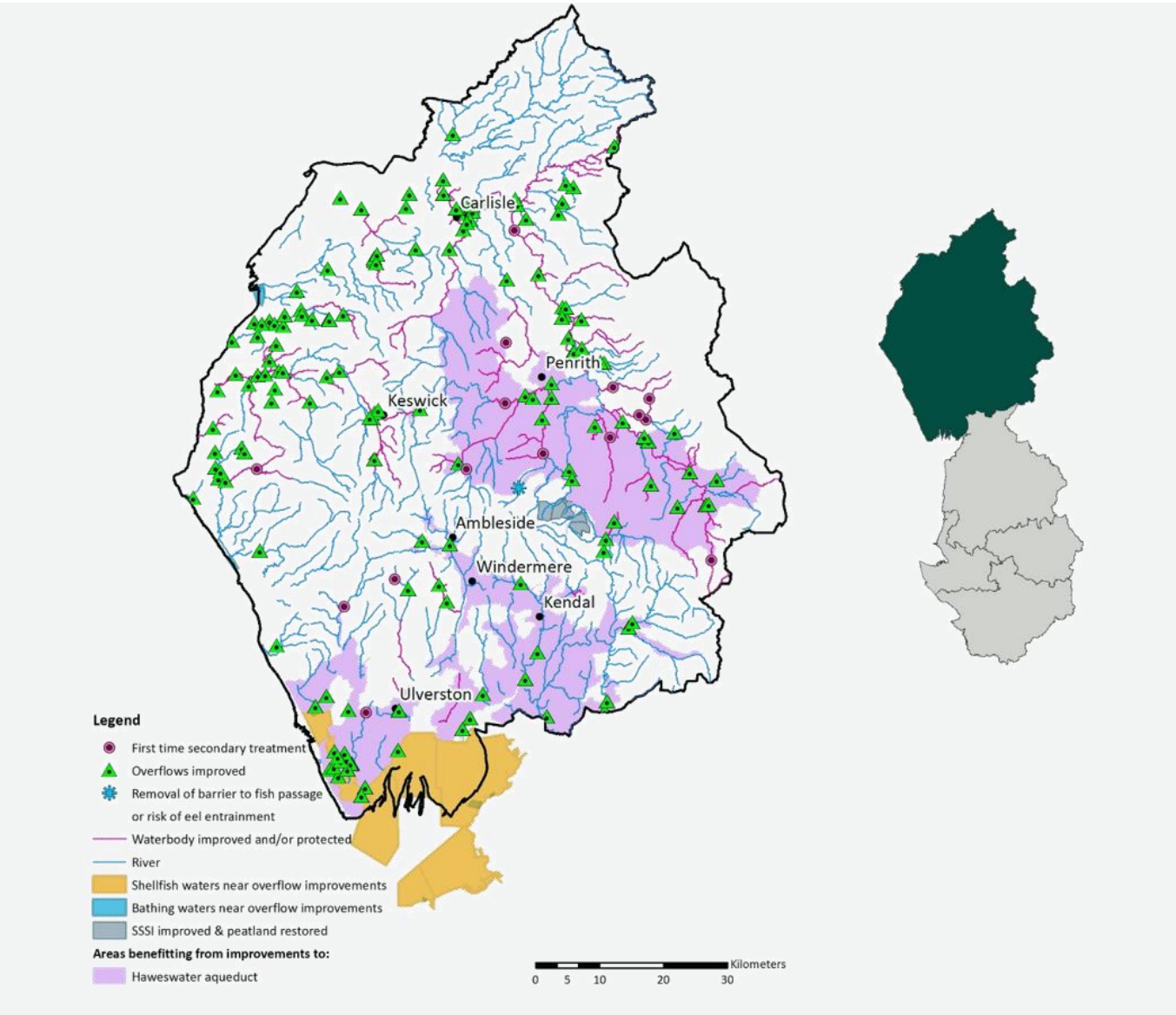
Figure 6-4 North West five counties

6.4.2 Cumbria

Our plan is to deliver the following benefits for Cumbria

- Improving 219km of river length
- Removing 171kg of phosphorus per day improving rivers and supporting nutrient neutrality
- Improving 158 combined sewer overflows to reduce spills with 88 including blue/green solutions
- Improving 26 combined sewer overflows that are near to eight bathing waters
- Improving 2,144Ha of SSSI for biodiversity and water quality

Figure 6-5 Map showing the activity planned for Cumbria in AMP8



Cumbria's environment

Cumbria is the wettest area of England and plays an important role in supporting the North West, by supplying water to Lancashire, Greater Manchester and into the Merseyside Region as well as Cumbria itself. The natural resources that support this play a significant role in the unique landscape of Cumbria that led to the Lake District's designation as a World Heritage site, attracting circa 47 million visitors per year. Cumbria is a place of considerable environmental importance with over 3,000km^2 of national park, 278 SSSI's and 1,369km of rivers designated as Special Areas' of Conservation (SAC). The challenges of balancing a rural and visitor economy, with

heritage drivers, food production and environmental improvement are considerable. Striking this balance will be critical in ensuring Cumbria's long-term prosperity while maintaining a healthy and resilient landscape.

Tackling nutrients across Cumbria

This challenge is most effectively demonstrated by the designation of large parts of Cumbria as Nutrient Neutrality areas due to the length of rivers designated as SACs facing challenges with nutrients, specifically phosphorus. To ensure development can occur without negative impacts on nutrients our plan proposes that we invest over £240 million in river quality improvements, resulting in 219km of river being improved with 219km of improvement being SAC rivers.

In AMP7 we have undertaken extensive investigations into the sources of phosphorus in the SAC rivers in Cumbria and identifying in detail where our activities are impacting on the river. This has resulted in a plan for activity across 44 sites in Cumbria to deliver environmental improvements, reducing the impact of our assets on this special landscape. In line with the requirements under the nutrient neutrality guidance we will also be delivering further enhancement at the seven largest sites, treating phosphorus down to the lowest technically achievable limit, removing greater amounts of phosphorus and supporting the release of development capacity. These interventions combined will remove 171kg of phosphorus from Cumbria's rivers per day. As part of Defra's Accelerated Infrastructure Delivery project we are getting a head start on the six largest schemes in the River Eden catchment which will enable us to deliver benefits as soon as possible.

Following the delivery of our AMP7 award-winning Petteril Project, we have identified opportunities for catchment nutrient balancing at nine sites in the Eden and Derwent catchments. This will allow us to deliver the phosphorus removal required, while supporting the rural economy with on farm investment and capture multiple additional benefits such as natural flood management, soil improvement, biodiversity gain and reduced GHG emissions. If further opportunities for catchment interventions materialise through amendments to the Levelling Up and Regeneration Bill we will continue to pursue them where they offer best value solutions. More information on the Petteril Project can be found in Section 3.3 of the supplementary document *UUW35 –Our Environmental Strategy.*

We also work with the Nutrient Neutrality Project Board, which has been convened by the Lake District National Park planning authority to bring together regulators, planning authorities and delivery organisations to identify opportunities for nutrient offsets and support the release of development within the areas affected by Nutrient Neutrality legislation. We are working with these organisations to share learnings of catchment mitigation.

Restoring the natural landscape

In AMP8 we also propose to invest to support and enhance the unique natural habitat in Cumbria. We will improve over 2,000Ha of SSSI land through the continuation and extension of projects such as Thirlmere catchment resilience and delivery of nature friendly farming through our RSPB partnership across our Haweswater Estate. This work will be focused on delivering landscape improvements that protect and improve raw water quality, improve the resilience of water supplies, enhance biodiversity and reduce green house gas emissions as well as maintaining and enhancing the Cumbrian landscape that attracts 47 million visitors per year.

Reducing the impact of overflows

Recreational activity in Cumbria and the value this brings to the economy is not solely focused on the uplands. Cumbria has a number of designated bathing waters in coastal locations and Lake Windermere. As part of our commitment to improve CSO performance and reduce spills impacting on the environment we are proposing investment of over £230 million to improve 26 overflows near bathing waters. This will protect the water quality at eight designated bathing water sites. These will be part of a £972 million programme to improve 158 overflows across Cumbria and we will maximise blue/green infrastructure where possible to deliver multiple benefits and complement the landscape. 92 of these improvements are expected to use blue green or hybrid solutions.

Lake Windermere is iconic in the Lake District. Protecting and enhancing this natural water body is a key focus for us now and through our AMP 8 plans. As part of this commitment we are active members of the Love Windermere partnership, which aims to ensure that the lake, and its catchment, is healthy, more resilient to climate change and nutrient levels are reduced; where the community are its custodians and contribute to a

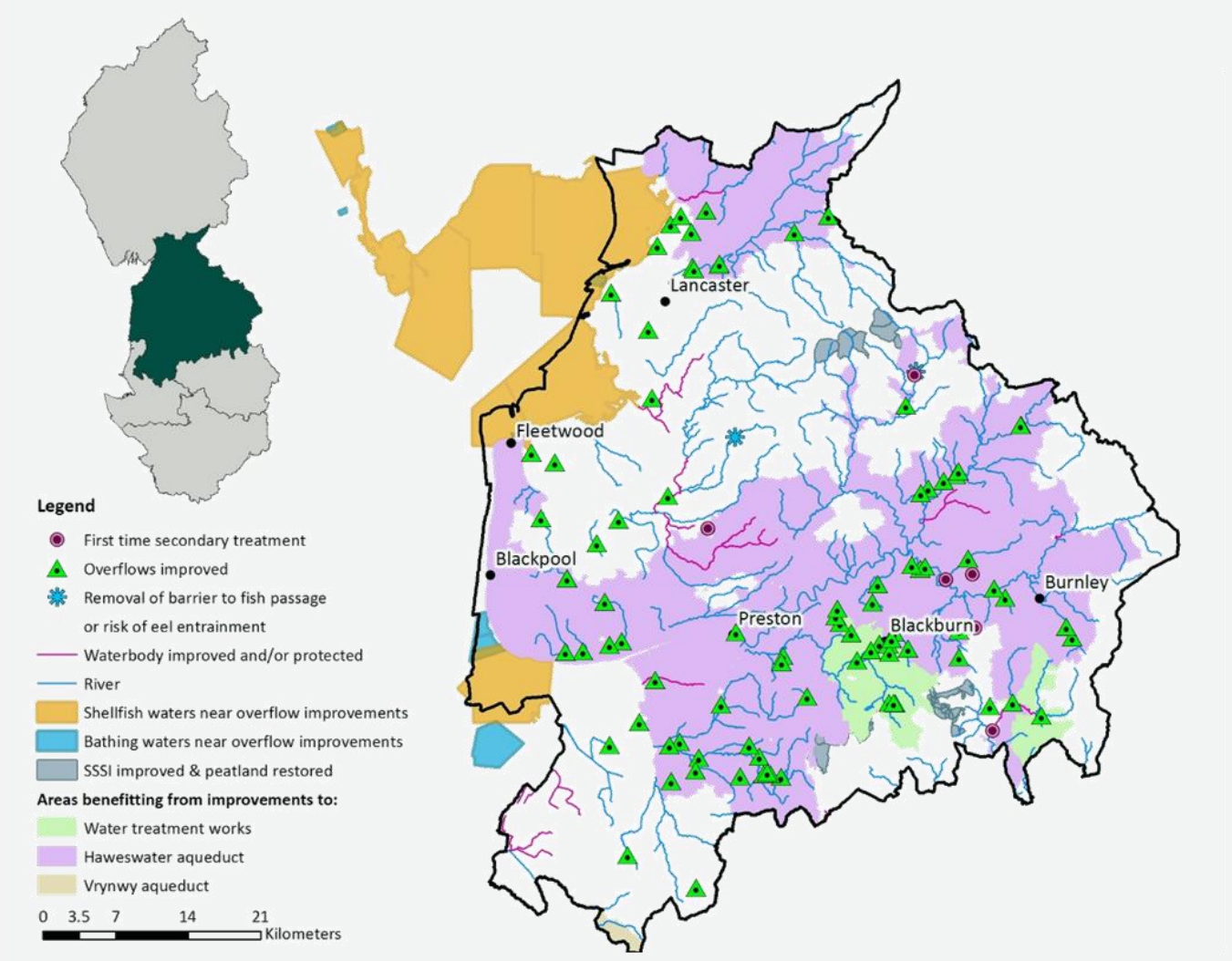
healthy lake and local economy. The partnership is focussed on developing solutions to a number of water quality challenges including, for example, from non-mains drainage and land management. As part of our commitment to the Love Windermere partnership, United Utilities is leading a number of key initiatives specifically related to driving improvements in wastewater operations. Building on our £45 million AMP6 investment to reduce phosphorous into Windermere from UUW operations, we are now proposing to invest £36 million to reduce spills from four overflows within the catchment, significantly reducing spills and contributing to improving the wider environment. Our plan is that this investment will be delivered by the end of AMP8, but £19 million has been brought forward into AMP7 in order to deliver these benefits as early as possible. Additionally, we have opened a Community Hub in a shop in the heart of the catchment to enable customers, visitors and stakeholders to discuss and engage with us on our plans, ensuing that communities play a central role as we deliver projects over the coming years.

6.4.3 Lancashire

Our plan is to deliver the following benefits for Lancashire

- Improving 91 combined sewer overflows to reduce spills with 41 including blue/green solutions
- Preventing ecological harm at 42 combined sewer overflows including 8 within 50m of a designated site
- Improving 8 combined sewer overflows that are near to five bathing waters
- Delivering improvements at 2 water treatment works to improve the resilience of 42Ml/d of water supply
- Improving 3,770Ha of SSSI for biodiversity and water quality

Figure 6-6 Map showing the activity planned for Lancashire in AMP8



Lancashire's environment

Lancashire sits centrally within the region, bridging the more rural landscapes of Cumbria to the north with the more urban environment of Manchester and Liverpool. It hosts a wide range of habitats that contribute to the economic output from the county ranging from designated natural areas such as the Forest of Bowland AONB, significant sources of water such as the Pennines, areas of agricultural production and coastal resorts such as Blackpool. The tourist economy is significant in Lancashire with 68 million visitors per year and the natural environment plays a major part in attracting them with the provision of bathing waters and access to outstanding natural beauty.

Protecting Lancashire's water supplies

The uplands of the Pennines play a key role in drinking water provision for the county but in recent years they have been susceptible to prolonged dry weather and the increasing prevalence of algal blooms. These combined influences have impacted on the resilience of these water sources so investment to protect the reliable supply of water to Lancashire is required. Through AMP8 we propose £17.2 million of investment in two water treatment works in Lancashire increasing the resilience of 42Ml/d of supply. This will protect customer supplies in combination with the significant investment in resilience of the Haweswater Aqueduct, which will replace six tunnel sections, improving the resilience of supplies to 2.5 million customers across Lancashire as well as Greater Manchester, Merseyside and Cumbria.

In conjunction with this asset investment, through our systems approach we propose to improve over 3,500Ha of SSSI land on catchment which will support protecting and maintaining the quality of this raw water while also enhancing the habitat for the benefit of visitors, biodiversity and GHG emissions.

We also propose to carry out significant investigations into the sustainability of abstraction from the aquifer feeding Franklaw Water Treatment Works. Our plan would complete a feasibility assessment and conceptual design for a range of aquifer recharge solutions which may mitigate sustainability issues. The second phase would be the development of a pilot scheme to test and monitor the proposed solutions which may include injection cycle testing as well as natural filtration from surface water ponds.

Reducing the impact of overflows

Lancashire has significant combined sewer systems and the surface water that drains through these impacts on CSO spills. Additionally, customers in areas such as the Fylde and Wyre have suffered significant flooding on numerous occasions. We will be expanding our pioneering approach to delivery of natural flood management through the Wyre Natural Flood Management (NFM) project and our approach to supporting the development and delivery of multi-partner interventions through the Fylde hub. More information on these projects is included in Section 2.5 of the supplementary document *UUW35 - Environmental Strategy.*

Learning from this approach, we propose to deliver 41 hybrid or blue green solutions to manage water in the catchment for mutual benefit for United Utilities and other stakeholders. This will increase water retention to support sustainable abstraction while taking surface water out of combined sewers to support delivery of our targets for CSO improvements and spill reduction as well as supporting a reduction in flooding. These hybrid solutions will utilise blue green infrastructure in supporting sustainable water management in conjunction with the delivery of storage.

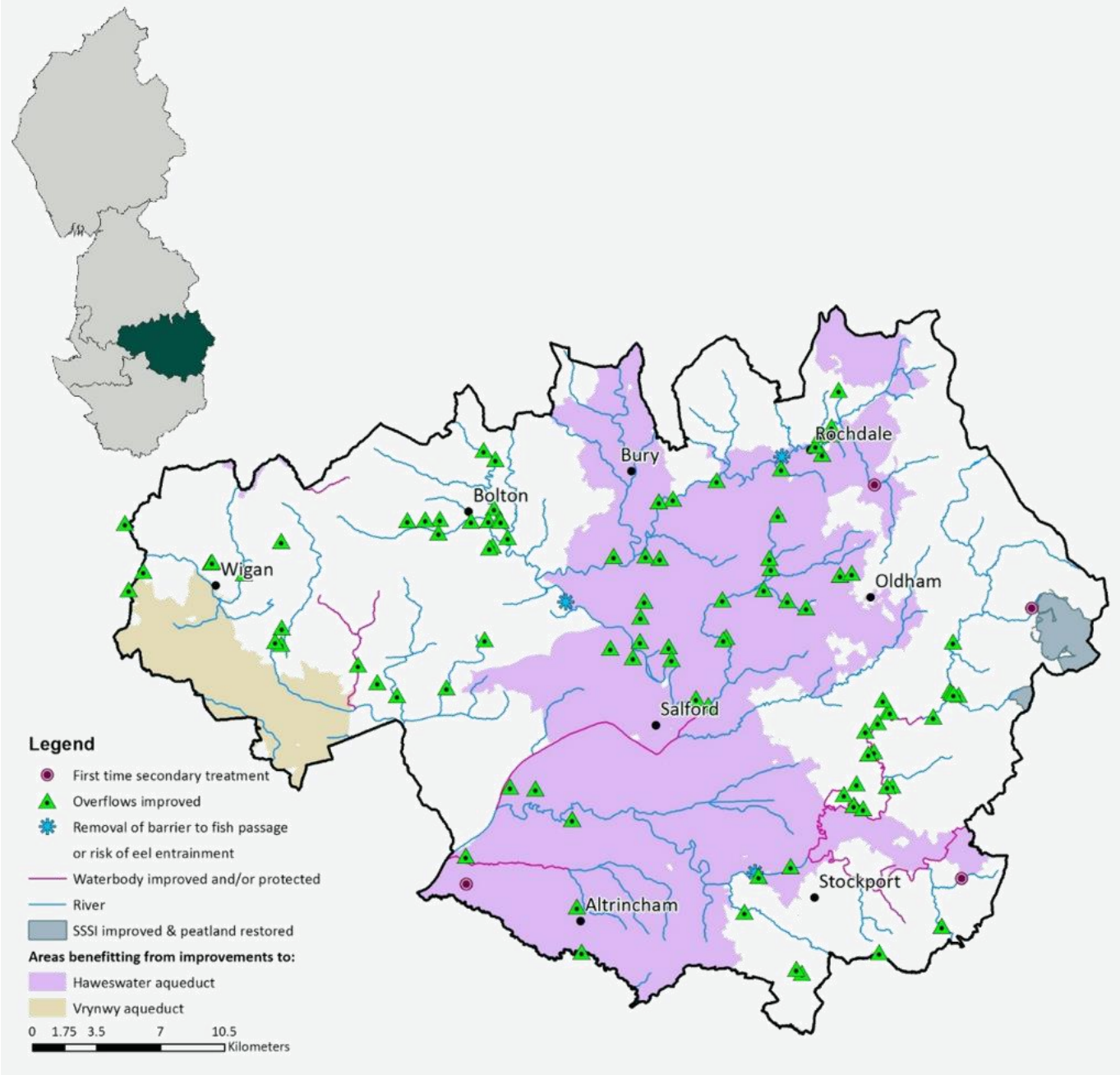
The coastal environment is a key element of Lancashire's tourist economy and we have been active in supporting this through our ongoing involvement in the Turning Tides partnership. Since its inception in 2012, it has acted as a cross-agency partnership, working to address and improve the quality of bathing waters. We have been able to share our coastal models to support integrated partnership delivery to target bathing water improvements. In AMP8 our plan would see investment of over £265 million to deliver interventions at eleven overflows that impact on five bathing waters and four shellfish beds. Additionally we propose to investigate the impact of assets on other shellfish beds in Morecambe bay to identify the best way to protect these in the future. These interventions will support the economic use of these shellfish beds as well as protecting coastal resorts that benefit from tourism.

6.4.4 Greater Manchester

Our plan is to deliver the following benefits for Greater Manchester

- Improving 105 combined sewer overflows to reduce spills
- Screening 70 combined sewer overflows
- Improving 82km of river
- Improving 5,814Ha of SSSI for biodiversity and water quality
- Removing 4 barriers to fish passage or risks of eel entrainment

Figure 6-7 Map showing the activity planned for Greater Manchester in AMP8



Greater Manchester's environment

Greater Manchester is predominantly an urban environment but with significant moorland containing upland peat around the periphery. The area is served by a significant proportion of combined sewers and experiences high rainfall, which results in surface water runoff from the urban landscape leading to high numbers of combined sewer overflows and spills into the environment. Historical land use has exacerbated this challenge with the uplands being drained to improve land productivity, channelling water rapidly through urban rivers resulting in flooding. This legacy of water quality issues and heavily modified waterbodies makes meeting objectives (such as the Water Framework Directive (WFD) targets) challenging. This is a key reason why Natural Course[1], a European Union funded partnership between United Utilities, the Environment Agency, Natural England, Greater Manchester Combined Authority and The Rivers Trust was formed, to develop ways to improve rivers across the full North West but with a specific focus on Greater Manchester.

Greater Manchester has a thriving economy and continues to grow as a city. It is predicted to see the third highest growth of all UK towns and cities between 2024 and 2026. We will be playing our part to support this and address some of the challenges the city faces but this can't be delivered alone. Working collaboratively with partners at scale will be key to delivering the benefits planned for Greater Manchester.

Reducing the impact of overflows

To deliver improvement in the water environment in Greater Manchester UUW is proposing to improve 105 combined sewer overflows. It will be key to work effectively with a range of stakeholders so we will be aligning our investment with the broader needs of others in Greater Manchester. Through AMP7 we have been working with key partners, the Environment Agency and Greater Manchester Combined Authority to form a strategic partnership. With them, we have developed an integrated water management plan for the city region, which is the first plan of its type to be developed and is endorsed by the city Mayor Andy Burnham. The plan is available to all through the combined authority website[2]. The aim of the plan is to deliver a strategic approach to water management across multiple stakeholders tackling the range of challenges faced across the city region's water cycle. This will bring together strategic plans across sectors to drive holistic water management, enhance water quality, reduce flooding and increase biodiversity. Further details of the integrated water management plan are available in Section 3.4 of the supplementary document *UUW35 - Environmental Strategy.*

This plan supports key elements of our proposed AMP8 delivery such as our Advanced WINEP, which will target managing surface water in a different way across Greater Manchester to reduce the frequency of storm overflow spills. Through this we propose to target seven overflows in Greater Manchester and also have a significant programme that is targeting maximising partnership opportunities by flexibly working in areas important to other stakeholders as well. This will utilise our Catchment Systems Thinking (CaST) approach and support the long term delivery of the Storm Overflow Discharge Reduction plan by maximising the delivery that can be achieved through rainwater management now before delivering additional required investment through grey infrastructure in future AMPs.

Through this programme we also look to align activity in the uplands to manage peat and improve biodiversity for the delivery of better-quality raw water. Effectively managing water in the uplands is important as holding water back in the catchment reduces river flows downstream reducing the risk of fluvial flooding whilst also creating the capacity in the river network to drain surface water into rivers once it is disconnected from the combined sewer network. Slowing the flow in the uplands also has the benefit of improving the quality of raw water that can be abstracted from the landscape, improving habitat for biodiversity and reducing the risk of wild fires and carbon loss from these soils.

The Advanced WINEP programme targets removing more than 200Ha of impermeable area that is currently connected to our network which will improve service resilience for customers and contribute to the delivery of the significant overflow reduction plan for Greater Manchester. Working in this way also enables activities such as

[1] https://naturalcourse.co.uk/

[2] https://democracy.greatermanchester-ca.gov.uk/documents/s27343/10A%20Integrated%20Water%20Management%20Plan.pdf

peatland restoration which has a significant carbon benefit, reducing carbon losses from the landscape to a significant degree and supporting UUW and the Greater Manchester areas ambitions to reach net zero. The Advanced WINEP activity is proposed in addition to the already significant overflow programme in Greater Manchester which would be reducing spills at 105 combined sewer overflows. Examples of this include over £55 million proposed investment across eleven overflows in the Tame.

Improving the Manchester Ship Canal catchment

We also have a significant programme of works to tackle some of the water-related challenges that result from Greater Manchester's industrial heritage. The canalisation of Greater Manchester's rivers into the Manchester Ship Canal has resulted in challenges in achieving the environmental objectives of this water body. The dissolved oxygen levels in the canal are low as a result of the slow stagnant nature of the water body as well as the impact of several wastewater treatment works discharges. To drive improvement into the canal is complex and will require coordinated effort across stakeholders. To achieve this in the most cost-effective way while delivering environmental benefit as soon as possible we have set out an adaptive plan for the canal which has enabled the identification of the least regrets route to meeting the objectives, seeking the lowest cost over the 25-year design horizon. This proposes investing £340 million in AMP8 to deliver improvements at three wastewater treatment works to reduce biological oxygen demand and increase dissolved oxygen in the canal. This would then be followed by further activity in AMP9 including improvement at Davyhulme Wastewater Treatment Works, the largest in the North West.

Phosphorus is also a concern in this catchment and the adaptive plan builds on the success of the country's second catchment permit which we have delivered through AMP7 to drive improved phosphorus performance in the Manchester Ship Canal while also delivering significant improvements in upstream water bodies. This has allowed us to deliver environmental improvement as a low regrets measure in the adaptive plan for Davyhulme Wastewater Treatment Works by outperforming at works higher up in the catchment. In turn this has meant greater environmental benefit as phosphorus reductions are achieved for longer lengths of water body as well as providing the time to develop more sustainable long-term plans to address the remaining issues in the catchment. As part of the ongoing delivery of phosphorus removal across Greater Manchester, under our plan we aim to remove 323kg/day more by 2030.

The combination of these proposed investments in the Manchester Ship Canal catchment and the other rivers that make up Greater Manchester such as those in the Upper Mersey catchment would be expected to result in 82km of river being improved and 12km being protected from deterioration across Greater Manchester, mitigating any impact potentially caused by continuing population growth. More information on this can be found in Section 2.6 of the supplementary document *UUW35 – Our Environmental Strategy*.

Protecting Greater Manchester's water supply

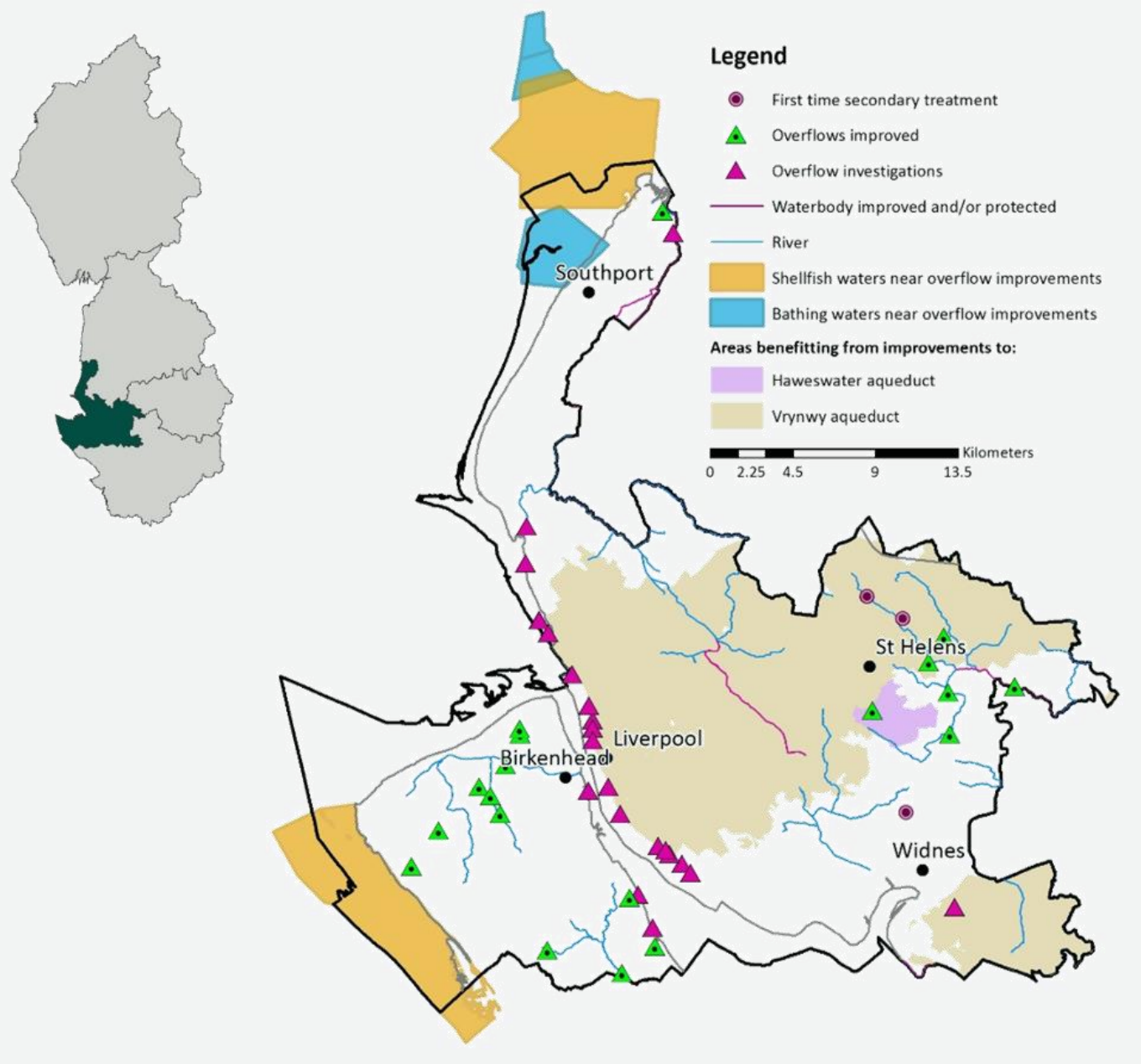
Customers in Greater Manchester will also benefit from our Haweswater Aqueduct Resilience Programme (HARP). This is a scheme to replace six tunnel sections of the 109km Haweswater Aqueduct. Built in the 1950s, the pipeline runs from Cumbria through Lancashire and into Greater Manchester, supplying drinking water from the Lake District to 2.5 million people. Work is needed to minimise water disruptions and maintain the high quality of drinking water. This landmark programme will be the single largest infrastructure project commissioned by UUW since privatisation. The complex scheme is currently going through the planning process across the three counties following a pre-planning process which included one of the largest consultations undertaken by UUW in our history. The consultation engaged with thousands of residents, businesses and stakeholders across Cumbria, Lancashire and Greater Manchester to explain our plans, listen to feedback and concerns and then amend those plans. On completion, it will increase the resilience of United Utilities' water supplies for customers throughout the North West of England but with a particular focus on Greater Manchester.

6.4.5 Merseyside

Our plan is to deliver the following benefits for Merseyside

- Protecting water supplies by relining 65km of aqueduct
- Improving 20 combined sewer overflows including improvements at 14 to prevent ecological harm
- Investigations to identify how to modernise the Mersey's drainage infrastructure
- Removing 84kg of phosphorus per day
- Targeting improvements at combined sewer overflows to protect 1 bathing water and 1 Shellfish water

Figure 6-8 Map showing the activities planned for Merseyside in AMP8



Merseyside's environment

The Mersey Estuary defines this region supporting trade, recreation and acting as a gateway for aquatic species to access the wider Mersey catchment. Since the 1980s there have been significant improvement in the water quality of the Mersey estuary as infrastructure has improved and some of the key challenges have been addressed, such as the capacity of the combined sewer network and discharges into the estuary.

Defra's storm overflow discharge reduction requirements mean that there is now further action needed on storm overflows. The scale of change needed for the drainage areas serving the Mersey Estuary is substantial as the sewer systems contain a particularly high percentage of combined sewers - with 84% of the network in Liverpool being a combined system - and the treatment works being in congested urban areas with very limited land. Whilst designed to meet the standards required at the time, the increasing focus on sewer overflows, new overflow requirements and higher expectations for the environment means that these systems no longer provide the environmental protection required.

Developing a long term plan for Merseyside

The interrelated nature of this drainage system makes it very difficult to address any elements in isolation due to the impact that action in one location would have in other areas. Consequently, we will be developing a long-term environmental plan for the Merseyside area, which will involve working closely with key partners. Through AMP8 we will be conducting extensive investigations and developing a systematic solution to the local drainage challenges. This will be focused on developing an in-depth investment plan that can begin delivery in AMP9 to further reduce storm overflow spills, improve water quality and protect and enhance coastal bathing waters and shellfish beds. This delivery in AMP9 will extend the work done in the upstream catchments through AMP8 in Greater Manchester and Cheshire, which will also deliver benefits that cascade downstream into the Merseyside.

Protecting Merseyside's coastline

Merseyside also has a significant coastline with several bathing and shellfish waters attracting tourists and providing recreation for residents. Southport represents a key bathing location in the region. To support this element of the Merseyside economy, we are proposing to invest over £85 million to reduce spills at Southport Wastewater Treatment Works storm overflow, improving water quality and supporting the protection of both the bathing water and the shellfish bed at Southport.

Merseyside also faces the challenges of coastal erosion. This causes a risk to all infrastructure providers, local residents and councils alike. While the impact of this is in itself damaging to the environment when it puts assets such as sewers at risk, this has the potential to be still more environmentally damaging. In Crosby there is rapid coastal erosion, which is approaching our pipe network. [✂

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Protecting Merseyside's water supply

To deliver further resilience into the region we will also be significantly strengthening the water infrastructure that supplies it. This will ensure the value of a clean and reliable source of drinking water and also protect the environment from the indirect impact of leaks. This keeps more water in the environment and reduces energy and chemical use from treatment. There are two key elements of our proposed investment. Firstly, the region will be one of the many beneficiaries of the work to replace the 109km Haweswater Aqueduct. This project to replace six tunnel sections will be the largest infrastructure project undertaken by United Utilities since privatisation and the first direct procurement for customer's scheme delivered by the industry. This will make the aqueduct more resilient long into the future and protect the supply of water that flows down from Cumbria to serve Greater Manchester, Lancashire and Merseyside.

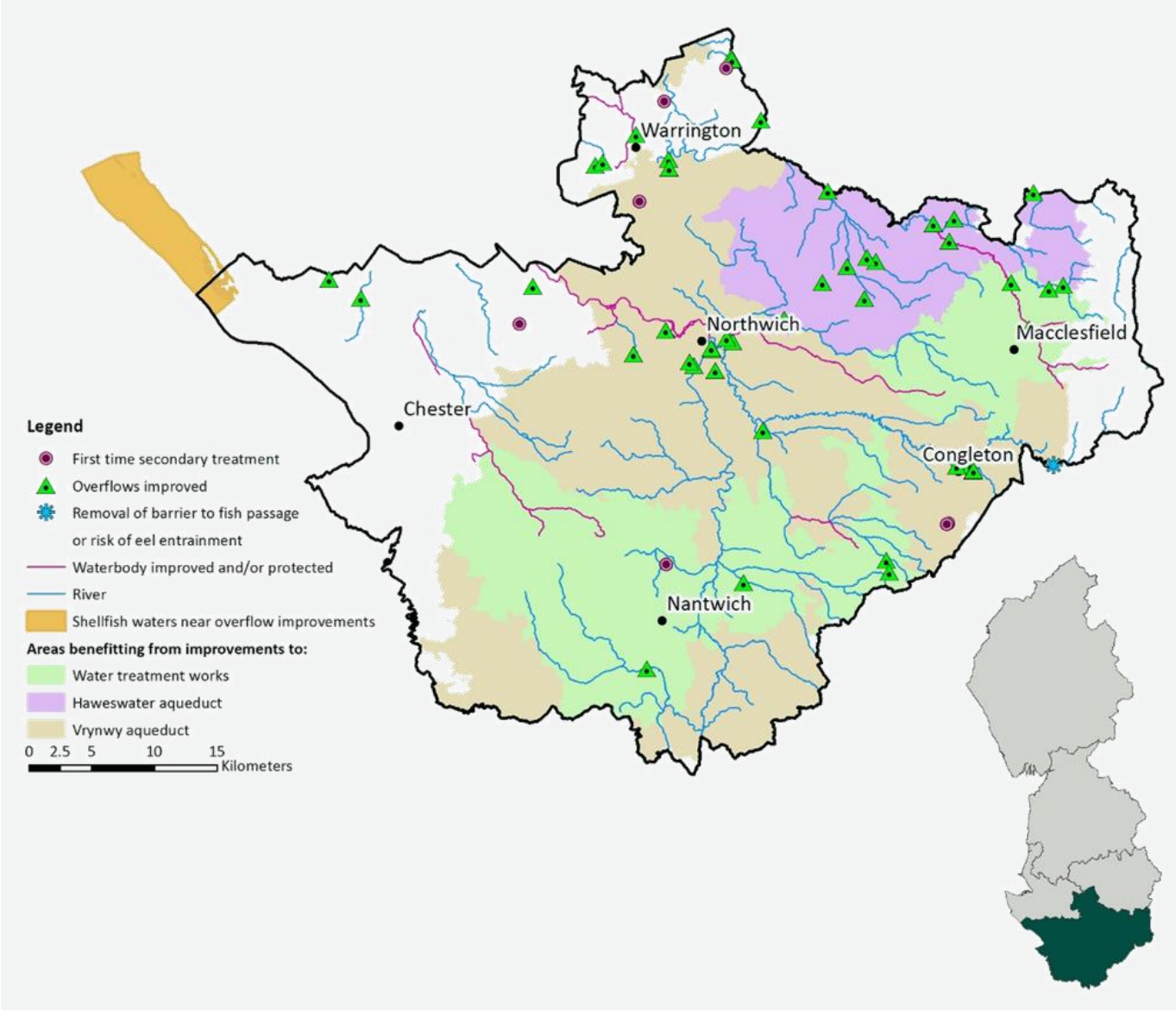
In addition to this our plan also sees us continue the AMP7 work to reline the Vyrnwy Aqueduct. This is expected to see us invest a further £151 million and extend to another 65km of the aqueduct. This will improve the resilience of the aqueduct and protect the quality of the water supplied through to Merseyside and Cheshire long into the future. This is in line with the principles of our award winning Water Quality First initiative, which is a programme developed to ensure that water quality is placed at the heart of everything we do at United Utilities. The primary aim is to establish a cohesive approach to water quality across the multiple programmes in place, whilst creating a working culture to introduce new ideas, initiatives and projects to improve water quality along its entire journey from source to tap. The Water Quality First programme was a key contributor to United Utilities' successful exit from transformation in February 2023, and won the Water Quality Initiative of the year award, at the Water Industry Awards, in July 2023.

6.4.6 Cheshire

Our plan is to deliver the following benefits for Cheshire

- Delivering improvements at 3 water treatment works to improve the resilience of 60Ml/d of water supply
- Improving 63 combined sewer overflows including improvements at 24 to prevent ecological harm
- Installing screening at 53 combined sewer overflows to reduce litter on river banks
- Providing full sewage treatment to 7 septic tanks
- Preventing deterioration in 45km of river

Figure 6-9 Map showing the planned activity in Cheshire in AMP8



Cheshire's environment

Cheshire is home to internationally important wetlands. The Meres and Mosses form a wetland network that Natural England is working hard to restore. Through our catchment restoration work we also work with the agricultural sector, which is a key part of the Cheshire economy, to improve land management and land use to support this activity. Fostering collaboration and a catchment systems approach, we led the establishment of a Cheshire Hub in AMP7 to align activity and deliver mutually beneficial projects. This hub is fundamental to our approach to catchment management, protecting source water and delivering a strong and resilient natural environment.

Reducing the impact of overflows and septic tanks

The presence of the Meres and Mosses in Cheshire has resulted in a high number of designated sites in the area and while Cheshire has historically benefitted from significant investment to meet the requirements of the Water Framework Directive, there is still more to be done. Our programme to address spills from 63 combined sewer overflows across Cheshire includes improvements to 24 overflows specifically identified as causing ecological harm. In addition to this our plan also includes delivery screens at 53 combined sewer overflows to prevent litter in rivers across the county.

Cheshire has a significant number of septic tanks serving small communities. Our AMP8 plan would improve septic tanks by installing secondary treatment for the first time on seven assets. This will improve the treatment provided, improving water quality and resilience. This will be combined with the extensive storm overflow reduction programme and taken together would be expected to improve 24km of river and protect 45km from deterioration.

As part of our plans to improve 63 combined sewer overflows 16 will be delivered using a wholly blue green approach or a hybrid approach where blue green solutions are delivered in combination with tanks to reduce spills. This approach will see significant areas of impermeable area disconnected from the drainage network, removing surface water from the system and managing the network in a more sustainable way. This approach will build on the successful partnership work we have undertaken with the National Trust in the Bollin catchment through AMP7. Here we have worked with the Trust to identify how land use on their estate can support better water management, taking rainwater out of combined sewers and holding it in the landscape. This approach delivers mutual benefit in reducing spills, preventing sewage litter and improving river water quality through the Trusts estate.

Protecting Cheshire's water supply

Our partnership with the National Trust also establishes the foundations for delivery across catchment land which is under their ownership. In the Goyt Valley in AMP7 we have been working with the trust to develop partnership projects through our Green Recovery peatland restoration activity to deliver improvements across trust land. This activity will continue into AMP8 with further enhancements planned, protecting sources in the Goyt Valley and Lyme Park reducing the risk of dissolved organic carbon, which causes colour, in raw water.

Partnerships such as these are particularly important in Cheshire because, unlike in other areas, we do not own significant quantities of catchment land. Initiatives such as that with organisations such as the National Trust and the Cheshire Hub are key to aligning activities with partners and influencing other landowners to manage land in ways that benefit raw water provision. The hub approach will evolve in AMP8 developing innovative ideas, such as the agricultural network to help grow catchment management in Cheshire. The hub has also supported the development of the Bollin Valley Investment group, a collection of private, public and third sector organisations, which aims to create a coordinated plan for the river Bollin catchment, improve water quality, support economic growth and secure investment.

Our plans also further enhance resilience in Cheshire's water supplies by investing £24 million in three water treatment works enabling treatment to address Geosmin and 2MIB[3] which - if untreated - would impact taste and odour in the water supplied to customers. This will provide greater resilience to algal blooms as raw water will less frequently be unavailable for treatment - protecting a capacity of 60Ml/day of safe clean drinking water for Cheshire.

The resilience of supply in this area will also be supported by investing in Oswestry water treatment works to provide an additional storage capacity of 80 million litres. This supports the resilient supply of water to the Vyrnwy Aqueduct and combined with the proposed £151 million investment to reline 65km of the aqueduct will protect the water quality piped to Cheshire and Merseyside.

[3] 2-Methylisoborneol which together with Geosmin account for the majority of biologically cause taste and odour issues in drinking water world wide

In addition and to provide further resilience to Cheshire's water supplies, through our involvement in identifying water trading opportunities to support the resilience of the country, we will be developing two new water sources in Cheshire. In times of prolonged dry weather these will replace the water that is currently supplied from Vyrnwy allowing this capacity to be released and traded to the South. At other times these sources will be additional to the water balance in Cheshire providing greater resilience and allowing better optimisation of abstraction.

6.5 Delivering social value for the people of the North West

Our business plan delivers social value for the North West by:

Protecting public health and wellbeing – By ensuring we provide safe drinking water; manage flood risk, keep reservoirs safe and make our land available for land access and recreation;

Supporting those who most need it – By supporting customers who are struggling to pay their bills, supporting those in vulnerable circumstances and those on the Priority Services Register and making our services accessible;

Being inclusive for everyone – By recruiting and developing a diverse and inclusive workforce which represents the communities we serve in the North West; and

Ensuring reliable services and supporting economic growth – By avoiding interruptions, ensuring capacity for others to grow, and investing in local jobs.

Our purpose drives us to deliver our services in an environmentally sustainable, economically beneficial and socially responsible manner, reflecting the interests of all our stakeholders. Social value is about delivering benefits to the economy, environment and communities in which we operate. For instance, we deliver value through water and wastewater services but also provide apprenticeships, employee health and wellbeing schemes, pay suppliers on time, reduce our environmental impacts, encourage access to our land and invest in our local communities.

As a provider of essential services, the vast majority of the social value we deliver is in our core service – providing great water and removing wastewater enabling customers to get on with their day. Providing support to customers who are struggling to pay their bill and helping those in vulnerable circumstances provides additional social value. In addition to the core service we deliver, we deliver social value by:

- Protecting and enhancing reservoirs, catchments, rivers and bathing waters that provide a home for wildlife, areas for recreation, tourism, and working hard to reduce negative environmental impacts;
- Building partnerships to support communities to be stronger, working with schools and young people to develop skills and help people get back to work. Much of our land is open to the public and we encourage people to use it responsibly; and,
- Working with teachers and children to raise awareness about water and the natural environment, giving the next generation an understanding of the true value water brings and how we can all play our part in protecting the services nature provides.

6.5.1 Protecting public health and wellbeing

We impact on public health and wellbeing of the people of the North West in many ways. This section discusses how we are working to deliver more in AMP8 across four key areas which impact health and wellbeing. These are:

- **Providing great quality water -** We take pride in providing a wholesome, resilient supply of drinking water to customers and businesses in the North West. Firmly at the front and centre of our decision-making is our fundamental responsibility to protect public health. We have ambitious plans to continue improving taste, smell and appearance because we recognise that customers' trust and perception of their water supply is vital to their wellbeing.
- **Minimising flood risk to protect public health and wellbeing** – We recognise that internal sewer flooding is one of the worst service failures that customers can experience. It also has the potential to cause widespread financial impacts and economic disruption.
- **Reservoir safety** – We operate a fleet of 162 reservoirs. These reservoirs provide the majority of the water for homes and businesses across the North West. A breach of one of these structures may not result in a flood but is likely to cause significant environmental harm. It is of paramount importance that these sites are kept safe for communities of the North West, whether or not they are located on land with open access to the public.
- **Accessible green and blue space for people to enjoy** – We take pride in our role as custodians of some of the most beautiful landscapes in the North West and we continue to work in partnership to break down barriers to access, ensuring our land has the opportunity to deliver the proven physical and mental benefits for customers. Our access and recreation strategy sets out a strong ambition to work more closely with partners, recreational bodies and clubs to mitigate the risks associated with entering our reservoirs to maximise social value (health and wellbeing) from our natural capital, while addressing public expectations for more recreational access to green and blue space.

What did customers say?

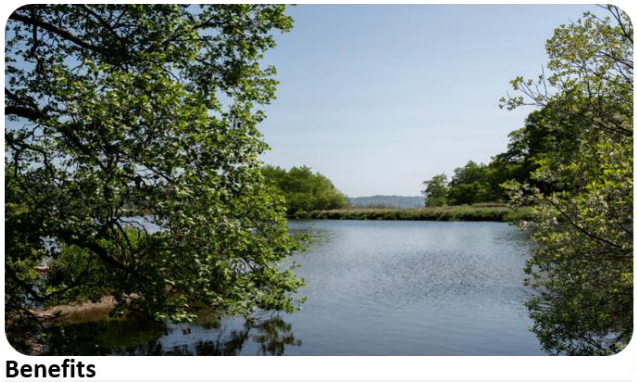
- UUW customer priorities research, CCW and Ofwat's customer preferences and ODI rates research show drinking water quality and sewer flooding are top customer priorities which customers place high value on companies addressing and improving. Our service levels for these have been co-created and validated by customers in our WRMP[4], DWMP[5] and Affordability and Acceptability testing research[6].
- Our stakeholder feedback and research on river health, sewer overflows, and customer listening feedback on our Better rivers commitments show that customers prioritise reducing river pollution first and foremost. Protecting biodiversity, recreation and bathing waters are also things customers want companies to protect.
- Customers have expressed in our customer priorities research and long-term delivery strategy research that health and safety is of upmost importance and customers would prefer for investment in lead pipes to be accelerated as much as possible.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology*

[4] unitedutilities.com/corporate/about-us/our-future-plans/water-resources/water-resources-management-plan/

[5] unitedutilities.com/corporate/about-us/our-future-plans/Our-long-term-plans/

[6] Supplementary document *UUW22 – Affordability and Acceptability testing reports*

Protecting public health and wellbeing – the benefits and value delivered



Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
26.8% reduction in storm overflow operation	✓	✓				✓	✓			✓
Improvements to 11,728 hectares of SSSIs	✓					✓	✓	✓	✓	✓
Delivering activity at 15 bathing waters impacted by CSOs	✓	✓				✓	✓			✓
Enhancing safety at 10 reservoirs	✓	✓	✓			✓				
26% fewer contacts about water quality	✓	✓	✓			✓				
32% reduction in sewer flooding inside homes & businesses	✓	✓	✓			✓				
13% reduction in sewer flooding outside of homes & businesses	✓	✓	✓			✓				
30,000 lead pipes replaced in homes across the North West	✓					✓				

Where to find out more

For more detail on how our strategy and AMP8 plan helps to protect public health and wellbeing, see section 3 of supplementary document *UUW39 - How our plan delivers social and environmental value*.

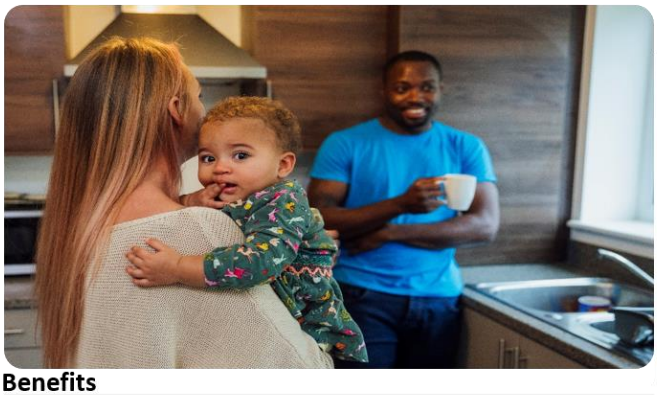
6.5.2 Supporting those who most need it

Water customers in the North West have diverse and differing needs and expectations from their water and wastewater services. These needs can vary over time as people's circumstances change. In the current economic climate, it is more important than ever that we support those struggling the most and we deliver strong social value through our targeted and tailored support packages.

What did customers say?

- Affordability is a key concern for customers and we have tracked the rise of this over time.
- UUW debt research explores how we can better help those at risk or in need of support from UUW, which has directly fed into our propositions and strategy.
- Our affordability package and support has been directly informed by dedicated testing of our support package through our affordability package research and Affordability and Acceptability testing research.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology*

Supporting those who most need it – the benefits and value delivered



Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
£525m of affordability support for customers	✓	✓		✓	✓					
590,000 additional households benefitting from a broader range of affordability support	✓	✓		✓	✓					
£335m on schemes for customers in vulnerable circumstances	✓	✓		✓	✓					

Where to find out more

For more detail on how our strategy and AMP8 plan helps to support those who most need it, see supplementary document *UUW39 - How our plan delivers social and environmental value*.

For more on how we support customers with affordability, vulnerability and accessibility, see Chapter 4 and *UUW25 – Affordability and Vulnerability - Operational Response.*

6.5.3 Being inclusive for everyone

Protecting public health and wellbeing | Supporting those who most need it | **Being inclusive for everyone** | Ensuring reliable services and allowing for economic growth

The North West is diverse, with people from all backgrounds. By understanding the communities and counties we serve, we better understand how to deliver the things that matter most. Being inclusive does not just apply to customers and communities, it also applies to our colleagues and supply chain. It is important to reflect the diversity of our region with the people who work with us in order to deliver a service that delivers for all.

Through our business plan we expect to support over 30,000 jobs in the North West, supporting economic equality as an accredited living wage company with a strong track record of diversity and inclusion. As well as this we will continue to have a strong focus on health and safety with colleagues and in our supply chain, to make sure that we provide a safe and great place to work.

What did customers say?

- UUW diversity and inclusion research showed that 57 per cent of customers take into account diversity of a company and 59 per cent how inclusive a company is when using a product or service
- In a national survey by Mustard research, 71 per cent said they cared a lot about companies being committed to treat employees fairly
- Our stakeholder engagement and customer engagement in future plans, demonstrates that the number of jobs added to the region by UUW is a valued contribution to the North West
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology*

Being inclusive for everyone – the benefits and value delivered

Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
Over 30,000 jobs supported	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Where to find out more

For more detail on how our strategy and AMP8 plan helps to be inclusive for all, see section 3 of the supplementary document *UUW39 - How our plan delivers social and environmental value*.

6.5.4 Ensuring reliable services and supporting economic growth

We recognise our essential role as the regional water supplier to the North West, providing not only public water supplies but also enabling economic productivity across the region. Through long-term responsible corporate governance and financing, backed by a strong regulatory framework, we are delivering multi-million-pound infrastructure projects to improve services and resilience for the long term. We ensure the cost of this is shared fairly and affordably between those that benefit now and in the future.

In providing reliable and consistent levels of service we make sure that the lives of customers, members of the North West workforce, and businesses run smoothly and without unnecessary disruption, generating the environment and confidence to further invest in the North West. In our capacity as the provider of public and wholesale water services to the North West, we understand the need to ensure that our services are reliable today and for the future. We ensure that there is sufficient capacity in our water and wastewater systems now and over the long term to provide reliable services fit for the needs of customers and businesses. Providing reliable service to customers but also new demands to be met from developers and for industrial needs supporting the growth of the North West.

We also recognise that we are a significant employer in the region, with a far reaching economic impact not only with respect to direct employment but also significant regional, and UK supply chains. Supporting 22,700 FTEs and £2.1 billion GVA per annum on average over AMP7 and we expect this to grow to over 30,000 jobs supported in AMP8 due to the size of our ambitious environmental enhancement programmes.

What did customers say?

- Our customer priorities, WRMP, DWMP and climate change research projects demonstrate that the reliable supply of water and wastewater services now and in the future is a top priority and customers want us to proactively invest against climate change impacts including drought and power resilience. The feedback on priorities and optional appraisal has fed into the service levels and strategies proposed.
- Our long-term delivery strategy ambitions research demonstrates that customers think maintaining pipes and pumps is very important and investment shouldn't be delayed.
- Our affordability and acceptability testing demonstrates support for service levels such as reduction in supply interruptions and mains replacement.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology*

Ensuring reliable services and supporting economic growth – the benefits and value delivered

Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
Helping homes and businesses to reduce water usage by 49 million litres a day	✓	✓	✓			✓		✓		✓
Upgrading 928km of water mains	✓	✓	✓			✓				
Providing asset and environmental resilience	✓	✓	✓			✓				
Upgrading 66km of the Vyrnwy aqueduct	✓	✓	✓			✓				
Investing in power resilience at 51 facilities	✓	✓	✓			✓				
Protecting 14 sites at risk from costal and river erosion	✓	✓	✓			✓	✓			✓
Enhancing physical and cyber security	✓	✓	✓			✓				
13% reduction in water supply interruptions	✓	✓	✓			✓				

Where to find out more

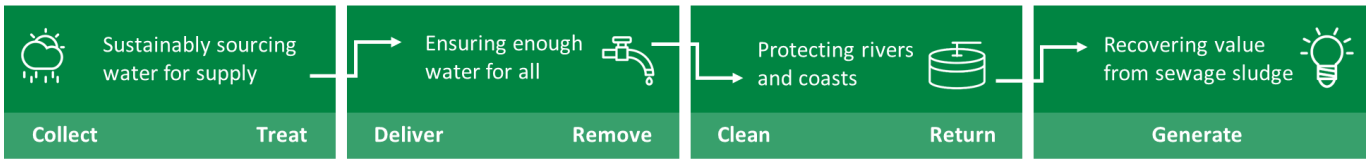
For more detail on how our strategy and AMP8 plan helps to ensure reliable services and enable economic growth, see section 3.2 of supplementary document *UUW39 - How our plan delivers social and environmental value*.

We discuss further how we secure the continued resilience of our services in Chapter 7. We also detail our approach to securing access to sufficient sustainable water and wastewater services in our WRMP[7] and our DWMP[8].

[7] unitedutilities.com/corporate/about-us/our-future-plans/water-resources/

[8] unitedutilities.com/corporate/about-us/our-future-plans/Our-long-term-plans/

6.6 Delivering environmental value for the people of the North West



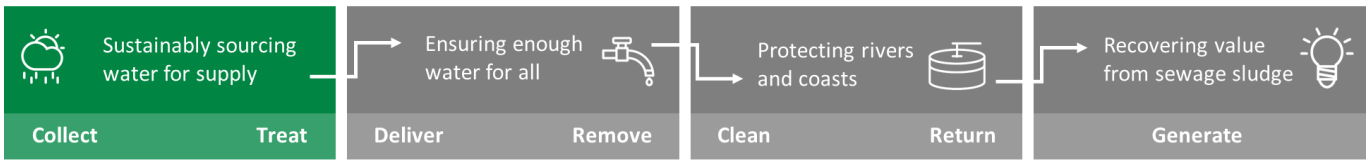
Our business plan delivers environmental value for the North West by:

- **Sustainably sourcing water for supply** – Protecting sources of water and abstracting water in a sustainable way to minimise negative environmental impacts;
- **Ensuring enough water for all** – Reducing our own use of water and tackling leakage, collaborating with customers, both domestic and business to use less and balancing regional and national needs;
- **Protecting rivers and coasts** – Minimising the operation of storm overflows, treating wastewater to even higher standards, and keeping surface water out of our system to manage flood risk; and
- **Recovering value from sewage sludge** – Safely treating sludge, recycling nutrients to land and recovering calorific value by generating renewable energy.

Our core business is inextricably linked to the resilience of the natural ecosystems of the North West. Our strategy will protect and enhance the natural environment to meet the needs of water customers today and tomorrow. We have the opportunity to create environmental value throughout our role in the water cycle, whether this is in collecting and treating water, cleaning and returning it to the environment, or recovering value from sewage sludge.

The following section will discuss these elements in turn, highlighting how our AMP8 plans will deliver better value for the environment.

6.6.1 Sustainably sourcing water for supply



Having sustainable access to water is more than simply meeting the requirements of public supply. Access to reliable water plays a key role in:

- Ensuring everyone has access to clean, reliable water now and in the future;
- Protecting habitats and enhancing biodiversity, including in protected areas such as National Parks and SSSIs;
- Supporting the economic development of the North West and supporting industry;
- Providing amenity value to residents and visitors to the North West, providing access to nature and open spaces that promote physical activity and wellbeing;
- Providing third-party critical infrastructure providers, such as the power sector, with essential cooling water for energy generation; and,
- Ensuring a resilient food supply chain.

We recognise that UUW is one of many abstractors of water in the North West, and, therefore, the importance of working with others to manage these resources sustainably to support all the needs of the North West, and increasingly the needs of the wider country. That is why we take our role seriously in the stewardship of our asset base, our expertise and leadership, and the services that we provide to the people and environment of the North West in ensuring sustainable water for all.

What did customers say?

- UUW customer listening, WRMP, six capitals, state of the nation and customer priorities research all support our plan to improve sustainable supply of water and use options and engineering solutions which reduce its impact on the environment.
- These projects also demonstrate how environmental factors such as carbon and biodiversity have a notable impact on which options customers prefer, therefore, UUW has applied this to our optimisation of options appraisal.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology*

Sustainably sourcing water for supply – the benefits and value delivered

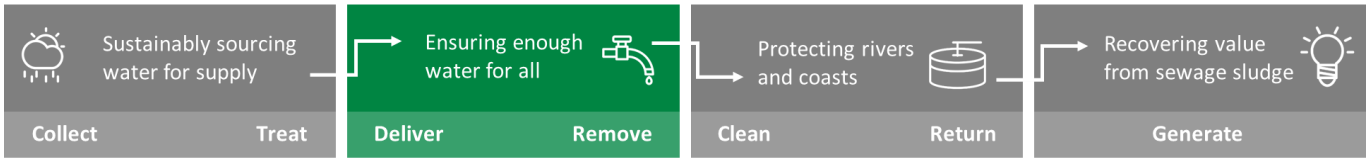
Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
6 million litres a day abstraction reduction from sensitive sources	✓	✓				✓	✓	✓		✓
Restoration of 6,528 hectares of peatland	✓	✓				✓	✓	✓	✓	✓

Where to find out more

For more detail on how our strategy and AMP8 plan helps to sustainably source water for supply, see section 3.3 of supplementary document *UUW39 - How our plan delivers social and environmental value*.

We also share details of our approach to water quality and sufficiency in supplementary document *UUW57 – Water Business Plan* and section 5 of *UUW12 – Long Term Delivery Strategy.*

6.6.2 Ensuring enough water for all



Ensuring enough water is available for all is more than simply having enough in storage to meet demand. It's about making sure that precious resources are used wisely and not wasted, that a range of future scenarios of total demand are understood and pathways developed to meet these projections, how these demands may impact on the environment and customer service levels. Water does not respect the administrative boundaries of the UK's water companies. We work with the other water suppliers in our region and with the Environment Agency to ensure enough water is available for all users regardless of whether they happen to be in the North West. We support and collaborate with customers through smart metering and other water efficiency initiatives to help reduce usage and their bills. Our plan will deliver a step change in our leakage performance to support reduction in environmental impacts such as carbon, but also help build trust with stakeholders and support economic growth.

What did customers say?

- Leakage reduction is a top priority for customers, and in the future, customers would like us to accelerate leakage reduction targets if deliverable.
- Through our dedicated smart metering research and WRMP research, we have majority customer support for our smart metering rollout plans and moving to 50 per cent reduction in TuBs.
- Customers are supportive of reducing consumption and feel customer education is the key to behaviour change.
- 85 per cent of customers support changes in their water supply due to a need to transfer water supplies to other areas in need.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology*

Ensuring enough water for all – the benefits and value delivered

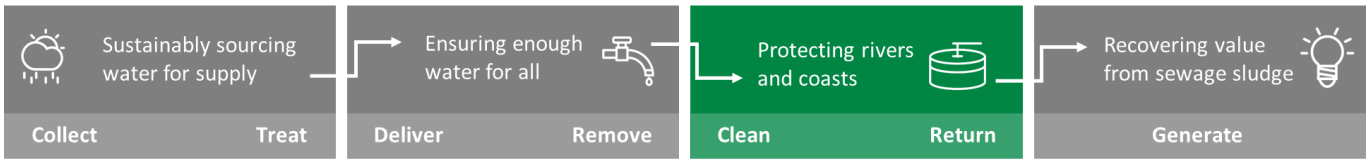
Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
13% reduction in leakage		✓	✓			✓	✓	✓		✓
Household - 70 litres saved per property from smart metering		✓	✓	✓	✓	✓	✓	✓		✓
NHH - 84 litres saved per property from smart metering		✓	✓	✓	✓	✓	✓	✓		✓
50% reduction in likelihood of implementing a temporary use ban (“hosepipe ban”)	✓	✓	✓			✓				
20% reduction implementing drought permits and emergency drought orders	✓	✓	✓			✓				
Enabling national water trading through 25MLD new transfer of water	✓	✓	✓	✓			✓			

Where to find out more

For more detail on how our strategy and AMP8 plan helps to sustainably source water for supply, see section 3.3 of supplementary document *UUW39 - How our plan delivers social and environmental value*.

We also share details of our approach to water quality and sufficiency in supplementary document *UUW57 - Water Business Plan* and the section 5.1 of supplementary document *UUW12 -Long Term Delivery Strategy*.

6.6.3 Protecting rivers and coasts



We will continue to deliver long-term environmental value for customers through taking responsible action to further reduce the potential for sewage pollution, continuing to develop our surface water removal strategies and promoting the uptake of SuDS. Our multiple strategies aimed at protecting our rivers and coasts, driven by our AMP8 plan will deliver multiple benefits for customers and the environment. AMP8 will see a step change in performance levels on CSO spills, reducing these by 26.8 per cent by the end of the period. This will help protect rivers and coasts, and the biodiversity these habitats support. Through the continuation of our Better Rivers programme, we are putting the protection of rivers and coasts at the heart of our plan for AMP8 and beyond.

What did customers say?

- UUW customer priorities and regulatory customer preferences research demonstrates that customers support investments to sewer upgrades and reducing sewer overflows. Our customer listening research tested our better rivers commitments and used customer feedback to shape our strategy on overflows and commitments listed in the table above.
- In our sewer overflows research, customers ideally wanted zero spills, but recognised they did not want to pay for this due to the considerable investment.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology.*

Protecting rivers and coasts – the benefits and value delivered

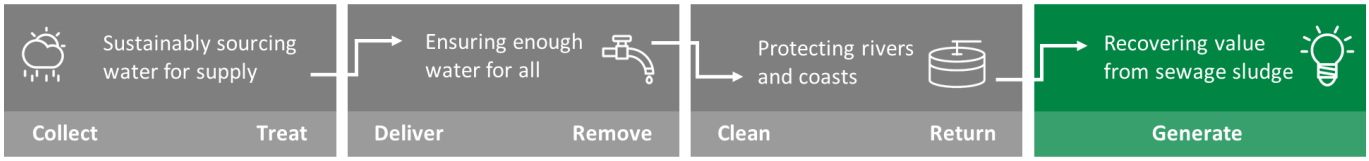
Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
Improvements to flow measurement at 184 sites	✓	✓	✓				✓			✓
5% reduction in sewer collapses	✓	✓	✓			✓	✓			✓
26.8% reduction in storm overflow operation	✓	✓	✓			✓	✓			✓
Screening 335 overflows, reducing sewage litter entering water courses	✓	✓				✓				✓
36 schemes to deliver septic tank improvements		✓	✓							✓
386km of river improved	✓	✓	✓			✓	✓		✓	✓
Tackle nutrient enrichment in 46km of river designated as Special Areas of Conservation	✓	✓	✓			✓	✓			✓
25% reduction in pollution events	✓	✓	✓			✓	✓			✓
40% of overflow improvement projects to contain blue/green solutions	✓	✓	✓			✓	✓	✓	✓	✓

Where to find out more

For more detail on how our strategy and AMP8 plan helps to protect rivers and coasts, see section 3.3 of supplementary document *UUW39 - How our plan delivers social and environmental value*.

We also share details of our approach in supplementary document *UUW56 Wastewater Business Plan* and the section 6 of supplementary document *UUW12 - Long Term Delivery Strategy*.

6.6.4 Recovering value from sewage sludge



Each year we treat and recycle over 200,000 tonnes dry solids of sludge as a critical part of our service to customers and the environment. Sludge is a resource from which there is potential to recover valuable energy and nutrients. However, we are in an unprecedented period of change with regards to the management of sludge. Against a backdrop of increasing challenges from climate change, environmental standards, market competition, volume of sludge production and emerging risks posed by novel chemicals, we and the rest of the water industry, accept the need to continue to improve performance to protect and enhance the environment. Facing into these significant uncertainties, we will take decisive action where we have the greatest certainty we can add value. Our AMP8 business plan is focussed on low regret interventions, where we have high certainty in the scope and the investment needed to meet new service standards. This approach includes the necessity of a Notified Item as a means of managing the residual investment risk over uncertain future investment requirements. We believe this is the right approach to best protect the interests of customers.

It is our strategy to follow circular economy principles to continue to develop and maximise the value created through recovery and re-use of bioresources and deliver significant benefits to society. We treat our sludge using anaerobic digestion, and the resulting biosolids are recycled to agriculture. This process has many environmental and economic benefits. We generate renewable electricity or green gas and biosolids applied to land are a sustainable source of nitrogen and phosphorus, as well as other plant nutrients and organic matter, which can provide long-term benefits to soil structure and fertility.

What did customers say?

- When engaging with customers about bioresources, customers supported upgrading processes to meet the latest standards and to reduce the risk of harmful emissions protect river water quality.
- The majority of customers were supportive of the principle of recycling sludge, rather than sludge disposal using technologies such as incineration.
- Customers valued a balanced approach to sludge management that kept one eye firmly on the future. Managing risks of air pollution, carbon and micro plastics were important for many customers and this has directly fed into our strategy.
- Much more detail about our customer research and our customer research library is available in supplementary document *UUW21 – Customer Research Methodology.*

Recovering value from sewage sludge – the benefits and value delivered

Benefits	Social value						Environmental value			
	Health and wellbeing	Trust and transparency	Economic growth	Helping low income households	Diversity and access	Quality of place	Biodiversity & ecosystem health	Climate mitigation	Air quality	Protect the water environment
100% of biosolids beneficially recycled to land	✓	✓	✓			✓	✓			✓
Self-generation of 19% of UUW's energy needs	✓	✓	✓				✓	✓	✓	✓
Upgrade our sludge digestion centres to deliver enhanced environmental protection		✓	✓						✓	✓
60 days contingency storage to improve resilience in biosolids recycling		✓	✓				✓			✓
Reduce our operational carbon emissions	✓	✓	✓			✓	✓	✓	✓	✓
New capacity to manage sludge growth		✓	✓				✓	✓		
Enhanced sludge screening to improve the quality of over 400,000 wet tonnes of biosolids per year	✓	✓	✓			✓	✓			✓

Where to find out more

For more detail on how our strategy and AMP8 plan helps to maximise value from sewage sludge, see section 3 of the supplementary document *UUW39 - How our plan delivers social and environmental value.*

We also share details of our approach in supplementary document *UUW58 –Bioresources Business Plan* and section 7 of supplementary document *UUW12 - Long Term Delivery Strategy*.

6.7 Our plan to deliver value through partnership working

Collaboration is critical to meeting the complex environmental and social challenges of today and tomorrow in the most efficient and effective means. Through our extensive experience of working in partnership to co-design, co-finance and co-deliver, we secure greater value for customers and the environment than we could achieve working alone.

In AMP8 we have an ambitious plan for partnership working to help tackle these big challenges and unlock sizable opportunities. Our plan builds on our strong track record of partnership approaches to take even further many existing partnerships and expand beyond this with new ones. Our partnership plan will deliver financial, social and environmental benefits for customers and stakeholders. An effective partnership approach is agile and responds to both our needs and those of partner organisations. For example, through the Greater Manchester trilateral partnership, we have co-created an integrated water management plan for the city region, endorsed by the city Mayor Andy Burnham. This is a significant step forward in exploring the potential to align plans between a diverse range of partners to benefit the water environment.

Our AMP8 plan includes areas of more defined and formalised partnership activity, combined with a governance framework and pipeline of potential partnership opportunities that we continually review to achieve the best possible value.

Through collaboration we can access solutions that are not otherwise open to us, and which are not possible by working alone in traditional ways. For example, partnership working will allow us to access different resources and skills such as social and environmental specialists, community groups and innovative financing options. All

this means that we can deliver our core services more effectively and efficiently at the same time as supporting wider public value. Ultimately, working in partnership helps to leverage more value to maintain and improve services while benefitting bills.

We summarise our partnership plan below, but there is much further details available in the supplementary document *UUW38 – Working in Partnership*.

6.7.1 Our partnership plan for AMP8

Our bold plan for partnership aims for well over half a billion pounds of investment in partnership approaches that will ensure lower costs and greater benefits for customers in the period 2025 to 2030.

UUW expects to invest at least £344 million in exploring partnership solutions across our enhancement programmes (assuming relevant programmes are supported in the Final Determination)

UUW will seek to leverage total co-funding of at least **£267 million** from third parties, of which:

- **£95 million** will directly support our core duties and has enabled us to benefit bills for customers in AMP8, and,
- **£172 million** will deliver additional funding for wider environmental and social benefits for the North West.

Based on our track record of delivering in partnership and accessing various sources of co-funding, our ambitious co-funding target separates:

- **Leveraged funding for direct benefit** – helping to benefit bills by reducing the cost of delivering our core duties. This amount has already been locked into our financial proposals to guarantee the saving for customers. This approach is taken at our risk as the leverage funding is hard to plan this far in advance, and far from guaranteed.
- **Leveraged funding for wider benefit** – providing even more social and environmental benefits for customers, communities and the environment in the North West. The benefits are beyond, but still complementary to, our core duties, and therefore are appropriately funded outside the bills of water customers.

The leveraged funding has been split into two categories as it is important to distinguish between leveraged funding that can provide cost efficiency versus the leveraged funding which is providing wider benefit for society.

Table 6-1 below summarises the key financial components of our partnership plan. It remains agile and will continue to evolve as we pursue to maximise the potential benefits for customers and the environment in the run up to AMP8 and through subsequent delivery.

Table 6-1 Key financial components of our AMP8 partnership plan

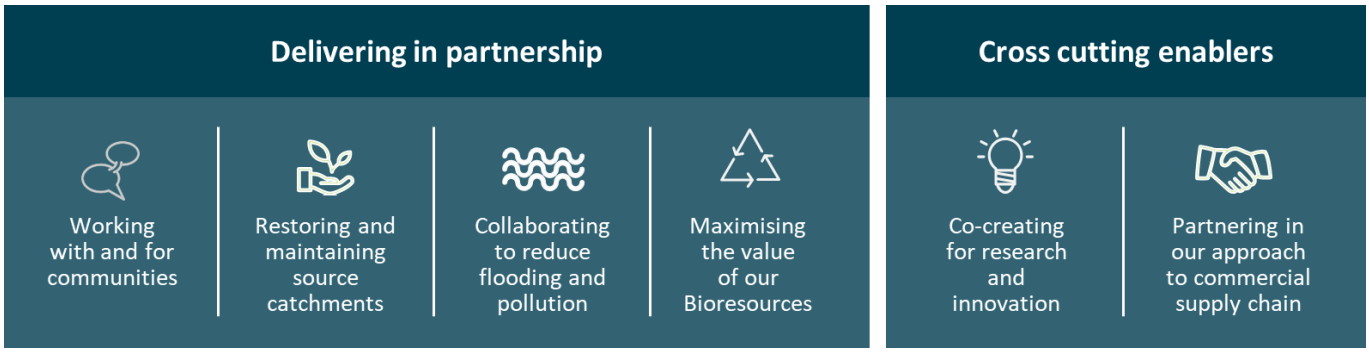
UUW priority theme	Activity	UUW investment in partnership solutions	Leveraged funding for direct benefit
Collaborating to prevent flooding and pollution	Rainwater management solutions	£283.6m	£59.6m
Restoring and maintaining source catchments	Water catchment schemes	£18.4m	£5.3m
Collaborating to reduce flooding and pollution	Crosby coastal resilience	[✂]	[✂]
Collaborating to reduce flooding and pollution	Catchment nutrient balancing	£6.7m	£0.7m
Net zero programme	Peatland restoration and woodland creation	£22.5m	£22.5m
Total		**£343.9m**	**£95.1m**

In addition to these financial costs and benefits, our partnership plan will unlock a wide range of benefits in kind from third parties, including extensive volunteering resources, technical expertise, engagement activities and

access to specialist networks. We provide more information on the overall benefits and value in section 2.4 of the supplementary document *UUW38 – Working in Partnership.*

Our plan focuses on six priority areas to deliver benefits and wider value to society and the environment, summarised in Figure 6-10

Figure 6-10 overview of our priority areas for partnership working in AMP8



In AMP8 we will continue delivering many of our existing partnerships, while seeking to explore and develop new opportunities to deliver even more social and environmental value. We will work with a range of partners, such as regulators, local authorities, land owners, businesses, suppliers, NGOs, community groups, water companies and schools. This list is not exhaustive, and we will look to collaborate with willing partners wherever we can. We will proactively seek out new partners from different sectors, particularly pursuing innovative approaches.

We will deliver our partnership ambition through a combination of strategic and tactical partnerships defined as:

- **Strategic** – High level commitment with a strategic influence and focus.
- **Tactical** – Partnerships with specific delivery benefits and a defined timescale and budget.

Our partnership plans are at various levels of scheme definition, maturity and timescales. We have a mixture of partnership plans including long-term strategic relationships, specific identified schemes and partnerships at an opportunity level.

As a cornerstone of our AMP8 partnership plan, we will continue to work closely with our strategic partners that help us deliver value at scale and speed. We and the partners want to take even further these long-standing relationships that have a track record of co-developing substantial value and opportunities to meet shared goals. Examples of our strategic partnerships are:

- **RSPB** – Our partnership with the RSPB goes as far back as the 1960s. We have a shared understanding that what is good for nature is good for water and recently refreshed our relationship through a memorandum of understanding signed by both Chief Executives in 2021 to continue our strategic relationship in the long term. The RSPB help manage some of our sites for recreational access and nature, while ensuring long-term protection of essential sources of water and working to store water to tackle downstream flood risk.
- **The Rivers Trust** – We have worked together with the Rivers Trust for the last ten years and developed a leading approach to working in river catchments, helping us to address catchment issues in an integrated way, working to revolutionise national water environment data sets and driving forward the market-led opportunities for nature. Amongst other things, this partnership has led to two successful Ofwat innovation fund proposals, which bring together many water companies, and wider stakeholders in the sector to unlock catchment based approaches.
- **Greater Manchester trilateral partnership** – Together with the Environment Agency and GMCA we formed the Greater Manchester Trilateral Partnership. For the last four years the partnership has driven forward the environmental, development and infrastructure priorities across Greater Manchester to reduce flood risk, improve water quality and enhance the natural environment. This has led to the launch of an Integrated Water Management Plan for Greater Manchester, endorsed by city Mayor Andy Burnham.

- **National Trust** – Both UUW and the National Trust are significant land owners in the North West. Collaborative initiatives include: Wild Ennerdale, Moors for the Future Partnership, Pennine prospects, High Peak Vision and Kinder Peat Restoration. Both organisations have committed to the development of a long-term strategic partnership.

We will deliver in partnership to improve the value we provide to customers, wider society and communities. We will work in partnership to support customers facing affordability challenges, supporting customers living in vulnerable circumstances, or who may become vulnerable without our services, plus supporting accessibility. Examples include:

- **Data sharing** – we have collaborated with Electricity North West, SP Energy Networks, and Northern Power Grid (the three distribution network operators in the North West), to share vulnerable customer data and best practice to improve the effectiveness of identifying and supporting customers eligible for vulnerability and affordability support. In addition, a data sharing agreement with Lancashire Fire and Rescue Service.
- **Hardship Hub** – Working in partnership we co-created a digital Hardship Hub which provides money advisors with a 'one stop shop' for debt support schemes to help customers seek help with their bills. Co-developed with experts from the money advice community, including the Citizens Advice Bureau, it contains information on the financial support schemes offered by suppliers across a wide range of sectors. The site contains information on 559 schemes from 100 organisations and we continue to add to this. More recently, the Hardship Hub has been re-developed and newly launched for the use of all our domestic customers needing assistance.
- **Accessibility** – We collaborate regularly with our independent Your Voice Customer Affordability and Vulnerability Panel, sharing processes and plans ensuring inclusivity for all our customers. Being fully verified against external British Standards ISO22458 accreditation for consumer vulnerability, has also given us the tools to ensure we are an accessible organisation for our customers.

Also central to our AMP8 plan is the continued development and deployment of our tactical partnerships. We manage over 100 of these relationships, delivering more targeted benefits and projects in a 'task and finish' approach. These tactical partnerships cover all stages of maturity from co-design to co-delivery, and the programme continues to evolve in response to business and partner needs. Examples include:

- **Catchment Systems Thinking Cooperative**[9] (CaSTCo) – a £7.1 million partnership innovation project with the aim to revolutionise the way crucial data about England and Wales' water environment is gathered and shared. Funded through the Ofwat Innovation Fund, led by UUW, partners include The Rivers Trust, 12 water and sewerage companies as well as academia and environmental charities.
- **Love Windermere**[10] – working in partnership to better understand the factors affecting water quality in the heart of the Lake District to prioritise action. Partners include; the Environment Agency; Lake District National Park; South Cumbria Rivers Trust; Freshwater Biological Association; National Trust; National Farmers Union, Lake District Foundation; Local Enterprise Partnership and Westmorland and Furness Council.
- **Mainstreaming nature based solutions**[11] – an £8.9 million multi-sectoral collaboration project led by UUW, with more than 20 multi-disciplinary partners, including regulators (Ofwat and the Environment Agency), NGOs (Rivers Trust), delivery partners (Jacobs and Mott MacDonald) and partners from across the water industry and wider to unlock catchment and nature based solutions. Funded through the Ofwat innovation fund and partners to provide a consistent framework around nature based solutions to help inform and shape the future WINEP.
- **North West Affordability summit** – to bring representatives together from a wide range of different sectors and communities to exchange ideas and support co-creation of potential new solutions to support

[9] https://theriverstrust.org/our-work/our-projects/castco-catchment-systems-thinking-cooperative

[10] https://lovewindermere.co.uk/

[11] https://www.unitedutilities.com/corporate/newsroom/latest-news/united-utilities-to-lead-multi-million-pound-national-programme-of-nature-based-solutions-to-help-improve-water-treatment/

customers. Representatives from organisations such as debt advice charities, food banks, Department for Work and Pensions, Credit Unions, Councils, Housing Associations, MPs and other utility companies.

- **Peatland restoration** – working to restore this rare habitat and help to mitigate the effects of climate change, working with a range of partners including; RSPB, National Trust, Great North Bog and Moors for the Future.

A detailed overview of our partnership track record and AMP8 partnership plan is provided in supplementary document *UUW38 – Working in Partnership*. The same document provides many case study examples of our work. Figure 6-12 over the page shows a map of some key partnership schemes across the five counties.

An effective approach to partnership working is agile. We have built in this element of flexibility providing us with the opportunity to adapt to the unique nature of individual partnerships, partners and changing needs of our communities. We will continue to proactively search out new opportunities and use our organisation-wide pipeline of opportunities to guide our partnership plans. Our pipeline collates potential partnership opportunities in one place, which we then assess and prioritise guided by our partnership framework to progress towards becoming deliverable partnerships. This is governed closely, led by our Partnerships Strategy Manager to ensure effective and efficient coordination and continual learning and improvement.

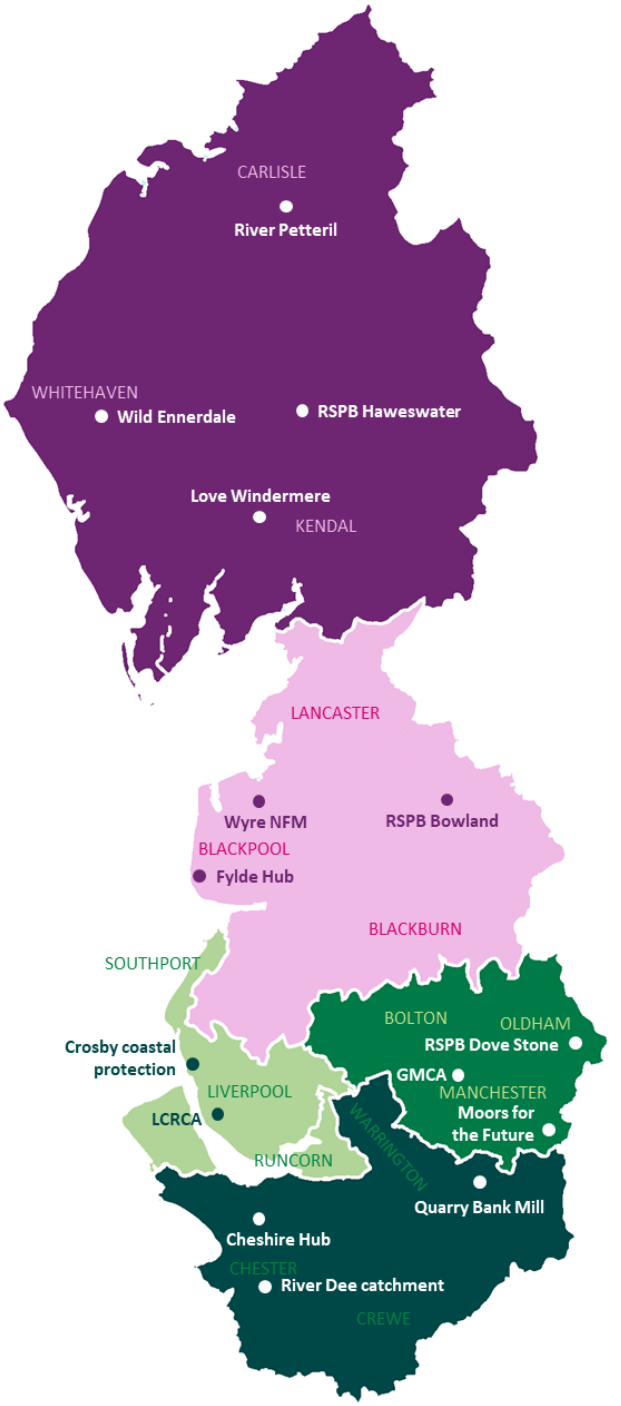
6.7.2 Our partnership strategy

Underpinning our approach is our important role as part of the North West community. We recognise that we can deliver more value for customers by understanding the environment we operate in, and the role of other organisations operating in the same geography or with shared goals. Our partnership strategy creates a wide ranging partnership opportunity pipeline, continuing to develop our capability, and overcoming inherent challenges in order to maximise value and deliver more for less. Our partnership strategy has provided the structure to deliver an ambitious and deliverable AMP8 plan.

We provide detail of this strategy and our track record in the supplementary document *UUW38 – Working in Partnership*.

Figure 6-11 The strategy underpinning our approach to partnership working and the development of our partnership plan for AMP8

Figure 6-12: Key partnership scheme map



Value delivered:

- Engagement
- Financial
- Innovation
- Performance
- Water environment
- Wider social and environmental

Region-wide

Hardship Hub
Online customer portal for affordability support across multiple sectors

The Rivers Trust
Transformation and protection of river environments

Natural Course
Multi-stakeholder project improving rivers and water quality

Catchment partnerships
Working with catchment based approach (CABA) partnerships to improve the water environment

Cumbria

Love Windermere
Multiple partner project working to improve water quality in England's biggest lake

RSPB Haweswater
Improving recreational access, nature, water quality and tackling downstream flood risk

River Petteril
Natural capital interventions to improve river water quality through phosphorus reduction

Wild Ennerdale
Wildland partnership enhancing the natural environment and connecting people with nature

Lancashire

RSPB Bowland
Enhancing upland biodiversity with a focus on re-establishing hen harrier habitats

Fylde Hub
Multi-stakeholder approach focused on tackling water quality and quantity challenges

Wyre Natural Flood Management (NFM)
Delivering natural flood management through innovative finance mechanisms

Greater Manchester

GMCA trilateral partnership
Delivering the Integrated Water Management Plan for Greater Manchester

RSPB Dove Stone
Improving the visitor experience and habitat restoration at catchment scale

Moors for the Future
Large scale multi-stakeholder upland restoration programme delivering water and wider benefits

Merseyside

Crosby coastal protection
Working with Sefton Council to protect the coastline, improve resilience and improve amenity

LCRCA partnership
Creating an integrated plan for water management for the Liverpool City Region

Cheshire

Cheshire Hub
Multi-stakeholder approach focused on tackling water quality and quantity challenges

Quarry Bank Mill
Working with the National Trust to prevent flooding and reduce storm overflow spills

River Dee Catchment
Addressing water quality through catchment management across national boundaries

6.7.3 Partnerships at the core of our business

Our approach to partnership working is guided by our organisation-wide partnership framework, which we have collaboratively created to capture learning from others leading work. It sets out our partnership working approach, outlining a clear set of principles, providing consistency, support and guidance to those working collaboratively across our business, while also recognising the unique nature of all partnerships and incorporating elements of flexibility.

An important element of our partnership approach is ensuring we have clear governance in place, guaranteeing support, commitment and accountability from our Board ESG Committee.

Enabling the full value of partnership
Delivering projects with multiple drivers through different partnerships requires flexibility to maximise the benefits delivered in partnership. Our business processes and culture reduce barriers to partnership working, however, due to the inherent uncertainty associated with partnerships there are still challenges to overcome:

- Partnership schemes take longer to develop due to the engagement and coordination required among multiple third parties that have different goals and values;
- A degree of certainty (both in terms of funding and objectives) is often required before potential partners will engage with us to explore opportunities;
- Partners' funding arrangements may be time sensitive or subject to internal budget arrangements, which may not align to the five-yearly price review, and,
- Partners' ability to deliver may limit the size, scale and timing of projects progressing.

Through our Advanced WINEP we aim to create the flexibility to unlock earlier, innovative investment and partnerships on rainwater management and storm overflows. The programme will drive £247 million of investment of which £197 million would be enhancement cost allowance and the remaining £50 million leveraged from partnership funding, enabled by removing conventional regulatory barriers of timeframes, geography and penalties to allow us to flexibly co-plan and co-deliver with stakeholders.

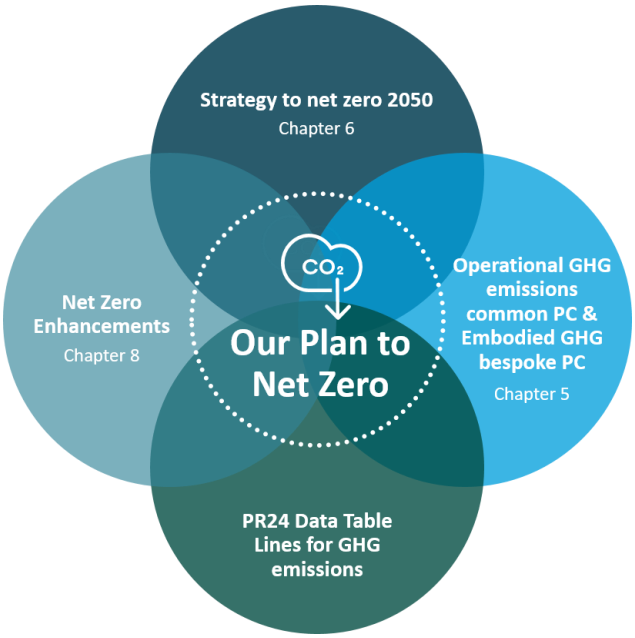
We will continuously improve our partnership working over the short and long term in support of our ambition to deliver greater value for the North West, sharing information and best practice to stimulate collaborative solutions, reducing barriers to partnership working across the sector and more widely.

6.8 Our plan to deliver value as we strive for net zero

6.8.1 Net zero is a priority in our business plan

We have produced an ambitious strategy to reach the national legal requirement for net zero in scopes 1, 2 and 3 greenhouse gas (GHG) emissions by 2050. This is a priority to us and our customers because the affordability and resilience of our operations and services fundamentally rely on a stable climate and a healthy natural environment. Figure 6-13 summarises how we have integrated the management of GHG emissions throughout our PR24 business plan. This document provides a summary of our low regrets plan to 2030 in the context of our adaptive strategy to net zero 2050. Further details are provided in the supplementary document *UUW57 -Our strategy to net zero 2050*, *UUW67 – Cross Price Control Enhancement case* and *UUW30 Performance Common Technical documents*.

Figure 6-13 Our plan to Net Zero

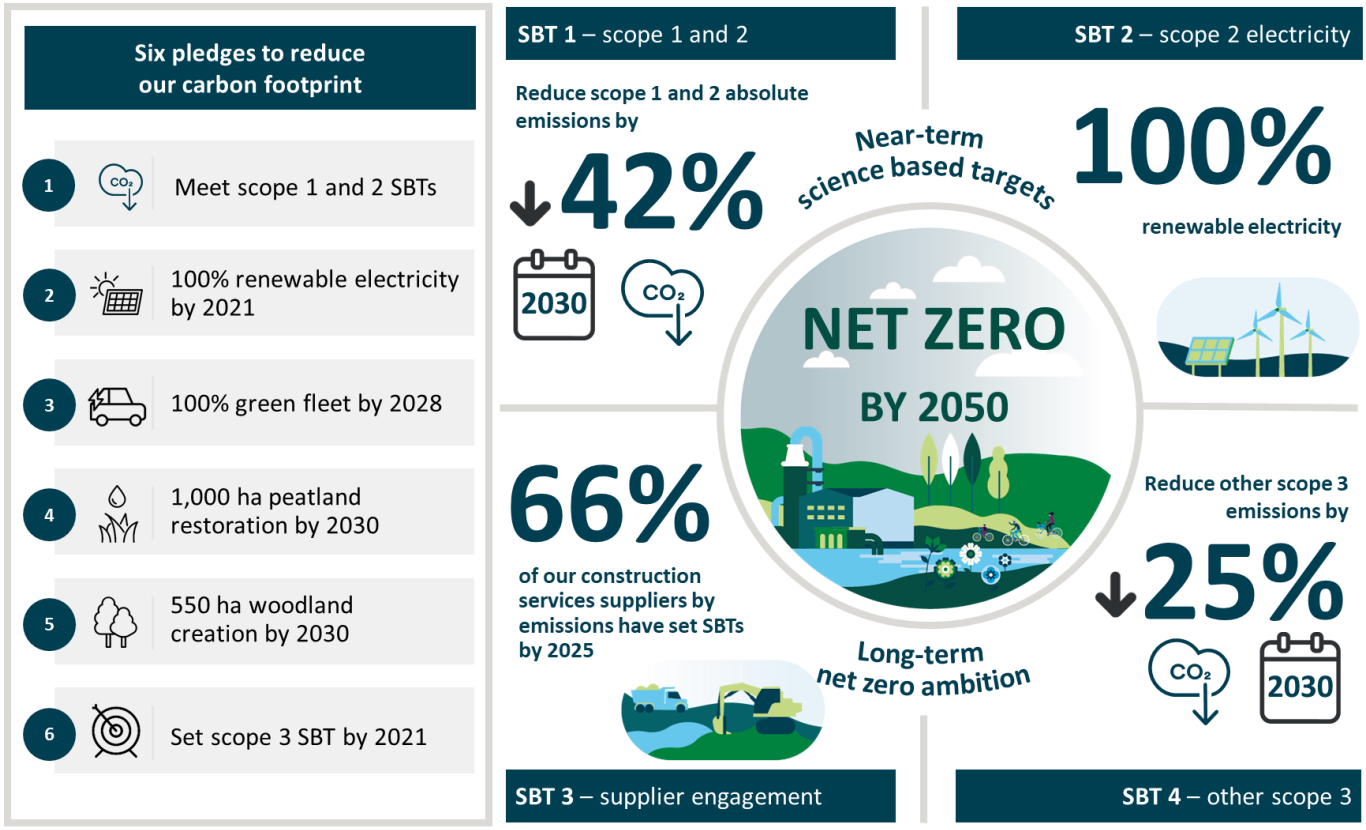


6.8.2 Our climate change mitigation strategy and carbon commitments

Responding to climate change is a long term priority. Having achieved previous targets ahead of schedule, in 2020 we refreshed our climate change mitigation strategy by defining four overarching policy pillars and committing to follow a science-based approach to net zero 2050. A science-based approach or trajectory is one which follows global best practice and the international targets agreed to help prevent the worst impacts of climate change. Our strategy embraces the widely recognised best practice GHG hierarchy of preference in which reductions are pursued as far as possible and is underpinned by six carbon pledges that include our Science-Based Targets (SBTs). . Delivering on pledge 6, we were the first UK water company to have SBTs approved by the global best practice Science-Based Targets initiative (SBTi). Our six pledges and four SBTs are summarised in Figure 6-14.

We are creating a culture for change through innovation and challenging standards, which is led by the board, and its ESG Committee. We govern progress towards our climate change mitigation strategy through an executive steering group and cross business working groups that lead the delivery and continual improvement of our priorities across this complex and evolving agenda. Our approach to net zero is agile as we continually respond to latest external policy, science and technological developments, which can all be strategically significant to our emissions and options.

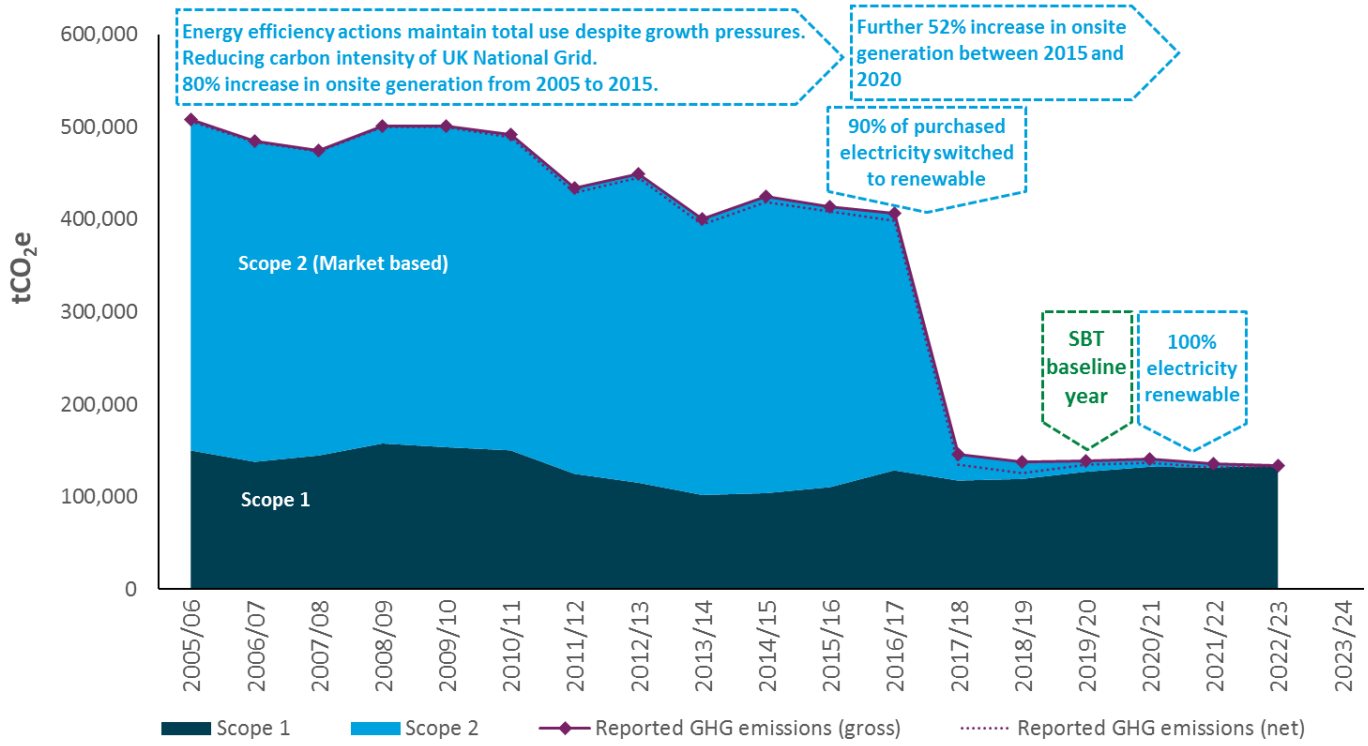
Figure 6-14 - Our six carbon pledges and four Science-Based Targets (SBTs



6.8.3 Managing growth pressures and embracing opportunities

Our approach builds on the progress we have already made by deploying cost effective solutions, such as investment to build new renewable energy facilities and moving to use only certified green electricity throughout our operations. This has reduced our scope 1 and 2 emissions by more than 70 per cent since 2010, assessed using the best practice market-based reporting method that recognises the emissions benefits of purchasing certified renewable energy.

Figure 6-15 - Our track record of reducing scope 1 and 2 GHG emissions



Over the past decade, our focus on green energy has enabled us to outpace growth pressures and reduce scope 1 and 2 emissions. However, it is now significantly more challenging for us to achieve net zero with the large increase in investment needed to comply with latest legal and regulatory requirements. The new Environment Act will make it much harder to deliver further absolute reductions in the face of substantial growth in emissions from building new infrastructure and the energy and chemicals required to achieve higher treatment standards.

The pace and scale of change in policy expectations was not visible when setting our SBTs only a few years ago. Continuing changes in the policy landscape also presents uncertainty we strive to manage and respond too. Despite the challenges, we have innovated and optimised to minimise emissions growth where we can, and we have identified options to further reduce emissions at the same time as providing wider benefits. However, we cannot entirely mitigate the substantial growth pressures and achieve required emissions reductions within existing base allowances.

6.8.4 Our AMP8 plan

Our new plan to manage and reduce GHG emissions is our most advanced and comprehensive yet. Our approach to GHG emissions is fully integrated in our overall business plan to deliver a wide range of substantial improvements in water and wastewater services in the most sustainable ways. Measured using global best practice GHG reporting methods, and with support from Ofwat, our plan will:

- Reduce operational emissions by around 43% during AMP8, mitigating growth pressures and going further to deliver overall reductions to support our operational emissions SBT;
- Avoid and defer approximately 858,000 tCO_2e of operational and embodied emissions during AMP8, reducing the emissions of our plan by nearly 40% from what they would have been without our focus on efficiency and innovation;
- Deliver essential enablers for further reductions in the longer-term, enabling more than 2 million tCO_2e benefits by 2055;
- Inform the new best practice standard for the measurement, reporting and management of emissions which are challenging to the whole sector, including innovative proposals for process emissions and a bespoke performance commitment for scope 3 emissions from many large infrastructure projects; and,

- Enable wider complimentary benefits for: water, resource and cost efficiency; public health improvements from better air quality and recreation; and nature.

We will work with our partners and strive to go even further during delivery in AMP8.

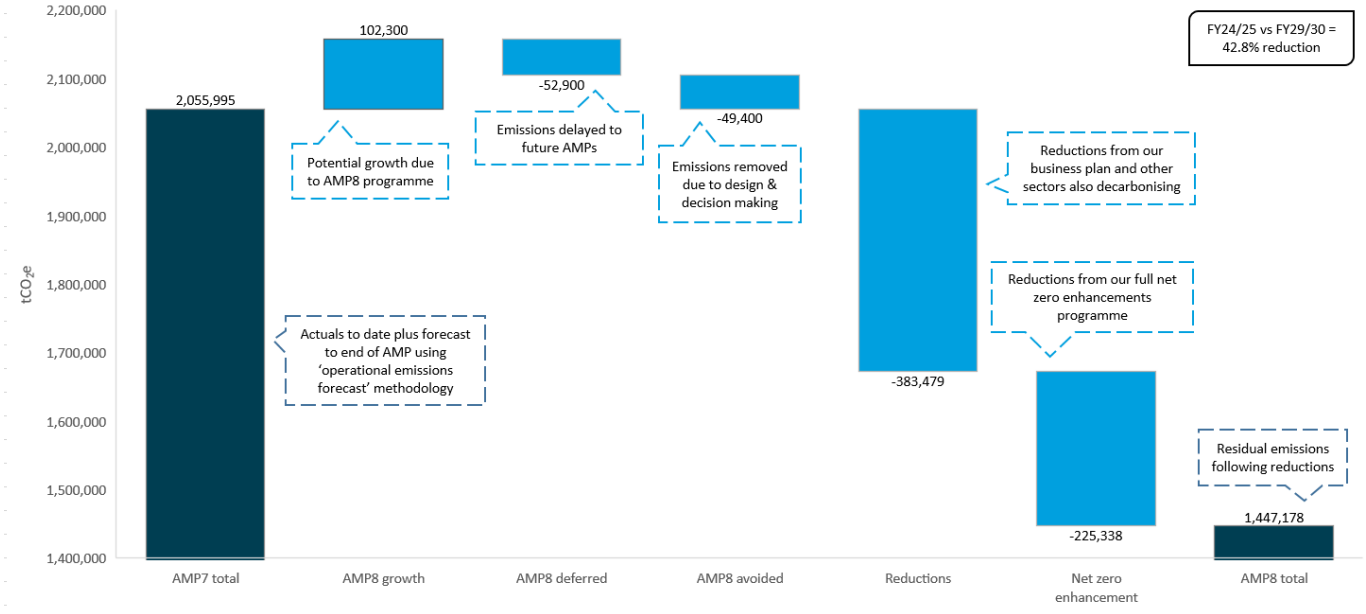
Our integrated approach achieves these outcomes through two inter-related areas of focus:

Optimising GHG emissions throughout our business plan – We applied our carbon assessment framework with support from expert third parties to forecast, reduce and avoid emissions by valuing them throughout our decision making. With substantial new legal requirements and other factors, there are many upward pressures on emissions. However, we have focused on efficiency and innovation to keep emissions as low as possible while maintaining and further improving infrastructure and services for customers. For example, we expect emissions reductions from base and enhancement programmes for sludge treatment, biosolids recycling, leakage reduction, demand management and measures to help customers be water efficient. We have embraced nature based approaches, surface water removal and hybrid solutions where they have lower emissions than traditional solutions.

Focusing specifically on GHG emissions through our net zero enhancement programme - To retain a science-based trajectory in AMP8 and beyond will require transformation and substantial investment beyond our historic base allowances. We are proposing a £196.3million net zero enhancement programme that prioritises the most cost effective deployable projects with emissions reduction as the primary driver, and which also deliver many wider benefits. As well as immediate reductions by 2030, this programme provides essential enablers to longer-term benefits that will accelerate decarbonisation for both us and the sector, as we are committed to sharing our learning from new innovations and ways of working.

Figure 6-16 uses our 'operational emissions forecast' methodology which follows the international best practice location-based reporting method and reflects expected advances in our supply chain, including decarbonision of the national grid. The net zero enhancement column uses Ofwat's GHG performance commitment (PC) methodology to align with PR24 data tables.

Figure 6-16 - The expected profile of our operational emissions to 2030 (tonnes of CO_2e)



We are continually exploring latest options to recover more value from under used resources by embracing the principles of the circular economy. As part of our clean energy strategy, and in light of the UK Government's new Biomass Strategy (August 2023), we have been reviewing the financial and technical viability of creating biomethane to grid plants at two of our largest sludge treatment centres. We have not yet included this specific option in our plan to net zero while we continue to work up detailed plans, but our initial analysis has shown strong potential to unlock this sustainable source of low carbon energy that has many applications and benefits. However, Ofwat's methodology for the common operational GHG PC provides a financial disincentive for this type

of action, and this is an area we would like to review in the spirit of effective regulation that supports the most sustainable long term solutions for society. We discuss this opportunity further in supplementary document *UUW58 - Bioresources Business Plan.*

We have rigorously applied the GHG preference hierarchy to optimise further emissions reductions as we strive to keep our emissions on a science-based trajectory despite the substantial growth pressures. We are pursuing a wide range of opportunities, striving for efficiency first and using purchased offsets only as a last resort and not at all before 2030. Our approach is summarised in Figure 6-17 below.

Figure 6-17 Our plan to net zero themes

NB: HVO is Hydrotreated Vegetable Oil, a low emissions fossil fuel alternative.

Reduce, replace and remove - Our AMP8 plan includes delivery of:

- Additional efficiency measures to reduce energy use;
- Increased renewable capabilities;
- Fuel switches to lower emission alternatives on our sites (e.g. diesel to biogas);
- A 100% green fleet, further reducing use of fossil fuels;
- Increased sludge processing capacity and priority for lower emissions options;
- Better monitoring and management of process emissions across wastewater and bioresources; and,
- Restored peatland and new woodland to remove emissions from the atmosphere.

Collaborate and innovate - Delivery of our net zero plan relies on collaboration with regulators, policy makers and other stakeholders to innovate together to go even further in pursuit of the most sustainable approaches in the round. For example:

- **Customers** - We are increasing how we support customers towards more sustainable behaviours in their use of water and wastewater services and the wider water environment;
- **Government and regulators** - National policy decisions have a strong influence and are currently driving substantial emissions growth pressures. We work to inform effective water sector policy with evidence and suggestions to encourage approaches that fully value GHG considerations alongside other priorities;
- **Supply chain** - We are working with a range of partners using traditional and innovative approaches in pursuit of the most efficient and effective path to desired outcomes for our organisation and the sector; and,
- **Investors** - We continue to explore how investors can help fund upfront investment requirements, as we have done with projects to create new renewable energy assets.

Our plan includes a stretching target in the operational GHG PCs that Ofwat is introducing for water and wastewater in AMP8, as well as an innovative and challenging bespoke performance commitment for embodied emissions.

Using Ofwat's methodology for the common PCs, our plan shows a 12 per cent decrease in water and 11 per cent increase in wastewater operational emissions in 2029/30 from a 2021/22 baseline. Ofwat's methodology for these PCs is different to our standard reporting approach that aligns to international best practice. For example it uses static emissions factors to avoid reporting changes associated with GHG accounting updates. This means that emissions reported using the PC methodology will increasingly diverge through AMP8 from 'actual' emissions in our company GHG reporting and will require careful communication to stakeholders. We are keen to work with Ofwat and the sector to align reporting methodologies where possible.

6.8.5 Our long term adaptive strategy

Our plan in AMP8 is the next stage of a long term adaptive strategy to net zero 2050 for scopes 1, 2 and 3, striving to maintain a science-based trajectory despite large growth pressures. To ensure an efficient and effective approach, we focus on low regrets action in AMP8 to reduce emissions where feasible, sustainable and most cost-effective. Our work in AMP8 also includes essential enabling activity that will unlock large further benefits and accelerate our decarbonisation plans beyond 2030, for example with improvement to our estate growing emissions benefits over time.

Our long term strategy to net zero aims to maintain and advance the progress made to date and in our AMP8 plan by expanding and accelerating action across all sources of our emissions while maximising wider benefits for customers. Our strategy remains underpinned by the GHG interventions hierarchy and the themes we outlined in our AMP8 plan, and is expected to go much further through focus on areas such as:

- Embracing substantial complimentary opportunities in our strategies for bioresources, energy, land, water use and sewers. This enables ongoing focus on resource efficiency as a first preference. We have already started large scale, long term programmes to use circular and partnership approaches to produce more clean energy from sewage and solar, along with emerging innovations in battery storage and hydrogen. We will continue to partner on landscape-scale action on our estate to store carbon and protect water quality;
- Our advances in AMP8 are expected to set the water industry standard for the long term operational evolution and asset transformation needed to tackle process emissions; and,
- Supply chain collaboration will help us deploy emerging developments in low carbon materials such as concrete and steel, and low carbon solutions such as nature-based approaches. Collaboration will also help us avoid or minimise interventions altogether for example through digital technologies for remote and automated monitoring and controls.

We have assessed a range of scenarios to consider the potential effects of a complex array of variables which influence our approach and present both reduction opportunities and growth pressures, including our new water, wastewater and bioresources adaptive plans. With national policy choices for the water sector having a strong influence on our emissions and investments, our latest analysis shows the need for on-going and growing net zero enhancements to meet the challenge of delivering more service at the same time as reducing emissions. Our strategy therefore includes ongoing collaboration for holistic decision making that fully values GHG emissions alongside other priorities for sustainable approaches in the round.

We will review our plan cyclically each AMP to ensure we're always acting in the short term with clarity and confidence. We will evolve the plan over time to always act on latest national policy, climate science and the technical feasibility and cost-benefit of potential interventions.

Further details of our short and long term approach to net zero are provided in the supplementary document *UUW37 – Net Zero 2050 Plan* , *UUW67 –Cross Price Control Enhancement Claims (Net zero Enhancement)*, and *UUW30 -Performance Commitments technical document*.