United Utilities Water

DRAFT Drainage and Wastewater Management Plan 2023

Wyre DWMP

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United Utilities

Water for the North West

Contents

Acronyms

For a list of acronyms, refer to document C0003.

1. Introduction to the DWMP

The Drainage and Wastewater Management plan (DWMP) is a long-term plan setting out how we intend to maintain robust and resilient drainage and wastewater systems, now and in the future. This is the first time that we are developing the plan and we have taken a comprehensive approach as we recognise the importance of long-term planning.

The heart of the plan will be built around collaborative and innovative working whilst encompassing all activities relating to drainage, flooding and delivering a wastewater service that protects the environment. We have led on this plan, but have developed it in consultation with our partners as we will be delivering the DWMP in partnership with other organisations such as the Environment Agency and local councils.

By developing the DWMP, we have an opportunity to:

- provide a basis for more collaborative and integrated planning alongside stakeholders across the region to tackle shared and interrelated risks relating to drainage, flooding and protecting the environment;
- strengthen partnership working with all key stakeholders to drive integrated investment in the environment and communities;
- develop a plan that will help address the increasing environmental expectations from customers and stakeholders and work towards the ambitions set out in Defra's 25-year plan;
- collectively explore innovative solutions such as Sustainable Drainage Systems (SuDS) and nature-based solutions to understand what is best for the North West; and
- embed Systems Thinking to better understand drainage and environmental interactions, and to maximise the potential for integrated solutions.

Throughout the DWMP process, we have engaged with stakeholders to share our data and findings, to ensure that the solutions delivered are co-created, drive efficiencies and will benefit the communities and environment that we live and work in.

The plan will be set out at three levels (Figure 1) to maximise the potential for partnership working and for effective engagement between regulators and stakeholders at both company-wide level and more locally.

Figure 1 Geographical scales applied for planning and collaboration within DWMP

The plan is made up of five main stages (Figure 2) which each contribute to developing the most sustainable and effective future for the North West. These stages include setting out the long-term ambition for the region, identifying risk and understanding the possible interventions and solutions that could be developed.

Figure 2 Five stages of the DWMP

Across the North West, there are 14 Strategic Planning Areas (SPAs) and the purpose of this document is to share local, place-based information.

We will share the results from the different stages of the DWMP and how the DWMP plans to make a difference in the Wyre SPA.

2. Background to the Wyre catchment

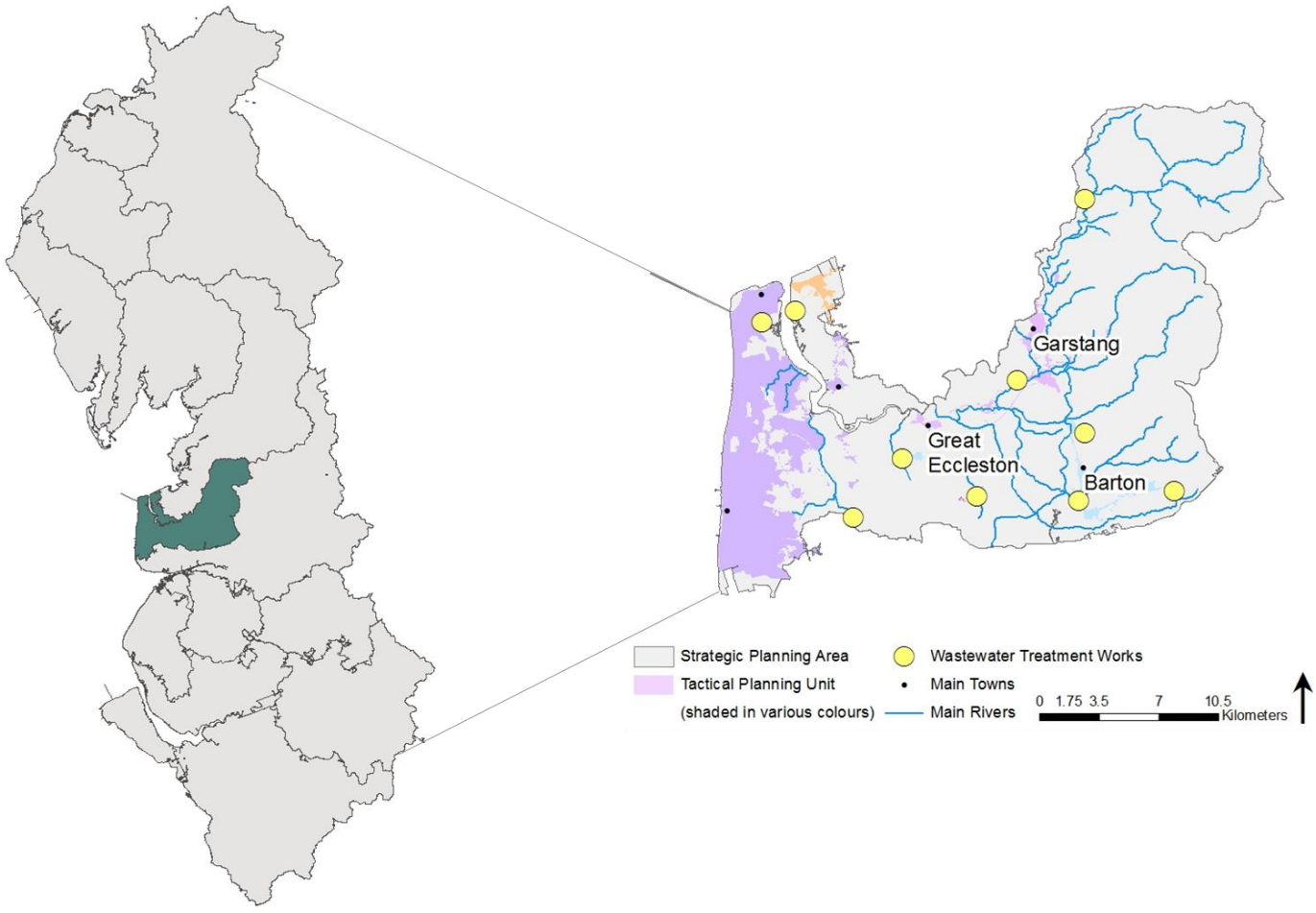
The Wyre catchment is located in North West Lancashire, it borders both the Lune and the Ribble catchment areas and is centred on the Bowland Fells. The majority of the Bowland Fells are located within the Forest of Bowland Area of Outstanding Natural Beauty. It is a mixture of industrial and agricultural land [1].

There are three main sub catchment areas:

- Brock and Trib – Located under the Lancaster canal, with the M6 and A6 roadways intersecting these waterbodies. It is popular area for residents and tourists due to the presence of Bleasdale Fell and Brock Bottom [2].
- Fleetwood Peninsula Trib – Located near the Wyre estuary, this catchment is a mixture of residential, agricultural and industrial land [3].
- Wyre and Calder – Located between the headwaters Wyre through to St. Michaels on Wyre, the area is mostly used for sheep farming [4].

There are 10 wastewater tactical planning units (TPU, also known as wastewater treatment work (WwTW) drainage catchments) within the Wyre SPA. A TPU is the drainage catchment area encompassing all the sewers and wastewater assets e.g. pumping stations, which drain into the associated wastewater treatment works. The TPUs within the SPA vary in size from larger catchments such as Fleetwood to smaller, rural catchments such as Elswick. The TPUs are highlighted in Figure 3.

Figure 3 Map of the Wyre SPA



There are numerous strategic management plans within the Wyre that are owned by various other organisations. Within the Wyre catchment, there are active management plans such as:

- The Environment Agency River Basin Management Plan (RBMP) and Flood Risk Management Plan (FRMP);
- Lead Local Flood Authority (LLFA) Surface Water Management Plans (SWMP);
- North West and North Wales Coastal Group Shoreline Management Plan (SMP); and
- Local council plans.

Each of these strategic plans focuses on managing particular risks and links to programmes of work. A high-level summary of these management plans is shown in Table 1.

The DWMP aims to collaborate, share best practice and to align with other strategic plans throughout the SPA. This will help to highlight common challenges, ambitions and goals where there are shared or interconnected risks and opportunities.

Table 1 Summary of stakeholder management plans

Management plan	Overview	Key aspects for the Wyre catchment
River Basin Management Plan (RBMP) [5] **Owner:** Environment Agency	A river basin district covers an entire river system, including river, lake, groundwater, estuarine and coastal water bodies. The RBMP aim is to improve the quality of our water environment to best support wildlife, agriculture, and businesses, and to boost regeneration and recreation.	The main reasons for not achieving good ecological status are due to pollution from rural areas, and to a lesser extent physical modifications, pollution from towns, cities, transport and wastewater. Future challenges predicted by the Environment Agency include changes in natural flow and water levels, physical modifications and pollution from agriculture and rural areas.
Flood Risk Management Plan (FRMP) [6] **Owner:** Environment Agency	The FRMP is a strategic plan, which reviews and develops measures to manage the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs. The plan outlines flood risk areas, hazards, and sets out measures and objectives to manage flood risk.	In the Wyre catchment, approximately 55,000 people (26.5%) are at risk of fluvial and coastal flooding. Approximately 20% of agricultural land, 5% of SSSI sites and 99% Ramsar sites are at risk of flooding. With regards to coastal flooding, the whole frontage of the Wyre catchment is protected by defences and the main areas of risk are Blackpool, Cleveleys, Rossall and part of Knott End. Future risk are erosion and deposition of coastal sediments as a result of changing currents and storm surges. There are numerous sources of fluvial flooding across the catchment such as the River Wyre and its tributaries, Hillyliad Pool and Royles Brook. Climate change poses future risks in the catchment as flooding is likely to become more severe. There are numerous activities relating improving flood resilience risk such as a Coastal Protection Schemes, creating Flood Warning Areas and replacing sea defences. Across the Wyre catchment there are 23 measures from earlier plans to manage flood risk.

Surface Water Management Plan (SWMP) [7] **Owner:** Lead Local Flood Authority (LLFA)	A SWMP is a plan which outlines the preferred surface water strategy for a location. Although owned and led by the LLFA, a SWMP is produced in collaboration with other drainage owners, water companies included. Partners work together to understand the surface water flood risk in an area and agree an approach to address these issues innovatively and in a cost-effective way, and where appropriate, in partnership. A SWMP is a long-term plan and should influence development. The decision on whether a SWMP is appropriate is down to the LLFA, generally they are produced for areas considered to experience a high flood risk. United Utilities Water (UUW) continues to work closely with LLFAs and supports the development of SWMPs where required, and the delivery of SWMPs where they are published.	
Shoreline Management Plan (SMP) **Owner:** North West and North Wales Coastal Group	The SMP is a non-statutory, high level policy document for coastal flood and erosion risk management planning that was formally adopted in August 2016. It provides a large-scale assessment of the risks associated with coastal processes and helps to reduce these risks to people and the environment by identifying the most sustainable policies for managing flood and coastal erosion risks in the short term (0–20 years), medium term (20–50 years) and long term (50–100 years).	Hold the line approach in Rossall: • The Rossall scheme was identified in the Fylde Peninsula Coastal Programme. It is a £63million scheme which involved the replacement of concrete seawall to reduce the risk of flooding to 7,500 residential properties, major highway and tramway infrastructure, sewerage pumping station and public utilities. Wider benefits include benefits to tourism and recreation and the natural environment.
Catchment Based Approach (CaBA) Catchment Plan [5] [8] **Owner:** Wyre Waters Catchment Partnership	The aim of the partnership is to bring together stakeholders to create and deliver a focussed, sustainable and collaborative action plan to deliver benefits within the catchment.	The catchment partnership aims to support a thriving Wyre catchment that is home to a wide range of species that is resilient, and supports communities. They aim for a catchment that is home to natural environmental processes that are not impacted by pressures such as pollution, non-native species and flooding. The main issues in the catchment are due to point source and diffuse pollution, unsustainable abstraction, invasive non-native species, surface water, fluvial and coastal flooding, and channel modification resulting in habitat loss and barriers to migration.

2.1 Strategic Planning Group (SPG)

We appreciate that there are many organisations with formal roles and responsibilities relating to drainage, flooding and protection of the environment. By participating in the creation of a DWMP much more can be achieved compared to working on our plans in isolation.

Within DWMP, SPGs have been a key form of engagement with stakeholders across the region. SPGs have operated at a local, catchment scale to allow stakeholders to input into the identification of priority and shared risk locations, and develop an understanding of potential collaborative solutions to tackle shared risks. The SPGs have covered a wide range of issues including reducing flooding and improving water quality. A key driver is understanding where there may be potential to achieve multiple benefit through solutions.

Through the SPGs, we have been able to consult with strategic partners on the various stages of the DWMP (Figure 4) and share outputs as and when they become available. This has been a two-way process and stakeholders have had the opportunity to share information with us such as action plans, confirmed projects, priority areas and ambitions for the future which could be developed and delivered in partnership. We have been able to review and incorporate the information shared during the different stages of the DWMP process.

Within the Wyre SPA we have engaged with stakeholders such as:

- The Environment Agency;
- Lancashire County Council;
- Fylde Council;
- Blackpool Council; and
- Wyre Rivers Trust (host of the Wyre Waters Catchment Based Approach (CaBA) partnership).

More information on co-creation activity undertaken with the SPG can be found in Technical Appendix 2 - Stakeholder Engagement (TA2). The outputs from this activity in the Wyre catchment are outlined in Section 4.

Figure 4 DWMP framework for engagement

3. Risk identification

A key component of the DWMP has been around risk identification. This has been a mixture of both historical risk and forecast risk. Activities to understand this were completed through the Risk Based Catchment Screening (RBCS) and Baseline Risk and Vulnerability Assessment (BRAVA) stages. We have also undertaken numerous additional assessments to understand wider resilience and catchment risks.

Further detail on the approaches can be found in Technical Appendix 4 - Risk Based Catchment Screening (TA4) and Technical Appendix 5 - Understanding Future Risk (TA5).

3.1 Risk Based Catchment Screening (RBCS) and Horizon Scan

The RBCS stage is a series of high-level assessments that are used to review and screen each TPU to determine whether a more detailed assessment is required during the Baseline Risk and Vulnerability Assessment (BRAVA) stage.

The assessments are designed to span the key aspects of a wastewater company's responsibilities: from the network, to the treatment works, to its interaction with the environment. Examples of the assessments considered are internal sewer flooding, storm overflow performance, and pollution incidents. The assessments typically used three to five years of historical data.

Additional assessments termed 'horizon scanning' were undertaken to understand wider exogenous factors and opportunities that could inform future investment e.g. major infrastructure projects, private septic tank locations and potential major infrastructure projects (HS2 etc). Areas with potential future developments were also considered and further information on projected growth areas can be found within the associated Local Plans.

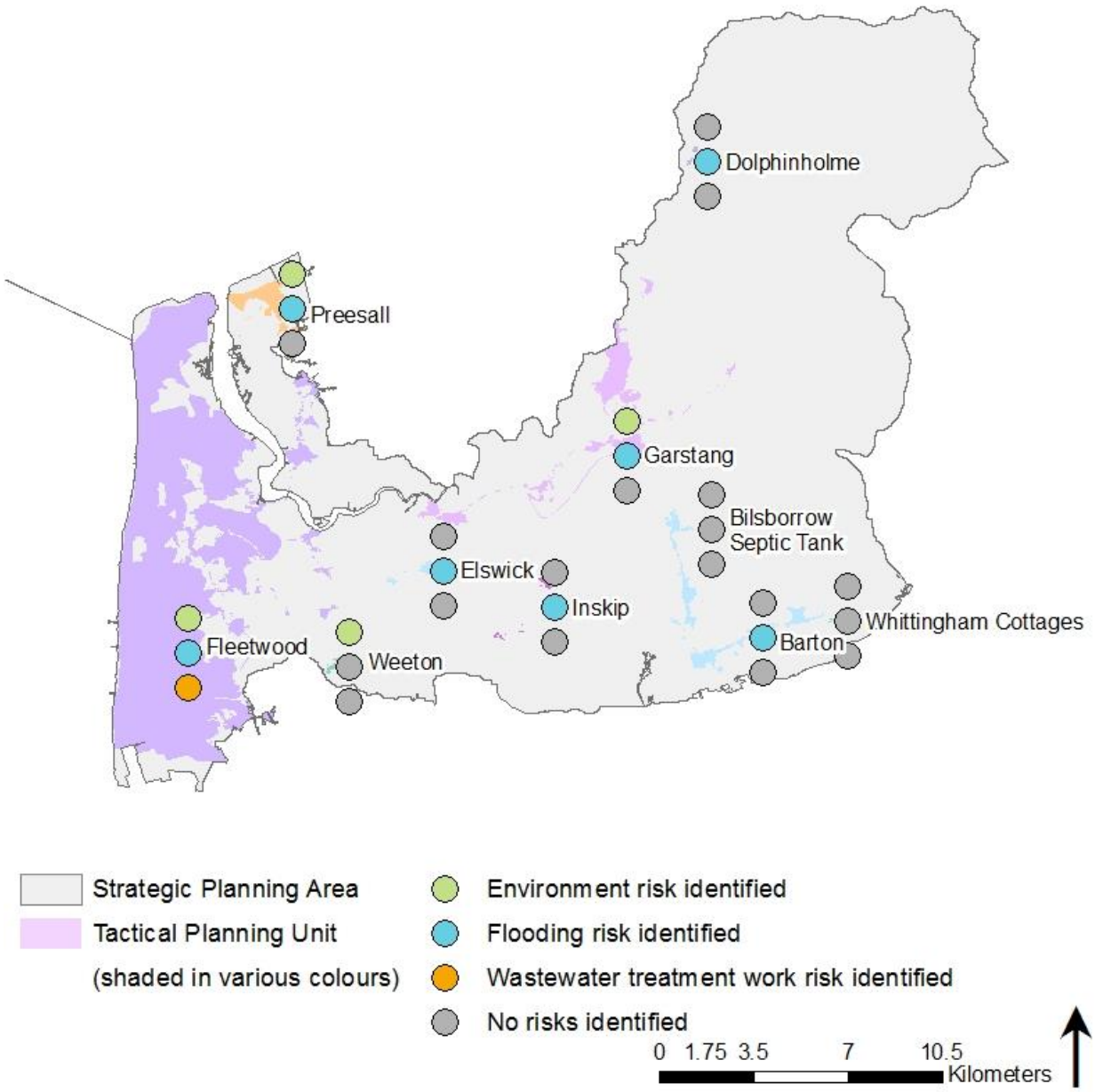
Within the Wyre SPA, the RBCS stage identified 8 out of 10 TPUs that required further investigation and therefore passed onto the BRAVA stage (outlined in Section 3.2).

Figure 5 indicates which of the RBCS categories (environmental, flooding and wastewater treatment works capacity) have triggered within each TPU. Environmental and flooding categories are the most common within the Wyre SPA, which is supported by the highest triggered RBCS assessments which are:

- Storm Overflow Assessment Framework - (4/10) – Environment; and
- External Sewer Flooding - (7/10) – Flooding.

Further detail on the approaches and assessment results can be found in TA4.

Figure 5 Map of the RBCS results for the Wyre SPA. Risk categories indicate areas triggering further investigation following RBCS



3.2 Baseline Risk and Vulnerability Assessment (BRAVA) and Resilience

The TPUs that were identified during RBCS were then taken forward into BRAVA, which aims to assess the baseline and future position of system performance against the DWMP planning objectives, to understand where there may be issues. It is also to understand wider resilience issues that could also impact upon the DWMP planning objectives. This stage considers risk at 2020, 2030 and 2050 design horizons.

In addition to BRAVA, a range of resilience assessments were undertaken and will have been incorporated throughout the plan to allow us to expand our understanding of wider core risks, such as how the water quality of rivers may change as a result of climate change. We have also assessed risks such as fluvial and/or coastal flooding and fluvial and/or coastal erosion and land stability.

Further detail on the approaches and assessment results can be found in TA5 and Technical Appendix 6 – Resilience (TA6).

The BRAVA and resilience results for the Wyre catchment are outlined in Table 2 to Table 5.

Table 2 Environmental BRAVA results

Tactical Planning Unit	Environmental					
	Pollution Assessment	Storm Overflow Performance		Bathing and Shellfish Spill Assessment		
	2020	2020	2050	2020	2030	2050
Barton						
Dolphinholme						
Elswick						
Fleetwood						
Garstang						
Inskip						
Preesall						
Weeton						

BRAVA	
	No concern (forecast)
	Potential area of focus (forecast)
	Area of focus (forecast)
	Not Assessed / Not Applicable

Table 3 Flooding BRAVA results

Key

No concern (forecast)

Potential of focus (forecast)

Area of focus (forecast)

Not assessed

Tactical Planning Unit	Flooding												
	Internal Flooding Risk			External Flooding Risk			Sewer Collapse Risk	Risk of flooding in a storm (1:50yr)		Flooding of open spaces			Blockage Assessment
	2020	2030	2050	2020	2030	2050	2020	2020	2050	2020	2030	2050	2020
Barton													
Dolphinholme													
Elswick													
Fleetwood													
Garstang													
Inskip													
Preesall													
Weeton													

Table 4 Wastewater treatment works BRAVA results

Tactical Planning Unit	Wastewater treatment works		
	Risk to wastewater treatment works (WwTW) capacity		
	2020	2030	2050
Barton			
Dolphinholme			
Fleetwood			
Garstang			
Inskip			
Preesall			
Weeton			

BRAVA	
	No concern (forecast)
	Potential area of focus (forecast)
	Area of focus (forecast)
	Not Assessed

Table 5 Environmental and flooding resilience results

Tactical Planning Unit	Resilience Assessment		
	Environmental		Flooding
	Potential for changes in the water quality of rivers as a result of climate change	Potential for changes in catchment contributions as a result of climate change	Outfall locking
	2050	2050	2020
Barton			
Bilsborrow Septic Tank			
Dolphinholme			
Elswick			
Fleetwood			
Garstang			
Inskip			
Preesall			
Weeton			
Whittingham Cottages			

Resilience	
	More resilient
	Less resilient
	Not Assessed

3.3 Problem characterisation

3.3.1 Complex catchments

Complex catchments were determined through problem characterisation using a combination of a complex and strategic catchment scores based on strategic need (largely derived from growth and climate forecast models) and modelled risks in each of the TPU (largely based on BRAVA). Within the Wyre SPA, no TPUs were identified to be 'complex' based on problem characterisation.

3.3.2 Strategic growth catchments

Through the various risk identification assessments, a number of locations were identified through opportunity workshops that require more strategic analysis. These are areas with high growth, a high number of risks and multiple potential scenarios. Different bespoke scenarios are applied to strategic catchments based on the needs and drivers of the catchments to understand the variability of risk as a first step for optioneering, so that the range of options developed can mitigate a different range of scenarios.

As a result of this assessment the following TPUs in the Wyre catchment have been identified as having 'strategic growth':

- Fleetwood Marsh

Note: Water Industry National Environment Programme (WINEP) and storm overflows guidance are still being developed. This could lead to significant changes in preferred options and could result in large-scale, short and long-term investment needs. This will be fully reviewed between draft and final DWMP publication, in addition to other aspects such as nutrient neutrality, bathing waters and shellfish water expectations. Between draft and final DWMPs the impact of storm overflow requirements will also require optimising against the other needs and opportunities detailed in this section to assess synergy/conflict and best value.

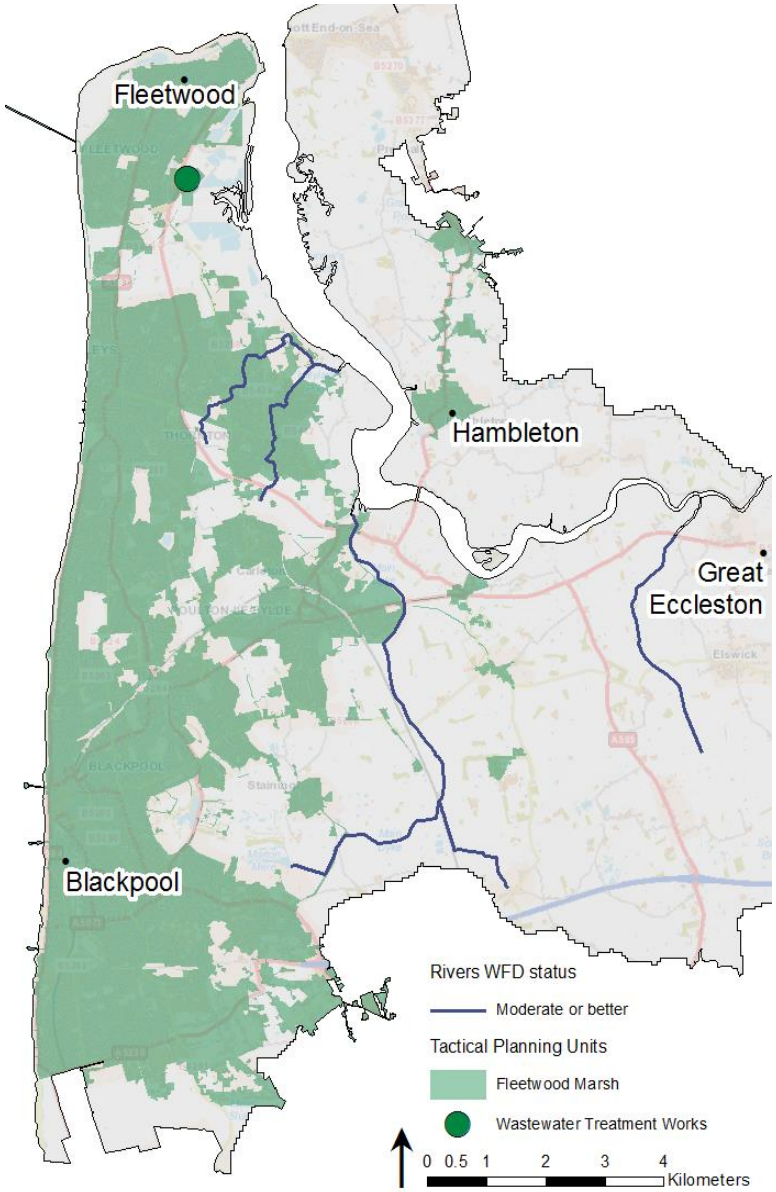
3.3.3 Fleetwood Marsh

The Fleetwood Marsh TPU is in the west of the Wyre SPA along the coast (Figure 6). The TPU covers two large urban towns, serving a residential population of over 230,000 people and just under 108,000 properties, with approximately 2,600km of complex sewerage network that drains to Fleetwood Marsh Wastewater Treatment Works in the North of the TPU. Watercourses are classified as 'moderate' under the Water Framework Directive (WFD) 2019, which includes the Hillylaid Pool / tidal Wyre, which drains into the River Wyre estuary, and there are a number of designated bathing waters.

Fleetwood Marsh is a strategic TPU as a result of multiple modelling scenarios and a variety of possible options, with different adaptive pathways. The area is at risk from both coastal flooding and inland fluvial flooding from the Wyre, and significant risks were identified for internal (property) flooding, external flooding, sewer blockages, sewer collapses, and pollution.

This is against a backdrop of significant population growth, with the population projected to increase 8% by 2050, possibly driving new development and an associated increase in wastewater being sent to the wastewater treatment works. The majority of the sewer network is a combined system where surface water and wastewater are not separated, therefore surface water run-off from additional properties and paved surfaces will likely increase pressure on our network. As the WINEP and storm overflows guidance are still being developed, this could lead to significant changes and investment to both wastewater treatment works and the drainage network.

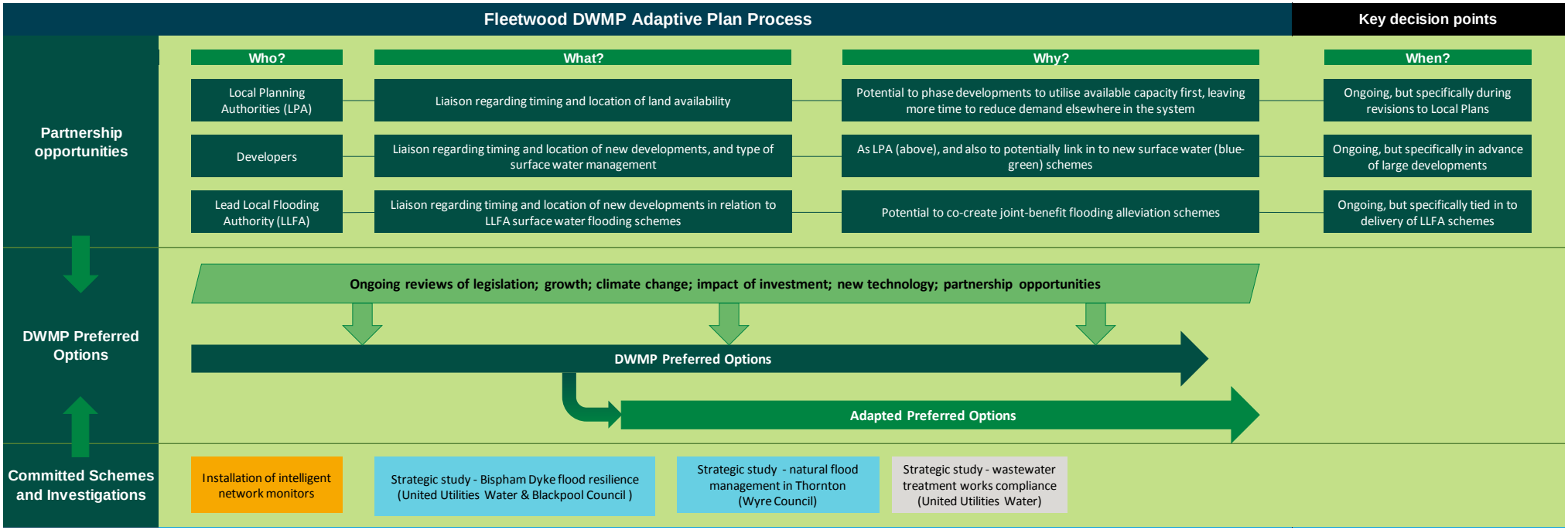
Figure 6 Map of the Fleetwood Marsh TPU



3.3.3.1 Fleetwood Marsh adaptive plan

The first part of the adaptive plan process (Figure 7) highlights the importance of partnership working and regular data reviews.

Figure 7 Fleetwood Marsh adaptive planning process



Partnership working

In a catchment where growth is a significant factor in future performance, it is key to maintain regular conversations with those stakeholders that have knowledge about future developments and can potentially influence their impact. Key organisations include:

- Local Planning Authority;
- The Environment Agency;
- Lead Local Flood Authorities; and
- Housing developers.

The DWMP plan for each TPU is developed based on a number of data sources. Some of these are prone to change over time, which means that original assessments can become out of date. As data from these sources change, it makes sense to re-evaluate the DWMP plan to check the impact on the plan. Examples of data that change over time are shown in Table 6.

Table 6 Examples of data that change over time and can impact upon the plan.

Type of data or information	Possible impacts of changes
Government legislation	More or less stringent requirements or regulations, which may require different levels of investment, and policy changes that may drive better or worse incentives on demand.
Development growth projections	These will vary with time in line with economic conditions, changing demographics, or government policy. This can result in the number of new houses and businesses growing at a different rate than originally forecast.
Climate change projections	As more climate data becomes available, climate projections are modified, which may indicate changes to temperature and rainfall patterns.
Impact of investment	As new drainage schemes or new strategies are implemented, we will continue to evaluate their performance. If they turn out to be more or less successful than anticipated, this may allow the extent of another option type to be reduced or increased accordingly.
Development of new technology	Over time, new technology provides opportunities to address and resolve risks differently, or more efficiently.
Partnership opportunities	We will work closely with key stakeholders to address risks jointly. Over time, these stakeholders may see changes in their own risks and funding levels, which may present opportunities for greater collaboration.

Figure 8 shows the second part of the Fleetwood Marsh adaptive plan, reflecting the different option types identified as being appropriate for Fleetwood Marsh. Each line represents a different option type – e.g. schools education programme. The plan shows that each option type will be regularly reviewed in line with the method described in part one. This allows new information and opportunities to be used to adapt the plan by either increasing or reducing the extent of some option types.

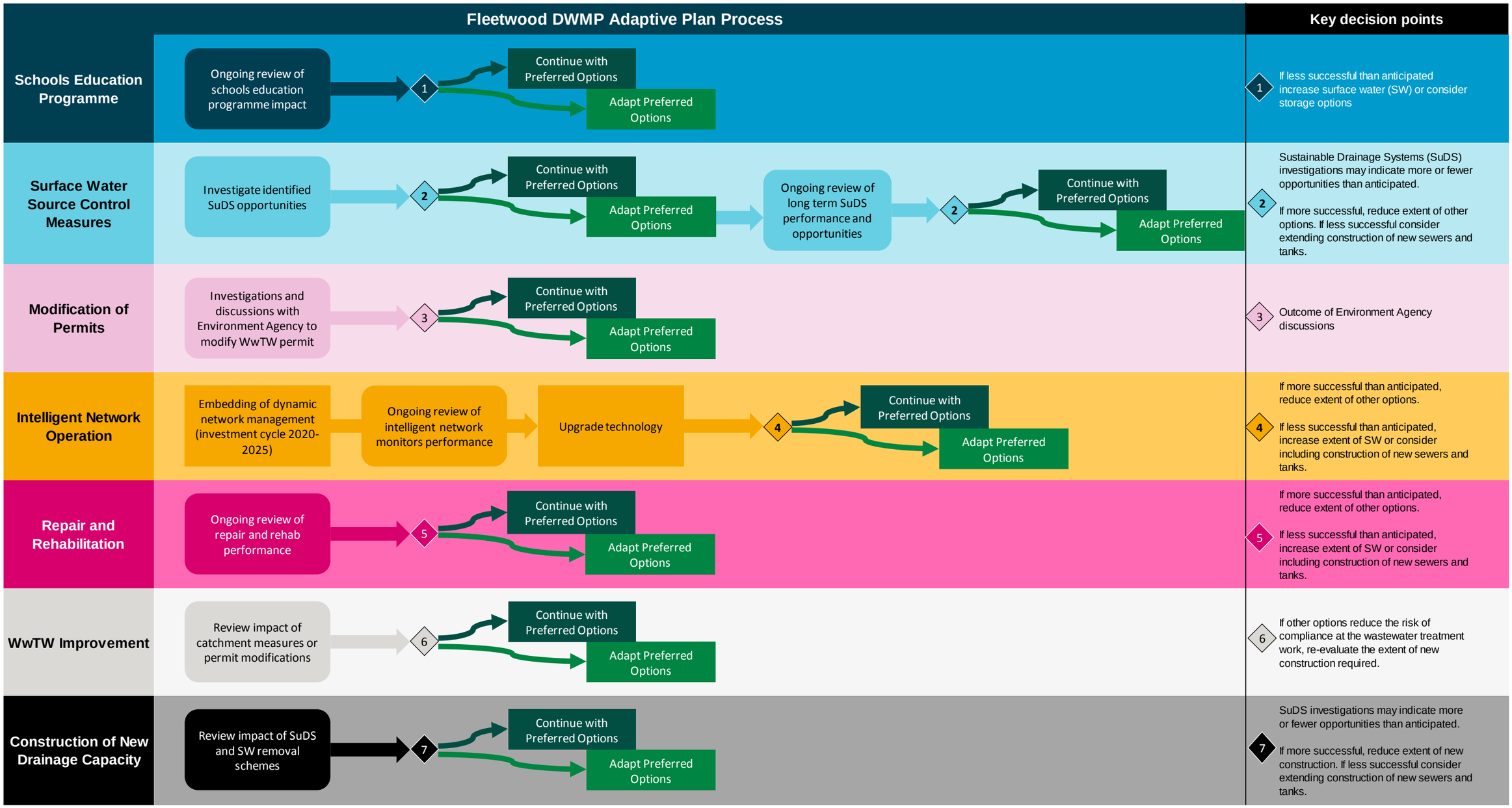
Within Fleetwood Marsh, there are opportunities to carry out investigations before making final decisions on the final strategy. This means that we can properly evaluate options before committing to significant investment. These investigations will take into account things such as:

- Technical feasibility;
- Benefit of the work;
- Customer impact;
- Environmental impact; and
- Cost.

The adaptive plan below demonstrates multiple potential scenarios and pathways, and should be read in conjunction with the optimised DWMP plan for the relevant TPU (refer to Section 5.3).

The adaptive plan should be reviewed regularly in order to incorporate potential changes in key factors such as legislation, population growth and climate change, which could impact standards or targets, as highlighted above in Figure 7. The adaptive plan may contain potential investigations which are currently excluded from the optimised DWMP plan (refer to Section 5.3) until there is more certainty. It is therefore important that both the adaptive plan and the optimised plan are developed together.

Figure 8 Fleetwood Marsh adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time



4. Options development

The approach for options development is an iterative screening process to identify most appropriate solutions for issues in each TPU. These solutions were taken forward for a best value assessment which will select the preferred option (Figure 9).

An options hierarchy was then used which has been endorsed by customers and stakeholders from across the North West to select preferred solutions (Figure 10). The hierarchy covers a range of option types from behavioural, to blue-green solutions e.g. SuDS and traditional grey solutions e.g. storage tanks across benefits such as reducing demand, better system management and creating capacity.

A key element to this has been built around co-development, co-funding and co-delivery through partnerships and third parties (for instances where a specific skill set is required).

Figure 9 Options development process

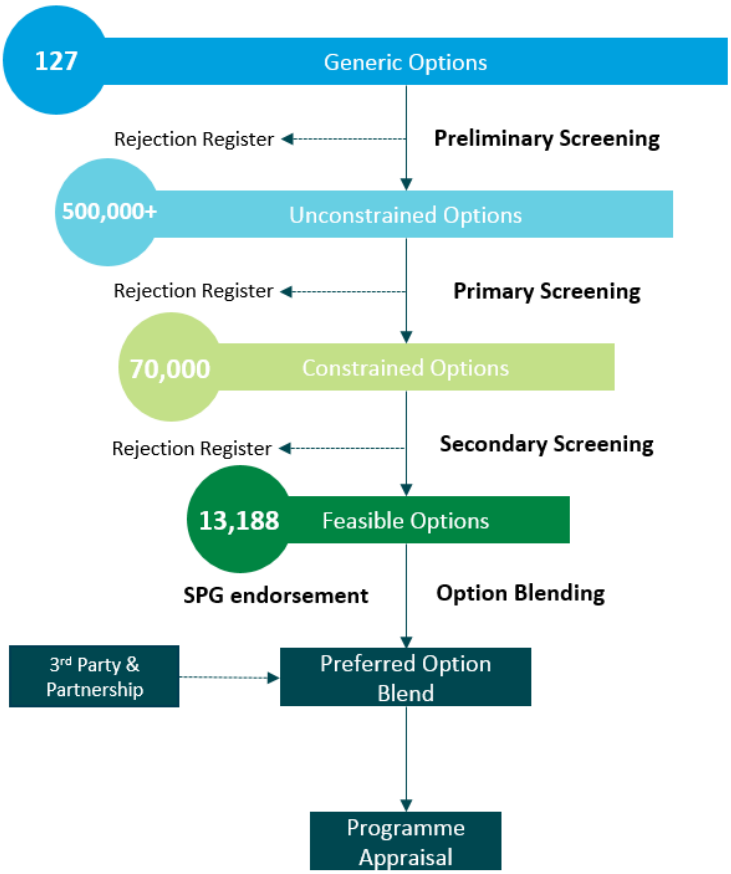


Figure 10 Options hierarchy

4.1 Wyre partnership options

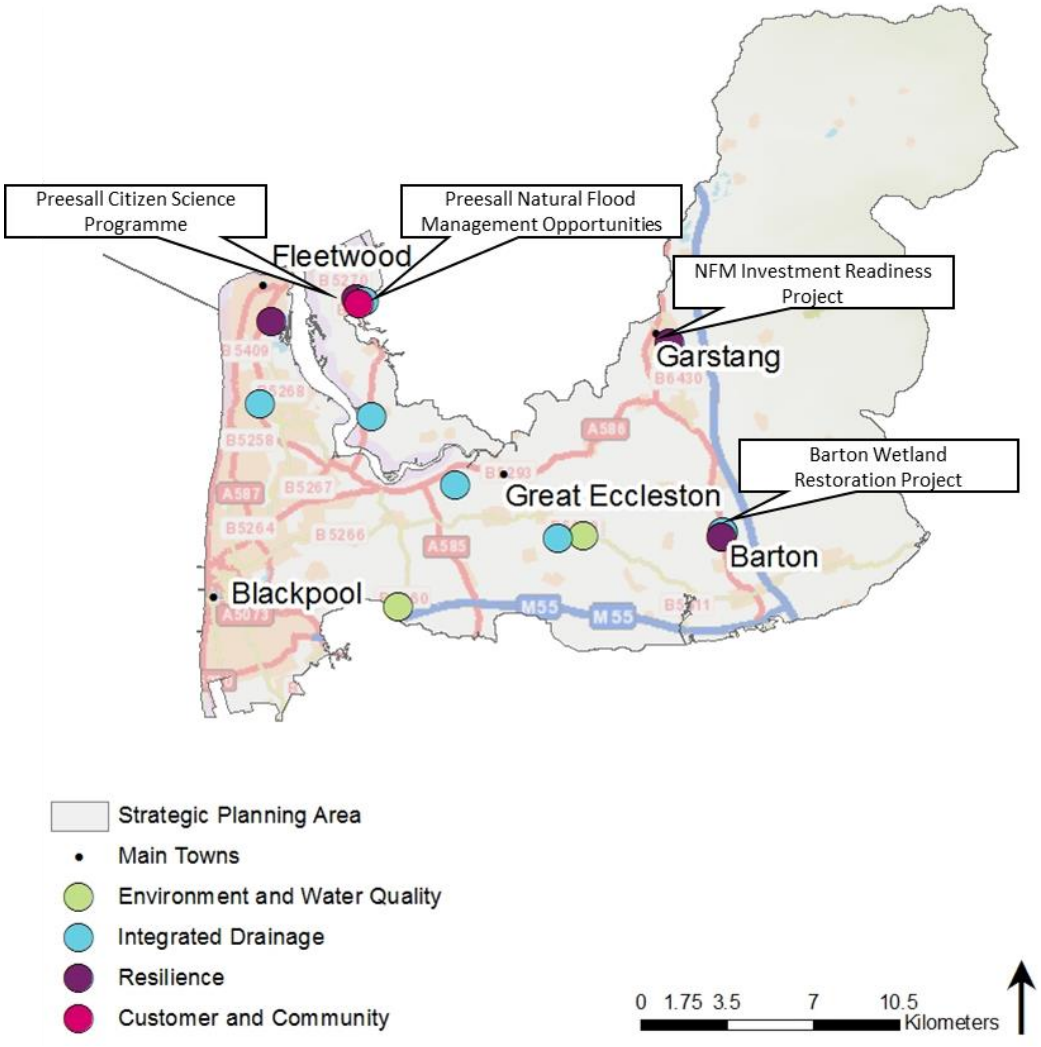
In order to identify and develop potential partnership options in the Wyre catchment, through the SPG we have shared the results from the risk identification stages such as BRAVA. This was done through a series of workshops and the purpose was to identify areas of shared risk and partnership opportunities which have been reviewed against the wider DWMP options development process (refer to Section 5.2).

The options shared were reviewed by the DWMP team and a second SPG workshop was held to gather additional information regarding potential partnership opportunities. This allowed us to understand timescales, likelihood of investment and potential organisations involved. An opportunities pipeline was consequently created using the outputs of this engagement. The pipeline includes opportunities at a range of different levels of maturity and confidence in development, as such these are not confirmed or necessarily funded schemes. However, they provide an indication of areas where we may be able to work collaboratively with partners in the future when more certainty is ascertained about need and funding. Examples of potential partnership locations are shown in Figure 11.

We have actively engaged with our SPGs to ensure that this is a collaborative process. Moving forwards, we are currently developing our Partnership Framework for the investment cycle 2025 – 2030 and beyond. The DWMP partnership opportunities pipeline will feed into this, forming an initial view of partners and opportunities. When developing the business plan, further engagement will be undertaken to where an opportunity is aligned to a 2025 – 2030 investment need. In addition to scheme specific collaboration opportunities, we recognise the need for more strategic partnerships and we will build on successes from historic partnerships in the North West.

For further information on our approach to partnership working, refer to TA2.

Figure 11 Overview of the potential partnership opportunities in the Wyre SPA



4.1.1 Wider partnerships within the Wyre catchment

Within the Wyre SPA, there are numerous challenges such as flood risk, water quality, climate change and population growth. In order to mitigate the risks and to protect both communities and the environment, there is an opportunity for partnership working.

This is something that we have strongly supported in the past and will continue to support moving forwards both through the DWMP and other avenues within the business.

Figures 12 and 13 are some examples of partnerships that we are proud to have been involved in, and opportunities which are currently being developed.

Figure 12 Overview of the Wyre Catchment Community Interest Group

The Wyre Catchment Community Interest Company

A new commercial business model was created to accelerate work to address flood risk through landscape and nature recovery in the River Wyre. Initiated by United Utilities, the Environment Agency and the Rivers Trust, the Wyre Catchment Community Interest Company was set up to as an independent entity to attract investment and deliver the flood risk interventions needed.

The enterprise combines private financing and innovative contracting structures to supplement public funding:

- Five key beneficiaries contracted to pay for flood reduction services.
- The beneficiaries promised to make an annual payment, which can be used to leverage investment, and then used to deliver mitigation measures.
- Extra revenue was secured through a woodland grant for the carbon credits, and a reduced interest rate on the finance based on the delivery of agreed biodiversity benefits.

FLOODRE Environment Agency North West Regional Flood & Coastal Committee United Utilities wyre council

Figure 13 Overview of Natural Course and the Wyre Partnership Investment

Natural Course

Natural Course is a collaboration of public, private and third sector organisations working together to help to deliver real improvements to rivers and the water environment across North West England.

This includes projects to better understand and overcome some of the biggest barriers preventing the achievement of 'good ecological status' under the EU Water Framework Directive.

NATURAL COURSE OUR WATER, OUR FUTURE Life

Wyre Natural Capital Approach Delivering Partnership Investment

The Wyre Natural Flood Management (NFM) investment readiness project brought together existing and new partners to create an **ecosystem service-based market.**

It offers a very serious solution for investing in natural capital improvements in our landscape, at scale, with **multiple environmental benefits for nature, climate change mitigation and adaptation**, based on repayment for social impacts valued by wider society.

A simple transaction structure was developed where a **Special Purpose Vehicle (SPV) will draw down external investment finance**, to fund the capital delivery. This will be repaid over a 9-year period through ecosystem service contracts with **buyers** (those who will benefit from the intervention) and **sellers** (farmers and landowners) who will host the NFM on the ground.

The project is one of the **first examples of an ecosystem service-based market**. It has been developed over the last 18 months and is in its final, legal stages of development prior to drawing down **£1.5 million of external investment.**

5. Options for the Wyre

5.1 Options considered

Following a number of iterative screening processes outlined in Section 4, a list of feasible options was developed for each TPU within the Wyre SPA. Options can be categorised into a number of categories:

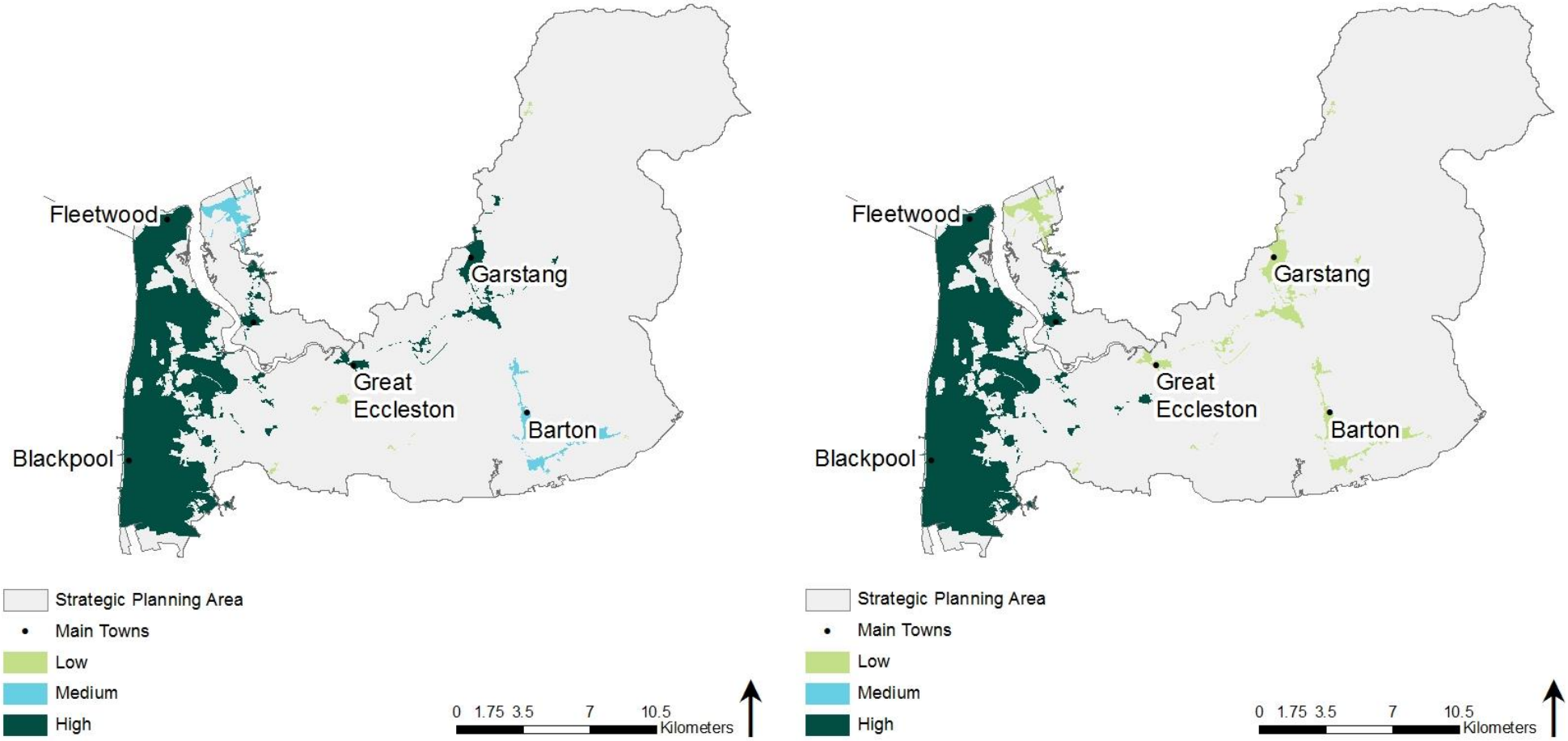
- Customer engagement;
- Monitor and investigate;
- Upstream management;
- Catchment management;
- Operational enhancement;
- Optimisation;
- Refurb/New asset (blue/green); and
- Refurb/New asset (grey).

Of these options a number can be considered regional options – those which could be implemented across the North West but may bring tangible benefits in some areas more than others. These can be investigated further ahead of investment cycle 2025 – 2030 where viable.

Across the Wyre SPA customer engagement options (Figure 14) comprising of options to work with customers to reduce demand and increase awareness of 'what not to flush' have been identified as having the potential to deliver the highest benefit in Garstang and Fleetwood TPUs.

Sustainable Drainage System (SuDS) options have been assessed, these form a key part of the strategy to manage rainwater from entering the sewer system in Elswick and Fleetwood TPUs (Figure 14).

Figure 14 Maps show the benefit of implementing regional customer engagement (left) and sustainable drainage solutions (right) options across the Wyre SPA



5.2 Preferred options

Note: Water Industry National Environment Programme (WINEP) and storm overflows guidance are still being developed. This could lead to significant changes in preferred options and could result in large-scale, short and long term investment needs. This will be fully reviewed between draft and final DWMP publication, in addition to other aspects such as nutrient neutrality, bathing waters and shellfish water expectations. Between draft and final DWMPs the impact of storm overflow requirements will also require optimising against the other needs and opportunities detailed in this section to assess synergy/conflict and best value.

The data below do not include planned investment in addressing storm overflows. The future standards for overflows are currently the subject of the Government's Storm Overflow Discharge Reduction Plan Consultation, and the outcome is not yet determined, so it has not been possible to include these in the screening process described below.

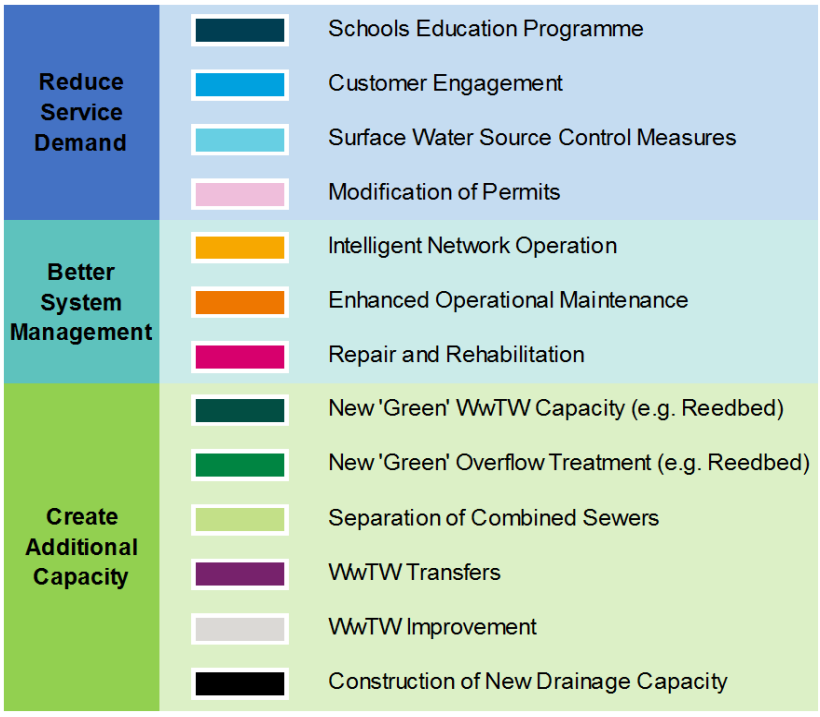
A high-level regional assessment has been carried out to estimate the likely investment requirements to address all overflow risks, but due to the uncertainty described above, this has not been broken down by Strategic Planning Areas. This information can be found in the DWMP main document.

Utilising data collected at the various stages of developing the DWMP (BRAVA, partnership opportunities and the data in Figure 14), preferred options were selected using a decision support tool and following the hierarchy principles. We have also included in this plan high confidence schemes that we believe are likely to have secured investment.

In addition the partnership opportunities highlighted in Section 4.1 are considered key for delivery of the options set out below. These will be investigated in detail in preparation for the investment plan for the period 2025-2030.

The following colour schemes are used for all charts and graphs in this section to represent each option type (Figure 15).

Figure 15 Option types



The first four option types are all grouped under the strategic heading of 'Reduce Service Demand', and are options that focus on either reducing the amount of wastewater that is produced, or preventing it from reaching the sewer network.

The second strategic group is 'Better System Management' and looks to try and manage and operate the existing assets in a more efficient or effective manner.

The final group is 'Create Additional Capacity'. This is about building new assets, for example storage tanks or new treatment work process units, where it is not possible or economical to reduce demand or improve operations any further.

Across the Wyre SPA, the outcomes seen as a result of potential investment and benefit in each option type are shown in Figures 16, 17 and 18.

Figures 16 and 17 show how potential investment could be split between the three high-level option strategies – reduce demand, system management and new capacity – and then further sub-divides these into the individual option types.

Figure 16 shows potential options that could address environmental planning objectives, which incorporate:

- Wastewater treatment work permit compliance;
- WINEP compliance; and
- Pollution of watercourses.

Figure 17 shows potential options that could address flooding planning objectives, which incorporate:

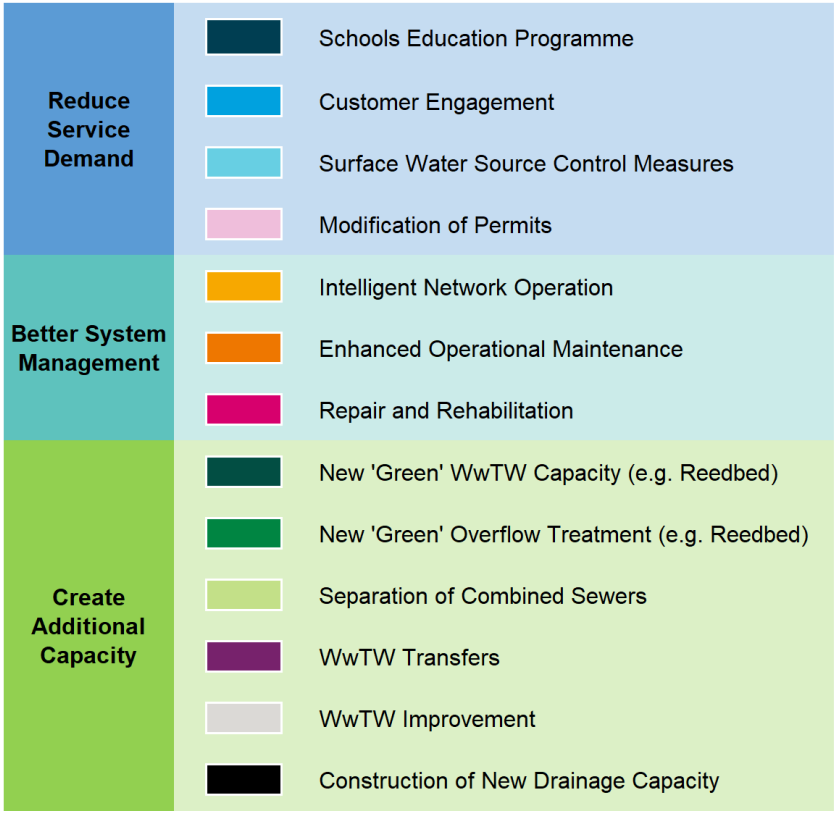
- Internal flooding;
- External flooding;
- Highway and open space flooding; and
- 1 in 50-year flooding.

Note that the percentages shown in Figures 16 and 17 are the proportions of investment within each planning objective type (flooding and environmental), but the total values of flooding and environmental investment are not equal. This split can be seen in more detail for each TPU in Section 5.3.

Figure 18 shows how these options could contribute to addressing the planning objectives – environmental and flooding.

Figure 16 Wyre Strategic Planning Area: Distribution of environmental investment by option type

This is an example of how investment in different options types may be used to address the environmental planning objectives. The vast majority of potential investment could be through improvements in wastewater treatment works. This chart does not show planned investment in improving overflow performance as these are not based on cost beneficial assessments.



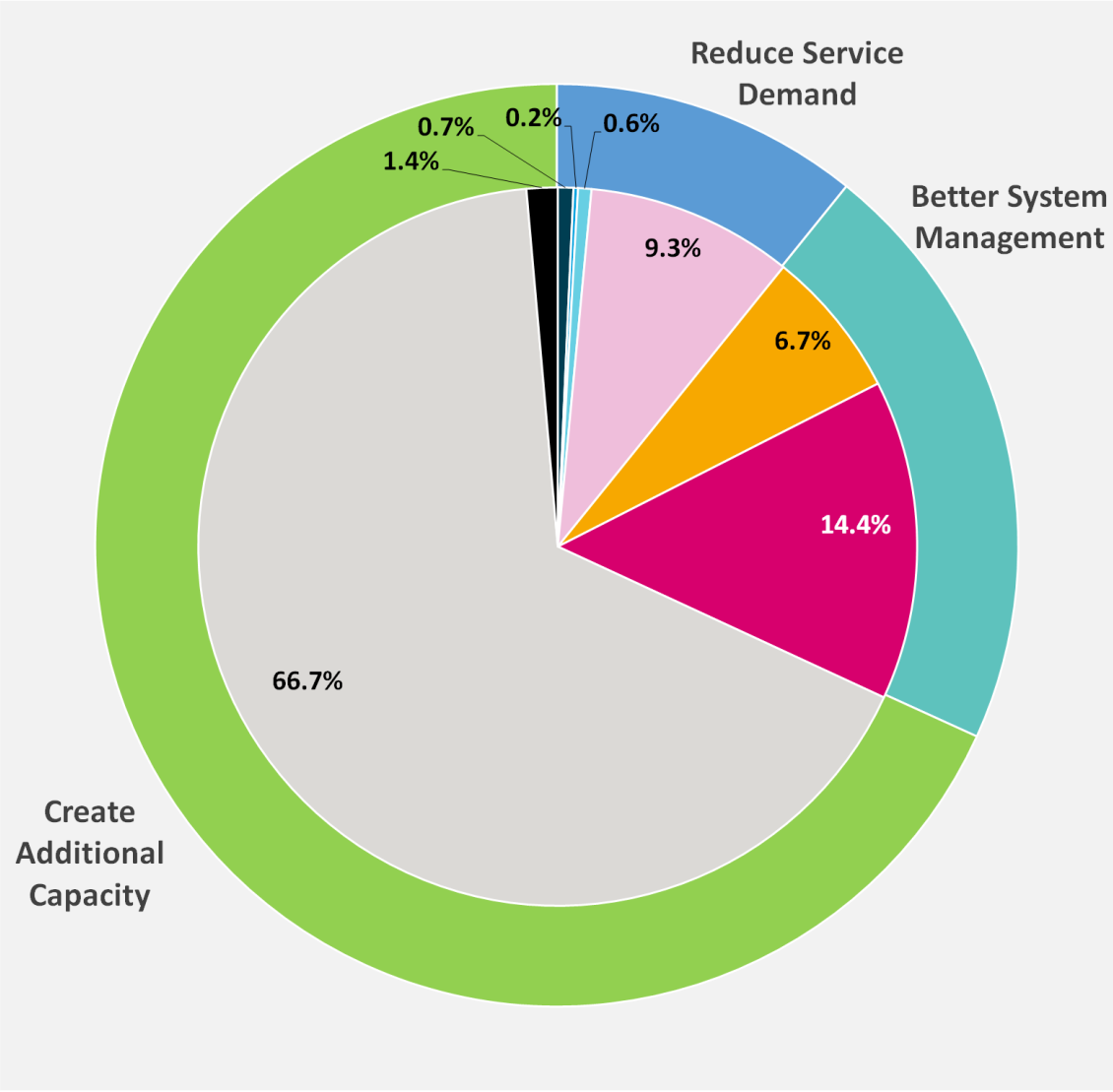


Figure 17 Wyre Strategic Planning Area: Distribution of flooding investment by option type

This is an example of how different options types may be used to address flooding planning objectives. Around 42% of potential investment could be through a strategy to reduce demand on the sewer system, seen here though surface water source control measures such as SuDS and schools and engagement programmes.

Around 6% of potential investment could be used on the construction of new stormwater storage tanks, and around 53% could be spent in improving existing system management, with options such as enhanced maintenance and rehabilitation.

Reduce Service Demand	Schools Education Programme
	Customer Engagement
	Surface Water Source Control Measures
	Modification of Permits
Better System Management	Intelligent Network Operation
	Enhanced Operational Maintenance
	Repair and Rehabilitation
Create Additional Capacity	New 'Green' WwTW Capacity (e.g. Reedbed)
	New 'Green' Overflow Treatment (e.g. Reedbed)
	Separation of Combined Sewers
	WwTW Transfers
	WwTW Improvement
	Construction of New Drainage Capacity

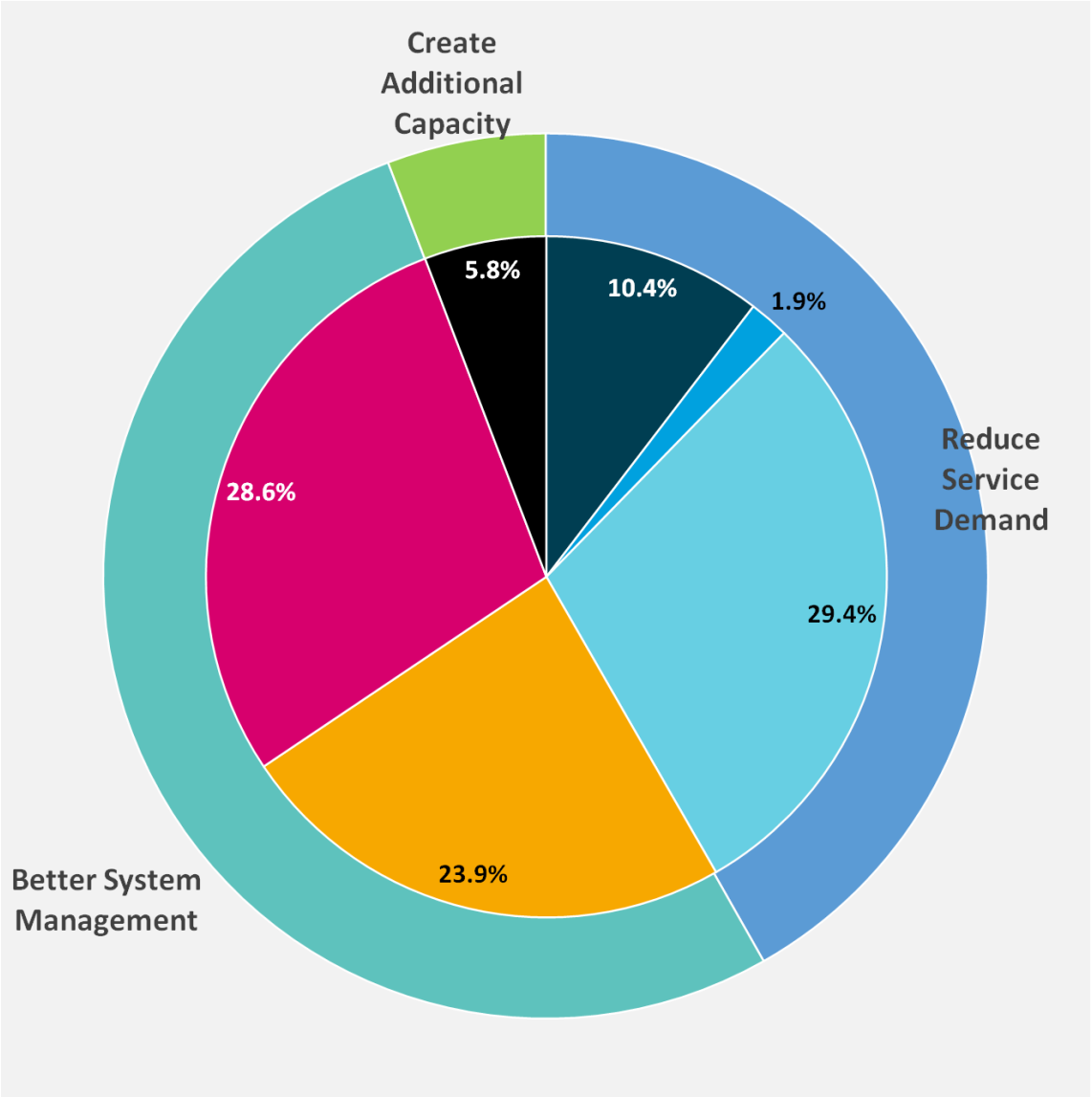
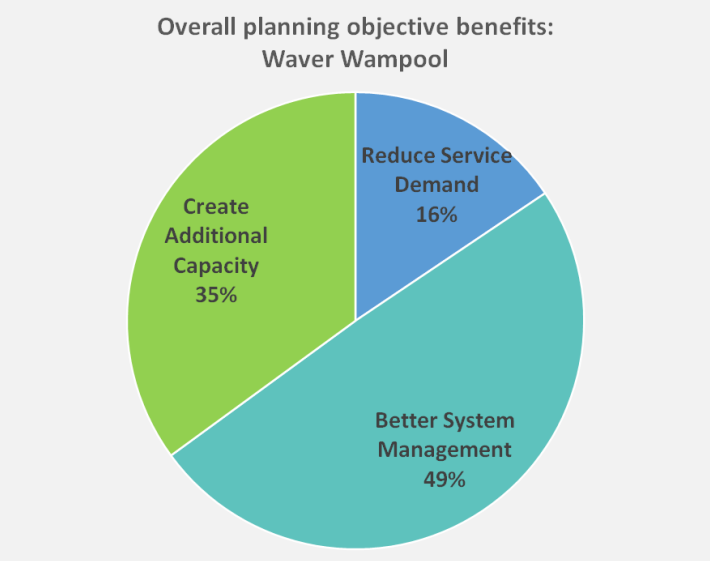


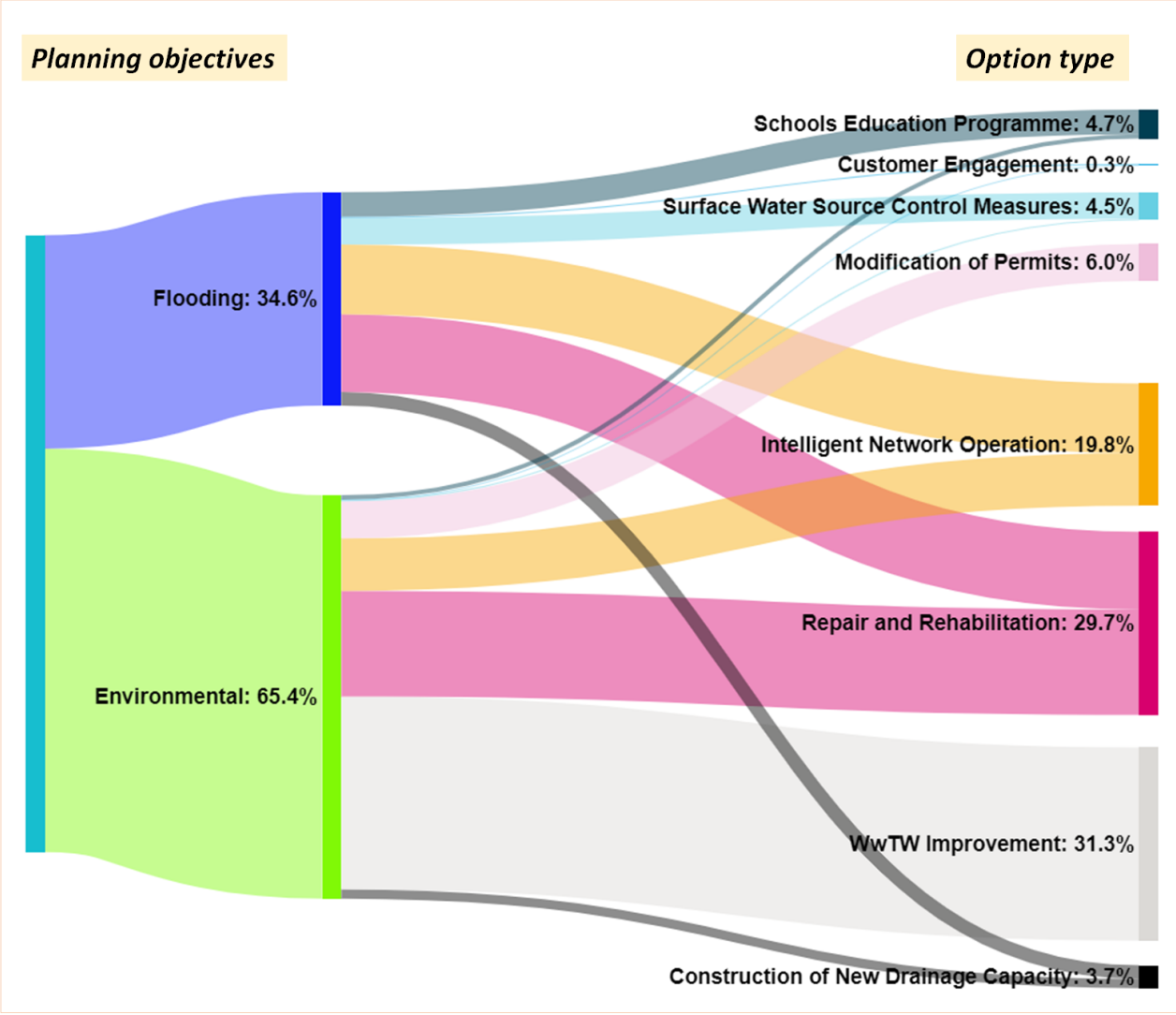
Figure 18 Distribution of benefit by option type within Wyre SPA

This is an example of how different option types may be used to demonstrate potential benefits against different planning objectives within the Wyre SPA.

United Utilities Water (UUW) commitments to improving flooding performance could be met through the repair and rehabilitation of the current system and the updates to the intelligent network monitoring systems that are already in place, reduction of surface water flows and schools education programmes.

Environmental planning objectives could be met mainly through the provision of wastewater treatment works improvements including modification of permits, repair and rehabilitation of the current system, intelligent network operation systems and new stormwater storage capacity.



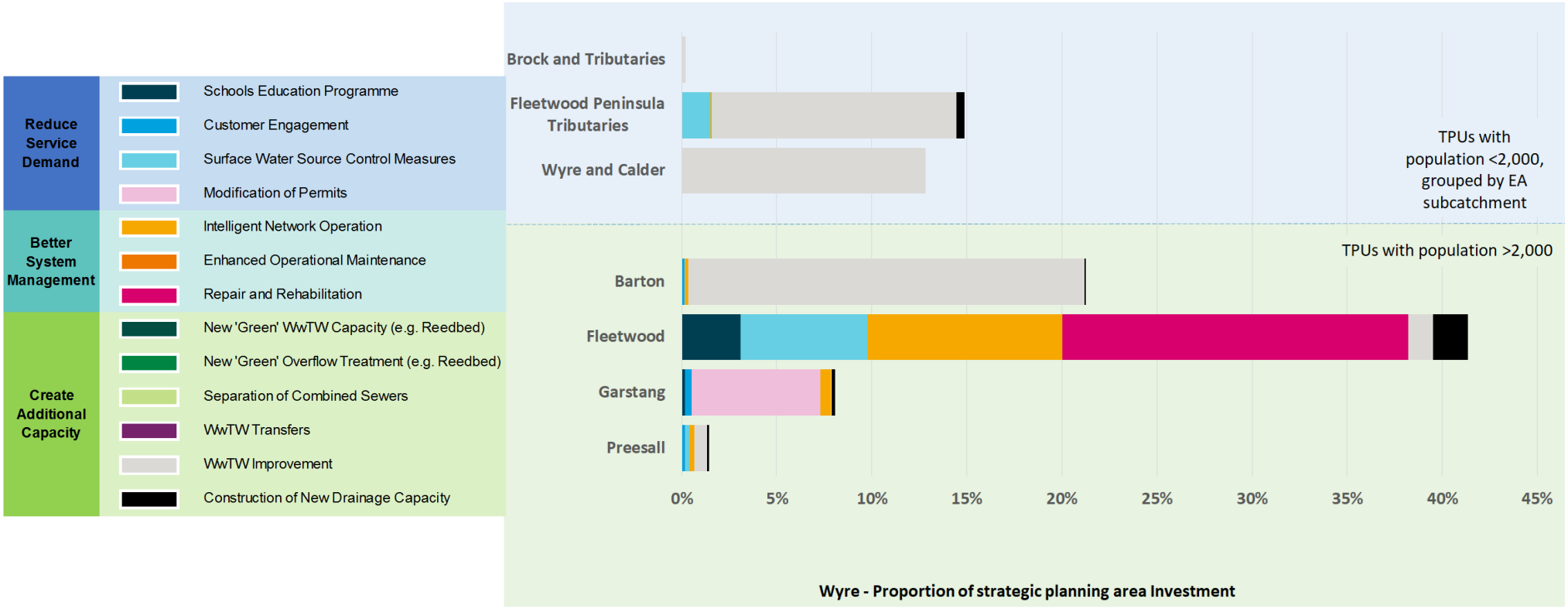


5.3 Overview of preferred options in each TPU

Figure 19 shows the proportion of Wyre SPA potential investment in each TPU, split up by option type. Note that the smaller TPUs within the catchment (those with less than 2,000 population) have been reported together at the top of the chart, grouped by SPA sub catchment (Environment Agency Operational Catchment boundaries).

It can be seen that in the Wyre SPA, the largest TPUs see the largest potential investment, which is split predominantly between surface water control, improved system management, and construction of new storm water storage tanks.

Figure 19 Proportion of investment seen in each TPU within the Wyre SPA



The following sub-sections show how potential investment could be split between different types of options to bring benefits to each TPU over the short, medium and long term. Some options, such as construction of new storm water storage tanks, occur at a single point in time; however the benefit of reduced flooding may be seen long into the future. Other options such as schools education, are continual programmes that could help to encourage long-term sustainable behaviours, such as reduction in water use.

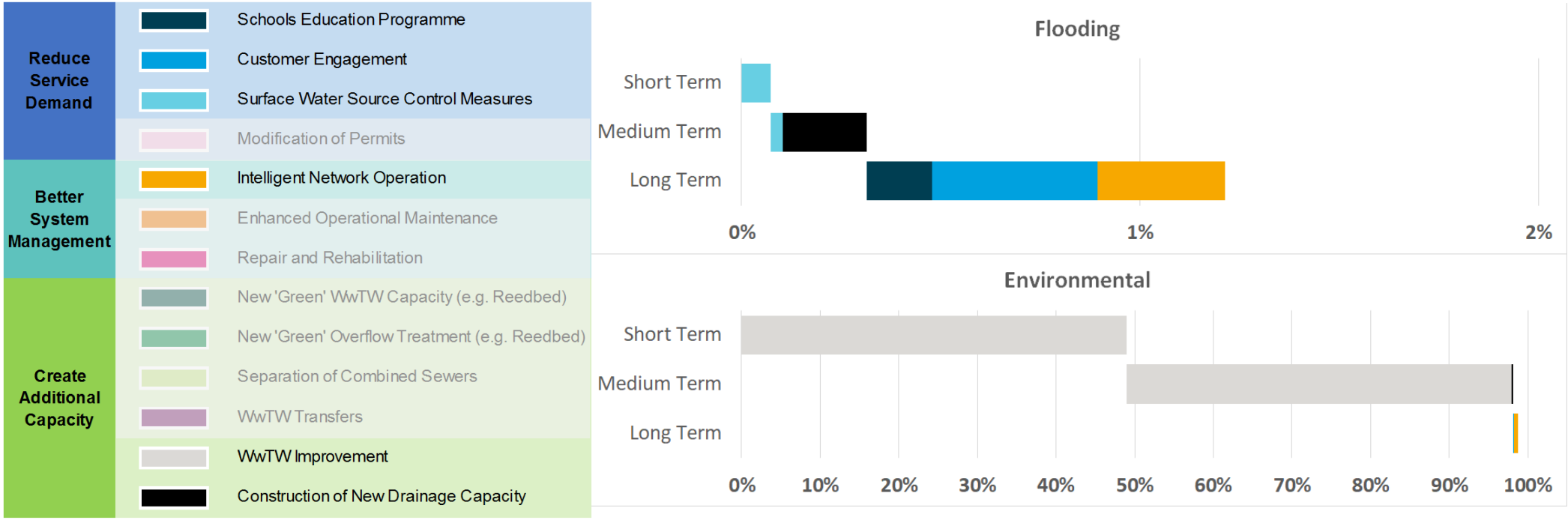
5.3.1 Barton

The results from the DWMP show that if we were to invest in Barton over the next 25 years, around 1% of the investment could be to address flooding risks, and around 99% of investment could be to address environmental risks (Figure 20).

In the short and medium term, potential investment could be through wastewater treatment works improvements to ensure permit compliance.

In the longer term, new intelligent network monitoring systems could be implemented. School education and customer engagement programmes could also be introduced.

Figure 20 Short, medium and long-term investment in the Barton TPU, distributed by option type



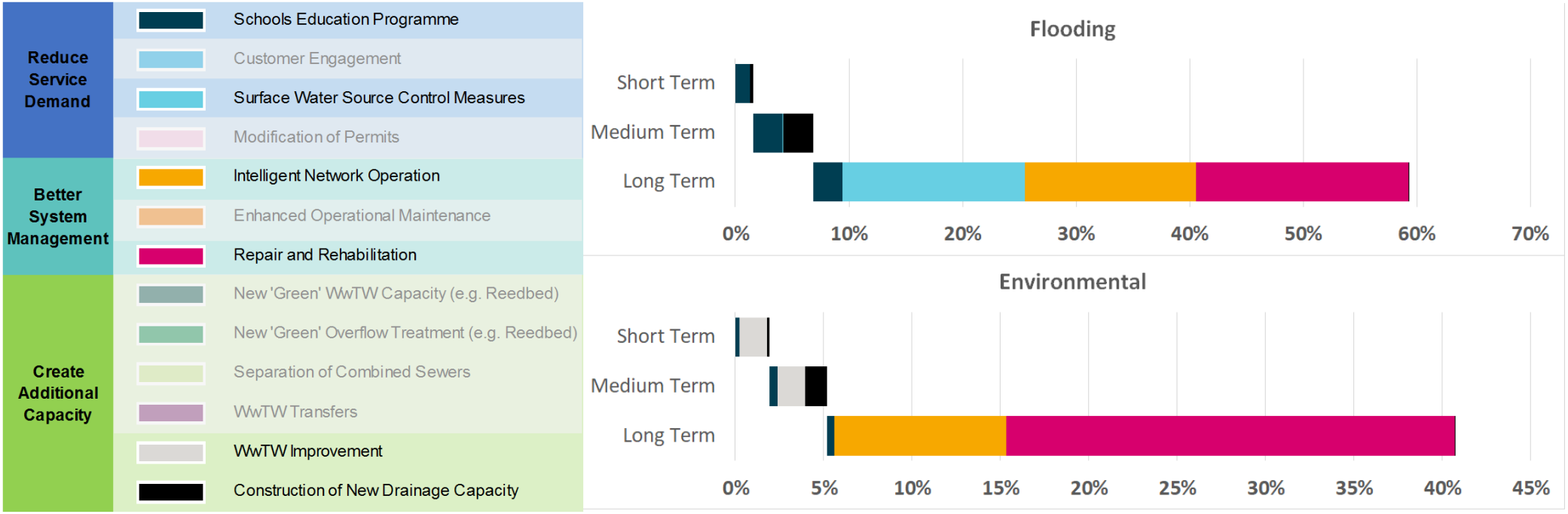
5.3.2 Fleetwood

The results from the DWMP show that if we were to invest in Fleetwood over the next 25 years, around 59% of the investment could be to address flooding risks, and around 41% of investment could be to address environmental risks (Figure 21).

In the short and medium term, potential investment could be through school education programmes and wastewater treatment works improvements to ensure permit compliance.

In the longer term, the intelligent network monitoring systems that are already in place could be replaced or updated. Existing sewer systems could be repaired and rehabilitated and there could be investment in surface water source control measures such as SuDS.

Figure 21 Short, medium and long-term investment in the Fleetwood TPU, distributed by option type



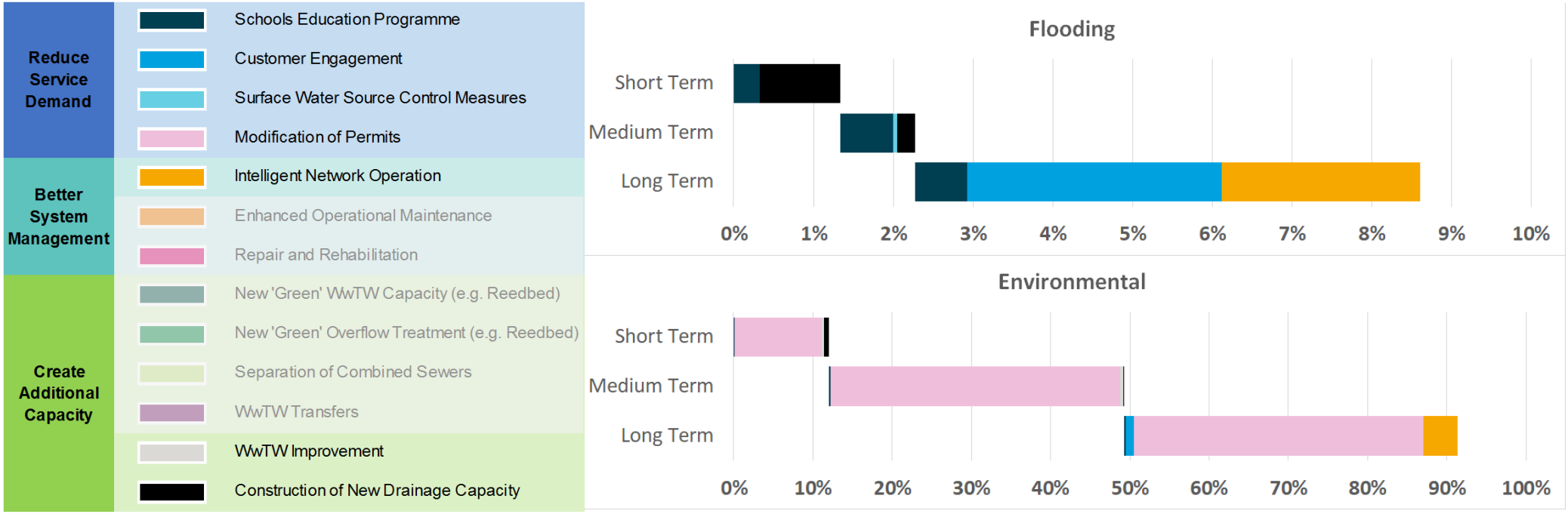
5.3.3 Garstang

Around 59% of the investment in Garstang over the next 25 years will be to address flooding risks. Around 41% of investment will be to address environmental risks (Figure 22).

In the short and medium term, a vast majority of the potential investment could be through modification of wastewater treatment works permits. There could also be investment through the construction of new drainage capacity and wastewater treatment works improvements to ensure permit compliance.

In longer term, these investments could continue with the addition of new intelligent network monitoring systems and customer engagement programmes.

Figure 22 Short, medium and long-term investment in the Garstang TPU, distributed by option type



5.3.4 Preesall

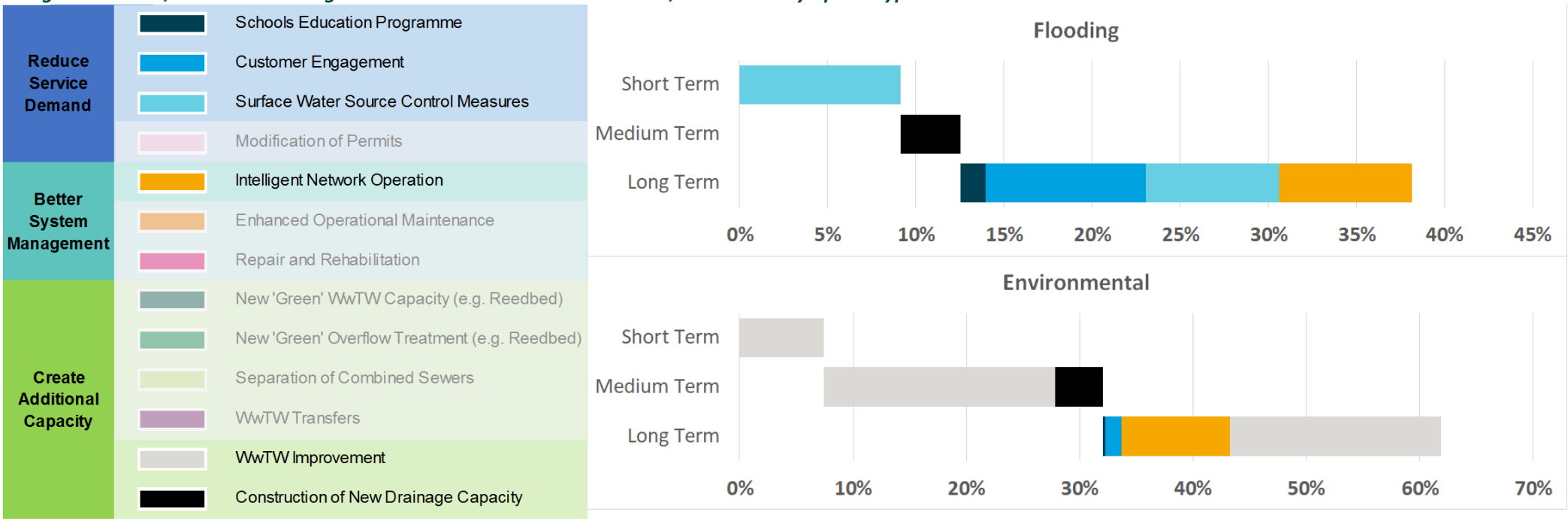
The results from the DWMP show that if we were to invest in Preesall over the next 25 years, around 38% of the investment could be to address flooding risks, and around 62% of investment could be to address environmental risks (Figure 23).

In the short term, potential investment could be through surface water source control measures and wastewater treatment works improvements to ensure permit compliance.

In the medium term, these investments could continue and there could also be investment in the construction of new drainage capacity in the catchment.

In the longer term, school education and customer engagement programmes could be introduced. New intelligent network monitoring systems may be implemented and the investment at wastewater treatment works could continue.

Figure 23 Short, medium and long-term investment in the Preesall TPU, distributed by option type



5.3.5 TPUs with population less than 2,000: Brock and Tributaries sub catchment

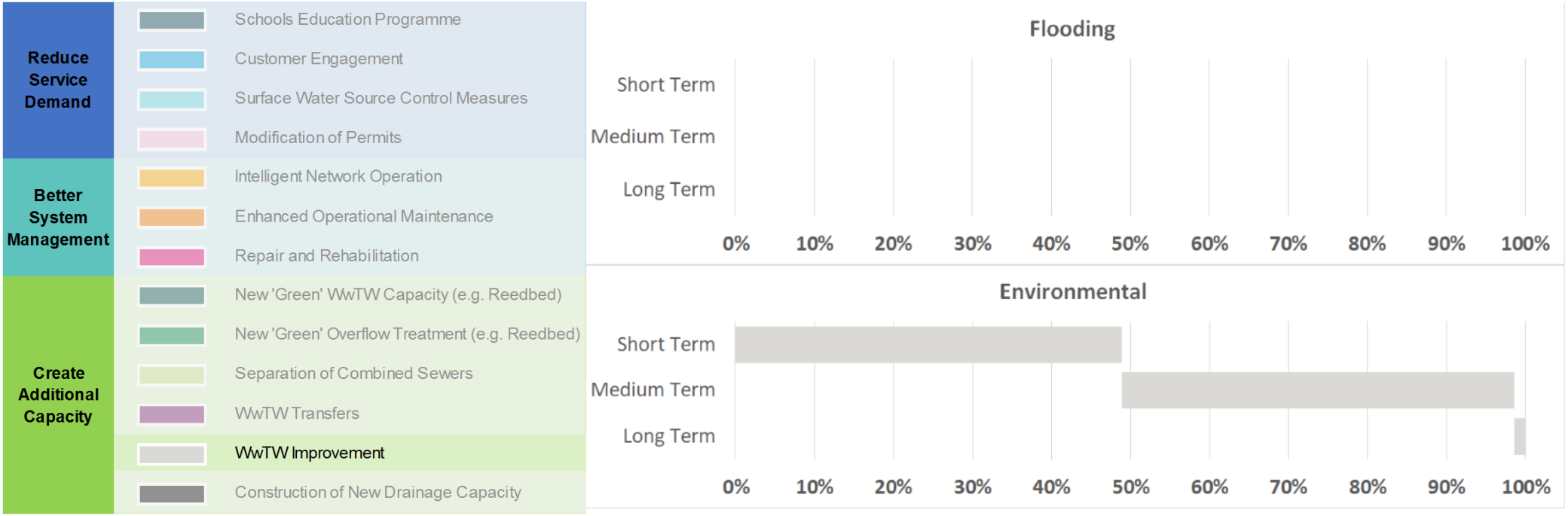
The following TPUs each have a population of less than 2,000, and have therefore been grouped together:

- Bilsborrow Septic Tank; and
- Whittingham Cottages.

All of the potential investment in these small TPUs may be to address environmental risks (Figure 24).

All short, medium and long term potential investment could be wastewater treatment works improvements to ensure permit compliance.

Figure 24 Short, medium and long-term investment in TPUs with population less than 2,000 (Brock and Tributaries) distributed by option type



5.3.6 TPUs with population less than 2,000: Fleetwood Peninsula Tributaries sub catchment

The following TPUs each have a population of less than 2,000, and have therefore been grouped together:

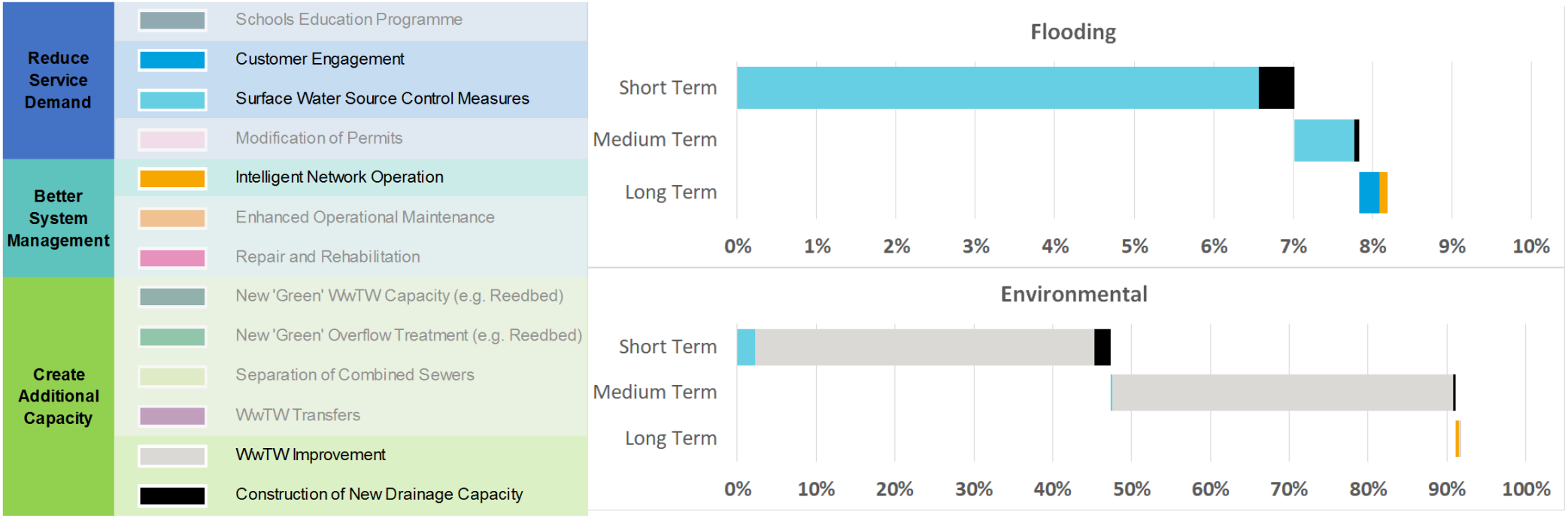
- Elswick;
- Inskip; and
- Weeton.

Around 8% of the potential investment in these TPUs over the next 25 years could be to address flooding risks. Around 92% of potential investment could be to address environmental risks (Figure 25).

Short and medium term potential investment in environmental risks could be in wastewater treatment works improvements to ensure permit compliance. Investment in flooding risks over this period could be through surface water control measures and the construction of new drainage capacity.

Longer term investment could be through customer engagement programmes and the installation of intelligent network monitoring systems.

Figure 25 Short, medium and long-term investment in TPUs with population less than 2,000 (Fleetwood Peninsula Tributaries) distributed by option type



5.3.7 TPUs with population less than 2,000: Wyre and Calder sub catchment

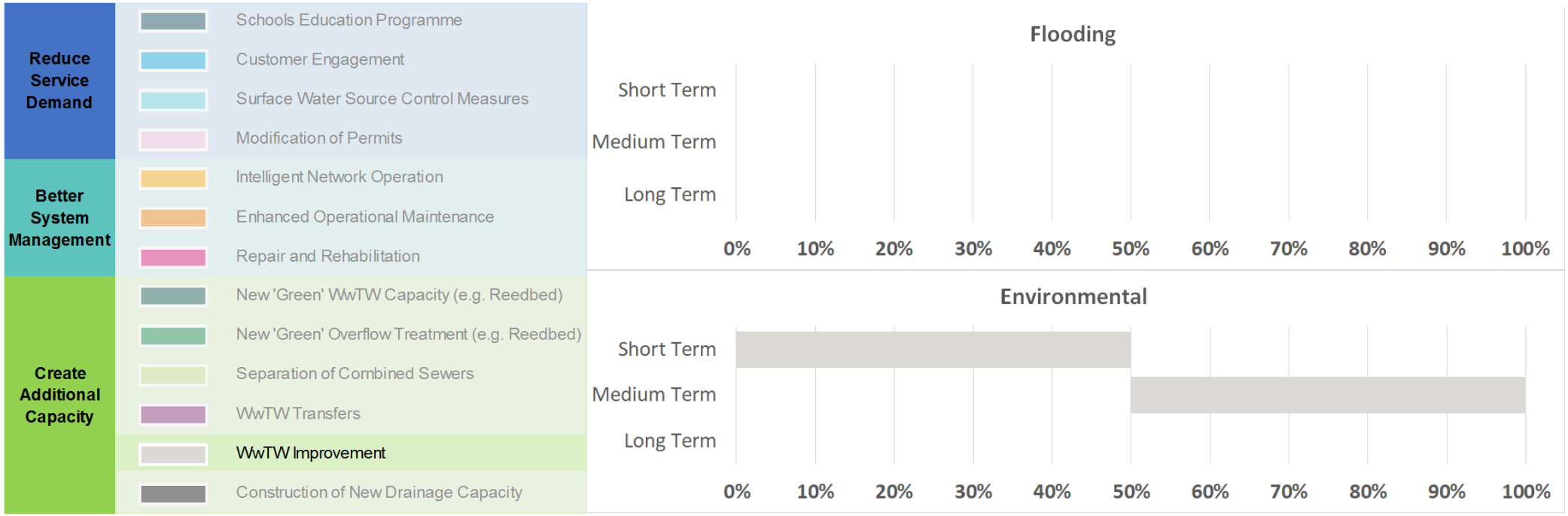
The following TPUs each have a population of less than 2,000, and have therefore been grouped together:

- Dolphinholme.

All of the potential investment in this TPU could be to address environmental risks (Figure 26).

All short, medium and long term potential investment could be wastewater treatment works improvements to ensure permit compliance.

Figure 26 Short, medium and long-term investment in TPUs with population less than 2,000 (Wyre and Calder) distributed by option type

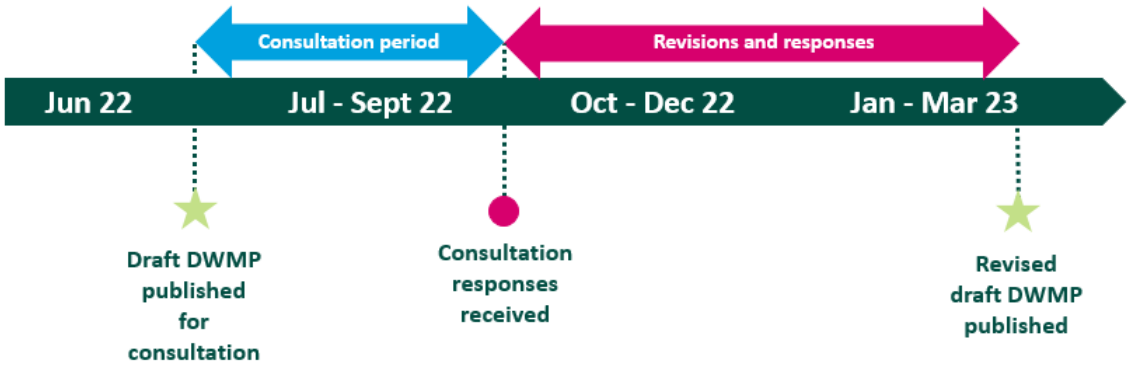


4. Next steps

The DWMP is inherently not a static plan so we will continue to work with stakeholders to develop partnership options and strategies which will make a difference within the Wyre SPA.

We are currently at draft publication (Figure 27) and between now and final publication in March 2023, we will reflect on updated guidance such as WINEP and storm overflows, and incorporate the feedback that we receive to ensure that the DWMP can build the best foundation to allow the North West to thrive in years to come.

Figure 27 Timeline between draft and final publication



We welcome your feedback on our draft publication of our first DWMP. Please get in touch using our mailbox:

DWMPConsultation@uuplc.co.uk

5. References

[1] https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3119

[2] https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3051

[3] https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3188

[4] https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3552

[5] https://environment.data.gov.uk/catchment-planning/v/c3-draft-plan/ManagementCatchment/3119

[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/507122/LIT_10210_NORTH_WEST_FRMP_PART_B.pdf

[7] https://www.gov.uk/government/publications/surface-water-management-plan-technical-guidance

[8] https://wyreriverstrust.org/

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