United Utilities Water

DRAFT Drainage and Wastewater Management Plan 2023

Waver Wampool DWMP

Document Reference: SPA_12

June 2022

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.

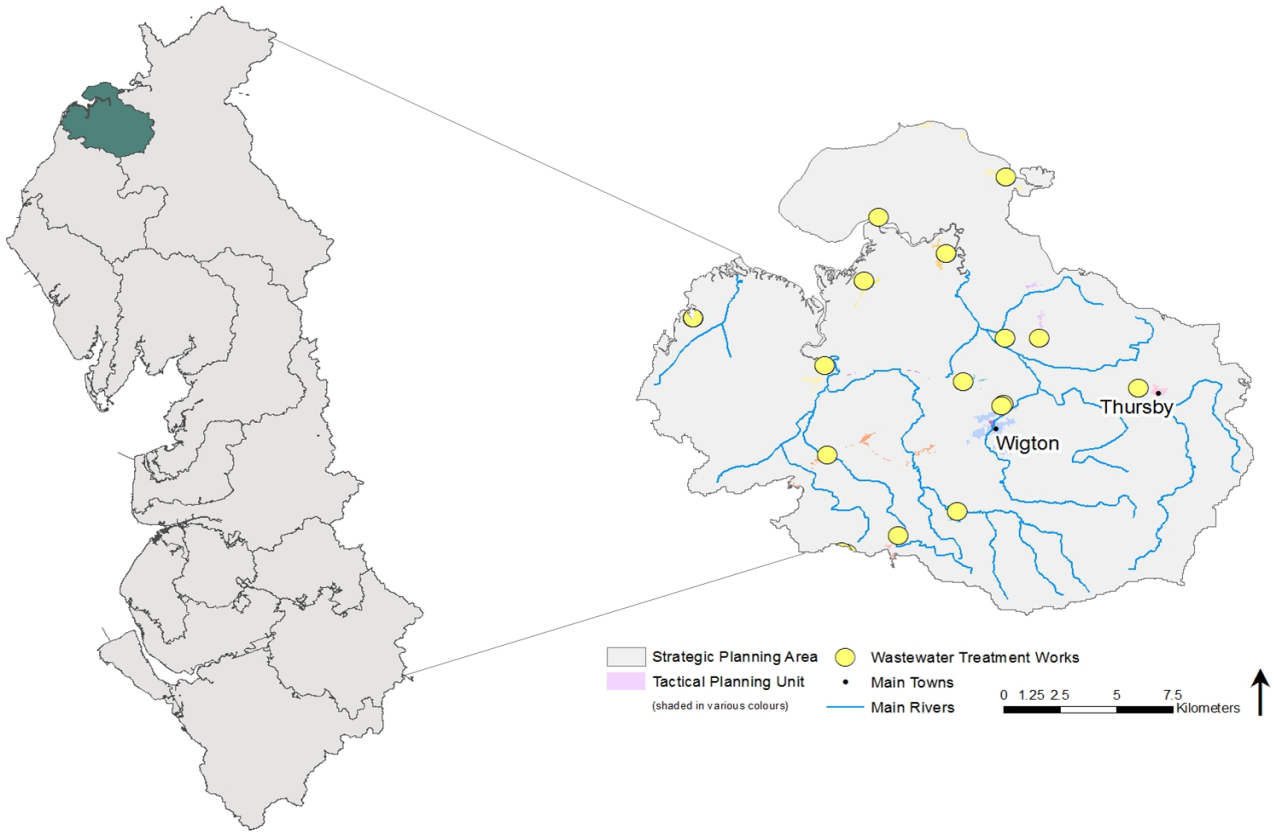
We will share the results from the different stages of the DWMP and how the DWMP plans to make a difference in the Waver Wampool SPA.

2. Background to the Waver Wampool catchment

The Waver Wampool is a small catchment (374.6km^2) in north-west Cumbria [1]. The land use in the catchment is largely composed of agricultural land with a number of smaller conurbations such as Wigton and Thursby [2]. The River Weaver and the River Wampool drain the north Lake District fells westerly through the flat Cumbrian coastal plains where they eventually drain into the sea at the Solway Firth in the north-west of the catchment [3].

There are 14 wastewater tactical planning units (TPU), also known as wastewater treatment work (WwTW drainage catchments) within the Waver Wampool 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 Rabycote to smaller, rural catchments such as Oulton. The TPUs are highlighted in Figure 3.

Figure 3 Map of the Waver Wampool SPA



There are numerous strategic management plans within the Waver Wampool that are owned by various other organisations. Within the Waver Wampool 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 Waver Wampool catchment
River Basin Management Plan (RBMP) [4] **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 physical modifications and pollution from rural areas.
Flood Risk Management Plan (FRMP) [5] **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.	Within the Waver Wampool catchment, there are 1,300 people at risk of flooding. The largest flood risk is in Wigton due to numerous watercourses meeting in the town and historic structures which lead to flooding hot spots. Areas such as Silloth, Skinburness, Kirkbride and Anthorn are at risk of coastal flooding. The December 2015 storms affected numerous towns and villages across the catchment. Since then, a programme of recovery was put into place. The Cumbria Floods Partnership Group was also formed which will consider mitigation measures such as improvements to existing flood defences and upstream management options such as slow the flow. Across the Waver Wampool catchment there are 14 measures from earlier plans to manage flood risk.

Shoreline Management Plan (SMP) [6] **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).	The long term plan for Morecambe Bay is to allow the shoreline to retreat where appropriate, so allowing the sea to return to low lying areas to create saltmarsh as sea levels rise. A managed realignment policy has been recommended for the majority of areas within Morecambe Bay to allow organisations, local land owners and responsible bodies to put in place measures to proactively adapt to future coastal changes.
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.	

Catchment Based Approach (CaBA) Catchment Plan [8] **Owner:** West Cumbria 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 aim of the catchment partnership is to: • Improve water quality of the catchment by reducing diffuse pollution and wastewater inputs • Reduce the impacts due to flooding, droughts and coastal erosion • Increase resilience to climate change • Provide high quality, diverse and connected habitats, and to control invasive species • Increase opportunities for communities • Reverse redundant modifications and to allow for more natural flow • Help farm businesses to adopt more sustainable practices. Current challenges include water quality, lack of habitat diversity and flood risk, particularly in Wigton.

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 Waver Wampool SPA we have engaged with stakeholders such as:

- The Environment Agency;
- Cumbria County Council; and
- West Cumbria Rivers Trust (host of the West Cumbria 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 Waver Wampool 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.

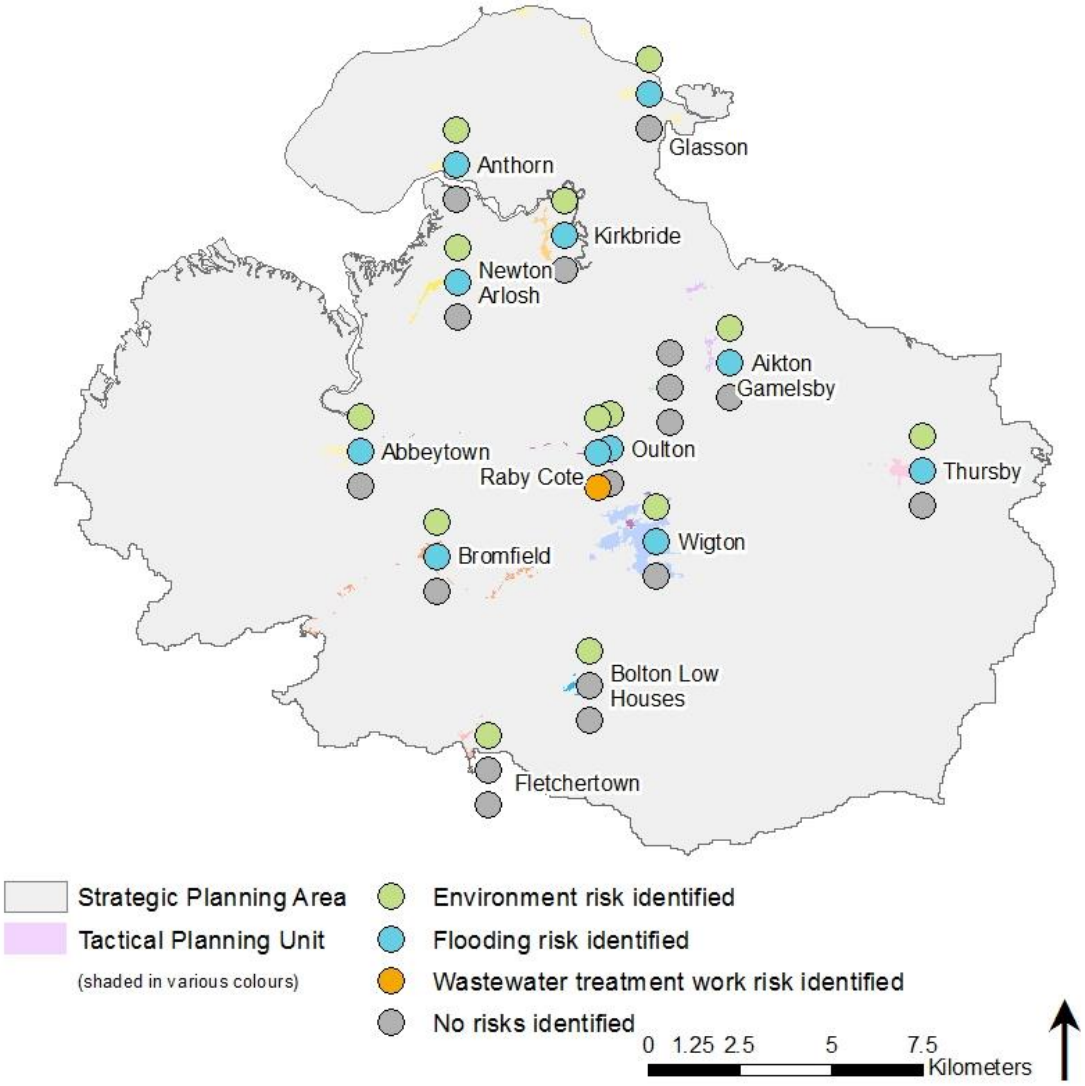
Within the Waver Wampool SPA, the RBCS stage identified 13 out of 14 TPUs that required further investigation and therefore passed onto the BRAVA stage (outlined in Section 3.2).

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 Waver Wampool SPA, which is supported by the highest triggered RBCS assessments which are:

- Storm Overflow Assessment Framework - (13/14) – Environment; and
- External Sewer Flooding - (11/14) – Flooding.

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

Figure 5 Map of the RBCS results for the Waver Wampool 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 Waver Wampool 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
Abbeytown						
Aikton						
Anthorn						
Bolton Low Houses						
Bromfield						
Fletchertown						
Glasson						
Kirkbride						
Newton Arlosh						
Oulton						
Thursby						
Wigton						

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 area 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
Abbeytown													
Aikton													
Anthorn													
Bolton Low Houses													
Bromfield													
Fletchertown													
Glasson													
Kirkbride													
Newton Arlosh													
Oulton													
Thursby													
Wigton													

Table 4 Wastewater treatment works BRAVA results

Tactical Planning Unit	Wastewater Treatment Works		
	Risk of wastewater treatment works (WwTW) capacity		
	2020	**2030**	**2050**
Aikton			
Glasson			
Kirkbride			
Thursby			
Wigton			

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
Abbeytown			
Bolton Low Houses			
Bromfield			
Fletchertown			
Gamelsby			
Oulton			
Thursby			
Wigton			

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 Waver Wampool, 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.

There are no TPUs within the Irwell SPA that were identified as having 'strategic growth'.

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 6).

An options hierarchy was then used which has been endorsed by customers and stakeholders from across the North West to select preferred solutions (Figure 7). 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 6 Options development process

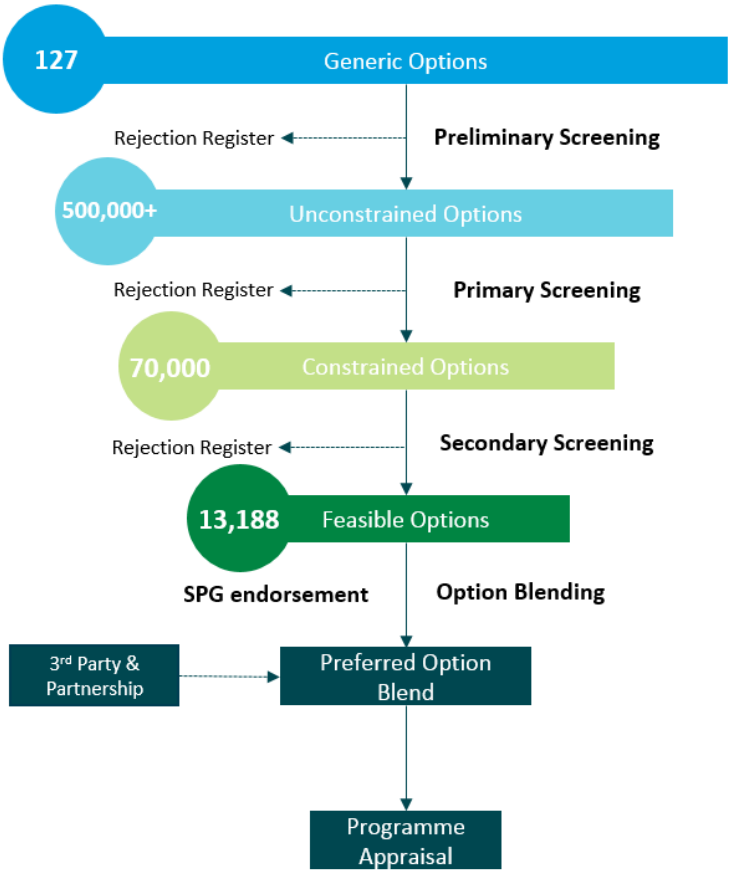
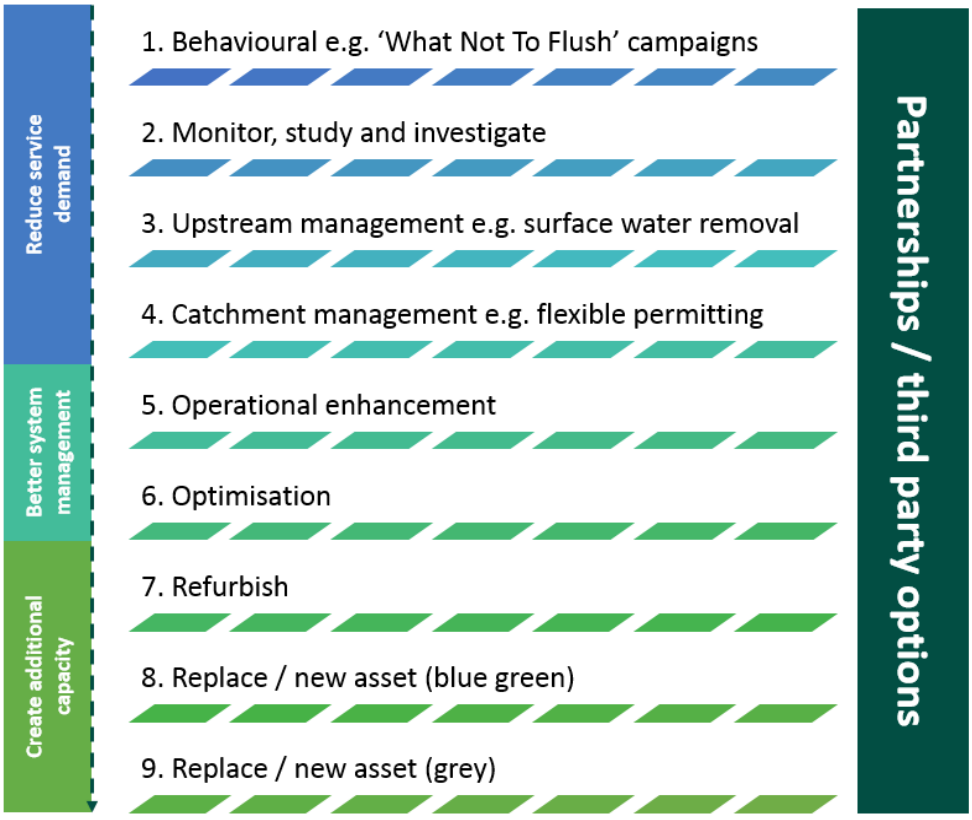


Figure 7 Options hierarchy



4.1 Waver Wampool partnership options

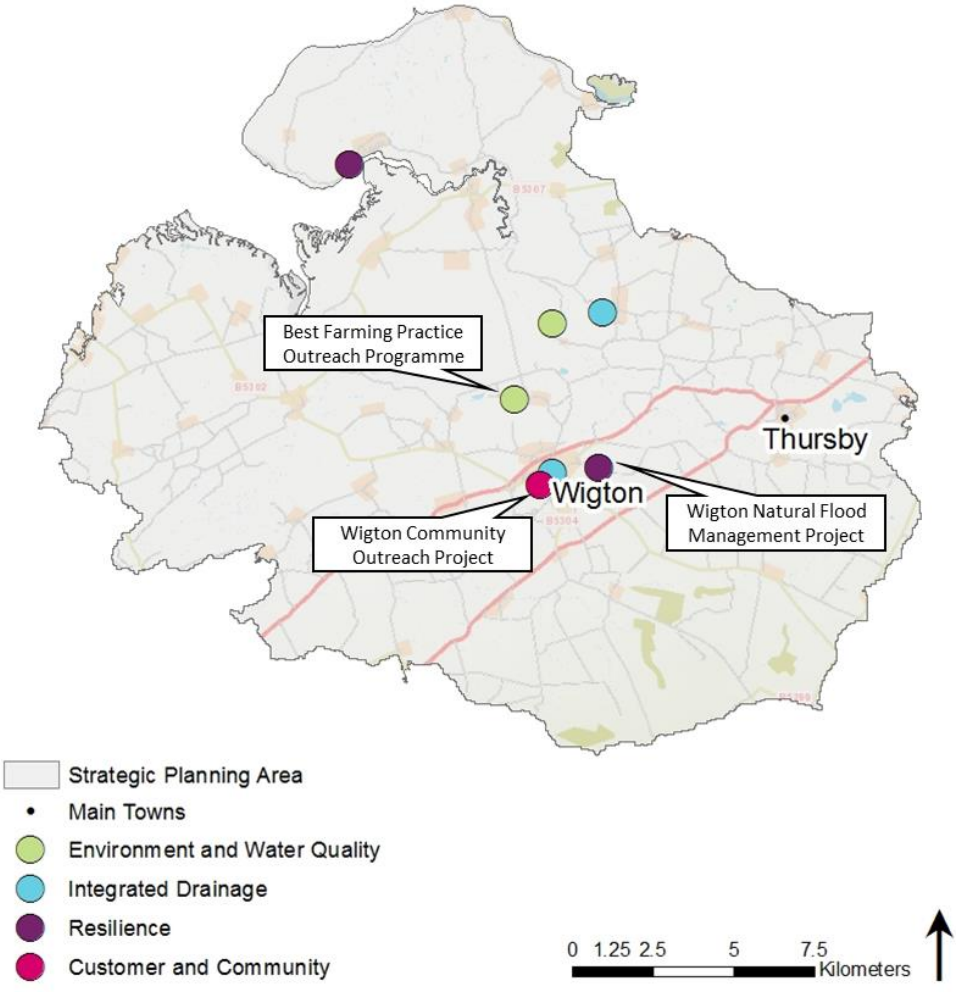
In order to identify and develop potential partnership options in the Waver Wampool SPA, through the SPG we have shared the results from the risk identification stages such as BRAVA. This was done through a series of workshops and the purpose was to identify areas of shared risk and partnership opportunities 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 8.

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 8 Overview of the potential partnership opportunities in the Waver Wampool SPA



5. Options for the Waver Wampool

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 Waver Wampool catchment. Options can be categorised into a number of categories:

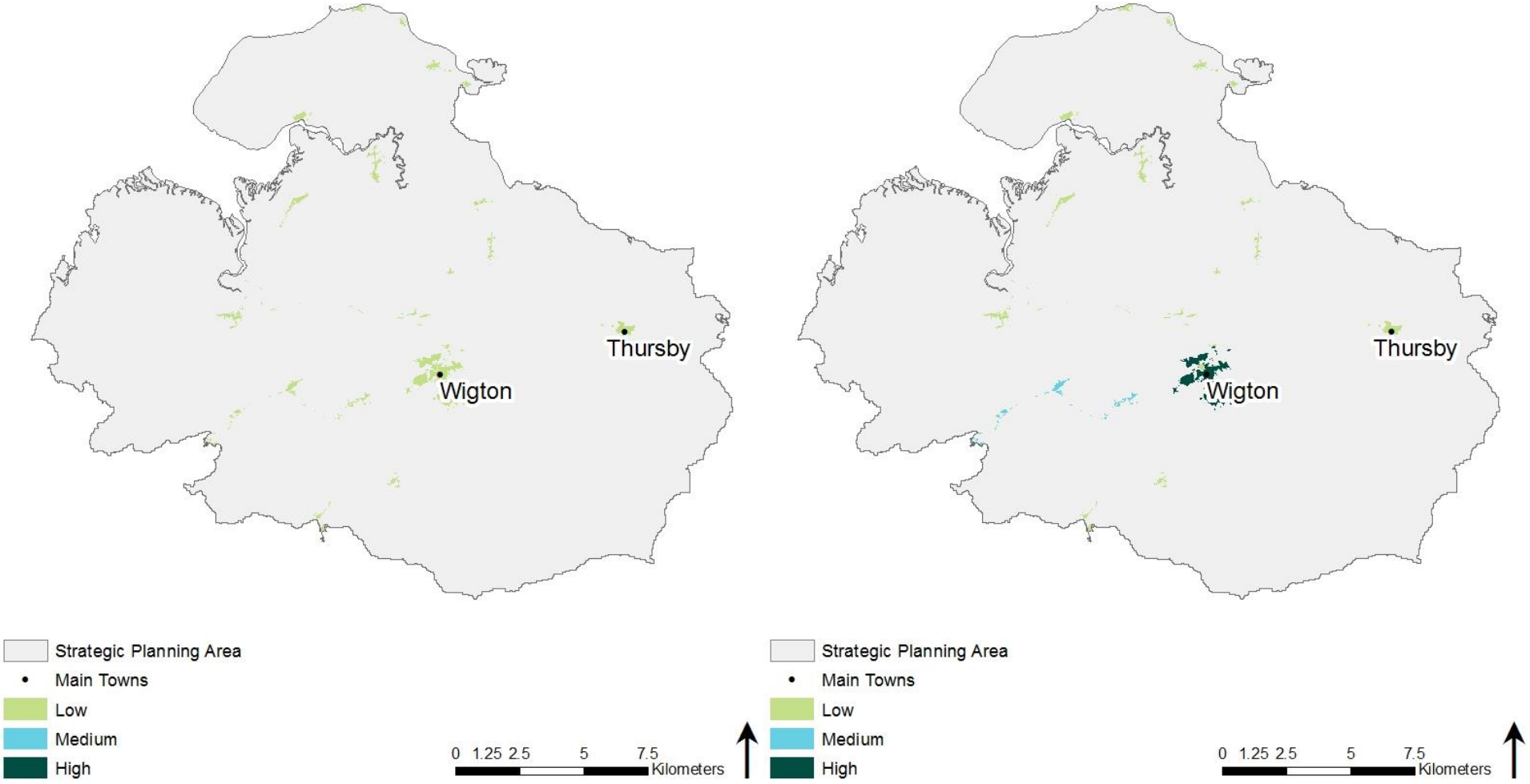
- Customer engagement;
- Monitor and investigate;
- Upstream management;
- Catchment management;
- Operational enhancement;
- Optimisation;
- Refurb/New asset (blue/green); and
- Refurb/New asset (grey).

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 Waver Wampool catchment customer engagement options (Figure 9) 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 Wigton TPU.

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 Wigton and Oulton TPUs (Figure 9).

Figure 9 Maps show the benefit of implementing regional customer engagement (left) and sustainable drainage solutions (right) options across the Waver Wampool 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.

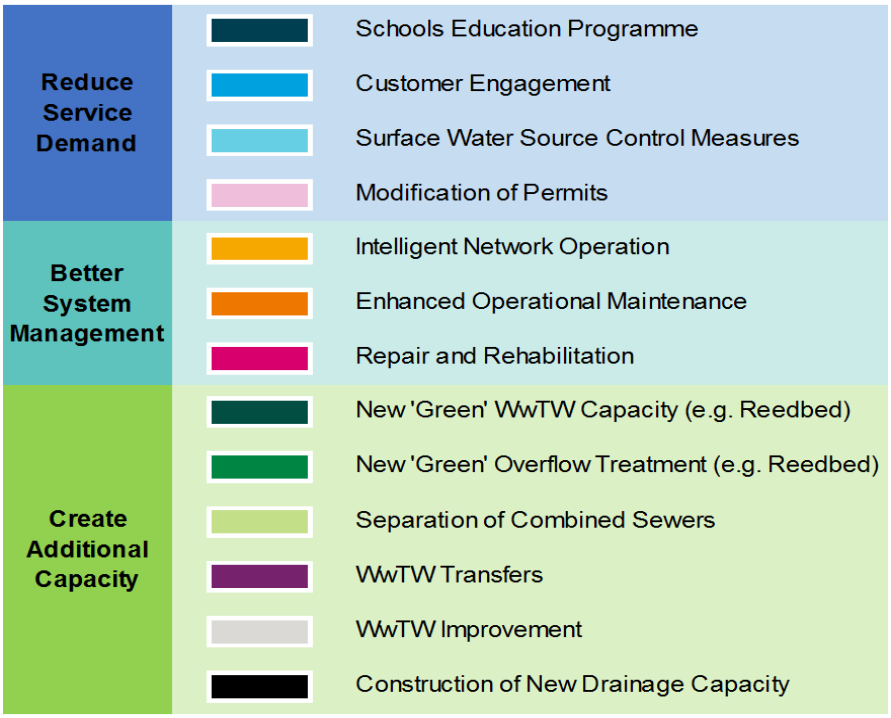
A high-level regional assessment has been carried out to estimate the likely investment requirements to address all overflow risks, but due to the uncertainty described above, this has not been broken down by Strategic Planning Areas. This information can be found in the DWMP main document.

Utilising data collected at the various stages of developing the DWMP (BRAVA, partnership opportunities and the data in Figure 9), 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 10).

Figure 10 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 Waver Wampool SPA, the outcomes seen as a result of potential investment and benefit in each option type are shown in Figures 11, 12 and 13.

Figures 11 and 10 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 12 shows potential options to address environmental planning objectives, which incorporate:

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

Figure 13 shows potential options to 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 11 and 12 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 13 shows how these options could contribute to addressing the planning objectives – environmental and flooding.

Figure 11 Waver Wampool 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.

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

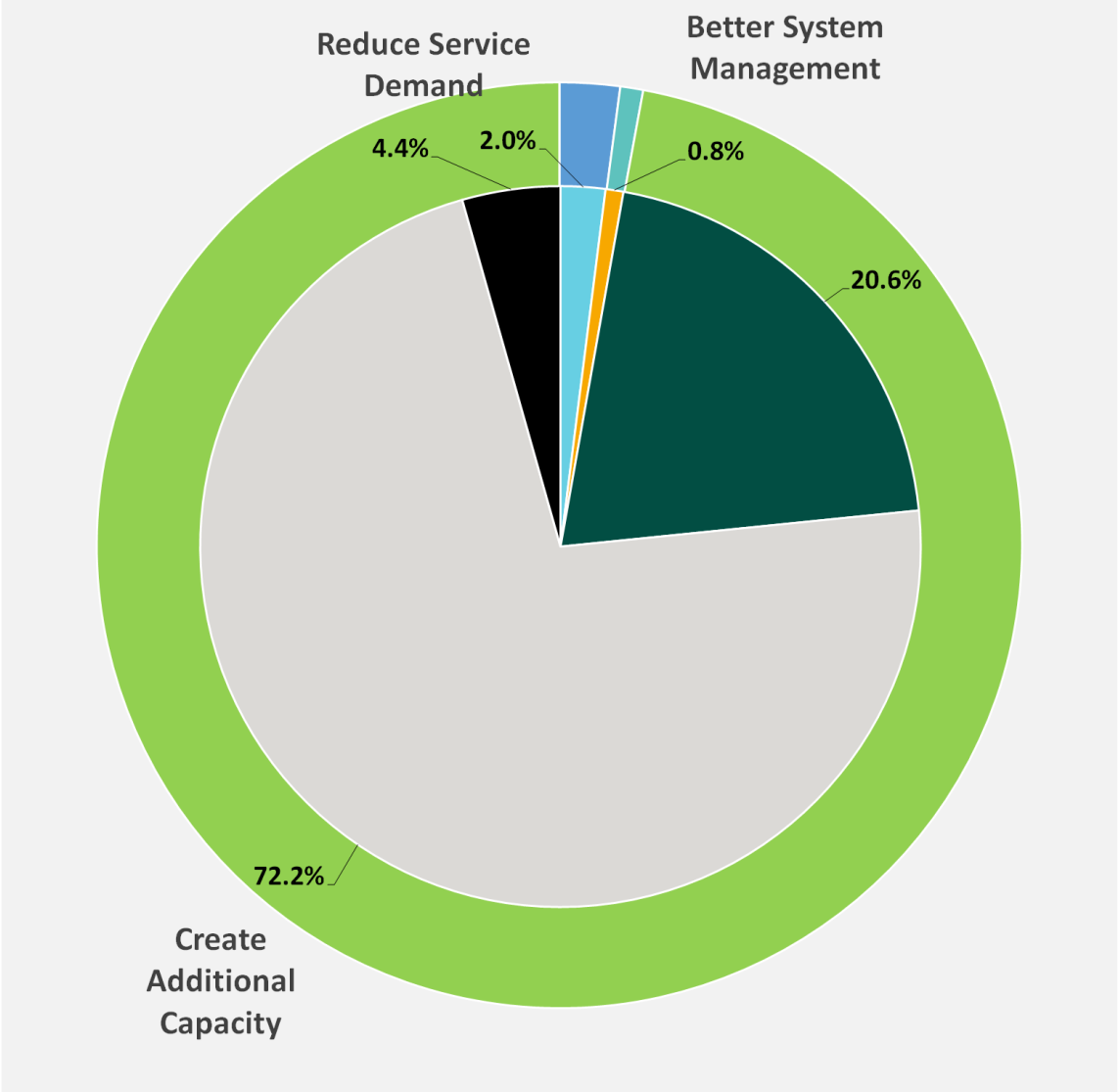


Figure 12 Waver Wampool Strategic Planning Area: Distribution of flooding investment by option type

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

Around 23% of potential investment could be in the construction of new drainage capacity and around 5% could be used to improve existing system management.

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

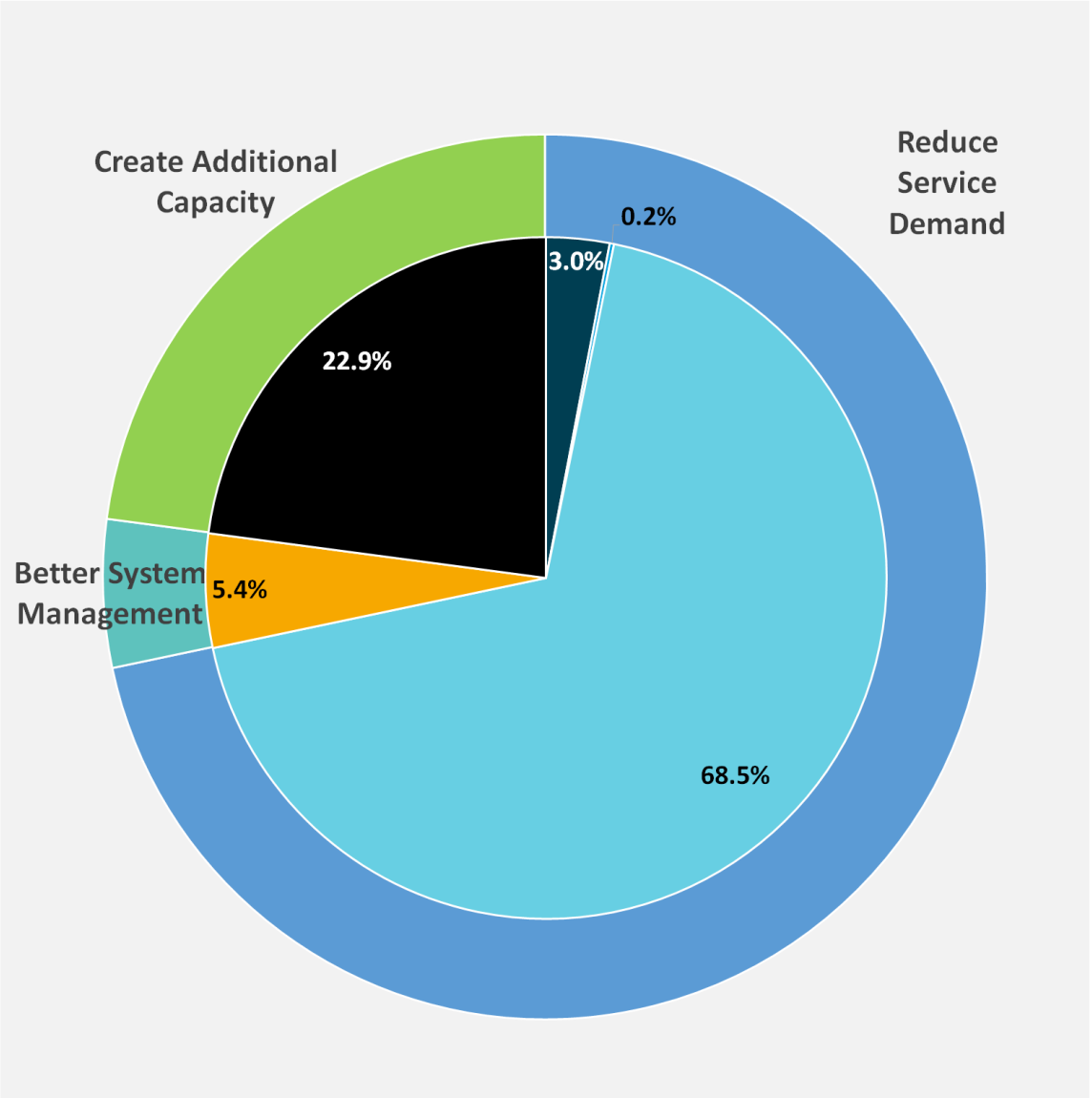
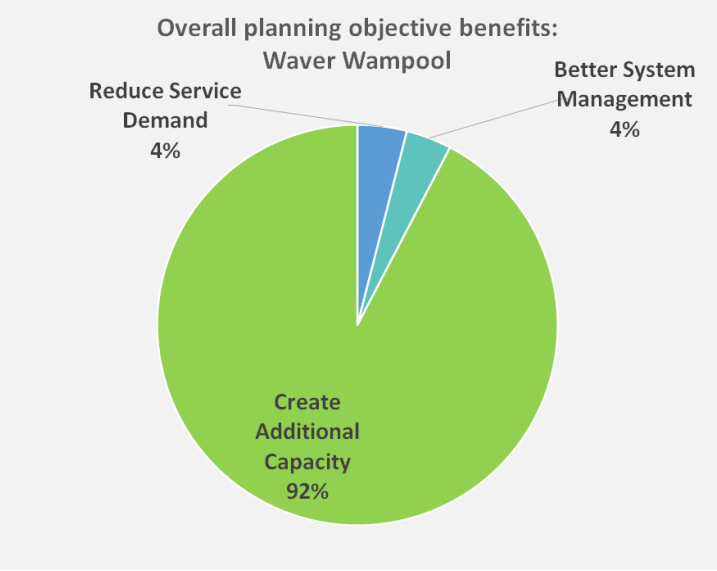


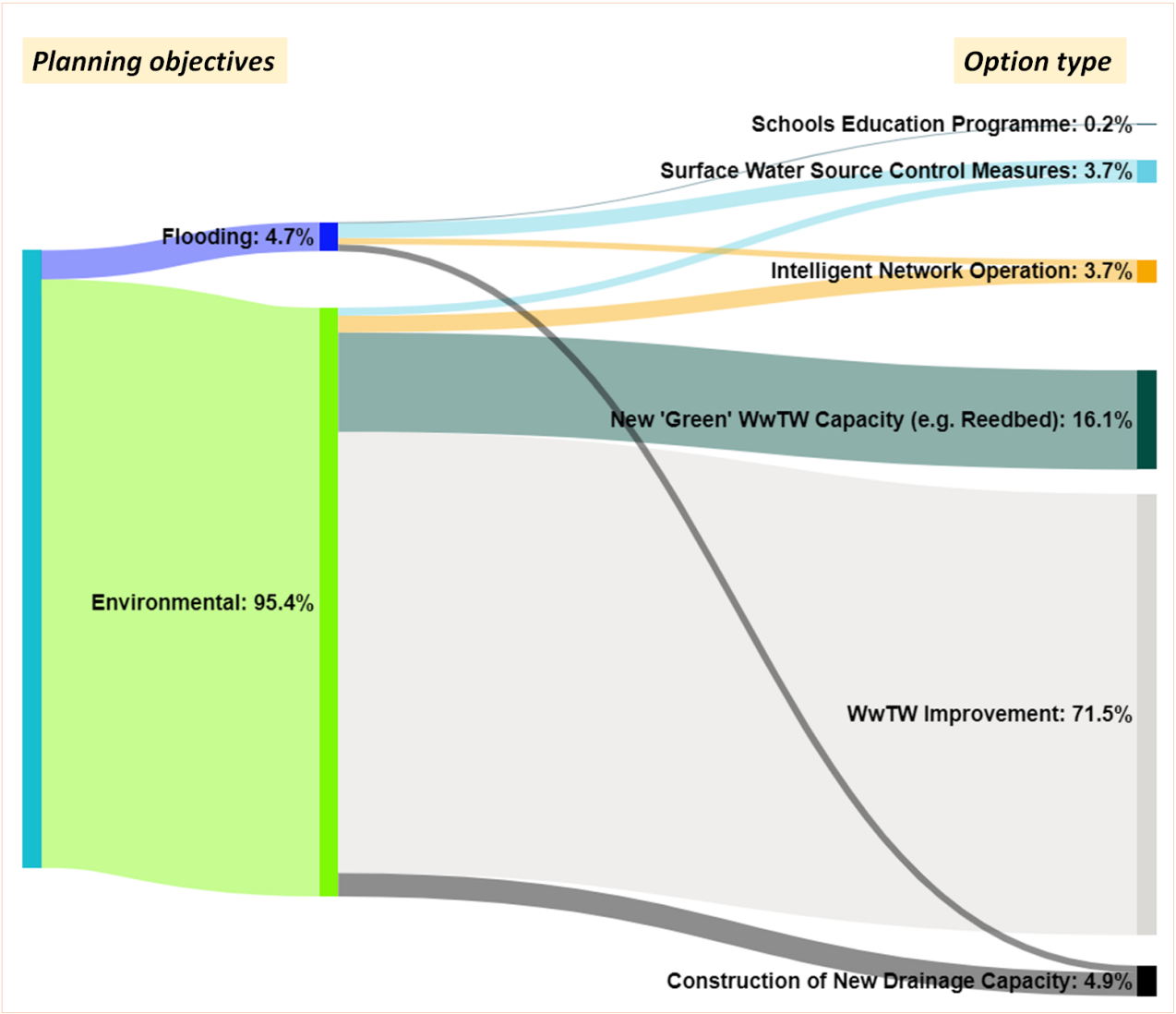
Figure 13 Distribution of benefit by option type within Waver Wampool SPA

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

United Utilities Water (UUW) commitments to improving flooding performance could be met through the reduction of surface water flows, schools education programmes, improved operational maintenance systems, and the construction of new stormwater drainage capacity.

Environmental planning objectives could be met mainly through improvements to wastewater treatment works, including 'green' wastewater treatment, improved operational maintenance systems, and provision of stormwater storage capacity.



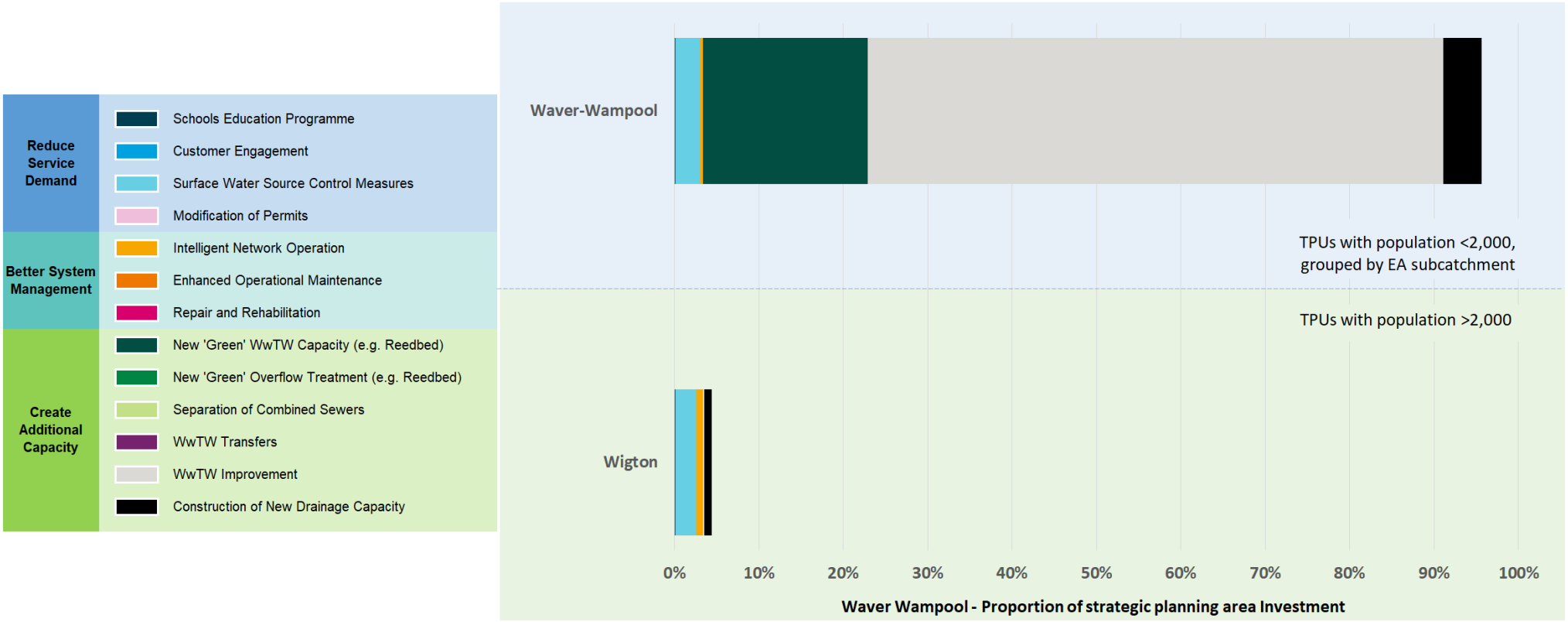


5.3 Overview of preferred options in each TPU

Figure 14 shows the proportion of Waver Wampool 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). In Waver Wampool there is one large TPU with population greater than 2000 (Wigton) and 12 small TPUs with a population smaller than 2000.

It can be seen that in the Waver Wampool SPA, the smaller TPUs has the largest potential investment, which is split predominantly between surface water control, construction of new wastewater treatment works, new green wastewater capacity and construction of new drainage capacity.

Figure 14 Proportion of investment seen in each TPU within the Waver Wampool 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 could be seen long into the future. Other options such as school education, are continual programmes that could help to encourage long-term sustainable behaviours, such as reduction in water use.

5.3.1 Wigton

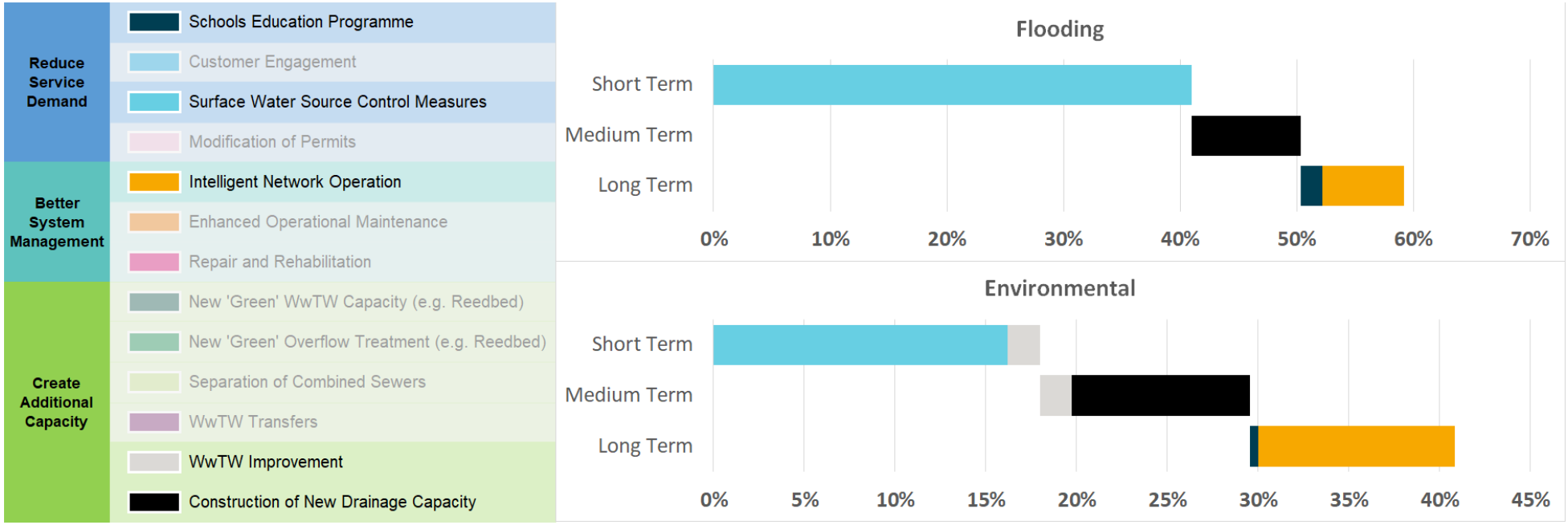
The results from the DWMP show that if we were to invest in Wigton over the next 25 years, around 59% of the investment could be to address flooding risks, and around 41% of investment could be to address environmental risks (Figure 15).

In the short term, investments could be through surface water source control measures and installation of wastewater monitoring systems to ensure permit compliance.

In the medium term, there could be investment in the construction of new drainage system capacity alongside further installation of wastewater monitoring systems.

In the longer term, there could be addition of intelligent network monitoring systems and there will be investment into school education programmes.

Figure 15 Short, medium and long-term investment in the Wigton TPU, distributed by option type



5.3.2 TPUs with population less than 2,000: Waver Wampool OC sub catchment

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

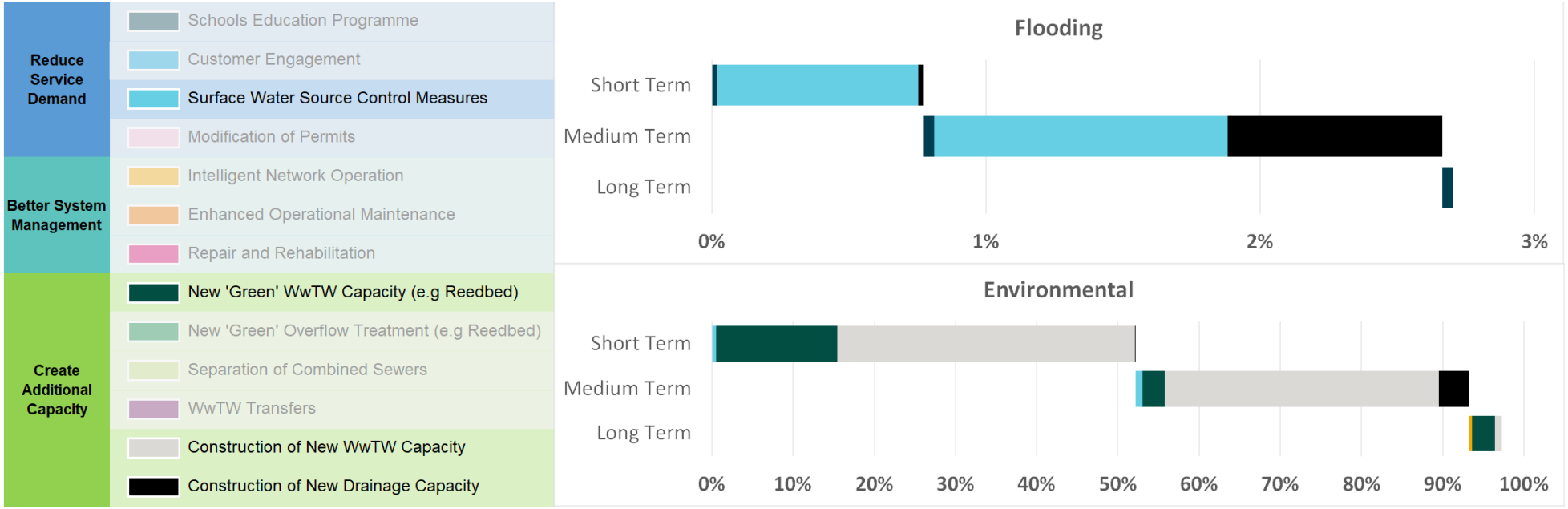
- Abbeytown
- Aikton
- Anthorn
- Bolton Low Houses
- Bromfield
- Fletchertown
- Gamelsby
- Glasson
- Kirkbride
- Newton Arlosh
- Oulton
- Thursby

Over the 25-year investment period within these small TPUs, 97% of the potential investment could be to address environmental risks and 3% of investment could be to address flooding risks (Figure 16).

In the short and medium term the majority of the investment could be wastewater treatment works improvements to ensure permit compliance, and new green treatment capacity. Investment in flooding risks could be largely from surface water control measures.

In the long term, the investment towards green wastewater treatment capacity could continue, with new investment in intelligent network operation solutions. There could be investment in the long term for school education programmes towards the flooding risk.

Figure 16 Short, medium and long-term investment in TPUs with population less than 2,000 (Waver Wampool sub catchment) distributed by option type

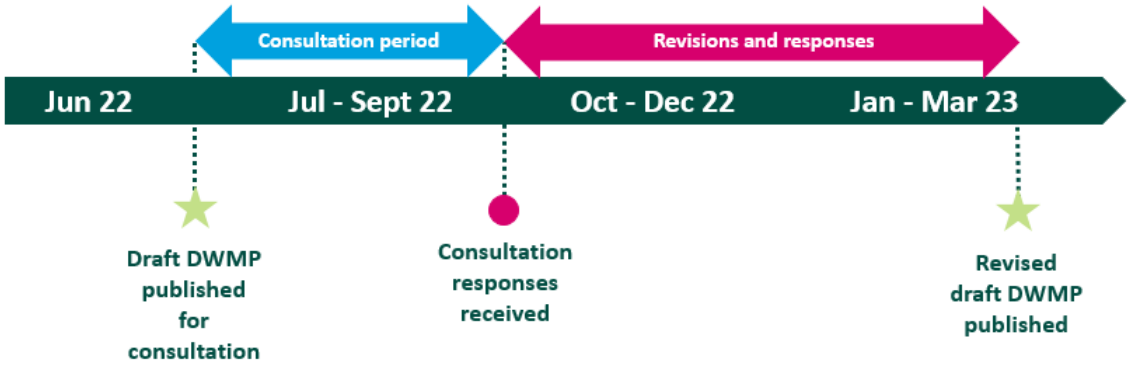


6. Next steps

The DWMP is 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 Waver Wampool SPA.

We are currently at draft publication (Figure 17) 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 17 Timeline between draft and final publication



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

DWMPConsultation@uuplc.co.uk

7. References

[1] https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3109

[2] https://www.westcumbriariverstrust.org/areas/wampool-and-waver

[3] https://wcrt.maps.arcgis.com/apps/MapSeries/index.html?appid=d4bc74ba52a2455695444559164d3eac

[4] https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3109

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/507132/LIT_10218_SOLWAY_TWEED_FRMP_PART_B.pdf

[6] https://www.mycoastline.org.uk/shoreline-management-plans/

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

[8] https://westcumbriacatchmentpartnership.co.uk/projects/waver-wampool/

United Utilities Water Limited / United Utilities Group PLC

Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

unitedutilities.com

United Utilities

Water for the North West