

**United Utilities Water**

# **DRAFT Drainage and Wastewater Management Plan 2023**

## **Irwell DWMP**

**Document Reference: SPA\_05**

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## 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 Irwell SPA.

## 2. Background to the Irwell catchment

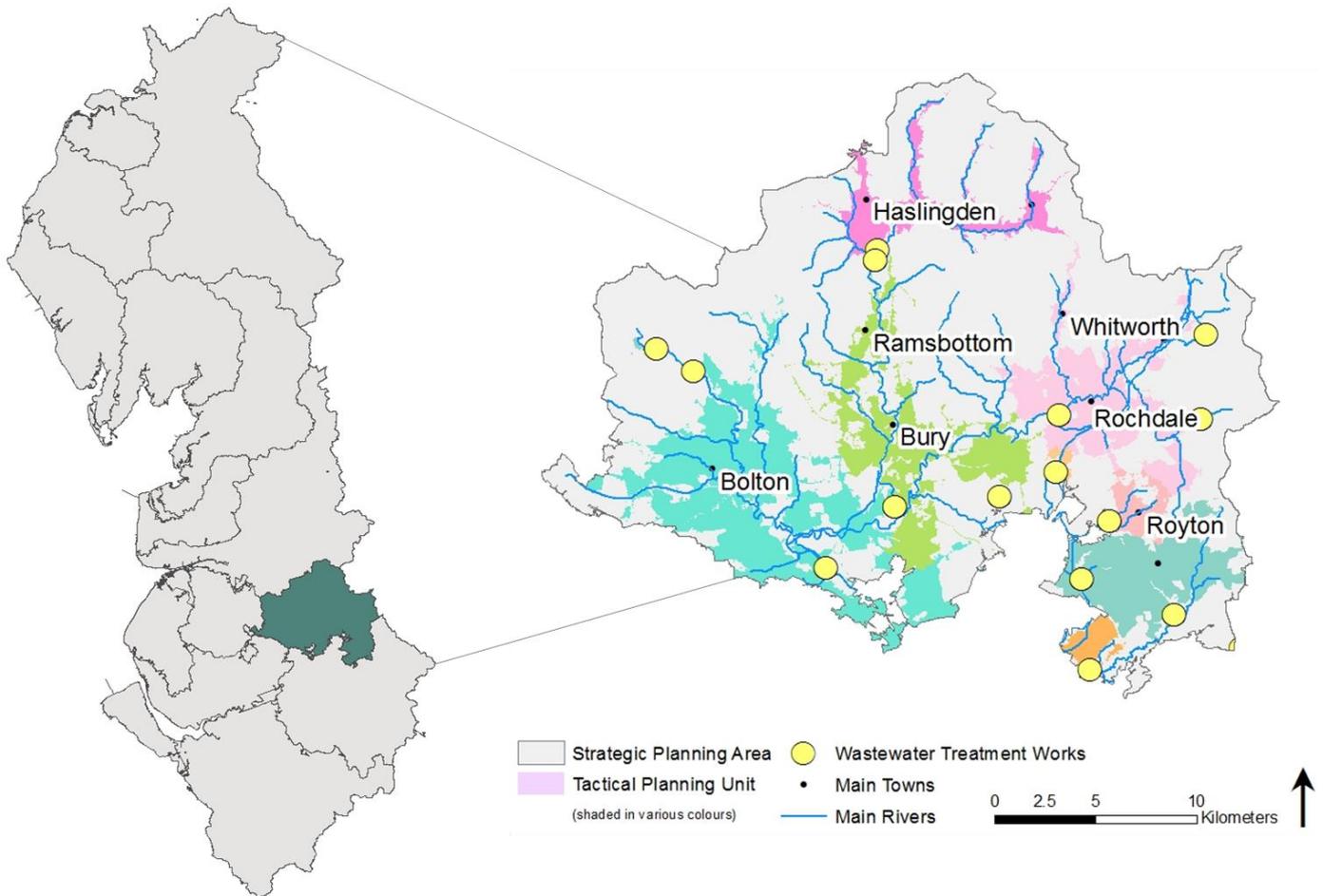
The Irwell catchment area covers a total of 777km<sup>2</sup> north of Manchester. This catchment is dominated by post-industrial and urbanised towns such as Bolton, Bury, Rochdale, Oldham, Manchester and Salford in the south. In the northern part of the catchment, the land is more covered by heather moorland with large areas of pasture <sup>[1]</sup>.

There are two main sub catchments:

- Croal Irwell – Located to the west of the Irwell catchment, this sub catchment includes Rossendale, Bury, Blackburn, Darwen, Bolton, Salford and Trafford. The area is a combination of rural upland in the north, with more heavily urbanised areas in the south, including the Manchester Ship Canal <sup>[2]</sup>.
- Roch Irk Medlock – Located in the east of the Irwell catchment, areas such as Rochdale, Shaw, Heywood and Littleborough are located here in the north, with areas such as Chadderton, Oldham and Failsworth being present in the south <sup>[3]</sup>.

There are 14 wastewater tactical planning units (TPU, also known as wastewater treatment work (WwTW drainage catchments)) within the Irwell 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 Rochdale and Bury to smaller, rural catchments such as Lydgate. The TPUs are highlighted in Figure 3.

**Figure 3 Map of the Irwell SPA**



There are numerous strategic management plans within the Irwell that are owned by various other organisations. Within the Irwell 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); 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 Irwell catchment
<p>River Basin Management Plan (RBMP) <sup>[4]</sup></p> <p><b>Owner:</b> Environment Agency</p>	<p>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.</p>	<p>The main reasons for not achieving good ecological status are physical modifications and pollution from a range of sources such as rural areas, towns, cities, transport and wastewater.</p> <p>Future challenges predicted by the Environment Agency include invasive non-native species, pollution from wastewater and physical modifications.</p>
<p>Flood Risk Management Plan (FRMP) <sup>[5]</sup></p> <p><b>Owner:</b> Environment Agency</p>	<p>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.</p>	<p>Across the Irwell catchment, there are over 75,000 people and 6,000 commercial properties that are at risk of flooding. The majority of the catchment is urbanised, but there is approximately 400Ha of agricultural land at risk of fluvial flood risk.</p> <p>The December 2015 floods affected numerous areas of the catchment such as Bolton, Rossendale, Rochdale, Radcliffe and Littleborough. Since the floods, a programme of recovery is in place, which includes asset inspection and repair, community engagement and investigations to understand flood mechanisms.</p> <p>Economic growth and development in Greater Manchester could present funding opportunities if complimentary options can be identified to reduce flood risk and allow development.</p> <p>Across the Irwell catchment there are 21 measures from earlier plans to manage flood risk.</p>
<p>Surface Water Management Plan (SWMP) <sup>[6]</sup></p> <p><b>Owner:</b> Lead Local Flood Authority (LLFA)</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	

<p>Catchment Based Approach (CaBA) Catchment Plan <sup>[4]</sup><sup>[7]</sup></p> <p><b>Owner:</b> Irwell Catchment Partnership</p>	<p>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.</p>	<p>The Irwell Catchment Partnership has developed the catchment plan, which through a multi-agency approach, aims to maintain, protect, improve, alter or enhance natural features.</p> <p>Pressures in the catchment include physical modifications and pollution from a range of sources such as wastewater, towns, cities and transport. Future pressures include invasive non-native species, physical modifications and pollution from wastewater.</p>
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## 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 Irwell SPA we have engaged with stakeholders such as:

- The Environment Agency;
- Greater Manchester Combined Authority (GMCA); and
- Groundwork (host of the Irwell 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 Irwell catchment are outlined in Section 4.

**Figure 4 DWMP framework for engagement**

### A framework for engagement in the North West



## 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.

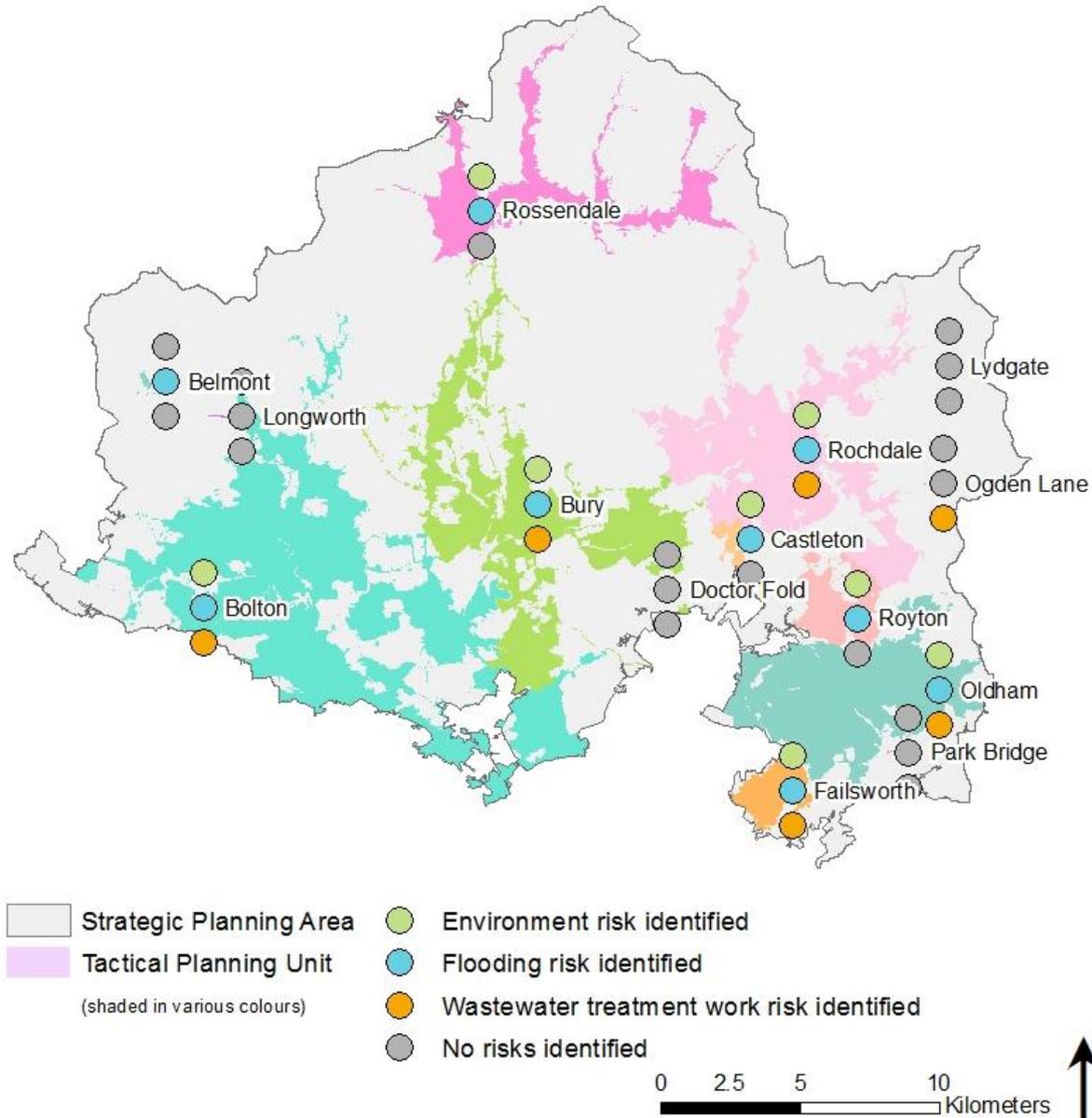
Within the Irwell SPA, the RBCS stage identified 11 out of 14 TPUs that required further investigation and, therefore, passed onto the BRAVA stage (outlined in Section 3.2).

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

- Storm Overflow Assessment Framework – (8/15) – Environment; and
- External Sewer Flooding – (9/15) – Flooding.

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

**Figure 5 Map of the RBCS results for the Irwell 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).

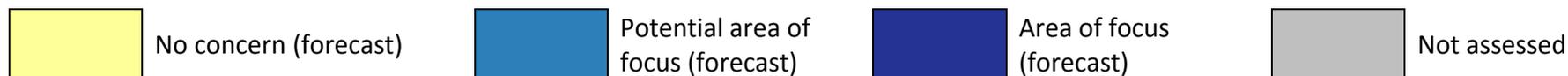
The BRAVA and resilience results for the Irwell catchment are outlined in Table 2 to Table 5.

**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
Belmont						
Bolton						
Bury						
Castleton						
Failsworth						
Ogden Lane						
Oldham						
Park Bridge						
Rochdale						
Rossendale						
Royton						

BRAVA	
	No concern (forecast)
	Potential area of focus (forecast)
	Area of focus (forecast)
	Not assessed/not applicable

Table 3 Flooding BRAVA results



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
Belmont													
Bolton													
Bury													
Castleton													
Failsworth													
Ogden Lane													
Oldham													
Park Bridge													
Rochdale													
Rossendale													
Royton													

**Table 4 Wastewater treatment works BRAVA results**

Tactical Planning Unit	Wastewater Treatment Works		
	Risk to wastewater treatment works (WwTW) capacity		
	2020	2030	2050
Belmont			
Bolton			
Bury			
Castleton			
Failsworth			
Ogden Lane			
Oldham			
Rochdale			
Rossendale			

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
Belmont	More resilient	More resilient	Not assessed
Bolton	More resilient	More resilient	Less resilient
Bury	Less resilient	More resilient	Less resilient
Castleton	More resilient	More resilient	Not assessed
Doctor Fold	Less resilient	Less resilient	Not assessed
Failsworth	More resilient	More resilient	Not assessed
Longworth	More resilient	More resilient	Not assessed
Lydgate	Less resilient	Less resilient	Not assessed
Oldham	Less resilient	Less resilient	Less resilient
Park Bridge	More resilient	More resilient	Not assessed
Rochdale	Less resilient	More resilient	Less resilient
Rossendale	More resilient	More resilient	Less resilient
Royton	More resilient	More resilient	More resilient

Resilience	
More resilient	More resilient
Less resilient	Less resilient
Not assessed	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 Irwell 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.

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

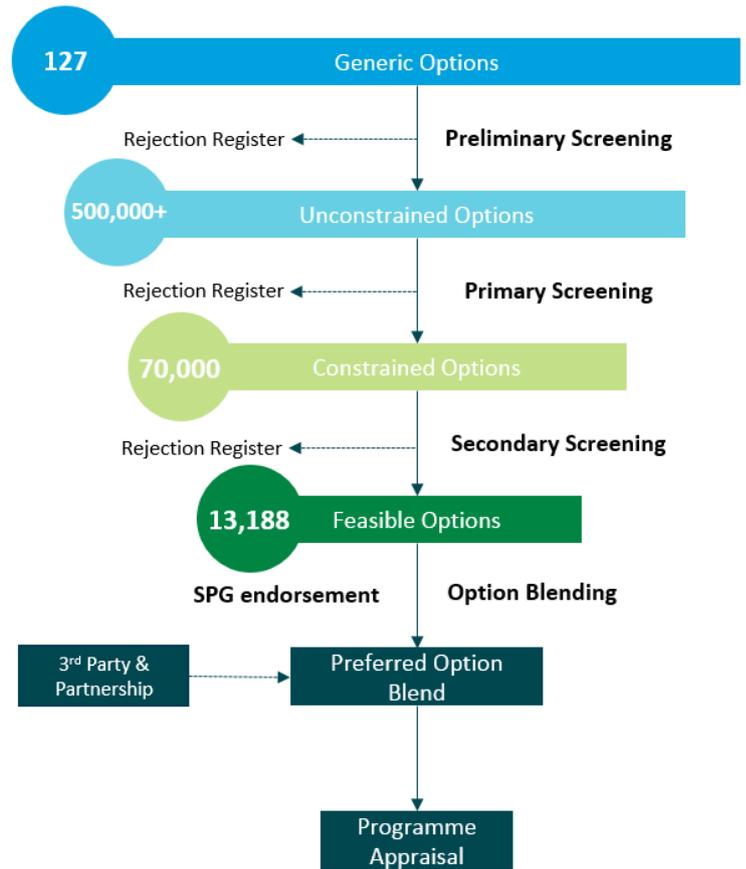


Figure 7 Options hierarchy



### 4.1 Irwell partnership options

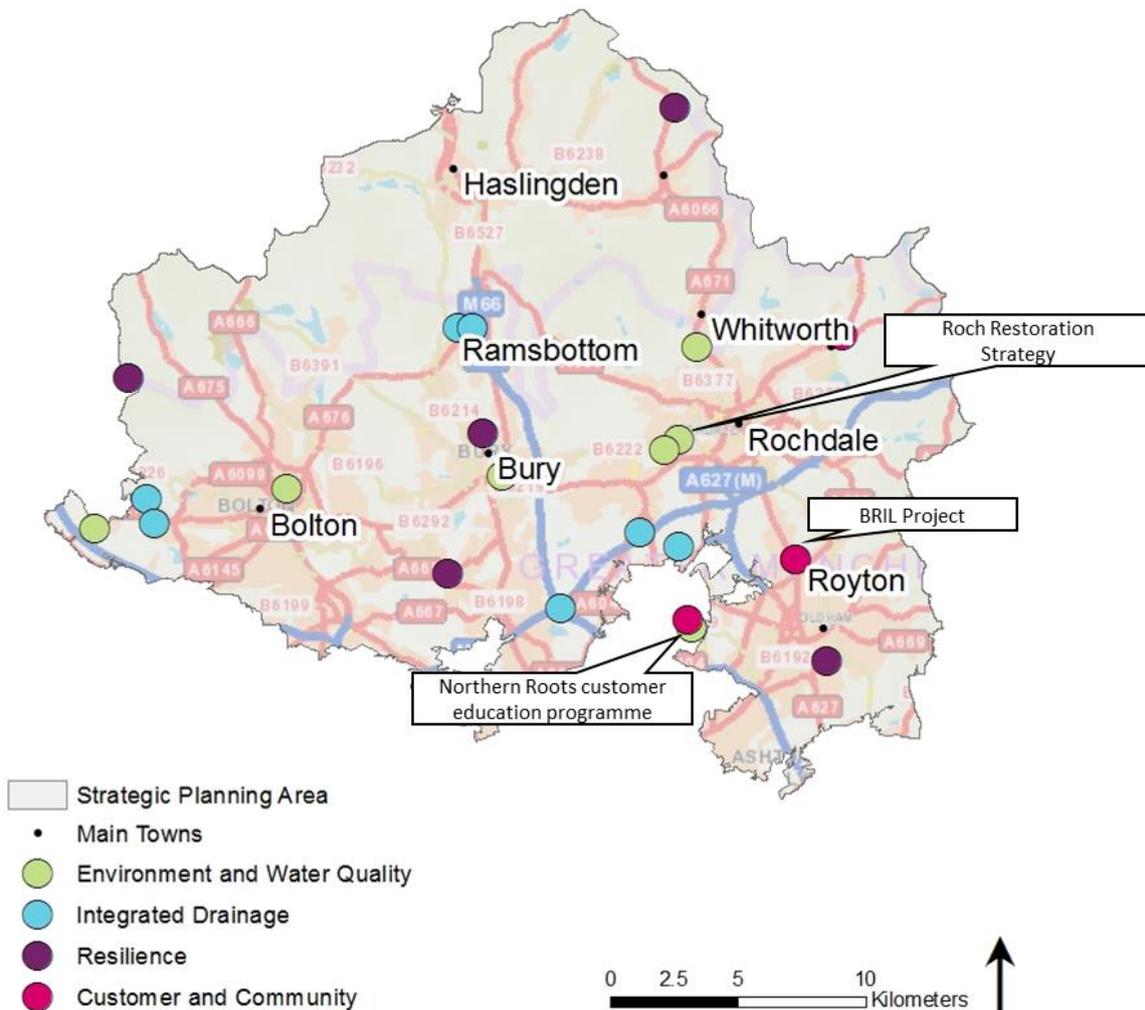
In order to identify and develop potential partnership options in the Irwell SPA, through the SPG we have shared the results from the risk identification stages such as BRAVA. This was done through a series of workshops and the purpose was to identify areas of shared risk and partnership opportunities,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



## 5. Options for the Irwell

### 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 Irwell catchment. Options can be categorised into a number of categories:

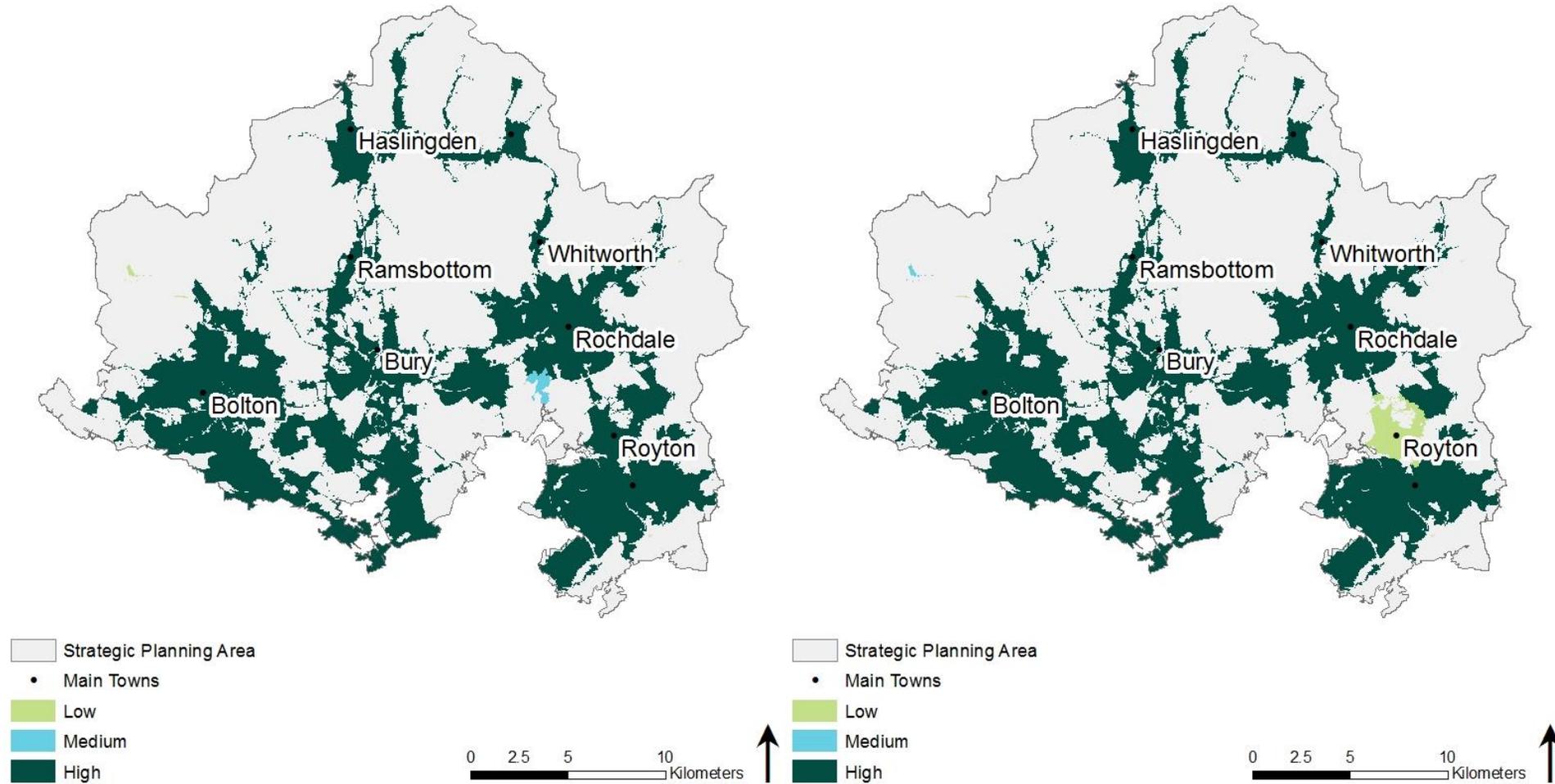
- Customer engagement;
- Monitor and investigate;
- Upstream management;
- Catchment management;
- Operational enhancement;
- Optimisation;
- Refurb/New asset (blue/green); and
- Refurb/New asset (grey).

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 Irwell SPA 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 Rochdale, Bury, Bolton 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 Bury, Rochdale and Bolton TPUs (Figure 9).

Figure 9 Maps show the benefit of implementing regional customer engagement (left) and sustainable drainage solutions (right) options across the Irwell 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 Irwell 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 12 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 11 shows potential options to address environmental planning objectives, which incorporate:

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

Figure 12 shows potential options to address flooding planning objectives, which incorporate:

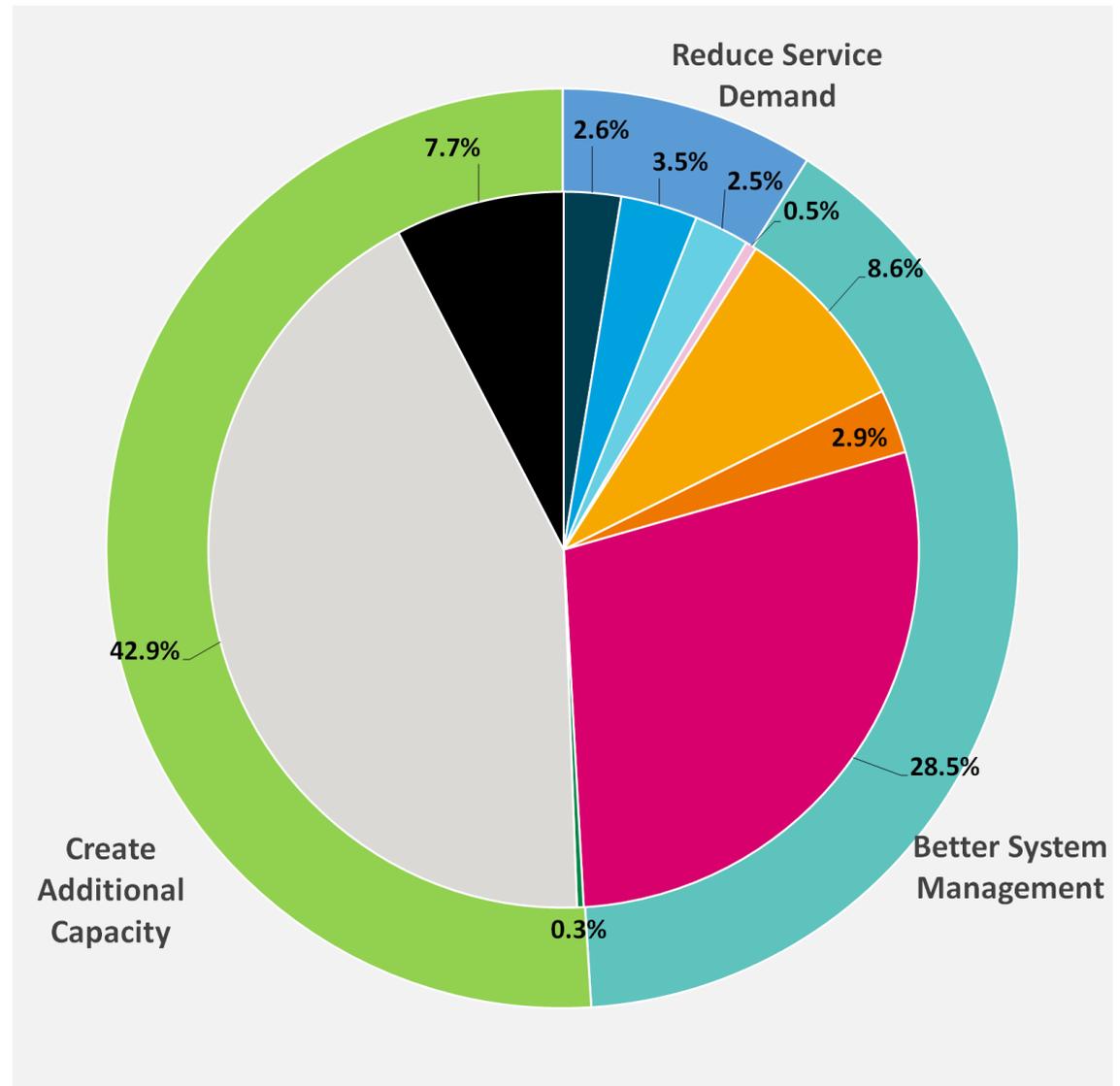
- Internal flooding;
- External flooding;
- Highway and open space flooding; and
- 1 in 50-year flooding.

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 Irwell 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.

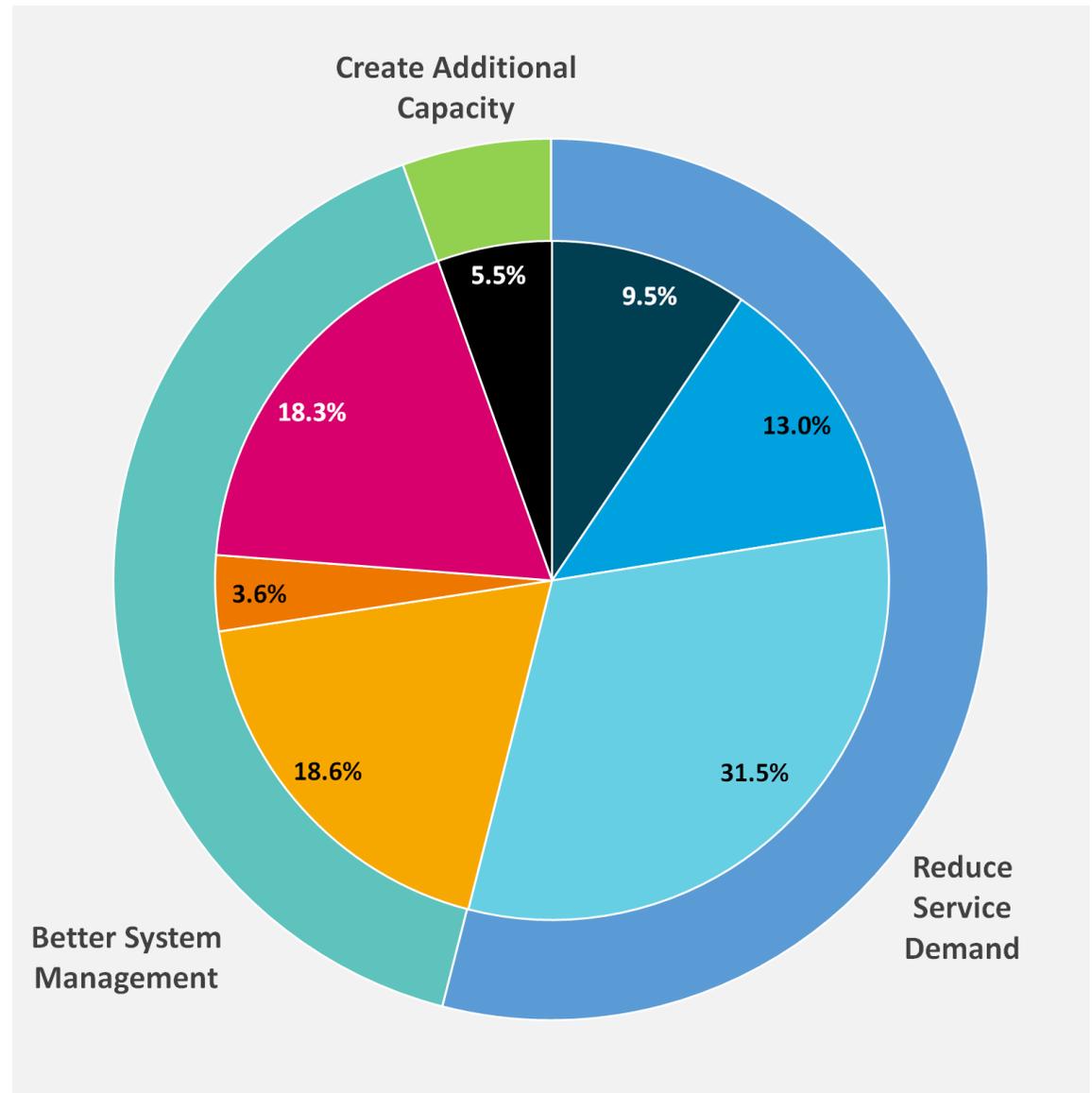


**Figure 12 Irwell Strategic Planning Area: Distribution of flooding investment by option type**

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

Around 5% of potential investment could be in the construction of new drainage capacity. Around 49% could be used to improve existing system management with options such as enhanced maintenance and repair and rehabilitation.

<b>Reduce Service Demand</b>		Schools Education Programme
		Customer Engagement
		Surface Water Source Control Measures
		Modification of Permits
<b>Better System Management</b>		Intelligent Network Operation
		Enhanced Operational Maintenance
		Repair and Rehabilitation
<b>Create Additional Capacity</b>		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

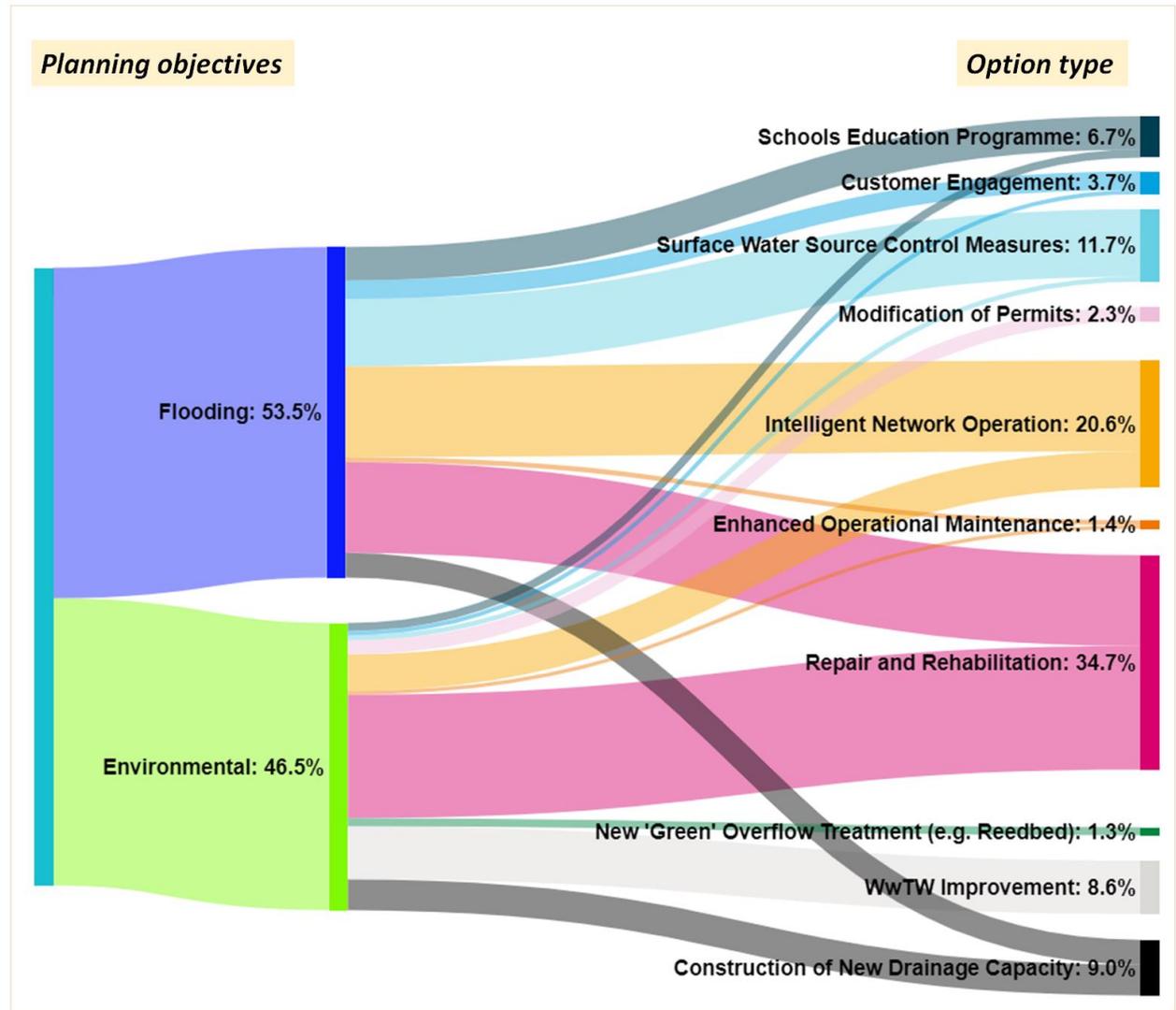
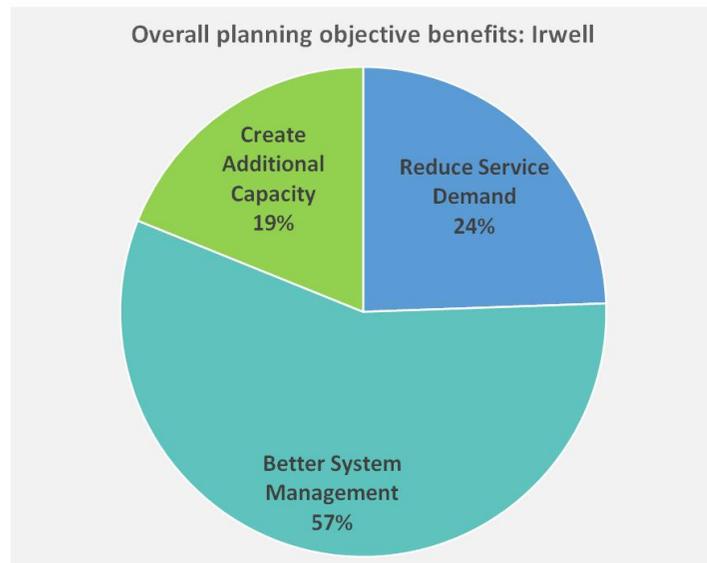


**Figure 13 Distribution of benefit by option type within Irwell SPA**

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

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

Environmental planning objectives could be met through the repair and rehabilitation of existing sewers, improvements to wastewater treatment works, including 'green' wastewater treatment, intelligent network systems, and provision of stormwater storage capacity.

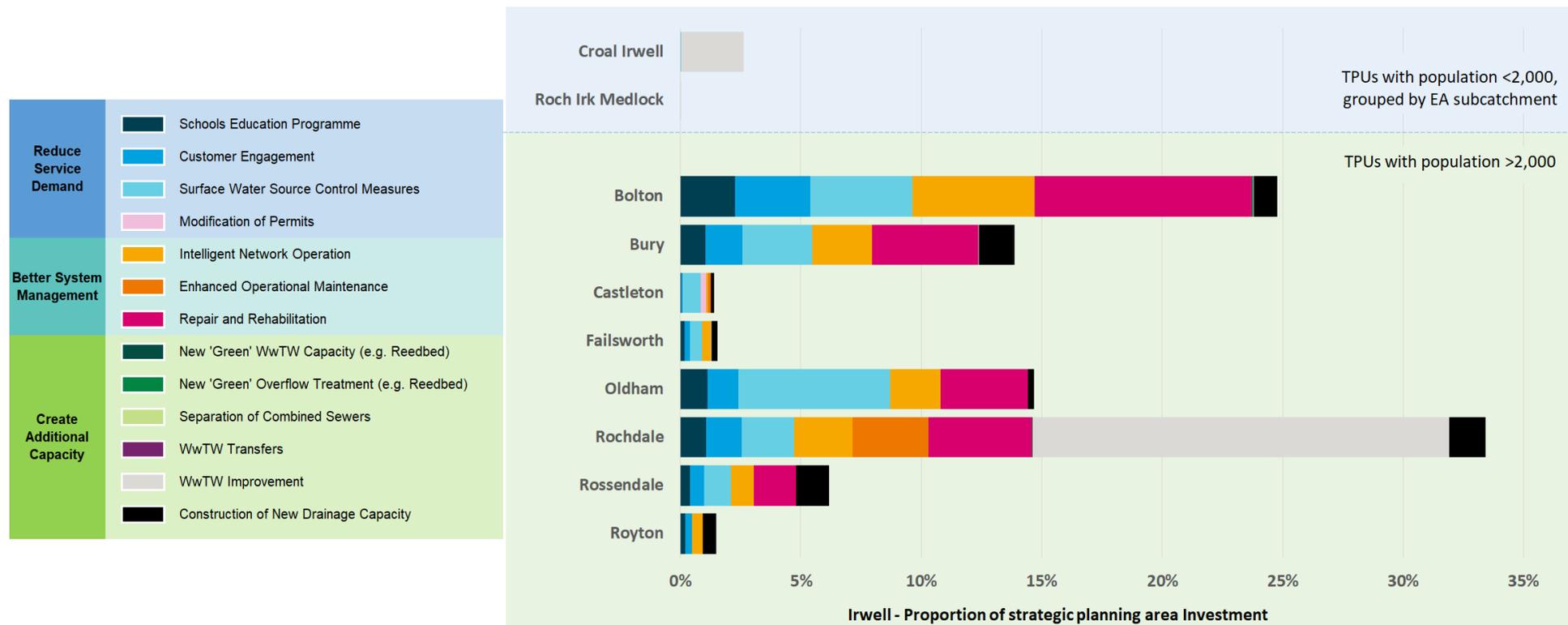


### 5.3 Overview of preferred options in each TPU

Figure 14 shows the proportion of Irwell catchment 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 Irwell catchment, the largest TPUs see the largest potential investment, which is split predominantly between surface water control, improved system management, and wastewater treatment works improvements and new storm water storage tanks.

**Figure 14 Proportion of investment seen in each TPU within the Irwell 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 Bolton

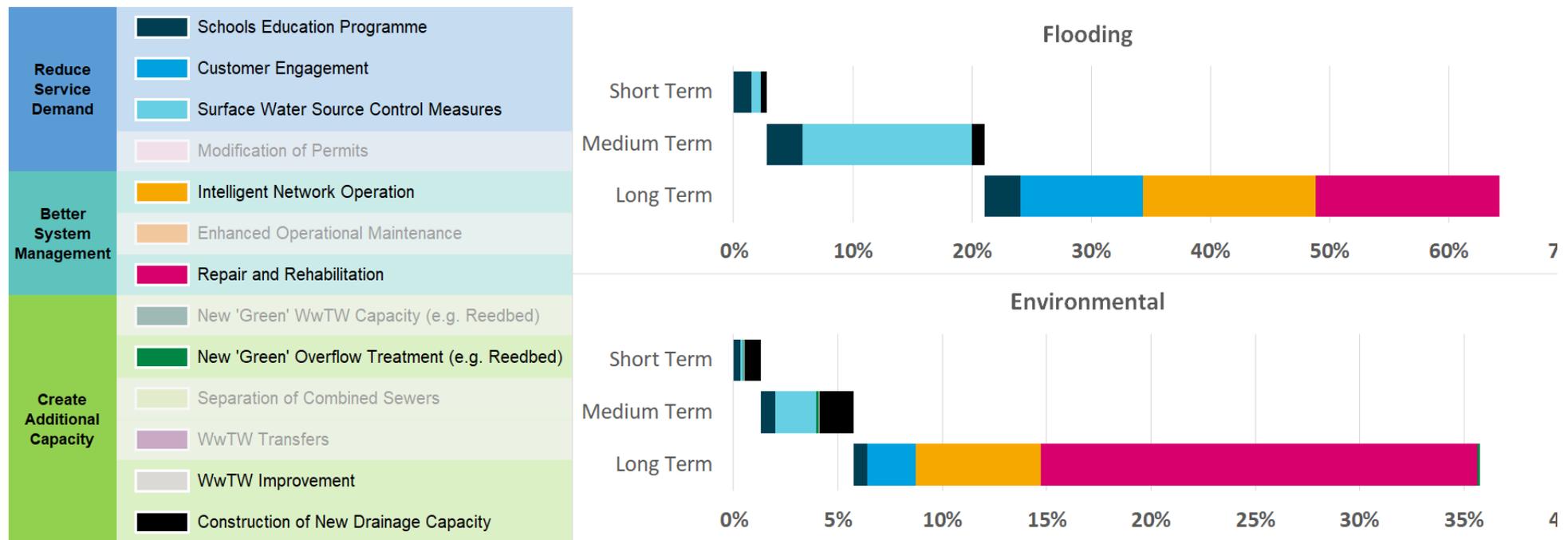
The results from the DWMP show that if we were to invest in Bolton over the next 25 years, around 64% of the investment could be to address flooding risks, and around 36% of investment could be to address environmental risks (Figure 15).

In the short term, potential investments could be through school education programmes with additional new drainage capacity.

In the medium term, school programmes could continue and there could be significant investment in surface water source control measures, such as SuDS.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. Existing sewers could be maintained through repair and rehabilitation programmes. School education programmes could continue and be supplemented by customer engagement programmes.

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



### 5.3.2 Bury

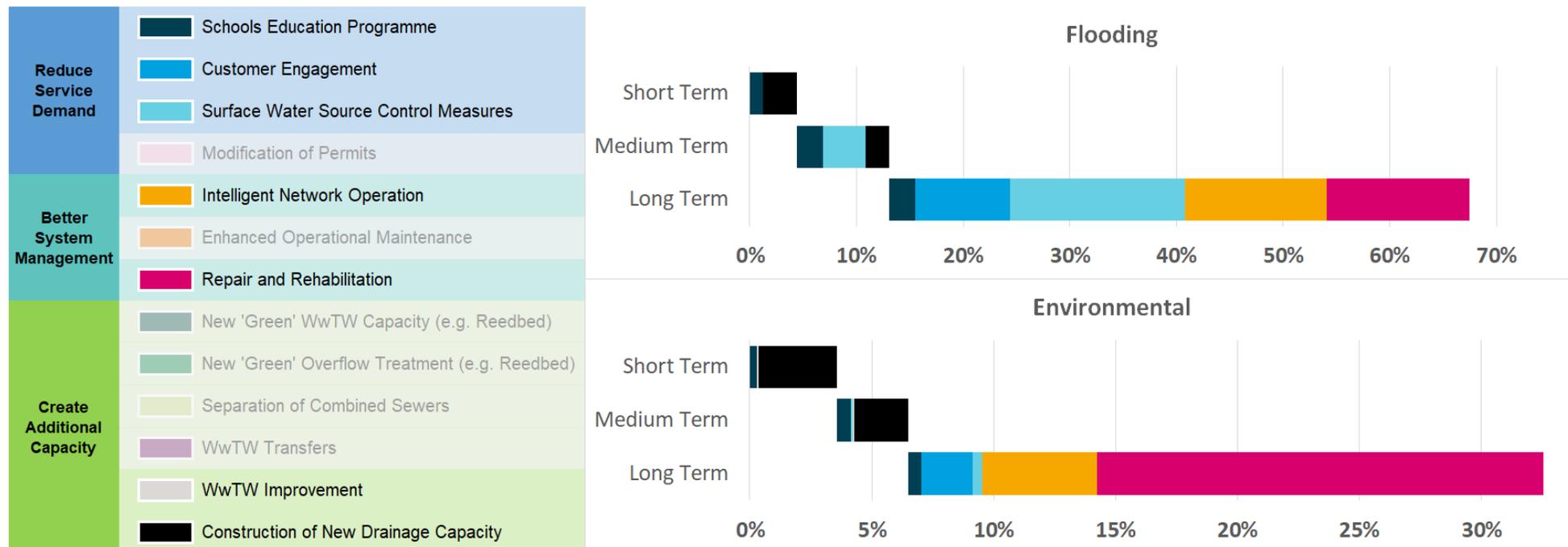
The results from the DWMP show that if we were to invest in Bury over the next 25 years, around 68% of the investment could be to address flooding risks, and around 32% of investment could be to address environmental risks (Figure 16).

In the short term, potential investment could be through construction of new drainage capacity. Flooding risk could be addressed through school education programmes.

In the medium term, school education programmes could continue and drainage capacity will be increased. There could also be investment in surface water source control measures, such as SuDS.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. School education programmes could continue and be supplemented by customer engagement programmes. There could also be investment in the repair and the rehabilitation of the existing network.

**Figure 16 Short, medium and long-term investment in the Bury TPU, distributed by option type**



### 5.3.3 Castleton

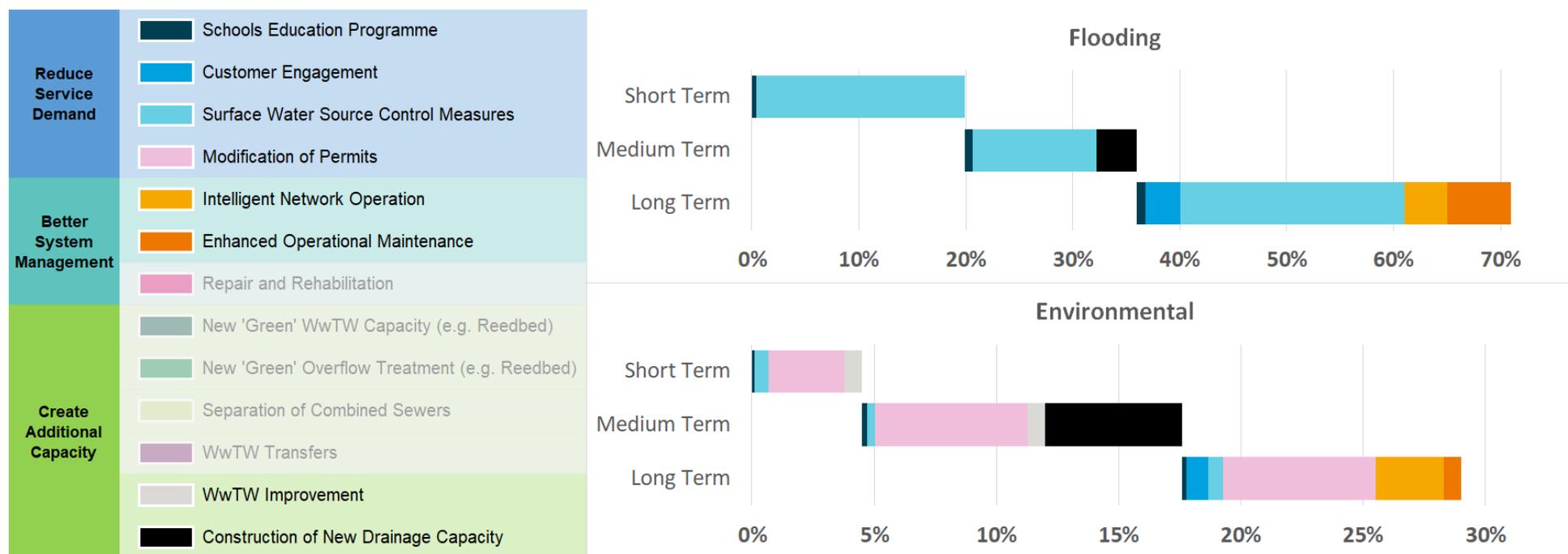
The results from the DWMP show that if we were to invest in Castleton over the next 25 years, around 71% of the investment could be to address flooding risks, and around 29% of investment could be to address environmental risks (Figure 17).

In the short term, potential investment could be through the surface water source control measures such as SuDS and the modification of permits.

In the medium term, school education programmes could be carried out and the drainage capacity in the catchment could be increased.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. Surface water control measures and the modification of the permits could continue to be carried out.

**Figure 17 Short, medium and long-term investment in the Castleton TPU, distributed by option type**



### 5.3.4 Failsworth

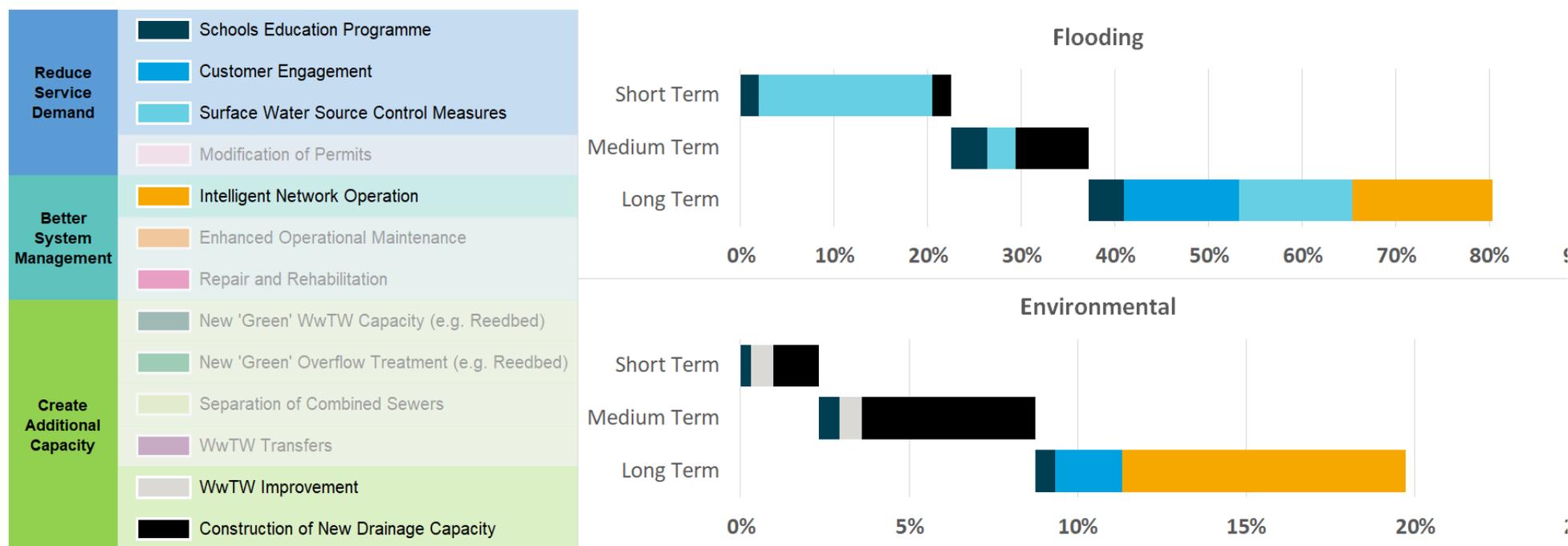
The results from the DWMP show that if we were to invest in Failsworth over the next 25 years, around 80% of the investment could be to address flooding risks, and around 20% of investment could be to address environmental risks (Figure 18).

In the short term, potential investment could be through the creation of new surface water source control measures, school education programmes, wastewater treatment works improvements to ensure permit compliance, and additional drainage capacity.

In the medium term, investments could be through addition of new drainage capacity. School education programmes could also continue.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. School education programmes could continue and be supplemented by customer engagement programmes. More surface water source control measures could be introduced.

**Figure 18 Short, medium and long-term investment in the Failsworth TPU, distributed by option type**



### 5.3.5 Oldham

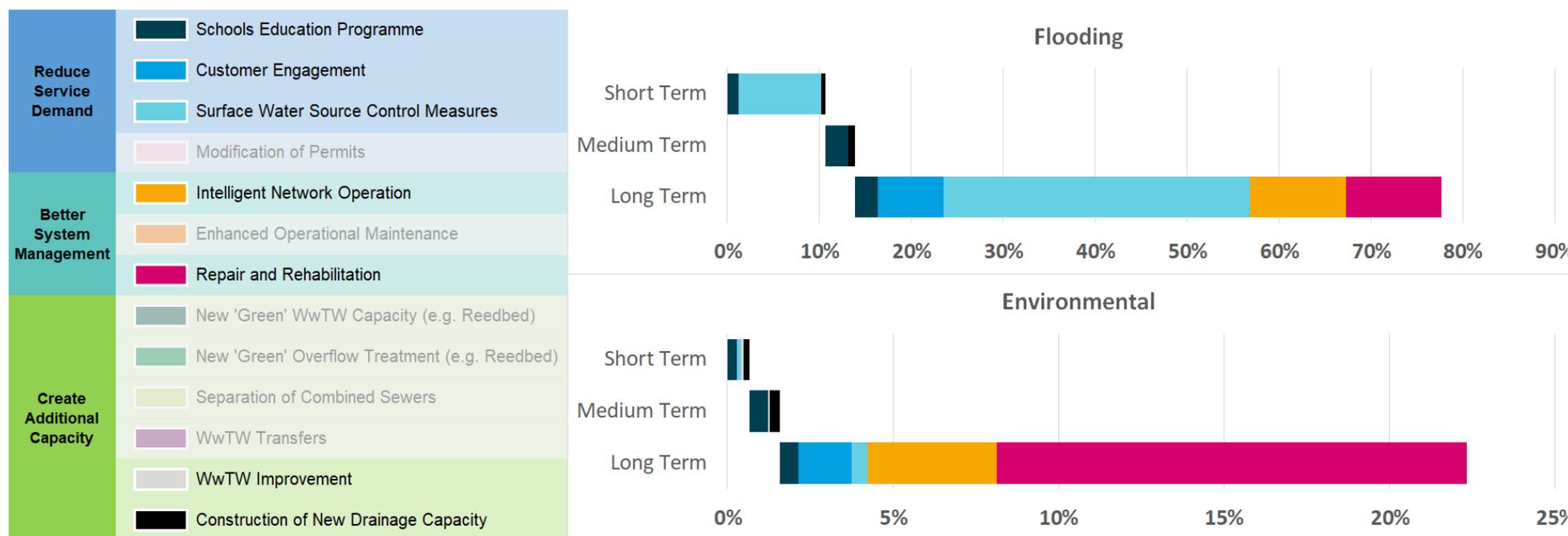
The results from the DWMP show that if we were to invest in Oldham over the next 25 years, around 78% of the investment in Oldham could be to address flooding risks, and around 22% of investment could be to address environmental risks (Figure 19).

In the short term, potential investment could be through the creation of new surface water source control measures, school education programmes and the construction additional drainage capacity.

In the medium term, investments could be through school education programmes and the construction of new drainage capacity.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. More surface water control measures could be introduced. There could also be investment for the repair and the rehabilitation of the existing network.

**Figure 19 Short, medium and long-term investment in the Oldham TPU, distributed by option type**



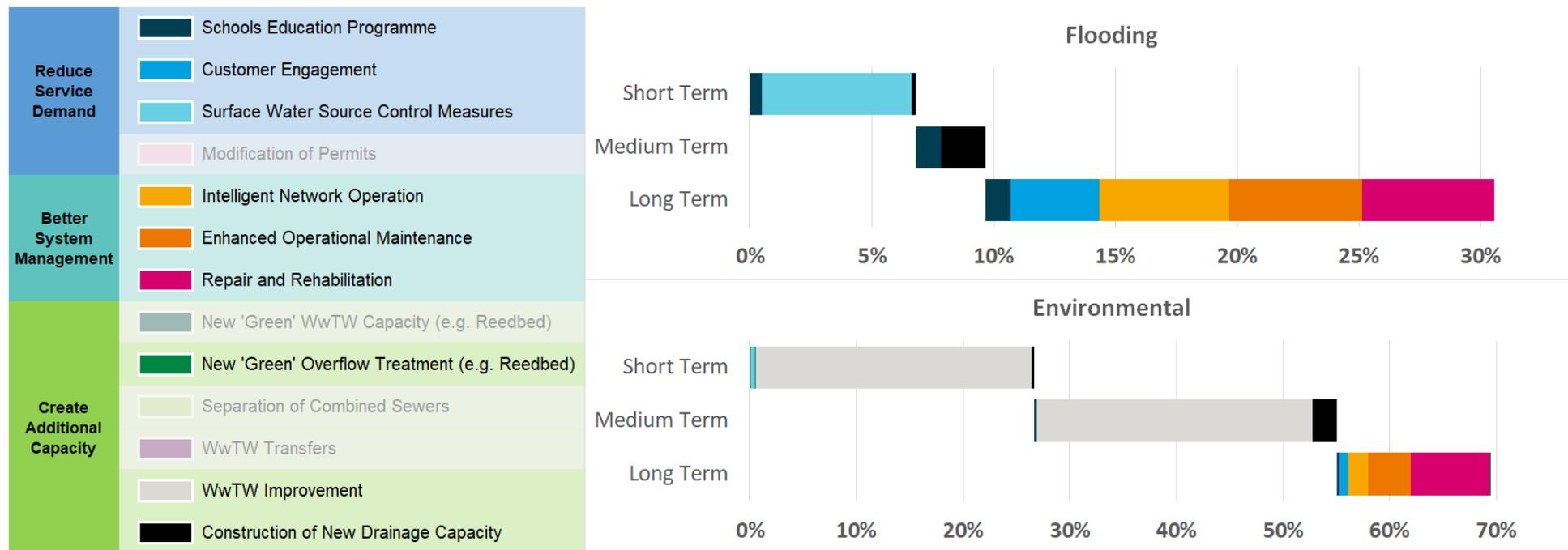
### 5.3.6 Rochdale

The results from the DWMP show that if we were to invest in Rochdale over the next 25 years, around 31% of the investment could be to address flooding risks, and around 69% of investment could be to address environmental risks (Figure 20).

In the short and medium term, potential investment to address flooding risks could be through the creation of new surface water source control measures, construction of new network capacity and investment in school education programmes. Environmental risks could be addressed primarily through wastewater treatment works improvements to ensure permit compliance.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. There could be new customer engagement programmes and also investment for the repair and the rehabilitation of the existing network.

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



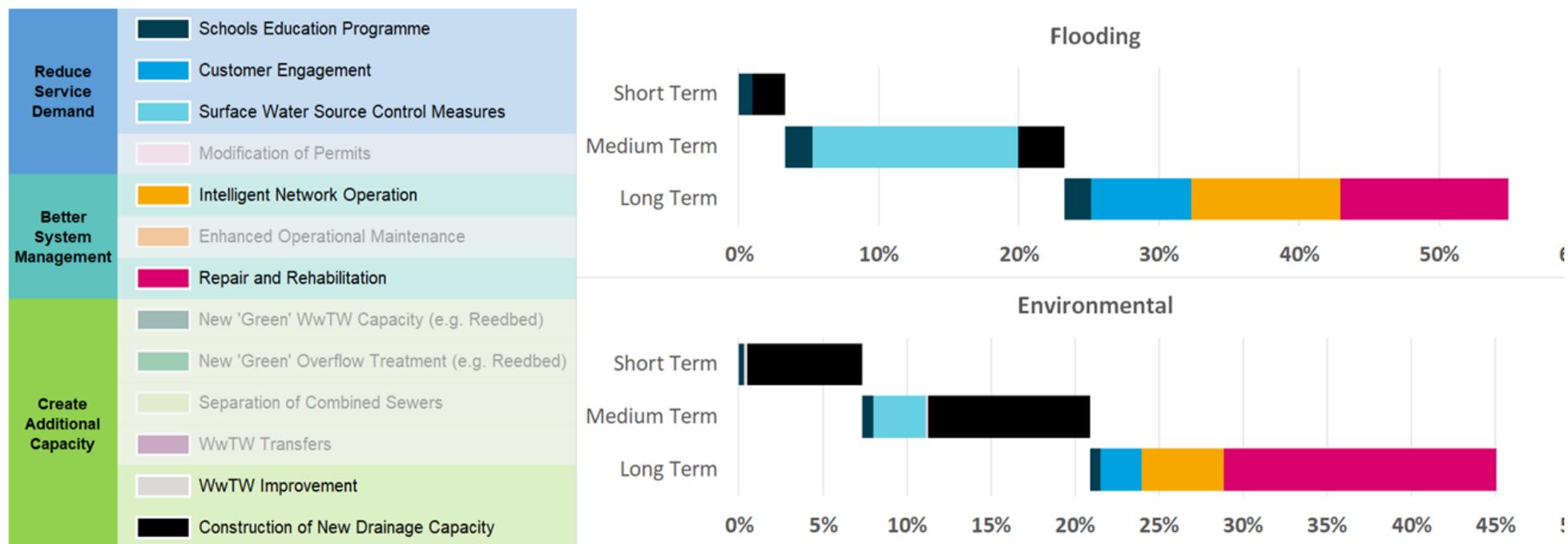
### 5.3.7 Rossendale

The results from the DWMP show that if we were to invest in Rossendale over the next 25 years, around 55% of the investment could be to address flooding risks, and around 45% of investment could be to address environmental risks (Figure 21).

In the short and medium term, investments to address flooding risks could be through the creation of new surface water source control measures. Environmental risks could be addressed primarily through the construction of new drainage capacity.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. There could be new customer engagement programmes and also investment for the repair and the rehabilitation of the existing network.

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



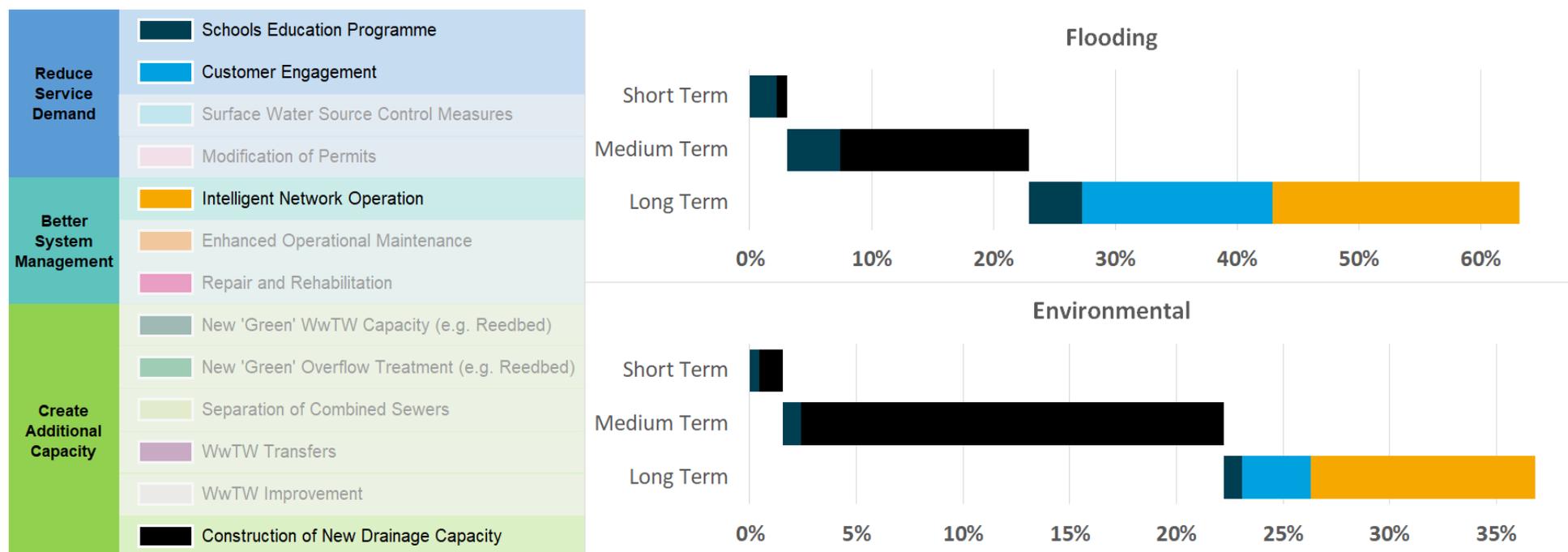
### 5.3.8 Royton

The results from the DWMP show that if we were to invest in Royton over the next 25 years, around 63% of the investment in Royton could be to address flooding risks, and around 37% of the investment could be to address environmental risks (Figure 22).

In the short and medium term, potential investment to address flooding and environmental risks could be through the construction of new network capacity (e.g. new sewers and storage tanks) and school education programmes.

In the longer term, the existing intelligent network monitoring systems that are already in place could be replaced or updated. There could also be customer engagement.

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



### 5.3.9 TPUs with population less than 2,000: Croal Irwell sub catchment

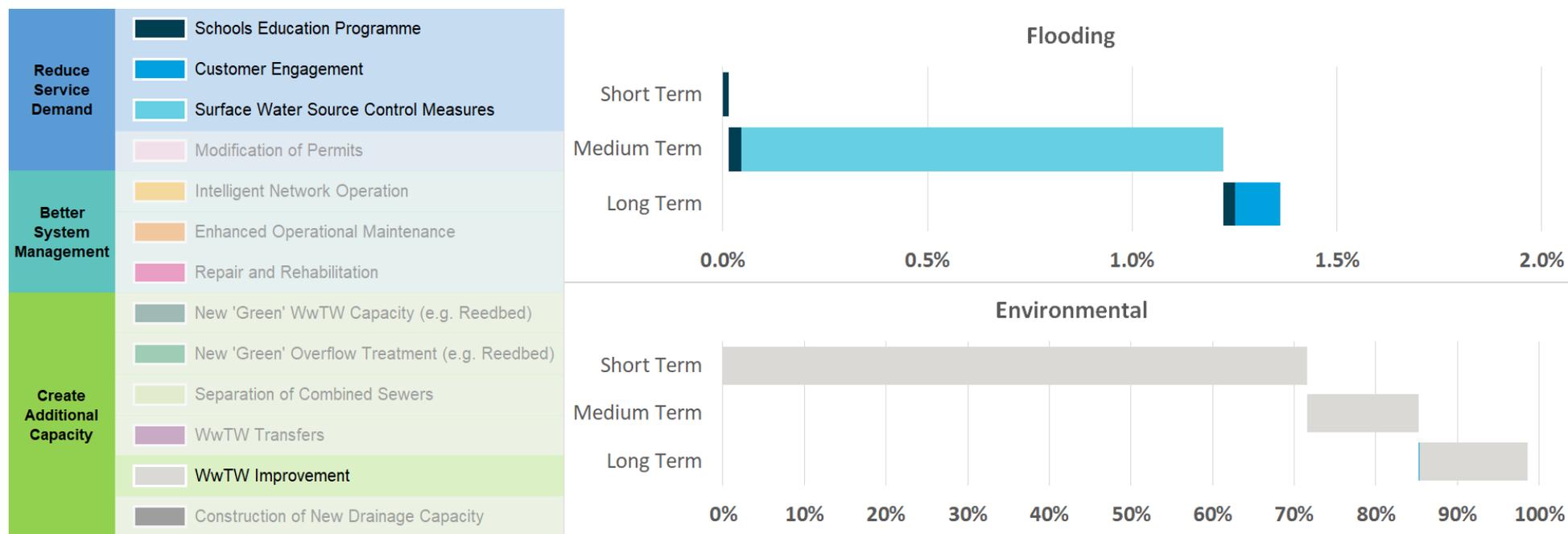
The following TPUs each have a population of less than 2,000, and have, therefore, been grouped together:

- Belmont
- Longworth

99% of the investment in these small TPUs could be to address environmental risks, and 1% of investment could be to address flooding risks (Figure 23).

Short, medium and long-term investments in these small TPUs could be through wastewater treatment works improvements to ensure permit compliance. A portion of investment could be towards surface water source control measures and customer engagement.

**Figure 23 Short, medium and long-term investment in TPUs with population less than 2,000 (Croal Irwell sub catchment) distributed by option type**



### 5.3.10 TPUs with population less than 2,000: Roch Irk Medlock sub catchment

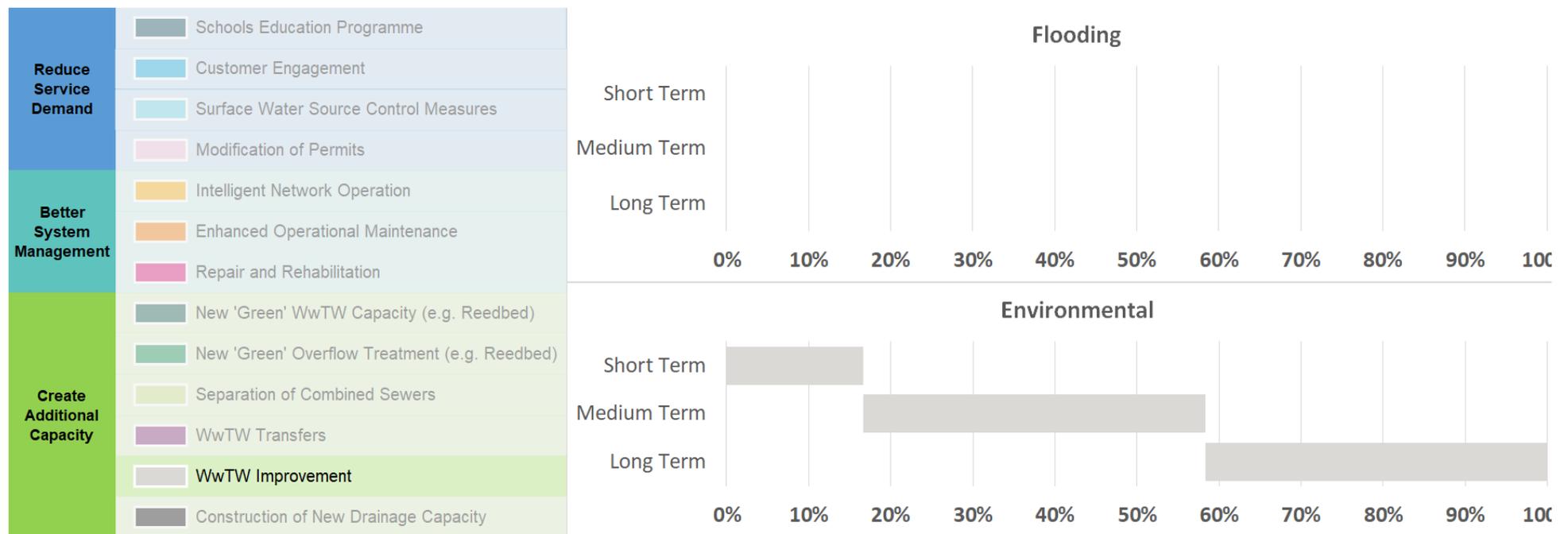
The following TPUs each have a population of less than 2,000, and have, therefore, been grouped together:

- Doctor Fold
- Lydgate
- Ogden Lane
- Park Bridge

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

All short, medium and long-term potential investments in these small TPUs could be wastewater treatment works improvements.

**Figure 24 Short, medium and long-term investment in TPUs with population less than 2,000 (Roch Irk Medlock sub catchment) distributed by option type**



## 6. 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 Irwell SPA.

We are currently at draft publication (Figure 25) 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 25 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**

## 7. References

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- [2] <https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3116>
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- [7] <https://catchmentbasedapproach.org/wp-content/uploads/2019/09/Irwell-Catchment-Plan-2019-2027.pdf>

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