

United Utilities Water

Drainage and Wastewater Management Plan

Upper Mersey DWMP

Document Reference: SPA_11

May 2023

Contents

1. Introduction to the DWMP	5
2. Background to the Upper Mersey catchment.....	7
2.1 Strategic Planning Group (SPG).....	11
3. Risk identification	12
3.1 Risk Based Catchment Screening (RBCS) and horizon scan	12
3.2 Baseline Risk and Vulnerability Assessment (BRAVA) and resilience	13
3.3 Problem characterisation.....	22
4. Options development	51
4.1 Upper Mersey partnership opportunities.....	52
5. Options for the Upper Mersey	56
5.1 WINEP development	56
5.2 Options considered within the DWMP	67
5.3 Other projects and investment.....	107
6. Embedding the DWMP.....	108
7. References.....	109

Tables

Table 1 Summary of stakeholder management plans.....	9
Table 2 Environmental BRAVA results.....	14
Table 3 Flooding BRAVA results.....	16
Table 4 Wastewater treatment works BRAVA results.....	18
Table 5 Environmental and flooding resilience results	20
Table 6 Examples of data that change over time and can impact upon the plan	25
Table 7 Examples of data that change over time and can impact upon the plan	30
Table 8 Examples of data that change over time and can impact upon the plan	35
Table 9 Examples of data that change over time and can impact upon the plan	40
Table 10 Examples of data that change over time and can impact upon the plan.....	48

Figures

Figure 1 Geographical scales applied for planning and collaboration within DWMP	5
Figure 2 Five stages of the DWMP.....	6
Figure 3 Map of the Upper Mersey SPA	7
Figure 4 DWMP framework for engagement	11
Figure 5 Map of the RBCS results for the Upper Mersey. Risk categories indicate areas triggering further investigation following RBCS.....	13
Figure 6 Map of the Knutsford TPU	23
Figure 7 Knutsford adaptive planning process	24

Figure 8 Knutsford adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time	27
Figure 9 Map of the Macclesfield TPU.....	28
Figure 10 Macclesfield adaptive planning process.....	29
Figure 11 Macclesfield adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time	32
Figure 12 Map of the Wilmslow TPU	33
Figure 13 Wilmslow adaptive planning process	34
Figure 14 Wilmslow adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time	37
Figure 15 Map of the Salford TPU	38
Figure 16 Salford adaptive planning process.....	39
Figure 17 Salford adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time.....	42
Figure 18 Map of the Manchester West area, with each TPU shown as a unique colour. The Eccles and Northbank TPUs are not formally included in Manchester West from a strategic growth perspective, but may still form part of the adaptive plan.....	43
Figure 19 Map of the Davyhulme TPU.....	44
Figure 20 Map of the Timperley Wedge development	45
Figure 21 Map of the New Carrington development	46
Figure 22 Manchester West adaptive planning process	47
Figure 23 Manchester West adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time	50
Figure 24 Options development process.....	51
Figure 25 Options hierarchy	51
Figure 26 Overview of the potential partnership opportunities in the Upper Mersey.....	53
Figure 27 Overview of the IGNITION project.....	54
Figure 28 Upper Mersey place based planning pilot case study	55
Figure 29 Potential benefits to the North West as a result of the WINEP	57
Figure 30 Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030.....	58
Figure 31 Option types	67
Figure 32 Map of the benefit of implementing regional customer engagement (left) and sustainable drainage (right) options across the Upper Mersey	69
Figure 33 Distribution of environmental investment by option type within the Upper Mersey	71
Figure 34 Distribution of flooding investment by option type within the Upper Mersey	72
Figure 35 Distribution of benefit by option type within the Upper Mersey	73
Figure 36 Proportion of investment seen in each TPU within the Upper Mersey	74
Figure 37 Details of the DWMP investment plan for Alderley Edge	75
Figure 38 Details of the DWMP investment plan for Altrincham.....	76
Figure 39 Details of the DWMP investment plan for Ashton-under-Lyne	77
Figure 40 Details of the DWMP investment plan for Bowden	78
Figure 41 Details of the DWMP investment plan for Chapel-en-le-Frith	79
Figure 42 Details of the DWMP investment plan for Davyhulme	80

Figure 43 Details of the DWMP investment plan for Dukinfield	81
Figure 44 Details of the DWMP investment plan for Dunham Massey.....	82
Figure 45 Details of the DWMP investment plan for Eccles.....	83
Figure 46 Details of the DWMP investment plan for Glossop.....	84
Figure 47 Details of the DWMP investment plan for Great Warford	85
Figure 48 Details of the DWMP investment plan for Hayfield	86
Figure 49 Details of the DWMP investment plan for Hazel Grove	87
Figure 50 Details of the DWMP investment plan for Hyde	88
Figure 51 Details of the DWMP investment plan for Knutsford.....	89
Figure 52 Details of the DWMP investment plan for Low Marple	90
Figure 53 Details of the DWMP investment plan for Macclesfield	91
Figure 54 Details of the DWMP investment plan for Mobberley.....	92
Figure 55 Details of the DWMP investment plan for Mossley	93
Figure 56 Details of the DWMP investment plan for Northbank	94
Figure 57 Details of the DWMP investment plan for Partington.....	95
Figure 58 Details of the DWMP investment plan for Saddleworth	96
Figure 59 Details of the DWMP investment plan for Sale	97
Figure 60 Details of the DWMP investment plan for Salford	98
Figure 61 Details of the DWMP investment plan for Stockport.....	99
Figure 62 Details of the DWMP investment plan for Stretford	100
Figure 63 Details of the DWMP investment plan for Urmston	101
Figure 64 Details of the DWMP investment plan for Whaley Bridge	102
Figure 65 Details of the DWMP investment plan for Wilmslow.....	103
Figure 66 Location of Environment Agency operational catchments within Upper Mersey SPA	104
Figure 67 Details of the DWMP investment plan for the Goyt, Etherow, Tame OC	105
Figure 68 Details of the DWMP investment plan for the Bollin, Dean, Upper Mersey OC	106
Figure 69 Overview of the Better Rivers: Better North West project	107
Figure 70 Timeline of key milestones	108

Glossary

For the glossary, refer to document C003.

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. Whilst long term planning for wastewater has always been undertaken, this is the first time that we are developing a region wide plan in this format, and we have taken a comprehensive approach as we recognise the importance of long-term planning and the increasing need for partnership solutions.

The heart of the plan will be built around collaborative and innovative working, while 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.

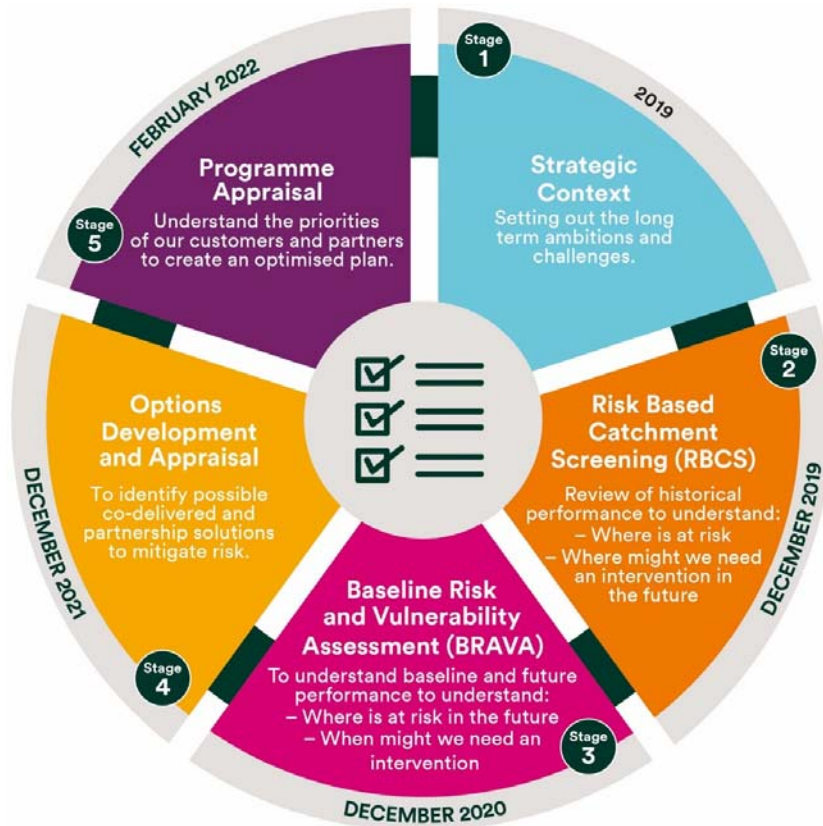
The plan will be set out at three levels (Figure 1) to maximise the potential for partnership working and for effective engagement between regulators and stakeholders at both company-wide level and more locally.

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 Upper Mersey SPA.

2. Background to the Upper Mersey catchment

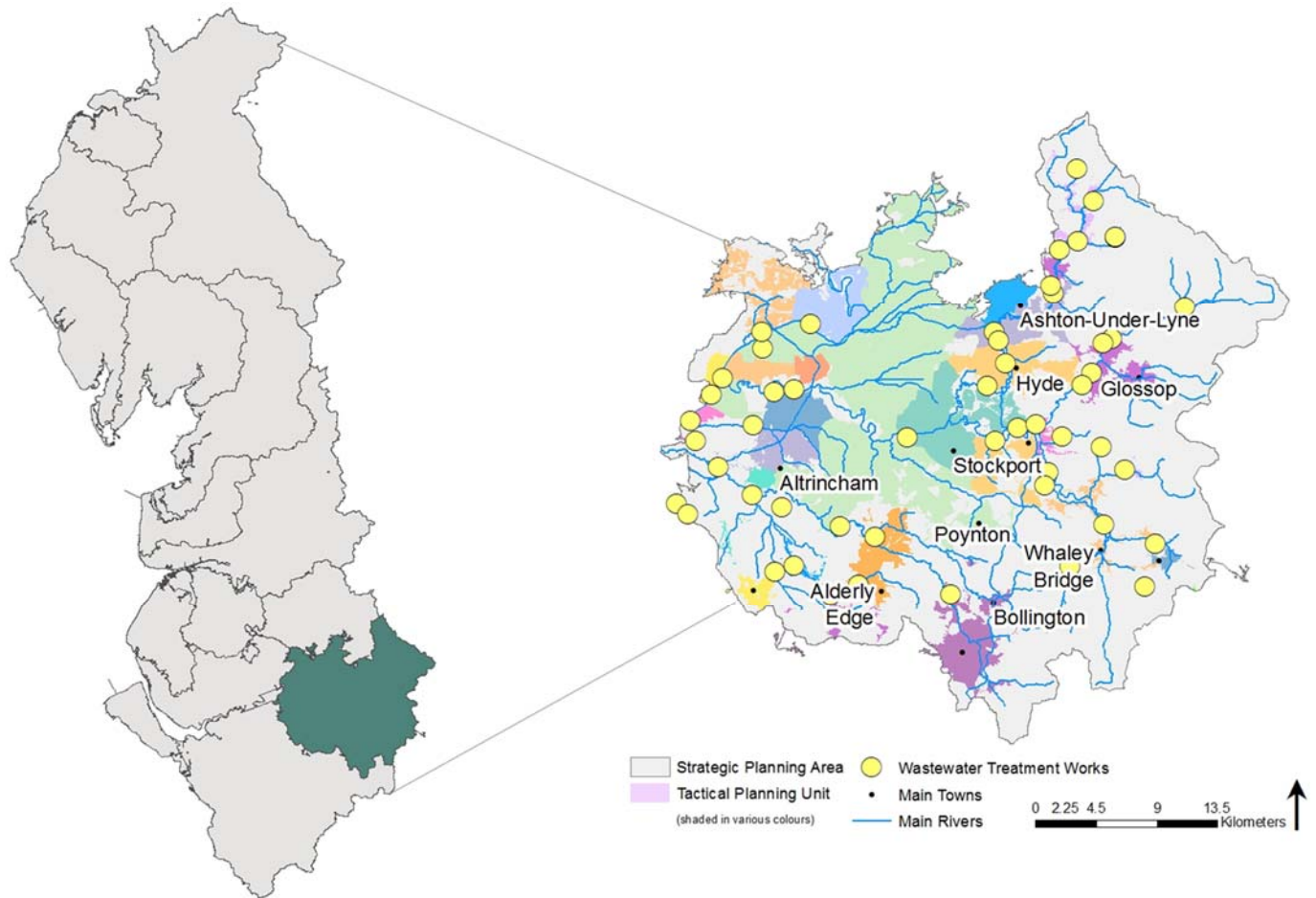
The Upper Mersey is a large catchment (1182km²) in the south-east of the region incorporating a significant area of Greater Manchester and parts of the South Pennine Moors ^[1]. The catchment has varied land use ranging from rural areas in the south-east such as Whaley Bridge and Buxton as well as semi-urban areas such as Alderley Edge and Knutsford and urban areas such as Stockport and Altrincham. The catchment is host to the Rivers Etherow, Goyt and Tame as well as the Rivers Bollin and Dean ^[1].

There are two main operational sub catchments in the Upper Mersey:

- Bollin Dean Mersey Upper – the sub catchment is on the western side of the Upper Mersey catchment and runs from the edge of the Peak District National Park to the Manchester ship canal ^[2].
- Goyt Etherow Tame – the sub catchment is on the eastern side of the Upper Mersey and runs through large portions of heavily modified water courses in Greater Manchester towards the Manchester Ship Canal.

There are 48 wastewater tactical planning units (TPU), also known as wastewater treatment works (WwTW drainage catchments) within the Upper Mersey SPA. A TPU is the drainage area including all the sewers and wastewater assets e.g. pumping stations, which drain to the associated wastewater treatment works. The TPUs within the SPA vary in size from larger catchments such as Davyhulme to smaller, rural catchments such as High Legh. The TPUs are highlighted in Figure 3.

Figure 3 Map of the Upper Mersey SPA



There are numerous strategic management plans within the Upper Mersey that are owned by various other organisations. Within the Upper Mersey 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 align with other strategic plans throughout the catchment. 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 Upper Mersey catchment
<p>River Basin Management Plan (RBMP)^[3]</p> <p>Owner: 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 rural areas, towns, cities, transport and wastewater.</p> <p>Future challenges predicted by the Environment Agency include invasive non-native species, physical modifications and pollution from a range of sources.</p> <p>Future challenges predicted by partnerships include pollution from towns, cities, transport, wastewater, agriculture and rural areas.</p>
<p>Flood Risk Management Plan (FRMP)^[4]</p> <p>Owner: 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>The catchment is within the North West River Basin District (RBD). The area covers approximately 13,200km² and is occupied by close to seven million people. More than 370,000 of these people being at risk from flooding by rivers and the sea with a further 600,000 people at risk of surface water flooding.</p> <p>Around 35,000 people are thought to be living in areas that are deemed high risk of flooding from surface water with a further 97,500 at a moderate risk. 31,000 people are living in areas at are high risk of flooding due to rivers and the sea with a further 46,500 at a moderate risk.</p> <p>Areas of significant flood risk across the North West RBD include Ambleside, Ashton under Lyne, Atherton, Blackburn, Burnley, Ellesmere Port, Formby, High Folds, Kendal and Liverpool.</p> <p>Ashton-under-Lyne has significant flood risk identified via surface water. This is largely due to high intensity rainfall events in low-lying areas with impermeable ground and a limited capacity drainage system. Sewer flooding was recorded in June 2020 following bad weather events in Greater Manchester. Around 4,489 people in areas that are at risk from surface water flooding, with there being 1,870 residential properties and 4,465 non-residential properties being at risk.</p> <p>The North West RBD has a large amount of reservoirs credited to its industrial history, there are currently approximately 290 in the region that are classed as large raised reservoirs. 300,000 people are at risk of flooding from reservoirs in the North West.</p>

Management Plan	Overview	Key aspects for the Upper Mersey catchment
<p>Surface Water Management Plan (SWMP) ^[5]</p> <p>Owner: 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. 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 ^[6]</p> <p>Owner: Upper Mersey 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 catchment partnership's mission is to:</p> <ul style="list-style-type: none"> • promote and encourage the preservation, restoration, and development of urban and rural waterways and environment for the benefit of the public; and • promote the use and access of waterways for social interests and recreation. <p>The Upper Mersey covers a varied area of rural, intensely urban and semi-urban land. The watercourses in the Upper Mersey have classifications that fall between good and poor (based on 2016 data). The majority of waterbodies in the catchment, approximately 70%, are classified as moderate. The good classifications are in the upland areas to the east of the catchment, with the poor classified waters being found in the low lying, more urbanised areas near Manchester and Stockport.</p>

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 benefits 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.

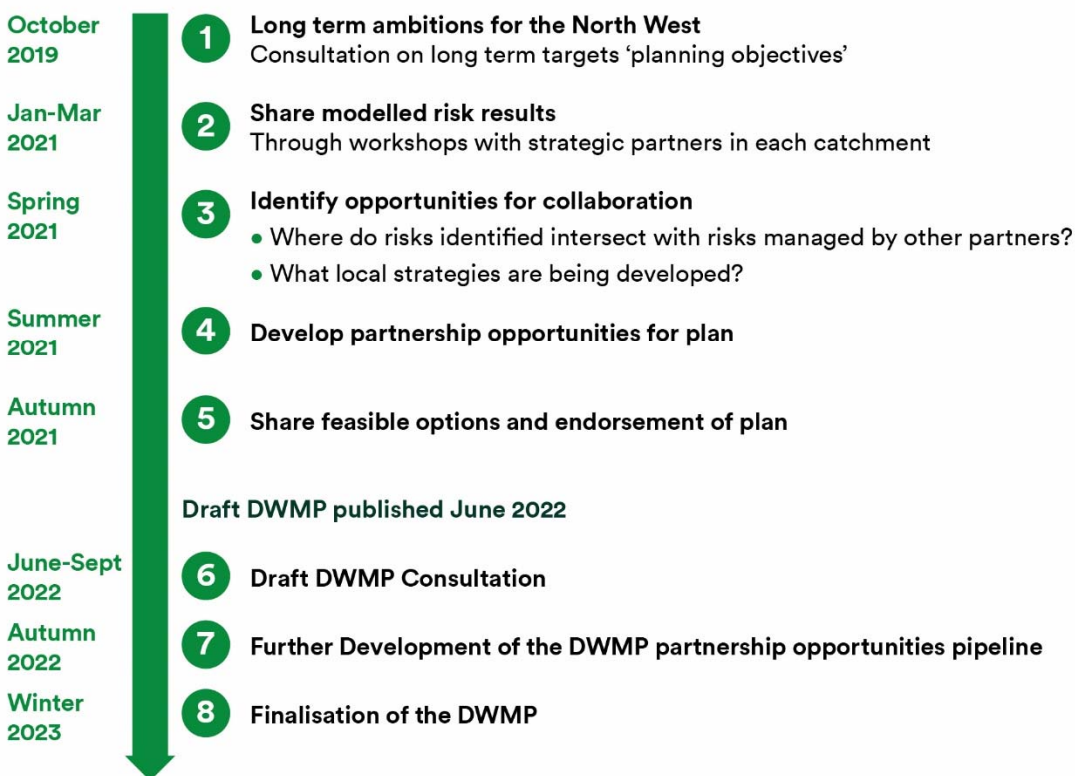
Within the Upper Mersey catchment, we have engaged with stakeholders such as:

- The Environment Agency;
- Greater Manchester Combined Authority (GMCA); and
- Mersey Rivers Trust (host of the Upper Mersey 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 Upper Mersey catchment are outlined in section 4.1.

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.

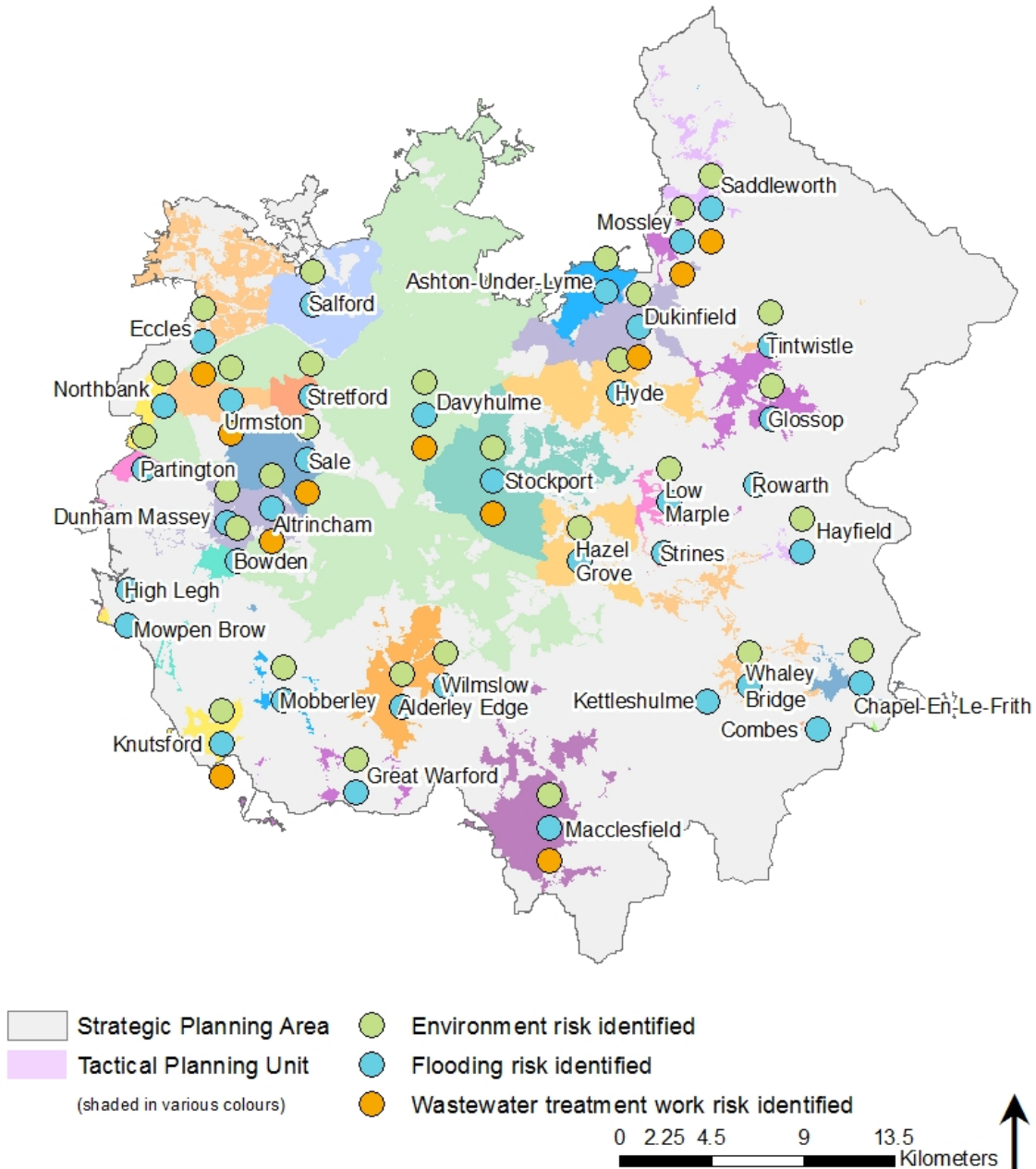
Within the Upper Mersey catchment, the RBCS stage identified 36 out of 48 TPUs that required further investigation and therefore passed onto the BRAVA stage (outlined in section 3.2).

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 Upper Mersey, which is supported by the highest-triggered RBCS assessments which are:

- Storm Overflow Assessment Framework – (30/48) – Environment; and
- External Sewer Flooding – (33/48) – Flooding.

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

Figure 5 Map of the RBCS results for the Upper Mersey. 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 Upper Mersey catchment are outlined in Table 2 to Table 5.

Table 2 Environmental BRAVA results

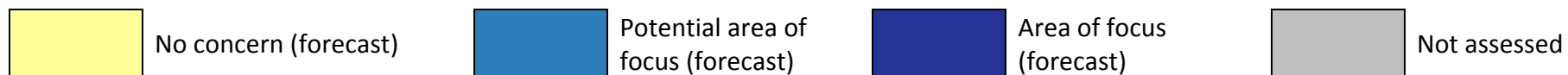
BRAVA	
	No concern (forecast)
	Potential area of focus (forecast)
	Area of focus (forecast)
	Not assessed/not applicable

Tactical Planning Unit	Environmental					
	Pollution Assessment	Storm Overflow Performance		Bathing and Shellfish Spill Assessment		
	2020	2020	2050	2020	2030	2050
Alderley Edge						
Altrincham						
Ashley						
Ashton-Under-Lyne						
Bowden						
Chapel-en-le-Frith						
Combes						
Davyhulme						
Dukinfield						
Dunham Massey						
Eccles						
Glossop						
Great Warford						
Hayfield						
Hazel Grove						
High Legh						
Hyde						

Tactical Planning Unit	Environmental					
	Pollution Assessment	Storm Overflow Performance		Bathing and Shellfish Spill Assessment		
	2020	2020	2050	2020	2030	2050
Kettleshulme						
Knutsford						
Low Marple						
Macclesfield						
Mobberley						
Mossley						
Mowpen Brow						
Northbank						
Partington						
Rowarth						
Saddleworth						
Sale						
Salford						
Stockport						
Stretford						
Strines						
Tintwistle						
Urmston						
Whaley Bridge						
Wilmslow						

Table 3 Flooding BRAVA results

Key



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
Alderley Edge	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue
Altrincham	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	Dark Blue	No concern	Dark Blue	No concern	No concern	No concern	Potential
Ashley	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Dark Blue	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Potential
Ashton-Under-Lyne	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	No concern	No concern	No concern	Dark Blue
Bowden	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	No concern
Chapel-en-le-Frith	Dark Blue	Dark Blue	Dark Blue	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern
Combes	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	No concern	Not assessed	Not assessed	Not assessed	Not assessed	Not assessed	Dark Blue
Davyhulme	Potential	Dark Blue	Dark Blue	Potential	Potential	Dark Blue	Dark Blue	No concern	No concern	No concern	No concern	No concern	Dark Blue
Dukinfield	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	No concern	No concern	No concern	No concern	Dark Blue	Potential
Dunham Massey	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	No concern
Eccles	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	No concern	No concern	Dark Blue	Potential
Glossop	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	No concern	No concern	Potential	Dark Blue	Dark Blue	Dark Blue
Great Warford	Potential	Potential	Dark Blue	No concern	No concern	Dark Blue	No concern	No concern	No concern	Dark Blue	Dark Blue	Dark Blue	No concern
Hayfield	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern	No concern
Hazel Grove	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Potential	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Potential
Heron Lane	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Not assessed	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Not assessed
High Legh	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	No concern	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Potential
Hyde	Potential	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	Dark Blue	No concern	No concern	No concern	No concern	No concern	Potential

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
Kettleshulme													
Knutsford													
Low Marple													
Macclesfield													
Mobberley													
Mossley													
Mowpen Brow													
Northbank													
Partington													
Rowarth													
Saddleworth													
Sale													
Salford													
Stockport													
Stretford													
Strines													
Tintwistle													
Urmston													
Whaley Bridge													
Wilmslow													

Table 4 Wastewater treatment works BRAVA results

Tactical Planning Unit	Wastewater Treatment Works		
	Risk to wastewater treatment works (WwTW) capacity		
	2020	2030	2050
Alderley Edge			
Altrincham			
Ashton-Under-Lyne			
Bowden			
Chapel-en-le-Frith			
Davyhulme			
Dukinfield			
Dunham Massey			
Eccles			
Glossop			
Great Warford			
Hayfield			
Hazel Grove			
High Legh			
Hyde			
Knutsford			
Low Marple			
Macclesfield			
Mobberley			
Mossley			

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

Tactical Planning Unit	Wastewater Treatment Works		
	Risk to wastewater treatment works (WwTW) capacity		
	2020	2030	2050
Mowpen Brow			
Northbank			
Partington			
Saddleworth			
Sale			
Salford			
Stockport			
Stretford			
Urmston			
Whaley Bridge			
Wilmslow			

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
Alderley Edge			
Altrincham			
Ashley			
Ashton-Under-Lyne			
Bowden			
Castleshaw			
Chapel-en-le-Frith			
Combes			
Davyhulme			
Dukinfield			
Dunham Massey			
Eccles			
Glossop			
Great Warford			
Hayfield			
Hazel Grove			
High Legh			
Hyde			
Kettleshulme			
Knutsford			

Resilience	
	More resilient
	Less resilient
	Not assessed

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
Low Marple			
Macclesfield			
Mobberley			
Mossley			
Northbank			
Partington			
Rowarth			
Saddleworth			
Sale			
Salford			
Stockport			
Stretford			
Strines			
Tintwistle			
Urmston			
Whaley Bridge			
Wilmslow			

3.3 Problem characterisation

3.3.1 Complex catchments

Complex catchments were determined through problem characterisation using a combination of complex and strategic catchment scores based on strategic need (largely derived from growth and climate forecast models) and modelled risks in each of the TPUs (largely based on BRAVA). Within the Upper Mersey, three TPUs were identified to be 'complex' based on problem characterisation:

- Knutsford;
- Macclesfield; and
- Salford.

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 there are a number of TPUs in the Upper Mersey catchment which have been identified as either having 'strategic growth' or being linked to potential solutions to nearby growth, and for the purpose of this document, they have been grouped together as the 'Manchester West' area. The key TPUs are:

- Altrincham;
- Davyhulme;
- Partington;
- Sale;
- Stretford; and
- Urmston.

3.3.3 Knutsford

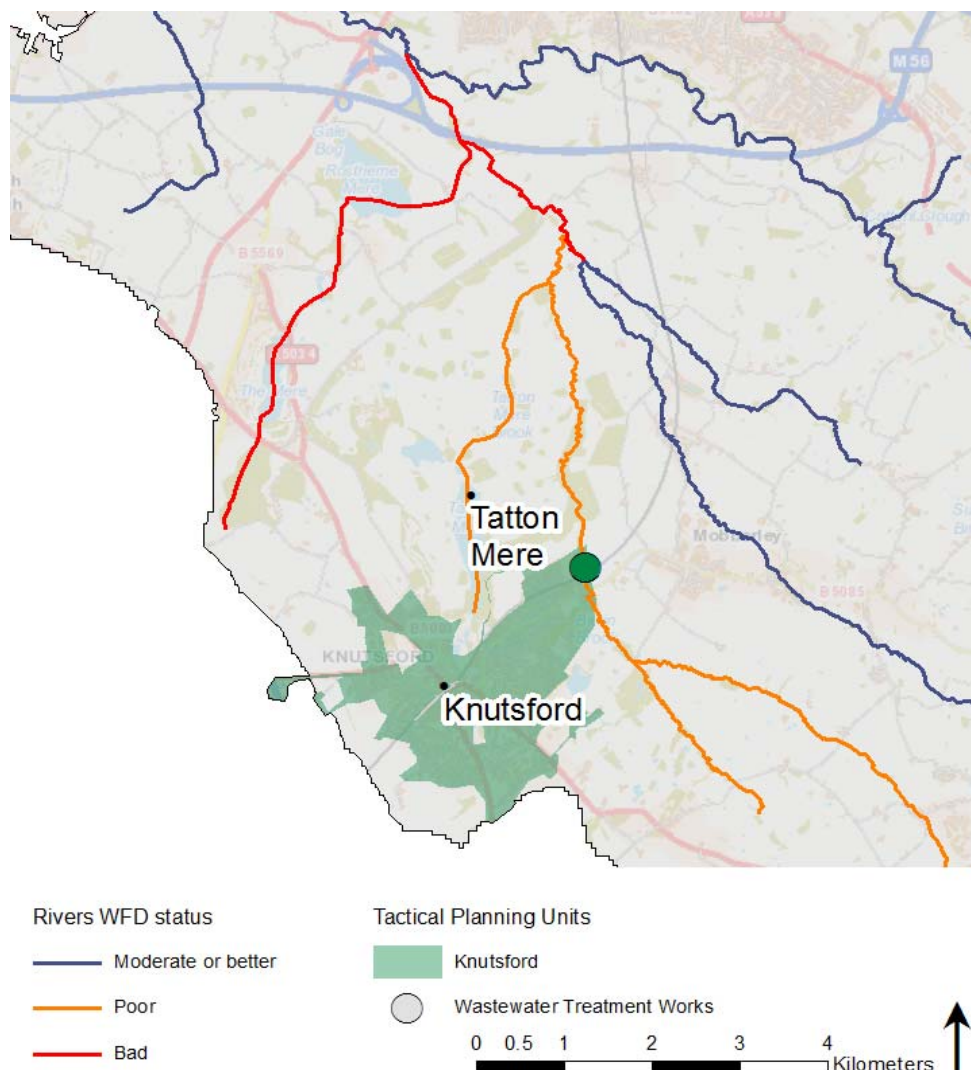
The Knutsford TPU (Figure 6) is to the south-west of the Upper Mersey catchment. Across the TPU approximately 200km of sewer network serves a residential population of nearly 13,000 people and over 6,000 properties, with the population expected to grow 21% by 2050.

The Knutsford TPU is a complex catchment with ongoing investigations and the potential for significant investment through the still developing Water Industry National Environment Programme (WINEP), in order to ensure protection of the environment. The Birkin Brook watercourse, to which the wastewater treatment works discharges, is classed as ‘poor’ under the Water Framework Directive (WFD) 2019. There are two ‘Reasons for Not Achieving Good’ (RNAG) drivers attributed to the water industry for Birkin Brook, relating to phosphate, and macrophytes and phytobenthos combined [7], which are identified as being addressed through the current investment cycle 2020 – 2050; however, the watercourse is small, and both the brook and nearby meres are sensitive to water quality changes due to low dilution, creating risk and uncertainty around performance. There are a number of storm overflows within the area, and uncertainty around medium- and-long term performance particularly with regards to meeting future new targets.

The Government’s Storm Overflow Discharge Reduction Plan (SODRP) was published in August 2022, which we have aligned with through both the Water Industry National Environment Programme (WINEP) and DWMP development. This could lead to significant changes and investment to both wastewater treatment works and the drainage network.

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change.

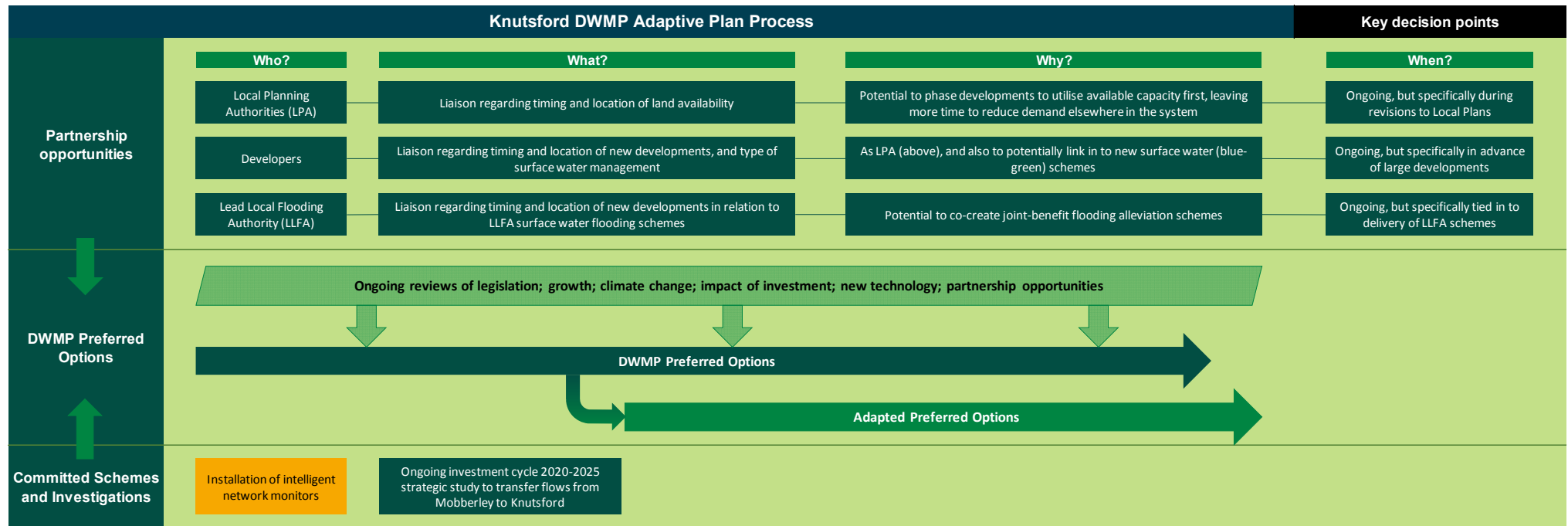
Figure 6 Map of the Knutsford TPU



3.3.3.1 Knutsford adaptive plan

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

Figure 7 Knutsford adaptive planning process



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 Knutsford adaptive plan, reflecting the different option types identified as being appropriate for Knutsford. 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 Knutsford, 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:

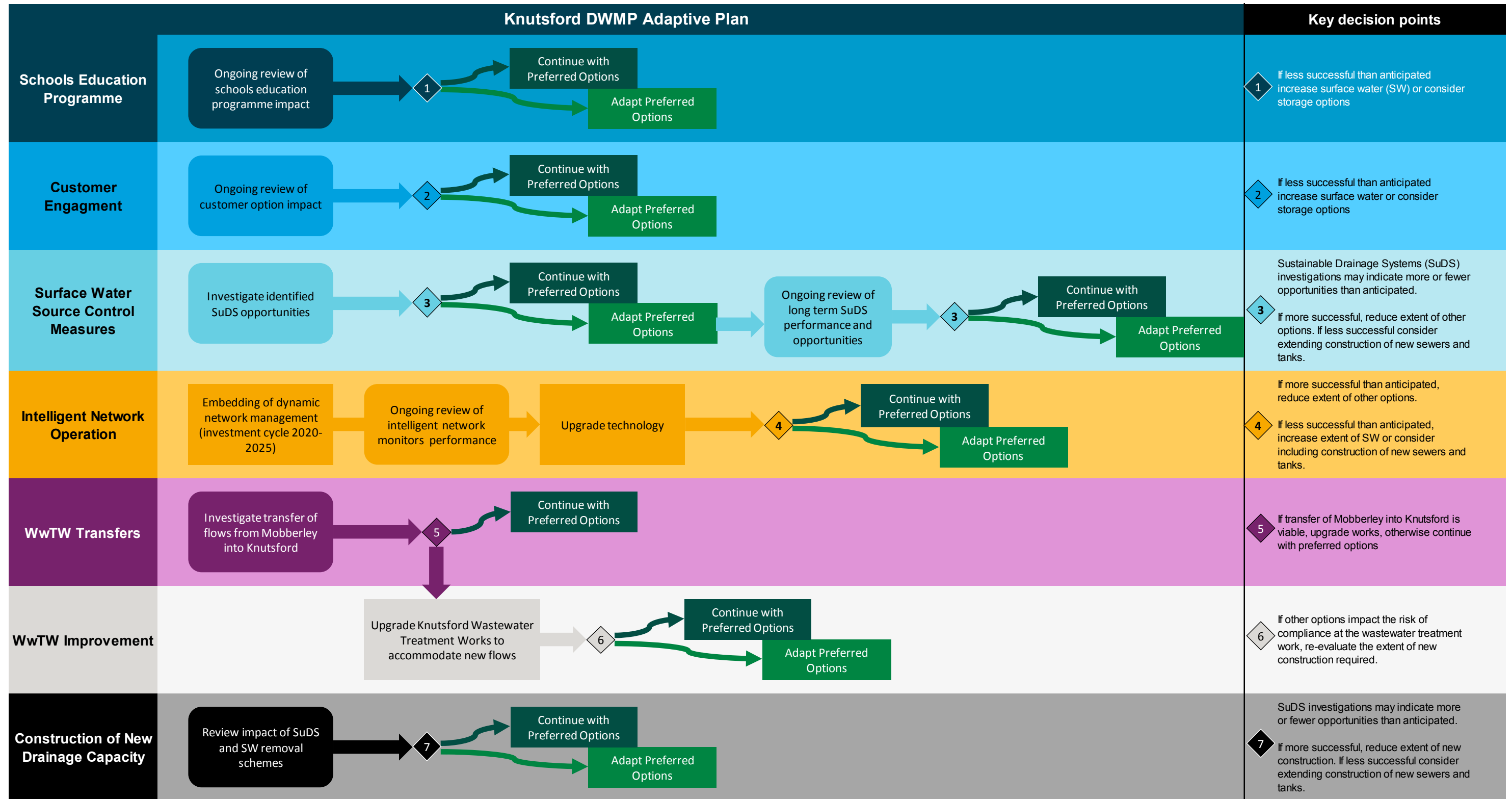
- Technical feasibility;

- 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 5.2).

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 5.2) until there is more certainty. It is therefore important that both the adaptive plan and the optimised plan are developed together.

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



3.3.4 Macclesfield

The Macclesfield TPU (Figure 9) is in the south of the Upper Mersey catchment. Across the TPU approximately 800km of sewer network serves over 32,000 properties and a residential population of nearly 70,000 people, which is expected to grow 19% by 2050.

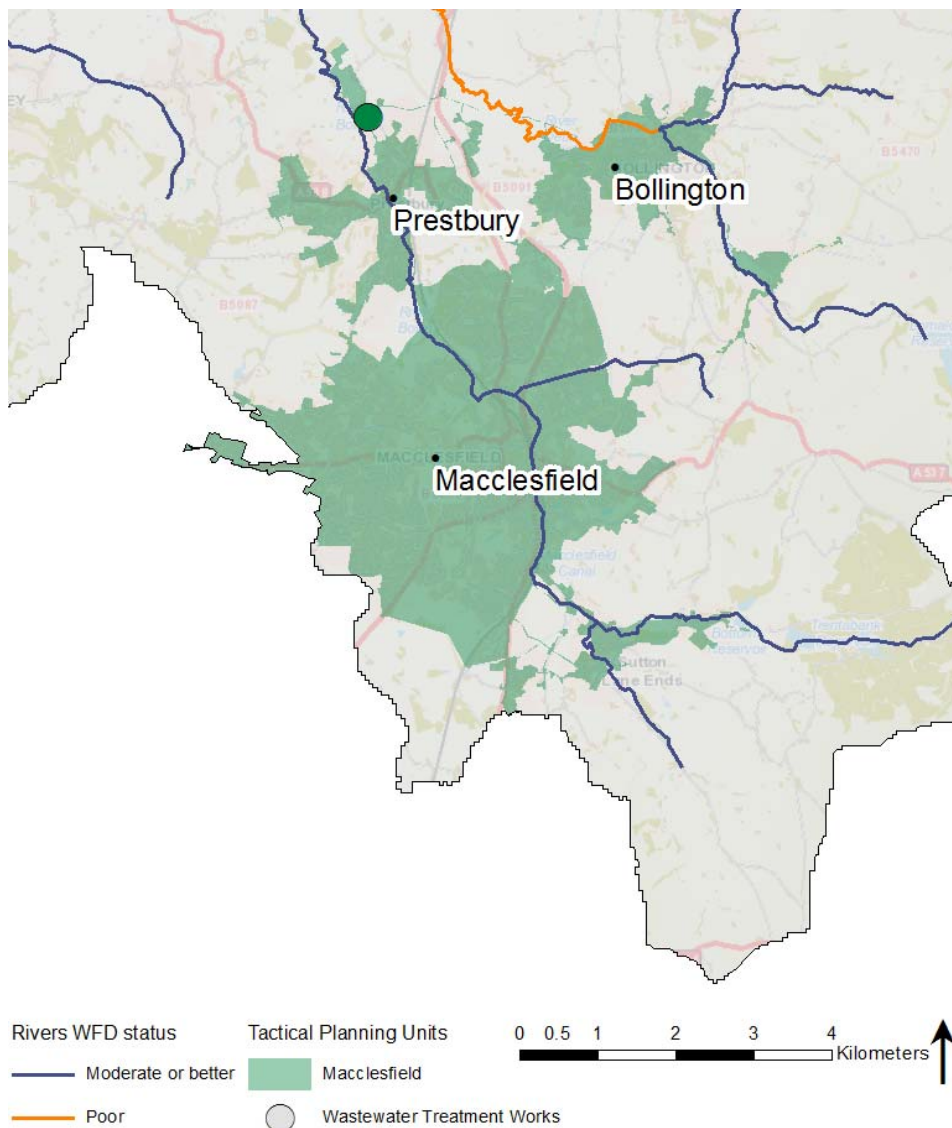
The majority of watercourses are classed as ‘moderate’ under the WFD 2019, including the River Bollin which is the main watercourse passing through Macclesfield and Prestbury, and to which the wastewater treatment works discharges. The River Dean to the north of the TPU near Bollington is classed as ‘poor’, although the majority of the watercourse is outside of the TPU. Both watercourses have RNAGs ^[8, 9] attributed to the water industry for water quality and biological measures, which are being addressed through the current investment cycle 2020 – 2025 and further work may be needed in subsequent WINEPs following completion of investigations.

Macclesfield is a complex catchment, with challenges such as ageing infrastructure and a growing population. There are a number of storm overflows within the area, and uncertainty around medium- and long-term performance particularly with regards to meeting future new targets.

The Government’s Storm Overflow Discharge Reduction Plan (SODRP) was published in August 2022, which we have aligned with through both the Water Industry National Environment Programme (WINEP) and DWMP development. This could lead to significant changes and investment to both wastewater treatment works and the drainage network.

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change.

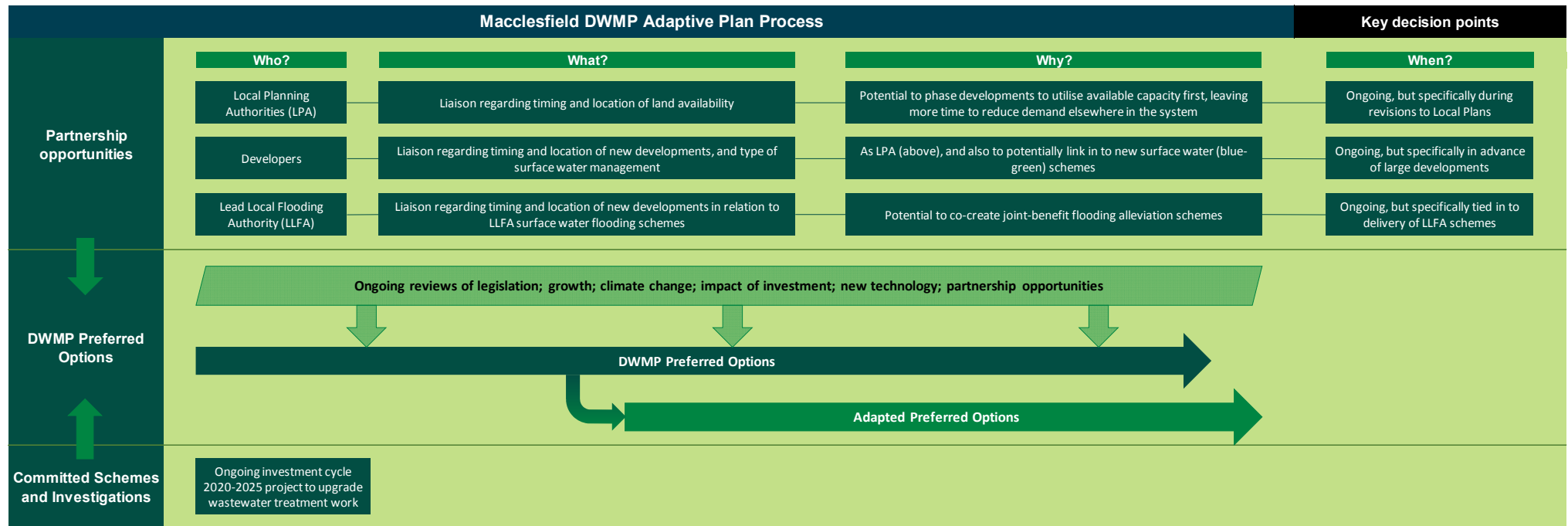
Figure 9 Map of the Macclesfield TPU



3.3.4.1 Macclesfield adaptive plan

The first part of the adaptive plan process (Figure 10) highlights the importance of partnership working and regular data reviews.

Figure 10 Macclesfield adaptive planning process



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 7.

Table 7 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 11 shows the second part of the Macclesfield adaptive plan, reflecting the different option types identified as being appropriate for Macclesfield. 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 Macclesfield, 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:

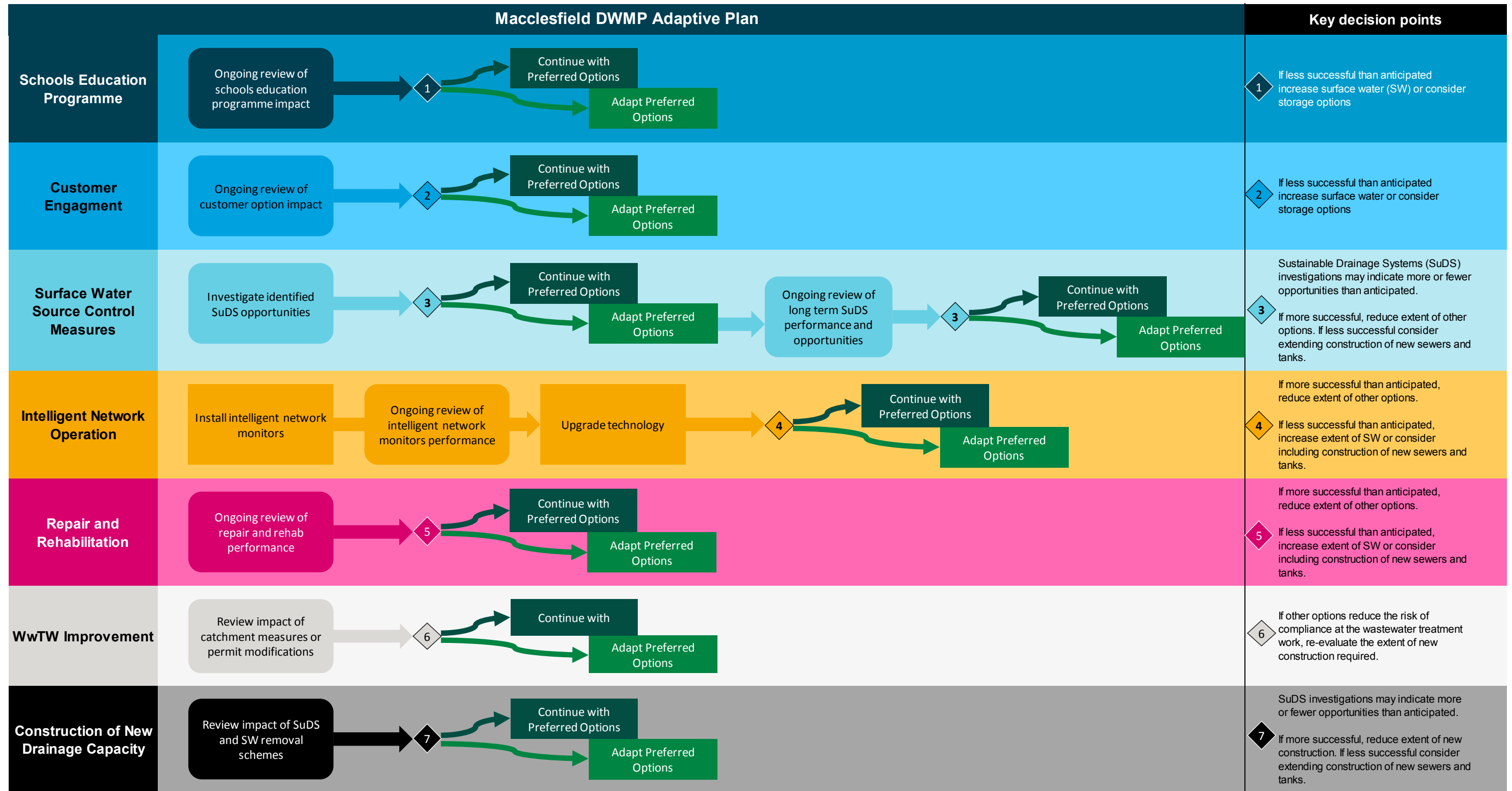
- Technical feasibility;

- 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 5.2).

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 10. The adaptive plan may contain potential investigations which are currently excluded from the optimised DWMP plan (refer to section 5.2) until there is more certainty. It is therefore important that both the adaptive plan and the optimised plan are developed together.

Figure 11 Macclesfield adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time



3.3.5 Wilmslow

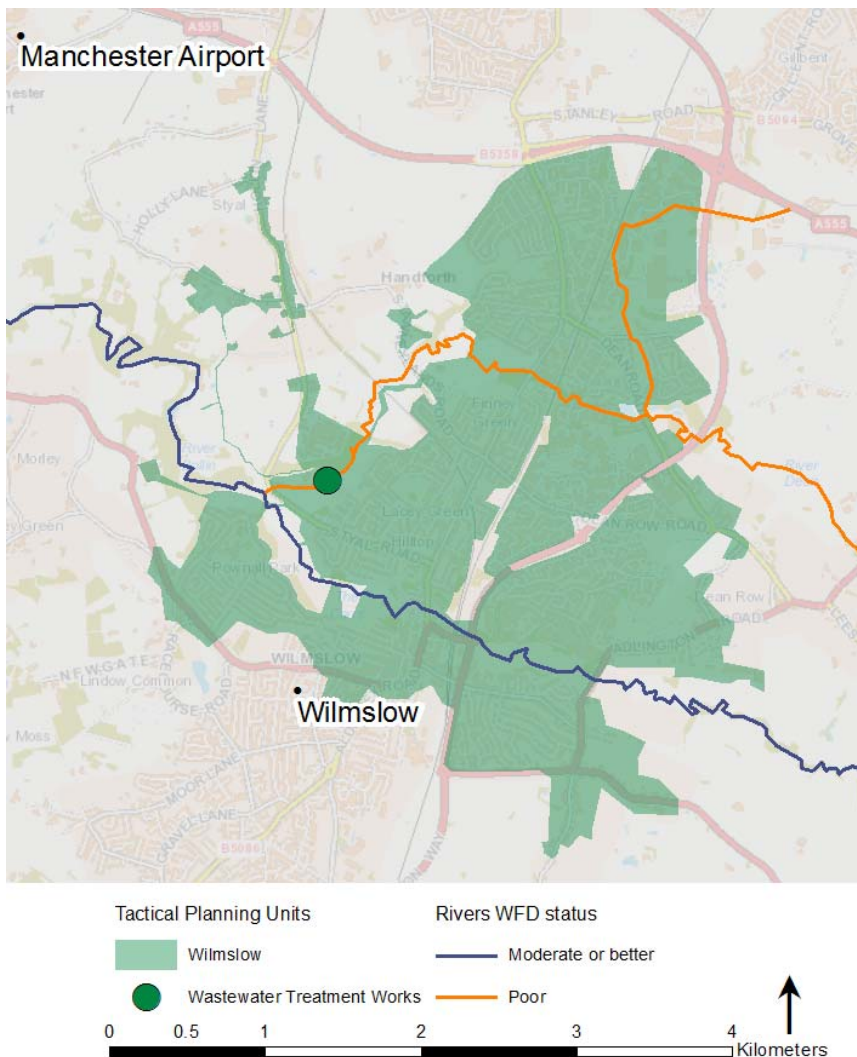
The Wilmslow TPU (Figure 12) is towards the south of the Upper Mersey catchment. Across the TPU approximately 340km of sewer network serves over 10,000 properties and a residential population of approximately 23,500 people, which is projected to grow 18% by 2050. The two main watercourses are the River Dean (to which the treatment works discharges) and the River Bollin, with are classed as ‘poor’ and ‘moderate’ respectively under the WFD 2019. Both watercourses have RNAGs [8,9] attributed to the water industry for water quality and biological measures, which are being addressed through the current investment cycle 2020 – 2025 and further work may be needed in subsequent WINEPs following completion of investigations.

Wilmslow is a complex catchment. There are a number of storm overflows within the area, and uncertainty around medium- and long-term performance particularly with regards to meeting future new targets.

The Government’s Storm Overflow Discharge Reduction Plan (SODRP) was published in August 2022, which we have aligned with through both the Water Industry National Environment Programme (WINEP) and DWMP development. This could lead to significant changes and investment to both wastewater treatment works and the drainage network.

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change.

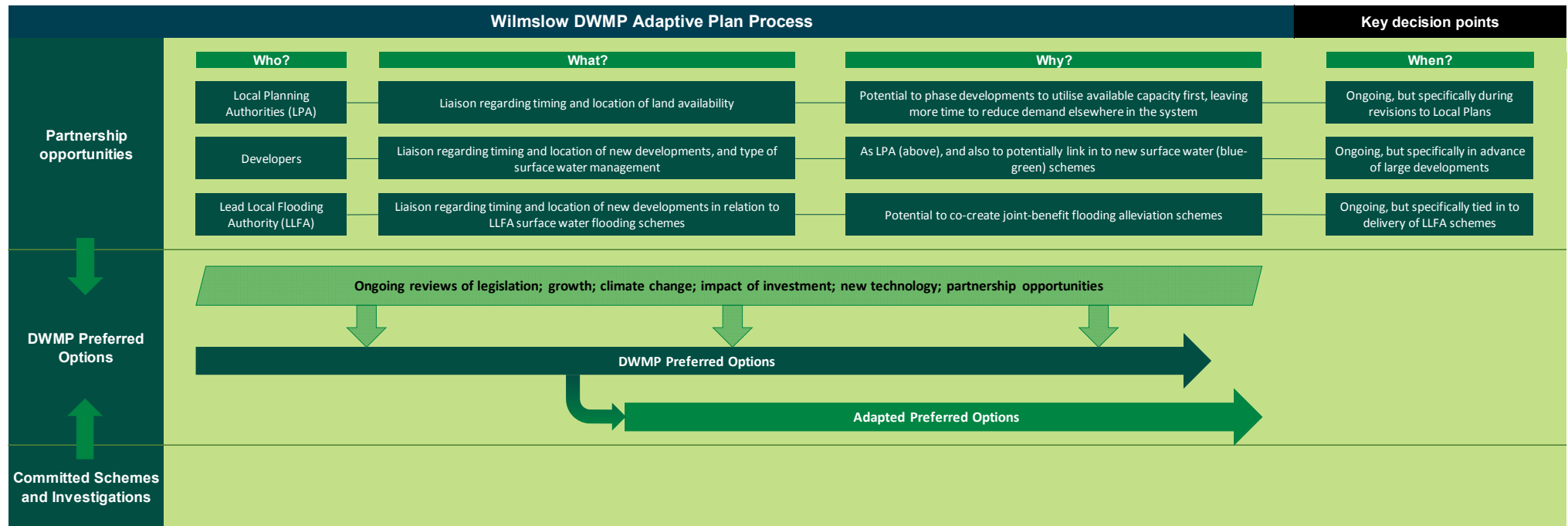
Figure 12 Map of the Wilmslow TPU



3.3.5.1 Wilmslow adaptive plan

The first part of the adaptive plan process (Figure 13) highlights the importance of partnership working and regular data reviews.

Figure 13 Wilmslow adaptive planning process



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 8.

Table 8 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 14 shows the second part of the Wilmslow adaptive plan, reflecting the different option types identified as being appropriate for Wilmslow. 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 Wilmslow, 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:

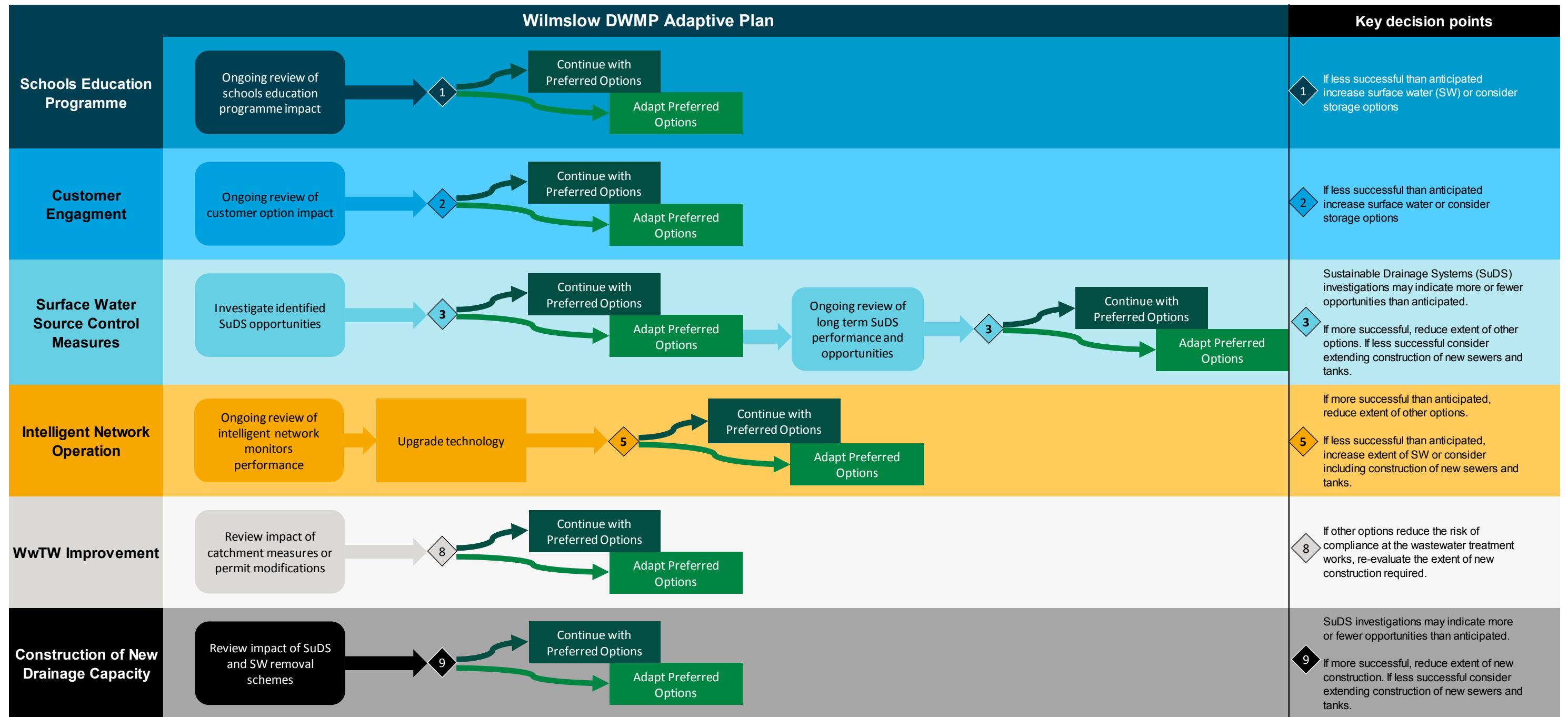
- Technical feasibility;

- 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 5.2).

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 13. The adaptive plan may contain potential investigations which are currently excluded from the optimised DWMP plan (refer to section 5.2) until there is more certainty. It is therefore important that both the adaptive plan and the optimised plan are developed together.

Figure 14 Wilmslow adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time



3.3.6 Salford

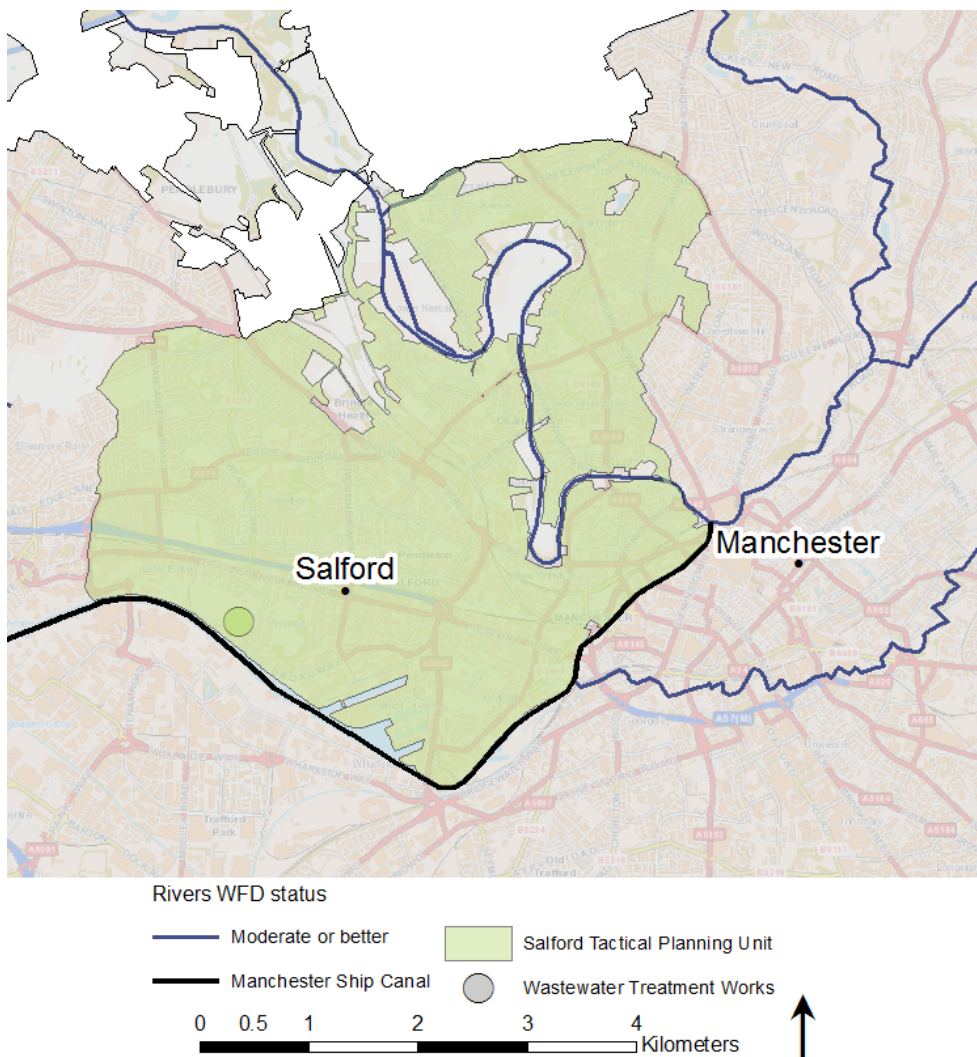
The Salford TPU is to the North of the Manchester Ship Canal and Manchester West area (Figure 15), consisting of just over 700km of sewer network which serves just under 50,000 properties and a residential population of over 100,000 people. The population is projected to grow significantly, with an increase of 25% by 2050, which will drive associated development and increase pressure on our network and assets.

Salford is a complex catchment, which is facing significant population growth alongside the still-developing WINEP, and the challenge of ageing infrastructure. There are a number of storm overflows within the area, and uncertainty around medium- and long-term performance particularly with regards to meeting future new targets. The Government’s Storm Overflow Discharge Reduction Plan (SODRP) was published in August 2022, which we have aligned with through both the Water Industry National Environment Programme (WINEP) and DWMP development. This could lead to significant changes and investment to both wastewater treatment works and the drainage network, and possibly drive a redesign of the drainage network, to ensure protection of the environment and water quality, and to ensure suitable capacity and headroom to deal with increased loading.

The challenges for the TPU are further complicated by the wider challenges across the Manchester West area, which may require solutions that work across multiple TPUs and wastewater treatment works to solve issues within particular areas.

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change.

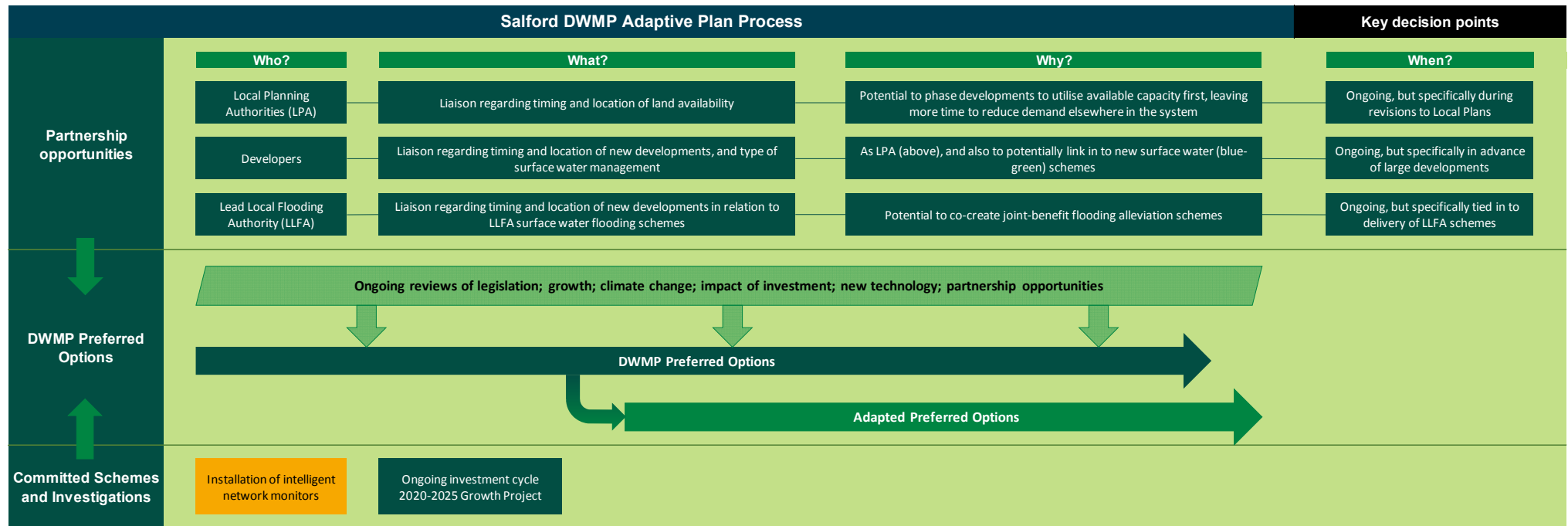
Figure 15 Map of the Salford TPU



3.3.6.1 Salford adaptive plan

The first part of the adaptive plan process (Figure 16) highlights the importance of partnership working and regular data reviews.

Figure 16 Salford adaptive planning process



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 9.

Table 9 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 17 shows the second part of the Salford adaptive plan, reflecting the different option types identified as being appropriate for Salford. 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 Salford, 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:

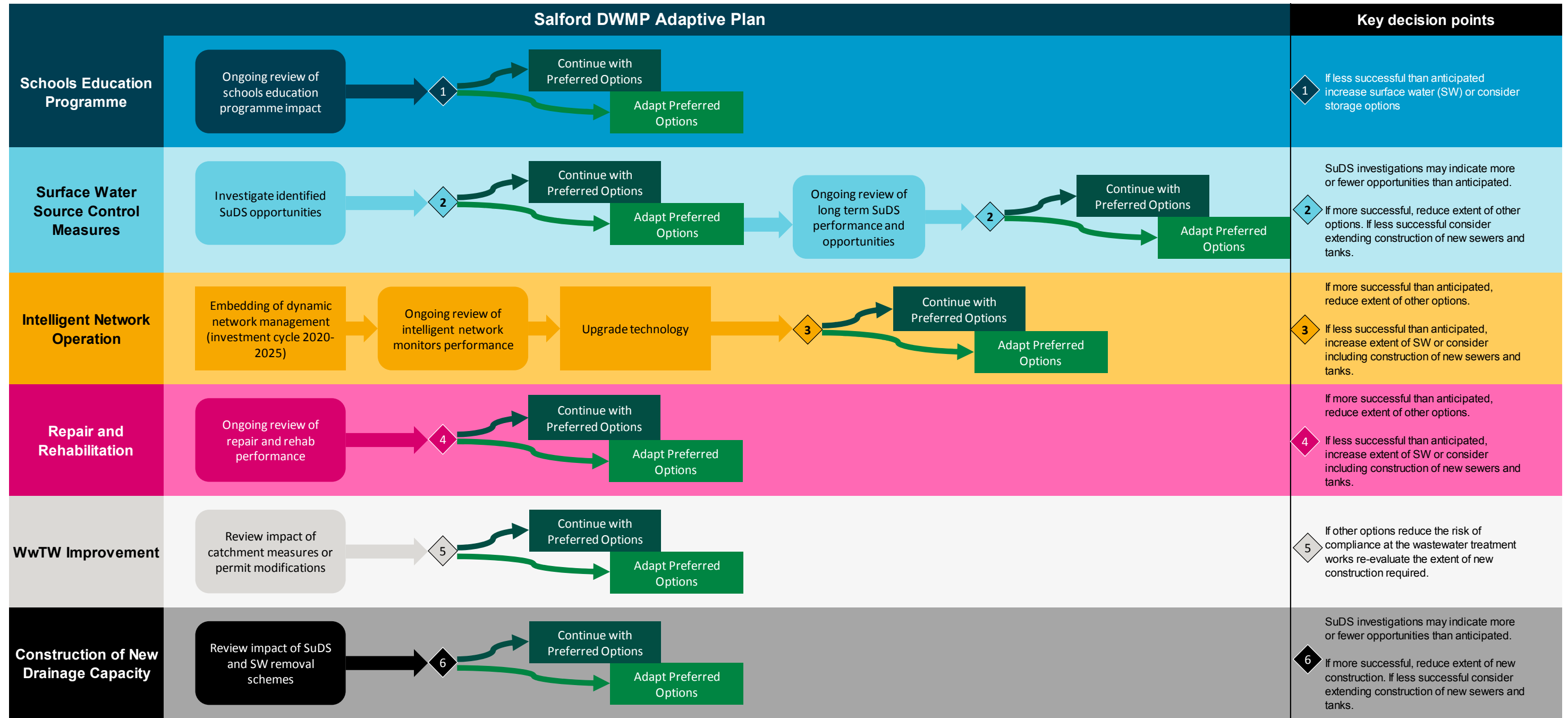
- Technical feasibility;

- 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 5.2).

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 16. The adaptive plan may contain potential investigations which are currently excluded from the optimised DWMP plan (refer to section 5.2) until there is more certainty. It is therefore important that both the adaptive plan and the optimised plan are developed together.

Figure 17 Salford adaptive plan – Possible adaptive pathways as knowledge and opportunities change over time



3.3.7 Manchester West

The Manchester West TPU (Figure 18) are located in the north and west and of the Upper Mersey catchment, draining Eccles, Salford, parts of central Manchester and areas of south Greater Manchester, including Manchester Airport. The combined drainage area is heavily urbanised, with nine wastewater treatment works and nearly 10,000km of sewer network serving just under half a million properties and a residential population of approximately 1.2 million people.

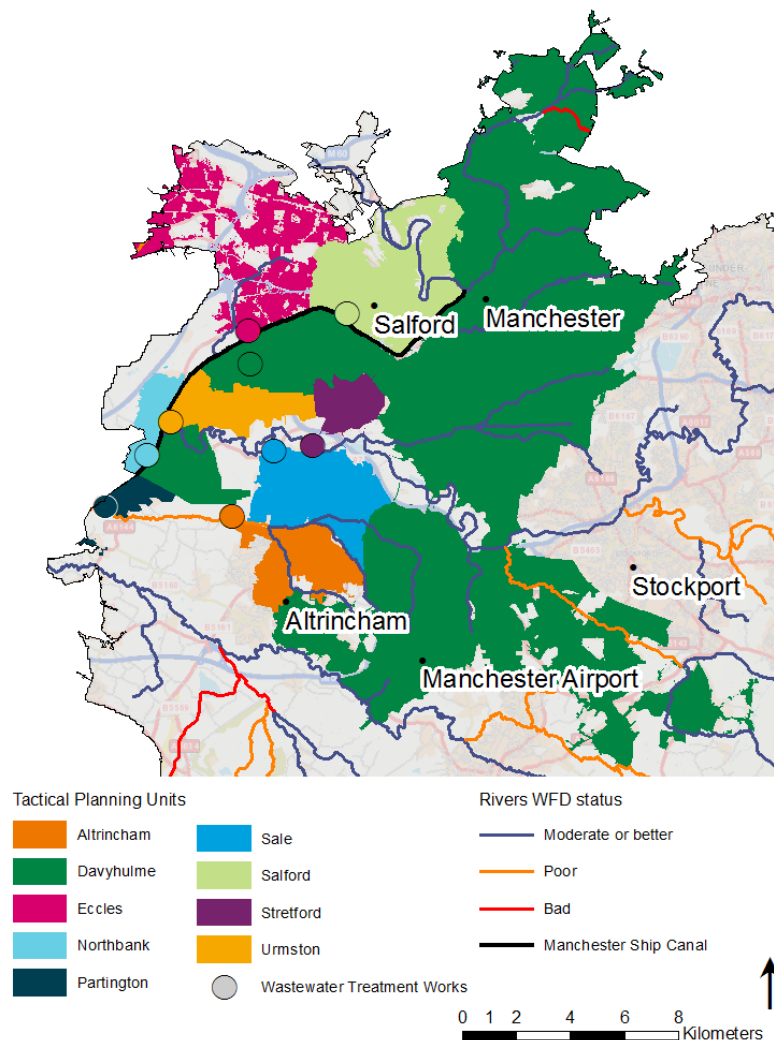
The area is projected to have significant population growth, with a population increase of 24% by 2050. This could drive a significant amount of development, and an associated increase in wastewater being sent to wastewater treatment works. Large, planned developments in the area include New Carrington and Timperley Wedge.

The majority of watercourses within the TPUs are ‘moderate’ under the WFD 2019, except for Micker Brook and Sinderland Brook (poor) to the south of the TPU, and Wince Brook (bad) in the north. The Manchester Ship Canal (shown in black in Figure 18) is also classified as ‘moderate’ and is the main watercourse draining the city with the key tributary rivers being the Irwell and Irk, and the Mersey to the south of Manchester.

Manchester West is a strategic area due to the multiple challenges in the catchment, and the close links and interdependencies between the TPUs, with multiple scenarios needing consideration. This leads to many potential options, and therefore different pathways within the adaptive plan depending on which options are selected at key decision gates.

The key TPUs within the Manchester West area are Altrincham, Davyhulme, Partington, Sale, Salford, Stretford and Urmston. Within the Manchester West area there are two key future developments of strategic interest, these are New Carrington and Timperley Wedge.

Figure 18 Map of the Manchester West area, with each TPU shown as a unique colour. The Eccles and Northbank TPUs are not formally included in Manchester West from a strategic growth perspective, but may still form part of the adaptive plan



3.3.7.1 Davyhulme

The Davyhulme TPU is the largest in the Manchester West area, and within the Upper Mersey catchment (Figure 19). Approximately 6,400km of sewer network serves a residential population of over 800,000 people and more than 300,000 properties. The population is expected to grow significantly, increasing 23% by 2050. The Davyhulme TPU had the largest modelled increase in population across all TPUs in the North West, and growth is a key strategic concern for the area.

The majority of watercourses within the TPUs are ‘moderate’ under the WFD 2019, including the Manchester Ship Canal, except for Micker Brook (poor) to the south of the TPU, and Wince Brook (bad) in the north.

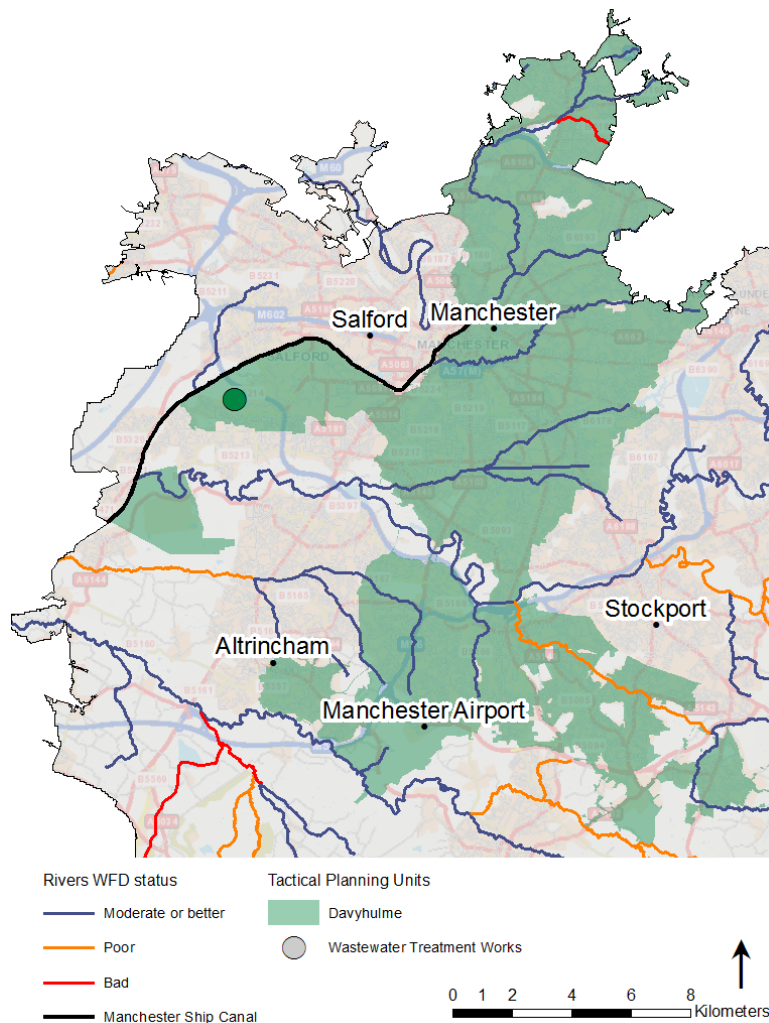
The Davyhulme TPU is a strategic catchment due to the significant forecasted population growth, and the associated increase in development and wastewater loading, alongside other risks identified through the BRAVA process. Risks have been identified for internal flooding, external flooding, pollution, sewer collapse and blockages by 2050. There are also a high number of storm overflows within the area.

The Government’s Storm Overflow Discharge Reduction Plan (SODRP) was published in August 2022, which we have aligned with through both the Water Industry National Environment Programme (WINEP) and DWMP development. This could lead to significant changes and investment to both wastewater treatment works and the drainage network, and possibly drive a large redesign of the drainage network, to ensure protection of the environment and water quality.

The challenges for the TPU are further complicated by the wider challenges across the Manchester West area, which may require solutions that work across multiple TPUs and wastewater treatment works to solve issues within particular areas.

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change.

Figure 19 Map of the Davyhulme TPU



3.3.7.2 Timperley Wedge

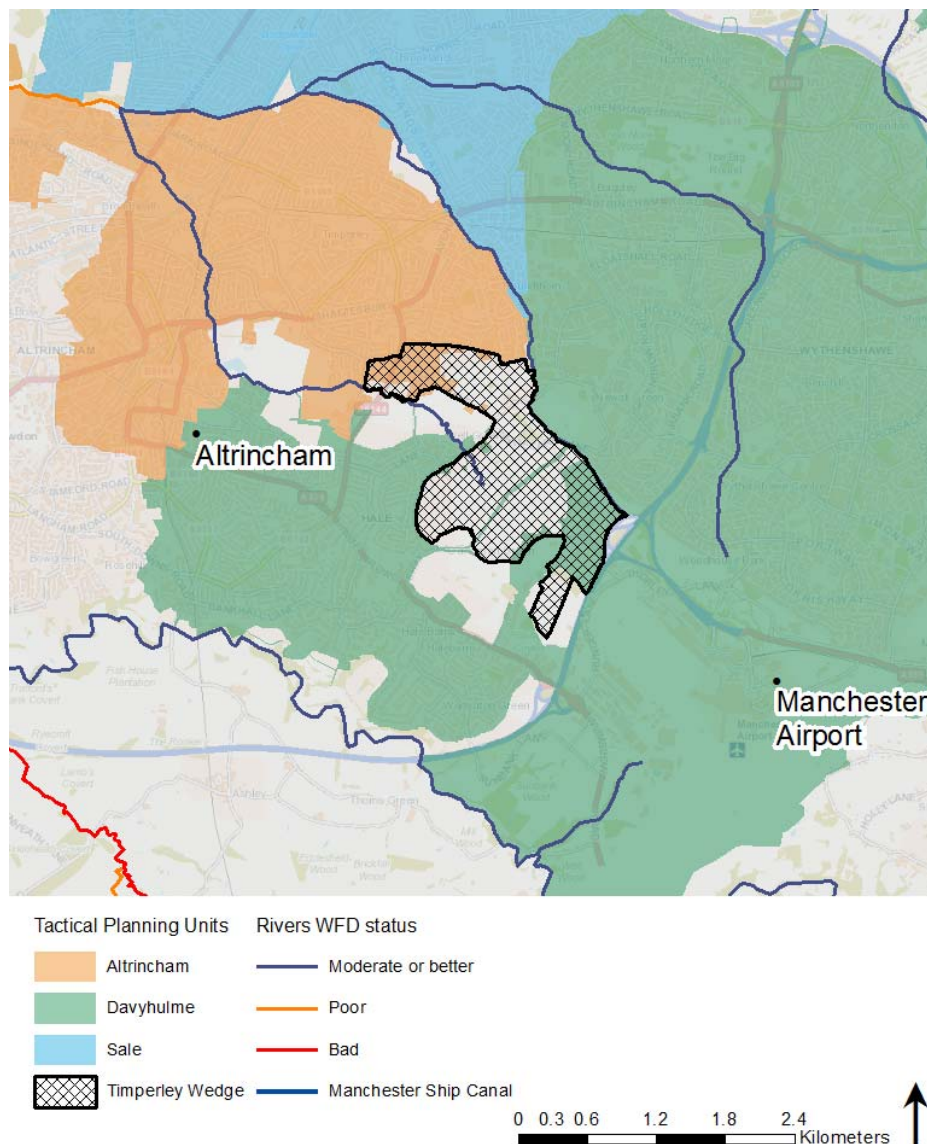
The Timperley Wedge development (Figure 20) is close to Manchester Airport, covering an area between the Davyhulme TPU and the Altrincham TPU, as well as an area that is not currently served by a wastewater treatment works. The proposed development includes 1,700 houses by 2037 ^[10], with potential for up to 2,500 houses in total, as well as commercial offices, which will drive a high number of new connections and increase the amount of wastewater needing treatment.

The Timperley Wedge development could be linked to either the Davyhulme or Altrincham TPU, however both wastewater treatment works are sensitive to development, and supply-demand challenges. Part of the challenge is determining which TPU and treatment works will be expanded to serve the area, and thus there are multiple options available to address the issues identified. The Altrincham TPU currently serves just under 18,000 properties, so the addition of the Timperley Wedge development would represent approximately 10% extra load, without considering any other future development in the area. However, the Davyhulme TPU is projected to have the largest increase in population served by 2050 across the whole North West, and also has its own strategic challenges around future growth and capacity.

The Government’s Storm Overflow Discharge Reduction Plan (SODRP) was published in August 2022, which we have aligned with through both the Water Industry National Environment Programme (WINEP) and DWMP development. This could lead to significant changes and investment to both wastewater treatment works and the drainage network.

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change.

Figure 20 Map of the Timperley Wedge development



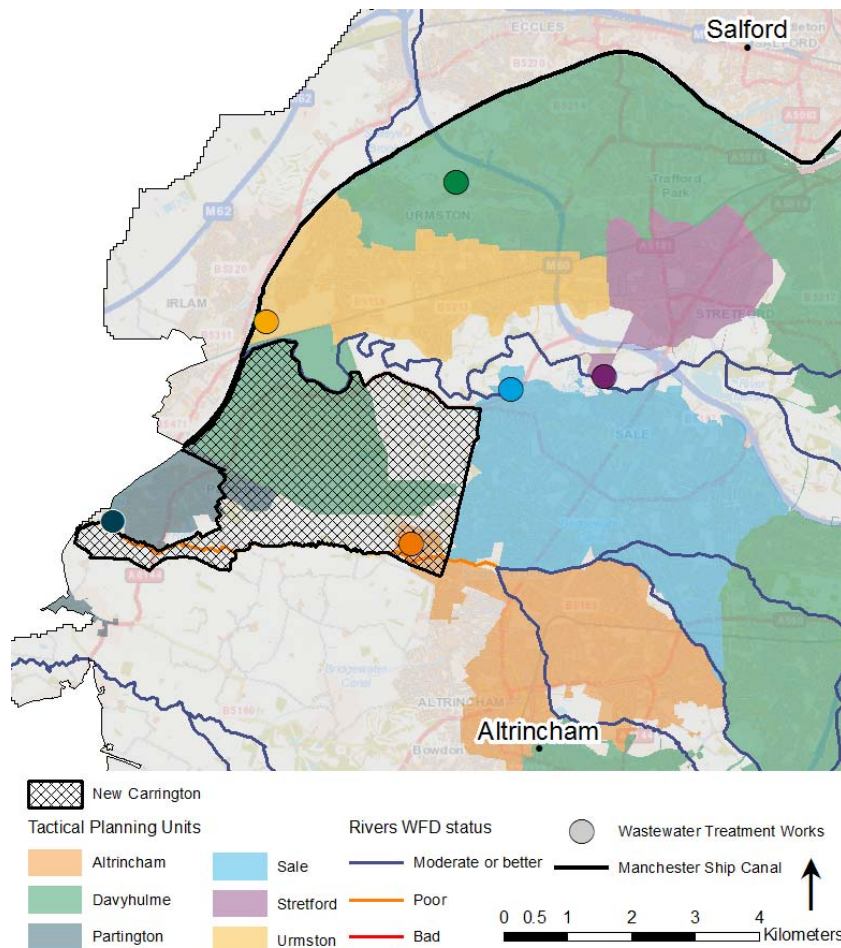
3.3.7.3 New Carrington

The area for consideration around the New Carrington development comprises of the Altrincham, Partington, Sale, Stretford, and Urmston TPUs, with the small separate section of the west Davyhulme TPU bordering to the west. The combined drainage areas (excluding the Davyhulme wedge) consist of over 1,600km of sewer network, serving approximately 75,000 properties and a residential population of 180,000 people.

The majority of watercourses are classed as ‘moderate’ under the WFD 2019, except for Sinderland Brook, between Altrincham and Partington, which is classed as ‘poor’.

The area is considered strategic due to the New Carrington development (Figure 21), which will drive a high number of new connections and increase the amount of wastewater needing treatment. The wastewater treatment works in the area are sensitive to new development, and supply-demand challenges, and part of the challenge is determining which TPUs will be expanded to include the development, and which treatment works will serve the area. This could lead to significant wastewater treatment works upgrades to ensure protection of the environment and water quality, and to ensure the wastewater treatment works have suitable capacity and headroom to deal with increased loading.

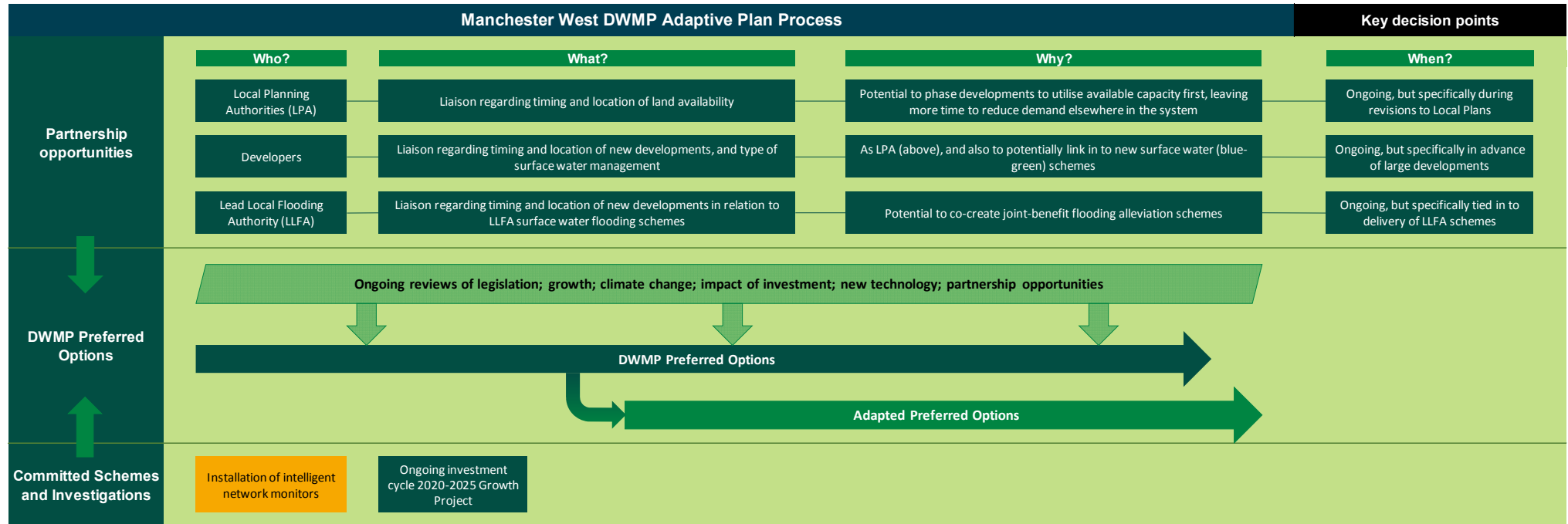
Figure 21 Map of the New Carrington development



3.3.7.4 Manchester West adaptive plan

The first part of the adaptive plan process (Figure 22) highlights the importance of partnership working and regular data reviews.

Figure 22 Manchester West adaptive planning process



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 10.

Table 10 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 23 shows the second part of the Manchester West adaptive plan, reflecting the different option types identified as being appropriate for Manchester West. 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 Manchester West, 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:

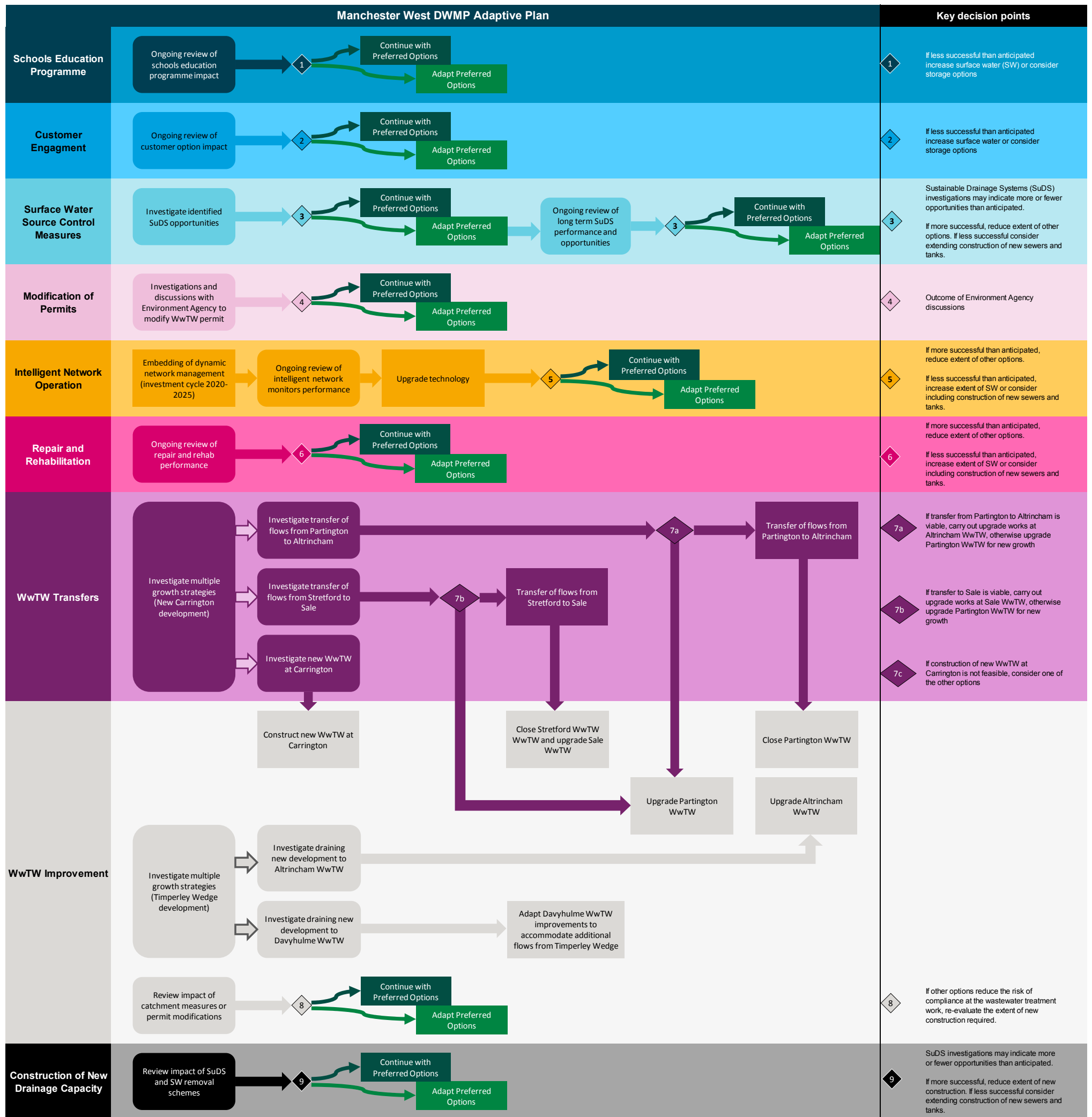
- Technical feasibility;

- 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 5.2).

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 22. The adaptive plan may contain potential investigations which are currently excluded from the optimised DWMP plan (refer to section 5.2) until there is more certainty. It is therefore important that both the adaptive plan and the optimised plan are developed together.

Figure 23 Manchester West 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 24).

An options hierarchy was then used which has been endorsed by customers and stakeholders from across the North West to select preferred solutions (Figure 25). 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 24 Options development process

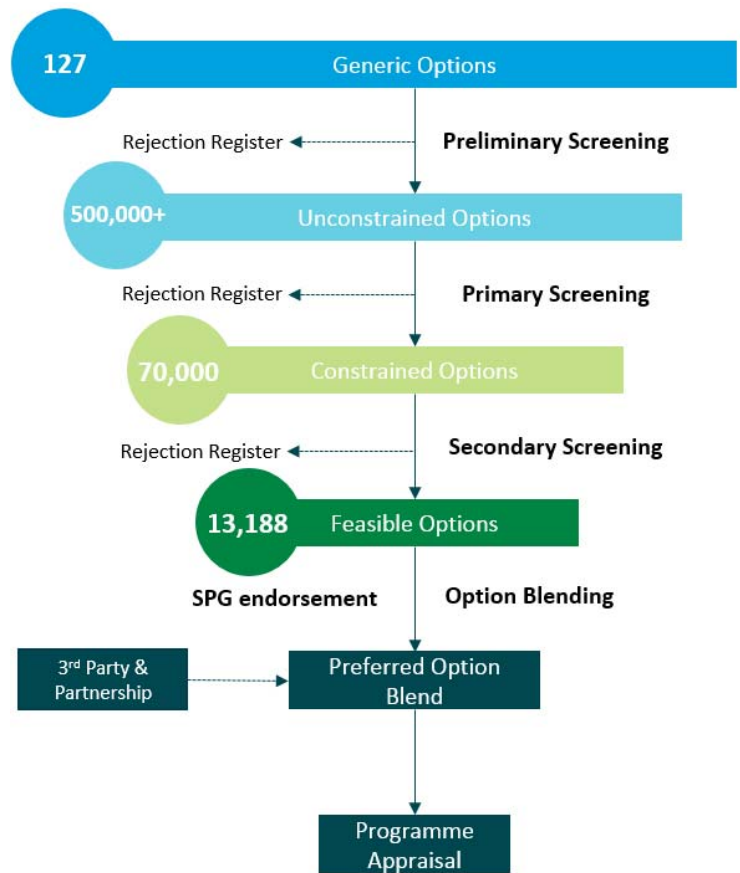
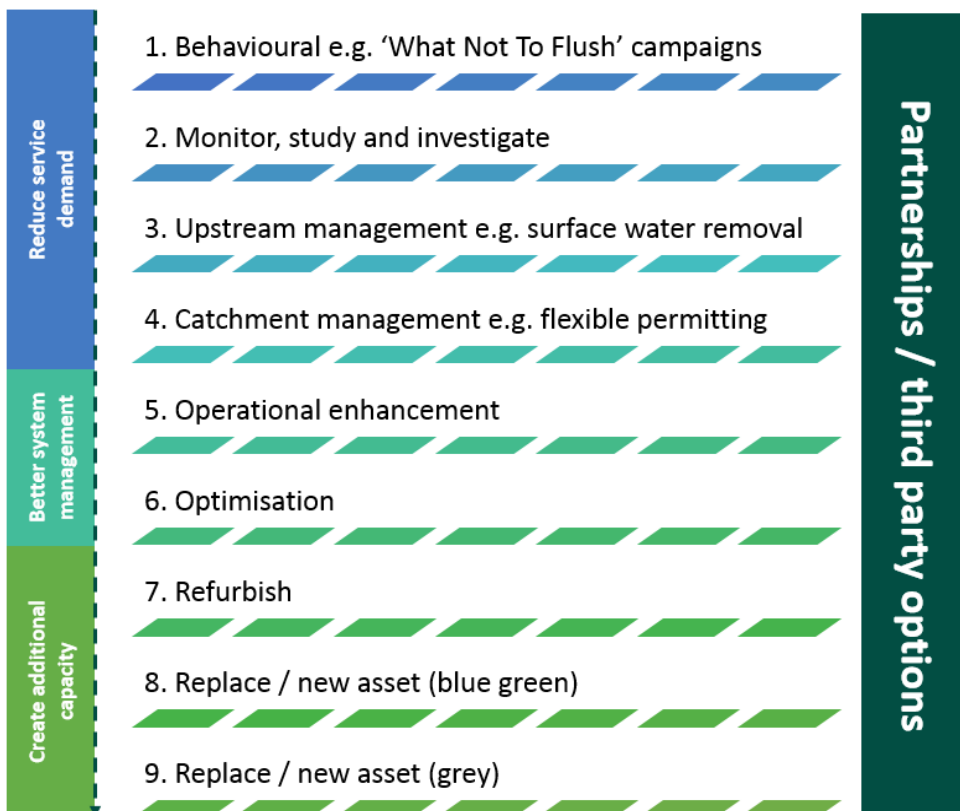


Figure 25 Options hierarchy



4.1 Upper Mersey partnership opportunities

In order to identify and develop potential partnership options in the Upper Mersey, 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.

The DWMP Partnership Opportunities Pipeline (PoP) 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 funded schemes at this time. However, they provide an indication of areas where we may be able to work collaboratively with stakeholders in the future when more certainty is available on need and funding.

From the initial suggestions made during the SPG workshops, the DWMP PoP has undergone various refinements as summarised below:

- Where possible, the potential partnership opportunities were mapped and this created over 1,000 opportunities for further investigation. The suggestions were screened depending on the opportunities timescales, proximity to UUW assets and the level of detail. This allowed UUW to refine the opportunities, which were believed to have the most potential;
- This refined list was presented back to the SPGs for updates, review and discussion. This further discussion allowed additional benefits to be identified and better mapping. This was particularly important for potential integrated drainage partnership opportunities as it helps to understand the holistic picture of the flooding mechanism. This refined the list further to approximately 500 potential partnership opportunities;
- Following the SPG events, we mapped the updated DWMP partnership opportunities against asset locations and UUW areas of interest e.g. flooding clusters and mutual natural flood management, to identify those most suited to the DWMP. This produced the list of key DWMP partnership opportunities; and
- The key list of opportunities have been reviewed against the wider DWMP options development process.

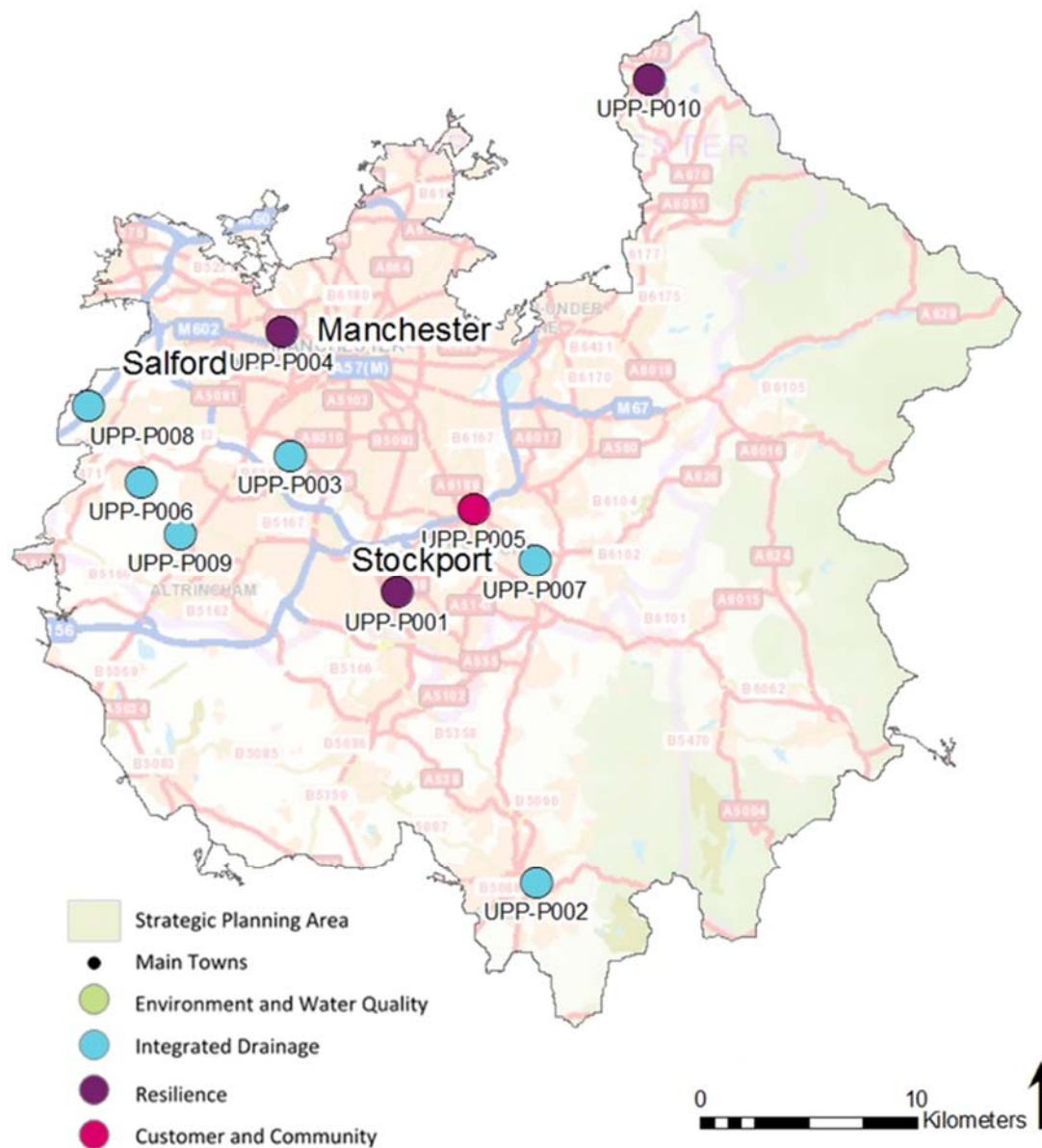
The remaining opportunities that did not make it into the key DWMP PoP, for example in areas with no wastewater assets, were captured in our organisation-wide partnership opportunity pipeline where they are considered alongside all other partnership opportunities. Another key reasons for opportunities not being included in the DWMP PoP is where projects may be more imminent as the DWMP is a longer-term plan.

Examples of potential partnership opportunities that were shared during the Upper Mersey SPG workshops are shown in Figure 26.

We are further developing the organisation-wide partnership opportunity pipeline and are developing a central partnership prioritisation process which comprises of two elements; the partnership solution identification stage and a specific partnership assessment activity which aims to support decision making for partnership schemes against a set of specific criteria. This will allow UUW to harness scheme specific collaboration opportunities as 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 26 Overview of the potential partnership opportunities in the Upper Mersey



ID	Partnership Opportunity	Theme	Organisation Type
UPP-P001	Natural flood management opportunities project	Resilience	Undisclosed
UPP-P002	Flood risk management project	Integrated Drainage	Undisclosed
UPP-P003	Surface water management project	Integrated Drainage	Undisclosed
UPP-P004	Natural flood management project	Resilience	Undisclosed
UPP-P005	Community outreach project	Customer and Community	Non-Governmental Organisations
UPP-P006	Surface water management project	Integrated Drainage	Public Bodies
UPP-P007	Flood risk management project	Integrated Drainage	Public Bodies
UPP-P008	Flood risk management project	Integrated Drainage	Public Bodies
UPP-P009	Catchment management project	Integrated Drainage	Public Bodies
UPP-P010	Natural flood management project	Resilience	Undisclosed

Note: The above are suggestions made by stakeholders but not all of them meet DWMP criteria for potential partnership working. Suggestions made that do not meet DWMP criteria have been added to U UW companywide partnership pipeline for further consideration.

4.1.1 Wider partnerships within the Upper Mersey catchment

Within the Upper Mersey catchment, 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.

Figure 27 and Figure 28 are examples of partnerships that we are proud to have been involved in, and opportunities which are currently being developed in the Upper Mersey catchment.

Figure 27 Overview of the IGNITION project



IGNITION

The IGNITION project pursued an innovative finance model to attract investment in Greater Manchester's natural environment. United Utilities has been a key partner from the outset.



IGNITION supported by an investment of €4.5 million from the EU's Urban Innovation Actions (UIA) initiative brought together, 12 partners – NGOs, local government, universities, and businesses like our own – wanting to enable major investment in regional, large-scale environmental projects.

We compiled evidence, developed business cases and ran pilots to provide a robust case for how, why and where nature-based initiatives could bring extra value to the Greater Manchester area – things like rain gardens, street trees, green roofs and walls and blue green space development.

Figure 28 Upper Mersey place based planning pilot case study

Upper Mersey Place Based Planning Pilot

Background

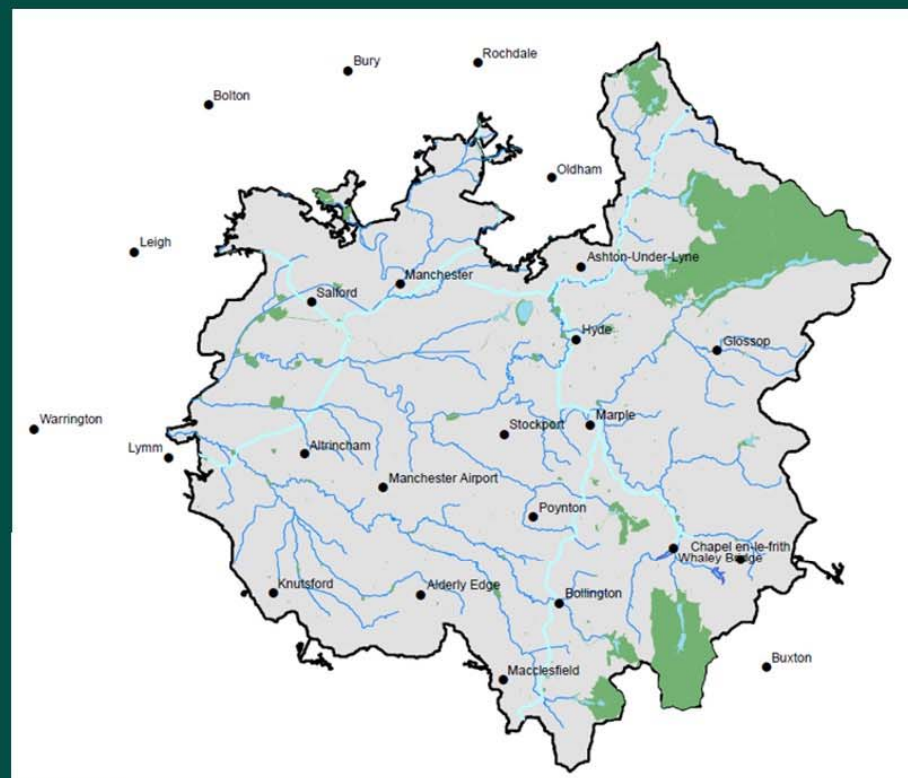
The Upper Mersey catchment was selected in partnership as a priority area due to the number of challenges it faces with regards to population growth and the impacts of a changing climate.

The partnership are working in collaboration with other stakeholders who have influence over planning, development and management of water within the catchment to develop a place based strategy by piloting a Place Based Planning approach.

Pilot Details

A initial workshop was attended by 10 catchment stakeholders who agreed to pilot Place Based Planning within 5 sub-catchments of the Upper Mersey: River Tame, River Dean/Bollin, Micker Brook, Sinderland Brook and Poise Brook.

The aim of the sub-catchment pilots is to trial different approaches to partnership working with the aim of co-creating a long term place based strategy which has a focus on the water environment and includes multiple benefits; including natural and social. The pilots in these areas will test elements such as data sharing mechanisms, governance, benefits and funding identification. The pilots have a variety of organisations taking the lead to facilitate the approach and capture lessons learnt.



Outcome

The outcome for each sub-catchment pilot is to co-create a long term place based strategy. Each pilot group has representatives from different catchment stakeholders and are capturing the learnings from working in partnership working. Key learning so far can be categories into four areas: integrated planning, data sharing, governance and engagement.

5. Options for the Upper Mersey

The DWMP's purpose is to provide a long-term view of potential interventions and opportunities up to 2050. We acknowledge that planning this far in the future can be uncertain. This is why it is important that the DWMP is also aligned with nearer term activities which could influence and change the trajectory of future risks and opportunities.

The success of the DWMP through investment across the North West will depend on continued and new partnership working which is at the heart of both the DWMP, and the development of the business plan for investment cycle 2025 – 2030 (also known as AMP8). We are aligned to ensure that decisions made support the continued growth of the North West for customers and communities, and allow the environment to thrive for future generations.

This section provides a high level overview of the potential benefits and investment that can be delivered across the North West through key activities such as the Water Industry National Environment Programme (WINEP) for investment cycle 2025 – 2030, longer-term measures identified through the DWMP, and other projects such as Better Rivers: Better North West which is our commitment to improving river health.

5.1 WINEP development

Note: At the time of DWMP publication, the WINEP was not confirmed by regulators so is likely to change. The WINEP data presented below aligns to the formal submission from U UW in January 2023.

The WINEP is a programme of works that is jointly developed between water companies and regulators to meet statutory requirements and deliver environmental improvements to customers and communities. It sets out how the water industry will contribute to improving the natural environment.

The water industry has undertaken significant investment in the last three decades to improve the water environment and thus aquatic life. The WINEP drives the largest investment programme in the water environment nationally. For investment cycle 2020 to 2025, it includes activities such as asset improvements, investigations, monitoring and catchment interventions.

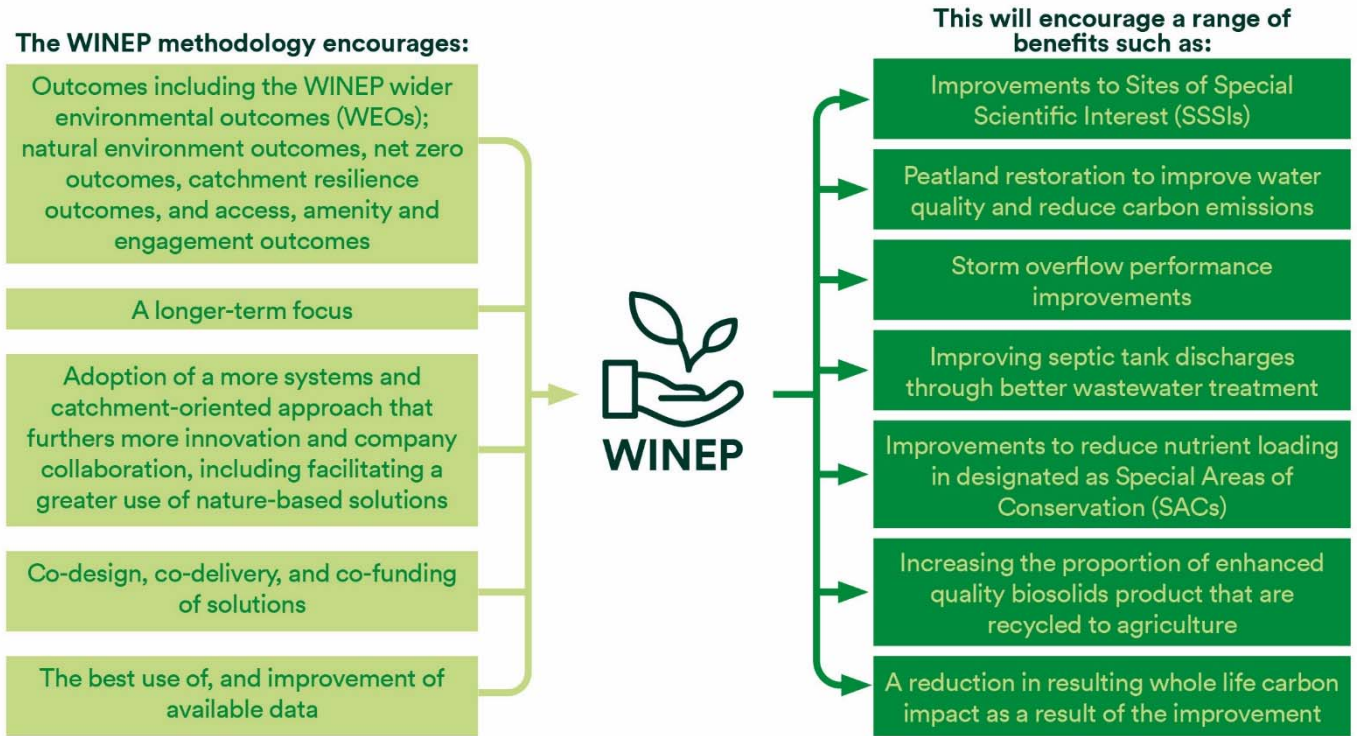
The next WINEP for investment cycle 2025 – 2030 (AMP8) is still to be confirmed (after the publication of the DWMP) and you will be able to find out more about what this means for the Upper Mersey when we publish our AMP8 submission in autumn 2023.

Moving forwards, there is a collective ambition for the WINEP to deliver even more for the environment, for customers and for communities. This reflects society's high expectations and the UK government's ambition to leave the environment in a better state for the next generation.

As part of this, a large portion of the WINEP for the next investment cycle (2025 – 2030) aims to improve storm overflow performance. The programme has been designed to meet the Government's Storm Overflow Discharge Reduction Plan (SODRP) trajectory targets, address proven harm where we have been able to identify the best value solution and then the remainder includes action at the most cost effective overflows to achieve a reduction in spill frequency to around 20 spills per annum average by 2030. Subsequent investment periods will see further reductions in line with the Government requirements. The scale of transition required to meet the SODRP targets means that U UW will be delivering substantial WINEP investment programmes for the next 25 years.

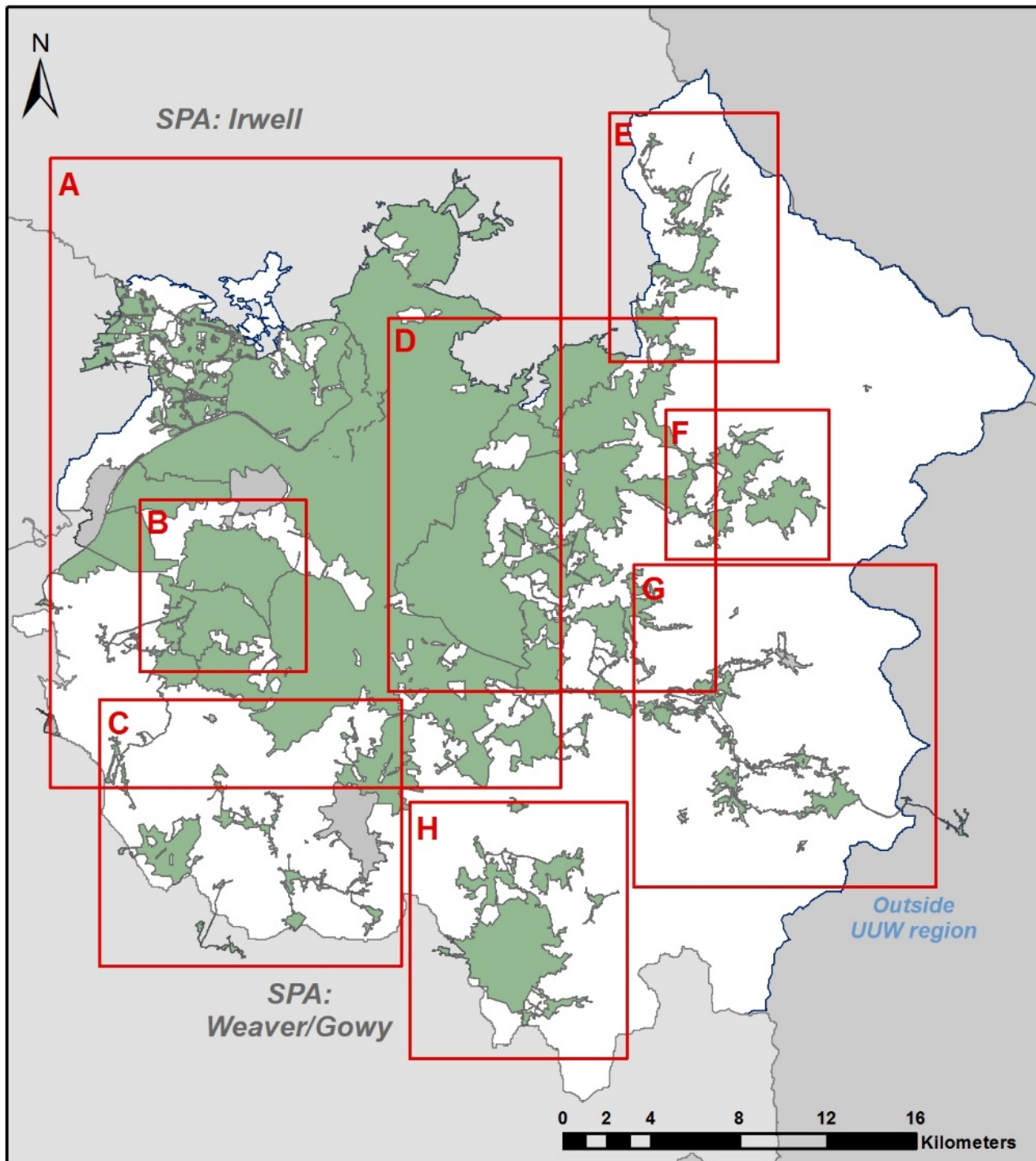
Figure 29 highlights some of the potential benefits as a result of the WINEP.

Figure 29 Potential benefits to the North West as a result of the WINEP



The WINEP will provide great opportunities to drive and deliver benefits across the North West region, and Figure 30 shows which locations within the Upper Mersey have the potential for investment cycle 2025 – 2030 WINEP schemes, based on the January 2023 WINEP submission.

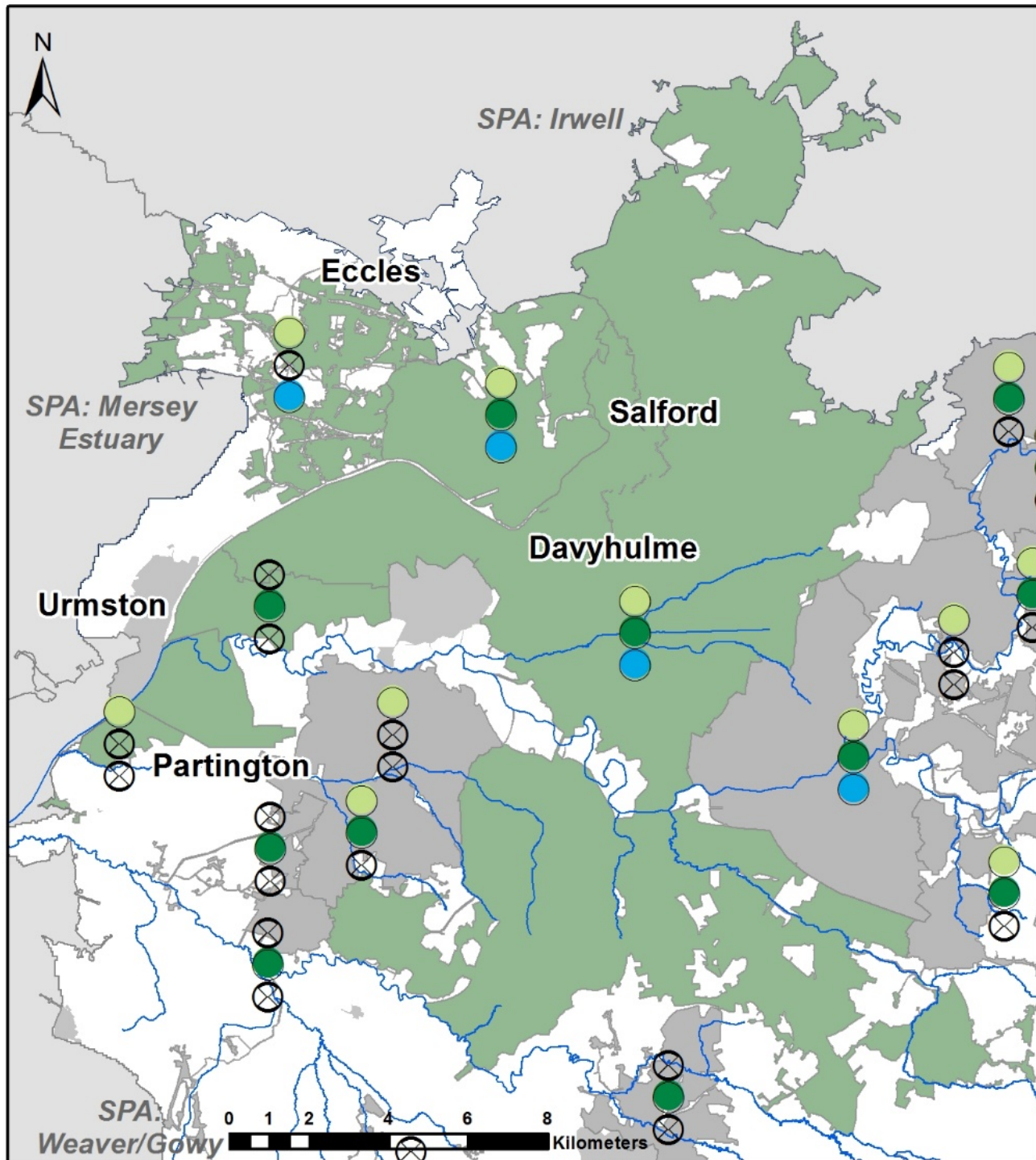
Figure 30 Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030



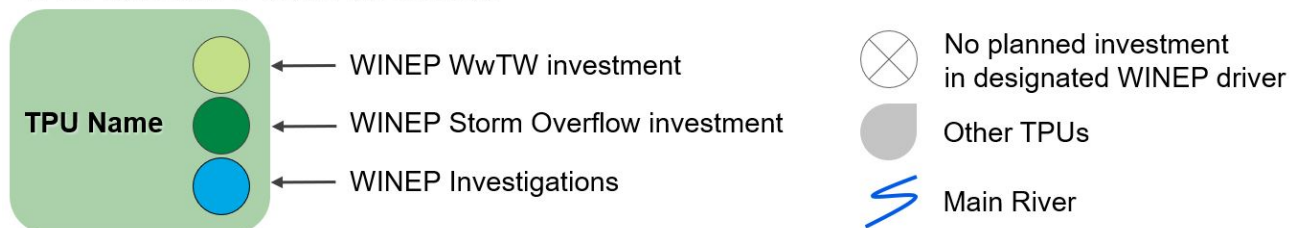
All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

The inset box references in Figure 30 above refer to Figures 30A to 30H on the following pages.

Figure 30A Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

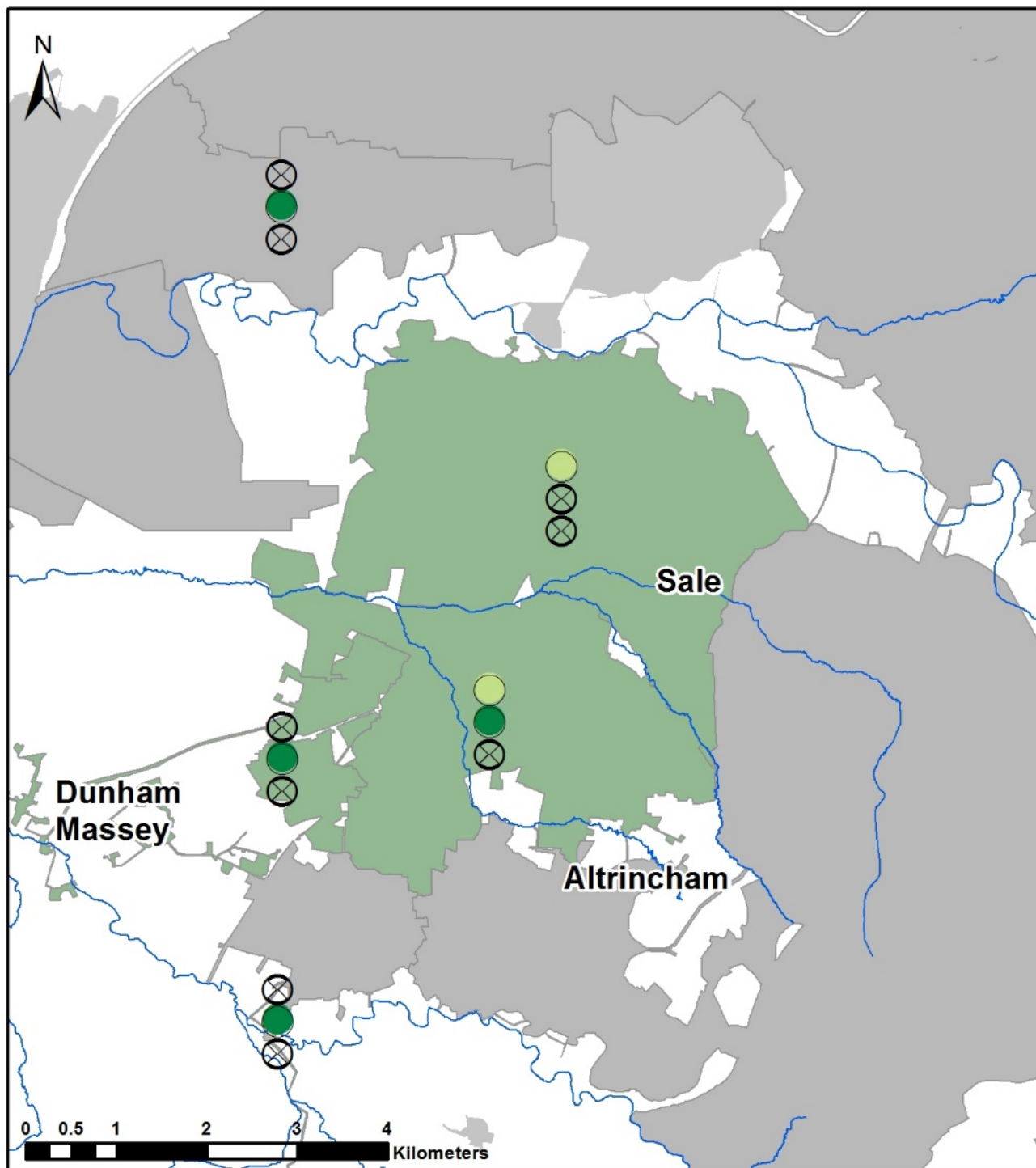


TPUs with WINEP driver investment

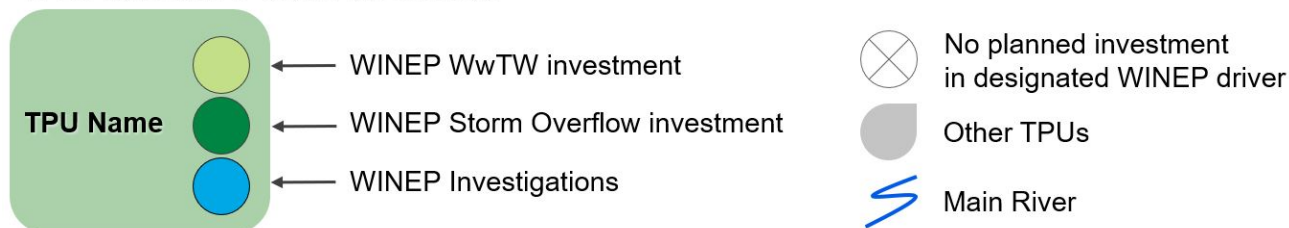


All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30B Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

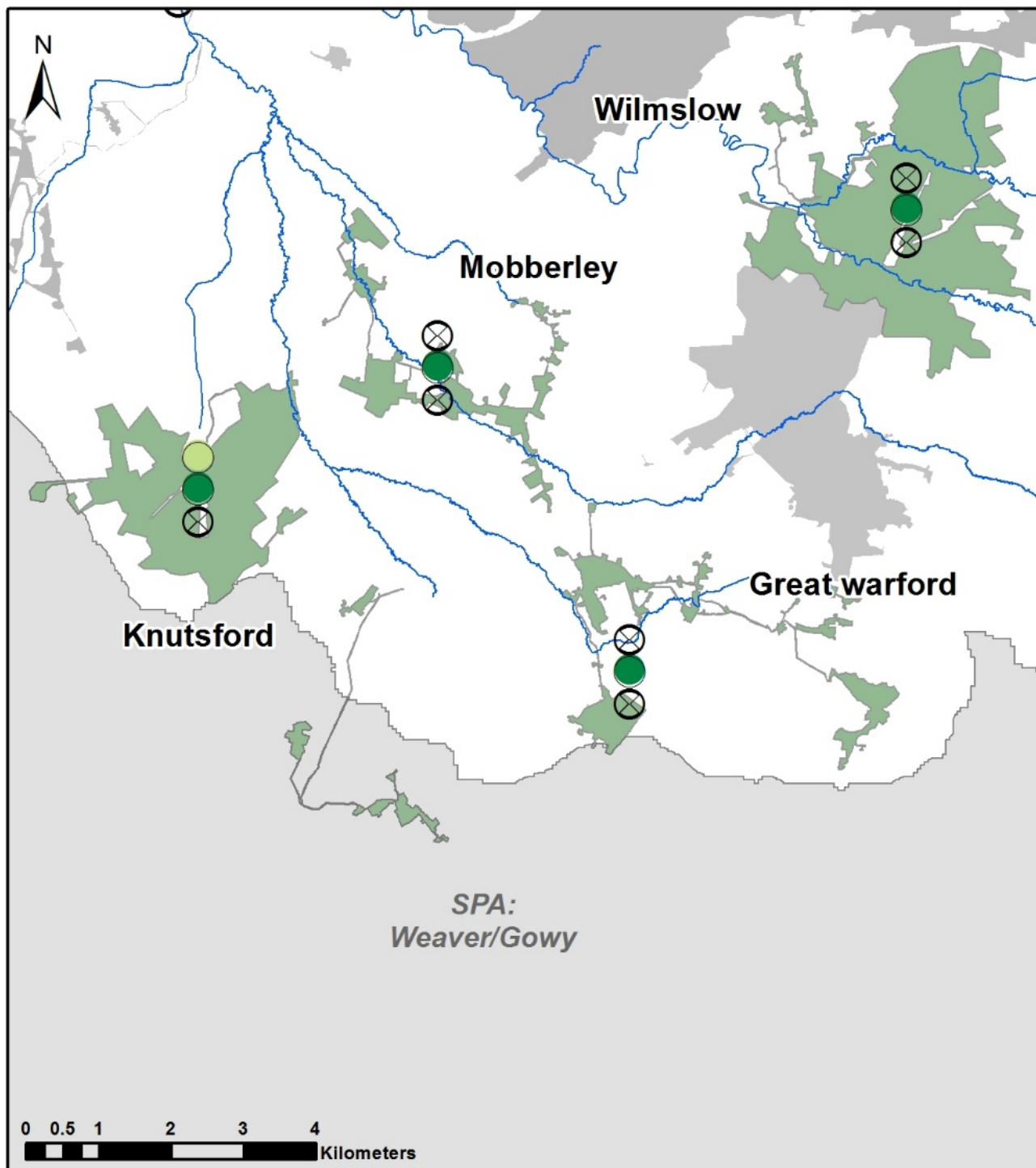


TPUs with WINEP driver investment

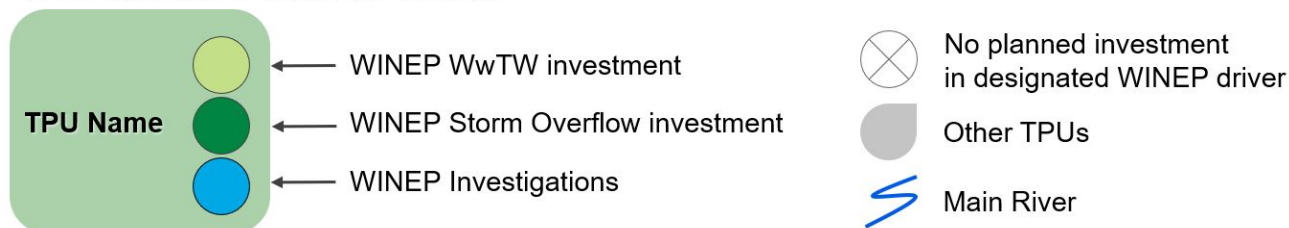


All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30C Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

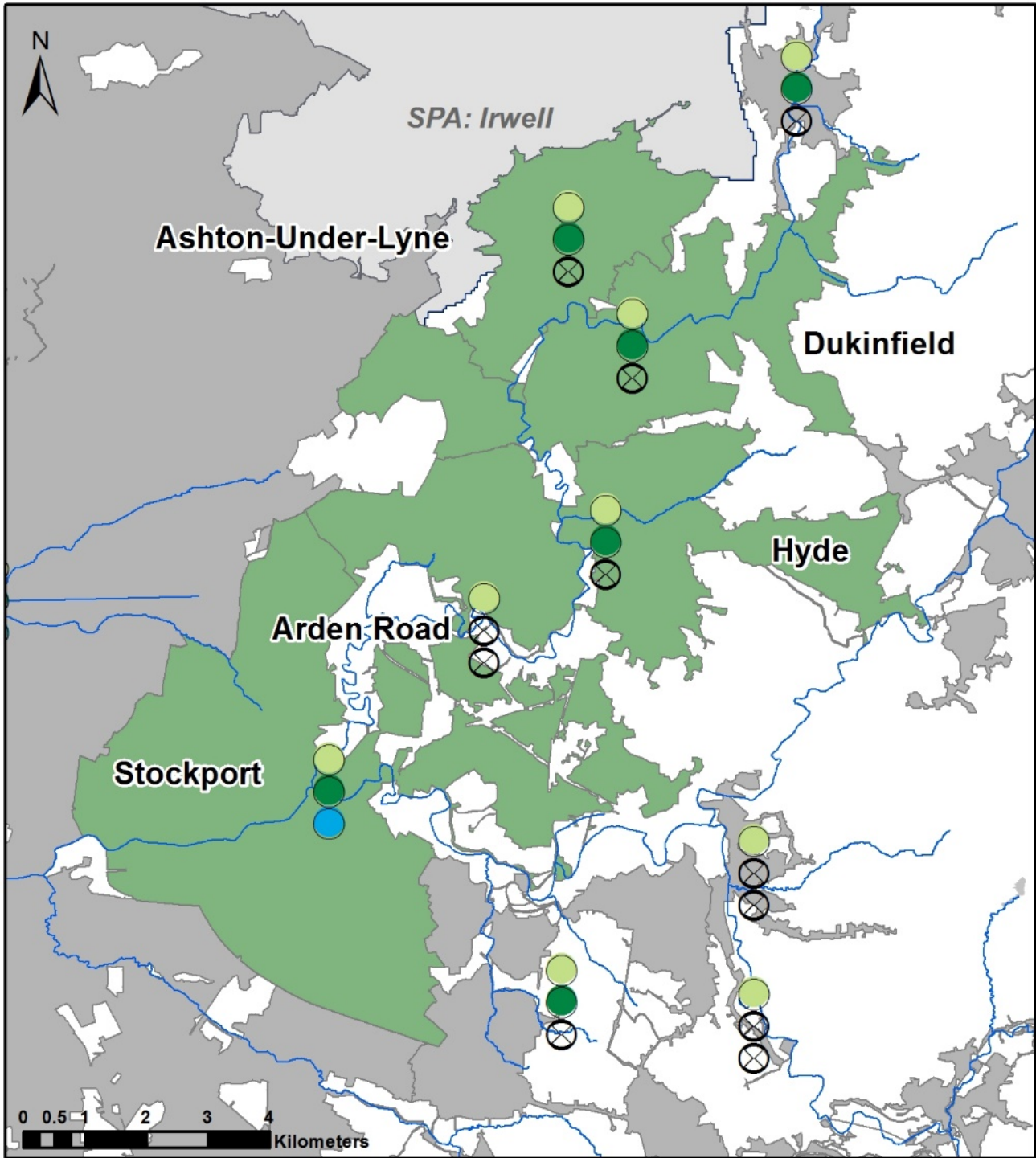


TPUs with WINEP driver investment

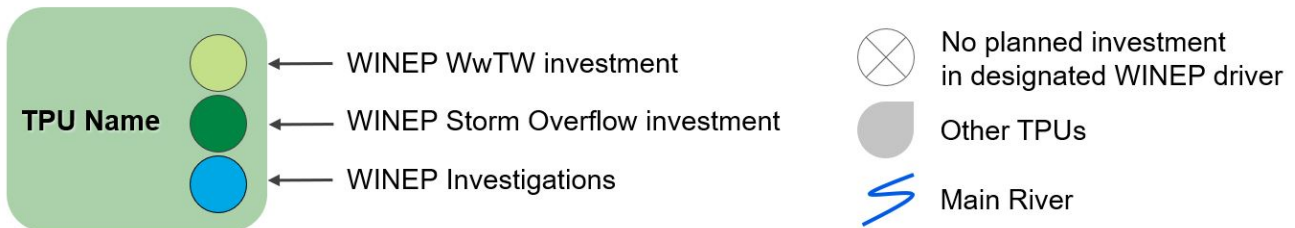


All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30D Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

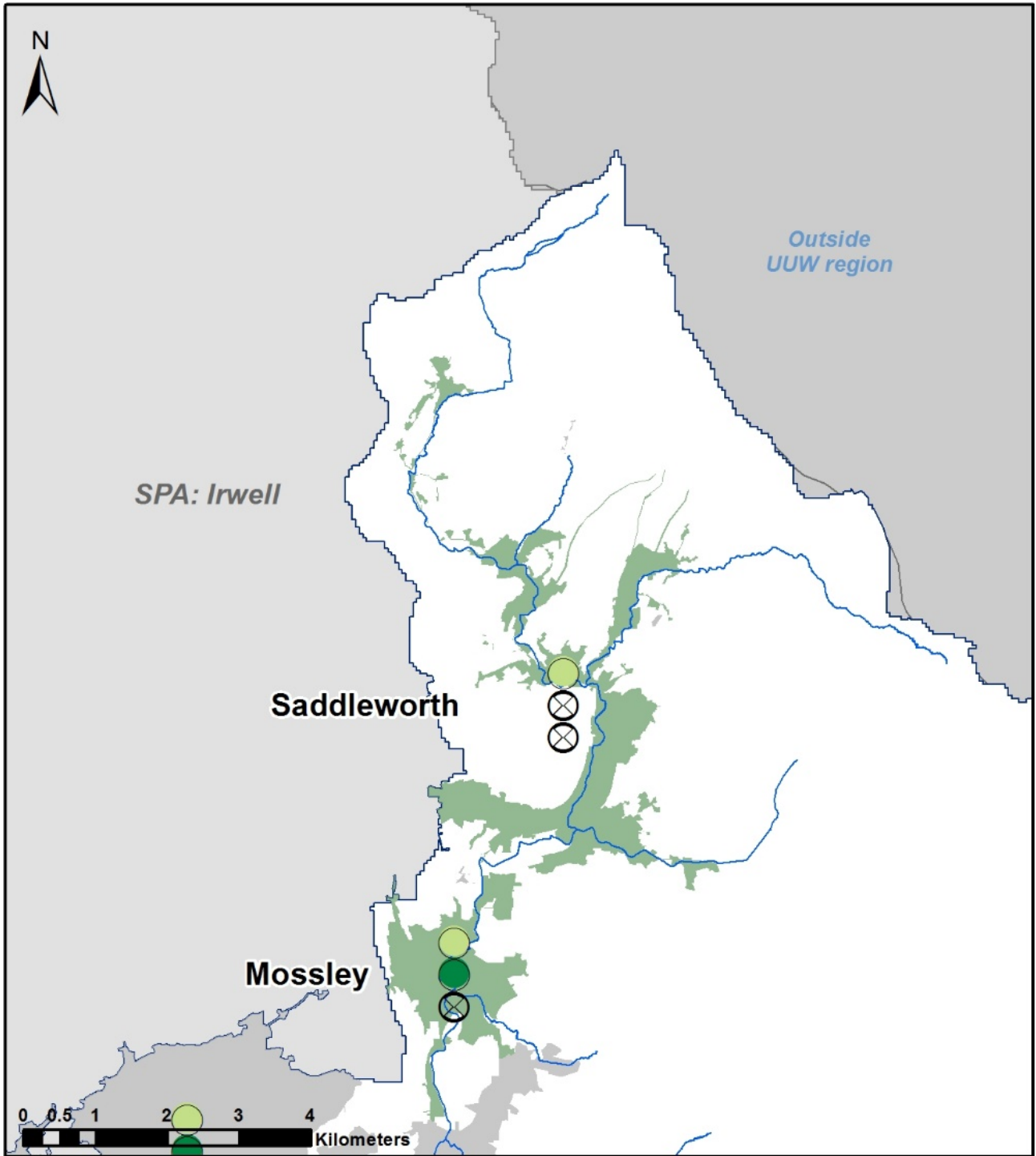


TPUs with WINEP driver investment

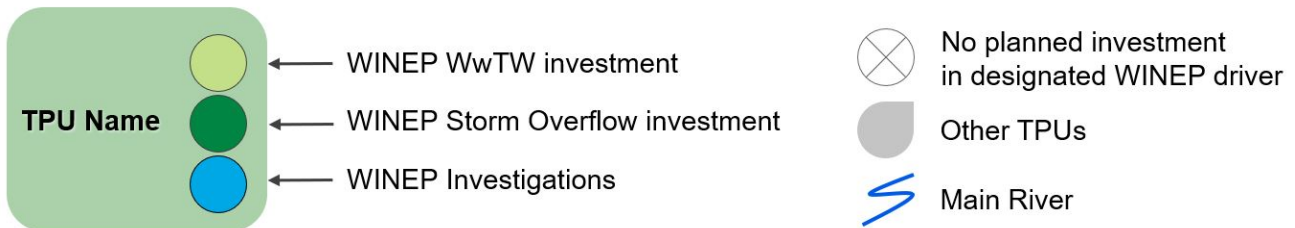


All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30E Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

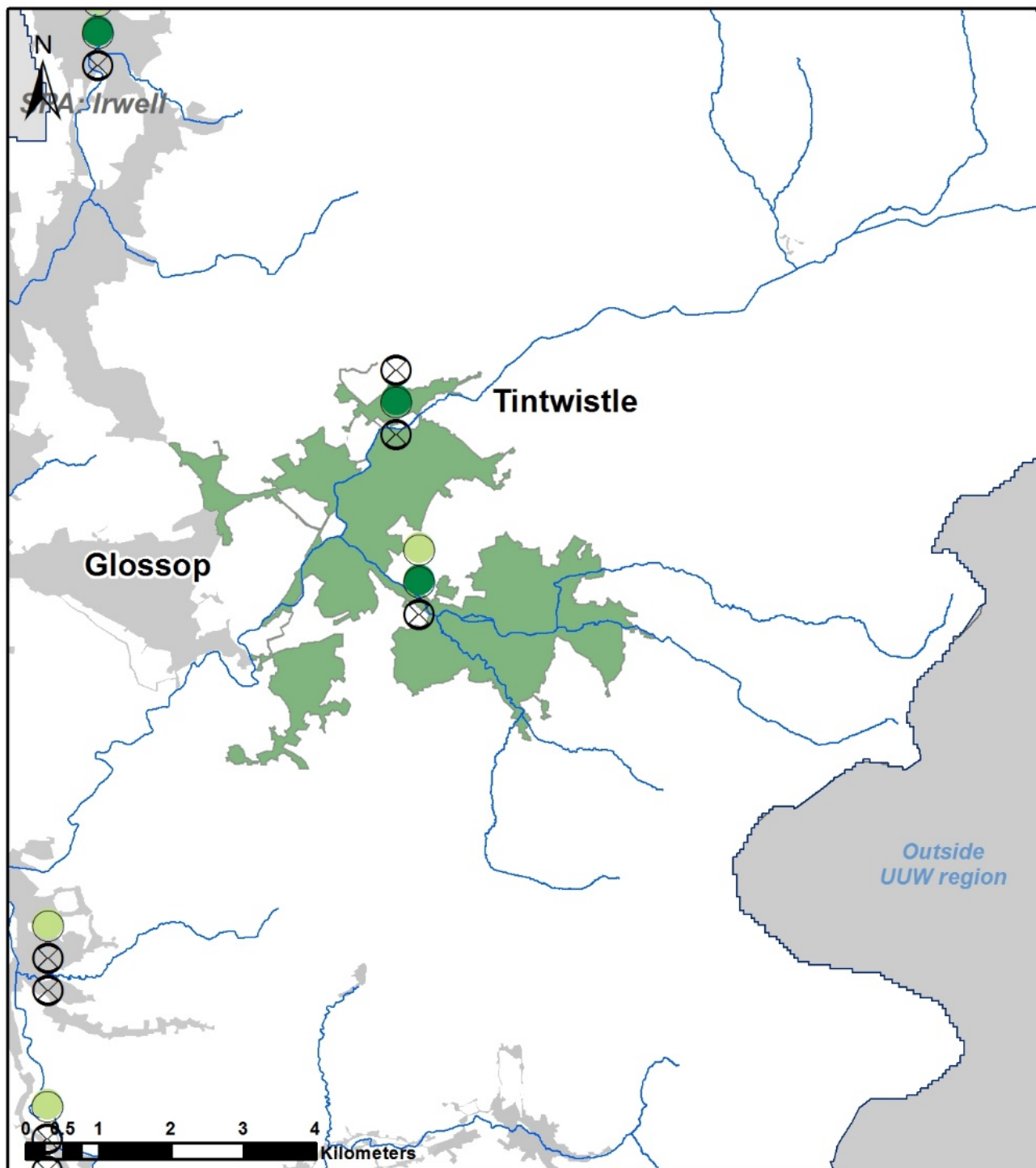


TPUs with WINEP driver investment



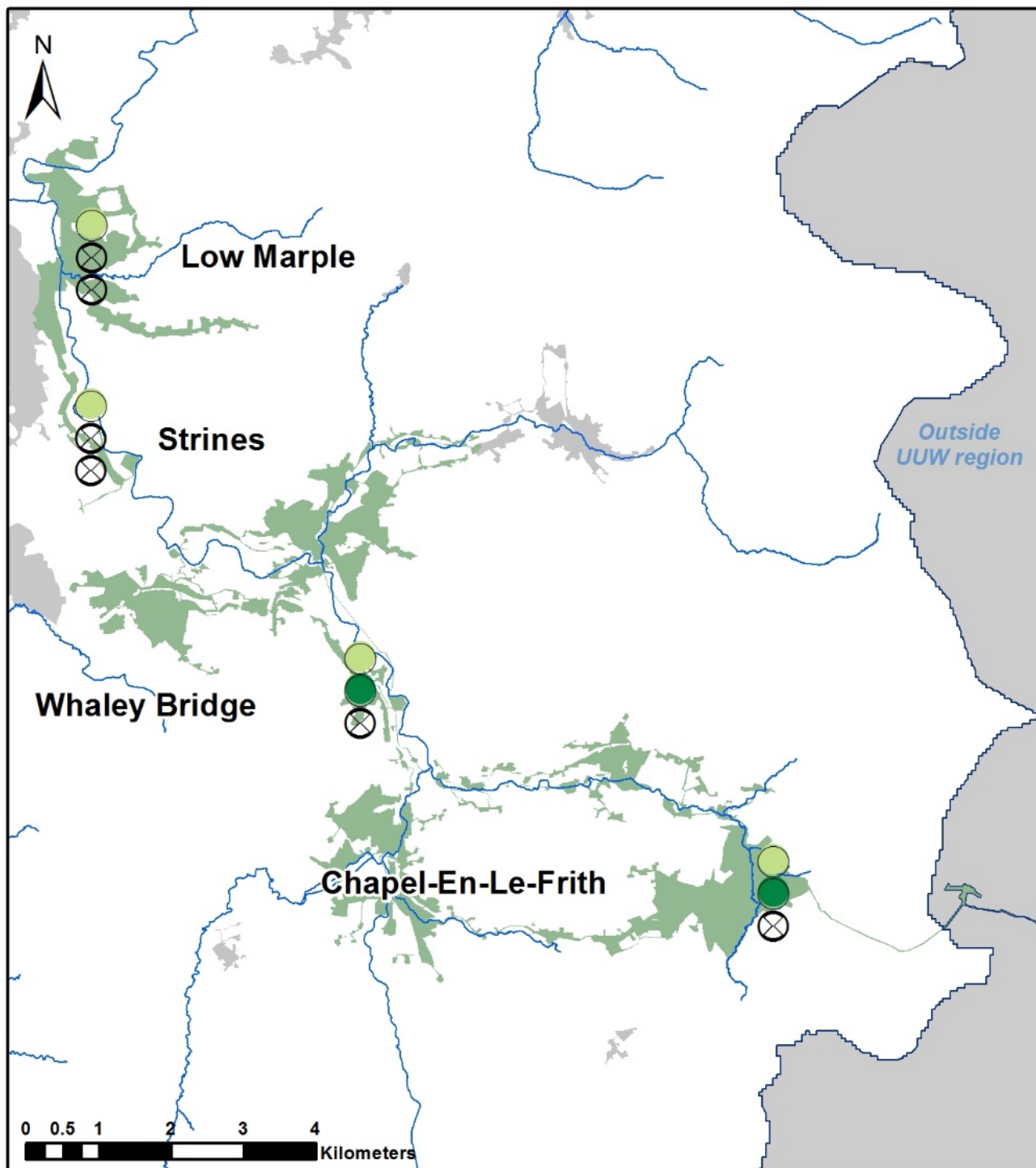
All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30F Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

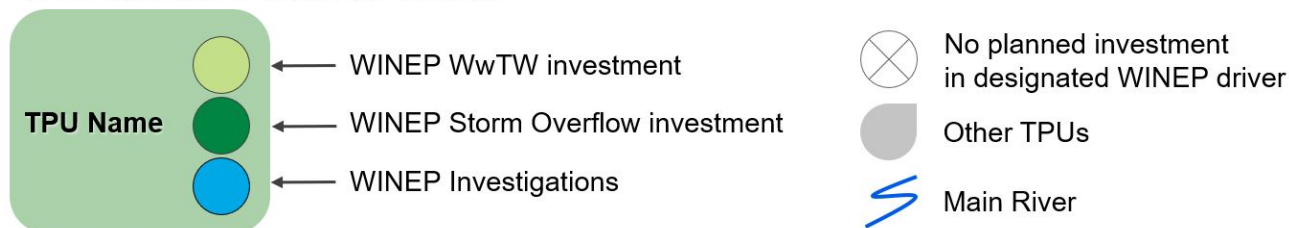


All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30G Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030

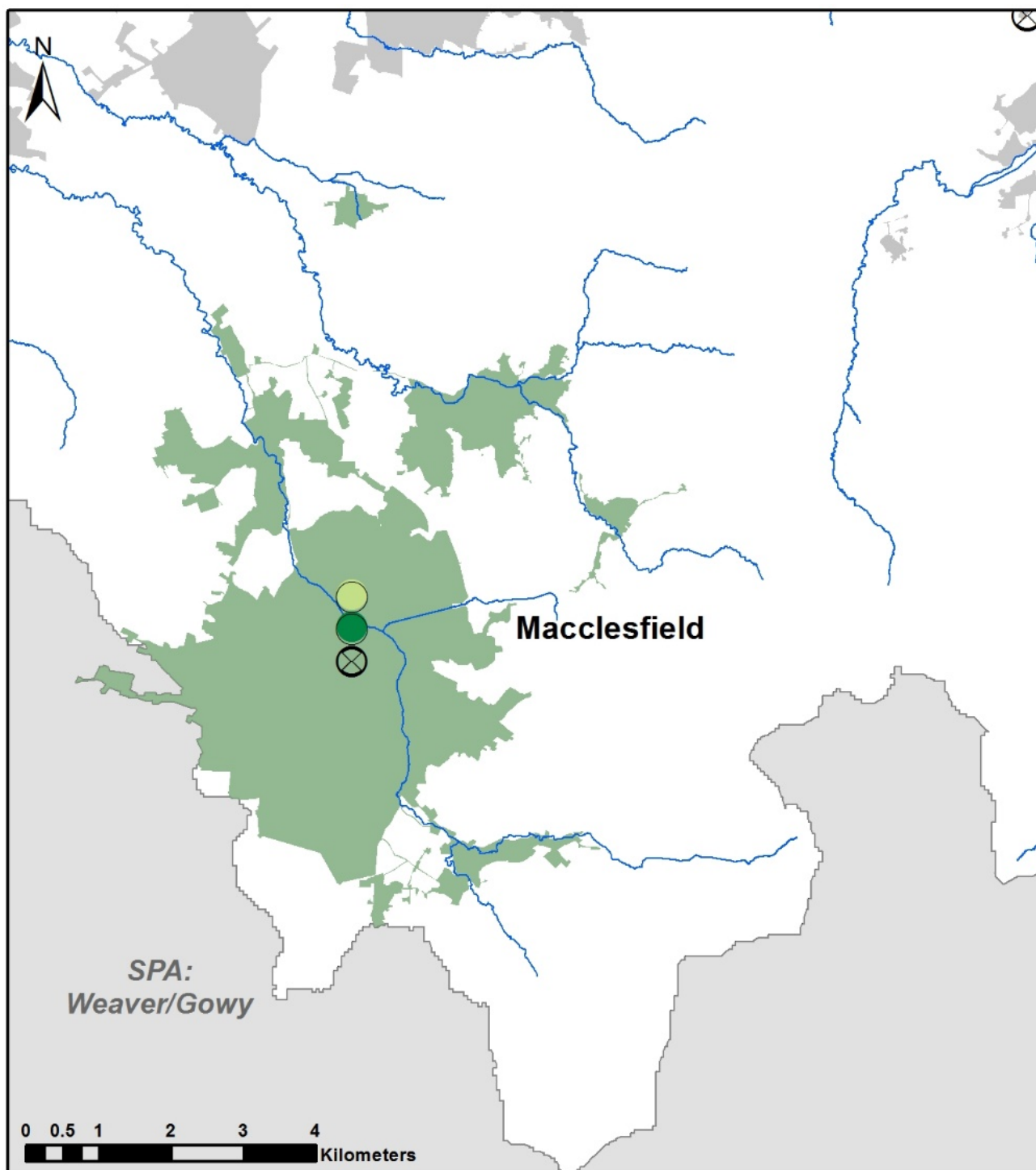


TPUs with WINEP driver investment

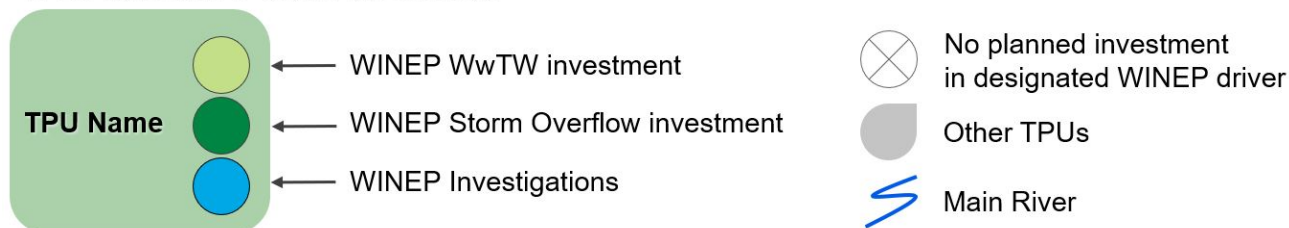


All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

Figure 30H Potential WINEP investment in the Upper Mersey for investment cycle 2025-2030



TPUs with WINEP driver investment



All potential WINEP interventions are subject to a regulatory decision making process that is ongoing at time of DWMP publication.

5.2 Options considered within the DWMP














As highlighted above, the delivery of the WINEP will drive improvements and deliver benefits across the North West in the nearer-term. The DWMP is closely aligned with the ambitions and targets included within the WINEP, and included below are potential further enhancement schemes to be delivered over the next 25-years as part of the DWMP.

The development of the DWMP has utilised various data sources across the different stages of the plan, such as risk identification and BRAVA, partnership opportunities, and option development. This has allowed us to understand what options and interventions could be introduced to mitigate shared risks and harness opportunities for collaboration. This aspect of the DWMP is known as preferred options and has been developed using a decision support tool and by following the option hierarchy. The preferred options are high-level potential interventions up to 2050.

The development of the DWMP preferred options followed an iterative screening processes (outlined in section 4) which have been grouped into option types as shown in Figure 31. There are three main categories which are:

- ‘Reducing Service Demand’ which focusses on either reducing the amount of wastewater that is produced, or preventing it from reaching the sewer network;
- ‘Better System Management’ which focusses on managing and operating the existing assets in a more efficient or effective manner; and
- ‘Create Additional Capacity’ which focusses on 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.

Figure 31 Option types

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

Potential opportunities for investment as part of the DWMP can be summarised as:

- Level 1: Regional measures (section 5.2.1);
- Level 2: Options for the Upper Mersey (section 5.2.2); and
- Level 3: Options for each location within the Upper Mersey (section 5.2.3).

Across these three levels, there are numerous opportunities over the next 25 years for continued and new partnerships in addition to new innovative technology.

The following sections provides an overview of the outputs from the DWMP. This includes all potential interventions that could be undertaken over the next 25-years to deliver benefit to the North West under the assumption of unconstrained funding. Therefore, it is likely that the interventions implemented will vary.

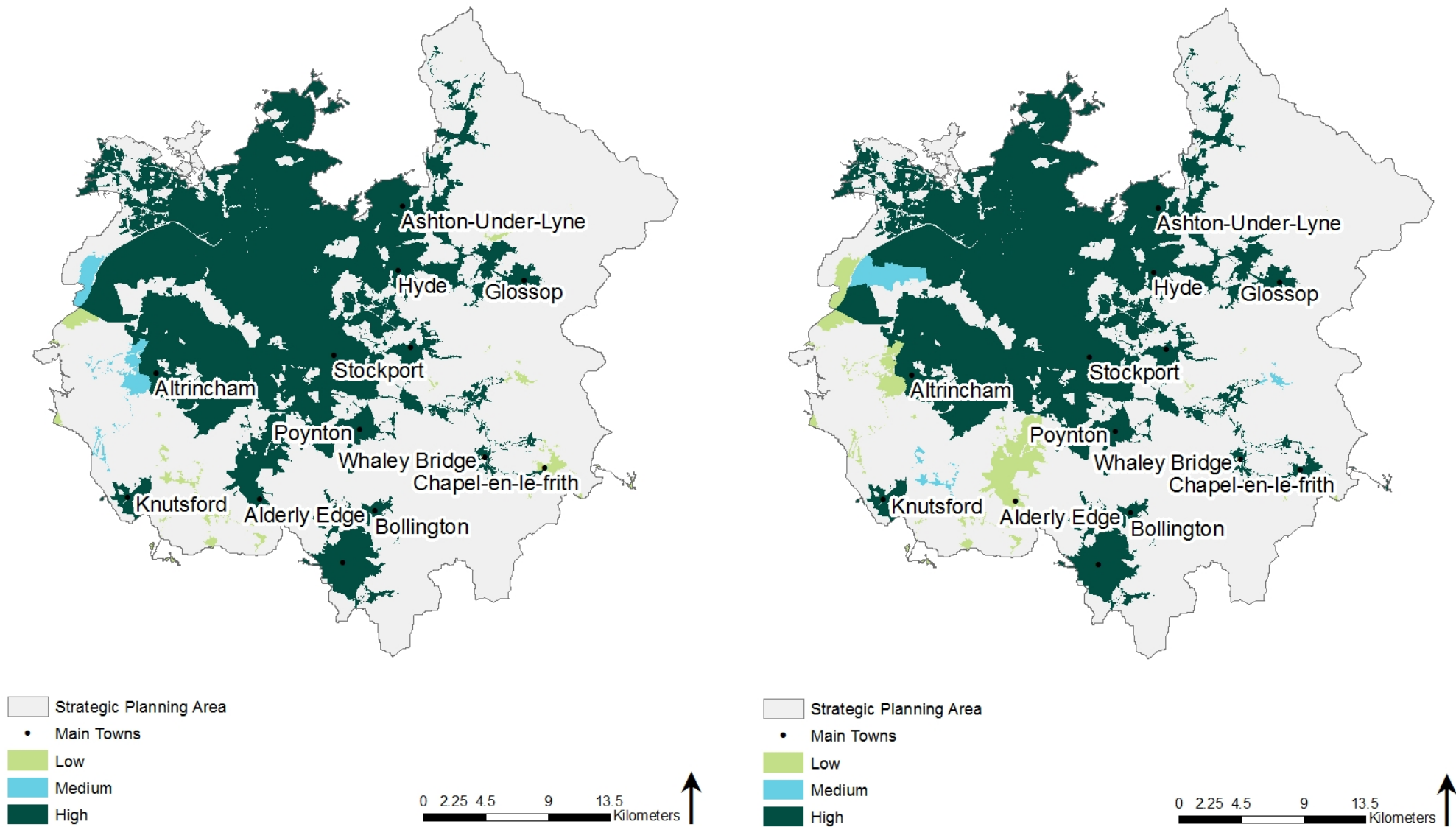
5.2.1 Level 1: Regional measures

Across the option types, 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 Upper Mersey catchment, customer engagement options (Figure 32), comprising 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 Stockport, Mossley and Davyhulme 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 Stockport and Davyhulme TPUs (Figure 32).

Figure 32 Map of the benefit of implementing regional customer engagement (left) and sustainable drainage (right) options across the Upper Mersey



5.2.2 Level 2: Options for the Upper Mersey

The DWMP preferred options can also be summarised as the potential investment and associated benefits across the Upper Mersey. These can be demonstrated by:

- The potential options to address environmental planning objectives as shown in Figure 33. This incorporates elements such as wastewater treatment work permit compliance, WINEP compliance and pollution of watercourses;
- The potential options to address flooding planning objectives as shown in Figure 34. This incorporates elements such as internal flooding, external flooding, highway and open space flooding and 1 in 50-year flooding; and
- The distribution of the potential options that could contribute to addressing the above planning objectives as shown in Figure 35.

Figure 33 Distribution of environmental investment by option type within the Upper Mersey

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 surface water source control measures (e.g. SUDS), improvements in wastewater treatment works, and construction of new drainage capacity.

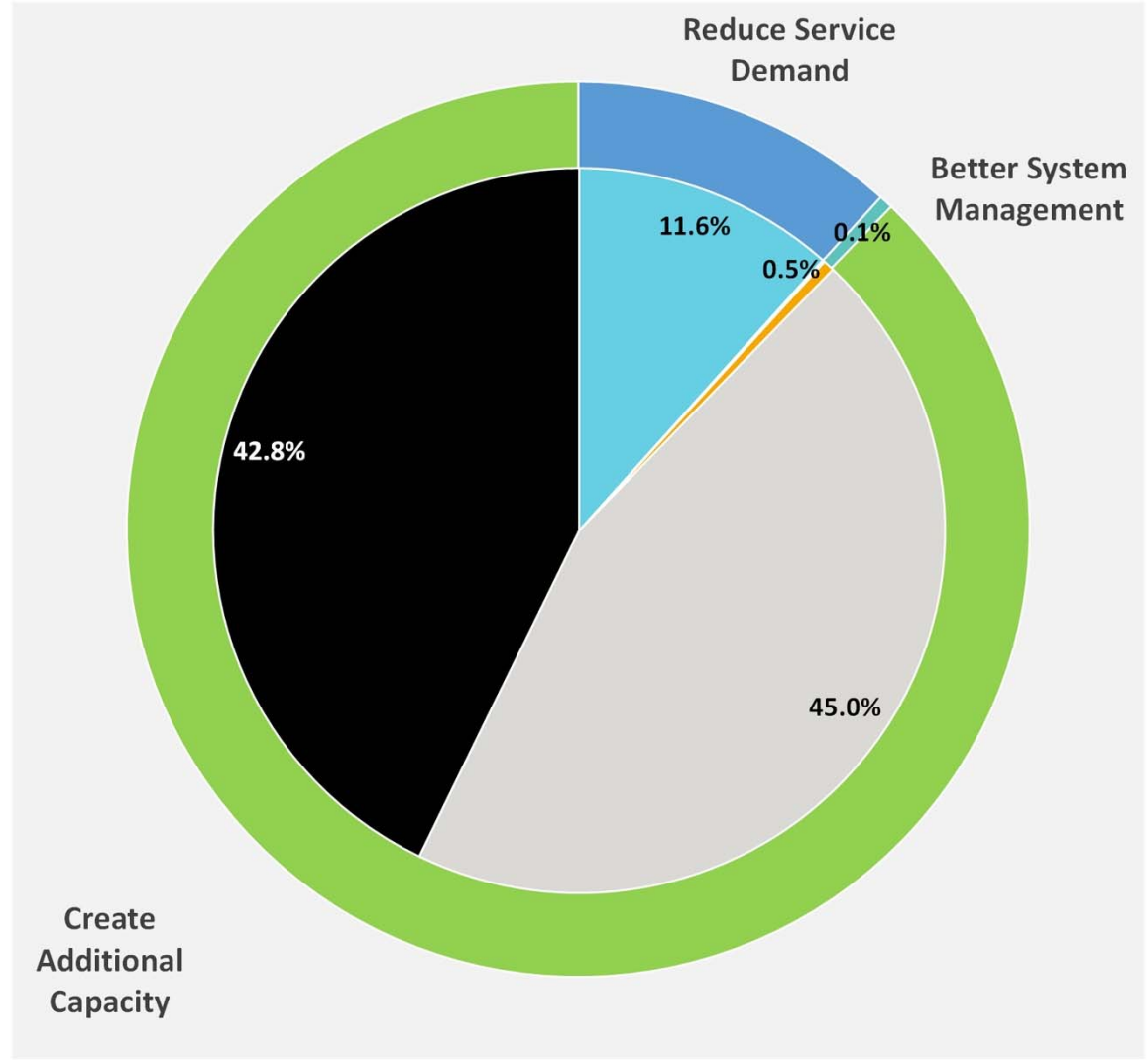


Figure 34 Distribution of flooding investment by option type within the Upper Mersey

This is an example of how different options types may be used to address flooding planning objectives. Two thirds of the investment could be through construction of new drainage capacity.

The remainder could be through investment in customer engagement, surface water source control measures (e.g. SUDS) and improving existing system management systems.

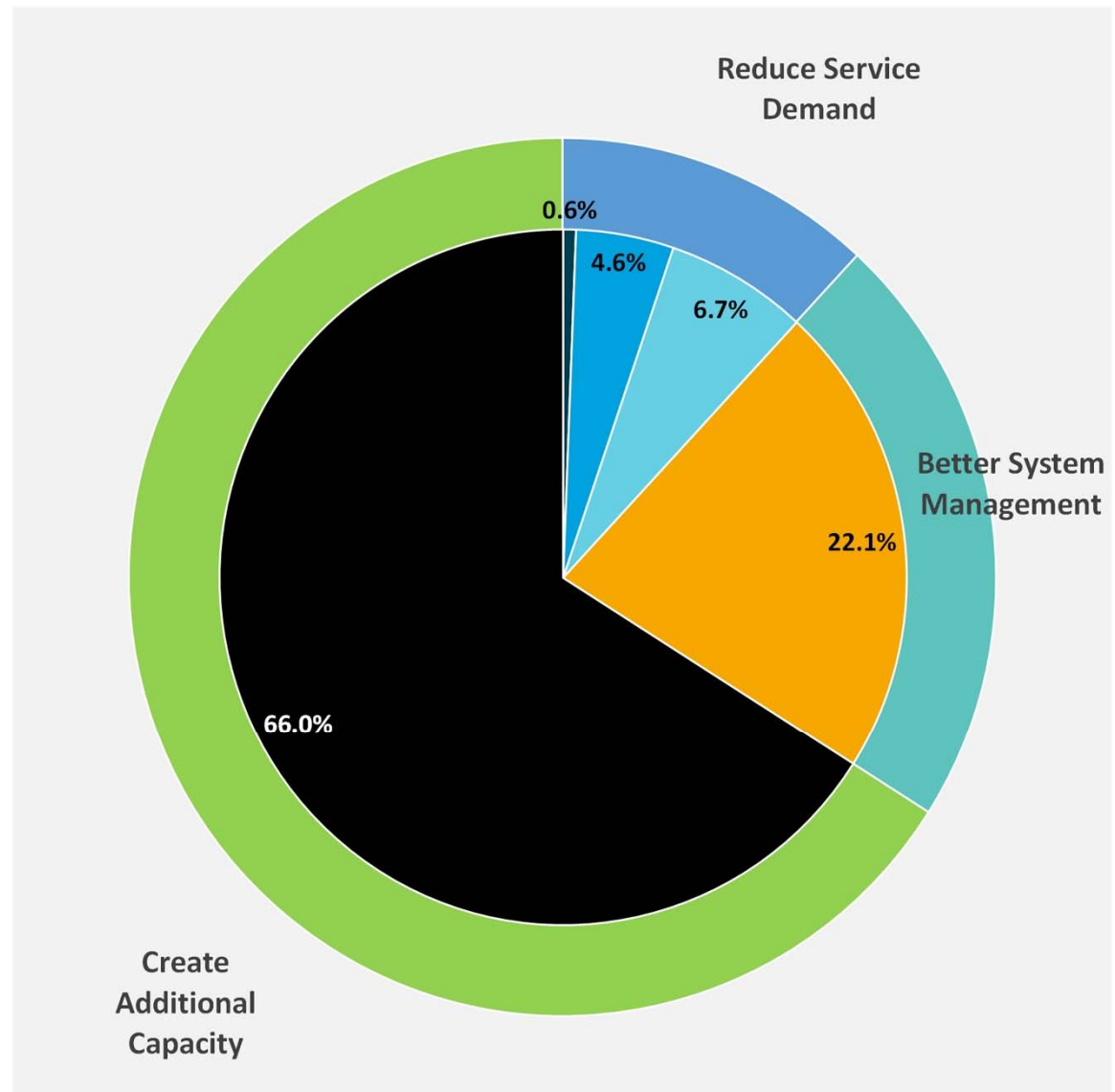
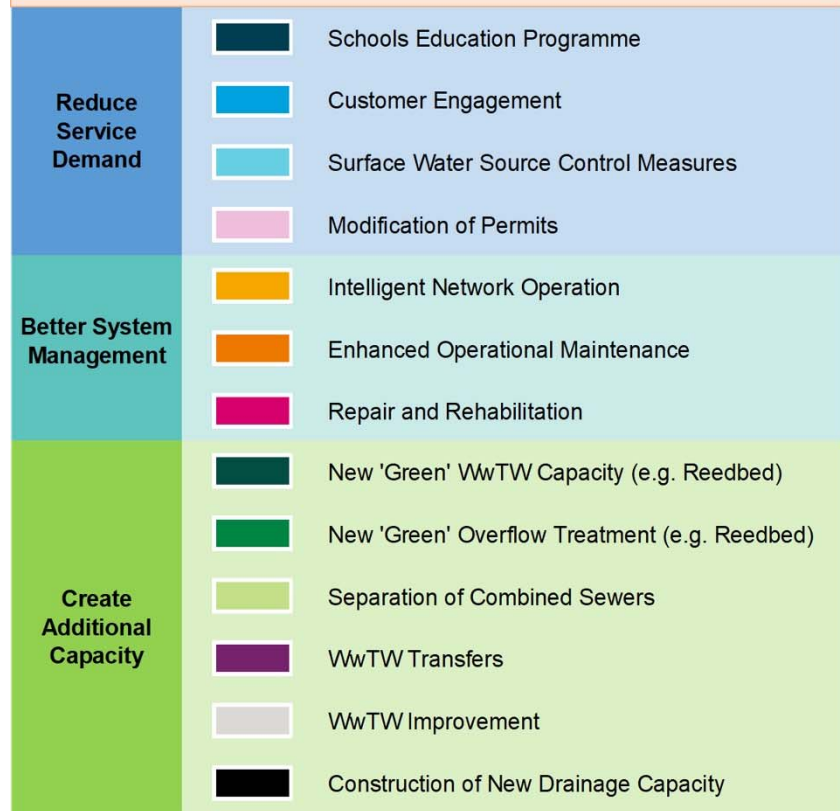
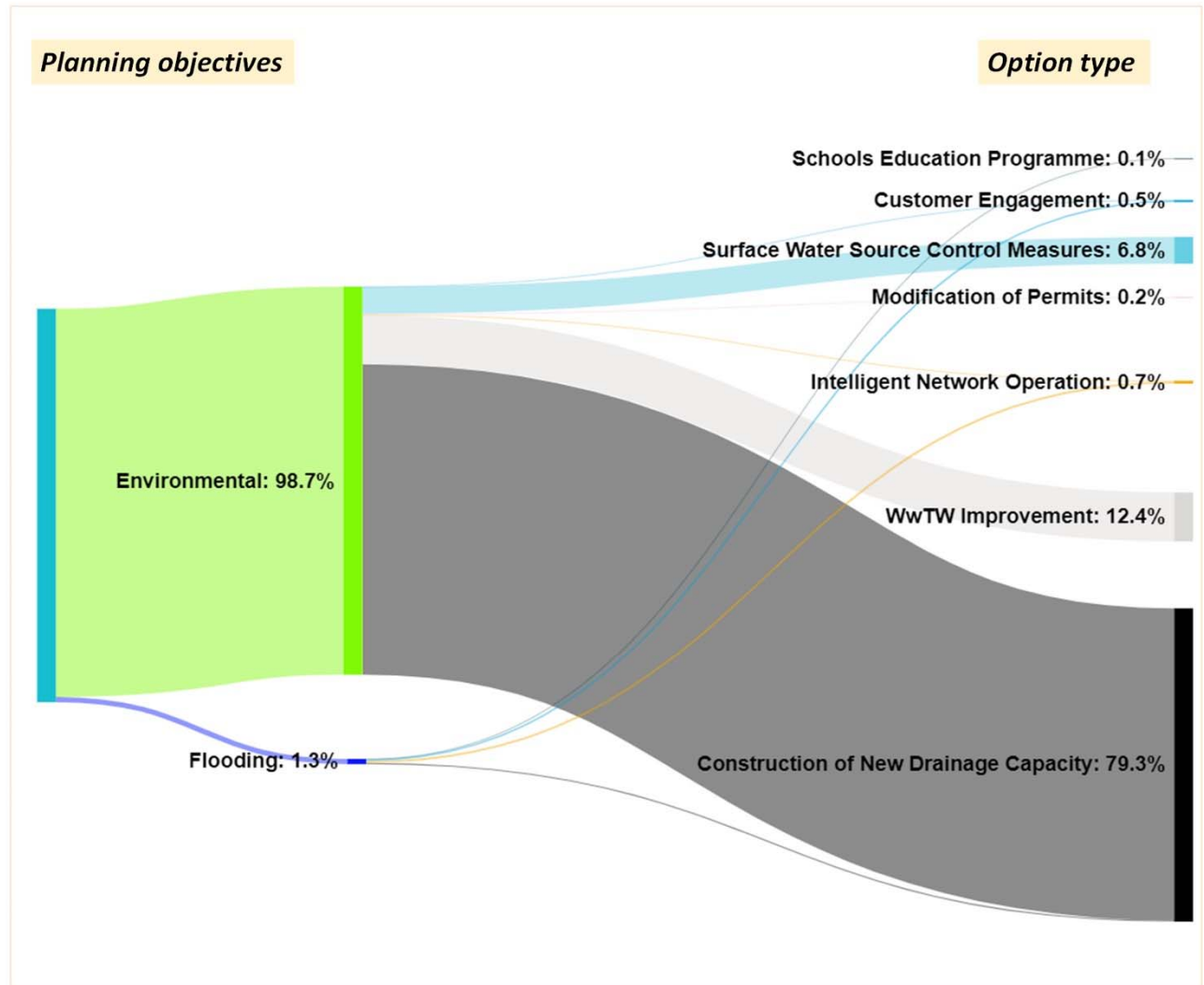
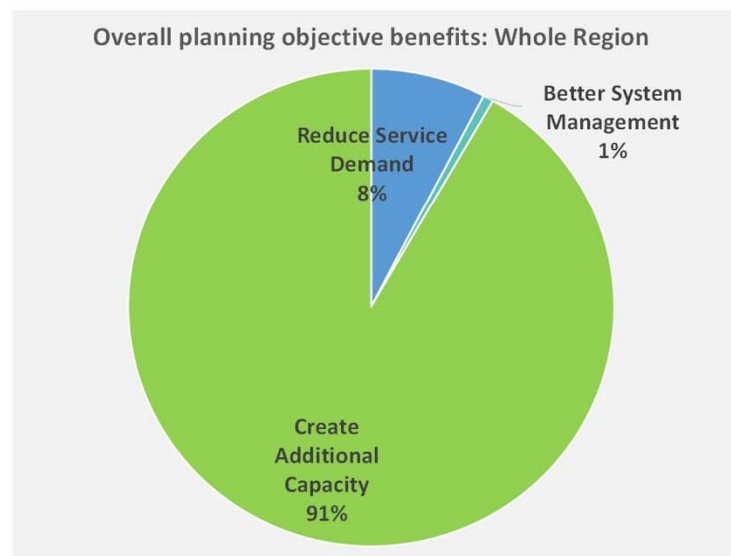


Figure 35 Distribution of benefit by option type within the Upper Mersey

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

United Utilities Water (Uuw) commitments to improving flooding performance could be met through the reduction of surface water flows, construction of new stormwater drainage capacity, installation of intelligent network operations, supported by schools and customer engagement programmes.

Environmental planning objectives could be met mainly through, the provision of wastewater treatment works improvements and stormwater storage capacity, plus new surface water source control measures (e.g. SUDS)

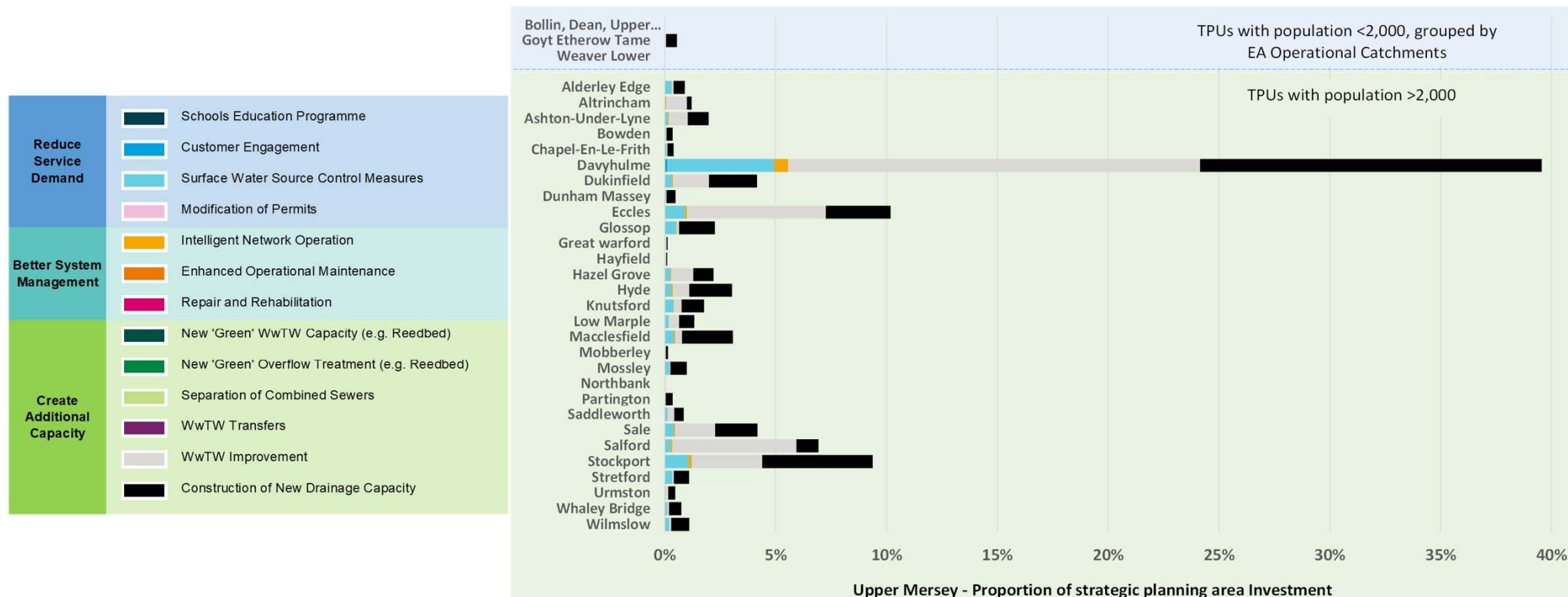


5.2.3 Level 3: Local options for each TPU within the Upper Mersey

The proportion of the Upper Mersey’s potential investment in each TPU, split up by option type, is shown in Figure 36. 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 sub catchment (Environment Agency Operational Catchment boundaries).

It can be seen that in the Upper Mersey, the largest TPUs see the largest potential investment, which is split predominantly between surface water control, WWTW improvements, and construction of new storm water storage tanks.

Figure 36 Proportion of investment seen in each TPU within the Upper Mersey



The following sub-sections show how 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 will be seen long into the future. Other options such as school education, are continual programmes that will help to encourage long-term sustainable behaviours, such as reduction in water use.

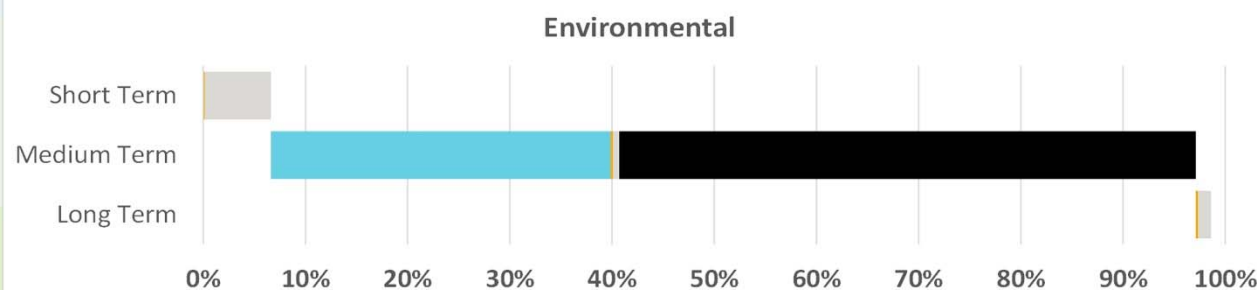
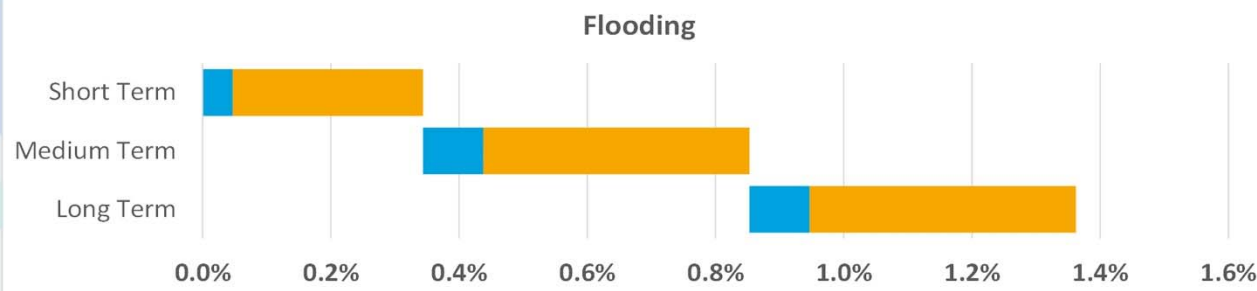
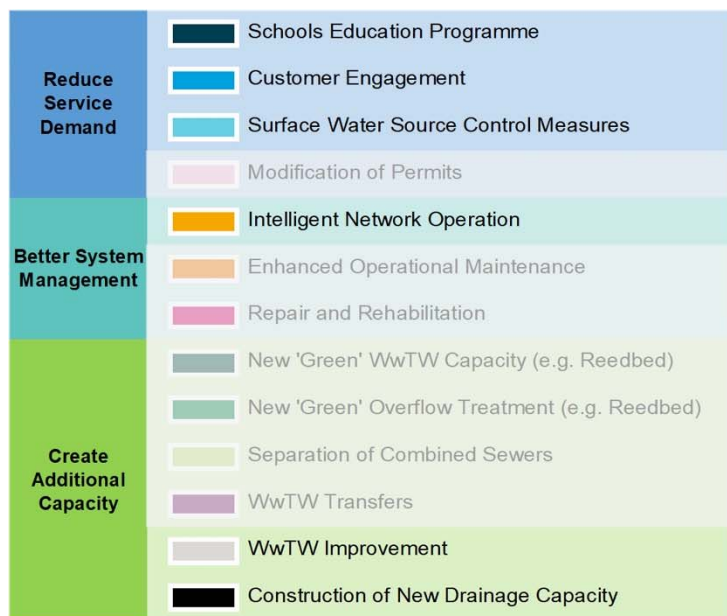
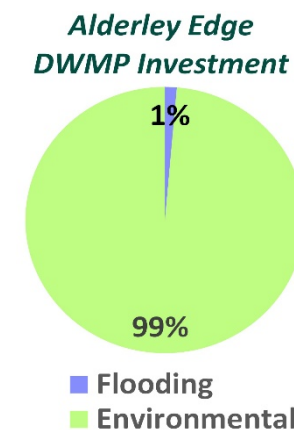
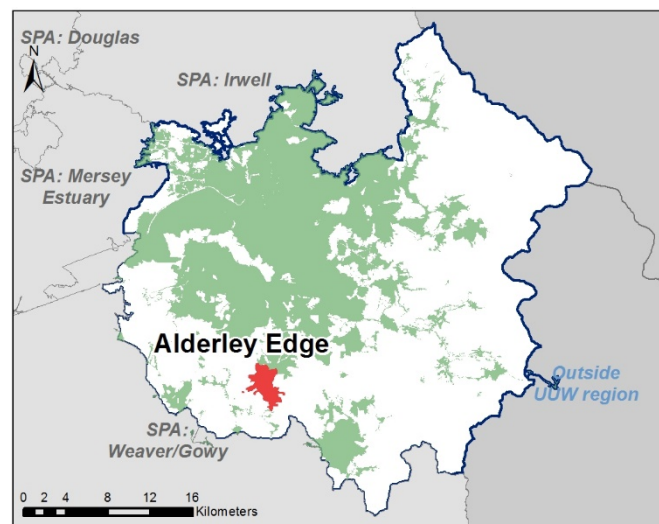
5.2.3.1 Alderley Edge

Figure 37 Details of the DWMP investment plan for Alderley Edge

The data on this page gives details of the investment plan for Alderley Edge TPU. The plan shows the geographic location of Alderley Edge within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



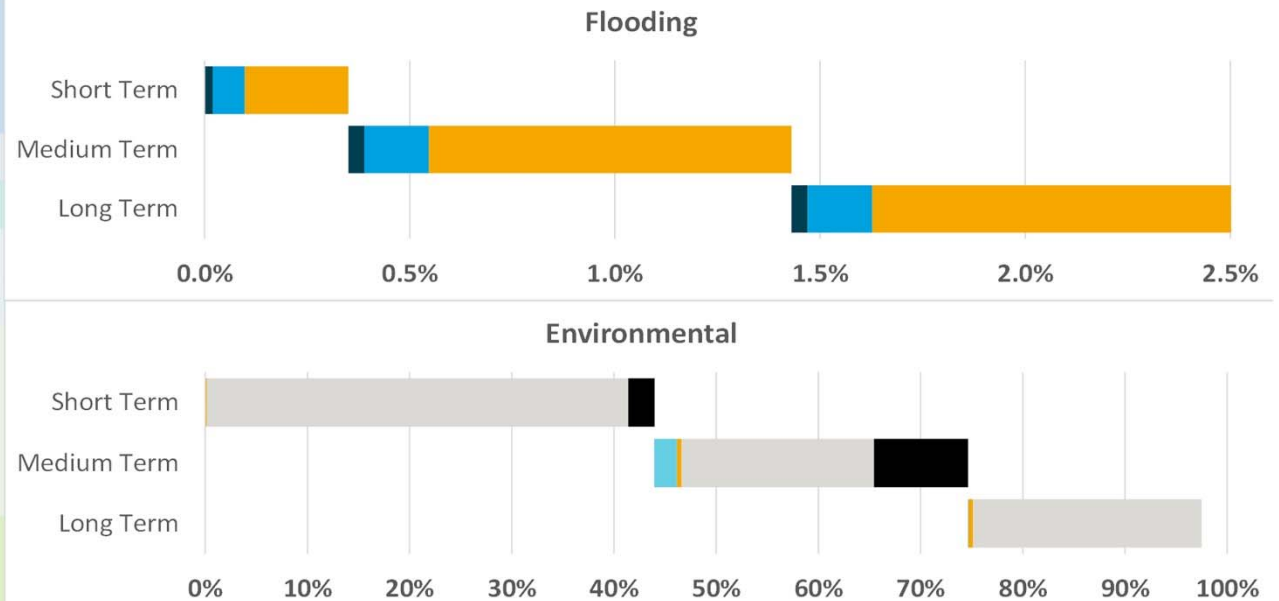
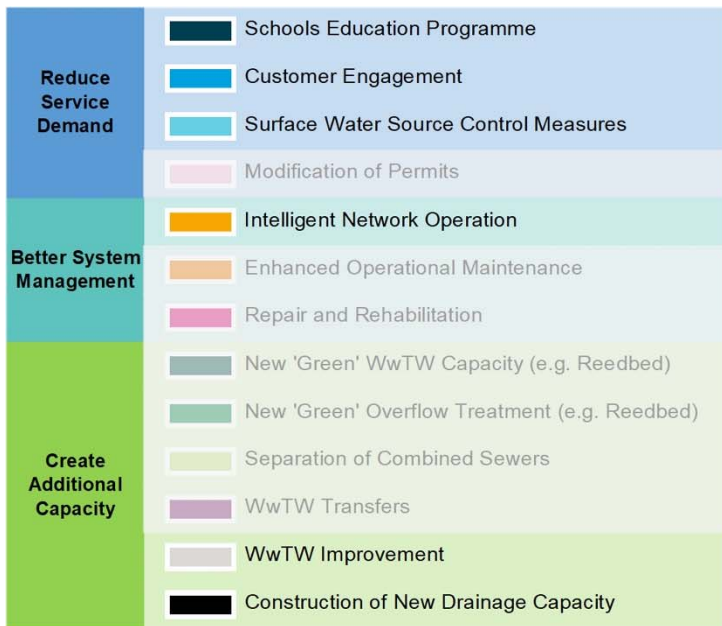
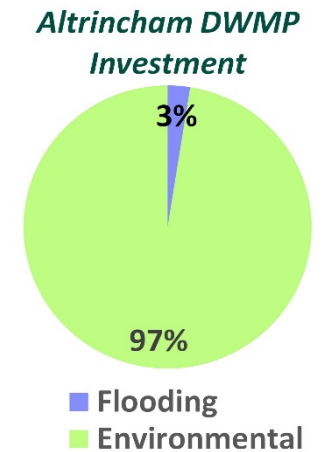
5.2.3.2 Altrincham

Figure 38 Details of the DWMP investment plan for Altrincham

The data on this page gives details of the investment plan for Altrincham TPU. The plan shows the geographic location of Altrincham within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



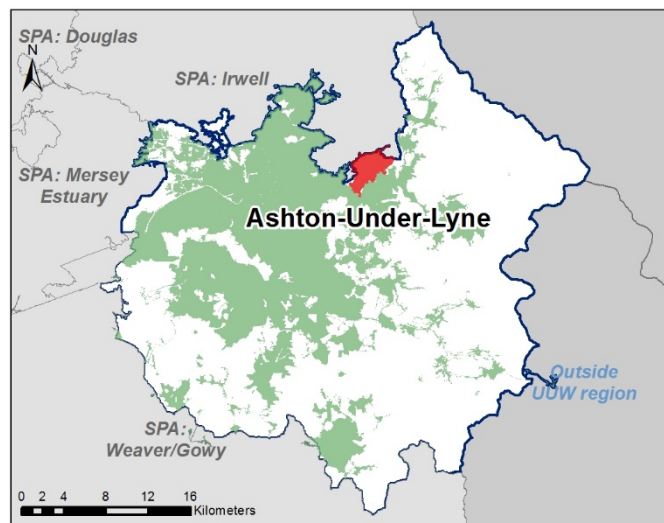
5.2.3.3 Ashton-under-Lyne

Figure 39 Details of the DWMP investment plan for Ashton-under-Lyne

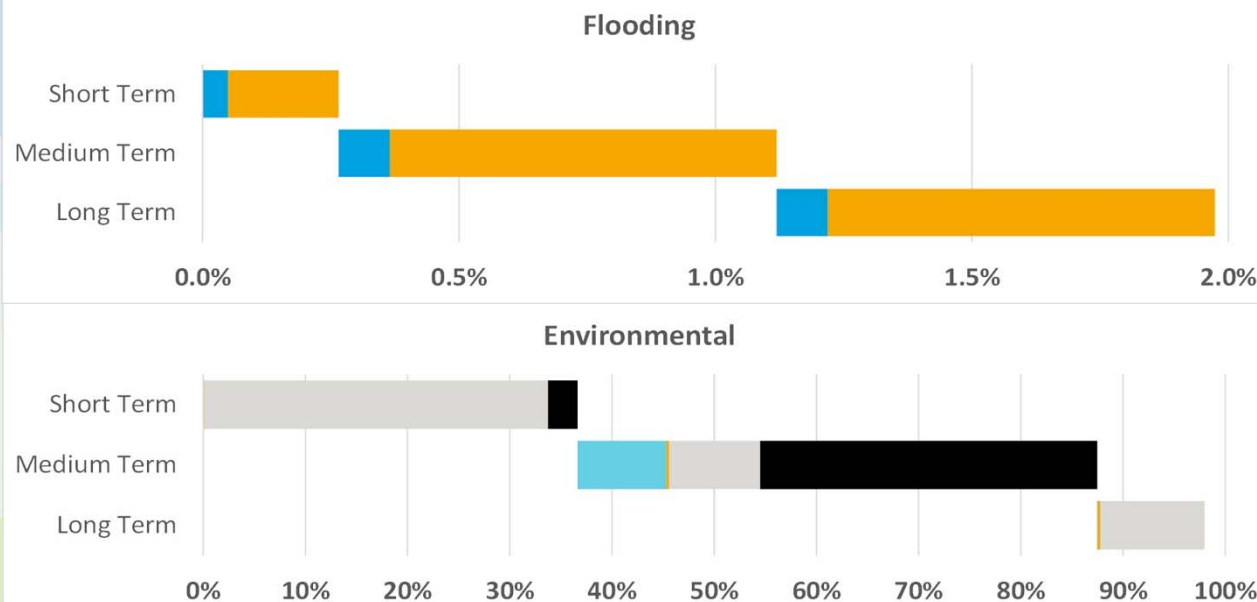
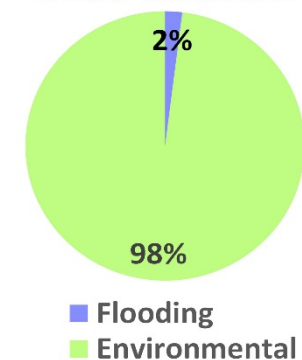
The data on this page gives details of the investment plan for Ashton-under-Lyne TPU. The plan shows the geographic location of Ashton-under-Lyne within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



Ashton-Under-Lyne DWMP Investment



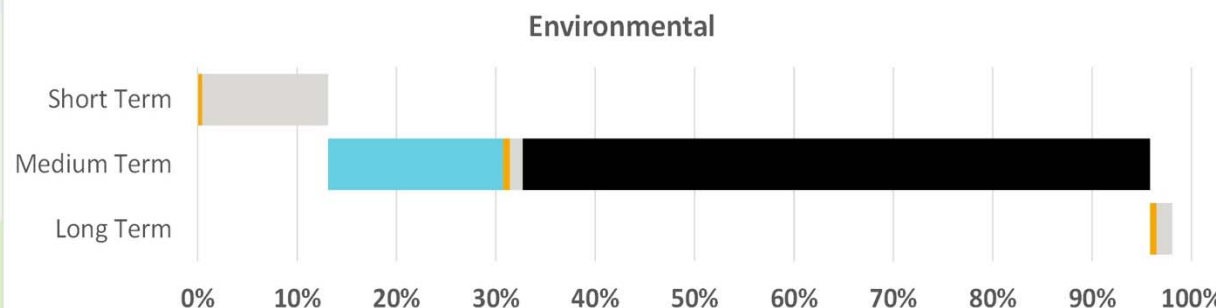
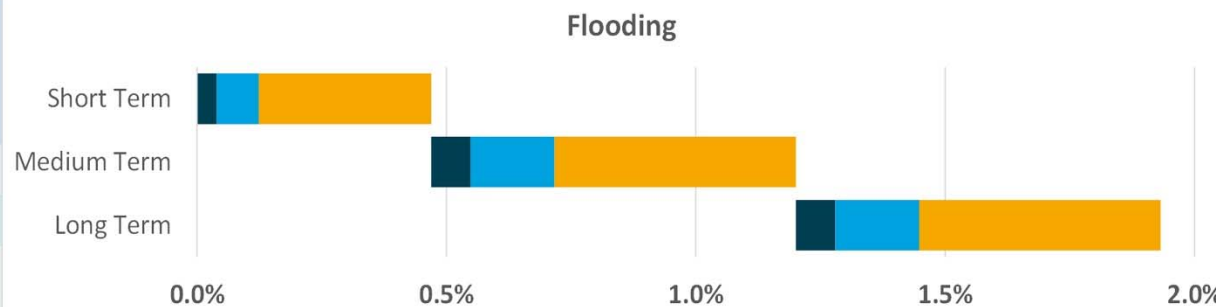
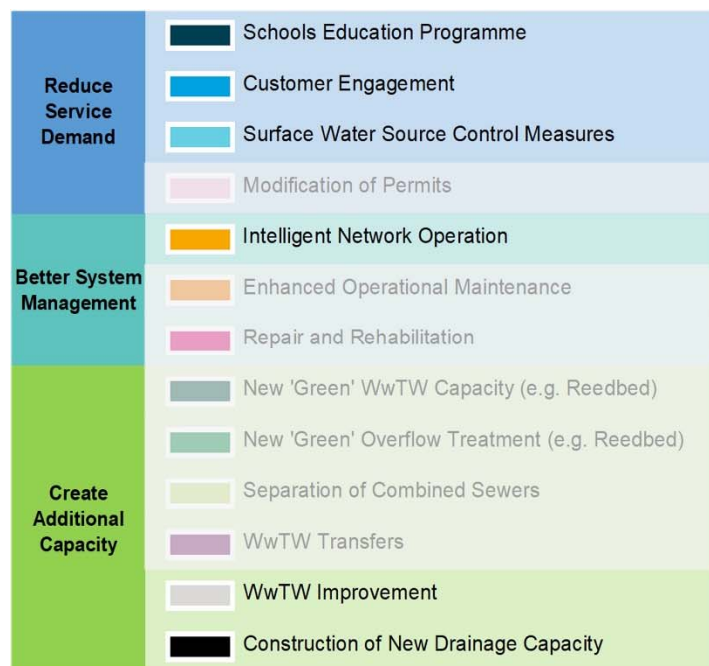
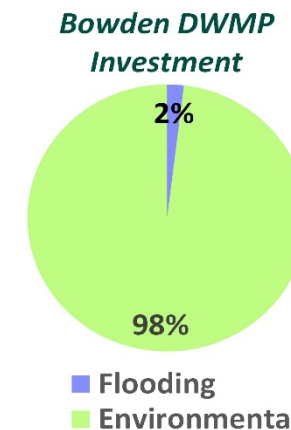
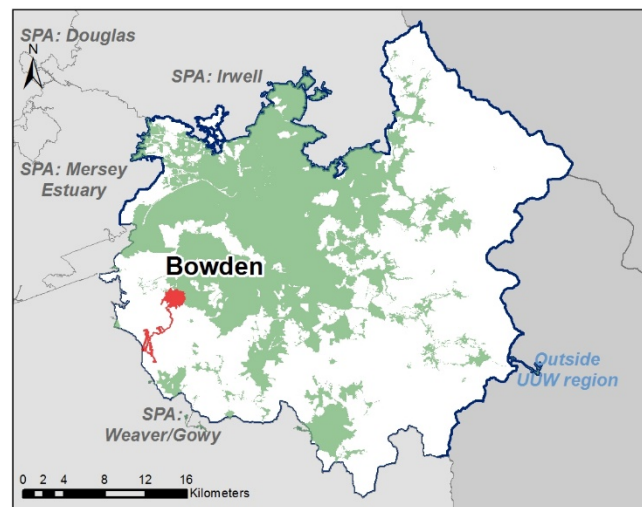
5.2.3.4 Bowden

Figure 40 Details of the DWMP investment plan for Bowden

The data on this page gives details of the investment plan for Bowden TPU. The plan shows the geographic location of Bowden within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



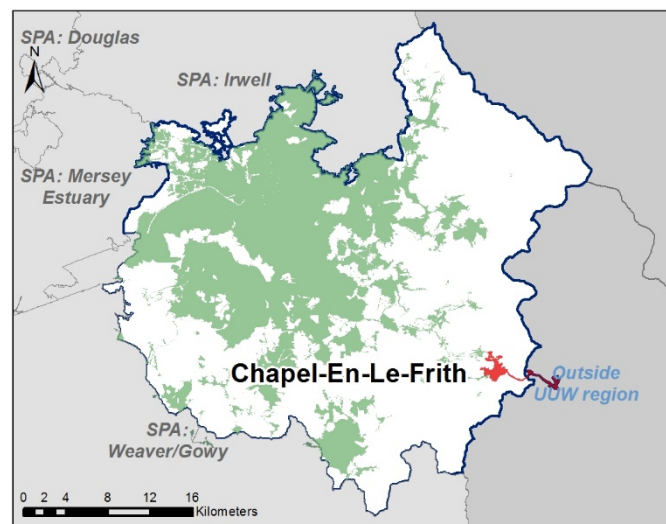
5.2.3.5 Chapel-en-le-Frith

Figure 41 Details of the DWMP investment plan for Chapel-en-le-Frith

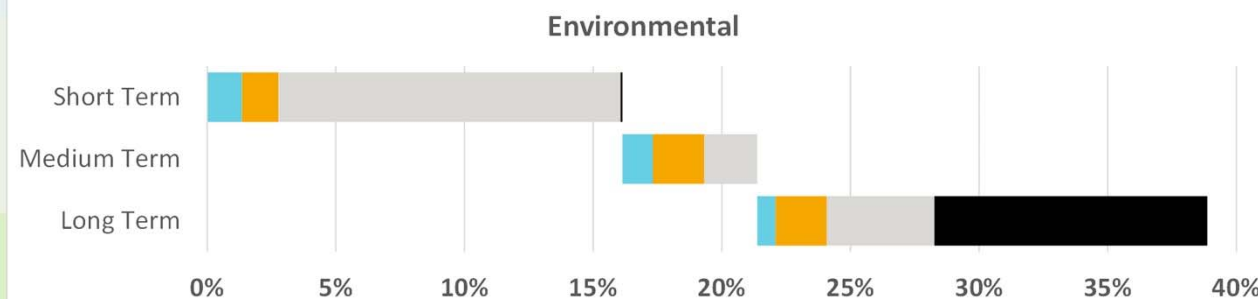
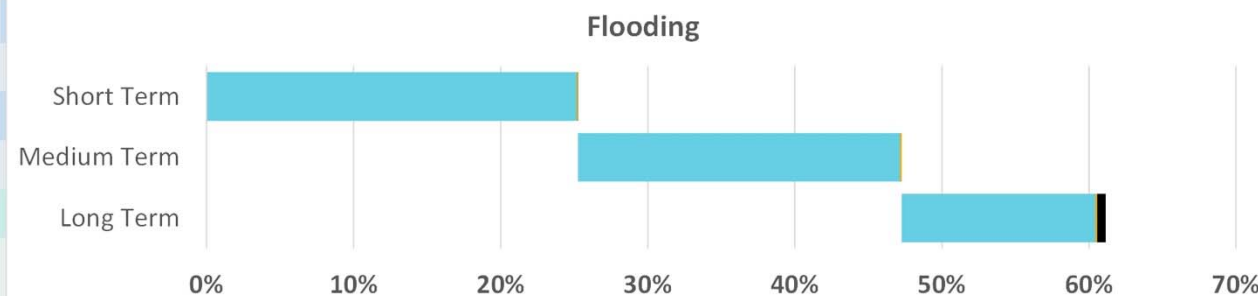
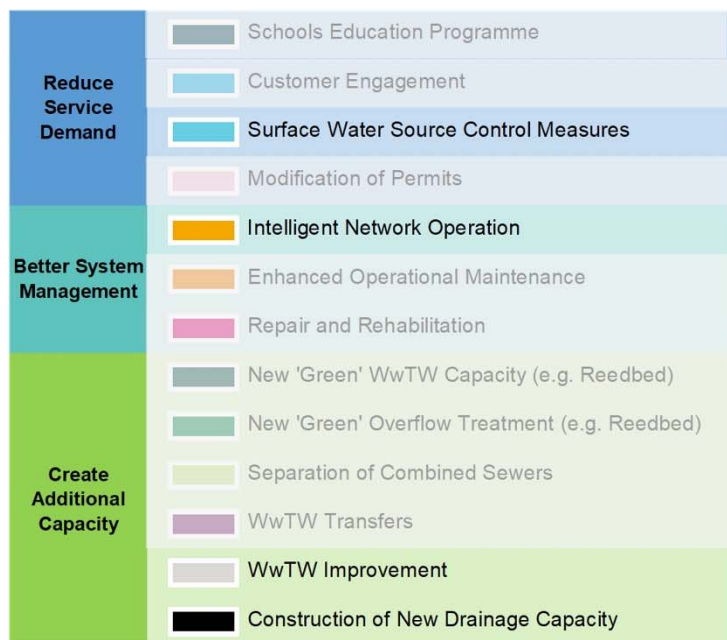
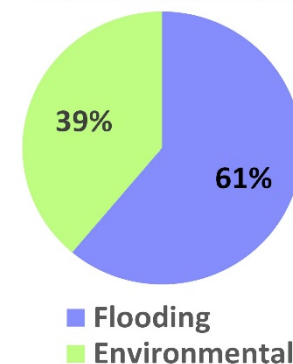
The data on this page gives details of the investment plan for Chapel-en-le-Frith TPU. The plan shows the geographic location of Chapel-en-le-Frith within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



Chapel-En-Le-Frith DWMP Investment



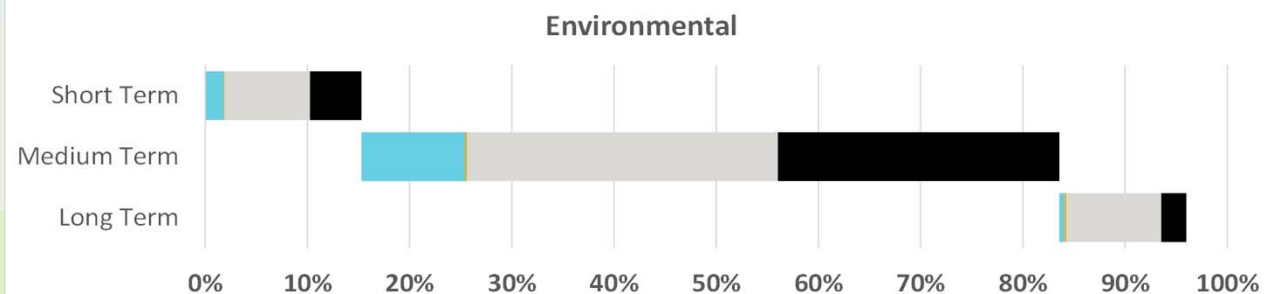
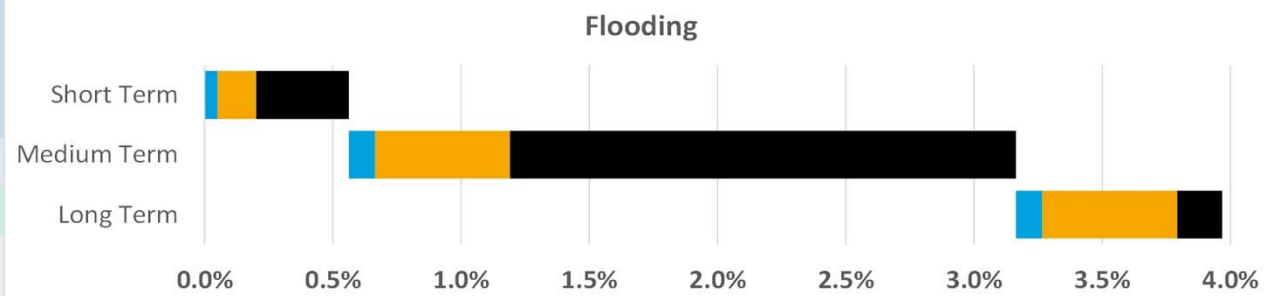
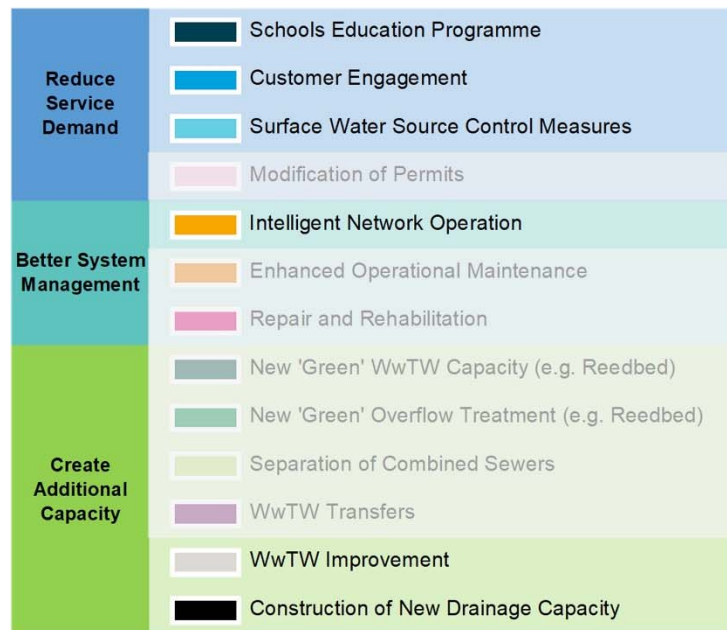
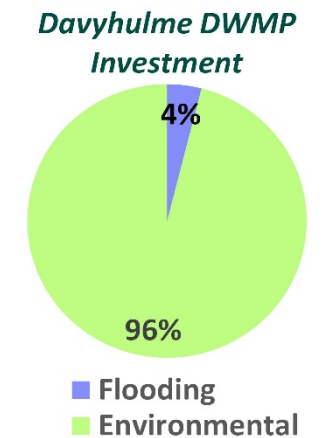
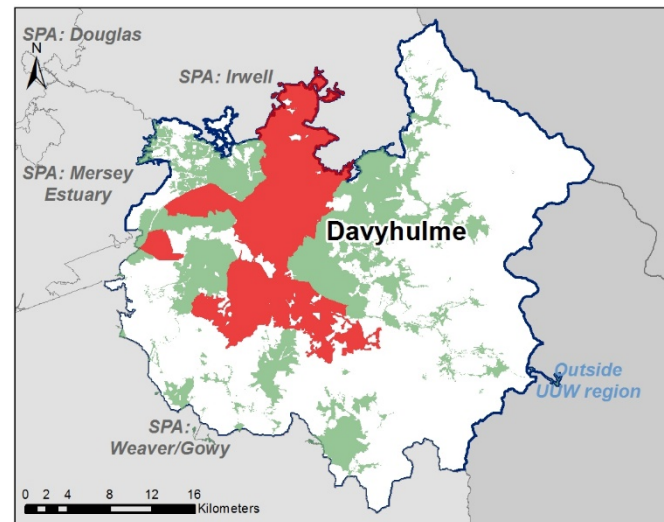
5.2.3.6 Davyhulme

Figure 42 Details of the DWMP investment plan for Davyhulme

The data on this page gives details of the investment plan for Davyhulme TPU. The plan shows the geographic location of Davyhulme within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



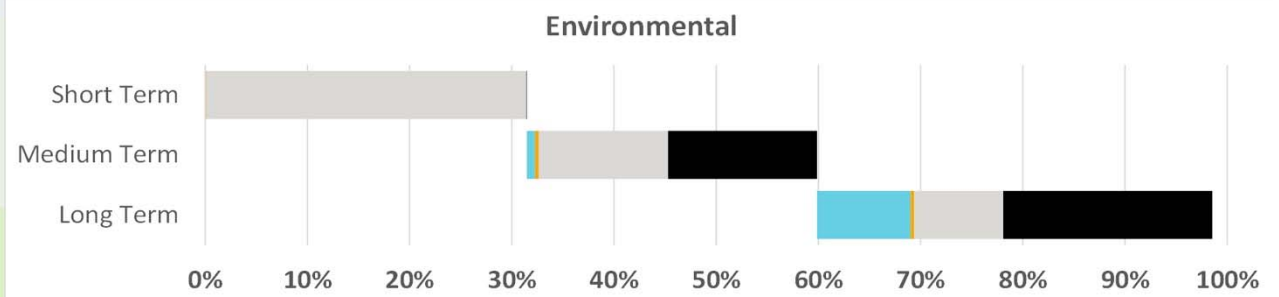
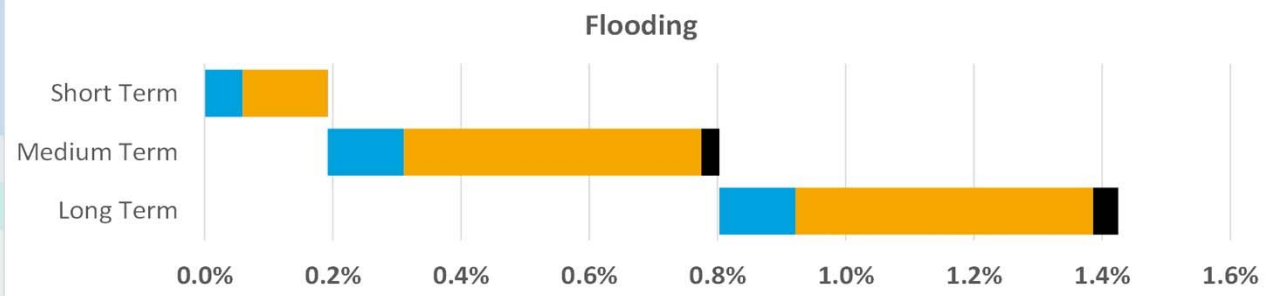
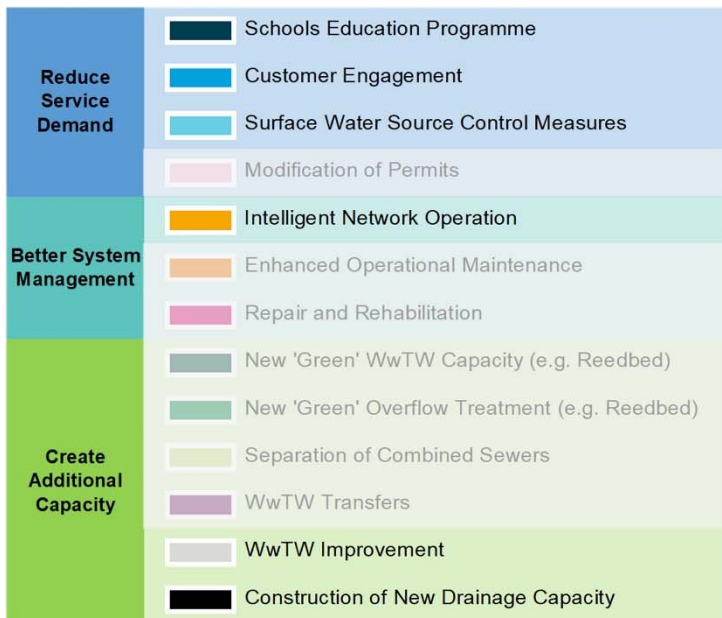
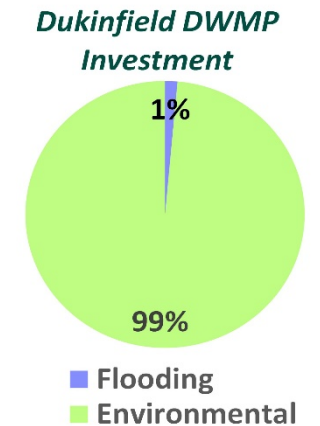
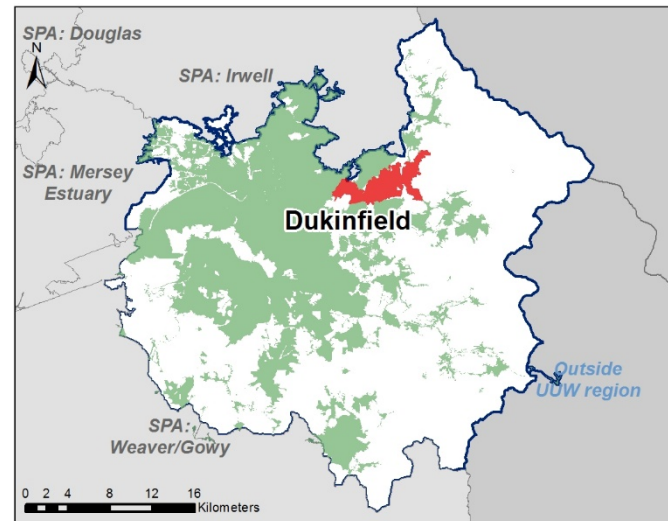
5.2.3.7 Dukinfield

Figure 43 Details of the DWMP investment plan for Dukinfield

The data on this page gives details of the investment plan for Dukinfield TPU. The plan shows the geographic location of Dukinfield within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



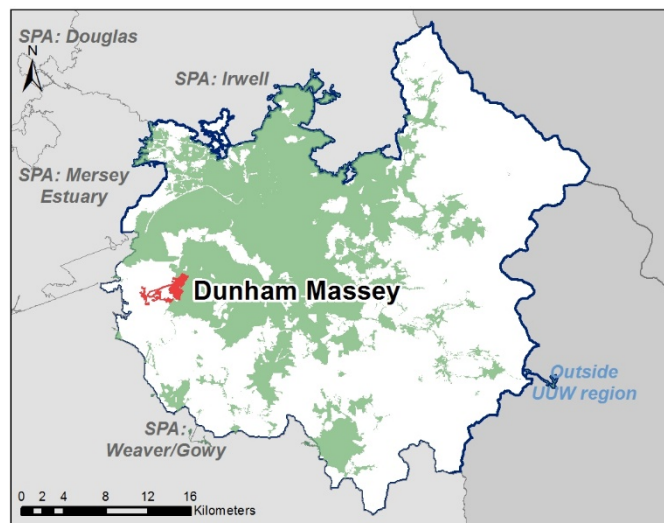
5.2.3.8 Dunham Massey

Figure 44 Details of the DWMP investment plan for Dunham Massey

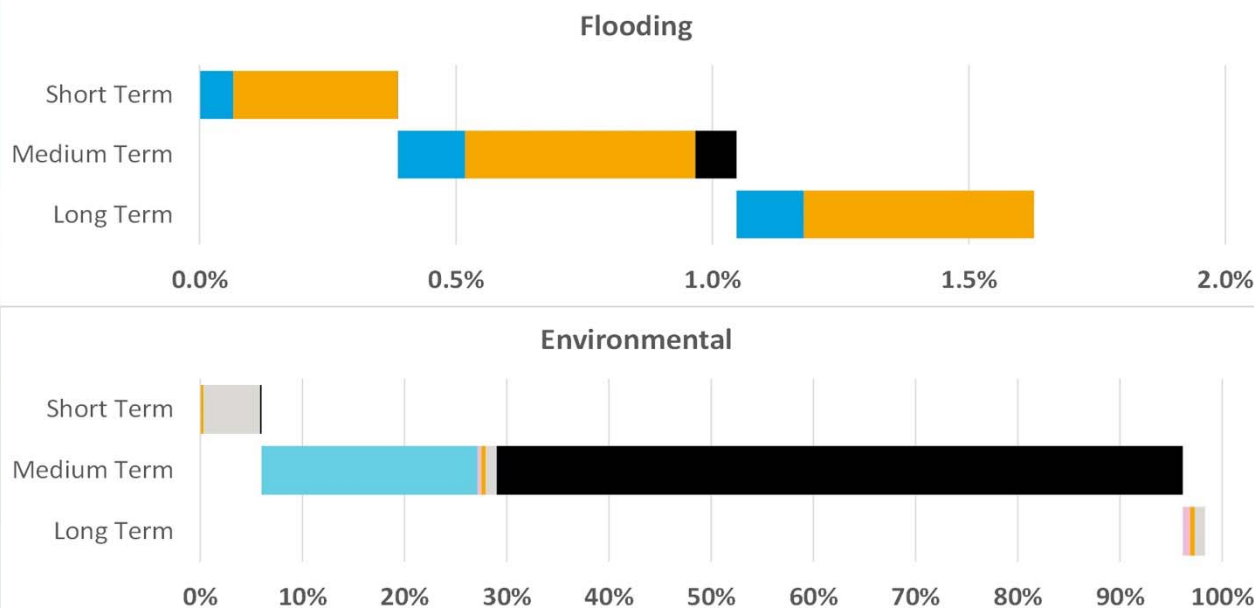
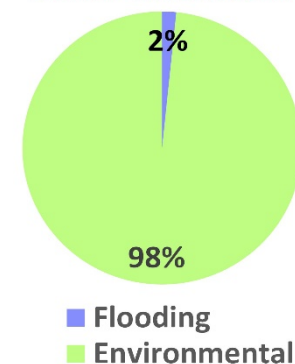
The data on this page gives details of the investment plan for Dunham Massey TPU. The plan shows the geographic location of Dunham Massey within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



Dunham Massey DWMP Investment



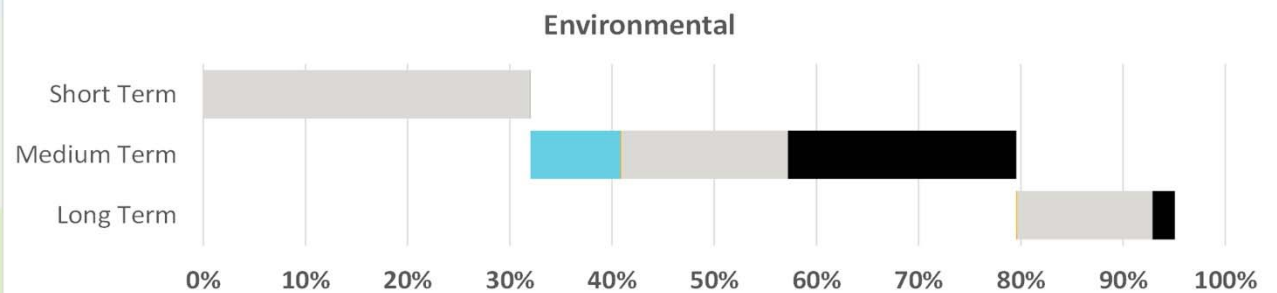
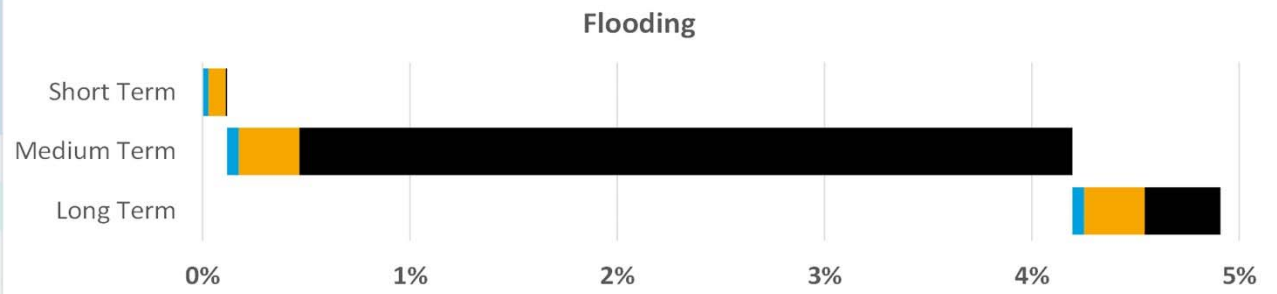
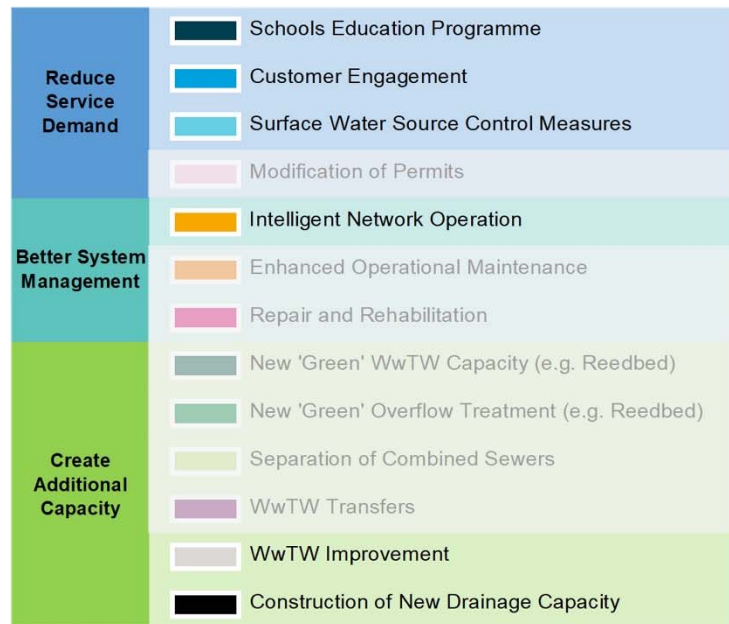
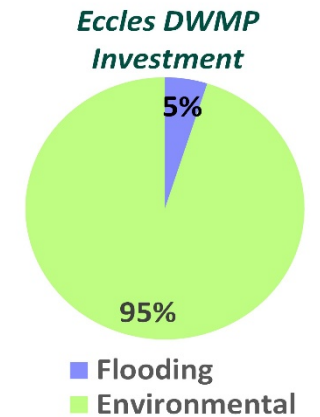
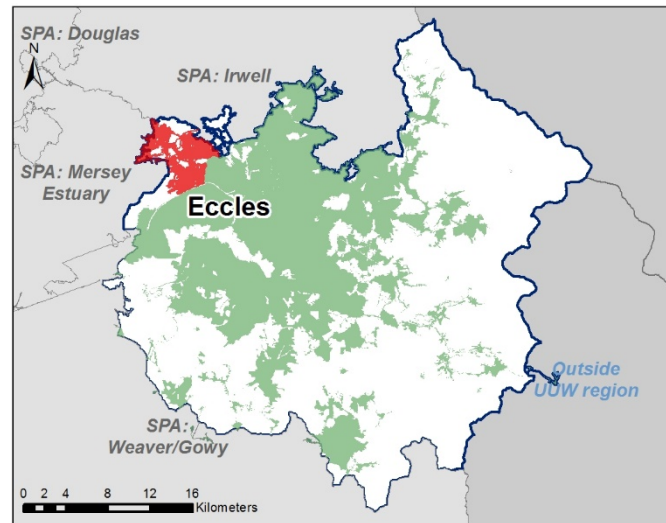
5.2.3.9 Eccles

Figure 45 Details of the DWMP investment plan for Eccles

The data on this page gives details of the investment plan for Eccles TPU. The plan shows the geographic location of Eccles within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



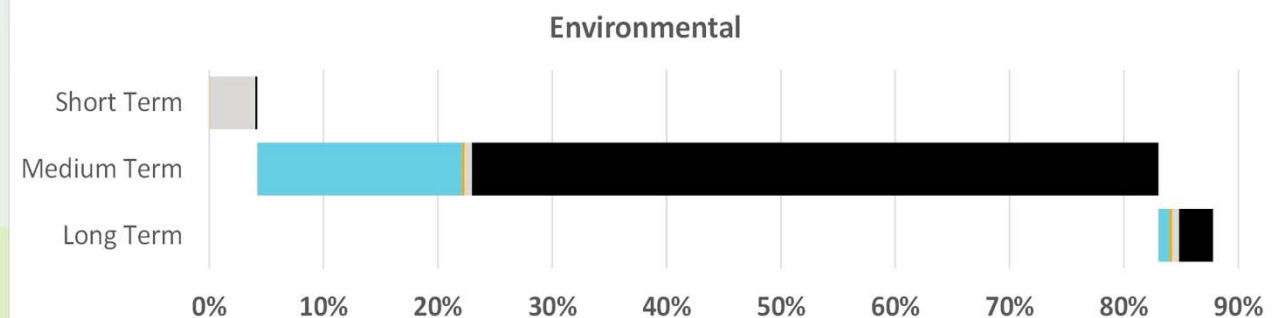
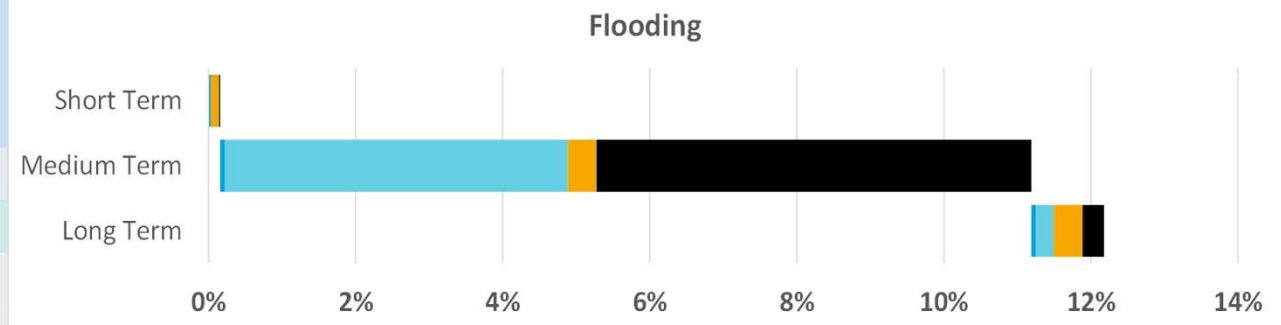
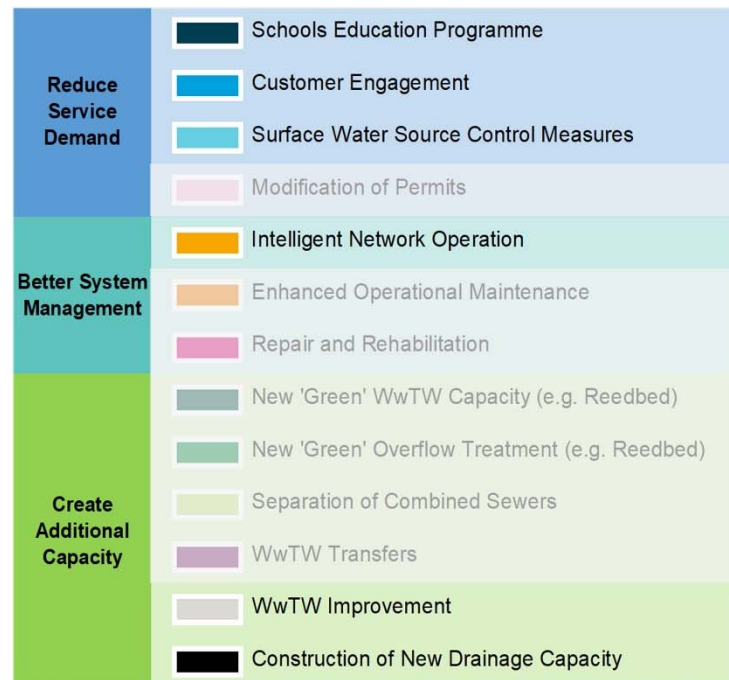
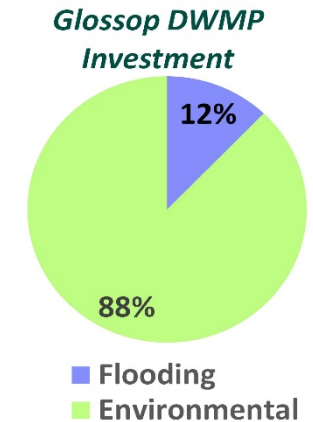
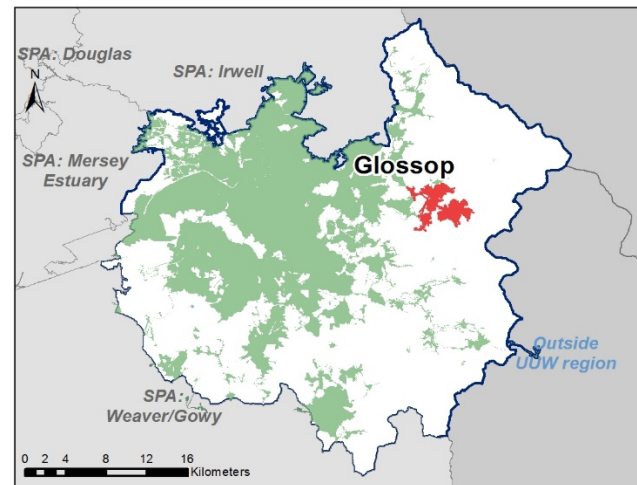
5.2.3.10 Glossop

Figure 46 Details of the DWMP investment plan for Glossop

The data on this page gives details of the investment plan for Glossop TPU. The plan shows the geographic location of Glossop within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



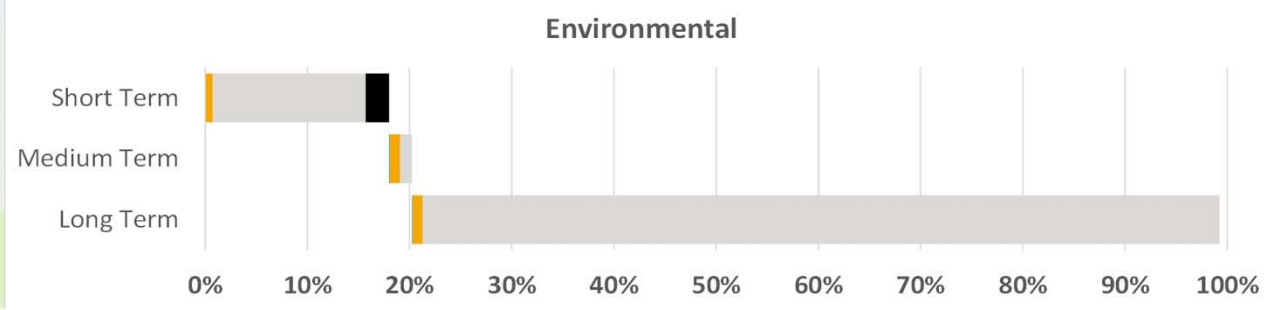
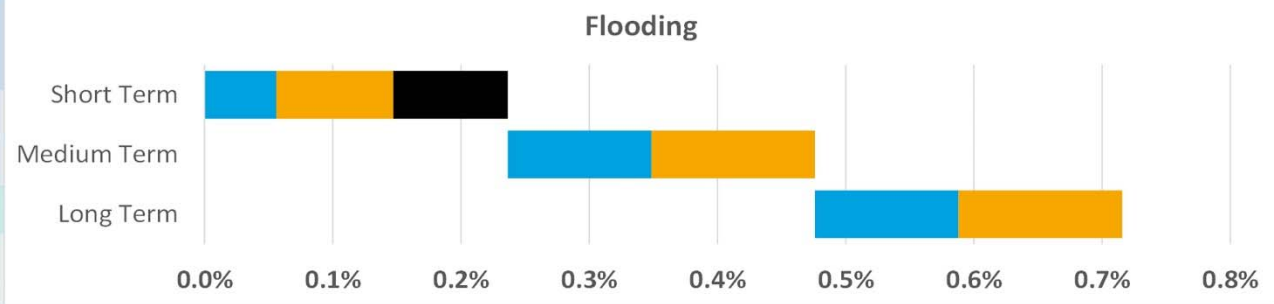
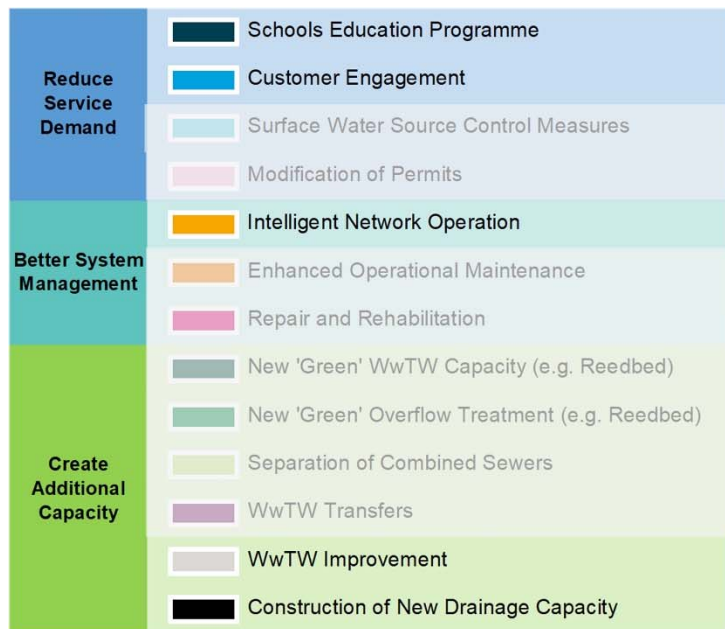
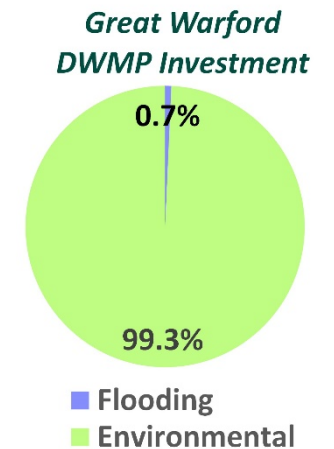
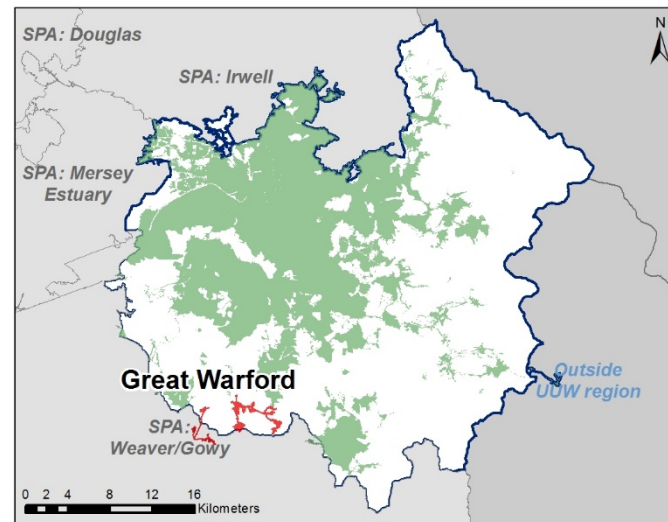
5.2.3.11 Great Warford

Figure 47 Details of the DWMP investment plan for Great Warford

The data on this page gives details of the investment plan for Great Warford TPU. The plan shows the geographic location of Great Warford within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



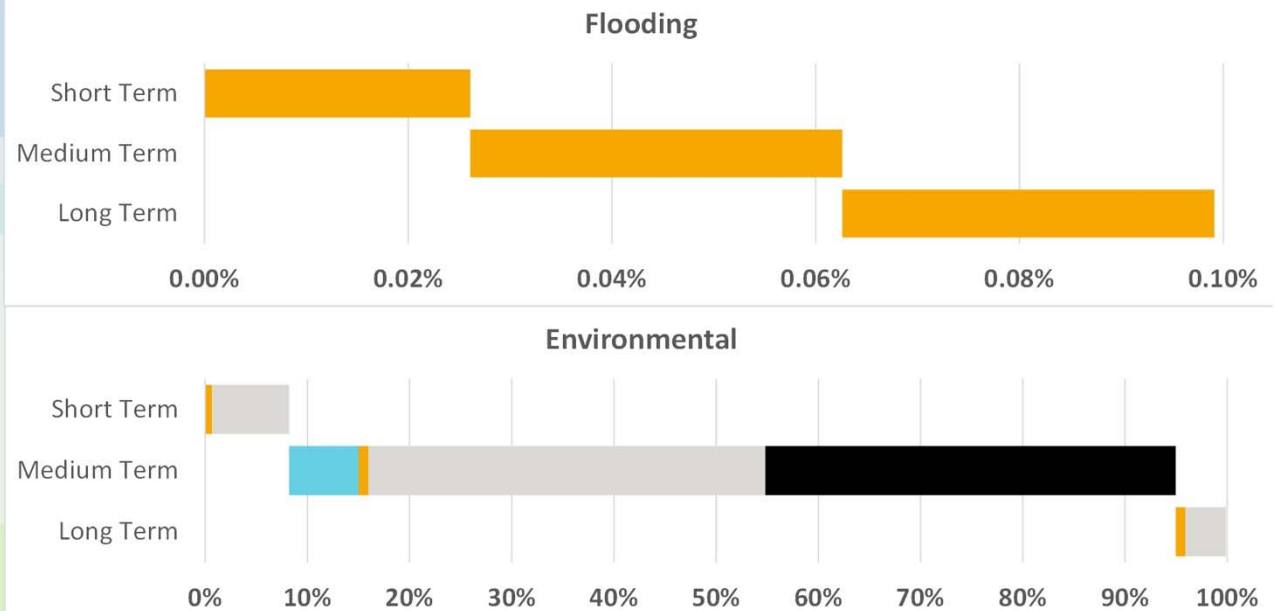
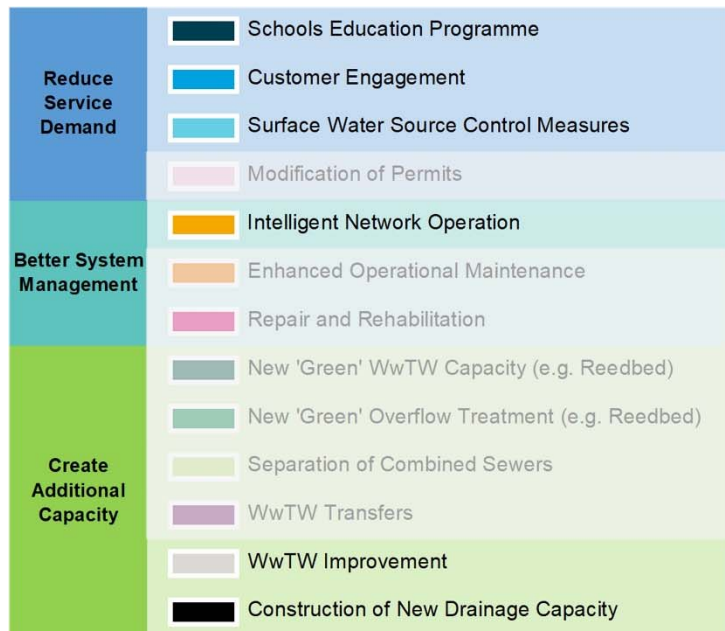
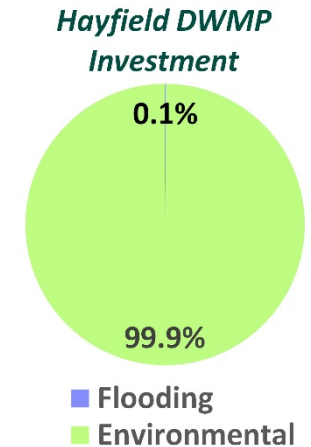
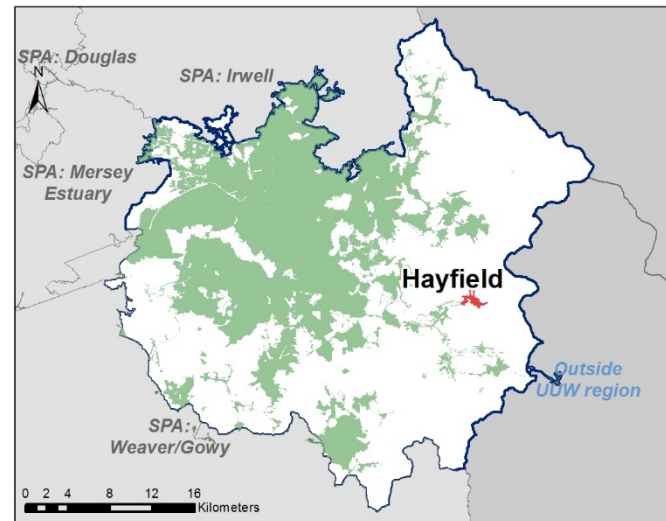
5.2.3.12 Hayfield

Figure 48 Details of the DWMP investment plan for Hayfield

The data on this page gives details of the investment plan for Hayfield TPU. The plan shows the geographic location of Hayfield within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



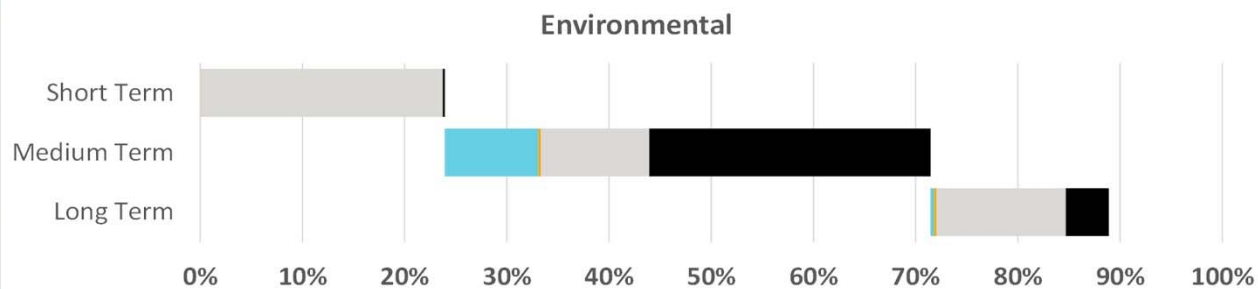
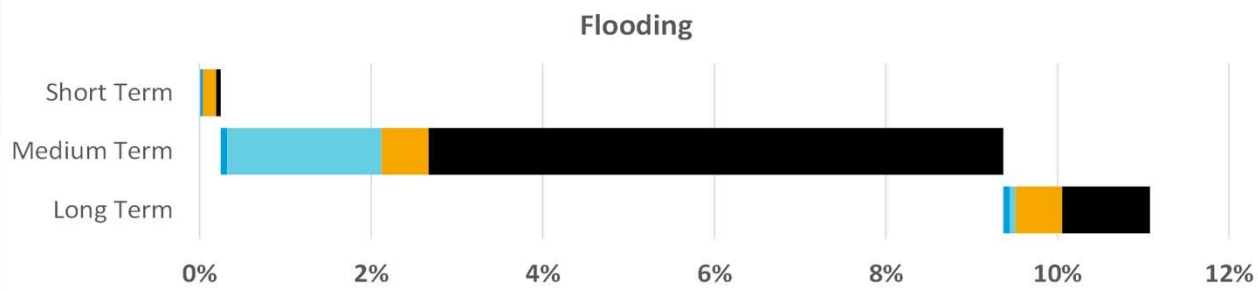
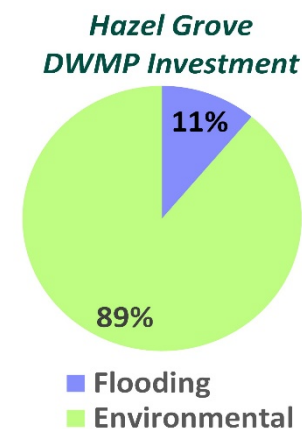
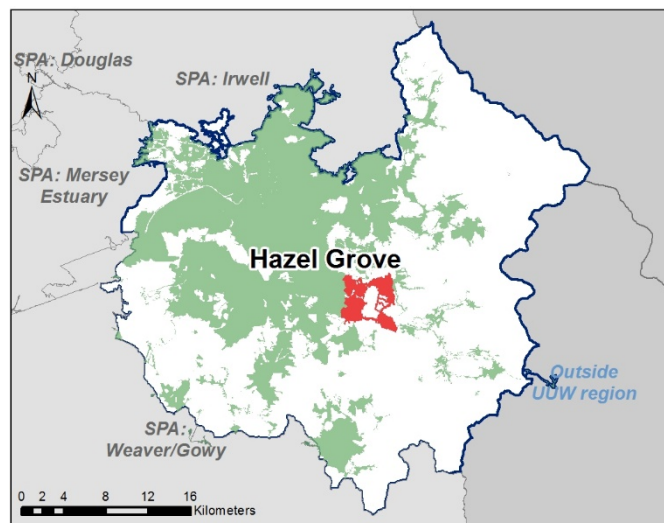
5.2.3.13 Hazel Grove

Figure 49 Details of the DWMP investment plan for Hazel Grove

The data on this page gives details of the investment plan for Hazel Grove TPU. The plan shows the geographic location of Hazel Grove within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



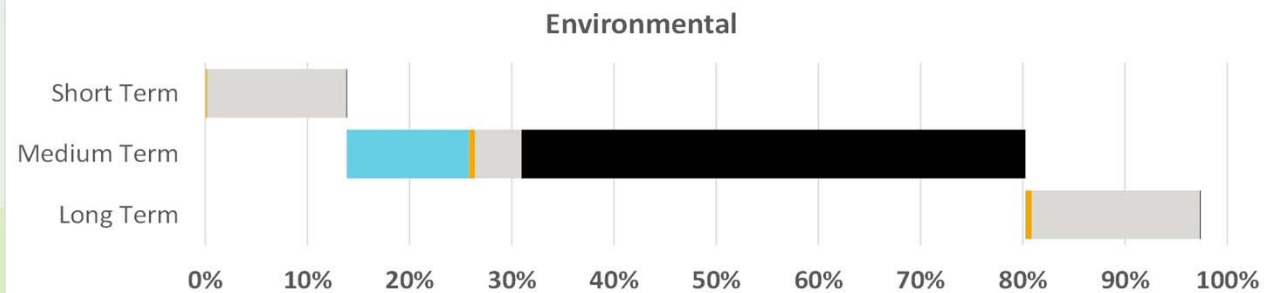
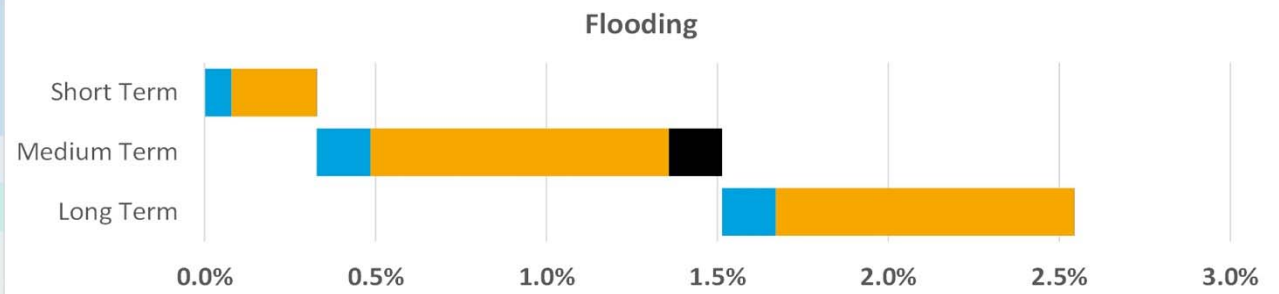
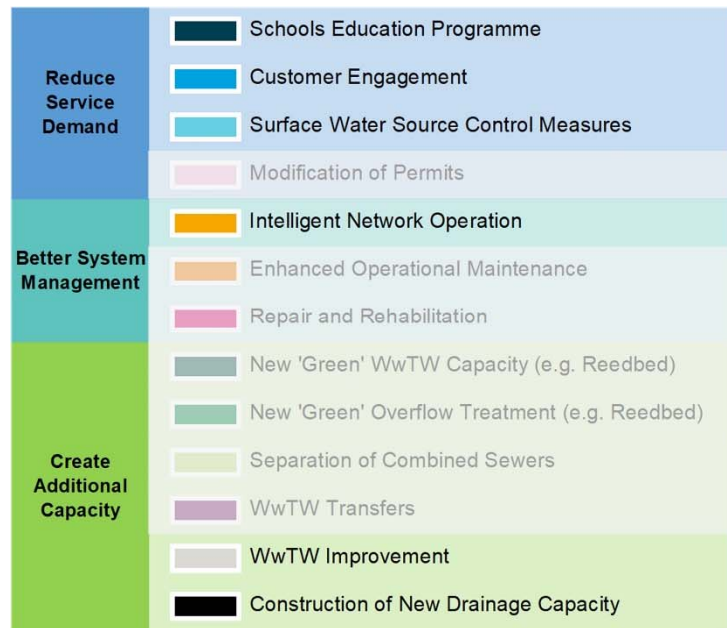
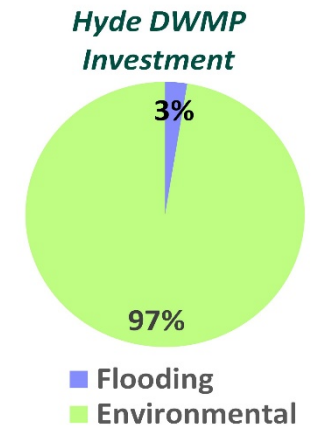
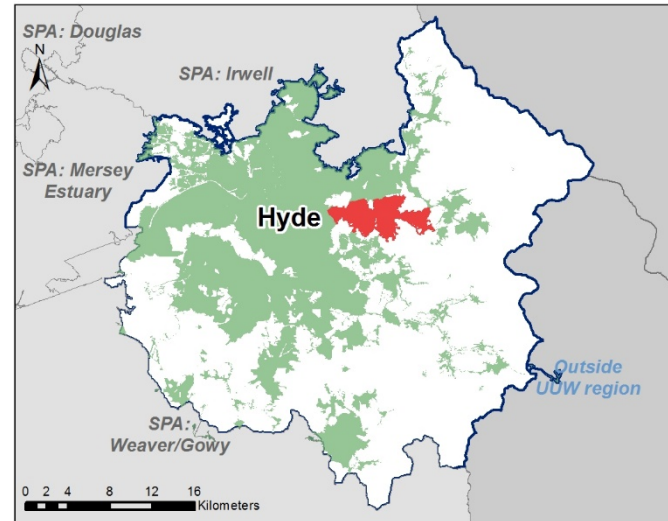
5.2.3.14 Hyde

Figure 50 Details of the DWMP investment plan for Hyde

The data on this page gives details of the investment plan for Hyde TPU. The plan shows the geographic location of Hyde within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



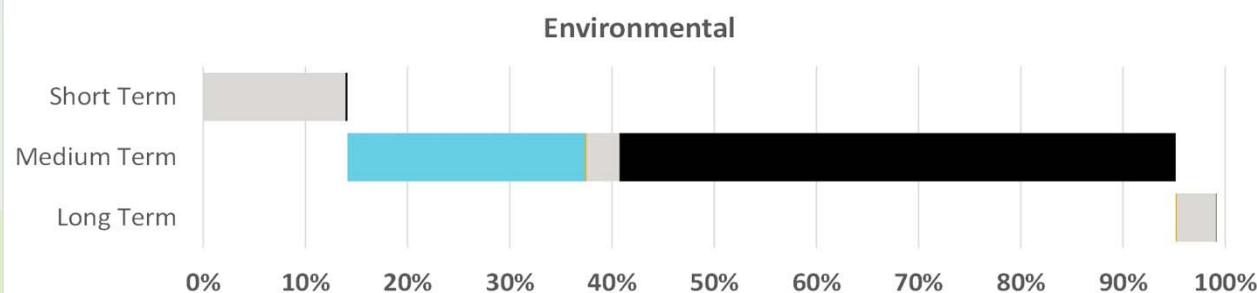
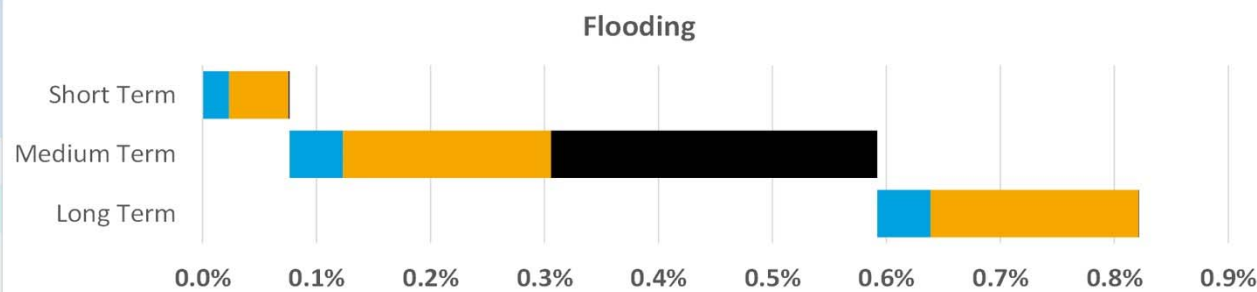
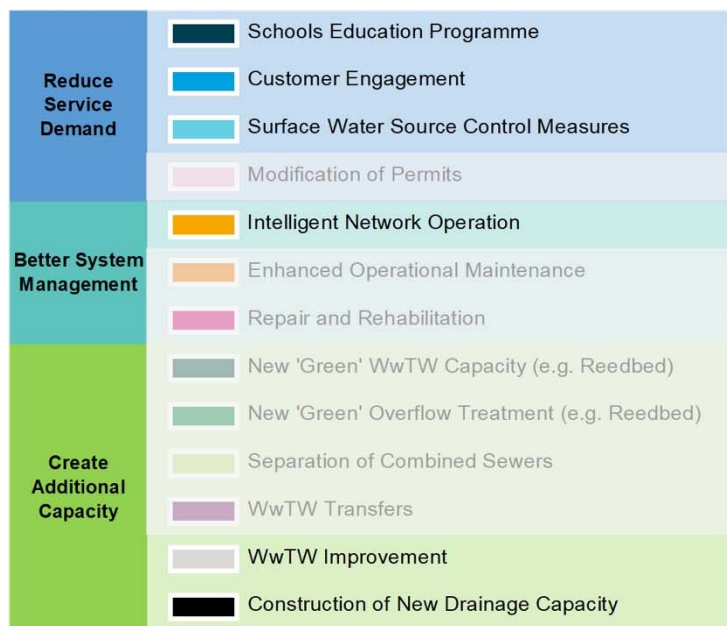
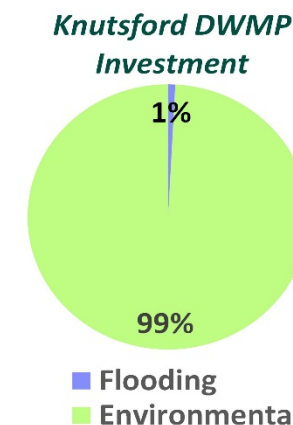
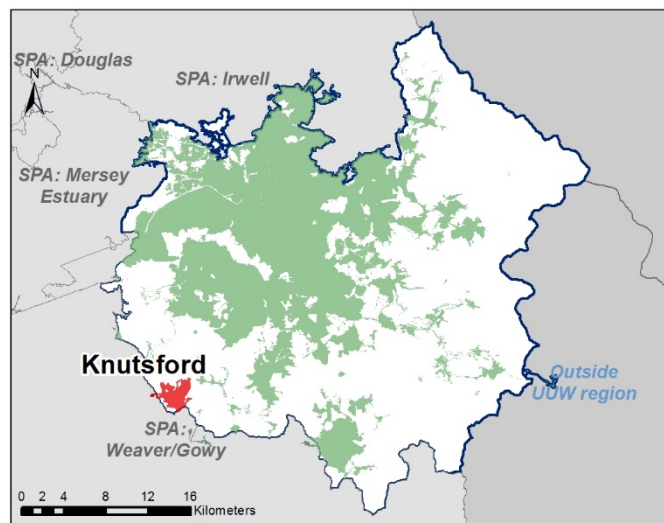
5.2.3.15 Knutsford

Figure 51 Details of the DWMP investment plan for Knutsford

The data on this page gives details of the investment plan for Knutsford TPU. The plan shows the geographic location of Knutsford within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



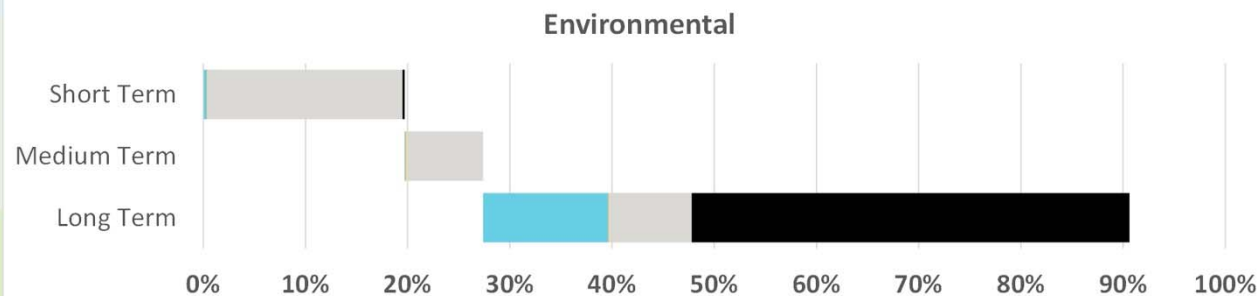
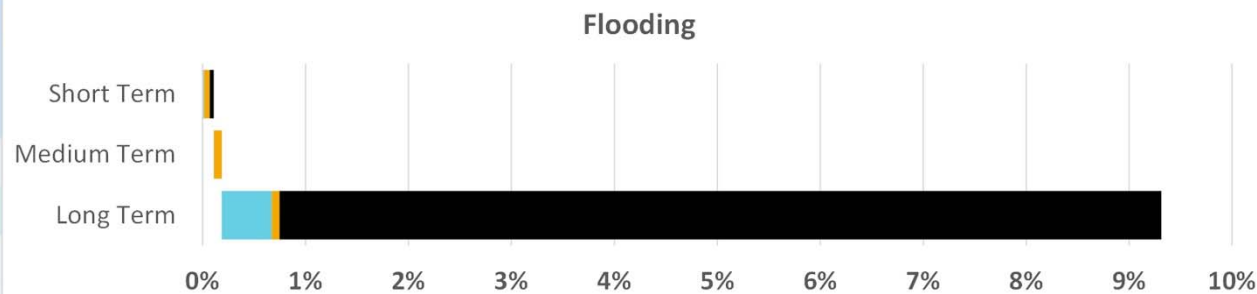
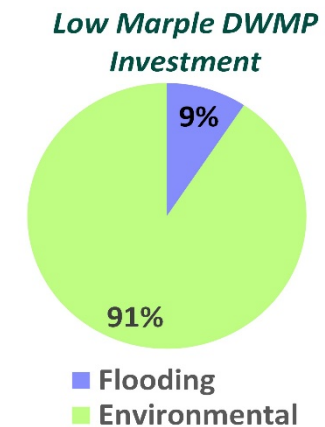
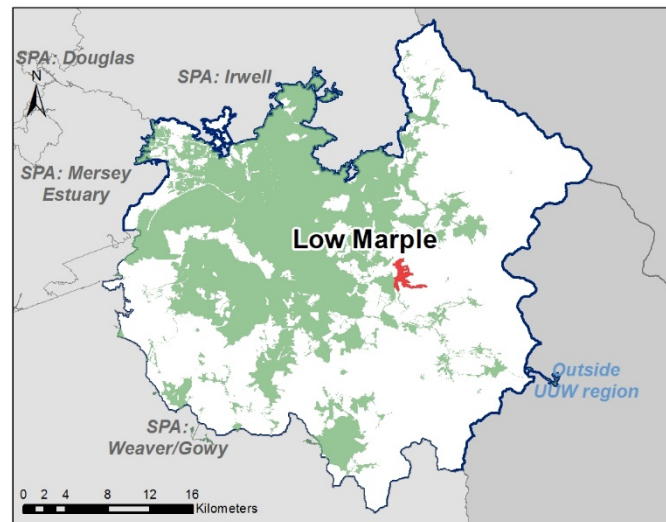
5.2.3.16 Low Marple

Figure 52 Details of the DWMP investment plan for Low Marple

The data on this page gives details of the investment plan for Low Marple TPU. The plan shows the geographic location of Low Marple within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



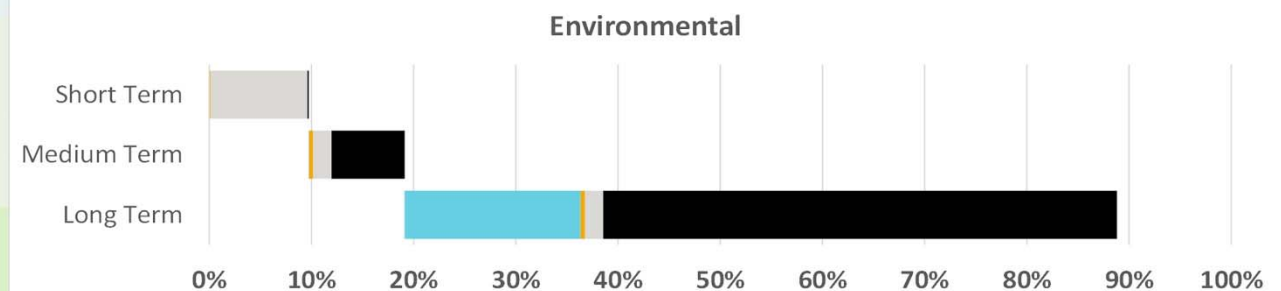
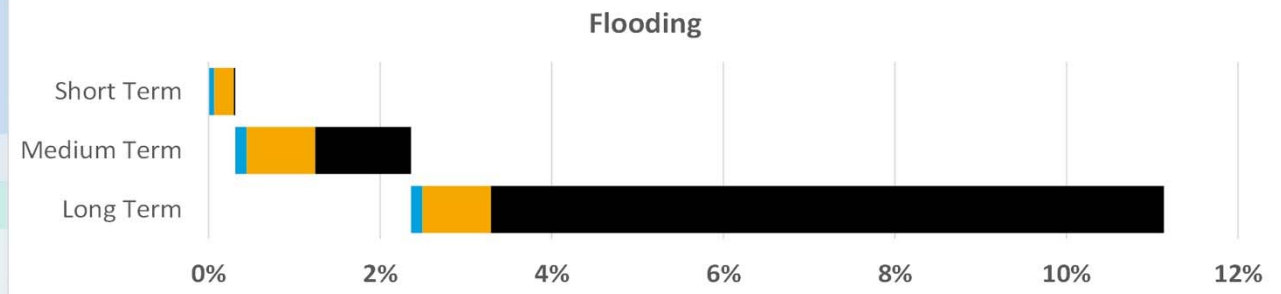
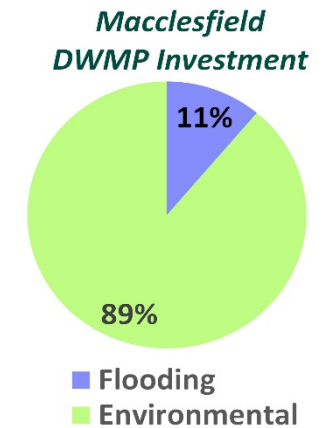
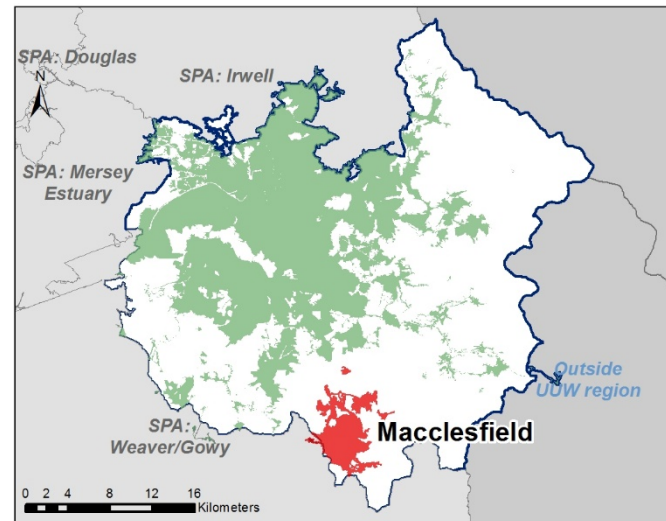
5.2.3.17 Macclesfield

Figure 53 Details of the DWMP investment plan for Macclesfield

The data on this page gives details of the investment plan for Macclesfield TPU. The plan shows the geographic location of Macclesfield within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



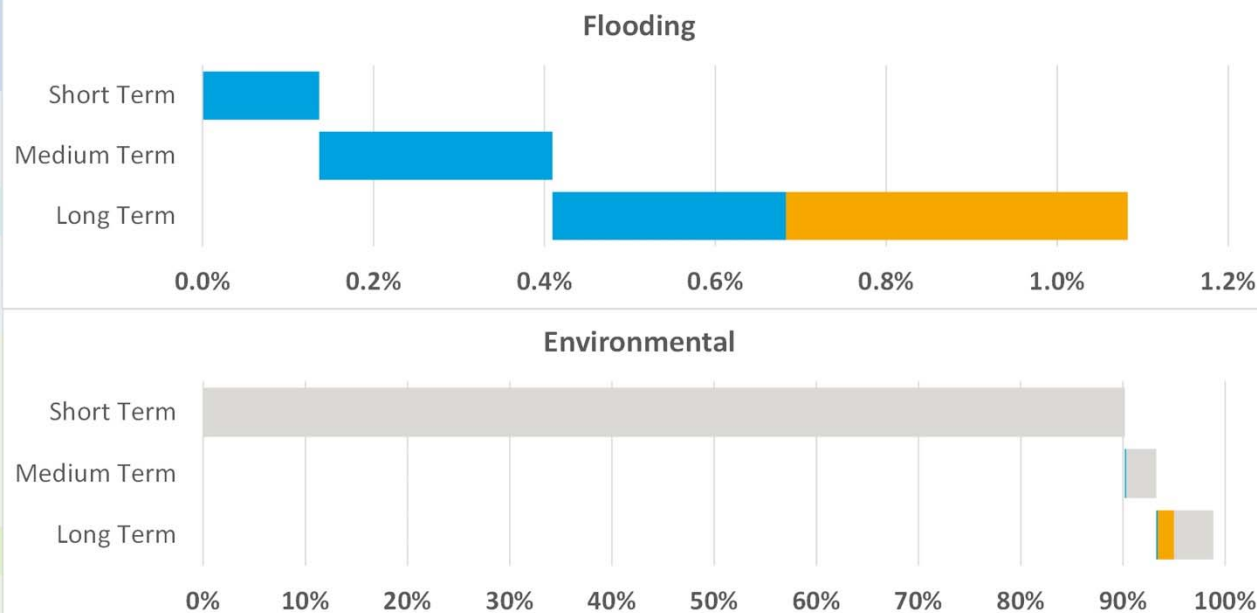
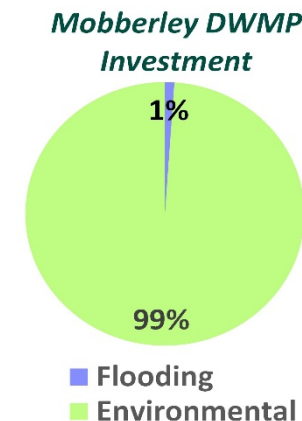
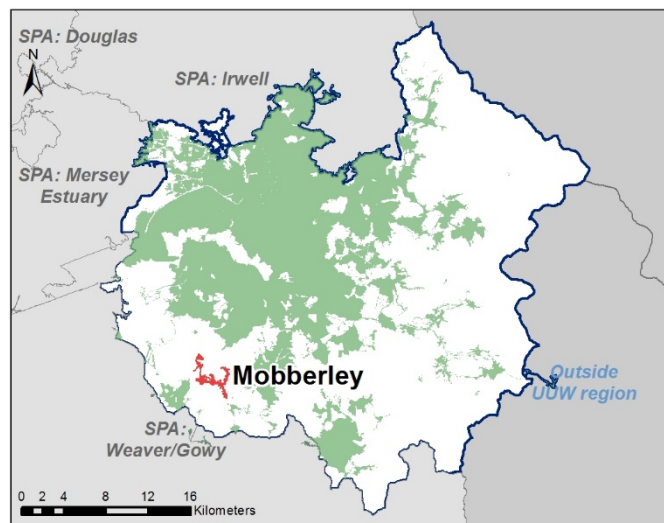
5.2.3.18 Mobberley

Figure 54 Details of the DWMP investment plan for Mobberley

The data on this page gives details of the investment plan Mobberley TPU. The plan shows the geographic location of Mobberley within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



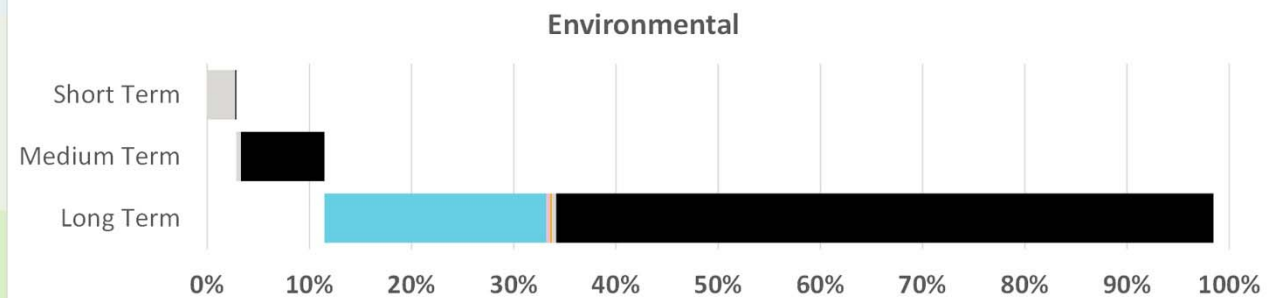
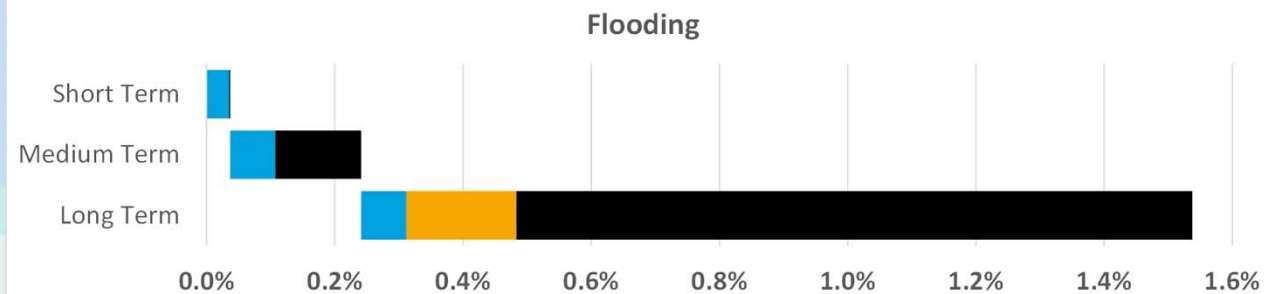
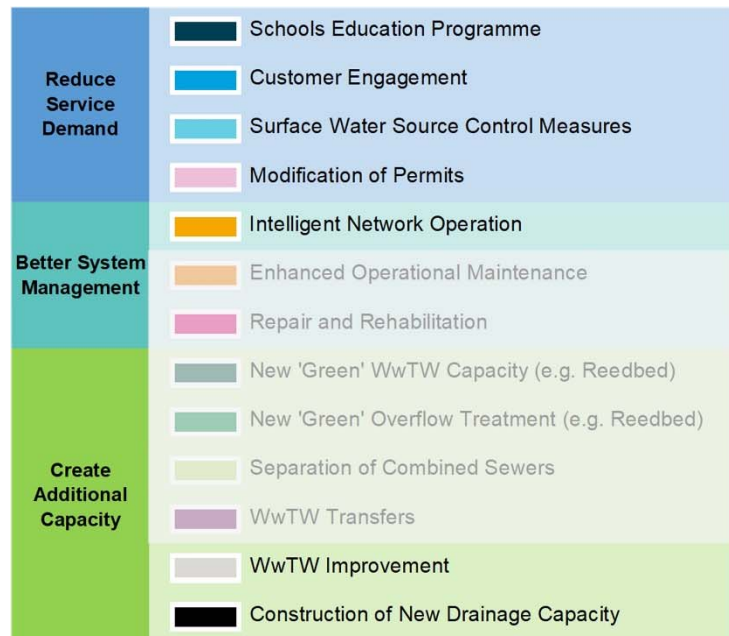
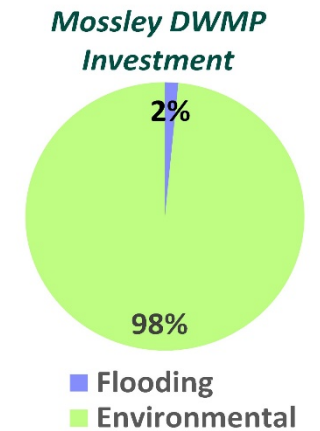
5.2.3.19 Mossley

Figure 55 Details of the DWMP investment plan for Mossley

The data on this page gives details of the investment plan for Mossley TPU. The plan shows the geographic location of Mossley within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



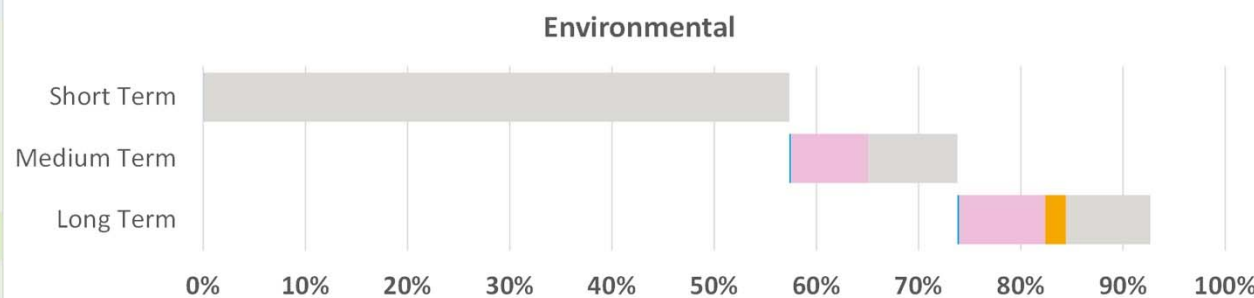
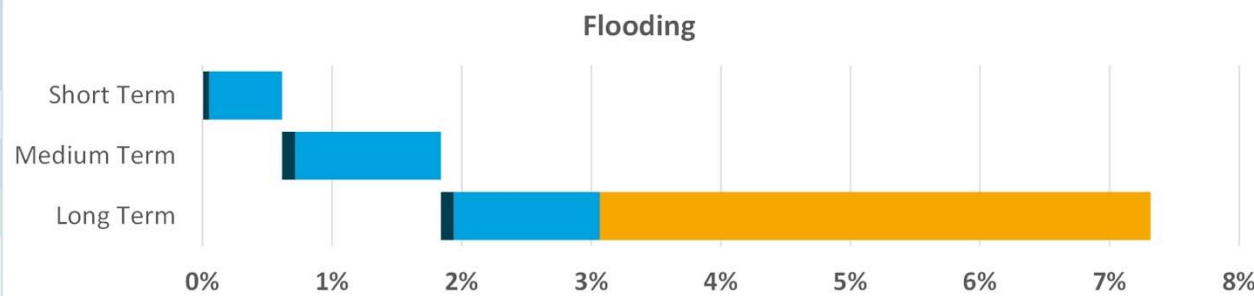
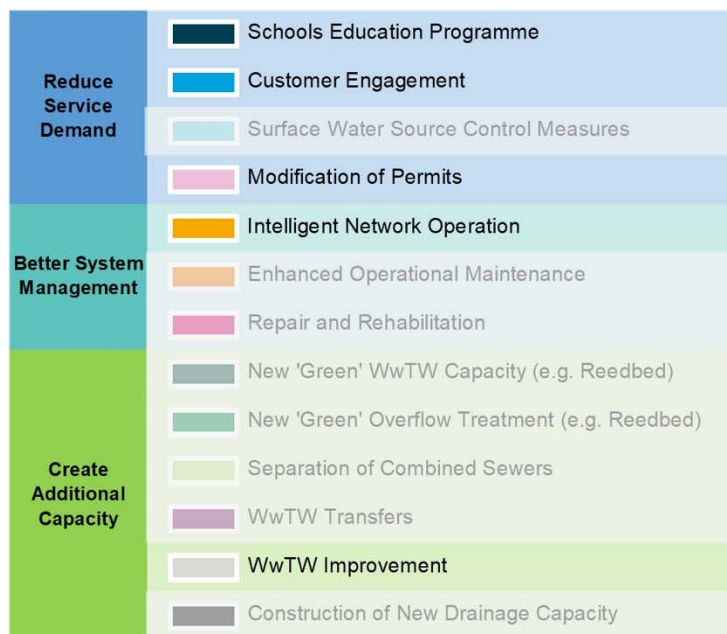
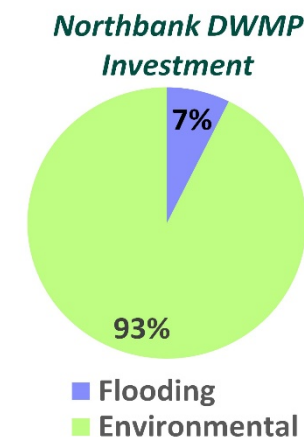
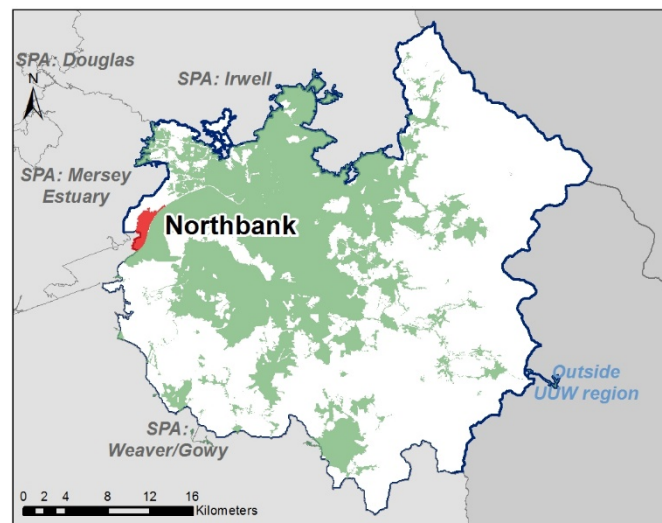
5.2.3.20 Northbank

Figure 56 Details of the DWMP investment plan for Northbank

The data on this page gives details of the investment plan for Northbank TPU. The plan shows the geographic location of Northbank within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



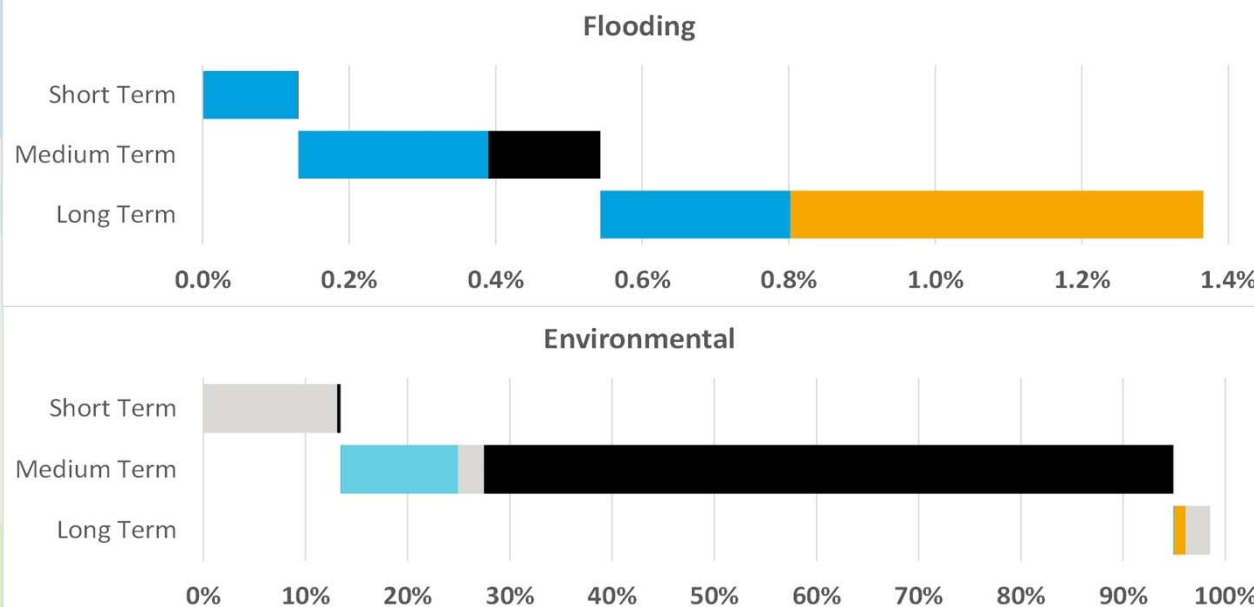
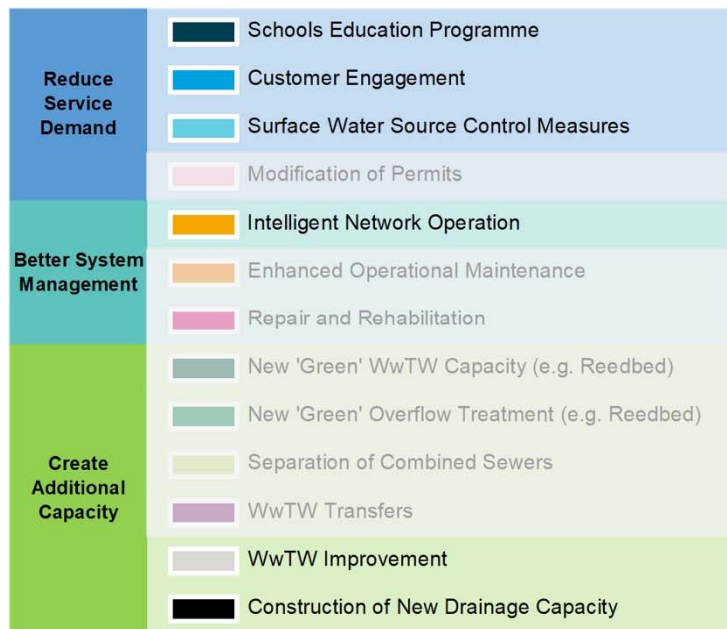
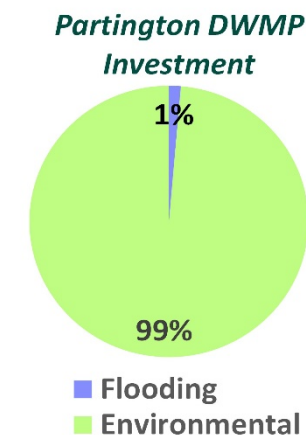
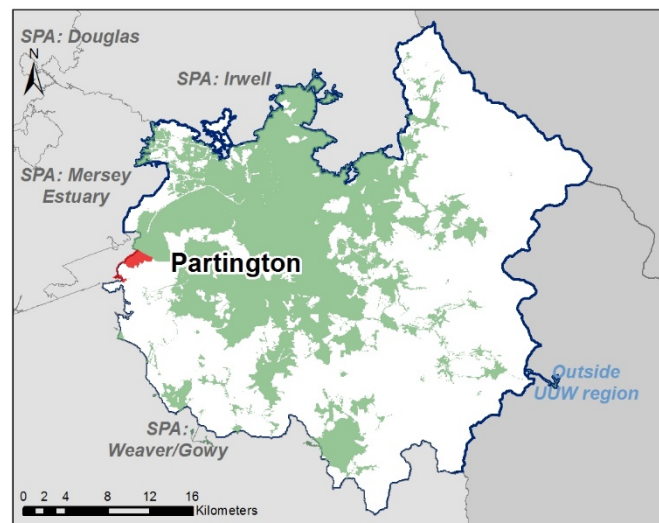
5.2.3.21 Partington

Figure 57 Details of the DWMP investment plan for Partington

The data on this page gives details of the investment plan for Partington TPU. The plan shows the geographic location of Partington within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



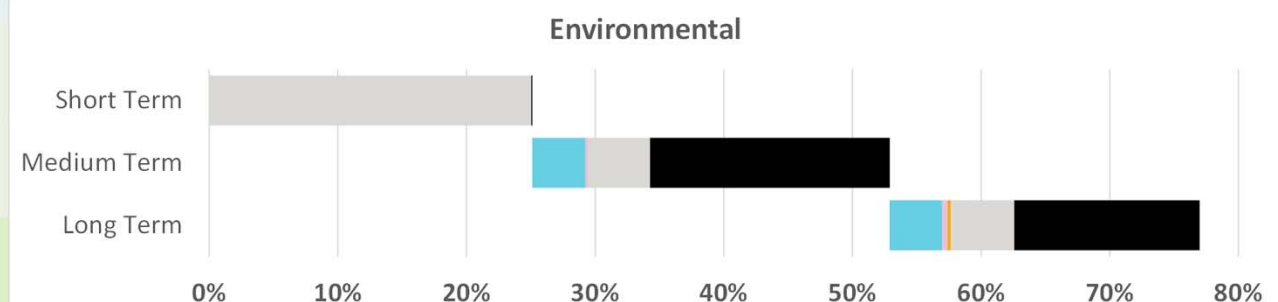
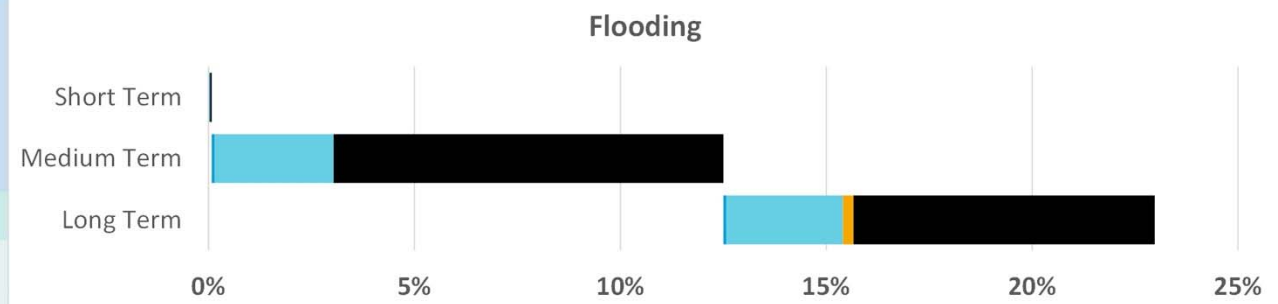
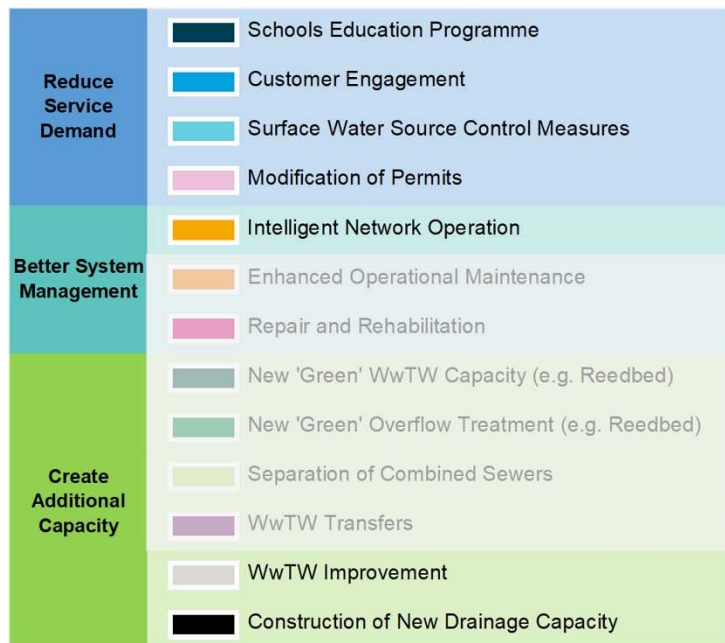
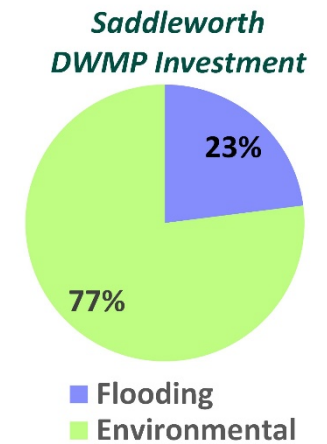
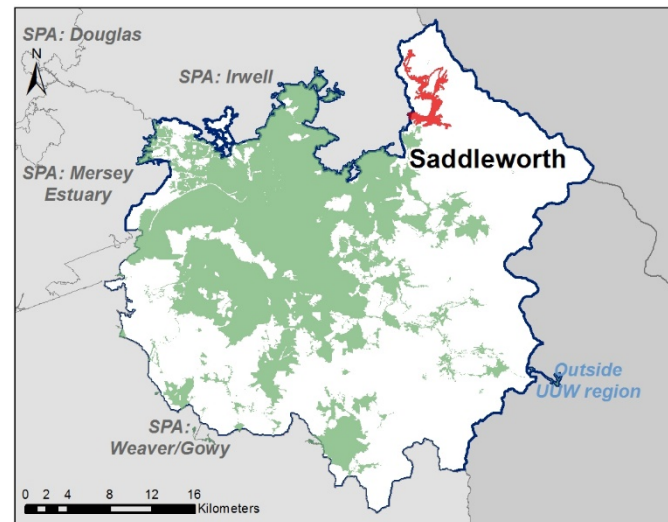
5.2.3.22 Saddleworth

Figure 58 Details of the DWMP investment plan for Saddleworth

The data on this page gives details of the investment plan for Saddleworth TPU. The plan shows the geographic location of Saddleworth within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



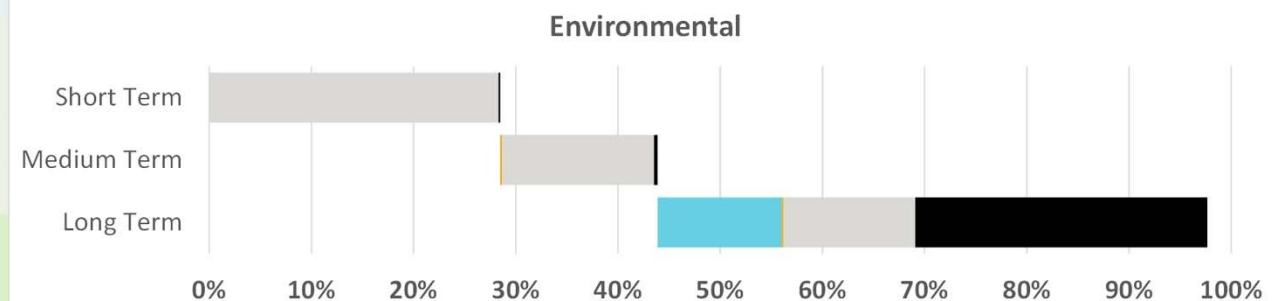
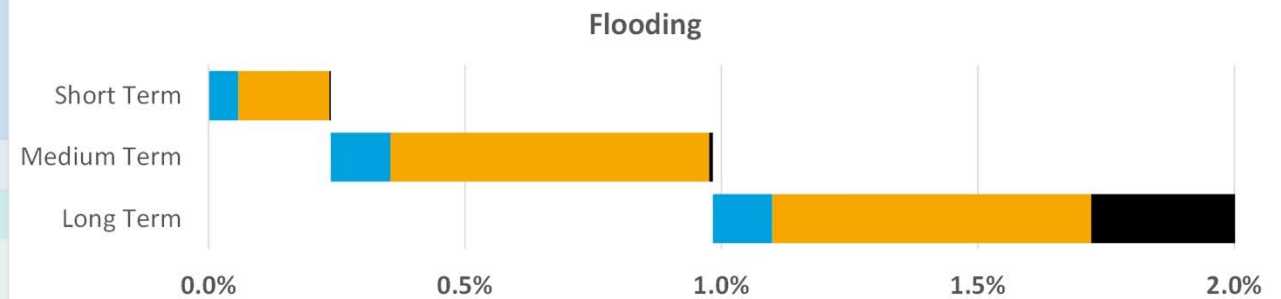
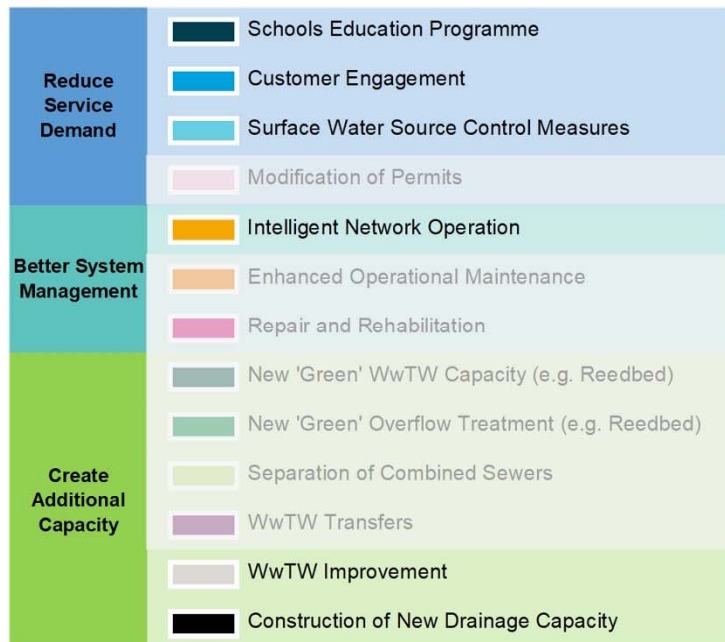
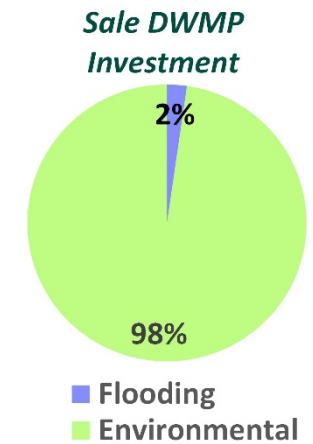
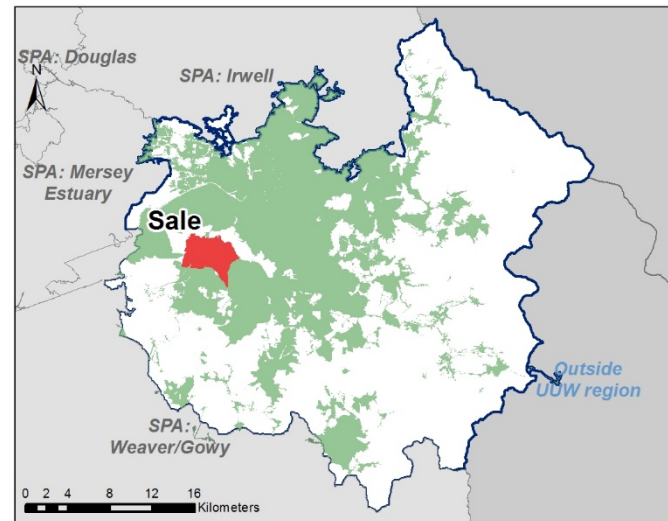
5.2.3.23 Sale

Figure 59 Details of the DWMP investment plan for Sale

The data on this page gives details of the investment plan for Sale TPU. The plan shows the geographic location of Sale within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



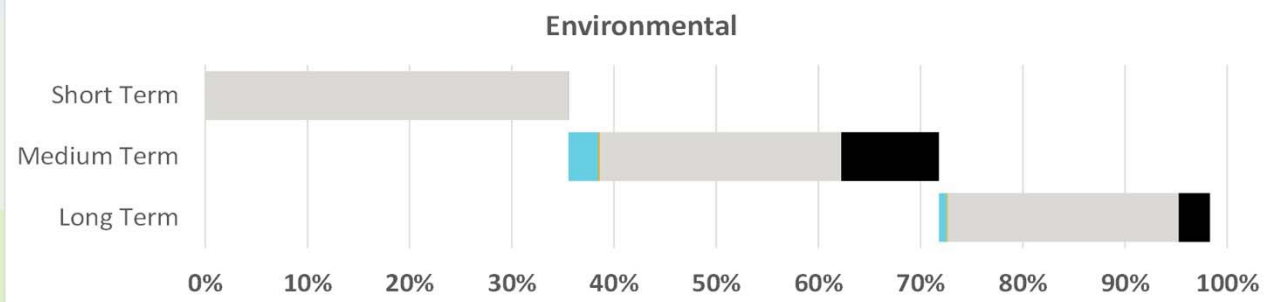
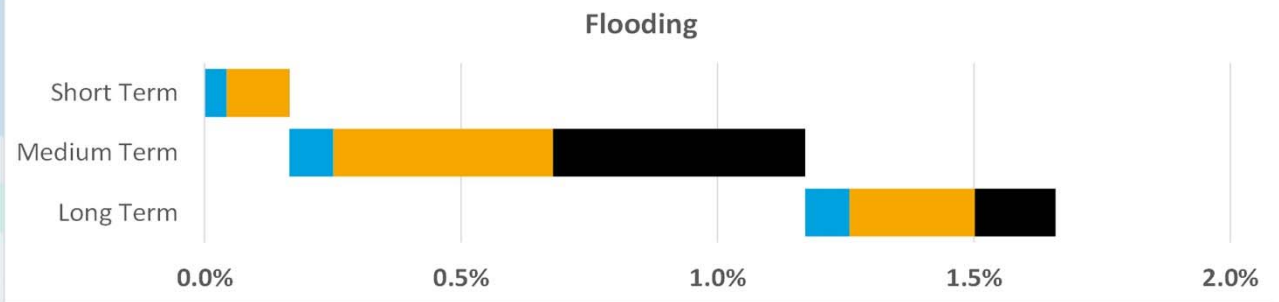
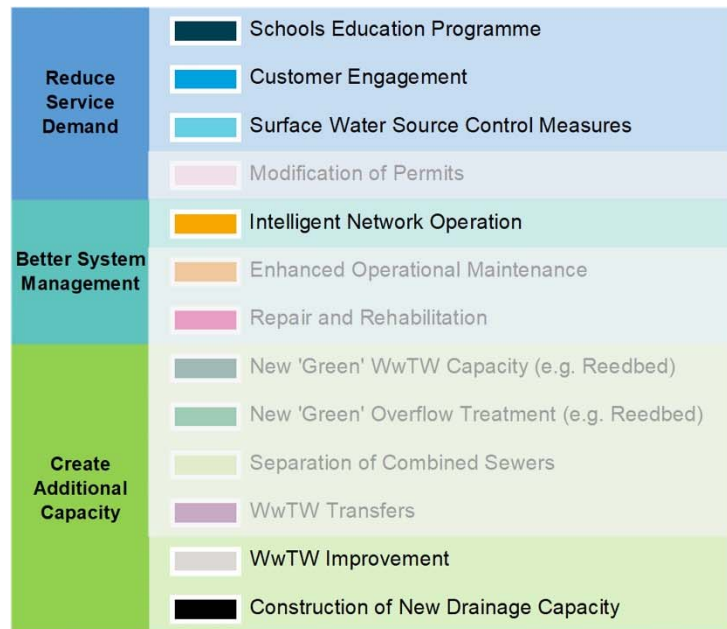
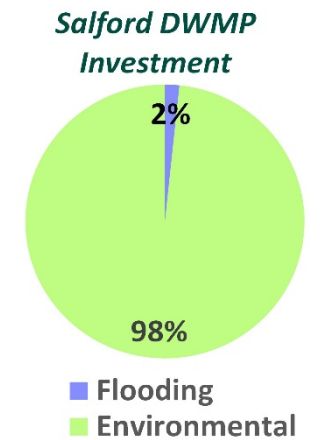
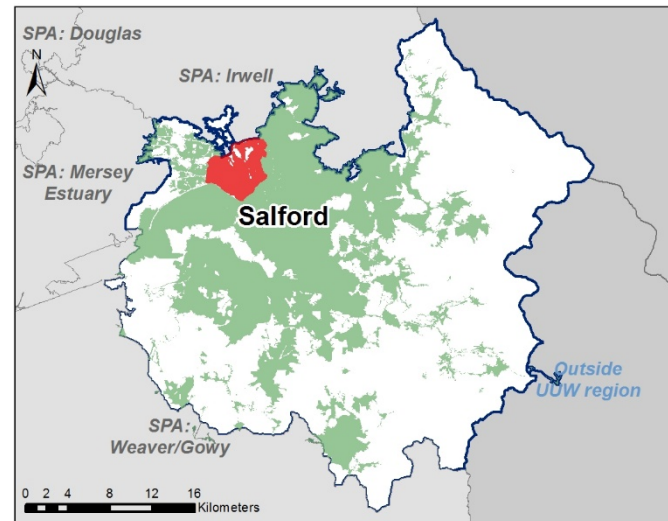
5.2.3.24 Salford

Figure 60 Details of the DWMP investment plan for Salford

The data on this page gives details of the investment plan for Salford TPU. The plan shows the geographic location of Salford within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



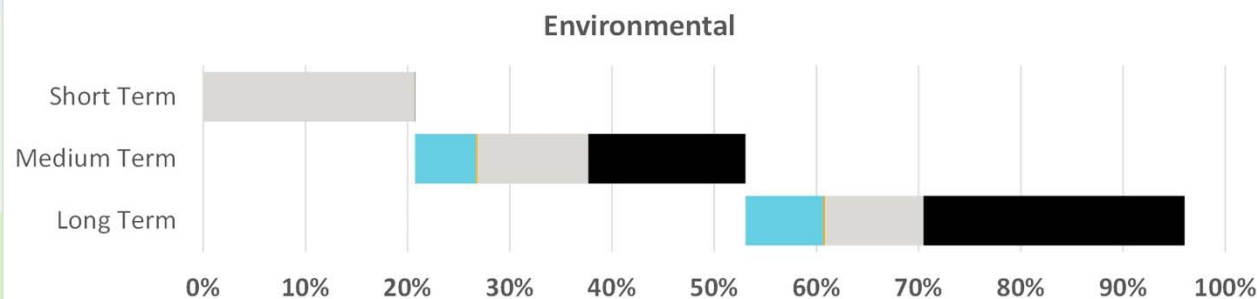
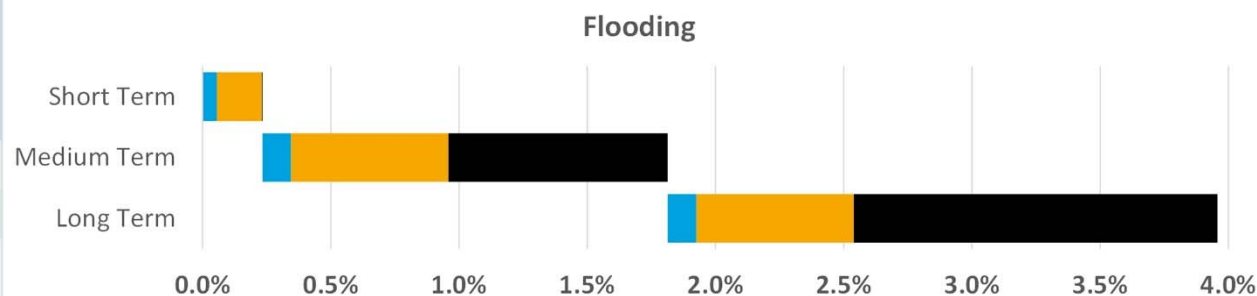
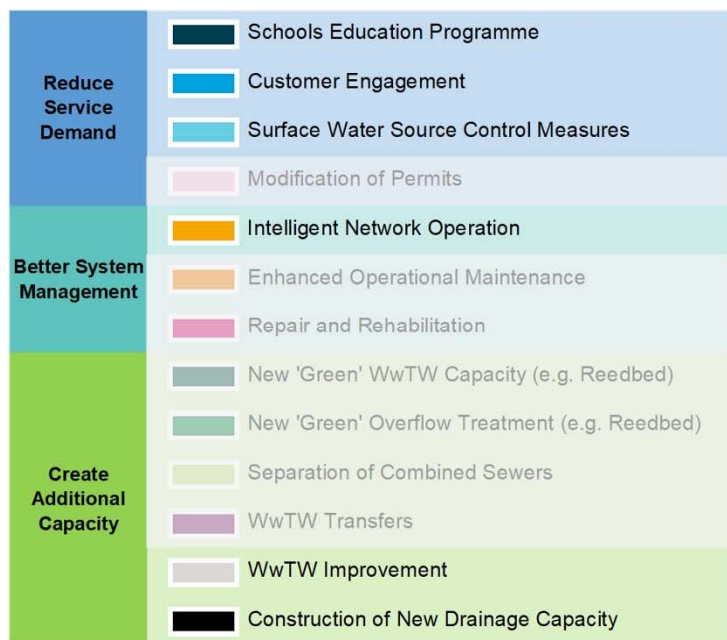
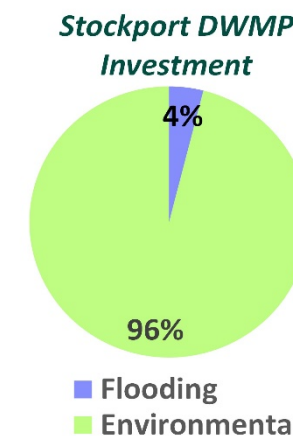
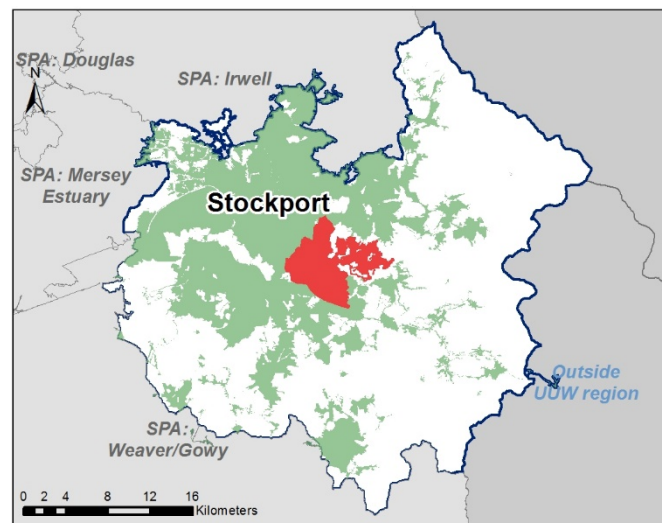
5.2.3.25 Stockport

Figure 61 Details of the DWMP investment plan for Stockport

The data on this page gives details of the investment plan for Stockport TPU. The plan shows the geographic location of Stockport within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



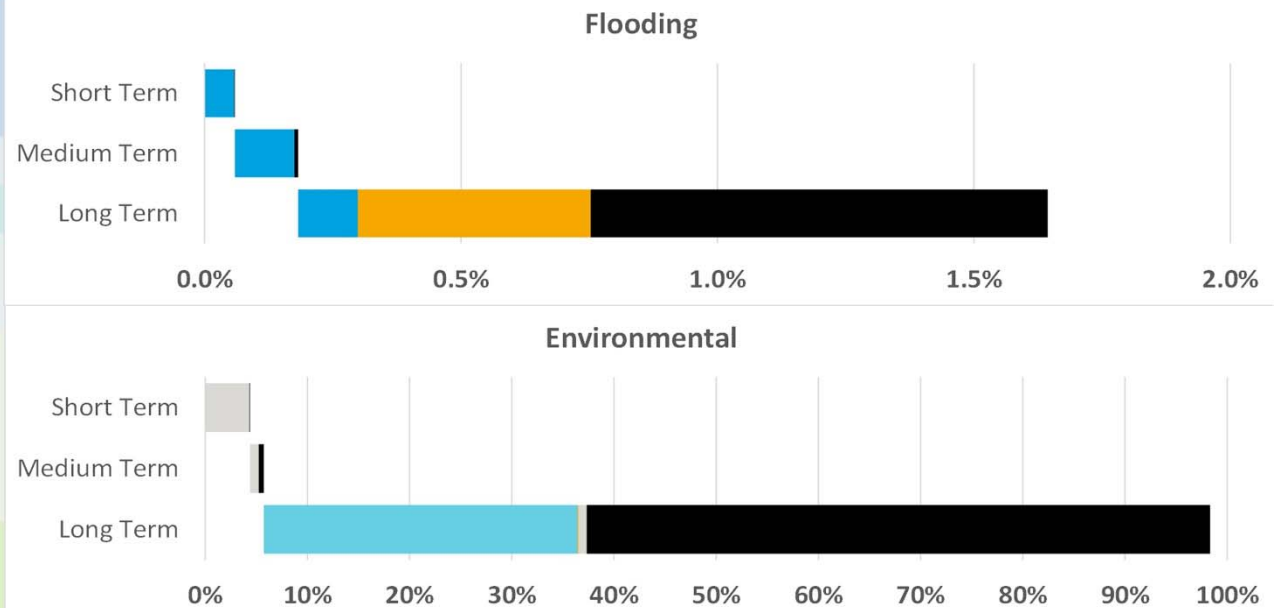
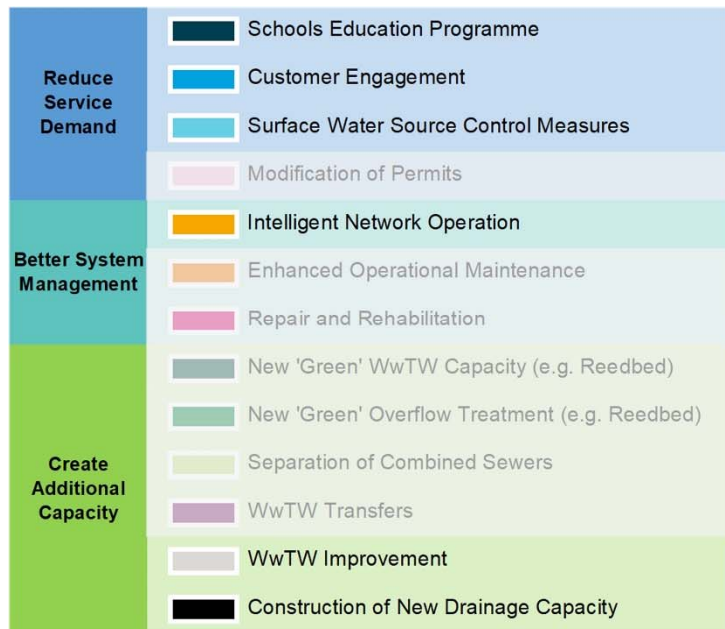
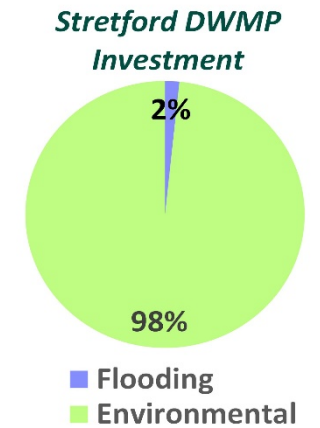
5.2.3.26 Stretford

Figure 62 Details of the DWMP investment plan for Stretford

The data on this page gives details of the investment plan for Stretford TPU. The plan shows the geographic location of Stretford within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



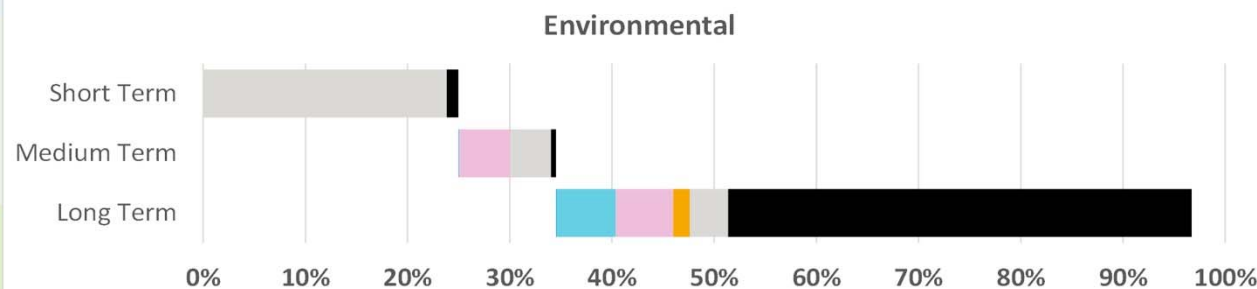
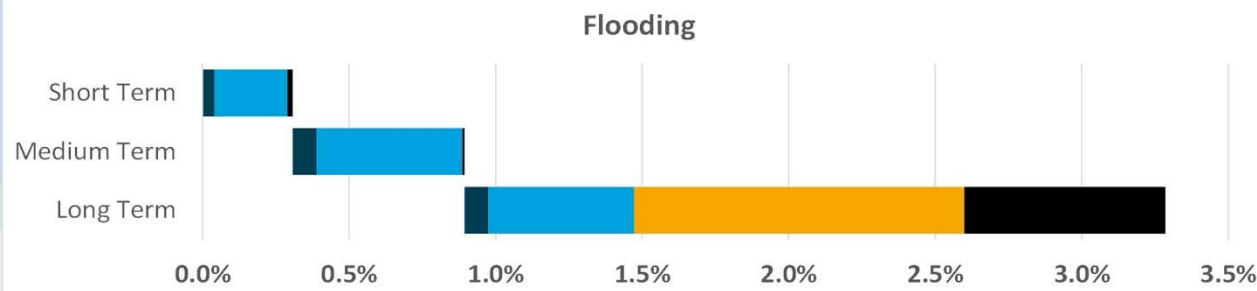
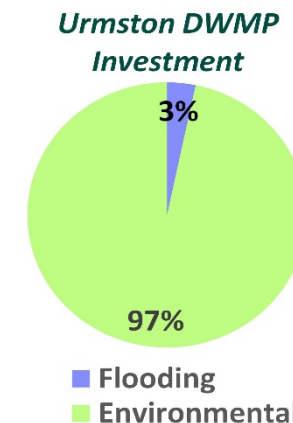
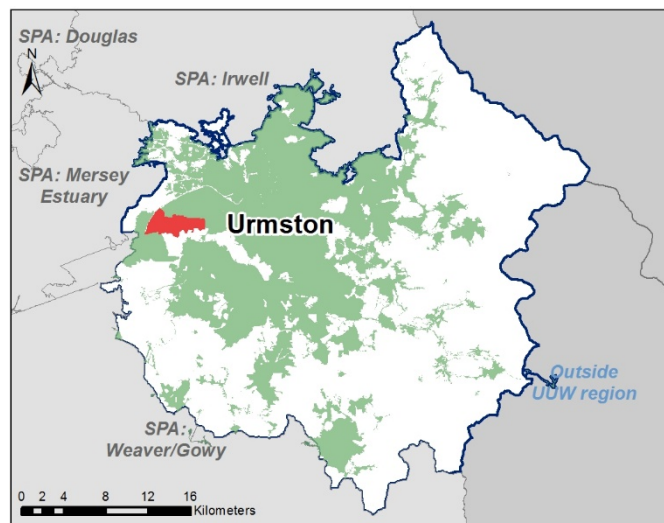
5.2.3.27 Urmston

Figure 63 Details of the DWMP investment plan for Urmston

The data on this page gives details of the investment plan for Urmston TPU. The plan shows the geographic location of Urmston within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



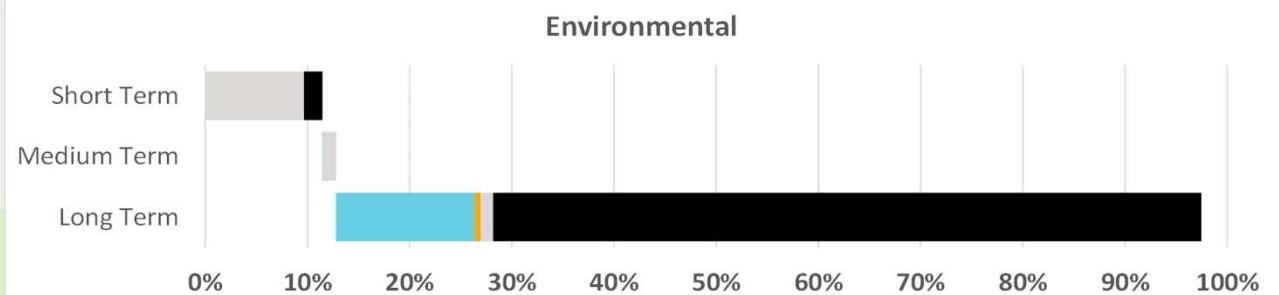
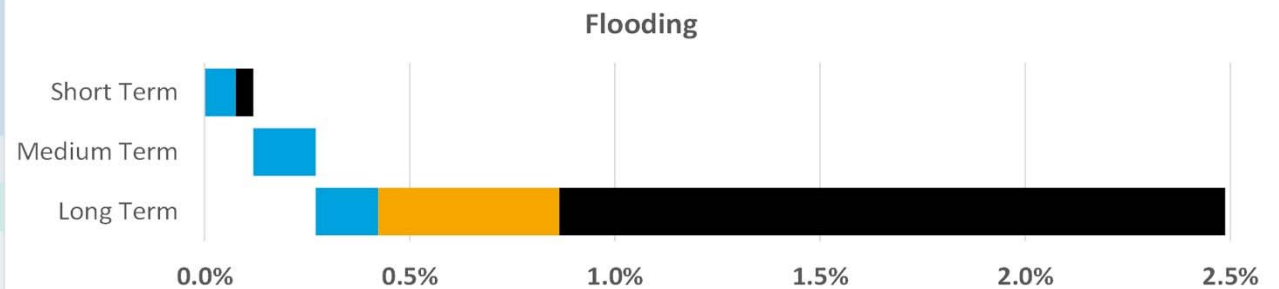
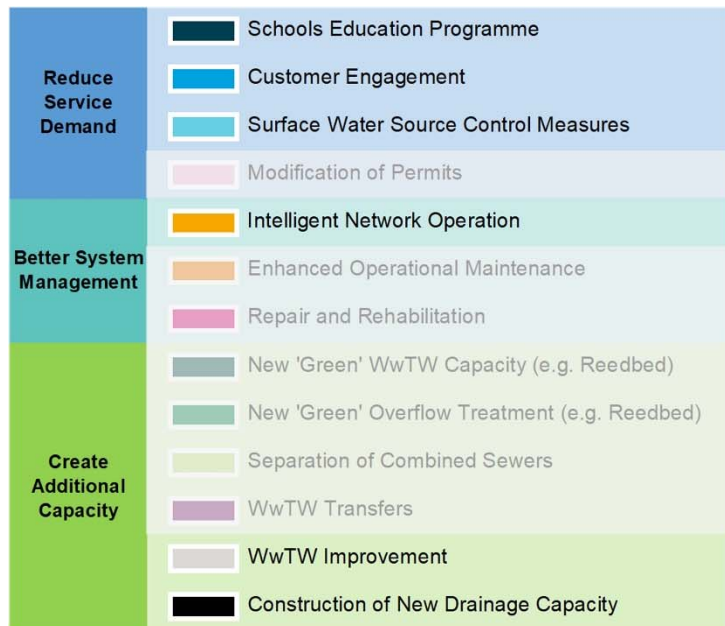
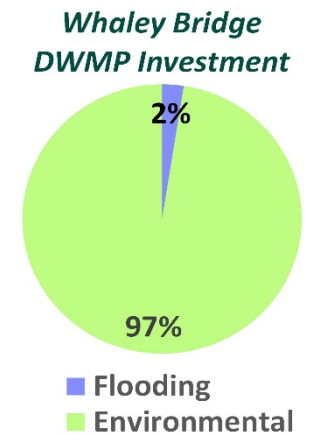
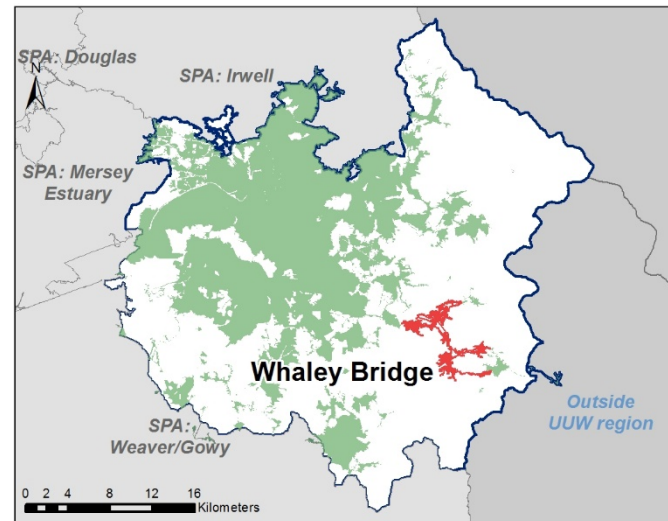
5.2.3.28 Whaley Bridge

Figure 64 Details of the DWMP investment plan for Whaley Bridge

The data on this page gives details of the investment plan for Whaley Bridge TPU. The plan shows the geographic location of Whaley Bridge within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



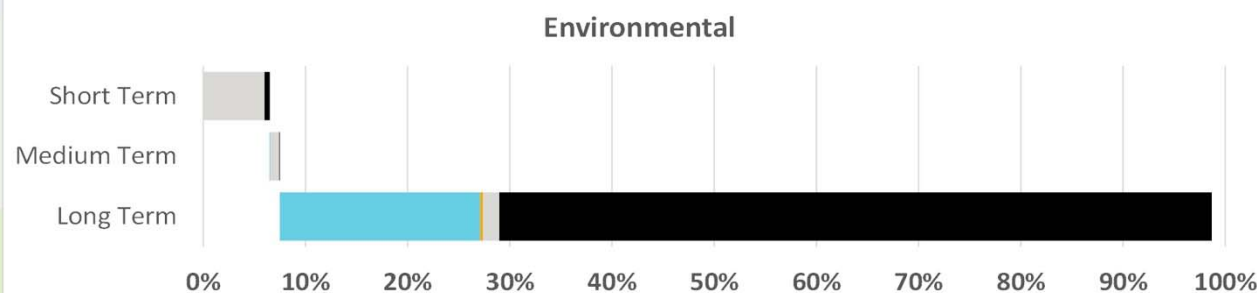
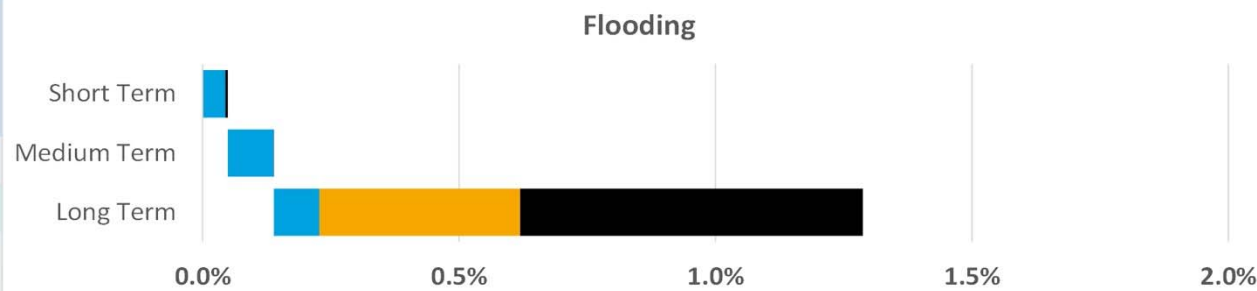
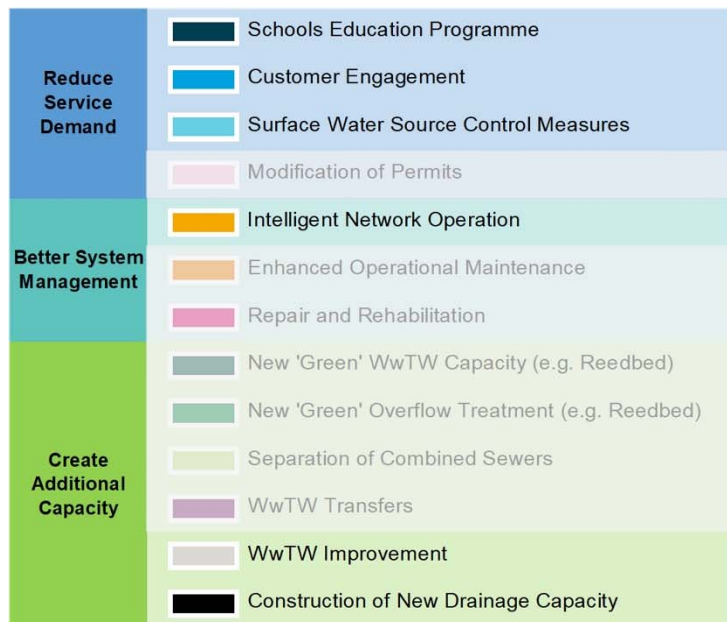
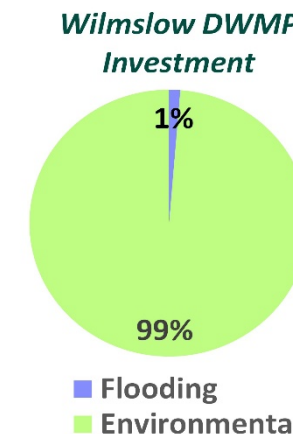
5.2.3.29 Wilmslow

Figure 65 Details of the DWMP investment plan for Wilmslow

The data on this page gives details of the investment plan for Wilmslow TPU. The plan shows the geographic location of Wilmslow within the Upper Mersey catchment.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

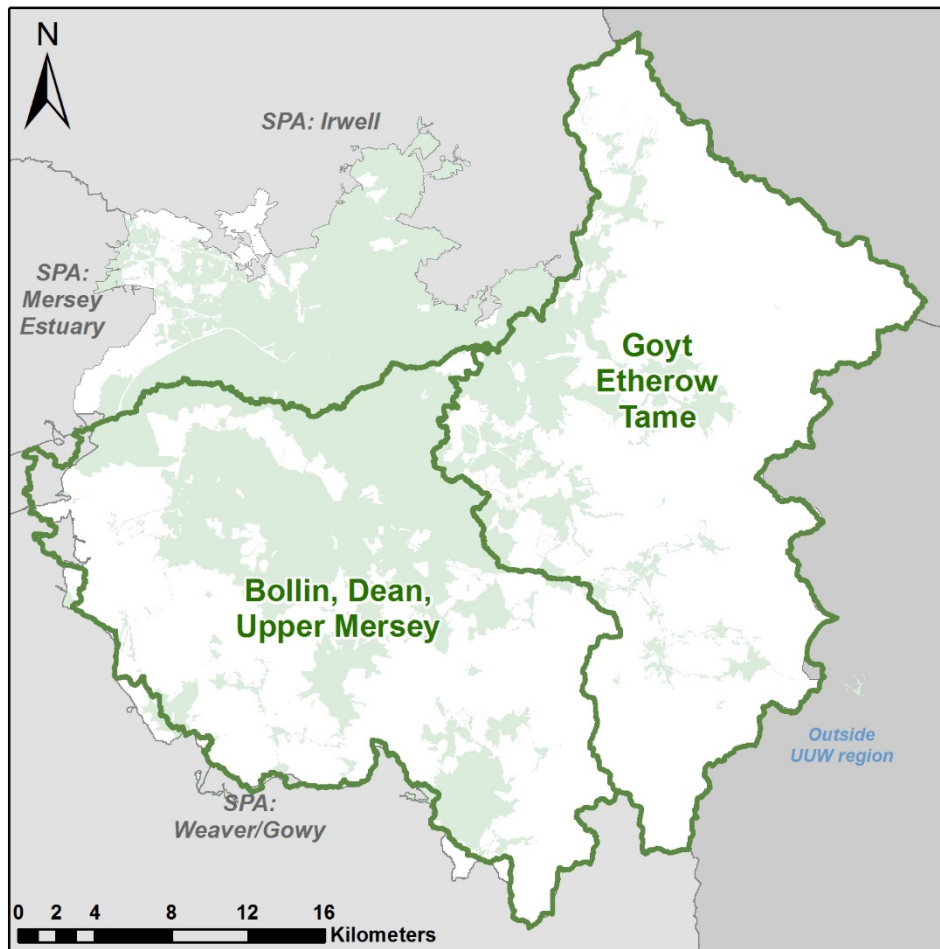
The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



5.2.4 TPUs with population less than 2,000

Within the Upper Mersey catchment, there are a number of small TPUs, each with a population of less than 2,000. For the purpose of reporting, these have been grouped together within Environment Agency operational catchment (OC) boundaries, which are sub-divisions of the overall catchment, aligned to local river systems. Within the Upper Mersey, there are two Environment Agency operational catchment areas, which can be seen in Figure 66.

Figure 66 Location of Environment Agency operational catchments within Upper Mersey SPA



EA Environment Agency Operational Catchment	TPUs
Bollin, Dean, Upper Mersey	Warburton Lane Ashley
Goyt, Etherow, Tame	Turf Lea Tintwistle Strines Rowarth Millbrook Cottages Lymefield Terrace Kettleshulme Holly Grove Heron Lane Crowden Combes Castleshaw Arden Road

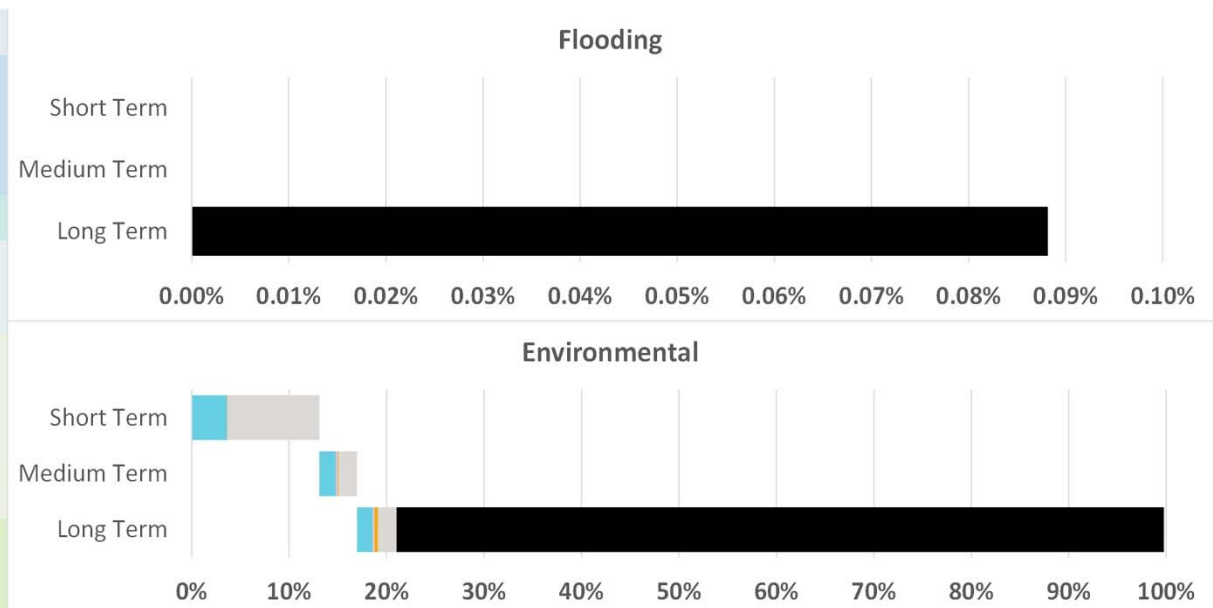
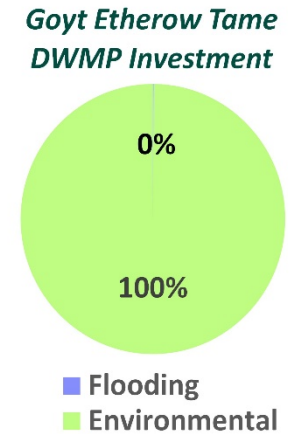
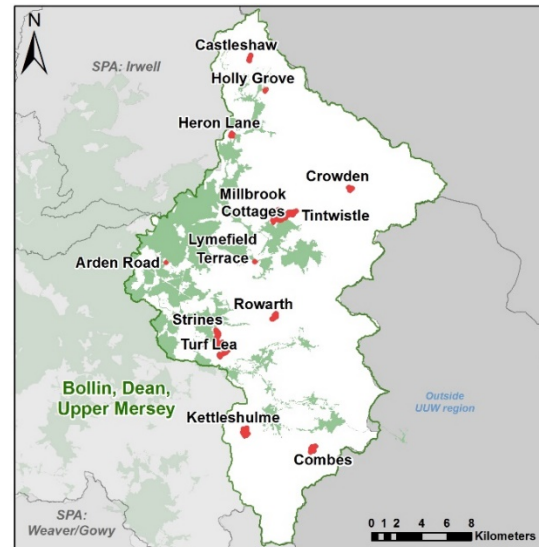
5.2.4.1 TPUs with population less than 2,000: Goyt, Etherow, Tame operational catchment (OC)

Figure 67 Details of the DWMP investment plan for the Goyt, Etherow, Tame OC

The data on this page gives details of the investment plan for the TPUs within the Goyt, Etherow, Tame OC. The plan shows the geographic location of these TPUs within the Goyt, Etherow, Tame OC.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



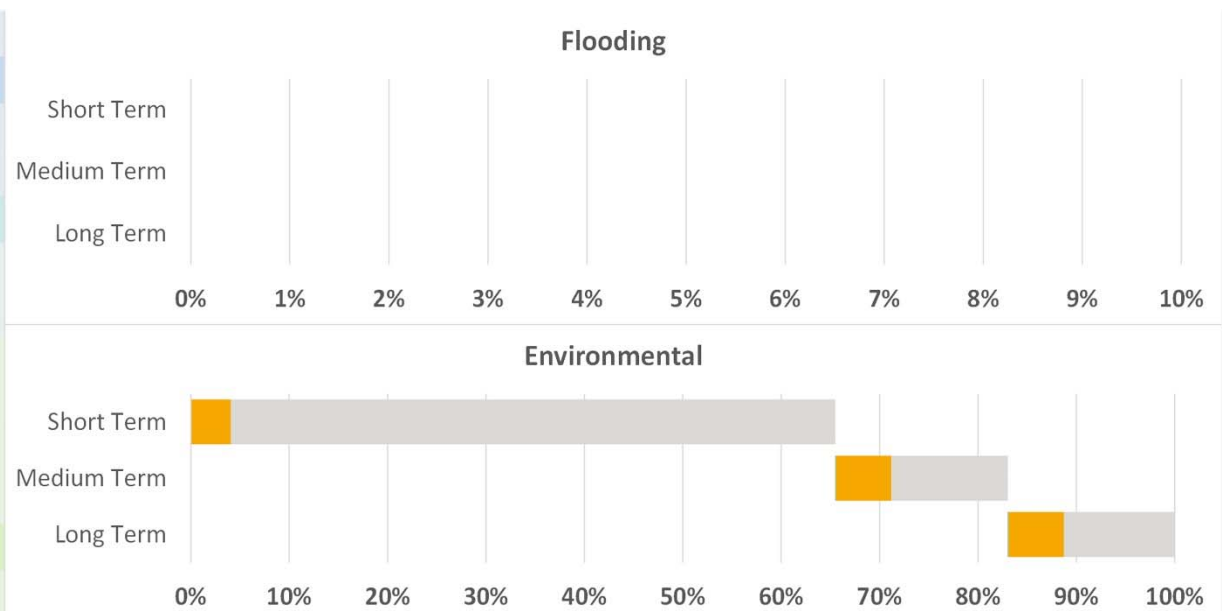
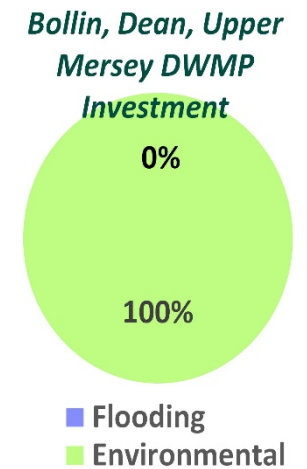
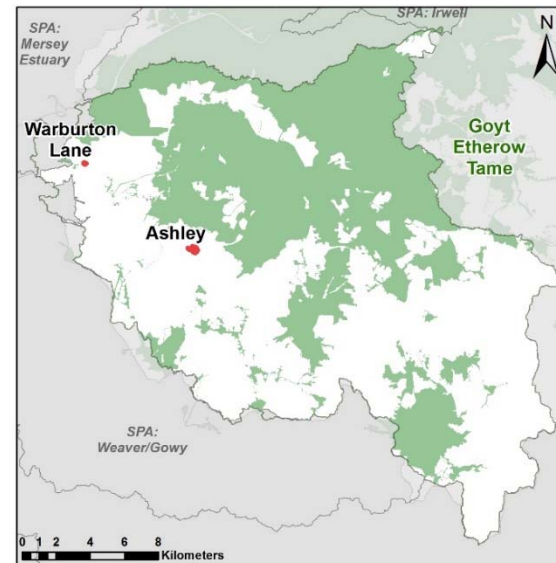
5.2.4.2 TPUs with population less than 2,000: Bollin, Dean, Upper Mersey operational catchment (OC)

Figure 68 Details of the DWMP investment plan for the Bollin, Dean, Upper Mersey OC

The data on this page gives details of the investment plan for the TPUs within the Bollin, Dean, Upper Mersey OC. The plan shows the geographic location of these TPUs within the Bollin, Dean, Upper Mersey OC.

The pie chart to the right of the plan indicates the percentage split of proposed flooding and environmental investment. Environmental investment includes work to address storm overflows, wastewater treatment works and pollution of watercourses.

The bar charts below show a more detailed breakdown of the potential option types that make up the flooding and environmental investment. The key to the left of the bar charts show the colours used for the 13 different option types. Additionally, the charts indicate whether investments are proposed in the short, medium or long term.



5.3 Other projects and investment

In addition to the improvements and benefits that the WINEP and the DWMP will drive in the years to come, there are also other projects that will help to achieve our ambitions. One of which is our Better Rivers: Better North West project which aims to improve the region’s river water quality.

5.3.1 Better Rivers: Better North West

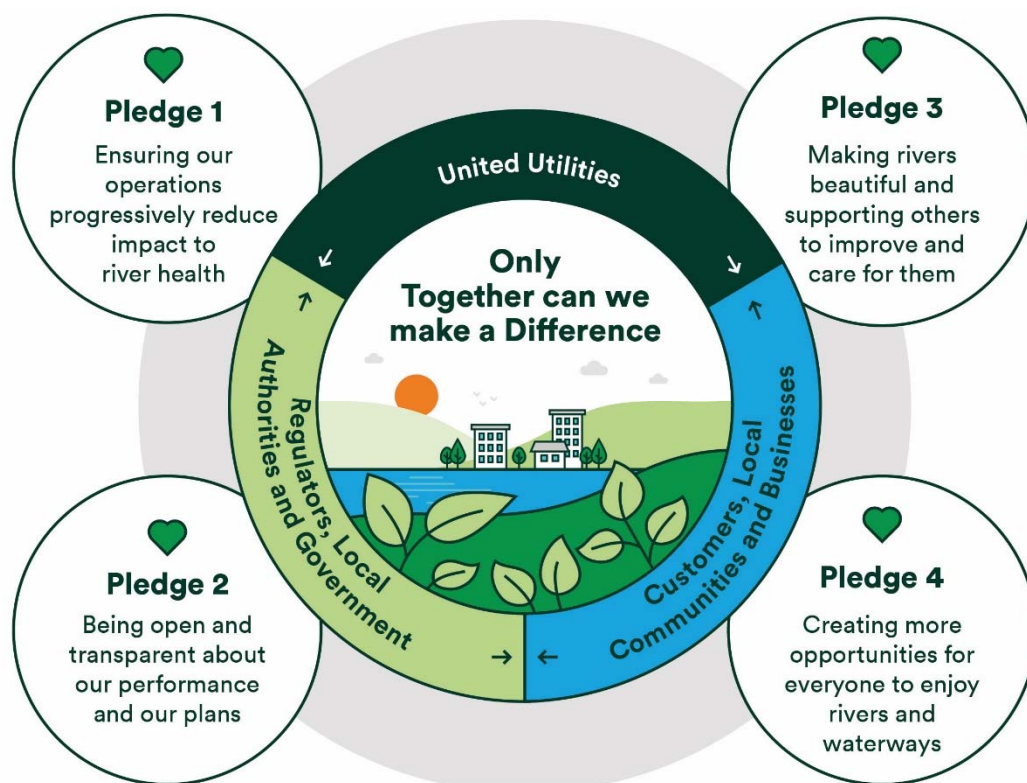
The North West is home to some of the most beautiful natural landscapes. We take our role in protecting them very seriously so they can be enjoyed by all. We are investing significantly to reduce the impact that wastewater has on the natural environment and our long-term ambition is to eliminate pollution incidents.

We want to demonstrate how we are addressing concerns regarding storm overflows and making our contribution to improving river health. Through our Better Rivers: Better North West plan, we have made four pledges which will include improving our wastewater network and treatment assets, collecting more data and sharing it, greater innovation and more use of nature-based solutions (Figure 69).

We are determined to build a coalition of the willing to improve the region’s river water quality and catalyse action from many parties. At the heart of this will be addressing surface water management at scale and securing continued investment in effective end-to-end wastewater management is necessary to improve river water quality. This programme sets out our ambitions for the next three years and beyond.

You can find out more about the Better Rivers: Better North West plan on our corporate website (<https://www.unitedutilities.com/corporate/responsibility/environment/reducing-pollution/storm-overflows/our-commitments-to-river-health/>).

Figure 69 Overview of the Better Rivers: Better North West project



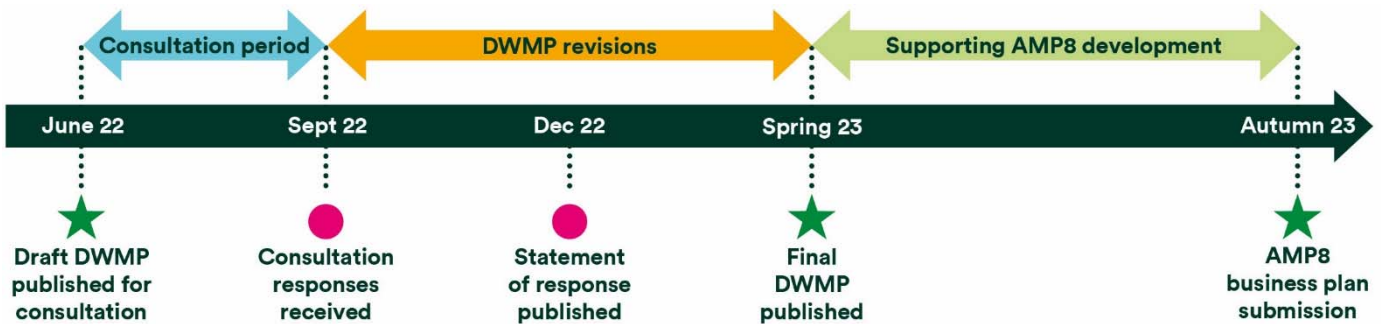
6. Embedding the DWMP

Since we began our DWMP journey when the framework was published in 2018, we have now produced our first ever plan. We have done this with the support from customers and stakeholders where we have listened to, reflected upon and made changes to different views, priorities and ambitions that we have for the North West, now and in the future.

The DWMP encompasses a host of documents covering different topic areas from assessing risks to identifying opportunities, and the SPA documents like this one for the Upper Mersey catchment. The DWMP is not a static programme and will continue to work with stakeholders to develop partnership options and strategies, which will make a difference within the Upper Mersey catchment.

Moving forwards, the DWMP will be a key component in the development of our business plan for investment cycle 2025 – 2030 (AMP8, Figure 70). Here, we will be able to continue to work in partnership to identify joint opportunities to mitigate risk, to improve the environment and create spaces for communities to enjoy.

Figure 70 Timeline of key milestones



7. References

- [1] <https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3106>
- [2] <https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3039>
- [3] <https://environment.data.gov.uk/catchment-planning/v/c3-plan/CatchmentPartnership/WEIF8502>
- [4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1120229/North-West-FRMP-2021-2027.pdf
- [5] <https://www.gov.uk/government/publications/surface-water-management-plan-technical-guidance>
- [6] <https://www.merseyriverstrust.org/index.php/projects/caba>
- [7] <https://environment.data.gov.uk/catchment-planning/WaterBody/GB112069061340>
- [8] <https://environment.data.gov.uk/catchment-planning/WaterBody/GB112069061320>
- [9] <https://environment.data.gov.uk/catchment-planning/WaterBody/GB112069061360>
- [10] <https://www.trafford.gov.uk/planning/strategic-planning/docs/PfE-2021-Timperley-Wedge-Fact-Sheet.pdf>

United Utilities Water Limited
Haweswater House
Lingley Mere Business Park
Lingley Green Avenue
Great Sankey
Warrington
WA5 3LP
unitedutilities.com



Water for the North West