



Business Plan 2019-2022

Draft for consultation: October 2018

To be published: April 2019

Our mission

Working together on sustainable management of flood and coastal erosion risks, we will improve the health and wellbeing of our communities and the environment in the North West

(To be) Published by:

North West Regional Flood and Coastal Committee
Richard Fairclough House
Knutsford Road
Latchford
Warrington
WA4 1HT

Tel: 03708 506506

Email: nw-rfcc@environment-agency.gov.uk

Website:

<https://www.gov.uk/government/groups/north-west-regional-flood-and-coastal-committee>

[The Flood Hub](#)

© North West Regional Flood and Coastal Committee 2019

All rights reserved. This document may be reproduced with prior permission.

Foreword

Welcome to the (draft) North West Regional Flood and Coastal Committee's Business Plan in which we set out our objectives and principle work streams for the period April 2019 to March 2022.

The plan sets out the Committee's priorities to ensure it fulfils its responsibilities now and furthers our ambition to look ahead and outwards to better address future challenges.

The work of the Committee is underpinned by sub regional strategic partnerships covering Cheshire Mid Mersey, Cumbria, Greater Manchester, Lancashire, and Merseyside. The Committee is also closely linked to the North West Coastal Group which brings together all the coastal protection authorities for the region. There are ten local authority Councillors who are members of both the Committee and the relevant strategic partnership who provide local democracy and scrutiny.

There is mounting evidence that our climate is changing and recent weather events across the world demonstrate that extremes of weather will increasingly be the norm. Considerable work is ongoing to reduce the risk of flooding across the North West. This includes those communities affected by Storms Desmond and Eva in December 2015 and elsewhere where there is a risk of flooding. In the case of surface water flooding caused by intense rainfall, impacts could be felt almost anywhere.

Against this background we want to set out a medium term view of what is likely to be important for us as an RFCC to focus on. This is within the context being set by national government's 25 year Environment Plan and the refresh of the national Flood and Coastal Erosion Risk Management Strategy being led by the Environment Agency.

The Committee has considered the draft Business Plan but has not yet fully adopted it, pending a period of engagement with stakeholders. We look forward to hearing your views.

Adrian Lythgo

Chair, North West Regional Flood and Coastal Committee



Contents

Who we are	3
This document in context.....	3
Working in partnership	4
Our mission statement and principles	6
Key risks.....	7
Our priorities	7
What is at risk from flooding?	7
Investment programme and partnership funding	10
Maintaining the main rivers network	15
Natural flood management programme.....	15
Developing the future programme	16
Looking to the future.....	16
1: Reducing the risk of harm from our changing environment	18
2: Using and managing land sustainably.....	20
3: Enabling sustainable economic growth and investment	22
Using our locally raised funding.....	24
Annual Action Plan	26
How to find out more.....	27
Appendix 1 – North West RFCC members	28
Appendix 2 – List of abbreviations.....	30
Appendix 3 – Glossary.....	31

Who we are

We, the North West Regional Flood and Coastal Committee (RFCC), are one of 12 RFCCs in England. RFCCs were established under the Flood and Water Management Act 2010. They bring together the principle authorities responsible for managing flood and coastal erosion risk (Environment Agency, lead local flood authorities and water companies) in their region.

Each RFCC is chaired by an independent chairperson who is appointed by the Government. The Chair's role includes managing the meetings, ensuring the RFCC is providing the required governance to fulfil its role, and acting as a figurehead to represent the RFCC and its interests.

There are ten elected members (Councillors) on the North West RFCC who are appointed by sub regional partnerships to represent the interests and voice concerns on behalf of people living and working in their partnership area.

There are also seven independent members with specialist skills or backgrounds who are appointed to the RFCC by the Environment Agency. These independent members represent the coast, nature conservation, community engagement, agriculture, land management, development, sustainability, and business and the private sector. More details on the members and roles are provided in Appendix 1.



As an RFCC we have three main purposes:

1. to ensure there are coherent plans for identifying, communicating and managing flood and coastal erosion risks across catchments and shorelines
2. to promote efficient, targeted and risk-based investment in flood and coastal erosion risk management that optimises value for money and benefits for local communities
3. to provide a link between the Environment Agency, Lead Local Flood Authorities, other risk management authorities, and other relevant bodies to engender mutual understanding of flood and coastal erosion risks in its area

RFCCs play an important role in deciding local priorities, guiding flood and coastal risk management activities within the sub regional partnership areas including along the coast, advising on and approving programmes of work, and raising Local Levy to help fund local priority projects and works.

Works to manage flood and coastal erosion risk include maintaining and repairing existing defences and assets, building new defences, improving flood warnings and working with local communities to help them become more resilient and adapt to their risks.

This document in context

This document sets out our priorities as the North West RFCC, what we want to achieve, and what we will do to achieve them, for the period 2019 – 2022. It covers how we will carry out our core role as well as where we will go further to look ahead to future challenges, and how we will use our Local Levy funding to support our aims.

The themes within the Business Plan have been consciously aligned with the developing direction for the environment as a whole, as set out in the government's 25 Year Environment Plan ('A Green Future: Our 25 Year Plan to Improve the Environment', January 2018). Flooding and coastal erosion are environmental hazards and the way we use our environment can reduce or exacerbate flooding. It is therefore becoming increasingly important that we use and work with our natural environment to manage flood and coastal erosion risk and take opportunities to improve the environment as a whole as far as possible.

Through our forward looking North West RFCC Vision 2030 work, we were already actively progressing elements now central to the 25 Year Environment Plan, for example natural flood management. In setting our priorities and objectives for the next few years we have consolidated and shaped these in line with the Environment Plan.

Secondly, a new national Flood and Coastal Risk Management strategy is currently being developed through a collaborative approach to set the overall national vision for the future and to help us make the necessary decisions in the right way. There are some key questions being considered in this process which are still being answered. We will review this Business Plan in due course and evolve our priorities in light of the developed strategy.

Working in partnership

In the North West, both as an RFCC and as risk management authorities delivering our responsibilities, we actively take a partnership working approach, aiming to collectively do our best for communities across the region. With an increasing focus on delivering multi-objective schemes and aligning multiple funding sources, the need to work jointly is crucial. It is one of our core roles as an RFCC to help make this work even more effectively.

Strategic flood risk partnerships

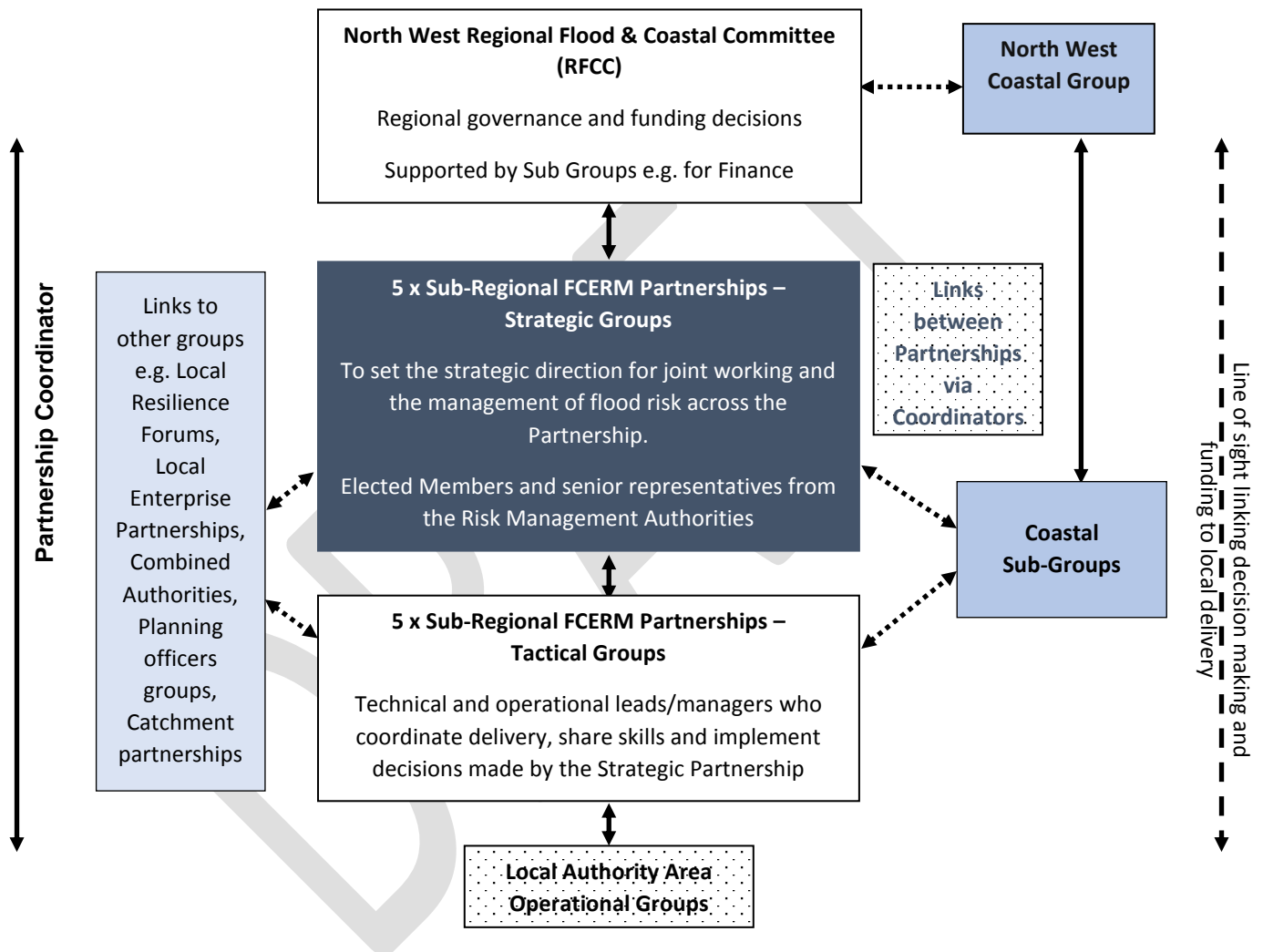
To embed partnership working, some years ago we established five partnerships around geographical areas: **Cheshire Mid Mersey, Cumbria, Greater Manchester, Lancashire, and Merseyside**. These partnerships consist as a minimum of the same risk management authorities – local authorities, United Utilities as the water company, and the Environment Agency. Some also include other local partners not represented on the RFCC. The purpose of these groups is to provide a partnership that is closer to local communities and the risks. They agree and promote investment priorities, set a shared direction for local initiatives and support management of cross cutting issues. They monitor delivery of the investment programme in their area and play an important role in delivering the RFCC's vision and the objectives in this business plan. These partnerships operate at both strategic (including elected members appointed by local authorities to represent their local authority at strategic partnership meetings) and tactical levels (officers from constituent risk management authorities).

Cumbria's partnership model developed in response to the flooding of December 2015 to incorporate a much greater range of partners, community groups and stakeholders. This is complemented by three catchment partnership groups with a similar broad representation.

The RFCC sees the partnership framework as essential to achieving effective partnership working and part funds a resource for each of the five partnerships to provide co-ordination and administration, hosted by a local authority partner.

The RFCC also has very close links with the **North West Coastal Group** which although it operates under slightly different legislation and governance rules, effectively forms a sixth strategic partnership group. The Coastal Group brings together the local authorities, the Environment Agency and other organisations who manage the coastline from Great Orme's Head in Wales to the Scottish Border on the Solway Firth. The coastline is a dynamic, ever-changing place that is home to many people and businesses, as well as being important for its variety of environmental and geologic features. The Group examines the social, economic and environmental issues that arise on the coastline and seek to find the best policies to deal with them.

Partnership Structure and Links to Regional Groups



Partnership with United Utilities

United Utilities are a key partner in the management of flood risk and have been consistently represented on the RFCC for some years. Their role is particularly critical in these areas:

- Strategic planning around the use of water supply and flood risk assets
- Customer engagement and what we can learn for community engagement
- Alignment of investment programmes
- Surface water flooding and designing 21st century drainage solutions

- Integrated catchment planning and natural flood management which reduces flood risk and improves drinking water quality

Wider links

The RFCC brings together at a regional level the organisations who have an interest in managing the risk of flooding and coastal erosion. With an increasing appreciation for the interconnectedness of flood risk management, the wider environment, development, and community resilience, we see a need for building stronger links with **other government bodies** in the North West, both within the wider **Defra family** (e.g. Forestry Commission, Natural England, Rural Payments Agency) and within **other government departments** (e.g. planning authorities within the remit of the Ministry of Housing, Communities and Local Government). We will take steps to achieve this including considering the membership of the North West RFCC, or representation of the RFCC at other forums.

There are also other initiatives ongoing in the North West which seek to focus on achieving improvements to the water environment. With the potential to achieve multiple benefits, both in relation to flood risk reduction and the wider environment, we see opportunities for stronger engagement with these projects and groups and their outputs.

Of particular interest are the Defra-sponsored **Pioneer projects** testing approaches to implementing the 25 Year Environment Plan, two of which are in the North West - the Cumbria Catchment Pioneer, and the Greater Manchester Urban Pioneer. These projects are looking at themes including public and community engagement, environmental land management, natural capital accounting, whole catchment approach and its governance, partnership working, the net gain principle for development and innovative financing.

Natural Course is a European Union funded project to improve and protect the water quality of the North West. Many of the measures taken to improve water quality also reduce the risk of flooding. Both are about the management of water within catchments and are both closely linked with strategic and spatial planning and land use. We therefore aim to take an integrated approach, developing shared goals, and aligning or combining action and engagement wherever possible.

The **Catchment Based Approach (CaBA)** embeds collaborative working at a river catchment scale to deliver cross-cutting improvements to our water environments. **Catchment partnerships**, bringing together local knowledge and expertise, are active in all catchments in England. They include NGOs, water companies, local authorities, government agencies, landowners, angling clubs, farmer representative bodies, academia and local businesses. There are 12 catchment partnerships across the North West: Derwent, South West Lakes, Kent/Leven, Lune, Wyre, Ribble, Douglas, Alt/Crossens, Irwell, Upper Mersey, Mersey Estuary, and Weaver/Gowry.

Our mission statement and principles

Mission statement

Working together on sustainable management of flood and coastal erosion risks, we will improve the health and wellbeing of our communities and the environment in the North West.

We have identified a number of principles which guide our priorities, decision making and action.

- We will involve, listen to and do the best for our communities
- We will work together in partnership and make delivering multiple benefits in an integrated way the default approach to make funding go further

- We will find sustainable approaches, taking a long term perspective to climate change and changing risks
- We will work to unlock and enable economic regeneration and growth by aligning investment in flood risk management with opportunities for wider investment and development

Key risks

The top risks that we as an RFCC see and have a role in managing are:

- Slippage of projects in the investment programme (including the natural flood management programme)
- Communities that have experienced flooding feeling disenfranchised
- Limited understanding of the scale and potential impact of surface water flooding

Our priorities

- Successful and timely delivery of the investment programme
- Working in partnership in an even stronger and more integrated way, delivering multiple benefits in all aspects of our work wherever possible
- Gaining a better understanding of surface water flood risk and how we are addressing it

What is at risk from flooding?

The North West RFCC and its constituent partners are responsible for managing flood risk across some 14,921 sq km of North West England. The area covers around 6,500 km of designated main river, almost 300 km of estuary and 826 km of coastline.

Over 140,000 residential and commercial properties have been identified as being at risk from flooding from rivers or the sea. Around 34,000 properties are at significant risk from surface water flooding.

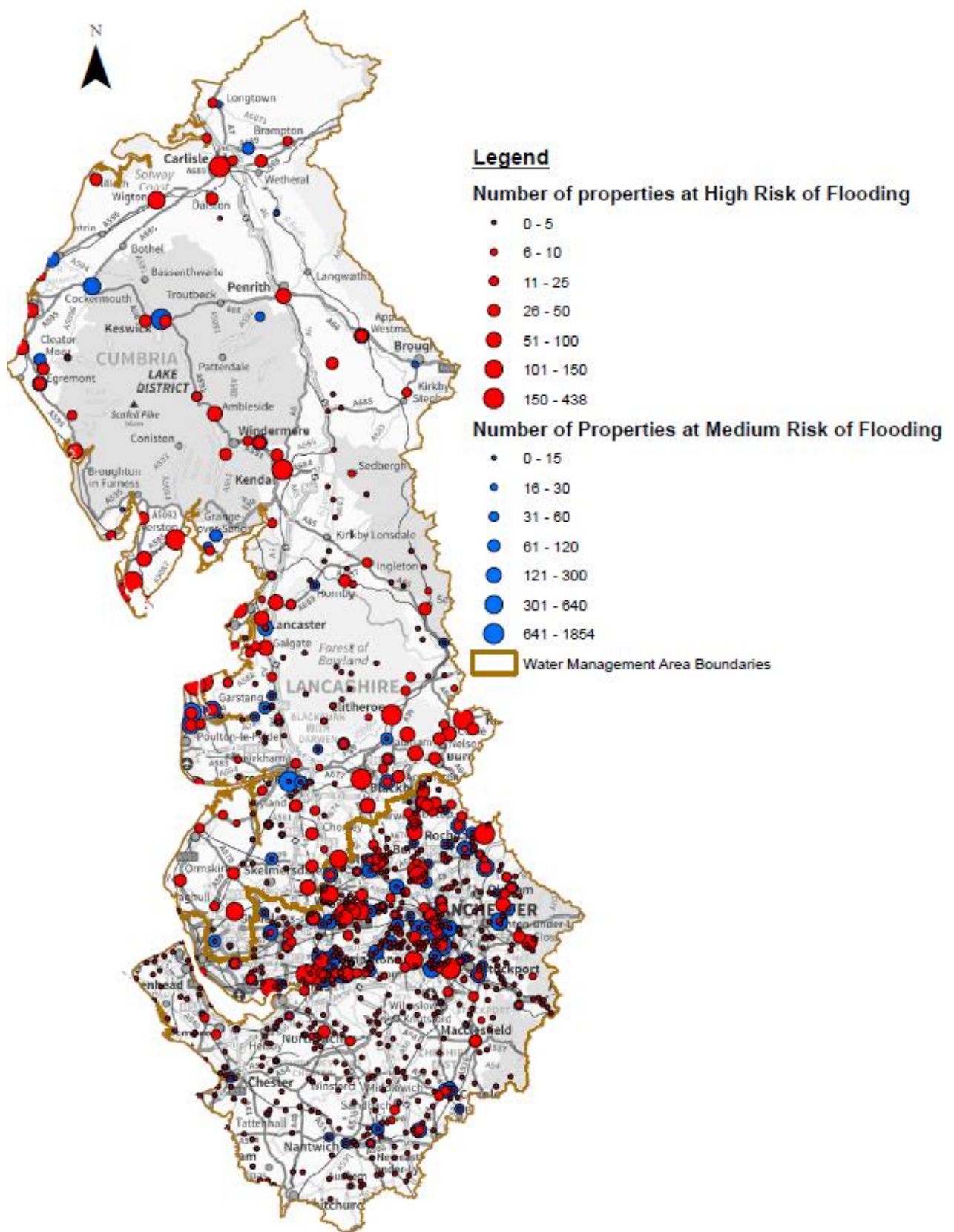
Flooding can have a major impact on critical infrastructure and there are a number of major transport routes in the NW including the M6, M62, M57, M58, M61, M53, M56 motorways and the West Coast mainline. We have also seen the significant disruption caused when locally critical infrastructure is impacted such as the closure of the A591 in Cumbria following Storm Desmond in December 2015.

The North West is the second most deprived region in England. Most of the deprived neighbourhoods are located in urban areas, particularly Blackpool, Liverpool and Manchester. These often coincide with areas of high flood risk, impacting those who are least able to help themselves.

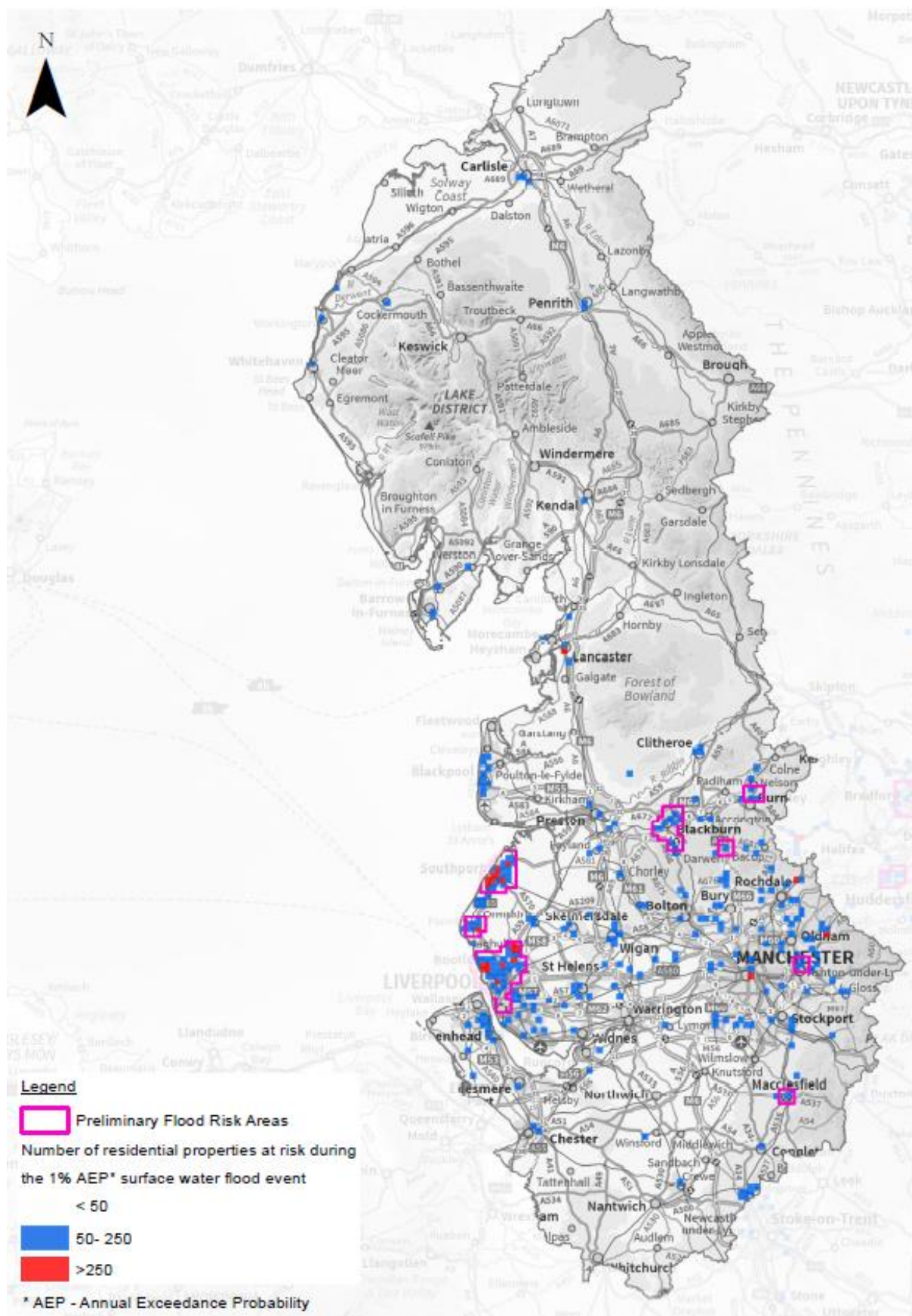
The maps on the following pages show communities which are at risk of flooding from rivers and the sea, and from surface water. The size of the circles indicates the numbers of residential properties affected.

For every residential property at risk, there is an individual, a family, or group who could experience the devastating impact of flooding at any time. And even if they are aware of the risk, have signed up for flood warnings and have a plan for what to do if the worst happened, they may live in fear, feeling anxious every time it rains. For every business at risk, livelihoods and jobs can be jeopardised.

Communities at risk of flooding from rivers and the sea



Communities at risk of flooding from surface water



Surface water flooding

Our changing climate has led to an increasing frequency of intense rainfall events often resulting in drainage networks being overwhelmed, surface water flooding is a real and growing issue. It is the most unpredictable and therefore least understood and mapped source of flooding. This makes it more difficult to communicate the risk to those potentially affected.

Urban development can make surface water flooding worse if sustainable drainage systems are not correctly designed or maintained. This underlines the importance of those involved in the development process working together to ensure surface water flood risk is well managed and, where possible, reduced.

We as the North West RFCC recognise the need for us and our constituent partners to improve our level of understanding of the risk that surface water flooding poses across the North West. The risk is greatest in urban conurbations of which we have several in the south of the region. With our partners and key stakeholders we will then assess the extent to which we are addressing surface water flooding within the future investment pipeline and through other measures such as promoting the adoption of sustainable drainage systems and green infrastructure.

Effective surface water management requires coordinated action by all of those with responsibilities for managing land, rivers and drainage systems. Lead Local Flood Authorities have the leadership role on surface water management but others, including water companies also have important roles to play and the responsibilities between different parties is not always clear cut, particularly when the source of flooding is unclear or there are different sources working in combination. These responsibilities will be clarified in the new National FCERM Strategy.

Investment programme and partnership funding

In addition to carrying out the essential maintenance and repair of existing flood defences, flood risk management authorities reduce the risk of flooding by building new flood risk management schemes. Sometimes these replace existing defences which are at the end of their life, sometimes in new locations, and seek to improve the standard of protection wherever possible. This activity is delivered through a large England-wide capital programme. A large part of the funding for this programme is provided by central government in the form of Flood and Coastal Erosion Risk Management Grant in Aid (FCERMGiA).



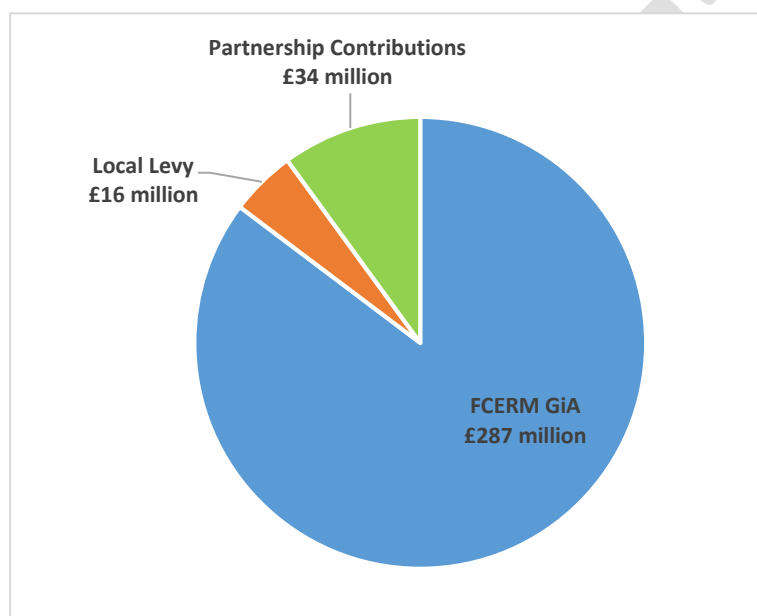
River Mersey scheme, Warrington

There is a 6 year plan for investment in flood and coastal erosion risk management. Between 2015 and 2021, the government is investing £2.6 billion in more than 1,500 projects which will reduce flood or coastal erosion risk to more than 300,000 homes. As part of this settlement, the government gave two conditions: to achieve at least 15% (£345 million) of funding contributions from other partners and to achieve the same outcomes with 10% efficiency savings. The benefits of this longer term settlement include longer term planning, improved efficiency and effectiveness, and greater opportunities for collaborative working.

The partnership funding mechanism means that any cost-beneficial scheme can attract an amount of FCERMGiA but depending on the scheme cost and the benefits it will deliver, the GiA may not be enough to cover the full cost, often leaving a funding gap which needs to be filled by other contributions. These include contributions from public (mainly local authorities) and private sector partners, and Local Levy provided by the RFCC.

Schemes are developed and proposed by risk management authorities (RMAs) working with communities. It is essential that the philosophy of partnership working is at the heart of developing and delivering schemes.

RFCCs endorse and put forward those schemes, which are then prioritised nationally based on the return on investment, measured through the partnership funding mechanism. The North West RFCC supports this national prioritisation approach and sees its role as ensuring sufficient and suitable schemes are being put forward which reflect the flood and coastal erosion risk across the region and which take advantage of partnership working where the wider benefits of schemes become shared outcomes.



Within the 6-year investment programme, the North West RFCC has been allocated £287million of FCERMGiA with the expectation that for this we will reduce the risk of flooding to around 43,000 properties. Along with other funding contributions from partners (both public and private sector) and the North West Local Levy this represents a total investment across the north west of £337 million.

For more details on the schemes making up the 6-year investment programme please follow this [link](#).

Delivering the investment programme

The 43,000 homes to be better protected through the North West investment programme is an important (14%) contribution to the overall 300,000 homes we need to better protect nationally.

As at October 2018, we have better protected over 26,500 homes, representing 63% of the total.

Right now, delivering the remainder of this programme is the biggest difference we can make to managing flood risk in the North West. The successful delivery of the remainder of the 6 year investment programme is dependent on timely delivery by many risk management authorities.

With only 1% (equivalent to 450 homes) of the North West programme still working to secure full funding packages, the emphasis is now on getting technical approval for (provided by the Environment Agency on behalf of Defra) and constructing the remaining schemes.

As an RFCC we recognise that there are challenges involved in delivering any flood or coastal erosion risk management scheme – they can be complex and working in partnership with communities and

partners takes time and resources. We also recognise that people resources are often tight particularly in local authorities where budgets are under pressure and there are many competing priorities. As a result we have taken steps to support our risk management authorities to deliver their projects.

The main step we have taken is to provide the funding for an additional five resources, one per partnership, dedicated to working alongside the local authorities to actively support them in project development and delivery. These additional resources have been well received by the local authorities and we are seeing a positive impact on the pace of project delivery.

"The...appointment has been a great boost to us in Cumbria. The future for flood risk reduction schemes, including the districts responsible for coastal concerns, looks much more positive with the Project Advisor in place." (Cumbria County Council)

"The Advisor has tailored interventions focusing on lack of resource and other barriers...Communication has been excellent. Opportunities for accelerating schemes have been identified and acted upon." (Wirral Council)

Based on forecast data regularly provided by those authorities delivering projects on the programme, each quarter we review progress and any delays arising which could impact the successful delivery of the North West 6-year investment programme. We do this through our Finance Sub Group who apply a level of scrutiny to delivery of the programme, who then report back their findings and recommendations to the full RFCC. Each of the strategic partnerships groups also has a mechanism for reviewing progress and identifying issues arising.

Below is a summary of the investment programme which shows for each risk management authority in each of the five partnerships, the level of investment being made in the current 6-year programme, the number of homes to be better protected, and the progress made so far. Data is current at the end of the 2017/18 financial year.

Table 1 – Investment and homes to be better protected by each risk management authority in the North West 2015-2021

Authority (lead)	FCERM GiA investment £million	Local Levy investment £million	Partnership Contributions £million	Total investment £million	Homes to be better protected Total	Homes better protected so far
North West Coastal Group (Coastal schemes)						
Allerdale	0	0	0	0	320	0
Blackpool	10.39	0	2.00	12.39	5,315	5,315
Lancaster City	10.39	0	0	10.39	11,426	5,956
Wyre	47.06	0	0.03	47.09	8,291	7,497
Fylde	21.01	0	0	21.01	2,347	0
Sefton	4.58	0.06	1.72	6.36	150	0
Wirral	1.65	1.32	1.44	4.42	92	0

Cumbria partnership						
Cumbria County Council	2.88	1.20	1.58	5.66	1,077	81
Environment Agency	72.17	4.32	8.17	84.66	3,229	442
Lancashire partnership						
Blackburn with Darwen	1.26	0.20	0	1.46	274	144
Blackpool	0.28	0.01	0	0.29	38	38
Lancashire County Council	1.39	0.30	0	1.69	173	104
Environment Agency	31.32	1.97	5.10	38.39	4,022	3,577
Greater Manchester partnership						
Bolton	3.40	0	0.36	3.76	453	38
Bury	0	0	0	0	0	0
Derbyshire	0.13	0	0.005	0.14	61	0
Manchester	1.05	0.12	0	1.17	253	30
Oldham	0.99	0.22	0.14	1.35	96	18
Rochdale	0.20	0.19	0.15	0.54	66	66
Salford	0.17	0	0	0.17	81	0
Stockport	0	0	0	0	0	0
Tameside	0.03	0	0.02	0.05	17	17
Trafford	0	0	0	0	0	0
Wigan	0.18	0	0	0.18	0	0
Environment Agency	41.58	1.57	8.70	51.85	3,490	2,127
Cheshire Mid Mersey partnership						
Cheshire East	0.40	0.20	0.16	0.76	144	15
Cheshire West and Chester	0	0.23	0.07	0.30	4	0
Halton	0.12	0.05	0.06	0.23	95	0
St Helens	0.04	0.07	0	0.11	0	0
Staffordshire	0.17	0	0	0.17	27	27
Warrington	0.97	0.14	0	1.11	151	63
Environment Agency	19.10	2.39	3.95	25.44	1,578	1,090
Merseyside partnership						
Knowsley	0.12	0	0.005	0.12	46	0
Liverpool	0.47	0	0.08	0.55	199	0
Sefton	0.95	0.03	0.01	0.99	127	0
Wirral	0.24	0	0.07	0.31	11	11

Environment Agency	7.76	0	0	7.76	0	0
Cross Partnership						
Environment Agency	4.99	1.26	0	6.25	0	0
North West RFCC Total	287.20	15.85	33.74	336.79	43,333	26,656

Note: Where there appear to be limited number of homes better protected for the investment being made it is because the completion of those schemes is outside of the 2015-2021 programme period or assets other than homes are benefitting e.g. critical infrastructure.

The Top 10 schemes representing 59% of the 43,000 homes to be better protected are set out below. Half of these are already complete.

Table 2 – Top 10 North West schemes		
Scheme	Homes better protected 2015 - 2021	Progress
Morecambe Wave Reflection Wall Phases 1-3	11,416	Due for completion in 2018/19
Rossall Coastal Protection Improvement Scheme	7,497	Completed 2017
Anchorsholme Coastal Protection Improvement Scheme	4,814	Completed 2017
Wyre Dune and Beach Management Scheme	1,915	Partially complete, due for final completion in 2020
Kendal	1,557	For completion in 2020
Fairhaven to Church Scar Coast Protection Scheme	1,357	For completion in 2020
River Irwell, Salford	1,110	Completed 2017
Jacks Key Reservoir Improvements, Darwen	1,098	Completed 2017
Radcliffe and Redvales, Bury	812	For completion in 2021
River Mersey, Warrington	656 (2,156*)	Completed 2018

*Total homes better protected by the scheme, including before 2015



River Irwell scheme, Salford

Main rivers network

Our rivers are a valuable natural asset which enhance the beauty and character of our towns and cities, and provide recreational opportunities. As we seek to apply a Natural Capital approach to our work, rivers will be an important element of this and there may be increasing opportunities to work in partnership with others on their enhancement and maintenance.

Since rivers often present a flood risk they have assets in place to help manage this e.g. flood banks. The RFCC approve the annual programme to maintain assets on the main river network. This is the part of the maintenance programme funded by FCERMGiA and delivered by the Environment Agency. This funding is also used to maintain incident response capability including clearing debris from screens and installing temporary flood defences. Local authorities and United Utilities also carry out their own maintenance of assets for which they are responsible.

When government funding falls short of the need, the RFCC has in the past supported the programme with contributions of Local Levy funding. This is not currently the case but we will keep this under review. In 2018/19 £10.8m of government GiA funding is being spent on maintenance of the main river network across the North West.



Clearing debris from river screen, Crawshawbooth

Natural flood management programme



Ribble Life Together project

In recent years there has been a growing recognition of the role that natural processes can play in managing flood flows and coastal erosion when used in conjunction with engineered flood defences. The North West RFCC recognised it's potential and has invested Local Levy funding to explore opportunities and build partnerships to develop natural flood management.

Following the 2016 Autumn Statement, Defra announced £15 million of government funding for natural flood management projects across England. The Environment Agency, together with risk management authorities, Natural England and

Forestry Commission, identified a number of projects at a catchment or coastal zone scale. The progress we had already made in the North West meant that we were successful in securing £4.1m of the funding. Delivery of these projects is a top priority for the RFCC and its constituent partners.

There was also an open competition to allocate £1m to community projects, five of which are in the North West. Our constituent partners are engaging with these projects via the catchment partnerships. Click [here](#) to view a map of all the government funded projects.

We are continuing to provide a reduced level of investment from Local Levy on natural flood management projects to progress other opportunities we had identified that are not eligible to use the GiA funding.

Developing the future programme

Risk management authorities are developing a pipeline of projects beyond 2021 for consideration in future programmes.

Across the North West we have so far identified a broad estimate of need of £2 billion beyond 2021 and will continue to develop the scheme details and seek funding, working in partnership with communities.

As part of managing flood and erosion risk on the coast, coastal authorities continue to use the Shoreline Management Planning process to establish management policies for stretches of coast into the future, to develop strategies to identify how policy implementation is best achieved, and to develop coastal management schemes. Recognising the impact that this could have on the coast, and the number of communities, homes, businesses and infrastructure which could be impacted, we have provided Local Levy funding for a resource to co-ordinate and support this work.

The government is currently reviewing its partnership funding mechanism for flood and coastal erosion projects, a review to which we have contributed. Changes to it may be made for the post 2021 programme. This is likely to affect the relative priority of scheme proposals and the amount of government funding they can secure and will also drive the need for multiple benefit schemes.

It is our view that as well as securing central government funding available, it is vital that we look to the significant investment being made across the North West and the Northern Powerhouse as an equally important source of partners and collaboration opportunity. We are actively engaging with the Manchester and Liverpool City Regions, Local Enterprise Partnerships, Council Leaders and Chief Executives, infrastructure providers and many more to incorporate flood and coastal erosion risk as one issue affecting the environment, health and wellbeing of our communities. Recognising and valuing the full range of benefits (environmental, social, economic, health and wellbeing etc.) of potential interventions will be critical to aligning investment and maximising the potential benefit. Developments in Natural Capital accounting now being pushed through the 25 Year Environment Plan will be a key element of this and it is likely we will need to find other means of valuing the other benefits. There is much more to be done on this and supporting this engagement will be a priority for the RFCC in the coming years.

Looking to the future

In addition to fulfilling our core purpose including overseeing the development and delivery of the investment programme, we have long recognised the need to look ahead and outwards, and to support innovation and pioneering activities which may not be integral to current ways of working. We also recognise the need to invest to save or to improve ways of working which have great potential benefits but may not be current priorities for funding. This led to the development of our RFCC Vision, under which we have provided Local Levy funding for projects and resources to progress some valuable initiatives. We have recently refreshed this Vision, re-examining what more we can do for people, the environment and the economy.

North West RFCC Vision framework



Our long term goals

<p>Reducing the risk of harm from our changing environment</p> <p>Communities say they understand flood and coastal erosion risk better and are helped to adapt so as to reduce their fear of flooding.</p> <p>We promote and deliver the right solutions for our coastal communities, managing and adapting to coastal change and helping those communities to adapt.</p>	<p>Enabling sustainable economic growth and investment</p> <p>Developers recognise the importance of flood risk and climate change adaptation and we work together, accessing a broader range of funding sources, to facilitate flood-resilient development which provides wider benefits to communities, business and the economy.</p>	<p>Using and managing land sustainably</p> <p>Flood flows in both rural and urban areas are reduced and managed, working with natural processes as part of an integrated whole catchment approach.</p>
---	--	---

A: Reducing the risk of harm from our changing environment

Our long term goal: Communities say they understand flood and coastal erosion risk better and are helped to adapt so as to reduce their fear of flooding or coastal erosion

There are many flood risk management schemes already in place which provide a level of protection to communities from flooding and coastal erosion. Authorities will continue to develop and deliver the investment programme to reduce the risk of flooding and coastal erosion as far as possible, using a combination of interventions and approaches from source to sea. However we are already seeing more extreme weather events and sea level will continue to rise as climate change manifests itself. The risk of flooding and coastal erosion is therefore going to increase as time goes on. It will never be affordable or feasible to provide total protection from flooding everywhere. If we are to reduce the risk of harm to people, including the fear that flooding and coastal erosion cause, those affected need to be ready to act in the event of flooding. As a society we need to anticipate the increasing risk resulting from climate change and adapt our homes, businesses and infrastructure so that damage and harm are avoided or recovery is easier, quicker and less costly.



Developing a community flood plan at Irwell Vale, Lancashire

Our long term goal: We promote and deliver the right solutions for our coastal communities, managing and adapting to coastal change and helping those communities to adapt

Coasts are subject to natural movement and change but with rising sea levels and more extreme weather events, in the long term it is not going to be sustainable to defend and preserve the coastline exactly where it is. Given that in some places this may involve the complete loss of land, the impact on coastal communities and the need for them to adapt may be great. Supporting these communities in this adaptation requires long lead times and may require significant resources. In the North West we are not yet experiencing significant coastal change but over the coming decades we will start to see change and the need to adapt will become a bigger and more urgent priority. We as the RFCC recognise that we need to start now by understanding the likely scale of this challenge and how this will need to be approached to support coastal communities in the best possible way.

Objectives - What we aim to achieve by 2022:

1. To measure, assess and improve the effectiveness and efficiency of risk management authorities' collective engagement with communities on flood and coastal erosion risk management
2. To better understand the increasing risks in the North West arising from our changing climate and develop means of communicating this in order to increase communities' resilience
3. To build an evidence base to demonstrate to coastal communities the likely scale of challenge faced in managing coastal erosion
4. Using this evidence to begin discussing adaptation options with those communities

We will achieve this by:

- Providing Local Levy funding for partners to deliver new tools, standards and guidance including those below
- Providing Local Levy funding for additional resources to support direct public engagement, especially in urban areas where the sense of community may be different and where people may be more difficult to engage
- Launching a new North West FloodHub website as a key communication and engagement tool for individuals, communities and professional partners across the region
- Agreeing standards for community and public engagement to be adopted by our risk management authorities and strategic partnerships
- Developing tools and skills to support engagement which deals with multiple sources of flooding so that communities feel they receive a joined-up support service from professional partners
- Placing a renewed focus on the impacts to and resilience of businesses, as well as communities
- Developing up-to-date educational resources aligned with the National Curriculum for teachers to download from FloodHub
- Continuing to monitor the changing environment, especially on the coast, and using strategic planning to identify what can be done
- Understanding updates of the Shoreline Management Plan and appreciating what they could mean in terms of our approach and adaptation for coastal communities
- Examining the barriers to implementation of coastal management policies and taking steps which may help remove these barriers
- Developing effective communication strategies to tell the story of change and the impact on communities including enhancement and development of online communication tools

We will have made a difference if:

- Significant numbers of individuals, communities, teachers, charitable organisations and professional partners are making use of the FloodHub website
- There is a measurable increase in the number of residents and businesses signed up to the full Flood Warning service
- More than one community group in each strategic partnership group area feels that engagement with professional partners collectively has improved.
- There are significant numbers of hits on the section of FloodHub targeted at businesses
- The Cumbria Coastal Strategy is adopted following business case submission in 2019
- There are more Coastal Flood Action Groups covering a larger proportion of the north west coast which will enhance communications and response mechanisms
- There is enhancement of the Coastal Group's web presence, by developing the North West Coastal Group website to make it more visual and easier to navigate (launching 2019), by having links to it from a new national Coastal Hub website, and by developing a new online community platform Coast Watchers currently [being piloted by Wyre Council](#).

B: Using and managing land sustainably

Our long term goal: Flood flows in both rural and urban areas are reduced and managed, working with natural processes as part of an integrated whole catchment approach, including relevant coastal considerations

In the past flood defence primarily used hard engineering solutions which separated communities from their rivers; the area of hard impermeable surfaces in urban areas continues to increase; and we have a system of agricultural subsidies which doesn't encourage environmentally beneficial land management. With more extreme rainfall events we see rapid surface water run-off, sewers and drains being overwhelmed, often leading to flooding, as well as overtopping of flood defences. There is now a growing appreciation of the need to use natural processes, considered as a whole catchment, as one element of managing flood risk. While this will only be part of the solution, to be used in conjunction with engineering solutions and property-level adaptation, there is now a great opportunity to better manage flood flows while also greatly benefitting the environment and wildlife, re-connecting communities to their rivers, and creating valuable green space for them to enjoy. Exercise and access to green space has a significant positive benefit on health and wellbeing, particularly mental health. The work of the RFCC and its partners could play an important role in enhancing the natural environment and providing opportunities for people to connect with it.



Installation of SuDS enabled tree trench, Salford

We have recognised natural flood management (NFM) as a priority in our Vision work for some years and as a result of identifying opportunities, generating partnerships and sharing experiences, once additional government funding was provided for a natural flood management programme we were successful in securing a significant proportion of it. Delivery of the North West natural flood management programme is now underway, partly funded from GiA and partly from our Local Levy.

On the issue of agricultural subsidies we recognise the opportunity that Brexit now presents to develop a new UK system of subsidies which incentivises and rewards sustainable land management (including helping to slow flows). We will keep up to date with developments on this and will provide input and comment where opportunities arise.

Finally, there are some areas, both rural and coastal, which have historically been maintained or drained to prevent flooding and coastal erosion but where this regime is no longer economically viable or affordable and will cease in the coming years. Authorities are and will continue to support communities and landowners in adapting to this, helping them to take on the maintenance themselves where agreed. The RFCC supports authorities in facilitating this adaptation.

Objectives - What we aim to achieve by 2022:

1. To successfully deliver, build on and develop our natural flood management programme
2. To develop and strengthen partners' approach to engaging, planning and managing water at catchment scale
3. To agree some waterbodies which could be operated to both maintain supply and help reduce flood risk, and to implement revised or trial operating protocol on at least one

4. To increase the adoption of sustainable drainage systems (SuDS) and green infrastructure on new developments and its retrofitting on existing developments
5. To find more ways to enhance the environment and recreational amenity through our flood risk management programme
6. To influence the future system of environmental land management payments and to make best use of the existing payments.

We will achieve this by:

- Providing Local Levy funding for a resource to co-ordinate and support partners delivering projects in our Local Levy-funded natural flood management (NFM) programme
- Monitoring delivery of our GiA and Local Levy funded NFM programmes, ensuring evidence and lessons learned are shared.
- Providing short term Local Levy funding for resources to co-ordinate and support the three catchment partnership groups in Cumbria with a view to lessons learned and good practice being shared, and adopted where appropriate, across the North West
- Encouraging authorities to identify and reach agreement on waterbodies to trial revised operating protocols to help manage flood flows
- Providing Local Levy match funding for a resource to enhance collaboration between United Utilities, the Environment Agency, local authorities and other partners, including through better data sharing and opportunity mapping
- Understanding how sustainable drainage requirements are being implemented on new developments, issues constraining this and identifying any steps we could take across the North West to encourage stronger and more consistent implementation
- Encouraging land use changes in towns and cities to allow natural flood management
- Remaining aware of the developing framework for agricultural subsidies and incentives post Brexit, inputting to the debate to both shape environmental land management payments in the future and also to make the best use of the existing payments framework during transition
- Continuing to encourage risk management authorities to build enhancements into schemes wherever possible including increasing access to water, creating areas of wildlife habitat and green spaces available for public recreation and amenity

We will have made a difference if:

- We use our full allocation of funding to 2021 for the natural flood management (NFM) programme, delivered through an effective partnership approach, to implement numerous measures which will be tested for their effectiveness as rainfall events allow
- We have identified additional NFM opportunities to form a future programme
- We agree and start to trial revised operating procedures on at least one waterbody by 2020
- There is evidence of greater integration of risk management authority programmes as a result of the new UU-hosted collaboration resource

C: Enabling sustainable economic growth and investment

Our long term goal: Relevant developers and planners recognise the importance of flood and coastal erosion risk and climate change adaptation, and are aware of how managing flood risk can unlock additional development, economic regeneration and growth potential. Effective joint working leads to accessing a broader range of funding sources, facilitates flood-resilient development and provides wider benefits to communities, business and the economy



Flooding at Caton Road, Lancaster, December 2015

Flood and coastal erosion risk schemes can take many years to put in place especially if additional funding contributions need to be sourced. Historically economic appraisals of schemes have focussed most on the benefits of a reduced flood risk in terms of property damage avoided. The degree to which other benefits (environmental, social, recreation, tourism, health, and wellbeing) have been valued has been variable. It is by recognising the full value of schemes that we will find shared outcomes with other partners, align funding, and deliver more benefits.

The current funding mechanism for FCERMGiA seeks 15% contributions across the programme from other sources. For the 2015-2021 investment programme, 17% of the total investment being made across the North West is coming from partnership contributions (including Local Levy). Currently risk management authorities don't always achieve or aim to achieve a 15% partnership contribution on individual schemes if the scheme already attracts a high proportion (>85%) of FCERMGiA. If the RFCC can support other ways of working which secure more contributions, particularly from the private sector, reducing the reliance on FCERMGiA, then we will be better able to address local priorities and can reduce the risk to more communities, homes and businesses overall.

Objectives - What we aim to achieve by 2022:

1. To increase understanding of the multiple benefits of flood and coastal erosion risk management schemes, how to value and promote them, and develop the skills pipeline in the North West to support the timely and effective development of place-based schemes and approaches.
2. To attract new partners and funding for integrated schemes, particularly from the private sector, which will reduce flood or coastal erosion risk and provide multiple benefits

We will achieve this by:

- Developing tools for and skills in risk management authority officers to be able to estimate the value of the multiple benefits of future schemes. This includes identifying the avoided costs of flood incidents on health, education, incident management, clean-up and recovery etc.

- Promoting, as part of our RFCC communications and engagement work, the range and value of social, environmental and economic benefits provided by flood risk and coastal erosion management schemes
- Providing support and resource to draw down European Regional Development Funding for four of our major flood risk management schemes, maximising our use of this funding source before the UK's departure from the EU
- Developing a shared understanding of potential sources of funding, both from the public and private sectors, after Brexit
- Providing focussed support (possibly Local Levy funding but also influence and engagement) to major schemes in the future investment programme which have significant benefits but which are struggling to find funding
- Keeping up to date with developments on the natural capital approach and up-skilling risk management authority officers in the approach and how to apply it in the flood and coastal erosion risk management context
- Gathering information on plans for investment in housing and infrastructure across the North West and then developing a targeted future investment strategy
- Maintaining resources and building skills within partner organisations and exploring ways of sharing those skills with our 'at risk' communities and residents so as to build community capacity.

We will have made a difference if:

- We can list and value the full range of benefits arising from flood risk management schemes and risk management authority officers feel they have the skills and tools to assess the full economic value of future schemes
- We use this new evidence base to produce communication tools (e.g. prospectus) to engage new partners in alignment of our investment programmes
- We increase the proportion of investment programme funding coming from non-FCERMGiA sources from its current baseline for the 2015-2021 programme of 17%.

Using our locally raised funding

What the Local Levy is used for

Regional Flood and Coastal Committees raise a Local Levy from their Lead Local Flood Authorities to support local priorities for addressing flood risk and coastal erosion. It provides an invaluable resource to enable us to set our own local agenda, to address priorities to best effect whilst maximising funds available from all sources to manage flood risk.

Local levy can be allocated to flood risk management related spend within the scope and remit of the RFCC and is entirely at our discretion. It is accessed and led by flood and coastal risk management authorities (including local authorities). Unlike many other public finances, local levy balances can be carried forward across financial years and earmarked for use in future years.

We have used Local Levy as a contribution towards FCERM schemes enabling them to attract FCERMGiA and other funding when they would otherwise not reach the required partnership funding threshold. On those schemes with Levy contributions providing part of the funding, for every £1 of Local Levy invested we have drawn in £2 of other funding on average, and between £5 and £100 in half of cases.

It therefore represents a sound investment option for local authorities to attract significant funding for flood risk reduction in local communities. The impacts of changing weather patterns and climate change mean that the national programme and FCERMGiA funding is likely to be under increasing pressure.

We are also using our Local Levy to progress strategic initiatives like the North West RFCC Vision work streams and to provide staff resources who provide important functions supporting the RFCC, partnerships and risk management authorities without which fewer outcomes would be achieved.

Rolling 6-year programme

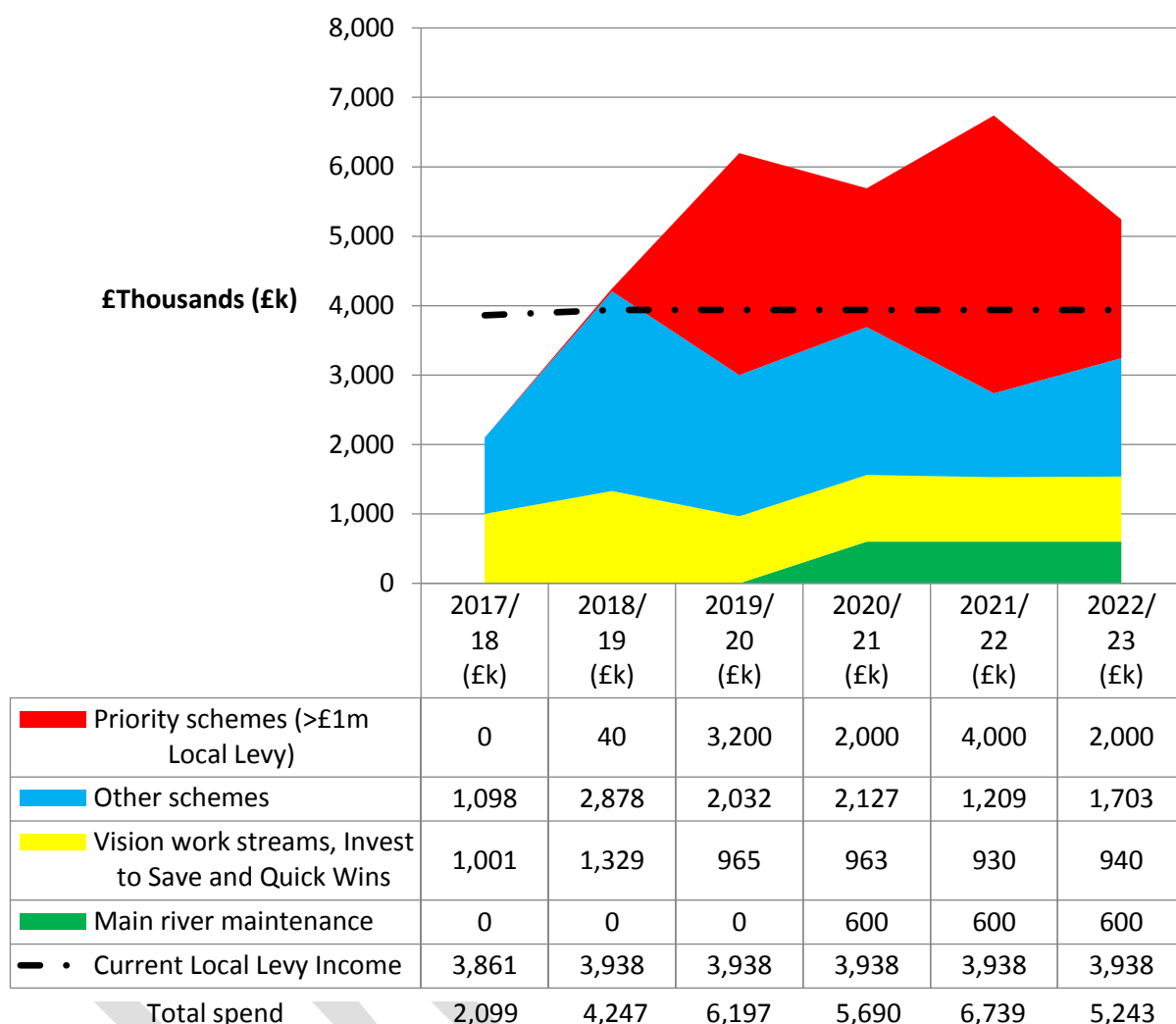
Since the start of the 2015-2021 investment programme, the North West RFCC has had a rolling 6-year Local Levy programme which is refreshed annually in line with any changes to FCERMGiA funding for schemes and in line with changing local needs. We also receive and consider additional requests from risk management authorities for Local Levy during the year. Levy allocations are approved for specific projects/schemes across the region where there is a clear and justified need.

The programme has been shaped around the following categories:

- 1 Delivery of **capital schemes** which protect properties at risk, and **studies** to develop scheme proposals which will support future funding bids
- 2 Projects and resources to support the innovative and pioneering work carried out under the **North West RFCC's Vision**
- 3 **'Quick Win' funds** for the strategic flood risk partnerships for smaller schemes that can be grouped or implemented quickly to provide benefits to communities suffering from frequent flooding
- 4 **Invest to save** activities which do not attract government funding but which will lead to reduced future investment
- 5 **Resources** to provide the necessary infrastructure to support effective partnership working
- 6 Support for **maintenance work and asset repairs on main rivers** where allocated national GiA funding falls short of providing effective protection.

The graph below is one we review regularly as the RFCC to understand the planned Local Levy programme.

Local Levy Income & Expenditure Scenario 2017/18 to 2022/23



Future strategy

We vote on the rate of Local Levy to be raised each year. The last few years we have supported 2% increases in the Levy rate as we recognise the future need as captured in the 6-year Local Levy programme. The amount of Local Levy raised each year is around £3.9 million.

As at 2018/19 we have accumulated a balance of £8.3 million all of which is allocated for use in the programme to 2024. We built up this working balance so that we were in a position to make some large (upwards of £1 million) Local Levy contributions to major FCERM schemes which deliver huge benefits but which would not have secured other funding had Local Levy not partly filled the funding gap. As the planned spend each year now exceeds the income, this will draw down the balance that we have built up.

We maintain a close eye on the Local Levy programme and the predicted effect on the balance which is available for use in future years. While we want to make use of our Levy funding we are also conscious of the need to maintain a certain amount of working balance so that we have the ability to make contributions to future schemes.

We recognise there is now a need to put in place a strategy for how we use the Local Levy funding beyond the current programme, what level of working balance we want to retain and what level of income is likely to be required to meet different options. This strategy will be developed for 2019/20 onwards.

Annual Action Plan

In order to achieve the objectives we have set out in this Business Plan, we will produce a detailed Action Plan for each financial year. We will closely monitor progress on delivering the actions making sure we do what we said we would do. It will be the role of the North West RFCC Finance Sub Group to provide this scrutiny who will report back to the full Committee each quarter.

The first North West RFCC Action Plan was produced for 2018/19, before the production of this Business Plan. From 2019/20 the actions in the Annual Action Plans will align with this Business Plan and subsequent reviews of it.

How to find out more

Flood Hub

The [Flood Hub](#) is an online resource which has been funded by the RFCC as a one stop shop for flood advice and information. It has been developed by Newground and other partner agencies to support communities at risk of flooding across the North West.

There are different pages for homeowners, businesses, communities, landowners, planners and developers providing information and advice on how they can plan and prepare for flood events and how to be more resilient. In addition, there is also a 'your local area' map, this contains information about flood local schemes, community groups and events across the North West. There is a 'Knowledge Hub' containing numerous downloadable resources and booklets to increase your knowledge and awareness of flooding.

How to contact us

If you would like to find out more or speak to someone about a specific flood risk issue in your community or locality, please contact your [lead local flood authority](#), that is your county council or unitary authority.

If you would like to find out more or speak to someone about flood and coastal erosion risk management across your wider geographical area, please contact the relevant strategic partnership group. Contact details are provided below.

Cumbria Strategic Partnership Group Co-ordinator: Anthony Lane Email: Anthony.lane@cumbria.gov.uk Phone: 01228 221331	Lancashire Strategic Partnership Group Co-ordinator: Paul Blakeley Email: Paul.Blakeley@lancashire.gov.uk Phone: 01772 535020
Merseyside Strategic Partnership Group Co-ordinator: Laura Makeating Email: Lauramakeating@wirral.gov.uk Phone: 0151 606 2327	Gtr Manchester Strategic Partnership Group Co-ordinator: Jill Holden Email: Jill.holden@greatermanchester-ca.gov.uk Phone: 07973 875722
Cheshire Mid Mersey Strategic Partnership Group Co-ordinator: Steve Berry Email: Steve.Berry@warrington.gov.uk Phone: 01925 442606	North West Coastal Group Secretariat: Jennifer Warner Email: Jennifer.warner@sefton.gov.uk Phone: 0151 934 4151

If you would like to contact the [RFCC](#) in relation to flood and coastal risk management generally across the North West, including raising any concerns or complaints, please contact the Secretariat (details below).

All quarterly RFCC meetings are public meetings and we welcome any observers. Please note that we use different venues across the region which vary in size and therefore the number of observers we can accommodate. If you would like to come along to a meeting, please contact the Secretariat to book your place.

RFCC Secretariat: Rachel Harmer

Email: NW-RFCC@environment-agency.gov.uk

Phone: 020302 50946

Appendix 1 – North West RFCC members

Role	Organisation	Name
Chair	Independent	Adrian Lythgo
LLFA rep – Cumbria Strategic Partnership	Cumbria County Council	Councillor Keith Little
LLFA rep – Lancashire Strategic Partnership	Lancashire County Council	Councillor Stephen Clarke
LLFA rep – Lancashire Strategic Partnership	Blackpool Council	Councillor Fred Jackson
LLFA rep – Merseyside Strategic Partnership	Sefton Council	Councillor Patrick McKinley
LLFA rep – Merseyside Strategic Partnership		Currently vacant
LLFA rep – Greater Manchester Strategic Partnership	Bury Council	Councillor Alan Quinn
LLFA rep – Greater Manchester Strategic Partnership	Rochdale Council	Councillor Neil Emmott
LLFA rep – Greater Manchester Strategic Partnership	Bolton Council	Councillor Stuart Haslam
LLFA rep – Cheshire Mid Mersey Strategic Partnership	Cheshire West and Chester	Councillor Karen Shore
LLFA rep – Cheshire Mid Mersey Strategic Partnership	Cheshire East Council	Councillor Don Stockton / Councillor Paul Bates
Coastal Group Chair	Wyre Council	Carl Green
Water industry rep	United Utilities	Jo Harrison
Independent Member - Agriculture and Land Management	Independent	Paul Barnes
Independent Member – General business	Independent	Neville Elstone
Independent Member - Nature Conservation	Independent	Peter Bullard
Independent Member – Community Engagement	Independent	Lorraine Smyth
Independent Member - Sustainability	Independent	Tayo Adebawale
Independent Member - Business and Private Sector	Independent	Ian Irving
Independent Member – Coastal Advisor	Independent	Currently vacant
Area Director – Cumbria and Lancashire	Environment Agency	Keith Ashcroft
Area Director – Greater Manchester, Merseyside & Cheshire	Environment Agency	Lee Rawlinson
Area Flood and Coastal Manager – Cumbria and Lancashire	Environment Agency	Daniel Bond
Area Flood and Coastal Manager – Greater Manchester, Merseyside & Cheshire	Environment Agency	Christian Wilcox
Senior Advisor (RFCC)	Environment Agency	Sally Whiting
Secretariat	Environment Agency	Rachel Harmer



Back row (from left to right): Peter Bullard (Independent member – Conservation), Neville Elstone (Independent member – General business), Councillor Patrick McKinley (Wirral Council), Councillor Keith Little (Cumbria County Council), Ian Irving (Independent member – Business and private sector), Tayo Adebawale (Independent member – Sustainability), Paul Barnes (Independent member – Agriculture and farming)

Middle row (from left to right): Councillor Stuart Haslam (Bolton Council), Councillor Neil Emmott (Rochdale Council), Councillor Fred Jackson (Blackpool Council), Councillor Alan Quinn (Bury Council)

Front row (from left to right): Lee Rawlinson (Environment Agency Area Director), Councillor Stephen Clarke (Lancashire County Council), Councillor Karen Shore (Cheshire West and Chester Council), Sally Whiting (RFCC Senior Advisor), Rachel Harmer (RFCC Secretariat), Carl Green (North West Coastal Group Chair), Adrian Lythgo (RFCC Chair)

Photo taken at Rochdale Townhall, 19 October 2018

Appendix 2 – List of abbreviations

Defra Department for Environment, Food and Rural Affairs

EA Environment Agency

FCRM Flood and Coastal Risk Management

FCERM Flood and Coastal Erosion Risk Management

GiA Grant in Aid

LA Local authority

LLFA Lead local flood authority

NFM Natural flood management

NGO Non governmental organisation

RFCC Regional Flood and Coastal Committee

RMA Risk management authority

SMP Shoreline Management Plan

SuDS Sustainable drainage systems

UU United Utilities

Appendix 3 – Glossary

Annual Exceedence Probability

The probability, expressed as a %, of a flood event occurring in any year. A large flood which may be calculated to have a 1% chance of occurring in any one year is described as 1% AEP.

Catchment

The area of land drained by a river

Fluvial

Relating to rivers and their flows

Flood

Where land not normally covered by water becomes covered by water by, for example: heavy rainfall, a river or a dam overflowing its banks or being breached; tidal waters; groundwater; surface water from drainage or any combination of these factors.

Flood and coastal (erosion) risk management

Activities to reduce the risks (likelihood and consequences) of flooding from rivers and the sea to people, property and the natural environment

Lead local flood authority

The unitary authority for the area or if there is no unitary authority, the county council for the area.

Local Levy

Money raised by the Environment Agency from lead local flood authorities. The EA must obtain the consent of the relevant RFCC before it can issue the levy. The levy is used to fund FCERM activities within the RFCC's region and supplements FCERM GiA funding.

Risk management authority

The Environment Agency; a lead local flood authority; a district council in an area where there is no unitary authority; an internal drainage board; a water company and a highway authority.

Surface water runoff

Rainwater (including snow) on the surface of the ground which has not entered a watercourse, drainage system or public sewer.

Natural flood management

The alteration, restoration or use of landscape features to reduce flood risk.

Green infrastructure

A strategically planned and managed network of green spaces and other environmental features vital to the sustainability of any urban area

Sustainable drainage systems

A natural approach to managing drainage in and around properties and other developments which works by slowing and holding back the water that runs off from a site, allowing natural processes to break down pollutants.

Catchment based approach

Collaborative working at a river catchment scale to deliver cross-cutting improvements to our water environments.