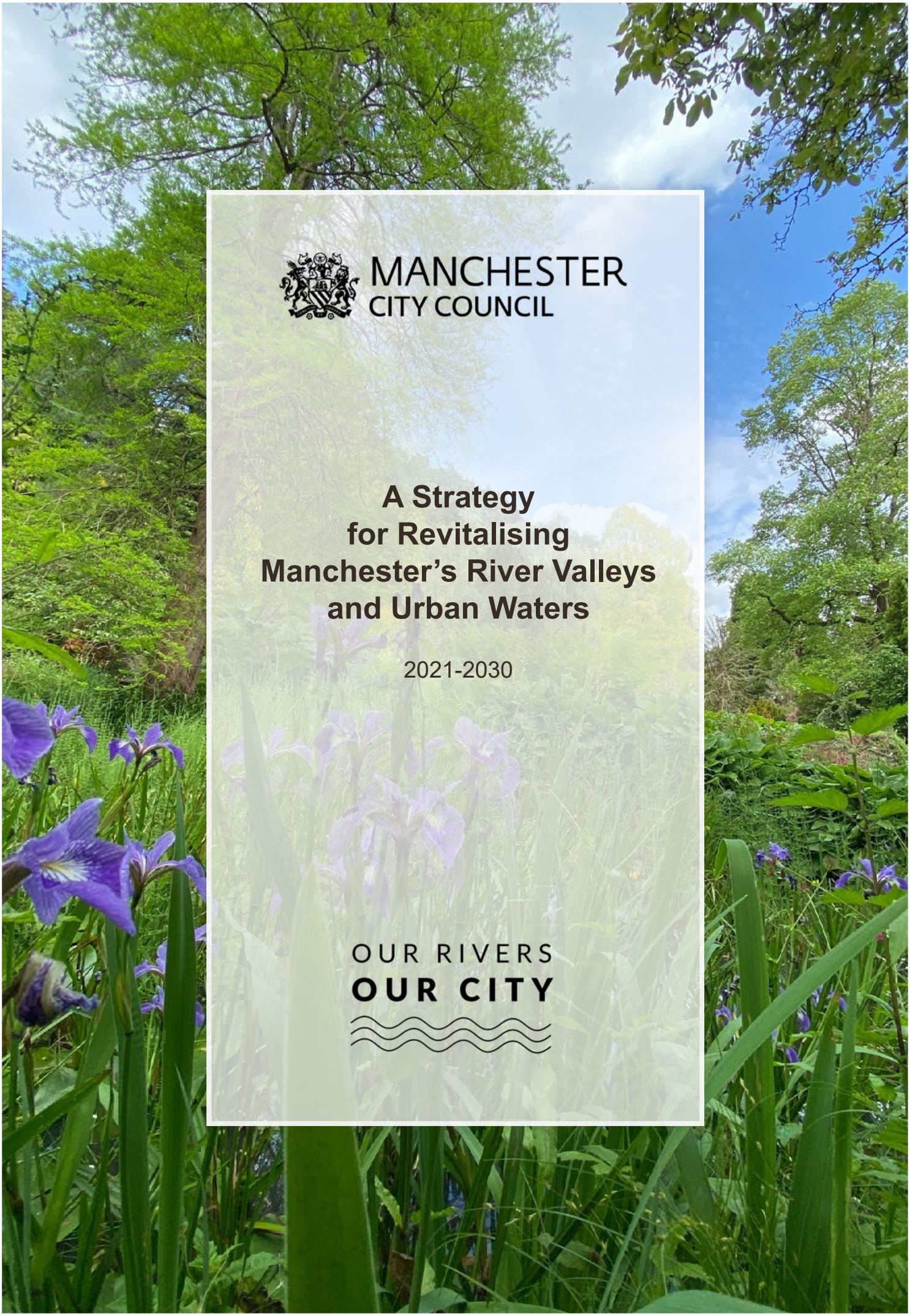


MANCHESTER
CITY COUNCIL

A Strategy for Revitalising Manchester's River Valleys and Urban Waters

2021-2030

OUR RIVERS
OUR CITY

Contents

Rivers for the 21st Century

In 2019, Manchester declared a Climate Emergency. Our population is growing and our city's environment and biodiversity is facing pressures from increased urbanisation and economic growth. As a global community, our current trajectory is unsustainable. We need to do things differently.

Leading the way, Manchester has already committed to policy and actions needed to become a smarter, more sustainable and liveable city. Shaping the future of our river valleys and urban catchments is part of that ambition. This is our strategy for a decade of action to revitalise our urban waters.

For hundreds of years, our rivers have been central to its success – providing water for industry, for wildlife and for communities. The rivers have survived multiple challenges and continue to flow between and beneath houses, streets, parks and railways.

Today, the river valleys of the Irk, Medlock and Mersey include many of the city's green spaces, connect Manchester to the wider City Region and contribute to the distinctive character of our neighbourhoods.

However, the rivers and their surrounding landscape are also the product of their past usage, and need to evolve in order to reclaim their rightful place in the story of Manchester's future.

In recent years we have come to understand and recognise how essential the environment is to people's lives, and the positive impact that access to quality green spaces, water courses and wildlife can have on our quality of life, our health and wellbeing and productivity, and how – if we work with nature – we can tackle many of our future challenges.

Our next step on this journey has been to develop a long term vision and action plans for the period to 2030 which will re-energise the City's river valleys.

In planning for the river valleys, we are taking a holistic approach to managing water within the urban catchment. Water is a precious resource and there are many things we can do better to ensuring that the clean rain which falls on our streets, houses and parks is managed carefully so it reaches our rivers in good quality.

Equally, we need to act to significantly reduce pollution and littering of our waters. We also need to protect our communities from the risk of dangerous flooding, including applying Sponge City thinking to our River Valley Strategy.

Rivers are exciting and dynamic places. Part of their social value is that they bring different values and experiences to different people, and this is important in a diverse and sociable city like Manchester. However, river valleys are not "neutral" spaces, as they can attract some people whilst deterring others.

Some of our people and communities don't enjoy the mental health benefits of access to river valleys, because they feel unwelcome or unused to visiting them. A crucial part of our strategy is to address these inequalities and involve people of all backgrounds, abilities and genders in managing and using river valleys. We have spoken to many people in formulating this strategy, and we will work in partnership with our communities in delivering our shared vision.

T. Rawlins

Councillor Tracey Rawlins
Executive Member for Environment
October 2021

MANCHESTER CITY COUNCIL

Grow Green

Listening and Learning

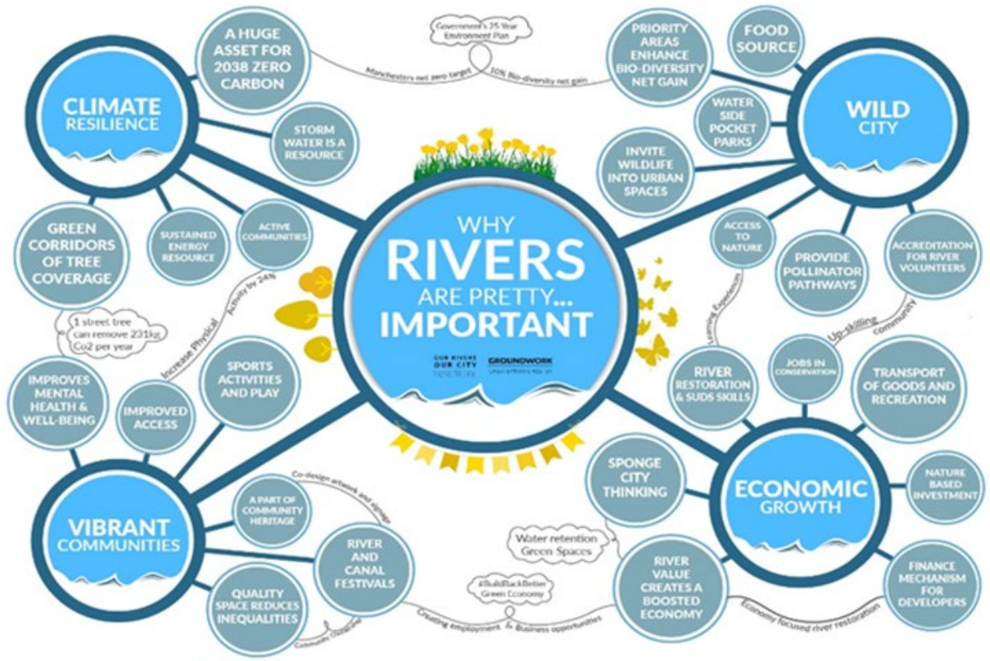
During 2020 and 2021, we have been listening and learning from many sources to help develop the Our Rivers Our City strategy:

- *The public and community leaders;*
- *Elected representatives;*
- *Neighbourhood and Housing teams*
- *Environmentalists and water specialists;*
- *Sustainable development policy in the UK and Manchester;*
- *Case studies from the city, the region and the world*

We have used surveys, social media, workshops, outdoor get-togethers, face to face interviews, literature review and have been guided by a steering group of City planners, water and greenspace managers and developers. You can read our stakeholder engagement reports at Annexes A and B. Our strategic review is at Annexe C.

We have gathered together an interactive web map which provides information about the environmental quality of our rivers and green spaces. For each electoral ward, there is an environmental profile with key statistics on biodiversity, tree cover, urban greening and ecosystem services . Links to the webmap and a user guide are at Annexe D.

The key messages are summarised below, including some quotes from people who shared their ideas, and documents which have shaped the strategy. The engagement process took place during the challenge of the Covid-19 pandemic. An over-riding message that came through was the importance of green and blue spaces to people; along with the need for continuous and long-term engagement with the full diversity of communities who use and enjoy our river valleys.




TEP

Place-making and Economic Growth

The river valleys are an economic resource – placemaking, economic development and tourism are drivers for jobs and the strategy must focus on the improving the City's economy;

There is so much ambition for how the river valleys can be transformed – ranging from huge decade-long transformations to local visions for pocket parks and riverside trails;

Much of Manchester's population growth will be in and around the City Centre, in Victoria North, Eastlands, Ancoats and Oxford Road. The Rivers Irk and Medlock flow right through these places and strategic regeneration frameworks should place a strong emphasis on river restoration as part of placemaking.


Manchester City Council

Wild Rivers

Wildlife Value – rivers are the wildlife arteries of the city, and if we get the conditions right, we can wildlife in the heart of Manchester – kingfisher have been seen in the city centre;

Anglers have many ideas for removing the barriers to fish migration and improving in-channel habitats;

There are many local problems with invasive species and flytipping;

Tree planting is usually helpful but we need more wetlands and meadows;

There are many opportunities to make urban river reaches greener;

Riparian land management could be adjusted to create more biodiverse habitats e.g. mowing less frequently, unless needed for flood management purposes.


Mark Waugh

Sponge City

Sponge City thinking should permeate all planning and parks management decisions;

Planning for flood resilience is vital – both at strategic level (development allocations) and at project level (make space for water, ensuring new landscapes in river valley don't get washed away);

Greater Manchester is a pioneer in retrofitting Sustainable Drainage Systems (SuDS) into the urban landscape and the City's relationship with Wuhan, the original sponge city, gives us many examples of good practice to share and to learn from;

Creating raingardens, infiltration trenches, bioswales and other "distributed SuDS" in urban streets and civic spaces not only makes areas more beautiful and liveable – it also means we don't overwhelm our drainage systems during heavy rainfall. This in turn reduces flood-risk and increases opportunity for new homes. Economic analysis shows the Benefit to Cost ratio can be significant.[1]

Groundwork

Clean Waters

Water Quality is critical – if we are to open up our watersides, people need to know the water is clean; and clean waters bring wildlife and increase economic value;

Since the 1980's, river water quality has improved significantly, due to investment in wastewater treatment works. However there are still major pollution issues , particularly urban diffuse pollution, misconnections, illegal discharges and the legacy of industrial activity (leachate from historic waste tips and contaminated land). In heavy rainfall, surface water mixes with sewage and exceeds the capacity of the combined sewer network, leading to spills from Combined Sewer Overflows (CSOs). There remains a huge task for our rivers to reach required conditions (as defined by national regulations) by 2027.

The widespread declarations of a climate and ecological emergency mean citizens will no longer accept poor water quality;

There is still a big problem with sewage, pollutants and sediment entering Manchester's rivers, from numerous point and diffuse sources upstream and in the City. Population growth and climate change will exacerbate this problem, unless additional mitigation is put in place, beyond planned activity;

United Utilities and the City Council are working together on a holistic Drainage and Wastewater Management Plan which will focus on the future of drainage, wastewater and environmental quality ;

A mix of engineering, green infrastructure and nature-based solutions, actions at business premises and householder level is needed to prevent pollution at source and reduce harmful emissions reaching our waters.

TEP

Vibrant Neighbourhoods and Inspired People

River valleys are great for family life – "taking the kids to the Mersey valley parks is a highlight";

Groundswell of community interest is there – if a project can be developed, there will usually be people to chip in and help out;

Our river valleys have huge heritage value and cultural diversity, for example nearly a hundred languages are spoken by people living in the Irk Valley. All cultures value water, but we need to do much more to make our river valleys into inclusive spaces where everyone feels welcome;

Manchester's parks are critical green "lungs" for health and wellbeing – rivers and streams flow through scores of parks. Clayton Vale shows how a river can be a centrepiece attraction;

The Mersey Valley Warden Service was a great example of cross-boundary working and the legacy of their community engagement lives on;

Rivers bring a sense of community connection.

Our Local Voice Mersey

Access

Access, safety and personal security when exploring blue spaces is fundamental. Many people have commented that their local river is 'off limits' due to concerns for their personal security and anti-social behaviour. Others have raised issues about poor footpath conditions, lack of way-marking or inaccessible public rights of way;

Increasing recognition and appreciation of blue spaces is great, but the more visitor pressure the harder it is to manage for wildlife and tranquillity. There will always be some tension between user groups but working from a shared understanding of the importance of the natural environment will help build bridges and identify win/win solutions.

Our Rivers Our City - TEP

Zero Carbon

Creating walkable and cyclable trails in our river valleys will take cars off the road. The river valleys can be a great day visitor destination, reducing the need to drive long distances for a day out;

Sustainable Drainage in urban settings and green architecture will help make our inner urban areas more liveable and climate-friendly;

Keeping surface water out of the sewerage system reduces pressure on aging underground infrastructure, meaning less energy and materials are needed to make repairs or provide energy-intensive treatment processes;

Greening our urban river valleys and restoring/creating wetland habitats will remove more carbon dioxide from the atmosphere.

Matt Doran

Delivery

To succeed in our vision, the Our Rivers Our City strategy addresses delivery – who will champion, implement, maintain and resource the green and blue infrastructure?;

It is vital to have an excellent policy framework for integrated water management, including urban greening, SuDS, water resource and pollution control, biodiversity, access to blue space and of course flood risk;

Water knows no boundaries…the water management pathway involves multiple public, private and Third sector bodies working together with our local communities, so a shared vision about good stewardship of water is critical. There are many excellent sources of guidance about partnership working and community involvement for integrated water management.

GROUNDWORK
GREATER MANCHESTER

OUR RIVERS OUR CITY

68% RIVER MERSEY MOST ACCESSIBLE

IRK: **18%**
MEDLOCK: **12%**

PERSONAL CONNECTION

"The Medlock trickled right by my house in Droylsden"

83% MORE **WILDLIFE, NATURE** & **TREES**

17% SAID SHOPS, BARS AND CAFE'S

90% WANT **RIVERS** TO BE A **FOCUS** OF THE **CITY**

10% SAID NOT WORTH THE TIME

2/3 WANT **BETTER ACCESS** FOR **CYCLISTS** & **WHEELCHAIR USERS**

60% **RIVER MERSEY** IS THE MOST **VALUED**

IRK: **23%**
MEDLOCK: **16%**

55 LIKED THE IDEA OF POCKET PARKS

59% KNOW EXISTING **AREAS** OF **FLOOD PREVENTION**

15 PEOPLE BELIEVE A **LONG-TERM CAMPAIGN** WOULD **REDUCE LITTER**

185 PEOPLE **LIKED** HOW **OTHER CITIES** USED **THEIR RIVERS**

SINGAPORE
READING
SHEFFIELD
LONDON

"**Manchester's rivers** are part of its **heritage**, but also a **fundamental part** of the city's **future**."

HASHTAG **LIKES**	**1,281**
HASHTAG **SHARES**	**300**
HASHTAG **COMMENTS**	**193**

Vision and Aims

Vision

Our Rivers Our City is the contribution of the City's water management sector to the Manchester Strategy which states:

Our vision is for Manchester to be in the top flight of world-class cities by 2025, when the city will:

- Have a competitive, dynamic and sustainable economy that draws on our distinctive strengths in science, advanced manufacturing, culture, and creative and digital business – cultivating and encouraging new ideas;
- Possess highly skilled, enterprising and industrious people;
- Be connected, internationally and within the UK;
- Play its full part in limiting the impacts of climate change;
- Be a place where residents from all backgrounds feel safe, can aspire, succeed and live well;
- Be clean, attractive, culturally rich, outward-looking and welcoming.

Aims

The five main aims of Our Rivers Our City are:

- Improving the quality and functioning of the river valleys and catchments;
- Ensuring river valleys and sustainable drainage are key components of new developments;
- Improving accessibility to the river valleys;
- Promoting a wider understanding of the benefits of river valleys and sustainable urban drainage.
- Improving flood management and risk mitigation.

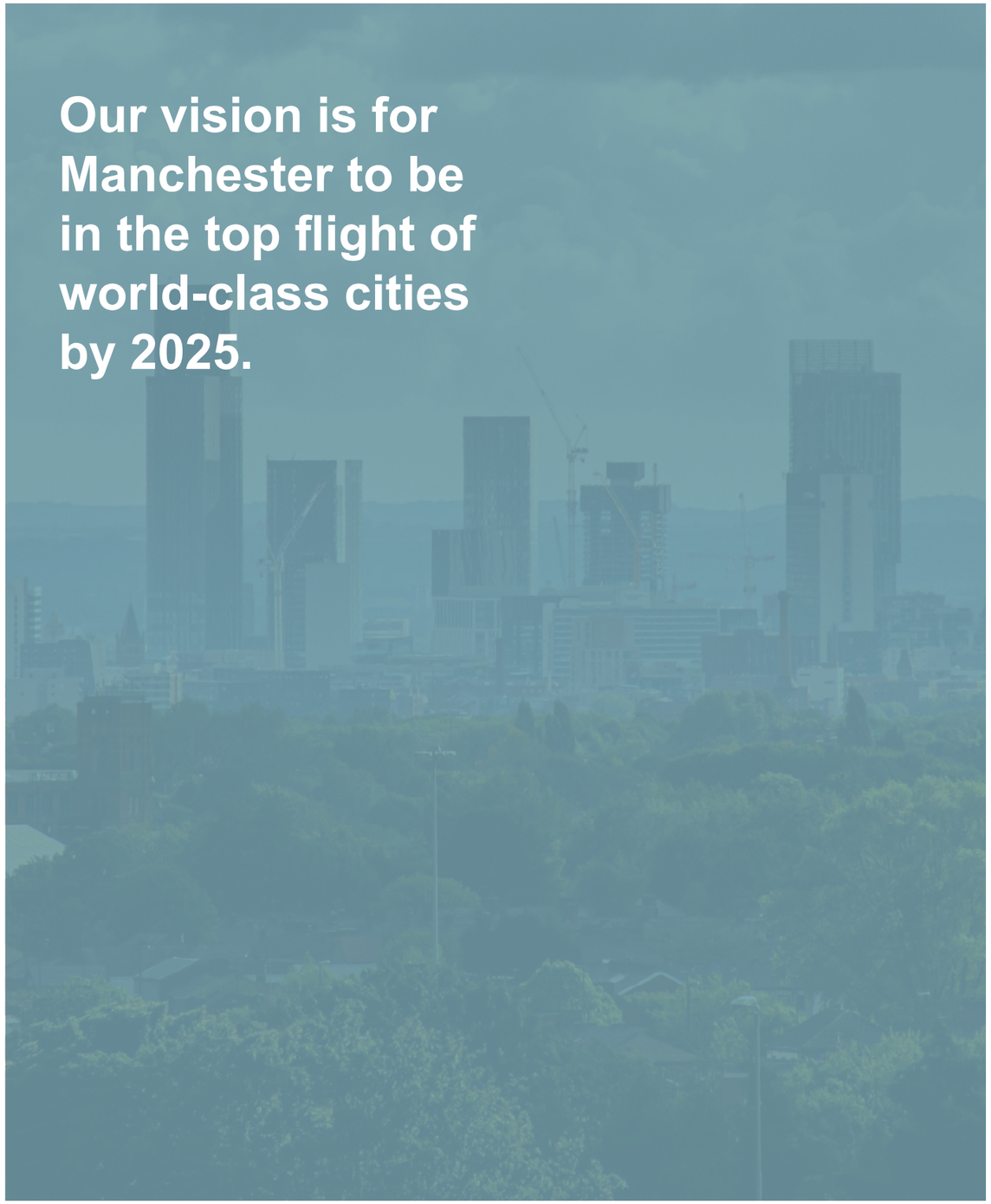
A Critical Resource

Manchester's rivers and water are a critical resource for the city. Watercourses are civic spaces. They are critical natural infrastructure, essential for place-making, public health and ecology.

Water is a vital resource. Without integrated management of the water cycle, from rainfall to the river, we risk flooding, drought, biodiversity loss, pollution and the adverse socio-economic consequences that result.

A Role For Everyone

Integrated water management is a key role for many, including several groups who may not normally realise how important they are in delivering rivers fit to pass on to the next generation: water companies, regulators, engineers, architects, planners, developers, greenspace managers, hydrologists, ecologists, public health specialists, elected members, anglers, enterprises, artists, community activists…and everyone living or working in Manchester also has a role to play.



Lewis Hendry

Setting the Scene

Manchester has long been an economic powerhouse in the North, and its waterways were fundamental to its successful growth and remain at the heart of what makes the city tick.

As well as the canals, Manchester has three main river valleys, the Irk in the north, the Medlock in the centre and the Mersey in the south. The Irk and Medlock flow into the River Irwell which forms the boundary between the city and Salford. The River Mersey flows through the southern part of the City on its route to the confluence with the Manchester Ship Canal further downstream. The Bollin forms the border with Cheshire.

Manchester's blue infrastructure is crucial to its "liveability". It is important the city manages its waterways and its surface water well to reduce the cost and misery of flooding. Our blue spaces are also vital economic assets, creating a setting for investment and family life. Our river valleys are oases and key corridors for the city's wildlife. Our rivers provide vital environmental services, including dilution for treated wastewater, health and well-being benefits, supporting temperature regulation of the urban heat island and water-based recreation.

The City Council, United Utilities and the Environment Agency are collaborating on programmes of river restoration as part of the major regeneration of North and East Manchester.

Manchester has long been at the heart of new initiatives to manage water in an integrated way. The Irwell and Upper Mersey catchment partnerships are the latest innovative approach to integrated management, bringing together a wide range of public, private and third sector organisations to work collaboratively in designing and delivering enhancements to our rivers for people and wildlife.

The City is twinned with Wuhan in China. Wuhan is at the confluence of two major rivers and is very vulnerable to flooding. They pioneered a "sponge city" approach to integrated water management. Hundreds of raingardens, washlands and areas of permeable paving have been retrofitted into its urban landscape.

Grow Green aims to create climate and water resilient, healthy, prosperous and livable cities though major investment in nature-based solutions (NBS). Embedding NBS in long-term city planning, in true collaboration with citizens, is a means of creating better harmony between people, the economy and the environment.

As a partner in the GrowGreen initiative for city sustainability, Manchester has pioneered its own approach to sponge city thinking, including the exemplar West Gorton Sponge Park, which has demonstrated resilience during the 2021 Storm Christoph and has become a source of local civic pride.

The Our Rivers Our City webmap has been developed to support the strategy development. It contains a multitude of environmental datasets which will in due course become available on MappingGM.

The following pages provide a short summary of the city's blue infrastructure supported by some key indicators.

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Photo credits Mark Waugh, Our Local Voice, Planit-ie, U&I

Planit IE

City River Park

The City River Park will follow the course of the River Irk from Victoria North to Queen's Park. The character of the river will form the centrepiece of the area's regeneration. The Red Bank viaduct will contribute to an iconic public realm, whereas St Catherine's Wood will be tranquil, with reflective waterside spaces.

Our Rivers Our City

The People's River

Engels, a socialist philosopher, wrote about the River Irk in his 1845 essay 'The Condition of the Working Class in England'. He exposed the extent of pollution and the appalling living conditions caused by industrialisation; observing also the resilience of North Manchester's working classes.

Moston Vale

Originally the valley of Moston Brook, the area was once near the Monsall Fever Hospital, and Manchester United, then Newton Heath FC, played nearby. In the 1960s the valley became a domestic landfill and Moston Brook was culverted and tipped over. For many years the vale was neglected, but in the early 2000's, Forestry Commission provided £1.7 million to fund a complete environmental regeneration scheme with new woodlands, meadows, pitches and footpaths.

Philips Park and Clayton Vale

The Medlock was known as the red river because it was lined by thousands of red "Accrington" bricks, installed as a Victorian flood defence scheme. The river is now being re-naturalised and brown trout have returned.

City Centre

Often unnoticed, the River Medlock meanders in a brick-walled channel down to Castlefield where it joins the Irwell. 19th and 20th century buildings often turned their backs to the river, but urban regeneration is gradually enabling us to create walkways, viewpoints and waterfront pocket parks. More and more people are noticing the river and getting involved with clean-ups.

Mark Waugh

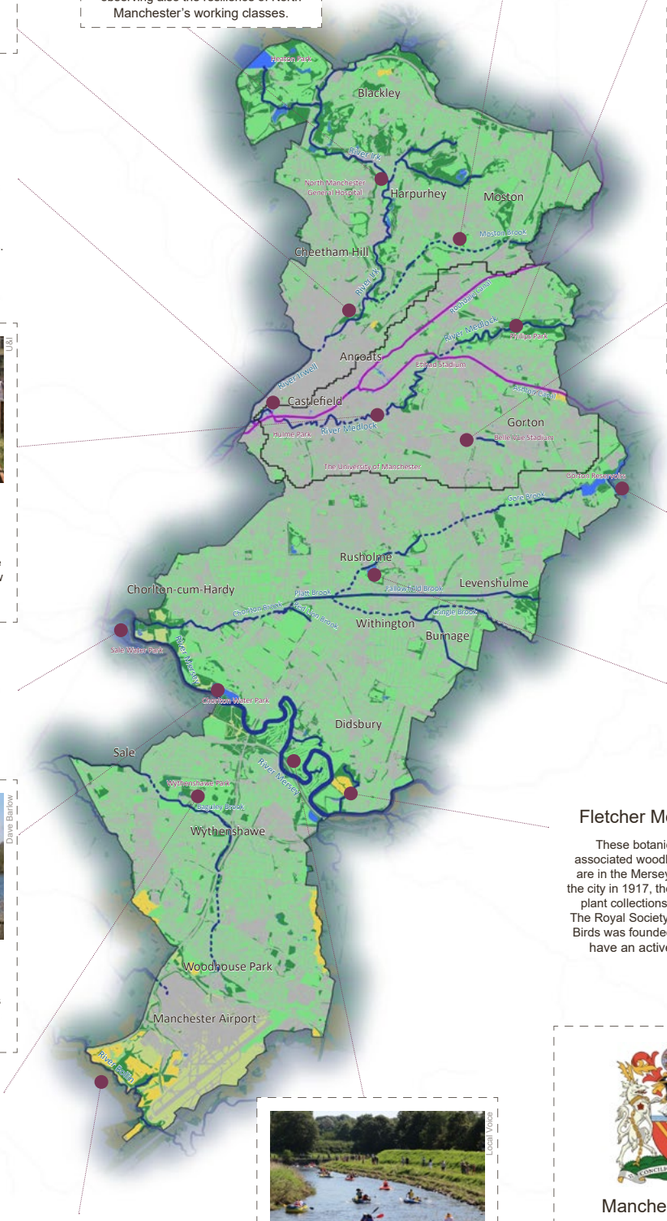
The Park that Drinks Water!

West Gorton "Sponge Park" opened in 2020. It includes meadow, woodland and community areas. Surface water from the neighbourhood is absorbed using Nature-Based Solutions such as bioretention tree pits, swales, rain gardens, permeable paving and an irrigation rill.

U&I

Mayfield Park

In 2021, 350m of the River Medlock which had been buried in a concrete culvert was uncovered to take its place as the centrepiece of the city's first new urban park for 100 years.



Gorton Reservoirs

Built in the 1820's the 2 reservoirs provided drinking water for south Manchester until 1963. Now, along with Debdale Park they are used for leisure and the Gore Brook flows downstream through a series of small parks.

South Manchester Brooks

Many small brooks flow from higher land east of the City and converge on Chorlton Brook which flows into the Mersey. Sadly many brooks have been culverted, but where they emerge, they are important for the ecology of parks like Platt Fields Park.

Sale Water Park

In the Mersey Valley just downstream of Manchester, the Sale Water Park is a regional destination for watersports, leisure running, cycling and birdwatching.

Dave Barlow

Chorlton Water Park

Formed from the flooding of gravel pits in the 1960's, this was Manchester's first Local Nature Reserve.

Fletcher Moss Gardens

These botanical gardens and associated woodlands and meadows are in the Mersey Valley. Donated to the city in 1917, there are rock gardens, plant collections and walking trails. The Royal Society for the Protection of Birds was founded here. The gardens have an active Friends group.

Wythenshawe Park

A beautiful historic park with mature woodlands and meadows lining the Baguley Brook.

Local Voice

The Mersey Valley

The famous river gently meanders through south Manchester's parks, golf courses and sports grounds.

River Bollin

The Bollin marks the City's boundary with Cheshire and meanders downstream towards the Mersey.

Manchester City's Coat of Arms

The three golden diagonal stripes on the red shield are from the de Grelley coat of arms but also symbolise the three rivers which run through Manchester city centre: the Irwell, the Irk and the Medlock.

Indicator 1
Accessibility of Waterbodies

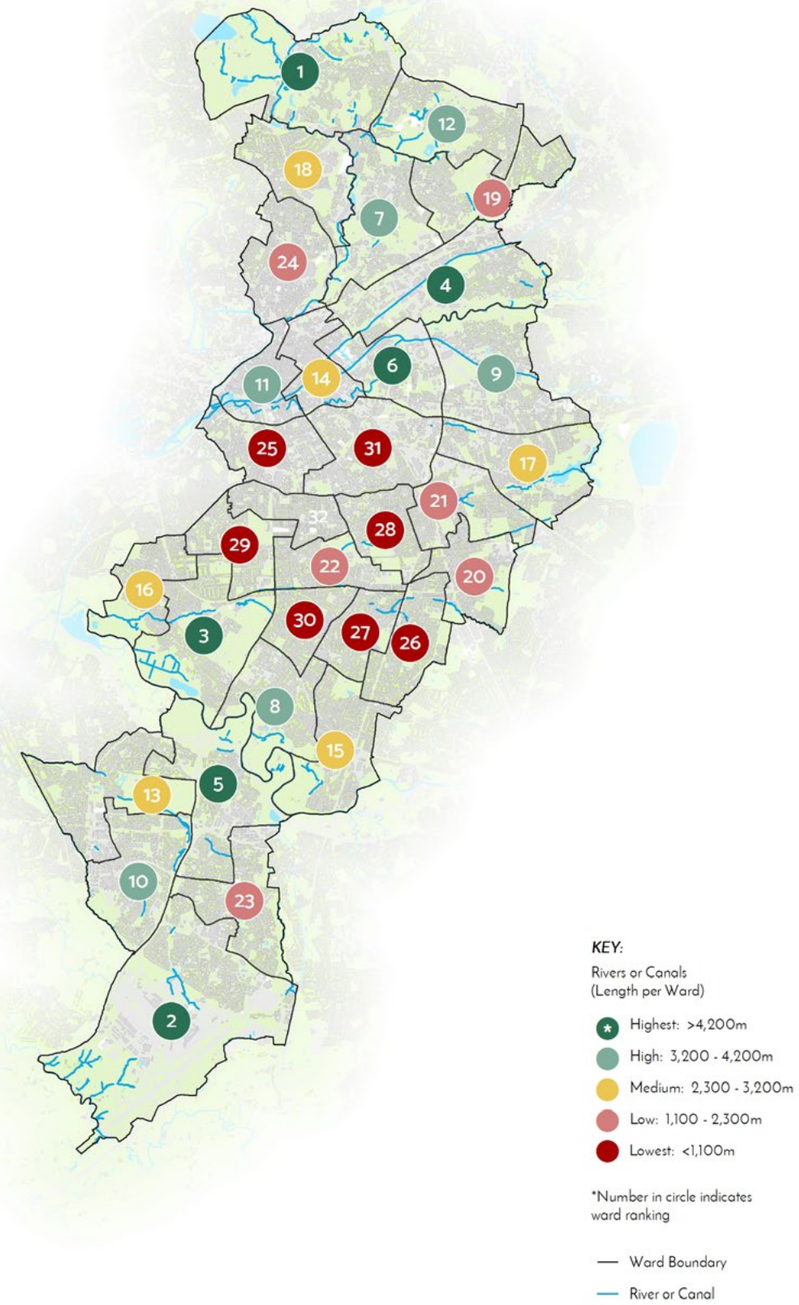
Rivers, streams and canals are significant in creating a sense of place. They provide attractive features both in city centre and suburban settings. They inspire creativity, and add value to property. Landscapes with water are perceived as more restorative than those without. Fortunately many waterways in Manchester are accessible to the public, at least visually if not always physically accessible. However, some river reaches are completely hidden from view, flowing through underground culverts or tunnels, particularly within the city centre.

The map shows the main waterways, with information about the length of waterway in each ward. Some wards have over 4,200m length, whereas others have less than 1,100m.

Higher Blackley has the Irk and its tributaries. Northenden and Chorlton Park have good access to the Mersey. Perhaps surprisingly, Miles Platting and Newton Heath and Ancoats and Beswick also have good waterfront access, due to the presence of the River Medlock and the Ashton and Rochdale Canals.

The ward with the lowest length of waterways is Ardwick, with less than 1,100m, as the Cornbrook is now largely buried. Old Moat, Withington, Burnage, Fallowfield and Rusholme have few waterways, because unfortunately many of the tributaries of the Chorlton Brook have been culverted. This makes it all the more important for the brooks to be attractive and biodiverse where they flow through open spaces such as Birchfields Park and Platt Fields Park.

Deculverting of the watercourses in these well-populated central wards would significantly improve access to water for thousands of people. Deculverting involves major engineering and flood risk assessment, but redevelopment or major infrastructure works may generate funds and opportunities.



Indicator 2
Flood Risk from Rivers

Mary Monaghan

Property around the city is at risk from river (fluvial) flooding during heavy rainfall when flow exceeds the capacity of the river channel. For example, the risk of flooding from the Irk and Medlock reduces the value of the city centre's natural capital by an estimated £1.78m per year .

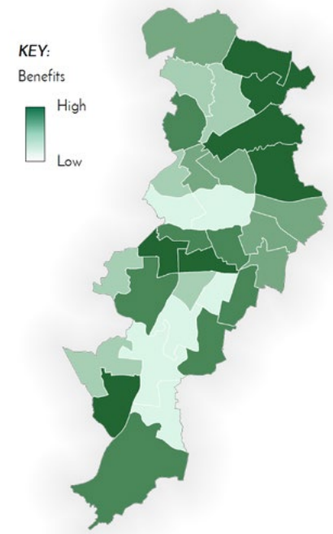
But of course the actual cost of flooding is borne by residents, businesses and the insurance industry. Living with flood risk and recovering from flooding also causes psychological stresses and social tensions, not to mention lowered property values.

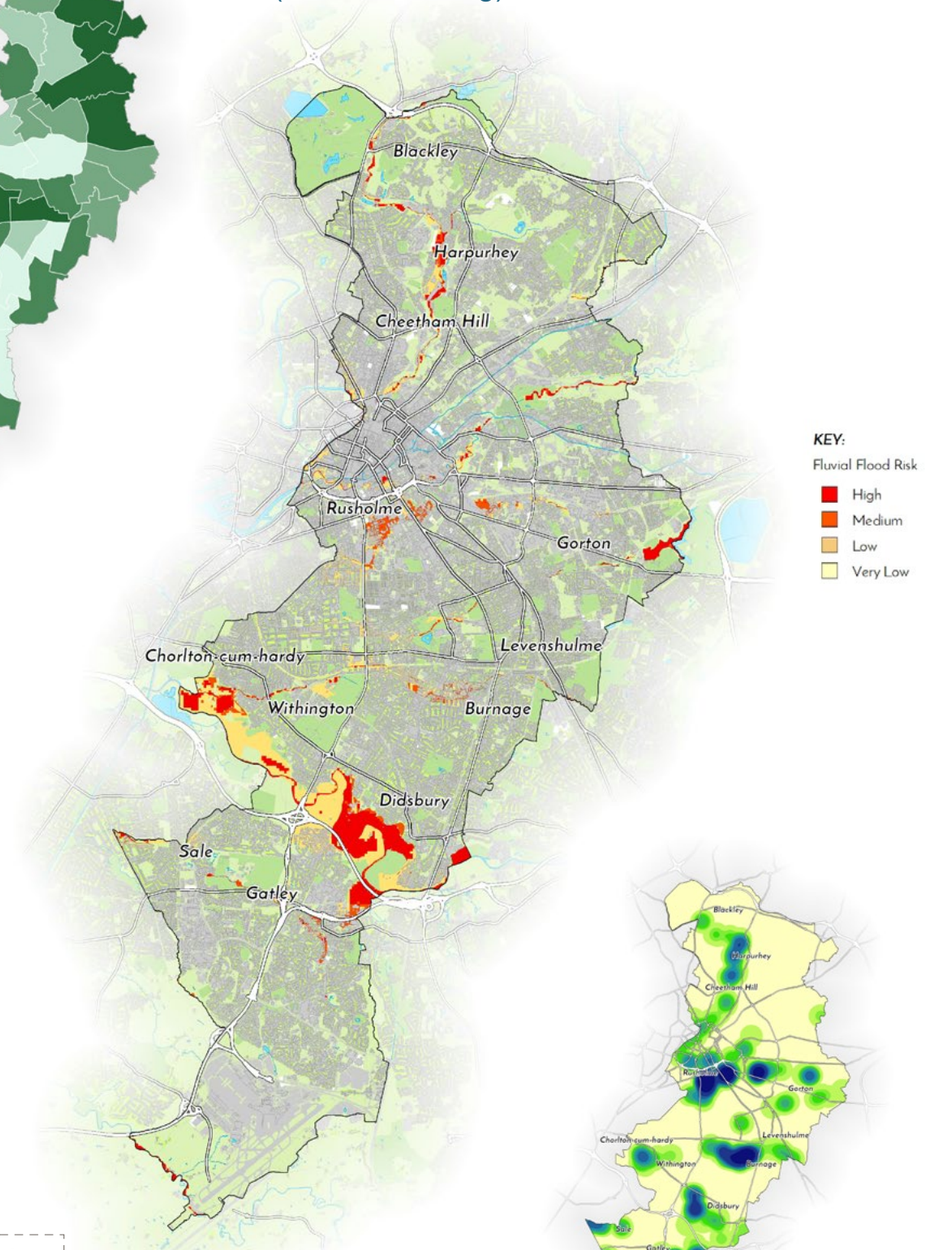
Storm Christoph, in January 2021, led to major flooding in south Manchester from the river Mersey, with long-term damage to roads, homes, business property and parks. Past investment in flood resilience measures meant that loss of life was averted, but the event is a reminder of the need to plan ahead with climate change in mind.

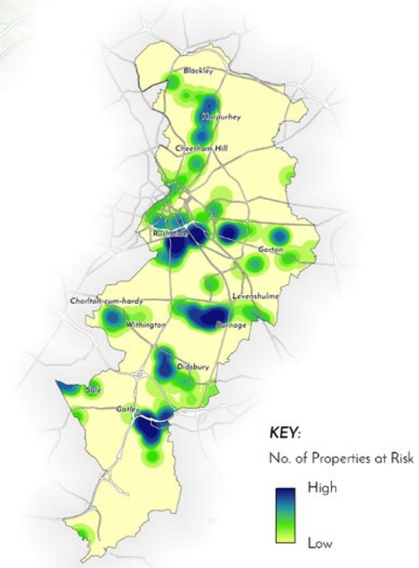
We cannot move floodplains, but we can reduce the spatial extent, depth and time of fluvial flooding in urban areas by complementing existing flood defences with "nature-based solutions" such as creating washlands, use of natural flood management techniques, enhancing blue-green infrastructure, tree-planting and upstream catchment management within neighbouring local authority areas.

The map shows a ward-level display of the benefits that Manchester's blue and green infrastructure provides in terms of fluvial flood risk reduction.

Flood Risk from Rivers
(Fluvial Flooding)







The Environment Agency Risk of Flooding from Rivers and Sea dataset uses local water level and flood defence data to model flood risk, for different flood likelihoods.

The indicator used to indicate flood risk from rivers and sea is the number of properties located in >1 in 100 year flood risk areas (from rivers and sea).

Data Source: Risk of Flooding from Rivers and Sea is obtained from the Environment Agency under an Open Government Licence - © Environment Agency copyright and/or database right 2017. All rights reserved.
Some features of this map are based on digital spatial data from the Centre for Ecology & Hydrology, ©NERC (CEH) © Crown copyright and database rights 2017 Ordnance Survey 100024198
Analysis and mapping provided by West Country Rivers Trust ©

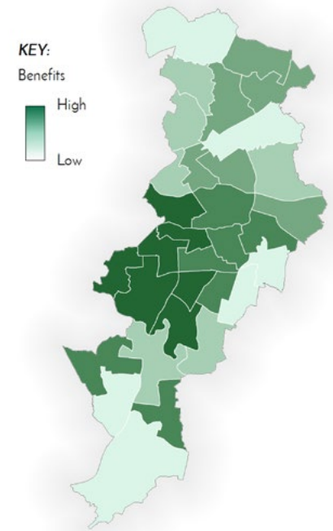
Indicator 3
Flood Risk from Surface Waters

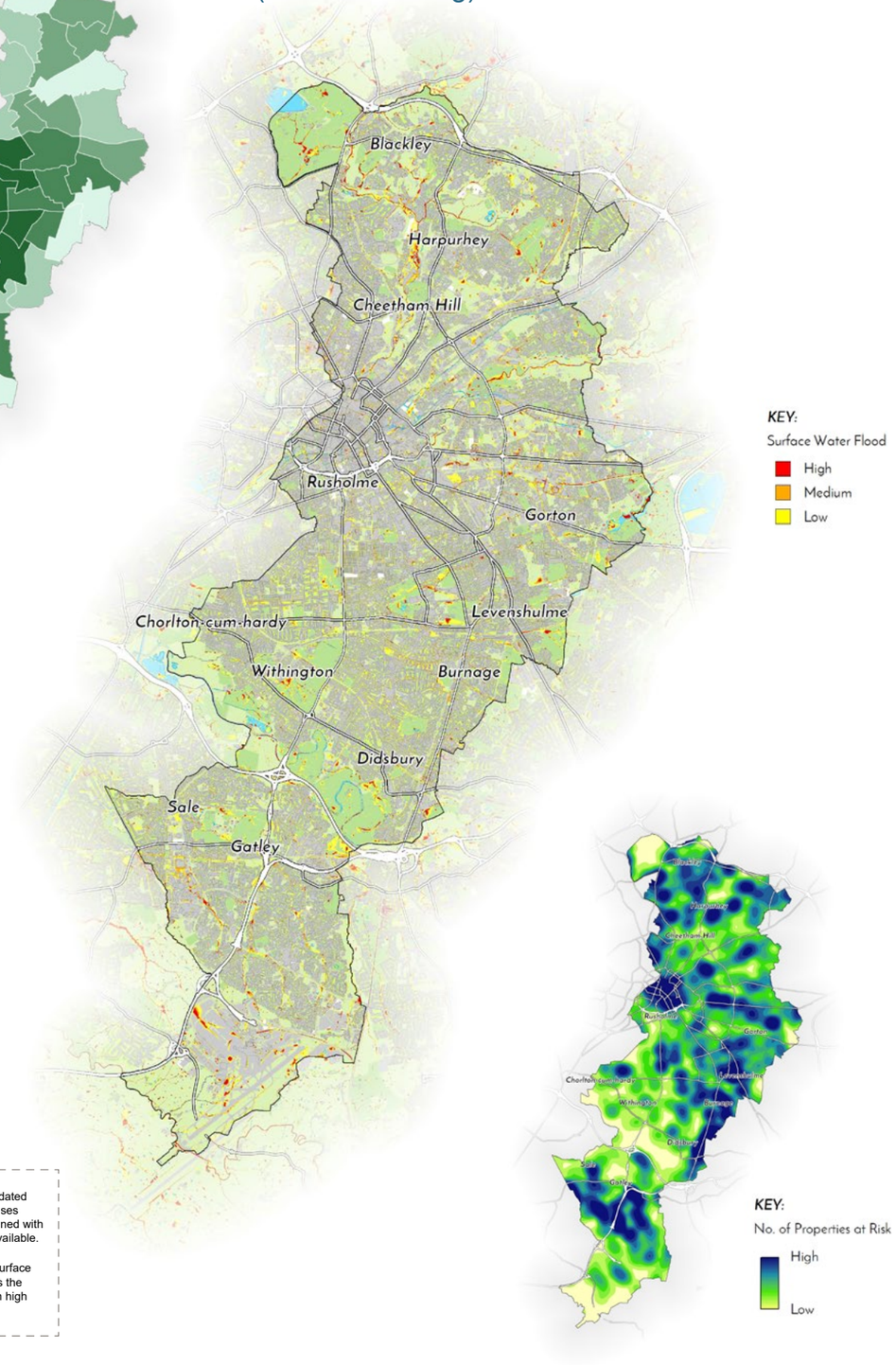
Surface water flooding occurs when heavy rainfall falling on our roads, paths, properties, car parks and paved open spaces exceeds the carrying capacity of the drainage network (surface water drains and the 'combined' surface water and sewer network). This leads to water pooling on paved surfaces as it cannot drain away as well as surcharging of water from overloaded drains and combined sewers causing flooding of roads, gardens, properties and open spaces. Surface water runoff that is carried away by the drainage network will also increase water levels in rivers, exacerbating the scale of river (fluvial) flooding.

The map shows a ward-level assessment of the numbers of properties at risk and the current degree of benefit that is provided by the city's blue-green infrastructure in terms of absorbing and slowing the flow of surface water before it reaches property.

The maps show that surface water flood risk is widespread, even well away from rivers. This reinforces the need for all property owners, including householders, housing providers and highway managers to implement nature-based solutions to slow surface water flow, such as rain gardens, de-paving of unnecessary hard surfaces and planting of trees.

Flood Risk from Surface
(Pluvial Flooding)





The Environment Agency's Updated Flood Map for Surface Water uses national scale modelling combined with locally produced data where available.

The indicator used to assess surface water flood risk is calculated as the number of properties located in high surface water flood risk areas.

Data Source: Risk of Flooding from Surface Water (RoFSW) is obtained from the Environment Agency under an Open Government Licence - © Environment Agency copyright and/or database right 2015. All rights reserved. Some features of this map are based on digital spatial data from the Centre for Ecology & Hydrology, ©NERC (CEH). Soils Data © Cranfield University (NSRI) and for the Controller of HMSO 2013. Analysis and mapping provided by West Country Rivers Trust ©

Indicator 4
Water Pollution and Waterbody Health

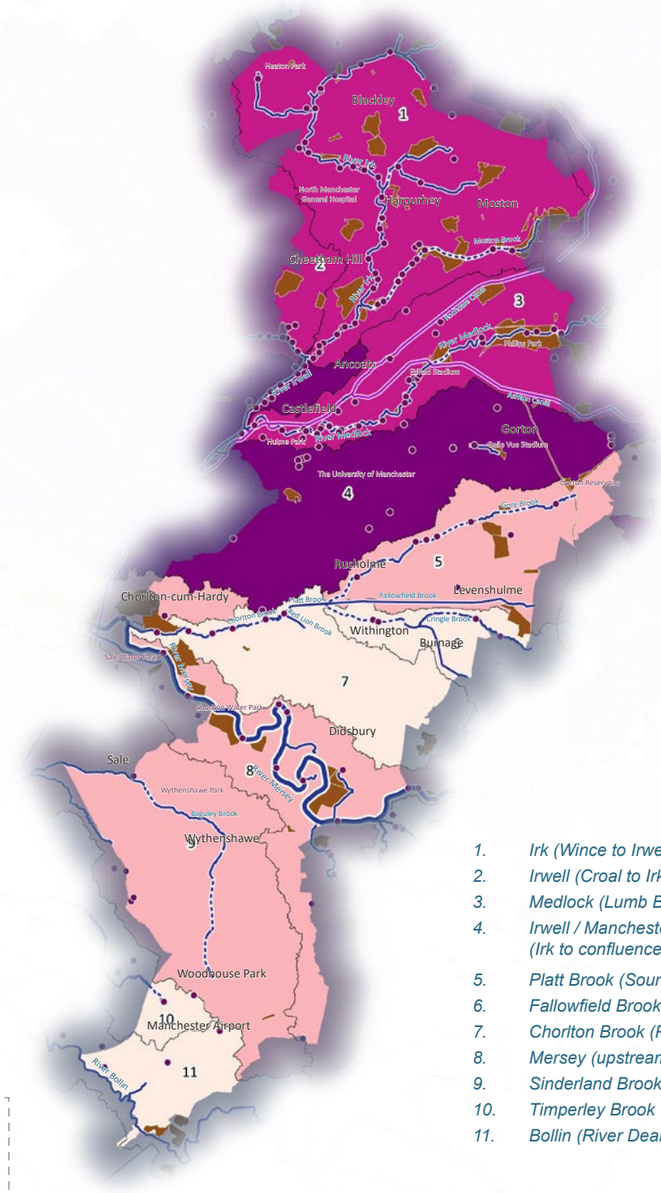
The water cycle is one of the fundamental processes that sustains life on Earth. All of us depend on the fresh clean water in our rivers and groundwater: for drinking, cooking, washing, for recreation and leisure, and which sustains the natural world around us.

Policy, legislation and citizen ambition is for at least good quality for our waterbodies – biologically, chemically, physically and aesthetically. If the waterbodies in urban areas are polluted and/or physically impacted by human activities, then the amenity value of accessible natural blue-green spaces can be reduced, it can negatively impact people's health and wellbeing and it can degrade the ecological health and biodiversity of the water environment.

The River Irk, in particular, is subject to multiple pressures, preventing it from achieving "good status". This includes numerous discharges, presence of historic landfills and culverting. We can, however, make a difference over time by removing, treating or isolating sources of the failure, tackling pollution sources and pathways, and by restoring river channel and river bank habitats and physical morphology.

The 2017 Water Environment Regulations set objectives for protection, enhancement and restoration of all Manchester's waterbodies by 2027. This Strategy is part of the City's response to the challenge set by these regulations. Even for waterbodies like the Irk where it is not technically feasible to achieve good status, nevertheless improvements can be made which will bring widespread benefits.

Key
- Number of urban-caused water quality issues for each Waterbody catchment
- Historic Landfills
- Consented Discharge Points
- Culverted Waterways



1. Irk (Wince to Irwell)
2. Irwell (Croal to Irk)
3. Medlock (Lumb Brook to Irwell)
4. Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey)
5. Platt Brook (Source to Fallowfield Bk)
6. Fallowfield Brook
7. Chorlton Brook (Princess Parkway to Mersey)
8. Mersey (upstream of Manchester Ship Canal)
9. Sinderland Brook (Fairywell Bk and Baguley Bk)
10. Timperley Brook
11. Bollin (River Dean to Ashley Mill)

Known causes of waterbody failures against a national standard for "good status" (Reasons for Not Achieving Good Status – RNAGs), are recorded by the Environment Agency using a defined set of reasons for the failure (Reasons for Not Achieving Good Status – RNAGs), along with the pressures driving that failure.

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Indicator 5
Climate Resilience
The Urban Greening Factor

Greener, bluer and “spongier” neighbourhoods are more resilient to the damaging effects of climate change.

Green-blue neighbourhoods with trees, open waterbodies and natural vegetation stay cooler and better ventilated than “urban heat islands” where there is little or no green-blue infrastructure and buildings and roads bounce solar heat into the street-scene.

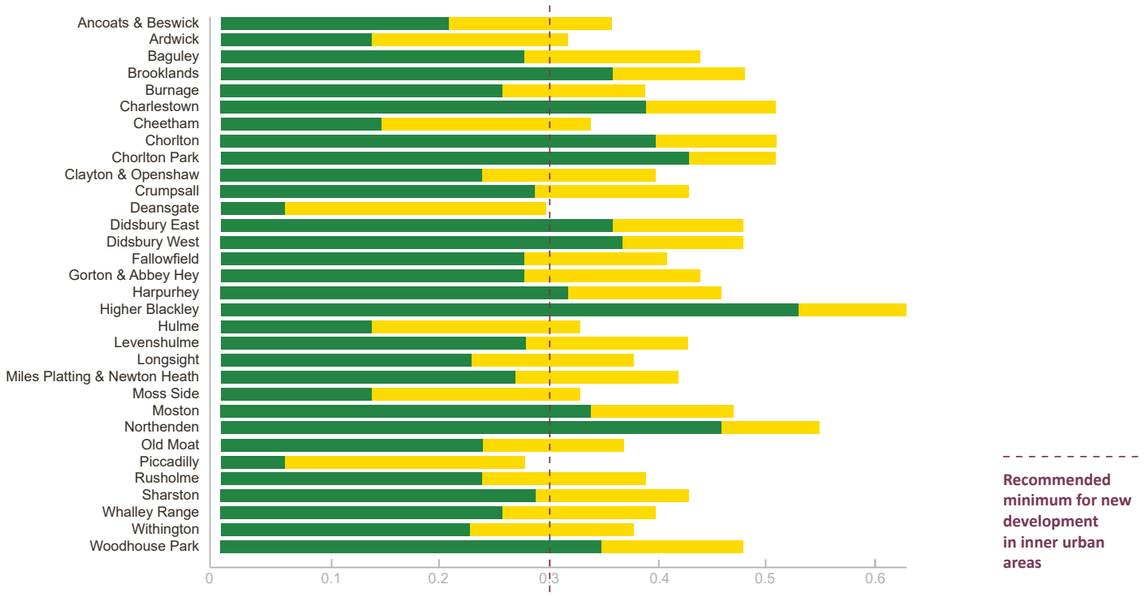
“Spongy” neighbourhoods with deep natural soils, good tree canopy cover, and plenty of grasslands can absorb rainwater into vegetation and soils. By contrast, highly urbanised areas have sealed surfaces, meaning rainwater rapidly flows into drains. When they run out of capacity, water backs up into the city, causing surface water (pluvial) flooding.

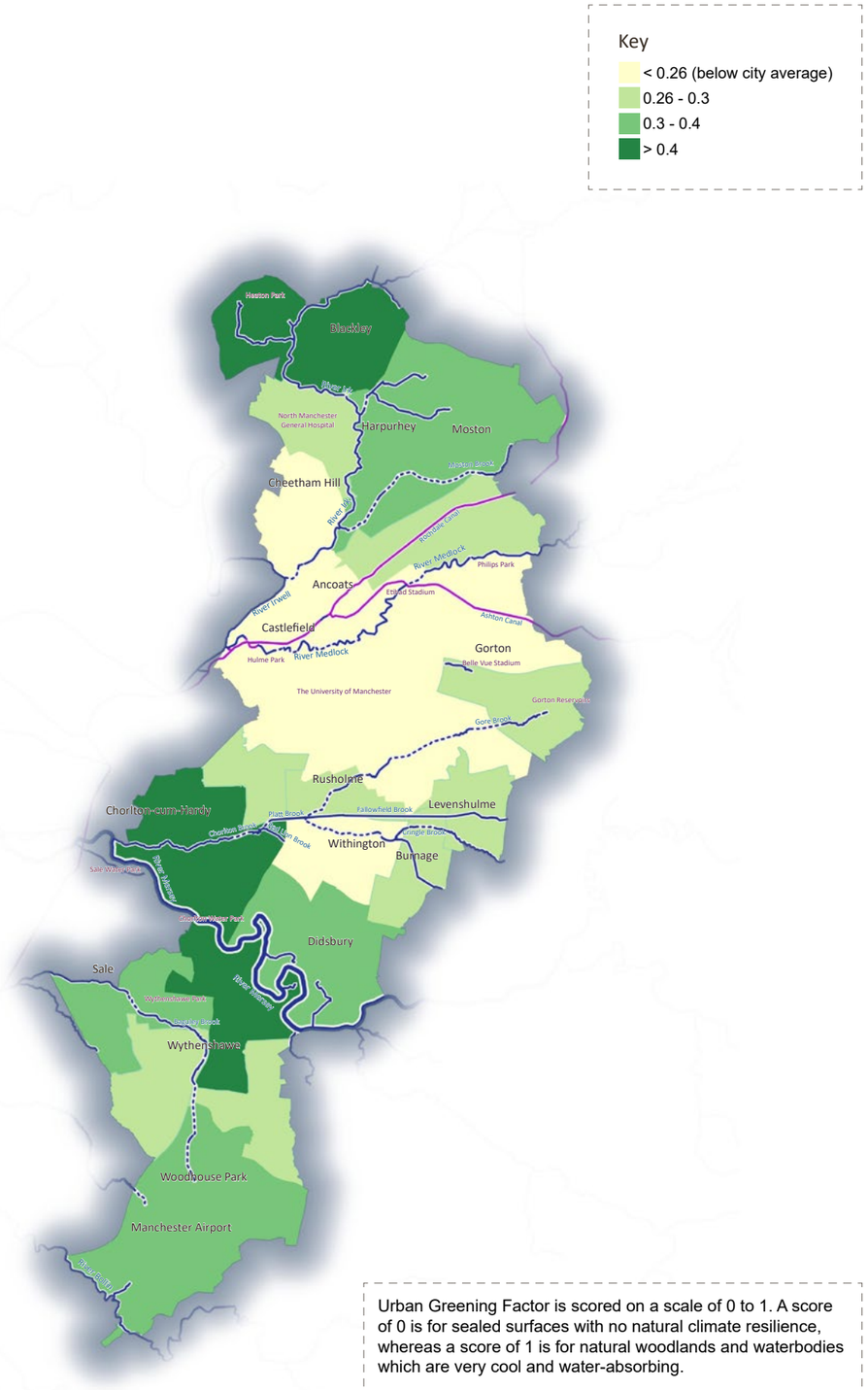
One measure of climate resilience is the “Urban Greening Factor”, shown per ward.

Urban planners can use the UGF to set minimum scores that new development should attain; this triggers architects and developers to integrate nature-based and water-focussed designs into their proposals.

Urban blue-green infrastructure measures such as tree planting, rain-gardens, letting grass grow long, blue-green roofs and living walls can all help existing neighbourhoods become greener, bluer and spongier. The bar chart shows the current Urban Greening Factor score for each ward, and also the potential score if all suitable opportunities are taken to make the city “spongier”.

Current and Potential Urban Green Factor





Urban Greening Factor is scored on a scale of 0 to 1. A score of 0 is for sealed surfaces with no natural climate resilience, whereas a score of 1 is for natural woodlands and waterbodies which are very cool and water-absorbing.

Neighbourhoods scoring less than 0.2 have little natural climate resilience, whereas neighbourhoods scoring over 0.4 are amongst the best in an urban context.

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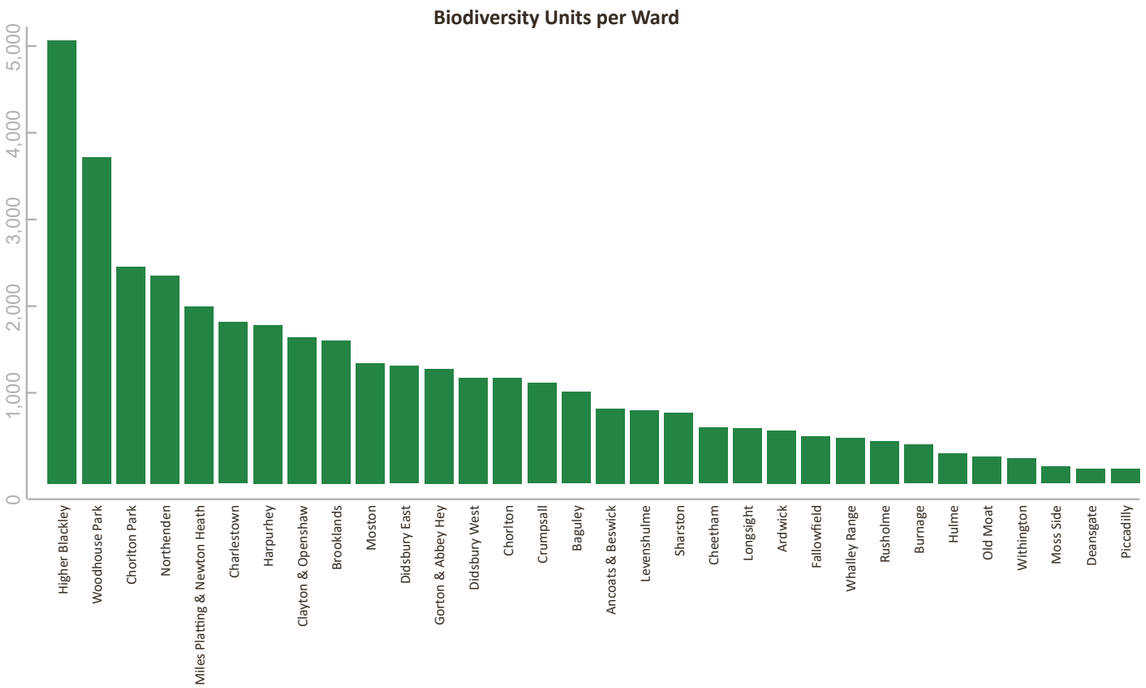
Indicator 6
Nature Provision

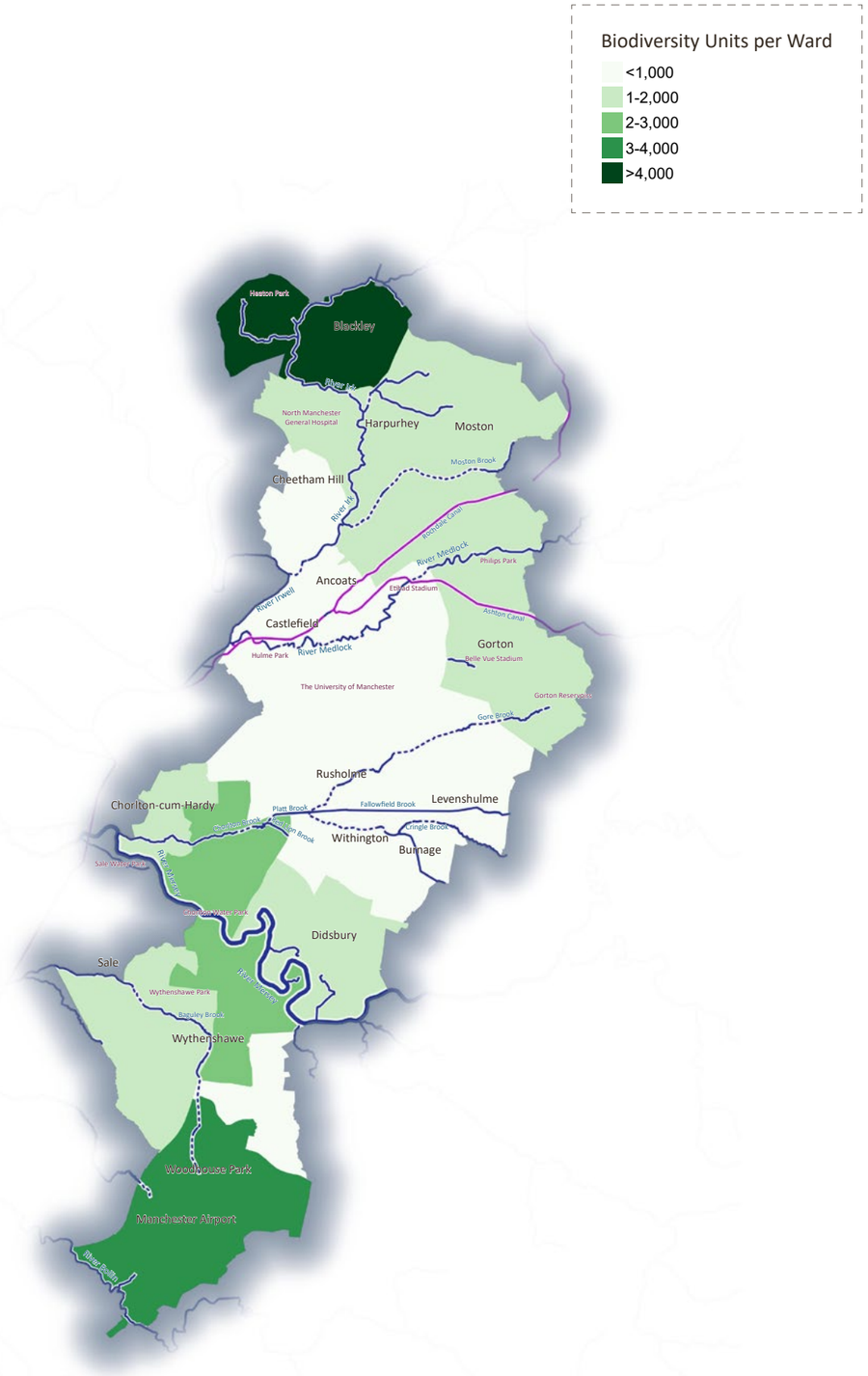
Biodiversity is important in its own right. England is one of the most nature-depleted countries in the world, partly as a result of industrialisation for over 250 years. Manchester, as one of the cradles of the Industrial Revolution, is now taking its part in nature recovery.

Access to biodiverse habitats is important for mental wellbeing, particularly helping us to respond positively to stress. In an urban area, nature is found in parks, river valleys, woodlands, street trees and grasslands.

These habitats are vital stepping stones for the recovery of nature from decades of urban intensification and centuries of pollution.

Using Natural England's Biodiversity Calculator, it is possible to assess nature provision per ward in terms of "biodiversity units". Waterways, woodlands and meadows are rich in biodiversity units. In a city centre context, even street trees and living walls provide some biodiversity.





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Indicator 7
Ecosystem Services

Our civic spaces, parks, playing fields and river valleys provide a range of ecosystem services which society needs. In Manchester, we particularly benefit from the following services:

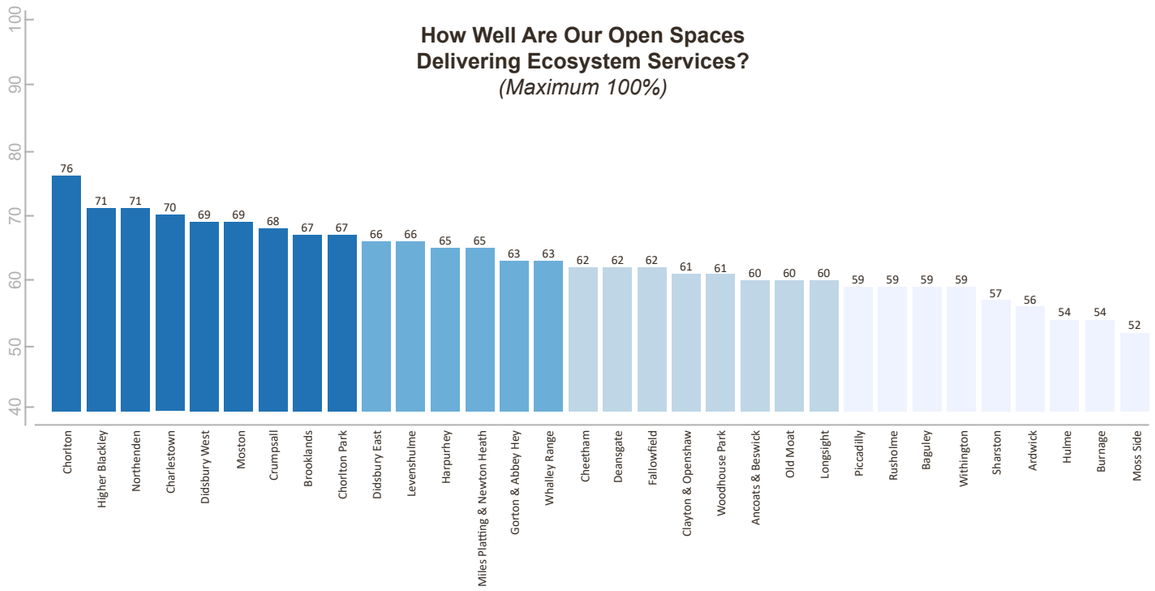
Water Quality Regulation – habitats such as woodland and grassland filter surface water before it reaches waterways. Rivers and groundwater dilute pollutants and treated wastewater discharges;

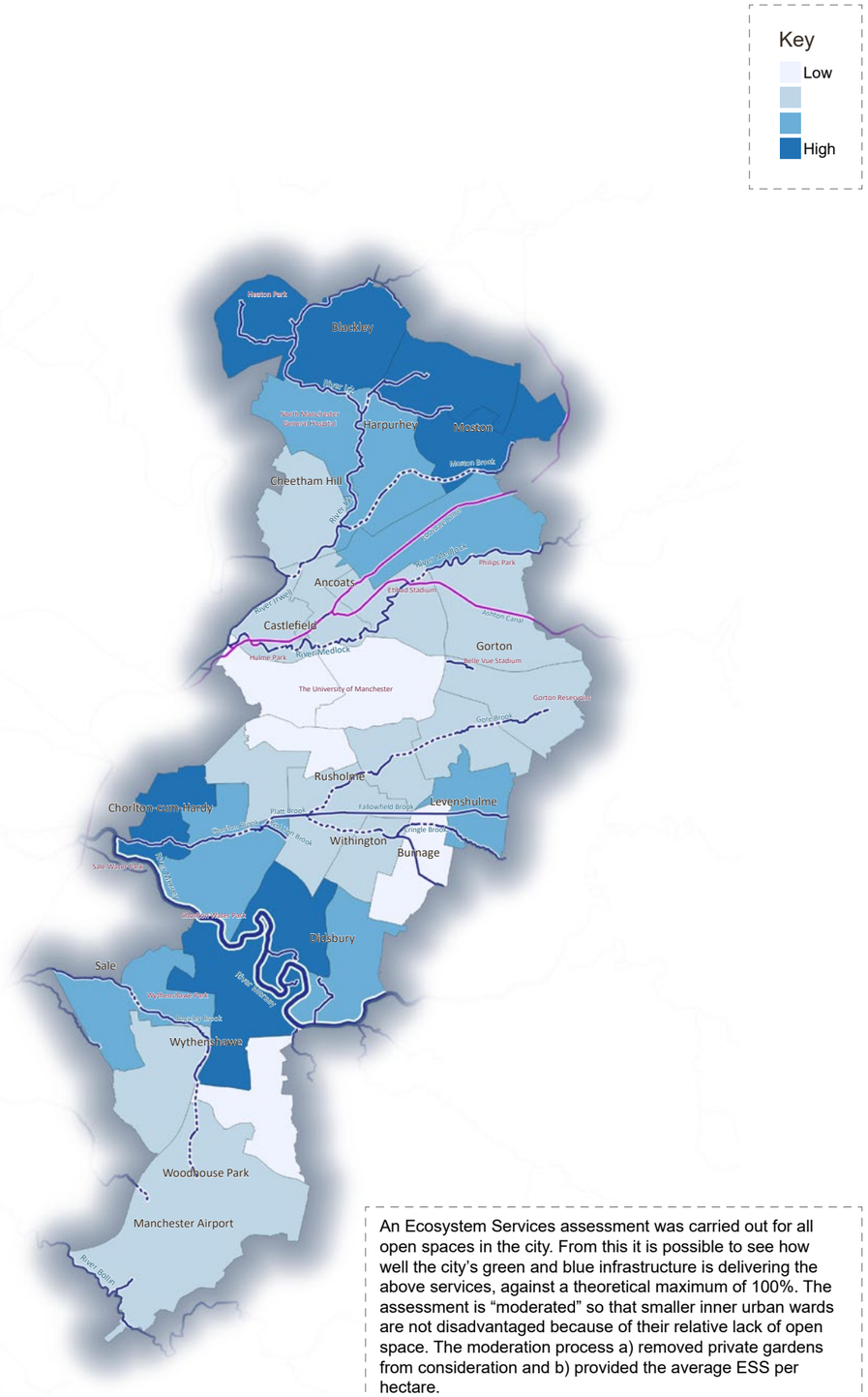
Flood Regulation – habitats such as woodlands, wetlands, natural flood plains and washlands store water during storm events;

Air Quality Regulation – trees, woodlands, hedges and wetlands trap particulates and dust in foliage, and sequester carbon;

Health and Wellbeing – trees, woodlands, meadows and waterbodies close to where people live reduce stresses, particularly important in densely-populated urban areas experiencing poor health. Community food-growing also contributes to health;

Biodiversity – larger areas of diverse and well-linked natural habitats are important for survival of wildlife populations.





An Ecosystem Services assessment was carried out for all open spaces in the city. From this it is possible to see how well the city's green and blue infrastructure is delivering the above services, against a theoretical maximum of 100%. The assessment is "moderated" so that smaller inner urban wards are not disadvantaged because of their relative lack of open space. The moderation process a) removed private gardens from consideration and b) provided the average ESS per hectare.

The bar chart shows many wards are doing quite well, with scores of over 60%.

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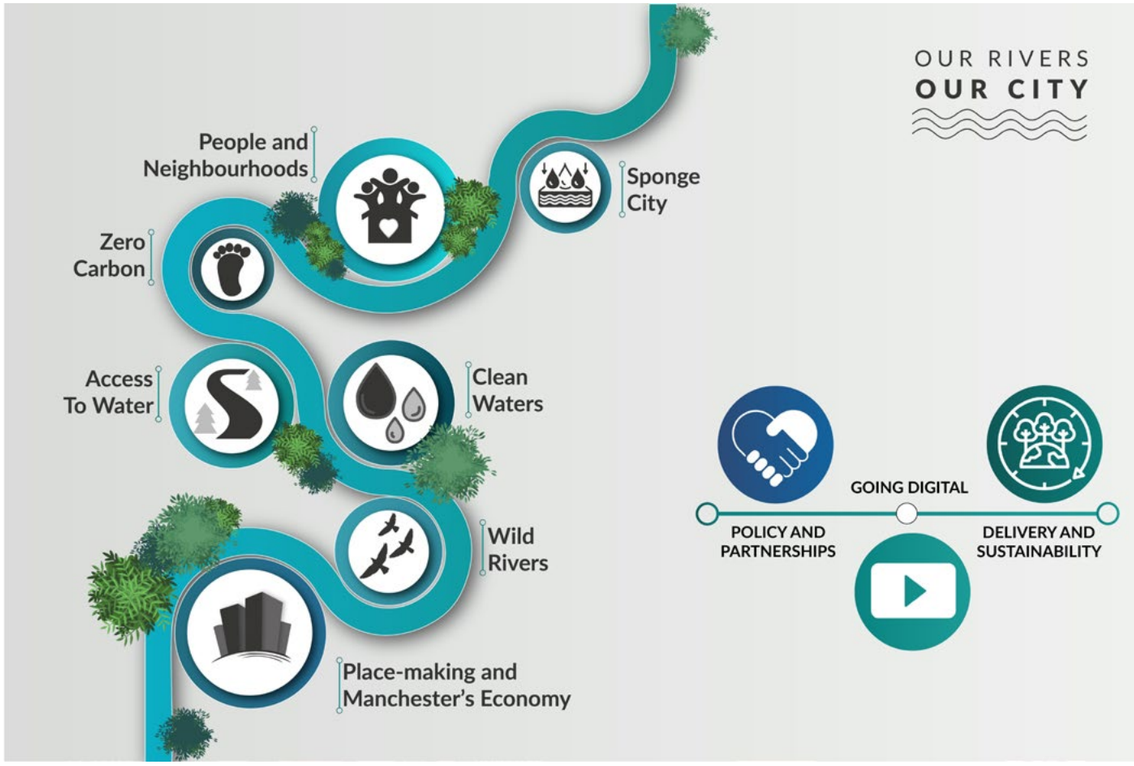
Strategic Objectives

Our Rivers Our City has seven strategic objectives, alongside three operational objectives.

Each objective is explored in the following chapters, as follows:

- **Strategy** – key issues and a summary of measures to address problems and improve conditions;
- **Outcomes** – a short description of how things could be by 2030;
- **Where and How** – a summary of key areas for intervention. A Key diagram is produced for some objectives;
- **Inspiration** - Case Studies of good practice.



Keywords

destination, place-shaping, family life, green skills, natural capital, finance-raising, avoided costs of flooding & poor health

Place-Making and Manchester's Economy

Strategy

Manchester is internationally recognised as an economic, research and cultural centre and its population is growing rapidly as a result. The city is also regarded as one of the greenest in the world, which is also vital to its attractiveness for investors and its economic resilience in the face of climate change.

The city's river valleys can make a much greater contribution to the city's economic and population growth, its quality of place, people's wellbeing and productivity, and the City's green brand. Issues such as low water quality, lack of access to waterfronts, flood risk, low awareness of place-making opportunity and shortage of impact finance (investments that bring social, economic or environmental outcomes as well as financial return) need to be addressed.

The place-based regeneration that has occurred alongside the city's canals shows the economic potential that will be realised through restoration of city centre rivers, i.e. the River Irk in Victoria North and the River Medlock from the city centre upstream to the Etihad campus. It is important to note that this waterside regeneration was predicated on improving the quality of the waterways. Cleaning up our rivers is a vital foundation for the success of riverside regeneration.

"Urban green and blue spaces that are restored and improved have direct benefits for local businesses if they attract more customers to an area."

In the suburbs, the rivers and tributary brooks flow through many neighbourhoods and parks, offering opportunities for businesses and social enterprises that rely on quality of place. Access to attractive riversides is important for family and community life, helping to make Manchester a place to settle and invest.

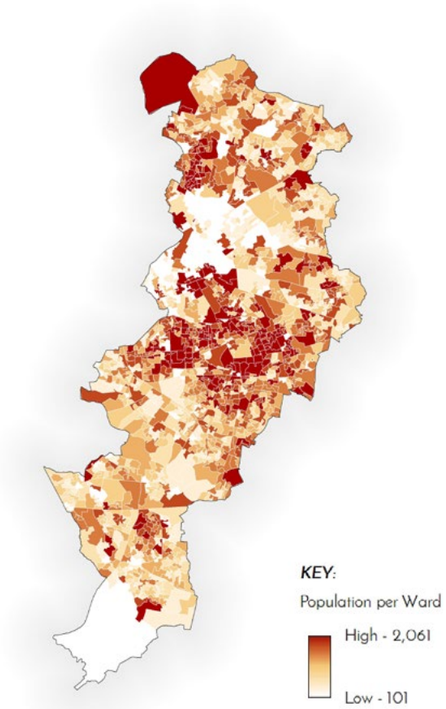
The Mersey Valley, from Stockport to Urmston, is a regionally important leisure destination which draws in day visits from a wide catchment and supports a range of local small businesses.

Our rivers also flow through many deprived areas and improving the quality of river valleys is part of community regeneration. Some neighbourhoods have suffered from river pollution and poor environmental quality for over a hundred years because of industry and its subsequent decline, so river restoration is a matter of equity for these communities.

There are many opportunities for training, skills acquisition and volunteering on the back of river restoration and day-to-day greenspace management. These green jobs are sustainable and long-term in nature. Manchester has an existing reputation for excellence in landscape and urban design, urban regeneration and water management, and the economic value of this "intellectual capital" can be crystallised through establishing a School of Urban Waters.

Flooding and poor public health bring significant costs to people and businesses. Good management of our river valleys will reduce these risks. The Rivers Irk and Medlock in Manchester have a natural capital value to the city of £78m . This includes £30.3m attributable to "avoided healthcare costs" by enabling people to engage with nature.

The economic value of the Irk and Medlock will only increase as the north and east of the city regenerates and its population increases.



TEP

Outcomes

Place-making
The place-making value of rivers is at the heart of economic plans, strategic regeneration frameworks and major infrastructure plans;

Unlocking Potential
The economic potential of city-centre rivers is unlocked e.g. waterfronts and hidden river reaches are integrated into branded trails, pocket parks and waterfront event spaces;

River Restoration
Investment portfolios for the Irk and Medlock are drawn up, stressing the socio-economic and place-making benefits arising from significant investment;

Training and Skills
The city develops increased design and maintenance skills for river restoration and Sustainable Drainage (SuDS) – a School of Urban Waters;

Enterprise
Social and private enterprises using waterfront spaces are supported;

Mersey Valley
The Mersey is recognised as a city-regional green destination with leisure, water activity, cycling and enterprise opportunities

Where and How

The Economy and Place-making Key Diagram shows the following:

Outcome 1: Place-Making

Strategic Regeneration Frameworks and other major redevelopment areas are shown. In Manchester, such developments are guided by adopted masterplans which are refreshed from time to time. Many are close to rivers.

TEP has analysed the current status (2020/21) of most SRF's and made recommendations about how the place-making and natural capital value of rivers could be further enhanced in regeneration documents and when making planning decisions, using an analytical framework proposed by CIRIA. This analysis is found at Annexe E.

Outcome 2: City Centre Rivers

For the Irk, the City River Park Plan is already in place, guiding investment and place-shaping activity in Victoria North.

For the Medlock, downstream of Great Ancoats Street, Conservation Areas are shown, in order to stimulate place-making activity along the river, such as the new Mayfield Park.

Outcome 3: River Restoration Prospectuses

In addition to the existing Irk City River Park Plan, investment portfolios are appropriate for

- *"Bringing the Irk to Life": the Irk from Queens Park upstream where there are multiple adverse influences on access, river habitats and water quality;*
- *The Medlock Valley Park from Great Ancoats Street upstream to Clayton Vale, where improvement of access and river restoration will stimulate investment in East Manchester's regeneration and support existing communities*

Outcome 5: Social and Private Enterprise

Destination Parks and Community Hubs that are close to rivers are shown. Such spaces can provide opportunities for enterprise, e.g. serviced floorspace, secure storage and passing trade.

Outcome 6: Mersey Valley

The major multi-user trails and destinations are shown, including the TransPennine Trail, with the designated Green Belt boundary being used to define the broad area for promotion of green access and leisure-based enterprise.

Economy and Place Making
Key Diagram

TEP

Bringing the Irk to Life

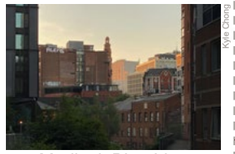
(Heaton Park to Queens Park)

A long-term restoration scheme which will improve water quality, remove unattractive and redundant infrastructure, improve access and community use of the "People's River".

Manchester City Council

City River Park

The City River Park will follow the course of the River Irk from Victoria North to Queen's Park. The character of the river will form the centrepiece of the area's regeneration. The Red Bank viaduct will contribute to an iconic public realm, whereas St Catherine's Wood will be tranquil, with reflective waterside spaces.



Kyle Cheng

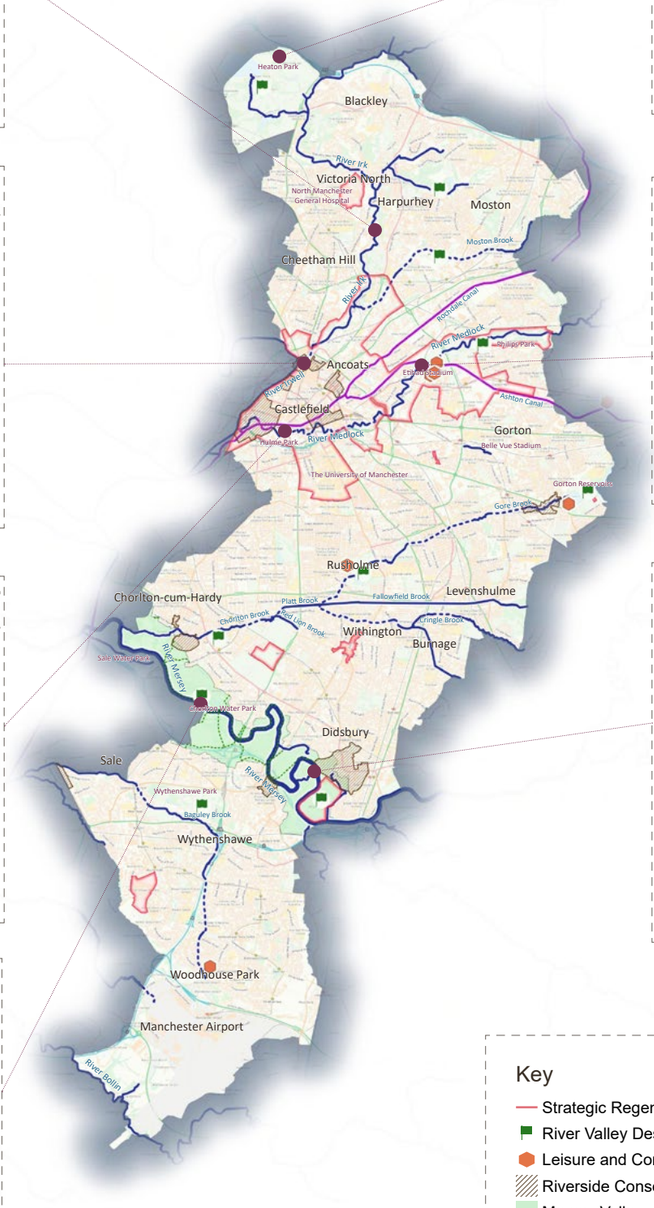
Medlock Blue Line

Taking inspiration from the city centre canal corridors, the "Medlock Blue Line" can be a waymarked trail connecting places of cultural and architectural interest. The blue line will evolve over time as re-development provides opportunities to open the River Medlock to new walkways, viewpoints and waterfront public realm.

Our Local Voice

Chorlton Water Park and Kenworthy Woods

A natural hub, the combination of open water and extensive woodland is an opportunity to create a significant tourist destination.



Matt Dixon

Heaton Park

In the Irk Valley, Heaton Park is a major visitor destination, with golf, treetop trails, boating, festivals and numerous running trails. The heritage value of the reservoir and a series of dams and pools forms part of the park's attraction.

Medlock Forum

Medlock Valley

The Medlock valley and Ashton Canal corridor from Great Ancoats Street up to Oldham has huge heritage value and could become a linked series of parks and open spaces, contributing to East Manchester's community and sports-led regeneration.

Mary Monaghan

Mersey Valley

A destination for day visits and a natural setting for family life, the Mersey Valley has numerous trails suitable for commuting, leisure and wildlife watching. High quality visitor infrastructure is essential to maintain its economic value. Washlands in the valley are critical natural infrastructure to reduce the adverse economic effects of flooding in south Manchester and Trafford

Key

- Strategic Regeneration Priority Areas
- River Valley Destination Parks
- Leisure and Community Centres near Rivers
- Riverside Conservation Areas
- Mersey Valley - A City-Regional Park
- Multi-user routes in the Mersey Valley

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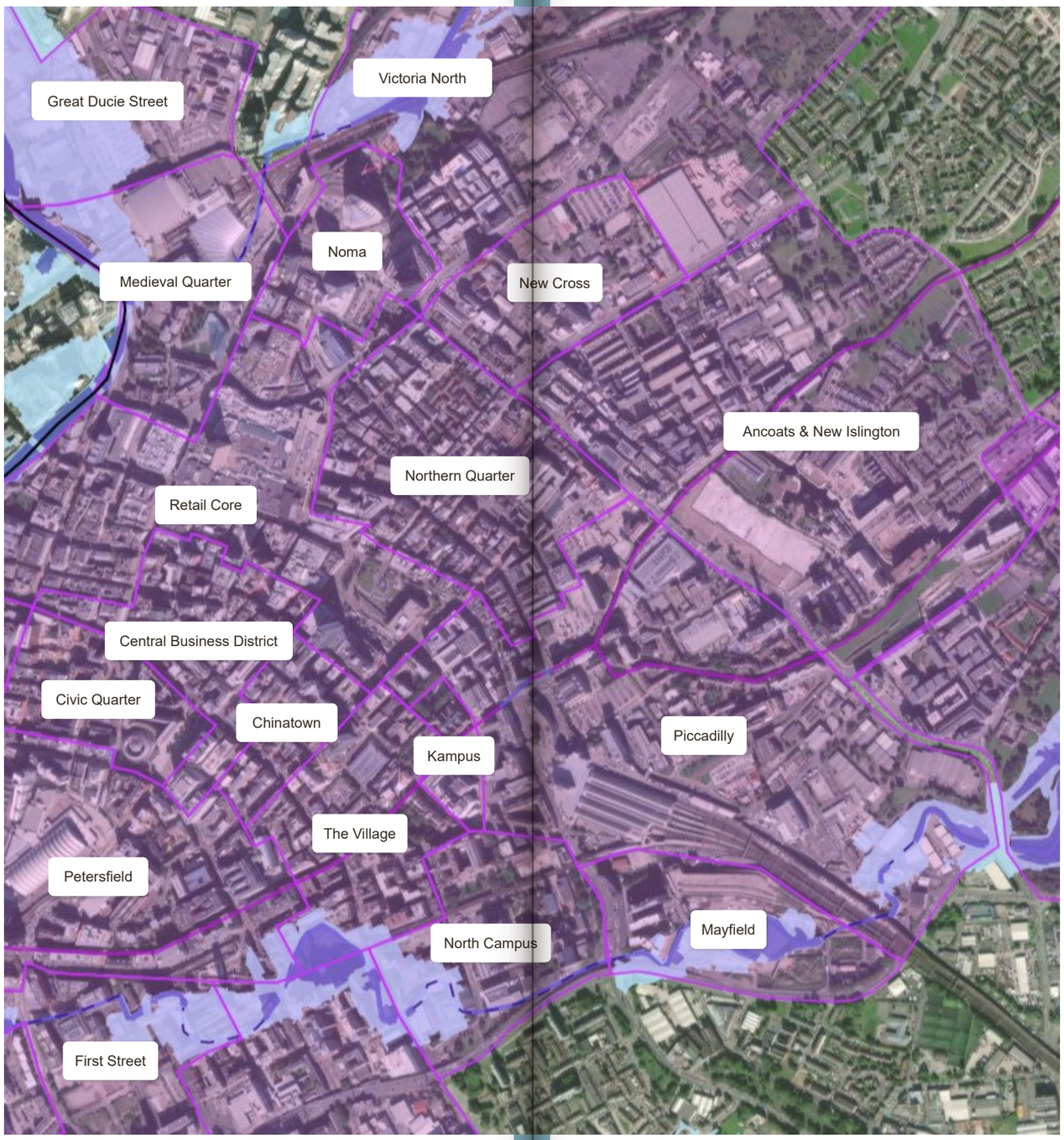
Our Rivers Our City Webmap

This shows more detail underpinning the Key Diagram:

- The jigsaw of Strategic Regeneration Framework Areas, Masterplans, Action Plans and their overlap with river valleys;
- Key Natural Tourism Assets associated with rivers (e.g. Heaton Park, Mersey Valley);
- Areas of multiple deprivation (training and skills priorities);
- Assets that may be used by social enterprises, e.g. community facilities, hubs of community activity;
- Detailed maps of multi-user access routes;
- Information on River Restoration

Further information on the value of the natural capital of our river valleys is found on the Natural Course website.



Policy and Partnerships

Local Plan policy can require developments to prioritise the role of water frontages, water features and Sustainable Drainage Systems in placemaking. Locally-specific implementation of Greater Manchester policy on watercourses and urban greening will drive place-making and watercourse restoration. This is explored more in the Policy and Partnerships chapter.

Outcome 4 (Training, skills and the School of Urban Waters) would be achieved in partnership with Salford City Council and both citys' HE/FE sector which already provides education in urban planning, hydrology, sustainable water management and environmental engineering.
The City can draw on the innovation and research in water and environmental management from the academic institutions, for example the Manchester Environmental Research Institute (MERI) at the University of Manchester.

Finance

Working with the Natural Course project, a City Water Champion can help develop new finance streams to implement river restoration and place-making measures; supplementing traditional sources of funding such as developer contributions and regeneration and infrastructure funds. The wider role of a City Water Champion is discussed in the Delivery and Sustainability chapter.

Other green training and skills programmes are run by NGOs such as Groundwork and Lancashire Wildlife Trust. Manchester's Parks Team have experience in enabling micro-enterprises to use greenspaces in a sustainable way.

Inspiration

Planit IE

City River Park Plan

Manchester's Victoria North redevelopment scheme is a joint venture between the City Council and Far East Consortium, with a long-term goal of creating 15,000 new homes, with a mix of family properties and city-centre apartments.

The development is anchored by a landscape-led approach to transform underused riverside in the Lower Irk Valley into welcoming, accessible and exciting spaces for both people and wildlife.

A City River Park plan has been drawn up to illustrate how the character of the River Irk will shape the place. For example, the Red Bank viaduct over the river will contribute to an "iconic" public realm, whereas the river flowing through St Catherine's Wood will be conceived as a "tranquil" park, with waterside spaces for reflection and wellbeing.

Nature based solutions, such as surface water swales and raingardens, will be delivered both in the new neighbourhoods and the riverside public realm.

Stewardship of the City River Park has been considered in the plan, with funding expected from developer contributions, service charges and regeneration grants. However development funds cannot address all the legacy of 200 years of industrial activity on the River Irk, and a long-term programme of river restoration will be needed to enhance river habitat, tackle legacy industrial pollution issues such as from contaminated land and address barriers to fish migration. Cleaning up the river will be key to delivery of the successful regeneration of this area.

Opportunities such as this – a river valley on the edge of the most vibrant and dynamic city centre in the UK – are few and far between.

U&I

Mayfield

Spanning 6.5-acres alongside a newly-daylighted River Medlock, Mayfield Park will become Manchester's first major inner city park for over 100 years. It is intended to become the anchoring space for the wholesale regeneration of Mayfield, 24 acres of land near Piccadilly which has been a neglected brownfield site for decades. The park will be multi-functional, with a sequence of spaces from informal, through to more natural and wild: an urban square with a buzz of activities; open greens for lawn sport and informal play; adventure play areas; floodable meadows and biodiverse ecological areas beside the river; quieter spaces for escape and contemplation. Sheltered structures and areas will make sure it's a park for all weathers.

Critically, another 6.5 acres of Mayfield linked to the riverside park will be given over to new public space featuring old architectural railway furniture, and flexible spaces for cultural events and curated local experiences. Early in the regeneration process, the brownfield spaces were opened up for beer and food festivals in order to build an enterprise momentum and involve the community. The developer is also promoting environmental awareness amongst incoming residents and occupiers.

TEP

Sheffield City Grey to Green Project

Since 2014, Sheffield City Council, in consultation with city-centre businesses, has been implementing a multi-phase SuDs and greening project, converting highways and sealed surfaces into biodiverse landscaped walkways and pocket parks, all with sub-surface water storage.

Direct economic benefits have come from place-making, e.g. increased footfall in commercial areas, pop-up developments in and around the greenery, and stimulating the re-use of existing buildings. Indirect economic benefits come from surface water storage, civic pride and improved climatic resilience of the city centre. Economic appraisal of the £5.1m Phase 2 works estimates the investment could create 127 net additional jobs and support approximately £44.3m net cumulative GVA in a ten year period[4].

Riverbank Coffee

Riverbank Coffee and Venture Out

Riverbank Coffee is a social enterprise owned and run by four Urmston residents. They saw their local area changing for the better which meant more people using footpaths along the River Mersey. They set up Riverbank Coffee close to the Mersey. Since opening they have used profits to donate £3,000 to local charities and they plan to use Riverbank Coffee to run group walks, history tours and educational activities.

Venture Out is a small outdoor activities centre based in the grounds of Burnage Rugby Club, on the banks of the River Mersey. Venture Out uses the river, woodland, meadows, ponds and surrounding trails to provide canoeing and kayaking courses, Duke of Edinburgh Award expeditions, activity days and holiday clubs.

Groundwork Greater Manchester

Training and Green Skills

Groundwork Greater Manchester is providing unemployed young people in Rochdale courses in 'Low Carbon Careers', which include topics such as the natural environment, waste and recycling and introduction to retrofitting, combining classroom learning and work placement.

Groundwork also provides 'Green Teams' training which provides on the job training for young people in nature conservation and horticulture within local communities. The hands-on and outdoor nature of the scheme suits many trainees who did not do well in formal school setting and often have many barriers to getting into work, such as mental or physical health issues. Green Teams is the first step for many young people getting into horticulture.

The Royal Horticultural Society (RHS) Bridgewater gardens in Salford are also engaging young people through a School Gardening campaign, which provides support to schools and community groups – inspiring young people through the power of plants, offering free resources, projects and guidance to get them growing.

Keywords

nature recovery, re-naturalisation, involving people, manage conflict with recreation, river restoration, invasive species, fish passage, wetland habitats.

Wild Rivers

Strategy

Most of our river valleys are visibly green, with woodlands and grasslands dominating the floodplains. The valleys have many Sites of Biological Importance and priority habitats and are recognised as ecological networks in our Green and Blue Infrastructure Strategy. They are also places where people can find a connection to nature.

The river valleys support a significant proportion of Manchester's biodiversity . Natural England's Local Nature Recovery Strategy also recognises that the rivers, tributaries and the green spaces through which they run are the backbone of the City's Nature Recovery Network.

Water quality, invasive species, rubbish and barriers to fish passage still blight our river catchments. Our rivers and streams are almost all heavily modified by bank and channel engineering, including culverts, weirs and bank reinforcements; all of which reduce ecological value of the river and its floodplain. Some can be removed or modified to improve habitat connectivity. Even inner urban river reaches have some scope for greening, whether this is by artificial habitats fixed to banks or by establishing living walls on waterfront buildings.

Many rivers and streams flow through parks and greenspaces so there are opportunities to re-naturalise them and make them more attractive to wildlife and people. The science of river restoration is well developed and a great range of approaches are possible, depending on budget and objective.

River valleys can be seen as wildlife refuges; core areas from where wildlife can explore other parts of the city. Green links to and from the river valleys will help sustain the city's pollinators, birds and bat populations. Kingfishers have been sighted on the River Medlock in the city centre, showing the ability of nature to recover from decades of pollution and bring delight to thousands of inner-city workers and residents.

"All of a sudden a kingfisher was fishing there, and you could see little shoals of fish … and … these 3 dragonflies … all dancing over the river"[6]

Climate change, urbanisation and pests and diseases continue to pose a direct threat to river valley wildlife. By the mid-2030s Ash dieback disease will have killed about 8% of the city's trees, many of which are in the river valleys. We need to replace riverside trees to reduce overheating of the water column.

Re-wilding is a term used to describe landscape-scale response to the climate and ecological emergency, where natural succession is encouraged. In an inner urban context where human security is important, complete abandonment of land is not appropriate. However, as rivers are the City's most natural ecosystem, it is appropriate to identify habitat islands where a policy of minimal intervention and diversion of public access can be deployed.

Riparian habitat management will remain critical in most areas; planted woodlands will require thinning to promote a diverse understorey and ground flora, invasive species need to be controlled and floodplain grasslands require meadow management to sustain invertebrates.

The greatly increased awareness amongst business and society of the planetary climate and ecological emergency, coupled with Biodiversity Net Gain and carbon trading associated with development, means there will be greater financial and human resources available to river valley landowners to create, restore and enhance biodiversity.

Development within and near our river valleys has the opportunity to create new biodiverse spaces that will directly benefit river valley wildlife.

Visits to greenspaces are increasing rapidly and with a post-pandemic appreciation of the value of nature and Manchester's increasing population, there will be inevitable tensions between recreation and biodiversity. Recognising that measures to improve path surfacing and security and lighting can lead to disturbance, a two-strand response is required; firstly to increase the extent of land available to river valley wildlife and secondly to adopt a path management protocol that reduces tensions between citizens who use the river valleys and wildlife protection.

River valley wildlife is mobile so is affected by upstream and downstream conditions. Tackling physical and chemical barriers to fish migration and dealing with invasive species and pollution will require catchment-scale action, contributing to the work of the Natural Course programme, local Catchment Partnerships and working in partnership with riparian landowners and our neighbours in Stockport, Oldham, Trafford, Rochdale and Tameside

Nature-connectedness is an emerging field of environmental psychology, with higher levels of nature connectedness associated with people who claim good wellbeing.

Nature-connectedness helps drive positive environmental behaviours, which are needed to achieve several aspects of our strategy; e.g. rainwater conservation and de-paving in gardens, avoiding flushing unsuitable materials, addressing misconnected plumbing or tackling litter.

In summary, our river valleys are fundamental to the city's ecosystem and protection and restoration are at the heart of the City's emerging Biodiversity Strategy and the My Wild City initiative.

Dave Almond

Manchester City Council

Outcomes

River Valley Wildlife Priority Areas
RVWPAs are included in Manchester's Nature Recovery Network and managed to create, restore and enhance biodiversity;

Urban Wilding
Habitat refuges in river valleys are identified and left to natural succession where safety and security allows;

Publicly-owned Land
Habitats in river valley wildlife priority areas are all included in Biodiversity Net Gain enhancement plans;

Urban Pocket Parks
Habitat features are created along inner urban rivers: at least one feature per 500m of river;

Wildlife by Design
Development within or fronting inner urban rivers and river wildlife priority areas includes wildlife-friendly features such as living walls on blank elevations, green/blue/brown roofs, wildlife gardens;

Wildlife Corridors
River valley wildlife finds its way round the city using pollinator pathways, green corridors and clean rivers and streams. Barriers to fish passage and heavily-engineered banks are removed where possible;

Invasive Non-Native Species
Problematic invasive plants and animals are mapped and control plans for key species of concern are well underway by 2030;

Access to Nature
Everyone in the city has an easy chance to connect with river valley wildlife. A lighting and path management protocol is drawn up in consultation with all river valley users, to enable informal recreation whilst minimising disturbance and/or creating compensatory dark corridors.

Where and How

The Wild Rivers Key Diagram shows the following:

- *River Valley Wildlife Restoration Priority Areas*
- *River Valley Wildlife Enhancement Priority Areas*
- *Stepping Stone Opportunities*
- *Habitat Island areas of search*
- *Barriers to fish passage*

Enhancement Priority Areas are where an Ecosystem Service assessment shows that the land is already functioning well for biodiversity, so the priority is to continue managing it well and enhance its quality e.g. through long-term management plans, problematic invasive species control, provision of fish passes, habitat diversification. Within these areas, a small selection of Habitat Island Areas of Search is shown, where a form of re-wilding may be appropriate.

Restoration Priority Areas are where an Ecosystem Service assessment shows that the land currently functions poorly for biodiversity, but could do much better. This is usually because land is intensively managed or has limited woodland, meadow or wetland cover. The objective is to create or restore priority habitats, as well as managing and enhancing existing good quality areas. It is recognised many Restoration Priority Areas are public open space or sports grounds or flood defences, and it is not intended to remove or replace such uses. The Restoration Priority Area is an "Area of Search" for habitat creation opportunities between more intensive land uses.

Stepping Stone Opportunities are urban open spaces where introduction of trees, rain-gardens, and pollinator-rich planting will improve connectivity for wildlife. Reducing the extent of sealed surfacing will also bring climate resilience benefits.

The Natural Course website includes many links to information about river restoration in the Irk and Medlock Valleys.

Mitigation measures for heavily modified waterbodies to achieve good ecological potential are available as GIS layers in the Environment Agency's Catchment Data Explorer.

Policy

The outcomes require a strong policy framework, including:

Policies for protection and restoration of rivers and wildlife, and the promotion of SuDS and nature-based solutions in the Manchester Local Plan;

Implementing a Local Nature Recovery Strategy including policy to protect and restore natural assets in a Nature Recovery Network;

Policies for restoration of biodiversity in the corporate plans of the City Council and partner organisations working in development, infrastructure and estate management;

Partnerships

Many of the outcomes will be delivered through "My Wild City". This is the City Council's partnership with Lancashire Wildlife Trust. It is a programme to engage everyone living, working and studying in Manchester to help transform work places, gardens and our open spaces into a city-wide nature reserve.

The objective is a nature-rich city that puts wildlife right on our doorsteps. Funded by The Esmee Fairbairn Foundation, My Wild City is developing and delivering a 10-year vision for wildlife in the city.

The My Wild City team can help deliver the Wild Rivers outcomes by:

Working with the City's parks teams as they implement wildlife-friendly management practices in river valleys;

Developing river restoration programmes with the Environment Agency and Natural Course;

Working with public-sector landowners to deepen the biodiversity component of their estate management plans, especially in floodplains;

Encouraging citizen scientists to get involved in biological recording so that long-term trends are spotted, and the success of restoration initiatives can be monitored.

There is an important role for the third sector (notably Mersey Rivers Trust, RSPB and Groundwork Greater Manchester) who can engage with private and voluntary sector landowners over their land management arrangements and enable citizen scientists, anglers and nature conservation volunteers to develop local environmental enhancement projects as well as encouraging the basic joy of wildlife watching;

Finance

A key action is to develop a city-wide scheme to collect biodiversity net gain contributions, sponsorships and donations from development and business and distribute it to river valley wildlife priority areas. This scheme would need to form part of a Greater Manchester-wide environment funding scheme which allows for cross-authority projects to be developed.

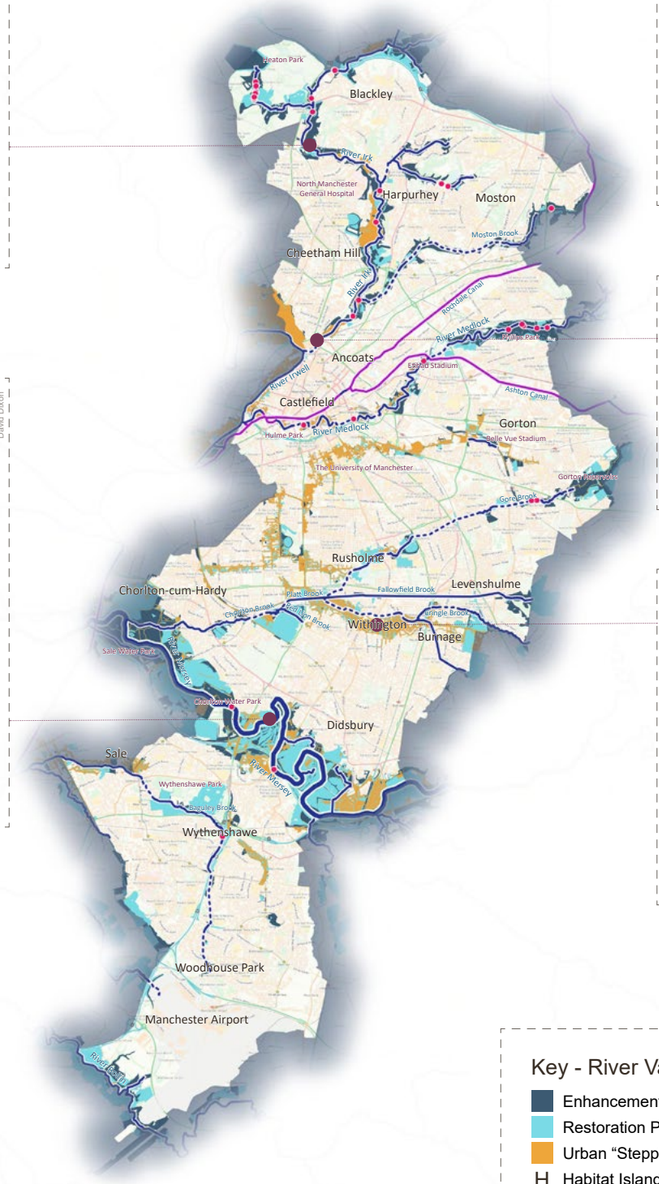
Wild Rivers
Key Diagram

Dave Barlow

River Wildlife Enhancement Priority Areas, shown in dark blue, are Manchester's top-performing biodiversity areas. These sites are in the top 20% of our city-wide Ecosystem Service assessment! But they are vulnerable to neglect, climate change, pests and diseases. Our priority is to bring them all into long-term management, tackle invasive species, look for opportunities to re-naturalise habitat and provide fish passes in the river where necessary.

David Dixon

River Wildlife Restoration Priority Areas, shown in light blue, are where biodiversity is limited but could do better. This is usually because land is intensively managed or has limited woodland or wetland cover. Many Restoration Priority Areas are public open space, sports grounds or flood defences, and it is not intended to remove or replace such uses. However, our city-wide Ecosystem Service Assessment shows there is scope for wetland habitat creation and tree-planting between the amenity uses. Sometimes intensive land management can be relaxed. All these measures will improve connectivity and resilience of the City's ecosystems.



Dave Almond

Habitat Island Areas of Search. A selection of sites are shown, where an urban wilderness approach may be appropriate, allowing natural succession to dominate, and providing interpretation to explain why nature has "taken over". These could also be used for long-term monitoring of urban wildlife in the face of climate change.

Frances Hesketh

Fish barriers, weirs and chemical problems prohibit fish from migrating and spawning.

Urban "Stepping Stones", shown in orange, are areas where creation of micro-habitats in built-up areas will improve connectivity for wildlife. These are areas of sealed surface in floodzones 2 and 3. Our vision is for a series of small-scale actions like de-paving of front gardens, wildlife gardening, rain-gardens, tree-planting, butterfly-friendly road verges.

Key - River Valley Wildlife Priorities

- Enhancement Priority Areas
- Restoration Priority Areas
- Urban "Stepping-Stone" Opportunities
- Habitat Island Areas of Search
- Fish Barriers
- Culverted sections

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Inspiration

Francis Hesketh

Redundant Weir Removals in the Irwell Catchment

In 2019 and 2020, two redundant weirs were removed on the River Tonge and the Eagley Brook in Bolton. The disused weirs, dating back to the Victorian eras stopped the natural movement of fish – mainly brown trout, which are predominant within this section of water.

The Irwell catchment is recovering following historic pollution from industry, and the removal or easement of weirs is carried out to deliver improvements in line with the Water Framework Directive.

This project forms part of the Environment Agency's five year plan, EA2025, which promotes health, equity and environmental enhancement.

The EA studied the up and downstream effect of removing other weirs in the Irwell catchment and found that, as well as improving passage of fish, river habitat diversity also improved, benefitting other fauna and flora. The EA has also removed or reduced weirs in the Rivers Irk and Medlock.

David Dixon

Mersey Life Project Portfolio

In 2009, the Environment Agency produced a Portfolio of site based projects, development options, research and monitoring specifications to drive improvements for wildlife and people within the Mersey catchment.

With a focus on people, wildlife and fish, information about the river was analysed to understand its ecology and how people take access to and make use of the river's environmental resources.

The Portfolio is a 25 year forward action plan which identifies the means and measures to sustain environmental enhancement. The projects can be delivered by a broad range of authorities, agencies and interest groups, and many could be adopted and integrated into local planning aspirations and policies.

The Portfolio includes several projects within Manchester, including footpath, vegetation management and habitat creation schemes.

Mersey River Trust

Bringing the Irk to Life

With support from the Greggs Foundation Community Urban River Regeneration Fund, Mersey Rivers Trust and Groundwork Greater Manchester are delivering environmental improvements and improved community access to the River Irk valley in the Harpurhey area as part of a longer-term multi-organisation strategy for "Bringing the River Irk to Life" (BRIL). The project is involving diverse local communities in building a local "Friends" group that will continue to look after their local river valley and providing safe, secure access for informal recreation, health walks plus opportunities for water environmental education and citizen science.

Mersey Rivers Trust is also working with local communities and angling groups to carry out river restoration work on other sections of the River Irk and its tributary streams. This work is complementing major water quality improvements by United Utilities and is starting to bring benefits, with brown trout now returning to the river for the first time since the industrial revolution.

Groundwork

Urban Greening for Biodiversity Net Gain – a Design Guide

The London Plan requires new developments to make urban greening a fundamental element of their site and building design, and to deliver net gains for biodiversity.

The Mayor and London Wildlife Trust's Design Guide shows how this can be done through design approaches that also help to create engaging, healthy and resilient places for people too.

It introduces simple design considerations for different types of urban greening features which can make space for nature in the built environments, and is relevant to anyone involved in the design of new developments. It is not a replacement for professional ecological or landscape advice, rather its aim is to inspire more projects to consider how they can adopt an interdisciplinary approach to make the city greener and wilder.

Mersey Rivers Trust - Mike

Clean Streams Project

Working in Charlestown, Gorton, Didsbury and Wythenshawe, Manchester City Council's flood team helped organise the community to clean and restore (where appropriate) 4.5km of watercourses, with tonnes of rubbish removed, habitat improved by planting marginal wetland plants, two new community orchards established and around 200 trees planted.

Over 1,000 local people were engaged, including local schools, youth groups, businesses and residents. They were encouraged to get involved and to take some ownership of their local watercourse.

Keywords

misconnections, problem CSOs, citizens, education, flytipping, nature-based solutions, research, biodiversity, tributaries, unflushables, good condition by 2027

Clean Waters

Strategy

Our citizens value clean watercourses and we are proud of the achievements of the past three decades, starting with the Mersey Basin Campaign and now continued by numerous bodies working in the Irwell and Upper Mersey Catchment Partnerships. Water quality in the City's rivers has improved significantly following major investment to upgrade wastewater treatment works.

Clean waterways are a social and economic imperative. The Water Environment Regulations require us to ensure our rivers achieve Good condition. At present all the City's rivers and tributaries are in Moderate condition. There are multiple and often site-specific reasons our waterways do not achieve Good condition. Our Clean Waters 2030 programme must address many different problems, so various strategies are required.

Litter, fly-tipping and unlicensed discharges to rivers and sewers are illegal and unacceptable. Our citizen's survey identified that littering and fly-tipping is a widespread problem and also showed there are many volunteers and communities who regularly clean up their local river. Enforcement, education and harnessing citizen power, co-ordinated at neighbourhood level can tackle these illegal activities.

There have been great improvements in urban river quality since the 1970s, but progress has not continued in recent years. Pollution from urban areas is still impacting on water quality and aquatic plants and animals[8].

Diffuse sources of pollution from households and organisational premises are an ongoing problem. This includes poor flushing habits and misconnections of washing machines and kitchen and bathroom wastewater into surface water drains rather than sewers. Problems also arise from the disposal of paints and oils into surface water drains combined with the flushing of wipes and sanitary products. Disposal of fat from catering establishments into sewers mixes with wipes and other non-flushable items to create 'fatbergs' that are the prime cause of blocked sewers and leads to untreated sewage overflowing into our rivers. This will require awareness-raising and a sustained programme of auditing the public sector estate and supporting householders and organisations to make the necessary changes.

Point sources of pollution arising from highways runoff, former landfills and industrial sites are a major problem for our rivers. Where these cannot be removed, it is necessary to mitigate the problem, for example by reducing rainwater infiltration into contaminated land or by treating discharges prior to their reaching rivers, ideally adopting nature-based solutions such as filtering wetlands.

Manchester's storm water infrastructure was largely installed in the late 19th century as a combined sewer and storm water system. It was designed to cope with heavy rainfall by the installation of "safety valves" on the sewerage system (called Combined Sewer Overflows or CSOs) to prevent sewers "backing up" and flooding properties with sewage. This means that a mix of storm water and untreated foul sewage spills into rivers from the CSOs at times of high rainfall. Whilst there has been substantial investment by United Utilities over the last 30 years to resolve problematic CSOs that cause adverse environmental or aesthetic impacts (e.g. "sewer litter"), some problematic CSOs remain to be addressed within the City and upstream.

The City Council has a key role to play in our Clean Waters programme through its management of its own estate, its housing management, highways maintenance and planning roles and through its elected members and neighbourhood teams assisting with education and awareness-raising.

United Utilities has a key role through its operational management of the sewerage network and its regulated investment programme to address sewerage water quality issues.

The City and United Utilities are working together on the Drainage and Wastewater Management Planning process. This includes partnership working to better manage surface water, for example by diverting it away from combined sewers or measures to reduce the speed and volume of surface water entering the combined sewerage system in the first place. This partnership work will also need to involve the Environment Agency, TfGM, Highways England and others to consider SuDS and nature-based solutions or surface water separation where feasible.

Many other bodies are actively engaged in partnership-working towards water quality recovery (e.g. Natural Course, the local Catchment Partnerships, eNGOs). Catchment-wide programmes of river restoration, education, nature-based solutions and retrofitting SuDS will be required.

Green infrastructure can help reduce the speed and volume of surface water entering the combined sewerage system. This includes water butts, rain-gardens, swales, attenuation ponds, tree planting and other measures discussed in the Sponge City chapter.

Digital systems offer great potential to reduce pollution. Real-time sewerage flow data combined with weather forecasts and storm water attenuation measures can give drainage managers early warnings of potential spillages. Wuhan has adopted digital technology to monitor and display real-time information about available water attenuation and storage measures. Manchester's association with Wuhan and our city's strong research capability give an opportunity to implement innovative digital water management solutions.

Restoration of rivers can also contribute to achieving clean waters. This includes reconnection of rivers with their floodplains, tree-planting and wetland habitat creation in floodplains. We already have detailed information about restoration opportunities in all Manchester's watercourses. Full restoration is not always feasible due to urbanisation and in some cases where river banks are formed of potentially contaminated material, so the "least-worst" solution may be non-intervention to avoid release of contaminants.

Our Delivery Plan includes early actions under the Clean Waters theme for the period to 2025. It will indicate future programmes for development, aligned to the water industry's 5 year regulatory planning cycle (the current cycle ends in 2025 and the next cycle will run from 2025 to 2030). The Delivery Plan also includes research and innovation that will be necessary to fully achieve the Clean Waters outcomes.

Mersey Rivers Trust

Outcomes

Tackling Illegal Activity
Litter, flytipping and unlicensed discharges are seen as completely unacceptable;

Point Discharges
CSOs, highway drains and other consented point discharges are assessed and, where polluting emissions are prioritised as problematic, are addressed by 2030. Manchester City Council, United Utilities and Environment Agency are recognised as national leaders in partnership working to improve urban water quality;

Citizen Power
Citizens and businesses take active steps to avoid pollution flowing into the sewer system. The City Council uses its influence to assist United Utilities with education campaigns on bad flushing habits, fats/oils/greases, misconnections, safe paints and oils disposal and domestic greening;

River Restoration
Reach-specific water quality and river restoration plans are implemented in line with those water quality issues identified by the EA as “reasons for not achieving good status”.

Misconnections
Surface water drainage misconnections are no longer found on City-owned/managed property and occupiers are engaged in tackling them. End-of-pipe solutions are investigated where multiple problems appear in the same sewer system;

Historic and Ongoing Pollution
Problematic discharges from highways, closed landfill sites and historic waste sites to watercourses are removed or remediated.

Where and How

Point Source Pollution

The Our Rivers Our City webmap shows the location of various point sources of actual or potential pollution. It is stressed that these may not cause actual or ongoing pollution.

- *Consented Discharges, including CSO locations*
- *Authorised and historic landfills and waste sites*
- *Locations of litter and flytipping highlighted by community survey*

Highway discharges are point sources which are not yet mapped publicly.

As part of the Clean Waters action plan, all point sources should be assessed with the objective of remediating or mitigating the most problematic by 2030, in accordance with prioritisation by the Environment Agency in dialogue with the City and other stakeholders. This can include nature-based solutions and/or green infrastructure solutions. This work should be integrated into water industry investment strategies for AMP8 and into the Drainage and Wastewater Management Plan (see Policy and Partnerships section).

Diffuse Sources of Pollution

The problems of misconnections, poor flushing habits and the inappropriate disposal of fats, oils, greases and paints require city-wide education and action, starting with the public sector estate. Campaigns targeted at individuals, community groups, businesses and schools are appropriate. This is a city-wide issue but actions to audit the public estate can be co-ordinated by different portfolio-holders, guided by the city's Water Champion.

River Restoration

The webmap contains some information from the Natural Course Evidence and Measures Study on problems in the Rivers Irk and Medlock.

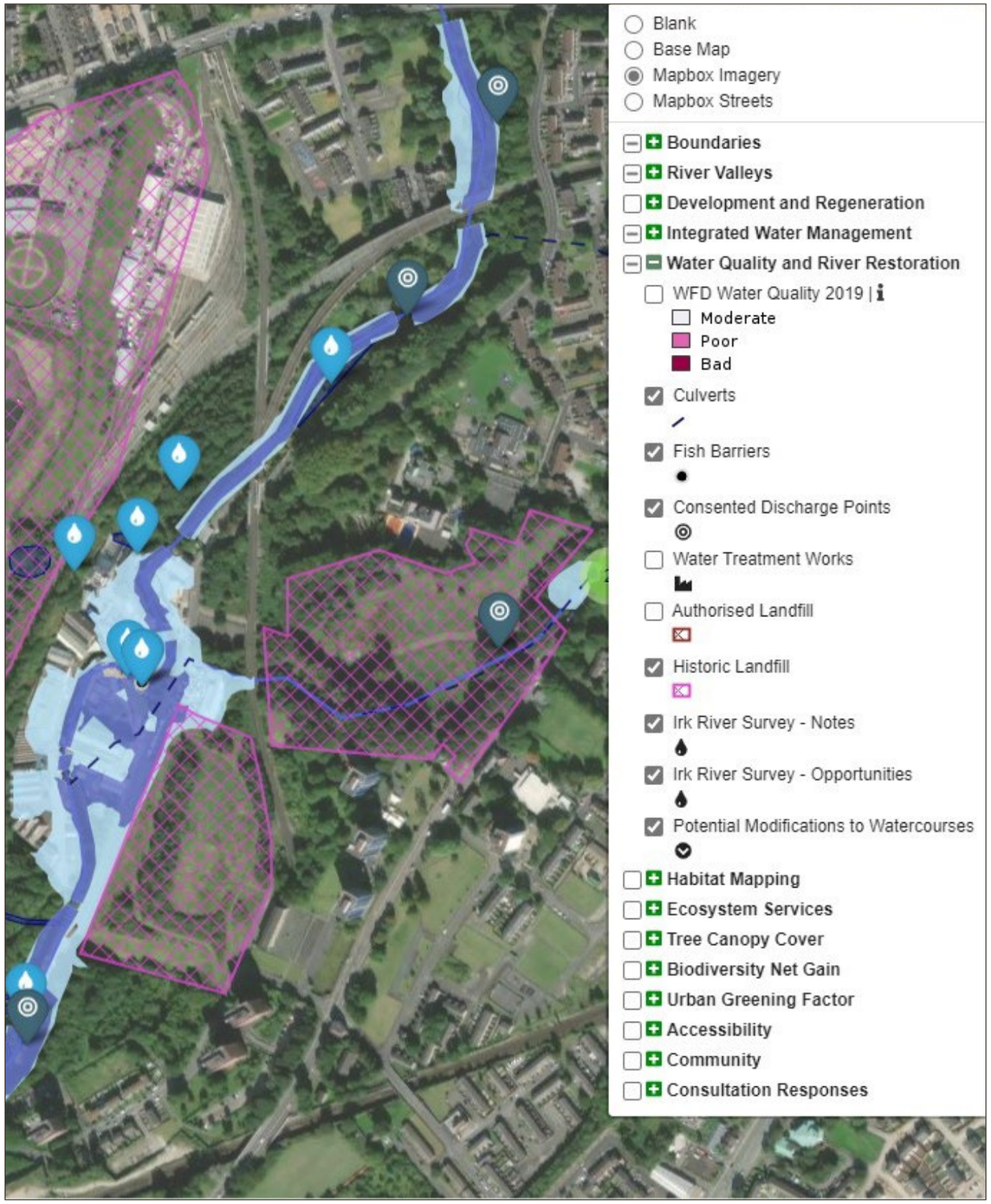
Policy and Partnership

United Utilities' Drainage and Wastewater Management Plan, developed in consultation with the City Council, provides the policy framework for continued action in addressing problematic discharges to waters, implementing SuDS and nature-based solutions to improve water quality.

Local Plan policy on watercourse restoration and urban greening standards in new development will attract funds for restoration and encourage good practice in SuDS and nature-based solutions to water quality issues.

Finance

The Our Rivers Our City team can help source green finance and provide public sector land and resources to extend the number and effectiveness of clean water projects implemented by United Utilities and the Environment Agency, in the short term and particularly in the next water industry investment cycle from 2025 to 2030.



Inspiration

Abdul Delati

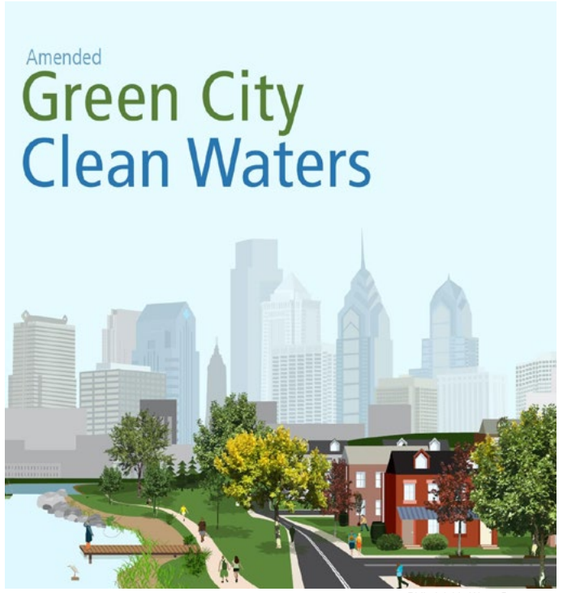
Green City, Clean Waters

Philadelphia is a large city with a combined sewer system serving 60% of the city. During wet weather, many of the 19th century sewers overspill, releasing stormwater and diluted sewage into local rivers. The Philadelphia Water Department has a 25 year plan to reduce at least 85% of this pollution.

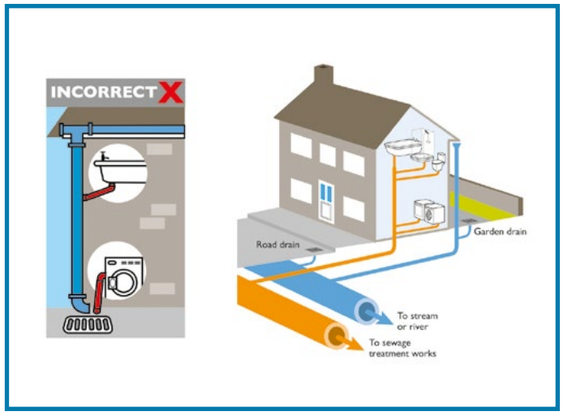
The plan includes traditional engineering solutions to improve capacity at water treatment works. Most exciting is its long-term plan to reduce the volume of water entering the sewerage system through "green tools" i.e. nature-based solutions such as raingardens, swales and tree-planting.

There is a parallel community engagement programme which encourages individuals, businesses, community groups and schools to take action. For example residents can obtain free rainwater barrels or discounted landscape upgrades. An education programme raises awareness of simple "at-home" projects that protect rivers.

The programme started in 2011 and, by 2021, had installed 2,800 green tools at 800 sites and kept 10.2 million m3 of polluted water out of the city's rivers. An interactive map helps people to see the location of green tools in their neighbourhood.



Philadelphia Water Department



Mersey Rivers Trust

Education and Engagement on Misconnections

Mersey Rivers Trust worked in partnership with United Utilities and Environment Agency to target education and engagement about misconnections with households where there is a sewer and surface drain system. Simple diagrams have been produced to indicate how washing machines, dishwashers, showers, baths and sinks should be connected to the sewer rather than the surface water drains that flow directly into the river.

There are further opportunities to involve plumbing professionals and citizen scientists in the identification of contaminated surface waters and education programmes.

Cooker King

"Stop the Block" Education Campaign to Prevent 'Fatbergs'

United Utilities has carried out a wide range of customer education and engagement campaigns to reduce river water quality issues from operation of CSOs caused by blockages in the sewer system.

These blockages arise from the flushing of wipes, sanitary products and other non-flushable items, along with pouring fats, oils and grease down combined sewer drains. Together these can create what is known as a 'fatberg' (a congealed mess of fats, oils and greases that congeal with 'unflushables' such as wipes to form a hard soaplike substance in the sewer. Education campaigns include a joint United Utilities and Rivers Trust campaign to stop flushing wipes, as well as United Utilities' new "stop the block" campaign.

There are further opportunities to involve citizens and business in raising awareness of sewer litter and tackling problem hot-spots.

Todd Diemer

Surface Water Separation to Address CSOs

Working in partnership with local authorities, United Utilities has invested in projects to separate out surface water from the combined sewer system to address CSOs. This is an expensive capital solution involving the laying of new surface water drains to stop surface water entering the sewer system; it is not feasible everywhere, particularly in densely populated areas.

Surface water separation was a key part of the United Utilities investment programme on the Fylde coast to improve Blackpool's bathing water quality which substantially reduced the number and magnitude of spills from CSOs.

Manchester City Council

River Restoration at Clayton Vale (River Medlock)

The award-winning River Medlock restoration at Clayton Vale involved a £250,000 transformation of 300m of river channel just upstream of Philips Park and the Etihad Campus. This has created a more natural stretch of river to encourage habitats for wildlife, resulting in increased aquatic biodiversity, including a return of brown trout, a key indicator species of river health.

The River Medlock was originally modified over a hundred years ago by lining the channel with concrete and bricks. This provided essential power and resource for local industry, but damaged natural habitats in the process.

The restoration work involved removal of the brick lining of the channel, concrete foundations were dug-up and the watercourse widened. Two weirs were removed which slowed the flow of the water and riffles and runs were added to provide protection for fish and insects. Deep pools were also created to help with water quality by reducing sediment build up.

The project was led by the Environment Agency and supported by Manchester City Council and Groundwork with lots of community engagement. It has benefited both wildlife and local residents by enhancing a fantastic place for nature-lovers, walkers, families and anglers, within just a couple of miles of Manchester city centre.

Mersey Rivers Trust

Dave Barlow

Firs Farm Wetland, London Borough of Enfield

The Firs Farm wetland nature-based solution provides multiple benefits to over 100 homes and to Pymmes Brook in Enfield. The wetland stores water during intense rainfall for flood protection as well as cleaning polluted water from sewer misconnections and highways outfalls from the A10 trunk road. It also provides a nature sanctuary for wildlife and the community to enjoy.

The wetland was created by the local rivers trust (Thames21) in collaboration with Enfield Borough Council, along with many volunteers from The Friends of Firs Farm. The wetland has transformed an underused urban public park alongside the creation of a cycle-way and network of footpaths, outdoor classroom and several seating areas to encourage recreation and access to nature along Pymmes Brook.

Matt Doran

TfGM: Greater Manchester Transport Strategy 2040

This strategy includes policies to address pollution from highways affecting water quality of rivers in Greater Manchester through improvements to blue-green infrastructure, including through Sustainable Urban Drainage schemes (SuDS), bio-remediation measures and use of tree pits. Such measures link to the TfGM ‘Streets for All’ approach which is focused on nurturing the distinct character of each street in Greater Manchester based on a good understanding of what local communities want from their streets and making them less polluted, safer and more welcoming for all.

Keywords

access to nature, mental wellbeing, security, perception, inequality, cultural values, visitor hubs and gateways, greenways, city-centre rivers, river guides, wayfinding, activity plans

Access to Water

Strategy

Our Rivers Our City aims for greatly increased access to water by Manchester's people, recognising concerns over safety and personal security and maintaining wildlife and natural heritage.

There are two aspects to the strategy:

1. Improving the availability and ease of access to water;
2. Increasing the actual number of visits to river valleys.

Although limited in extent, research on exposure to inland water shows benefits to mental health. People who experience water report better wellbeing, restoration and perceived quality of life. Some research suggests improved outcomes for affective disorders such as depression[9].

Rivers and canals have a crucial role in reducing stress and perceived poor quality of life, which is a significant problem in Manchester.

Visits to the natural environment have increased by 38% since 2009, mostly in green spaces close to home. However there are significant inequalities which Manchester, as a global city must tackle. Low income groups, ethnic minorities and older people make fewer visits, so miss out on mental health benefits[10].

Inequalities in access to green and blue spaces and a clean environment prevent many people from living happy, healthy lives. £2.1 billion per year could be saved in health costs if everyone in England had good access to greenspace[11].

River valleys are not neutral spaces and can inadvertently exclude certain groups of people. Different communities and genders have varying levels of confidence and enjoyment when near water or when in wooded areas. Research from the Queen Elizabeth Park, along the River Lea in London[12], suggests that naturalistic landscapes appeal much more to people with white British background than other ethnicities, so there is more work to do to open up our river valleys to all. Play areas, allotments and wildlife-watching are activities that have a broad appeal, so there is scope to create opportunities for these in our valleys.

Nevertheless we must actively seek inputs from a full range of communities, ethnicities, abilities and genders to ensure that our river valleys are equitable spaces, welcoming to all.

There is potential for conflict between user groups (e.g. pedestrians and cyclists), safety fears near running water, fear of anti-social behaviour, concerns about personal security, and also a tension between managing valleys for wildlife and people.

We must focus on wayfinding; creating welcoming and secure spaces, particularly at visitor hubs and at "gateways" into river valleys.

Within the river valleys, we can do more to support multi-user routes, including the use of welcoming lighting, surfacing, sightline management, seating, publicly-accessible toilets, cycle maintenance hubs and natural play areas, plus helping with wayfinding.

There are still several pinch-points where there are connectivity gaps within valleys. New landscape features need to be flood resilient. Vegetation can be used for screening or may need to be managed to increase daylight and open up interesting vistas.

Community engagement schemes, such as volunteer River Guides, will help to sustain safety and security through surveillance and pro-active participation in volunteering and themed guided walks, e.g. heath walks, local history trails, nature walks, after-dark experience.

The process of improving access and restoring rivers involves numerous stages of planning, design and implementation. Decisions should actively consider what different cultures within our community value about their river valleys. Participatory design techniques are needed to co-create better access.

Digital technology has an increasing role to play in wayfinding and activity-planning. This includes assisting and encouraging people to find their way to river valleys, paths, visitor facilities, reflective spaces, and enabling people to report on their experiences. It can also contribute to environmental and heritage education through digital interpretation boards linked by QR codes and/or interactive digital maps.

There is no national blue-space access standard but Manchester can pioneer its own, building on work it has previously commissioned on the Nature of Hulme.

Our Local Voice Mersey

Outcomes

Continuous Multi-user Routes
Fully supported routes are established in the river valleys, including appropriate lighting, permeable surfacing, sightline management, publicly-accessible toilets, cycle maintenance hubs, natural play, seating; all considering flood-resilience;

Wayfinding
Strategies are in place for main rivers and tributaries, including signage, digital apps, interpretation of natural and cultural histories, considering buried / hidden rivers as well.

Blue-space Access
Standards are developed for Manchester, improving physical and visual access to water particularly in nature-deficient neighbourhoods;

Communities
Neighbourhoods are engaged in management of access, sustaining safety and personal security through surveillance and pro-active participation in waterside walks, volunteering, etc.

Welcome for All
All abilities, cultures and genders feel that the river valleys and waterfronts are welcoming and safe places, with a significant increase in the number and diversity of people accessing their river valleys for recreation, health, wellbeing and connecting with nature.

Where and How

The Access Key Diagram shows

1. *Community Greenways for sections of the Rivers Irk and Medlock, Moston Brook, Chorlton Brook and Baguley Brook: here the aim is to enhance existing routes by addressing pinch-points, making routes more welcoming and accessible to all, improving wayfinding and visitor facilities; whilst respecting local character and biodiversity. See Connswater Community Greenway and Bridgewater Canal case studies*
2. *City Blue Lines – the city centre reaches of the Rivers Irk and Medlock which are currently invisible and/or unexplained: here the aim is to use wayfinding and digital technology to connect places of architectural, cultural and historic interest along the watercourses. See London Low Line and Thamesmead Lighting case studies.*
3. *The Mersey Valley: a city-regional day visitor destination which also functions as a community greenway.*
4. *Gateways and Hubs which offer visitor orientation and enhanced facilities for users of the river valleys.*
5. *Nature-deficient areas: These are Lower Super Output Areas within walking distance (300m) of the rivers and tributaries, in wards that have lower tree canopy cover than the city average. Areas that also experience high levels of health deprivation (top 20% on Index of Multiple Deprivation) are shown as priorities. Here the aim is to find ways to improve peoples' access to the river valleys which are a vital mental health resource.*

The Our Rivers Our City webmap provides further detail to help devise locally-specific action plans, for example:

Existing and proposed cycleways and Bee Lines Network;

Community Facilities such as schools, health centres, sports and leisure centres;

Ecosystem Services Assessment which illustrates how well each parcel of land delivers health and wellbeing services;

Consultation responses, notably areas where stakeholders identified specific access-related challenges and ideas.

Policy

Local Plan policy offers the opportunity to improve access to bluespace. A Manchester Bluespace Access Standard could be developed, identifying areas where there is a rectifiable shortfall in quantity or quality of access to river valleys. An interim solution would be to prioritise access improvements in nature-deficient priority areas experiencing health deprivation (see Access Key Diagram).

The River Valley Action plans, including "Activity Plans" (see below) could become material considerations in planning decisions. Given the critical importance of the river valleys for health and wellbeing, the tests for developer contributions may be met for residential developments generally and for other developments which affect access to the river valleys.

In order to broaden the engagement of Manchester's diverse communities with the river valleys, any proposals for access improvement and visitor facilities should go through a participatory design process.

Partnership with Community and Stakeholders

There are multiple groups and individuals with interests and experience in access and visitor management, so it is recommended that consultation and broad agreement is reached on the following:

An Activity Plan for each river valley, including the location of principal visitor hubs and gateways, the scope of events programmes and arrangements for wardening;

A Path Management Protocol and Code of Conduct for shared routes; balancing the needs of different users and wildlife;

Such consultation and documentation is most appropriately led by the City's Parks team, given their specific blend of experience in the sector.

Positive Action on Inclusion

Research is needed on how best to actively draw under-represented groups into the river valleys; and subsequently to develop a "positive action" approach to increase representation by minorities and special interest groups in river valley governance and access.

Such research and consultation is most appropriately led by the City's diversity and neighbourhood teams and Groundwork's Communities team, who have specific knowledge and experience in this area.

This is an important piece of work for the City Council. If done well, it can deliver important aspects of the City's 2025 vision that greenspaces are not currently delivering fully.

Finance

Planning conditions, developer contributions and traditional grant schemes are likely to continue to be the main source of funds for access enhancement. Partnership with business will help deliver some of the outcomes and actions, notably the city centre blue lines and the main visitor hubs.

The potential for impact investment in terms of avoided healthcare costs should be explored, particularly for GP's "green prescriptions", health walks and green gyms.

Community groups can access grant funding for small-scale projects at a neighbourhood scale.

Access
Key Diagram

Matt Dunn

Irk and Irwell Blue Line

Urban Wayfinding following the line of the buried Irk through Victoria to the confluence with the Irwell and southwards along the City's boundary with Salford to Castlefield. Features such as the viaducts at Red Bank and Castlefield can tell the story of the relationship between waterways and other infrastructure that underpinned the City's historical growth.

Matt Dunn

Medlock Blue Line

Waymarking the line of the river through the City Centre, where possible creating new public realm, waterfront pocket parks and walkways.

TEP

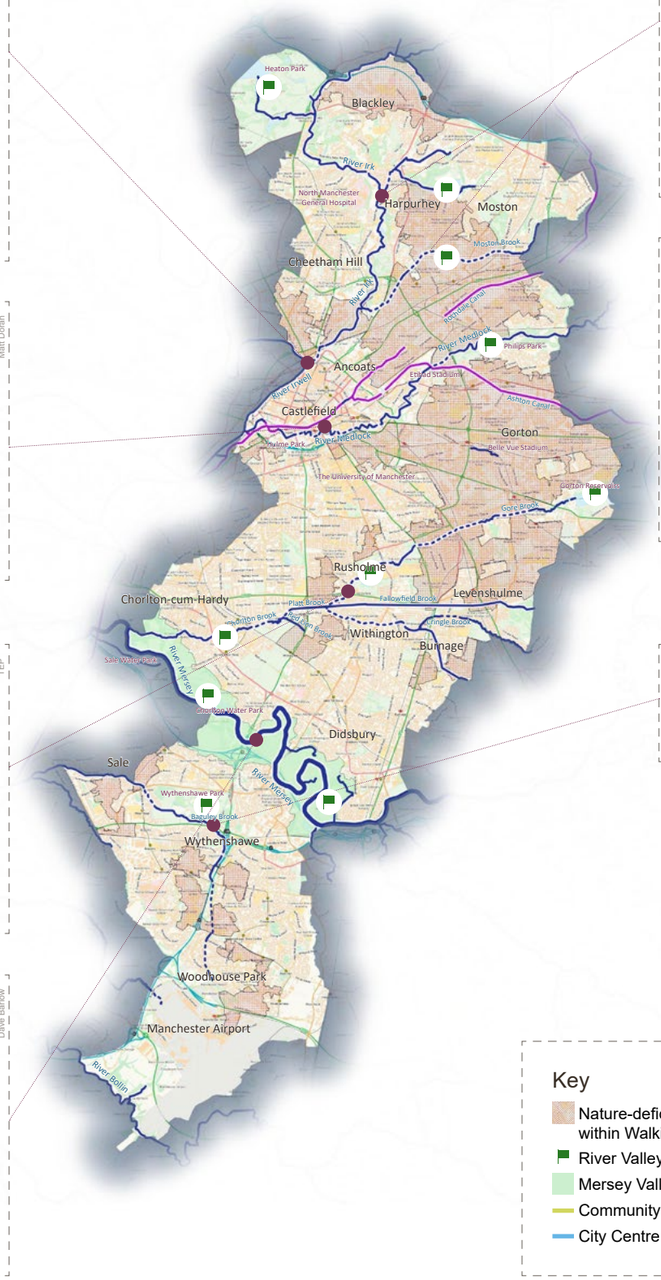
Chorlton Brook Community Greenway

Linking green spaces along the Chorlton Brook, Platt Brook and Gore Brook as far upstream as the Gorton Reservoirs and Debdale Park.

Dave Barlow

Mersey Valley

Community surveys highlighted the importance of the Mersey Valley to south Manchester residents and the desire to make improvements to the TransPennine Trail, river access points, seating, path surfacing and wardening.



North Manchester Community Greenways

Pedestrian-friendly waymarked trails from the Irk City River Park at Victoria North, northwards along the River Irk to Heaton Park and along the Moston Brook to Oldham.

Groundwork

TEP

Medlock Community Greenway

Pedestrian-friendly and welcoming trails from Great Ancoats Street past the Etihad Stadium through Philips Park and Clayton Vale, linking a series of parklets and open spaces along the Medlock and the Ashton Canal.

Baguley Brook Community Greenway

Opening up access to the Baguley Brook and celebrating its flow through Wythenshawe Park.

Key

- Nature-deficient Communities within Walking Distance of a River/Canal
- River Valley Destination Parks
- Mersey Valley
- Community Greenways
- City Centre Blue Lines

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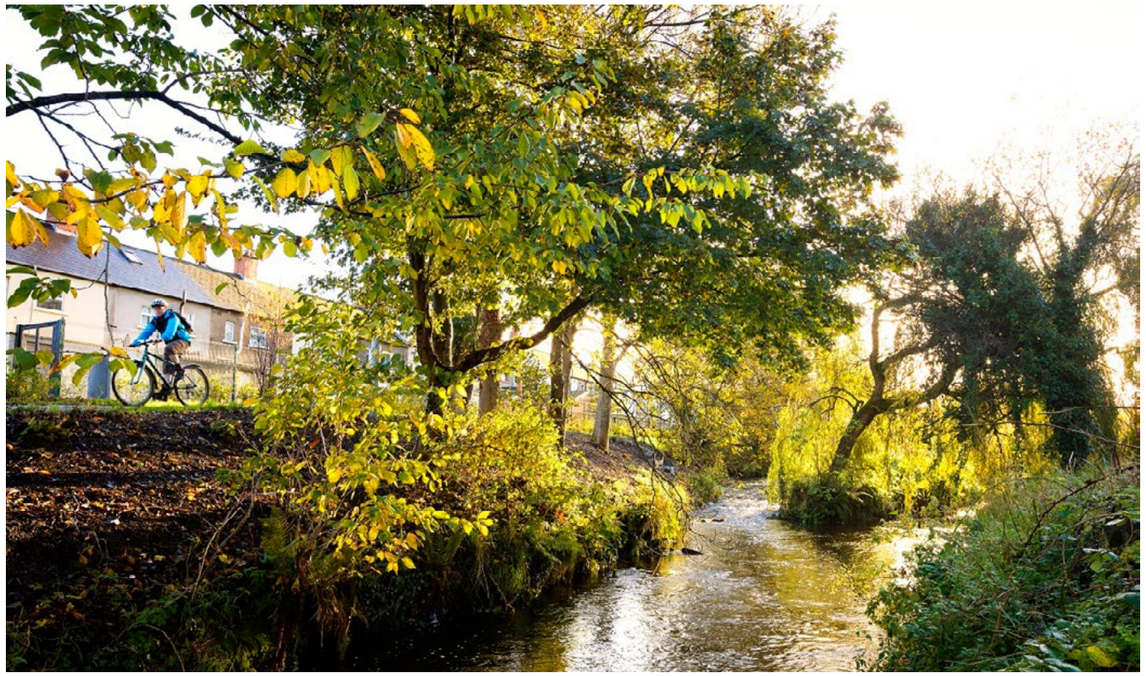
Inspiration



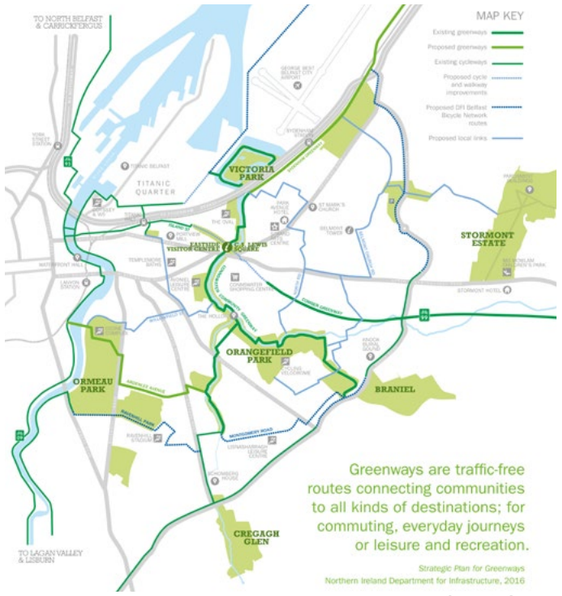
Paul Hogarth

Connswater Community Greenway, Belfast

The Connswater Community Greenway is a linear park through East Belfast, following the course of the Connswater, Knock and Loop Rivers, connecting the open and green spaces and incorporating a flood alleviation scheme to protect over 1700 properties. The Greenway has created vibrant, attractive, safe and accessible parkland for leisure, recreation, community events and activities. First conceived in 2001, it is a long-term investment which has delivered:

- 15Ha inner-city parkland;
- 12Km of foot and cycle paths;
- A new events space – the C.S Lewis Square;
- 14 new/improved bridges and crossings;
- Connecting 23 schools and colleges;
- 4km of rivers cleaned and flood alleviation provided;
- Wildlife corridor from Belfast Lough to Castlereagh Hills.

It has won numerous awards for its place-shaping quality and crucial to the success has been the active involvement of communities from different heritages.



Connswater Greenway

Better Bankside

The Low Line in South London

The Low Line is a walking destination which celebrates the heritage of the railways which have been part of the London Bridge area for over 150 years. It follows places of architectural and historic interest. It connects diverse neighbourhoods and communities, linking existing and new hubs of creativity, entertainment, and industry. Its opening has provided enhanced access, connectivity, and public spaces, as well as improved economic prosperity through repurposing underused or empty arches.

The Low Line was coined by a Southwark resident and the concept was developed in partnership with businesses, civic societies and Southwark Council. The Low Line is a waymarking and place-making strategy suitable for Manchester's city centre where the rivers Irk and Medlock are not very visible.

Matt Doran

Nature of Hulme

This study used detailed GIS analysis and community consultation to identify neighbourhoods with below-standard access to greenspace. The work has informed local projects and action plans, with strong buy-in from community leaders.

Bridge Water Canal

Bridgewater Way

The Bridgewater Way is a regeneration project, creating a 65km route for walkers and cyclists along the Bridgewater Canal, into Manchester City Centre.

The project is improving the Canal towpath by creating new access points and where possible widening the surface to allow cycling and making the towpath a safer and more appealing route.

Trafford Council has upgraded around 17km of towpath for use by cyclists, which resulted in massive increases in cycling of around 380%, measured from opening to 2020.

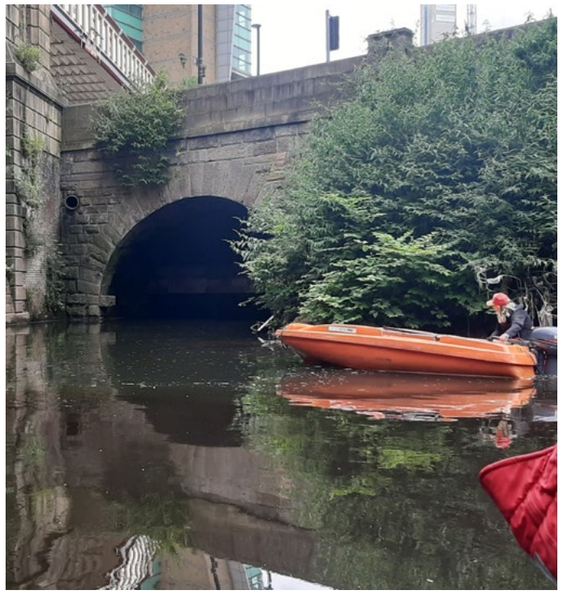
"Share the Space, Drop Your Pace" is the towpath code of conduct which was drawn up in consultation to reduce conflict between cyclists, anglers, boaters and pedestrians.

Mersey Rivers Trust

Angling Trust Voluntary Bailiffs

The Angling Trust runs a scheme where members of the public can be “eyes and ears” on the river, spotting illegal fishing and related damage to fish habitats. The volunteers are provided training, uniforms and equipment.

They are not required to put themselves at risk, and if they spot potentially illegal activity, they report to professional enforcement teams. Many volunteers find it to be a great way to put their spare time and knowledge of fishing to use. The Angling Trust has an inclusive approach and the scheme is part of the National Council for Voluntary Organisations.



Mersey Rivers Trust

Mersey Rivers Trust

Fishing on Prescription

NHS patients in North Manchester were some of the first in the UK to be recommended fishing to improve their mental health. Greater Manchester Mental Health Trust has partnered with a local fishing organisation, Tackling Minds, with the aim of helping patients overcome issues such as depression and anxiety.

The group, initially founded by army veterans but now expanded to welcome others, uses local ponds such as in Manchester City Council-owned Boggart Hole Clough. Funding is supplied by the Health Trust, local authority and the Angling Trust.

Angus Mill

The Moorings, Thamesmead – Lighting an Urban Waterside

A riverside pedestrian underpass was made more welcoming using a welcoming lighting and art scheme, co-designed with local residents and young people.

The co-design process included a guided night walk around King’s Cross and a one-day workshop to explore different ‘atmospheres of light’ and begin to produce unique ideas for the reimagined underpass. A key idea was to light trees and water in colour to add a sense of wonder and connect the underpass to the surrounding nature.

The improved underpass is lit by a simple, elegant and robust lighting detail which illuminates a beautiful tile mural. Lighting to the artwork also provides functional light to the underpass accentuating a gateway into the site.

Despite a limited budget and challenging installation and maintenance conditions, the lighting design accentuates the space and artwork while also being very discrete. The process was managed by housing provider Peabody, involving specialist lighting designers, artists, a local youth club and students from Woolwich Polytechnic.

Keywords

sponge parks, urban greening factor, nature based solutions, SuDS hierarchy, disconnections, green finance, city exemplar, flood zones, resilience, sewer capacity, citizen activism

Sponge City

Strategy

Sponge City activity is a term which includes many measures to capture and store rainwater within the landscape, slowing its flow on the way into urban drainage systems and rivers. A sponge city sees surface water as a valuable resource, rather than a problem that must be moved downstream as fast as possible.

Sponge city actions can be carried out at many scales. Householders can use water butts, gardeners can create raingardens, businesses, schools and other premises can create larger raingardens, swales and use permeable paving. There is particularly opportunity for new housing to incorporate these measures from the outset, supported by planning policy.

New development can consider permeable driveways, blue/green roofs and living walls. Tree-planting, especially when combined with infiltration trenches is widely possible. Our city's highways and pavements need to be transformed by adopting sponge city design standards to reduce surface water runoff.

Sponge city actions are sustainable drainage solutions (SuDS) and in many cases offer nature-based solutions (NBS) to the risks of surface water flood damage to land and property.

There is now a robust evidence base, much derived from pioneering work in Manchester, about the climatic and economic benefits of sponge city actions. Manchester also has a good track record in installing and managing NBS features, notably the West Gorton Park – "the park that drinks water".

By Aggregating SuDS projects at a number of locations, investment opportunities can be developed at a scale that provide a worthwhile return to investors as well as water management benefits at a catchment scale.[13]

Manchester has global relationships with other cities which are implementing SuDS and NBS. This is through the Grow Green programme and the city's long-term relationship with Wuhan, the Chinese city that has actively re-shaped its urban fabric with hundreds of sponge city features. Manchester is well-placed to provide international leadership on the challenges of installing and managing sponge city features in a dense urban fabric and engaging citizens.

Sponge city features bring several other benefits. They

- *Help weatherproof a rainy city;*
- *Provide shade and cooling in an urban heat island;*
- *Tackle flood risk at or near source;*
- *Contribute to water quality improvement;*
- *Contribute to increasing green infrastructure;*
- *Often deploy nature-based solutions, hence add biodiversity;*
- *Provide climate change resilience to the threat of more intense rainfall events*

Because of these multiple benefits, sponge city actions will naturally draw in partnership funds and delivery support.

Sponge City action is consistent with national policy that encourages application of a "SuDS hierarchy" in new development, biodiversity net gain and good design. Emerging policy tools such as the "Urban Green Factor" can be adopted to drive developers towards more permeable and nature-friendly approaches to building. Influencing national government to remove the automatic right for developers to connect to public sewers will also incentivise increased take-up of sponge city solutions as part of new development.

Yet much of Manchester is already built-over and covered by sealed, impervious surfaces with little vegetation. There are still many funding, institutional and policy blockers and inertia points which prevent widespread and rapid retrofitting of SuDS and NBS into the urban fabric. If we can overcome these blockers, the city will enjoy significant economic benefit in terms of place-making and climatic resilience.

Mark Waugh

Outcomes

Householders
People are active water managers: e.g. de-paving of front gardens, rainwater storage, rain-gardens;

Climate-resilient Design
New building and infrastructure is green and permeable – using a “sponge score”;

Sponge Parks
Civic parks and gardens have sponge park features, delivering tangible flood mitigation benefits to their neighbours;

Nature-Based Solutions
Surface water sewerage disconnections and landscape SuDS or NBS features are encouraged on the City Council’s built estate, on City highway networks and amongst City-led Housing Providers;

A Valuable Resource
Surface water is seen as a valuable resource. There is a shared understanding and commitment across the public sector and lead developers about the SuDS hierarchy and management of surface water as a resource.

Global Leadership
Manchester is an exemplar of good practice in management and adoption of SuDS and sponge city NBS approaches.

Where and How

The Sponge City key diagram shows:

1. *Strategic Regeneration Areas where relatively rapid change to the urban fabric is expected. This brings an opportunity to install SuDS and NBS, backed up by potential Local Plan policy requirement for achieving climate resilience. These areas include Strategic Regeneration Frameworks districts and other area masterplans where development will be led by design guides and adopted development frameworks*

2. *Suburban areas where there is currently a high proportion of sealed surface and low tree canopy, evidenced by an Urban Green Factor score of less than 0.2. As rapid change in the urban fabric is less likely here than in Strategic Regeneration Areas, a mix of smaller-scale householder, business, school and community actions will be appropriate. A low urban green factor score indicates relatively little vegetation (nature deprivation). Sealed Suburban areas in the upper 20% of multiple deprivation are highlighted as these communities are most likely to experience the adverse effects of nature deprivation.*

3. *Parks, civic gardens and open spaces with most capacity for sponge park features – this includes all spaces over 1ha in size where there are frequent surface water flowpaths, an indicator of landform that is most suitable for installation of raingardens, swales, ponds, leaky dams, etc.*

4. *Other areas in flood zones 2 and 3 – whilst not all sponge city features will bring benefit if installed in floodzones, several will assist with detention of surface water flows and reduce the risk of downstream property flooding.*

Sponge City
Key Diagram

Matt Dunn

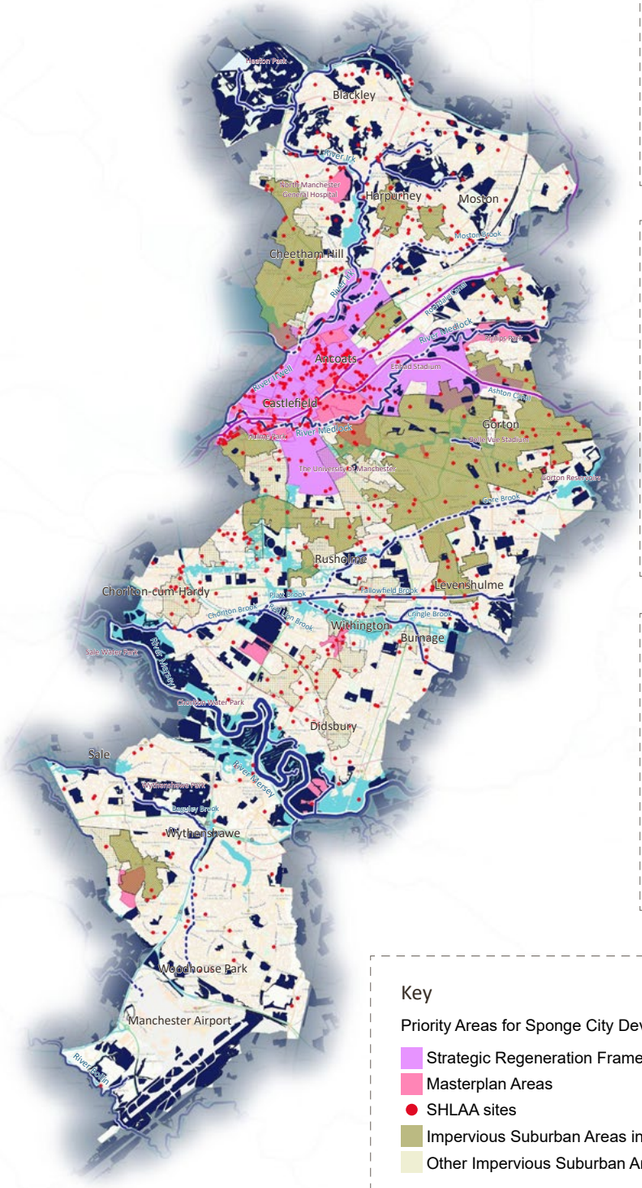
When land is regenerated for housing and city-centre development, there is a "use it or lose it" opportunity for nature to make the urban fabric more resilient to surface water flooding and over-heating. Combine green and grey infrastructure with smart systems for integrated water management. Apply an "Urban Greening Factor" to raise the permeability and vegetation cover as land is re-developed.

Matt Dunn

In masterplans such as the North Manchester General Hospital, there is a one-off opportunity to harvest and recycle rainwater, reduce run-off and store water in raingardens and pocket parks, bringing visual, biodiversity and climate benefits. The SuDS hierarchy is a good design principle for integrated water management at a site-specific scale.

Groundwork GM

Many of the City's edge of centre wards have low climate resilience, measured by the Urban Greening Factor. These suburban areas (shown in dark khaki) have many sealed surfaces, relatively few trees and also experience high levels of deprivation. Environmental regeneration, such as tree-planting, rain-gardens, water-friendly gardening techniques and "de-paving", can all reduce the risk of flash floods.



David Dobbs

Several other wards in the centre and south of the City also have high levels of sealed surface and relatively poor vegetation cover (shown in pale khaki). There are many opportunities for citizens to use water-friendly techniques in management of gardens, pocket parks and the streetscene.

Matt Dunn

The large green spaces in the north of the city (shown in dark blue), such as Heaton Park, Boggart Hole Clough and Blackley Forest have ecosystems that provide very important natural flood management services that benefit the communities downstream and in the city centre. Use leaky dams in upper tributaries of the Irk. Consider river and floodplain restoration for the main channel of the Irk to improve flood resilience.

Mark Waugh

Large greenspaces shown in dark blue have ecosystems that are high-functioning for surface water management. Making these greenspaces even more "spongy" will improve the city's climatic resilience. Sponge park features can be integrated with play and nature areas.

Key

Priority Areas for Sponge City Development Policy

- Strategic Regeneration Framework Areas
- Masterplan Areas
- SHLAA sites
- Impervious Suburban Areas in top 20% for multiple deprivation
- Other Impervious Suburban Areas

Priority Areas for Natural Flood Management (NFM)

- Large Greenspaces with Good NFM Ecosystem Service scores
- Other Floodzones

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Inspiration

Groundwork Greater Manchester

West Gorton Community "Sponge" Park

West Gorton Community "Sponge" Park is the first of its kind in Greater Manchester. The park includes a range of nature–based solutions and showcases how to design, fund, deliver and manage a blue-green infrastructure project which achieves climatic, social, economic and environmental benefits. This provides opportunities for Manchester to export this learning to other parts of the UK and Europe.

The project was delivered by the City Council working in partnership with The Guinness Partnership Ltd, University of Manchester and the Manchester Climate Change Agency, BDP landscape architects and Groundwork Greater Manchester as the community engagement lead.

Co-creation of the park with the local community was a key component of the success. This has ensured that the local community has a sense of ownership of the park which means that littering and anti-social behaviour will not be tolerated. The park includes a community growing area where residents are encouraged to grow their own herbs and vegetables that can be used by others in the neighbourhood.

The nature-based solutions are a key element used throughout the park to help reduce flooding and storm water run–off. These include:

- permeable paving that filters rain water into a sunken garden to water the plants
- a wildflower meadow with surrounding 'bio-swales' to take water from hard and soft landscapes, acting as a sponge with the excess water used to water the plant a rain garden with a pontoon deck.

In 2021, the Park won a Design Council Pineapple Award for public space.

Local resident Heather Rangza said, "It's brilliant. Because I was part of the group that helped design the park, it feels like it belongs to you. It's worth every penny!"

Sheffield City Council

Sheffield "Grey to Green" Highways SuDS

The "Grey to Green" scheme in Sheffield is the UK's largest retro-fit SuDS project, and also the UK's largest inner city 'Green Street'. Design work started in 2014, with phase 1 of the 1.6 kilometre scheme installed in 2016 with a further phase currently being delivered. The scheme has been implemented along the length of an inner city dual carriage-way, which runs along the edge of Sheffield city centre. The dual carriageway was reduced from four lanes to two to create space for extensive areas of rain gardens and bioswales, and widened pavement spaces for pedestrians.

The scheme reduces and slows down surface-water runoff: the route runs adjacent to the River Don and is in an area of Sheffield that is prone to flooding (in 2007 the area was flooded, causing major disruption and economic damage). The grey to green scheme is designed as part of a wider strategy to reduce the amount of surface-water runoff reaching the River Don.

Polypipe

Berlin Surface Water Management Planning Policy

Berlin City Council has a long-established suite of planning policies to address surface water flooding risks. In particular, there is a mandatory requirement for all new residential and commercial development to achieve a zero increase to surface water drainage, enforced by preventing new connections to the city's surface water drainage network. This effectively requires all new development to incorporate measures to deal with surface water arising on the property such as: permeable paving and driveways; raingardens; SuDS features/ponds or other water features; rainwater harvesting systems; and green roofs and roof gardens. The City Council has also shown leadership by retrofitting surface water management measures to many of its properties and public spaces.

Matt Doran

United Utilities Pilot Studies in Greater Manchester

United Utilities has funded several partnership pilot studies of surface water management measures in Greater Manchester to assess cost-benefit and efficacy in reducing surface water flood risk. Working with the City of Trees charity, Salford City Council, Environment Agency and University of Manchester, a pilot tree-pit system was installed in a street in Salford. Monitoring indicated an average 81% reduction in peak storm runoff and 78% average water volume retention.

With funding from Natural Course, a SuDs for schools project was trialled by Business in the Community (BITC) and United Utilities, including actions at a primary school in Sale. This involved building a rain garden and replacing tarmac and paths with permeable surfaces. The research demonstrated a material reduction in surface water runoff and reducing the school's surface water drainage charges.

Keywords

carbon stored in habitats, green travel, woodland management, carbon trading, healthy soils, need for research, low energy, sustainable and non-fossil fuel procurement, reducing energy to treat pollution and address flooding

Zero Carbon

Strategy

There are four ways that Our Rivers Our City can help Greater Manchester meet its target to become carbon neutral by 2038.

1. *Taking cars off the road for commuter and leisure trips;*
2. *Sequestering more carbon in soils and vegetation;*
3. *Reducing embodied carbon and using low energy sources;*
4. *Reducing energy used in water treatment and keeping surface water out of the city's sewers.*

Greener Travel

River valleys provide attractive walking and cycling routes for commuting. With the anticipated growth at Victoria North and Eastlands, demand for well-surfaced, permeable routes in the Irk and Medlock valleys will increase. The Mersey valley is also used for commuting, particularly for north-south journeys to Airport City.

The infrastructure is being planned and put in place, in terms of cycleways, Bee Lines Network routes and footpaths but there are still gaps and "pinch-points" such as narrow sections and difficult road/river crossings.

Local Visits

The Mersey Valley and Heaton Park are two main river valley destinations for recreational day visits. Increasing their attractiveness and visitor capacity will reduce the need for citizens to drive longer distances. This will also bring local economic benefits.

The Wild Rivers chapter discusses the need to develop a path management protocol to ensure that infrastructure improvements for greener travel mitigate and compensate for effects on wildlife and habitats. The Access chapter discusses the need for facilities such as cycle hubs and accessible toilets to increase access for all.

Sequestering and Storing Carbon

River valley habitats and soils can sequester and store atmospheric carbon. Trees, woodlands and wetland habitats are particularly effective. Healthy and deep soils are carbon stores, generally holding more carbon than vegetation14. Even where tree-planting or wetland creation is not feasible, rebuilding soil depth on poorly-restored brownfield sites through measures such as importation of green waste compost and reseeding with clover-rich grass mixes assists with carbon sequestration. This may attract support from businesses wishing to offset their unavoidable CO_2 emissions.

Leading by Example – Reducing Embodied Carbon

River Valley and Sponge City activity can have a positive impact. Capital and revenue works should use low / zero carbon energy sources and avoid oil-based products and materials with high embodied carbon. Landscape design should adopt "reduce, re-use, recycle" principles by working with existing materials and minimising earth-moving where possible.

Reducing Energy Used in Surface Water Treatment

There is a carbon benefit of keeping water out of sewers and wastewater treatment plants. Using SuDS or NBS reduces the volumes of storm water that need to be pumped around the sewerage system and reducing the need for operational response staff to travel to deal with flooding and flood damage .

Keeping pollutants and surface water out of the sewerage system also reduces the need for energy-intensive and chemical-intensive processes at wastewater treatment works.

"Manchester will play its full part in limiting the impacts of climate change and create a healthy, green, socially just city where everyone can thrive."[16]

TEP

Outcomes

Habitat Carbon Stores
More washlands, reedbeds, species-rich grasslands and SuDS and NBS in river valleys and sponge city priority areas;

Healthy Soils
Greenspaces have healthy carbon-rich soils, especially on former landfill and brownfield sites;

Sustainable Travel
River valleys are used as green commuter routes and day visit destinations to reduce car journeys;

Sustainable Procurement
Low energy lighting, recyclable and sustainable materials are used in river valley and river restoration projects.

Distributed SuDS
Water treatment and infrastructure repair costs are reduced through widespread use of SuDS, particularly in the highway network

Where and How

The Zero Carbon Key Diagram shows:

1. *River Valley Wildlife Priority Areas: creation of washlands, reedbeds, species-rich grasslands will sequester more carbon than current amenity grasslands.*
2. *Suburban Areas with high proportions of sealed surface: vegetated SuDS and tree-planting initiatives will sequester more carbon than current land use.*
3. *Healthy Soil Restoration Areas: Greenspaces on former landfill sites where existing soils are likely to be poor carbon stores.*
4. *Green Commuter route investment priorities: sections where consultation has demonstrated there are pinch-points reducing attractiveness or ease of walking and cycling. This includes*
    a. *The Medlock Valley (Etihad to Piccadilly)*
    b. *Irk (Crumpsall/Blackley to City Centre)*
    c. *Linkages to the Mersey Valley*
5. *River Valley Destination Parks – Visitor Hubs where investment in access and facilities will encourage more day visits within the city rather than longer journeys away from the city.*

Policy and Partnerships

The outcomes require a strong policy framework, including:

Policies for protection and enhancement of carbon stored in habitats and soils, and the promotion of SuDS and nature-based solutions in the Manchester Local Plan;

Guidance on sustainable specification for capital and maintenance works in Manchester's river valleys and open spaces, considering embodied carbon, whole-life CO2 emissions, resource use and ethical procurement.

Policies for sustainable practices and avoiding the use of oil-based materials and products with high embodied carbon in the corporate plans of the City Council and partner organisations working in development, infrastructure and estate management;

Inclusion of Our Rivers Our City's zero carbon objectives in a refreshed Manchester Climate Change Framework.

Finance

A key task is to develop a city-wide scheme to collect monies from carbon trades and distribute it to projects which reduce energy use in open spaces and create habitats which sequester and store carbon.

More evidence is needed on the value of carbon savings associated with retrofitting of SuDS and NBS into the urban fabric; e.g. the amount of carbon sequestered and the avoided carbon costs associated with pumping of storm water. Such evidence will assist future funding bids for installation of SuDS/NBS.

Zero Carbon
Key Diagram

Matt Dunn

Heaton Park

As Manchester's most iconic park, Heaton Park is a great destination for day visits by foot and cycle from the City Centre along an Irk Valley Way.

North Manchester Park Life

Moston Brook, Boggart Hole Clough and Blackley Forest form a "round" of natural green spaces linked by the Irk and the Moston Brook. Continued investment in visitor infrastructure, community engagement, arts, wardening and walking/cycling links will form a set of day visitor destinations. This is part of the emerging North Manchester People's Nature Recovery Network.

Irk Valley

An Irk Valley cycle and pedestrian highway is a huge opportunity for sustainable travel, but there are many pinch points and poor quality surfaces and entrance points to tackle to increase usage and security.

Stephen Dunn

Etihad

At the conjunction of the Medlock, the Ashton Canal and Philips Park, the area around the Etihad stadium is a great opportunity to become a hub for day visitors exploring the Medlock Valley and a "service stop" for a green commuter route between the City Centre, East Manchester and Oldham.

Riverside Cafe

Chorlton Water Park

Along with nearby Sale Water Park, Chorlton Water Park is ideally placed to become the centre of a sub-regional day visitor attraction centred on water-based leisure, trails and celebrations of family and community life; with associated micro-enterprises.

Mersey Valley Crossings

North-south connections across the Mersey are important for sustainable travel to and from Airport City, Wythenshawe Hospital and other major employers in south Manchester.

Key

- Habitat Management for Carbon Sequestration
- Soil Enhancement for Carbon Storage
- Suburban Areas - Most Scope for Planting Trees for Carbon Storage
- River Valley Destinations for Local Day Visits
- Green Commuter Priorities in River Valleys

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Inspiration

Wythenshawe Waste Warriors

Wythenshawe Greenway

Led by community volunteers and assisted by the local MP, this path was reclaimed for walkers and cyclists in 2020 and 2021 following years of neglect. The greenway is connected to existing path networks, meaning there is an off road leisure and commuting route between Manchester Airport, Wythenshawe and Chorlton Water Park, opening up accessibility to the River Mersey.

Robin Grimes

Northern Roots, Oldham

Oldham Council aims to create the UK's largest urban farm on neglected greenspace near the River Medlock. About 25 hectares of the site was subject to landfilling in the 1960s and 70s. Whilst the site has been restored and is safe for public use, if you tried to dig a hole in these areas, your spade would soon bang on layers of rubble. These areas have little topsoil and not much carbon is locked up.

Specialists in soil restoration calculated that incorporation of green waste compost into the existing thin topsoils would increase soil depth and create an improved environment for soil-dwelling invertebrates to thrive and re-build healthy soils. Up to 8,000 tonnes of CO_2 could be sequestered and the local population of earthworms would increase by 86 million.

Evidence

Manchester's Climate Change Framework includes actions for use of renewable energy, greener transport choices and increasing green infrastructure and nature-based solutions to flood risk management and overheating.

Natural England has published a report reviewing carbon storage and sequestration by natural habitats in England. It provides a clear, quantitative picture of which habitats store most carbon, sources of emissions, and where the best opportunities are to promote carbon uptake (sequestration). In Manchester's urban context, the optimum interventions to store more carbon are:

- Woodland and hedge planting;
- Conversion of amenity grassland to species-rich grassland with less mowing; and
- Creating and managing wetlands to prevent them drying out and oxidising stored carbon

The Environment Agency has worked in partnership with CIRIA and others to update B£ST (Benefits Estimation Tool – valuing the benefits of blue-green infrastructure). The updated tool and accompanying updated guidance were published in February 2019. The tool, guidance and case studies are available on the susdrain website (https://www.susdrain.org/resources/best.html).

B£ST provides a structured approach to help identify and quantify the financial, social and environmental benefits of sustainable drainage systems (SuDS). The tool can quantify the multi-benefits of SuDS including assessing the carbon reduction benefits and is based on updated evidence to 2018 and using monetary values up to 2017.

An Environment Agency[17] study (2009) concluded that in a situation where SuDS are installed in an existing development over a one hectare permeable area, and this results in all of the surface runoff being diverted away from the sewerage system, there would be potential carbon savings of 0.5 tonnes per year.

In the City of Philadelphia, a 2009 study concluded that a comprehensive SuDS approach to multiple benefits of disconnecting 50% of the stormwater inputs to the combined sewer networks compared with constructing a large interceptor sewer tunnel to achieve the same outcomes would lead to overall savings of 1.1 million tonnes of carbon.

Keywords

place-shaping, co-design, volunteering, health & wellbeing post Covid, capacity-building, environmental literacy, activism and campaigning, River Guides, Water Champions

People and Neighbourhoods

Strategy

This area of work aims to increase engagement with river valleys and water, celebrate those whose work makes a difference to their neighbourhood, and ensure blue spaces are inclusive.

Water adds many dimensions to a place; spaces for recreation, family life, reflection, improving our sense of wellbeing. Perhaps more than any other type of open space, it has universal appeal across ages, abilities and cultures.

Water evokes strong emotional reactions amongst many people, and the presence of water in open spaces is a strong attractant across many cultures. Water is one of life's necessities and we all share one thing in common; we all have to pay for the water we use in our homes.

As a society we take water for granted, and city dwellers generally have limited understanding of the water cycle and the amount of infrastructure that has to be maintained to deliver clean water to our taps and to reduce flood risk in our rivers and treat sewage.

To deliver our objectives of clean and biodiverse rivers throughout the city, we need to engage more people and businesses with the story of water and encourage individual responsibility. City-centre waterfronts and suburban river valleys are naturally great places to encourage that engagement, both passive (e.g. watching water whilst taking leisure or working) or active (e.g. learning about river wildlife or volunteering on clean-ups).

For many years, the Mersey Valley Wardens encouraged volunteer action and enabled special interest groups to access the valley. As a result, today there are many citizens who are highly engaged and passionate about the Mersey Valley. Levels of community engagement in the Irk and Medlock Valleys are much lower, which means their communities are not enjoying the benefits of access to water. As well as maintaining participation levels in the Mersey valley, we must increase that in the Irk and Medlock valleys.

Given a choice, most people will choose to live in a place which has been designed to help them live longer, healthier and happier.

As noted in the "Access" chapter, river valleys are not as inclusive as they should be. Disproportionately few people from ethnic minority communities, disabled people and young people are involved in planning, managing and using greenspaces generally, and research[12] suggests that a sense of exclusion is worse in naturalistic landscapes such as the river valleys.

River valleys and waterfronts are not neutral spaces; some groups in society have fears over security, mobility and safety near water. In encouraging greater access to blue spaces, we must have regard to the need to work with the full range of Manchester's communities; using processes of "co-design" to ensure our blue spaces are inclusive.

Our consultations showed the depth of community feeling towards rivers and many concerns about litter and access. Thousands of citizens (volunteers, wildlife watchers, anglers, walkers, park managers, business-owners) are already involved with Manchester's rivers.

At a local level, volunteer River Guardians and other similar Citizen Science initiatives help collect vital data about the health of rivers whilst others volunteer their time and energy to support river clean-up and habitat creation programmes organised by eNGOs, local "Friends" groups, angling associations, canoe clubs, etc.

Our ambitions for integrated water management require strong leadership and partnerships alongside strong policy; we will not secure place-making, clean waters and access for all without them.

Quality of place is vital for civic pride and is a catalyst for deepening local connections. Projects such as the RHS Bridgewater Garden, which opened in 2021, show that high quality places draw in volunteers and enable a range of parallel initiatives such as horticultural therapy and skills acquisition. In a similar way, improvements to the quality of our river valleys go hand-in-hand with people-centred initiatives.

We are fortunate in Greater Manchester to have strong environmental partnerships and a widely-shared vision of green economic growth. Nevertheless our strategy needs city leaders who will be "Water Champions".

TEP

Outcomes

Co-Design
Local people are involved in developing blue space plans and activities;

Community Interactions
Our river valleys, and the activities in them, promote social interaction between different ages and cultures, improving their wellbeing and community cohesion;

Voluntary Actions
Diverse groups of volunteers are making a positive difference in improving the rivers and associated open spaces, enabled by a well-supported and well-funded voluntary sector to ensure sustained, effective delivery;

Training and Skills
Opportunities are available for volunteers and council staff in ecology, river awareness, SuDS, social prescriptions etc, to strengthen community capacity, build confidence and form relationships;

Neighbourhood Assets
Rivers are celebrated as local heritage and cultural assets.

Local Identity
Our river valleys foster community creativity, engagement and local identity-building. Volunteers are supported to use river valleys to deliver services to those in need e.g. community gardens for the elderly, health walks.

Where and How

At a city-wide level, a Water Champion (a person or an organisation) has a role in ensuring water policies are introduced and implemented, along with establishing partnerships and strategic fundraising to drive forward the objectives of Our Rivers Our City.

Manchester might consider recognising businesses and individuals as "water heroes" recognising their commitment to river valley restoration.

At a neighbourhood or river valley level, River Guides have a role in encouraging and enabling volunteers, citizen scientists and user groups to be involved with stewardship of river reaches. They can engage with the health sector to promote and facilitate social prescriptions and health-related activity in the natural world.

The role of a River Guide fits well with the skillsets and remit of the City's Parks team.

Although all river valleys have specific character, consultation demonstrated that the Irk and Medlock have lower levels of local community participation than the Mersey, and both will be undergoing regeneration, so it seems appropriate that, if resources are limited, these river valleys are prioritised.

Working with the Third Sector

Community groups enable local people to become active citizens, organising local events, forming support networks and helping individuals to connect with services and agencies.

Third sector organisations are a framework of support to community groups. This support includes:

> *Building their social capital: relationships with neighbours, relationships with other groups and networks and relationships with the Council and other agencies who can help deliver their ambition;*
>
> *Building their capacity: improving the quality and scale of their activity.*

Both the framework of support and the grassroots activity itself need financial support. The potential for volunteer activists and community groups to deliver health improvement and community cohesion activities in the river valleys is huge although many of them will need support to be able to do maximise their impact – funding, training, connections and anchor organisations who can support their development as a group.

The consultation around this strategy shows there is appetite for communities to play a greater role in addressing Manchester's environmental challenges. Investing in the third sector's potential will help deliver many of our river valley objectives.

River Guides
Activating our River Valleys

Inspiration

Alan Hamer

Moston Brook Clean and Green Project

The Moston Brook Project was formed by Oldham and Manchester City Councils. Feasibility work & community consultation highlighted two key issues – poor quality access and poor environmental quality including fly tipping and lack of management. A grant from Manchester City Council's Clean City fund addressed these issues, helped unlock other grant funding, galvanized volunteer activity and has created a new management regime.

Their outcomes include:

- Four new high quality stone entrances;
- Views opened up and safety improved;
- Two new eco footpaths made with recycled materials;
- 33 ha of land cleared and 20 groups involved.
- Broadhurst Primary School Environmental arts project.

"The brook now looks like a place for the community to use and enjoy. The Moston Brook Friends Group have seen so much progress & we're keen to continue our efforts to make it better for everyone" Louise, Manchester resident & Secretary of the Moston Brook Friends group

https://youtu.be/1EpJ4Gr86JQ

Mersey Rivers Trust

Elaine Casap

Sow the City

Sow the City believes that everyone should have access to a garden where they can grow and eat their own produce, as well as providing educational opportunities, physical activity and stress relief. Sow the City has helped create and restore more than 100 community gardens in and around Manchester.

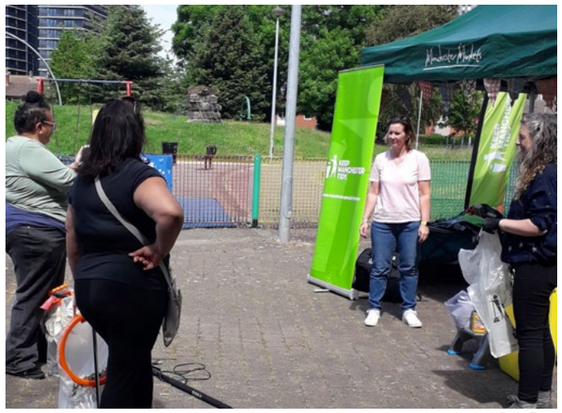
One example is in Beswick where Sow the City worked with local GPs and youth clubs to develop a new wellbeing garden. Outdoor space was redeveloped to provide easily accessible sites for growing including raised beds, bulk containers and paths for wheelchair users.

Francis Hesketh

Bringing the River Irk to Life

Bringing the River Irk to Life" (BRIL) is an ambitious project that aims to develop a collaborative Vision and Action Plan for the whole of the River Irk catchment, including the tributaries. If taken to fruition, the Vision and Action Plan will move the waterbodies of the river corridor to good ecological condition; deliver ecosystem service benefits for flood risk, water quality, biodiversity, amenity, and recreation and help to develop an environment which local people value and care for.

The Environment Agency commissioned Groundwork in Greater Manchester to gather the views and opinions of local people in order to involve them in the development of the Action Plan. The consultation engaged critical stakeholders and local communities, in order to ensure we deliver benefits not only for the environment, but for society and the local economy.



Parks Team

Co-Design

The Greater Manchester Centre for Voluntary Organisations (GCVO) set up Greater Manchester Co-Production Network which supports different people and community groups to share skills and develop co-production in Greater Manchester. This is particularly important to bring together ethnic minority communities who are often excluded from traditional collaboration techniques used to develop new policies. To help minority communities engage, GCVO provides information, sources of support and resources.

Jam and Justice have created a unique space for social innovation to co-produce, test and learn from new ways of governing cities. Jam and Justice bring together disenfranchised and excluded communities to search for solutions to address complex urban problems. The project 'Space in Common' enabled people to have their say on the re-draft of the Greater Manchester Spatial Framework including topics such as green and blue infrastructure, environment and nature conservation.

Our Local Voice Mersey

Riverside Park, Northenden

The Friends of Northenden Park promote a wider use of the park which fronts the River Mersey. Working with the local community, businesses and politicians, the Friends Group help install educational and environmental facilities, enhancing the park for the benefit of the whole community. They have successfully raised money for new park equipment and regularly organise fun days and events throughout the year to encourage more local people to enjoy the landscape, wildlife associated with the River Mersey.

The park first received a Green Flag award in 2014 because it is a welcoming, safe and well maintained space with a strong involvement from the local community.

TEP

Manchester City Council

Natural and Heritage Skills Programmes

Manchester Histories set up ‘People’s River’, which is a community-led project to collaborate with people who live and work along the River Irk in North Manchester. The project aims to reveal and share the hidden histories and stories of people’s heritage in a creative way. The project has been funded by Manchester City Council through their Neighbourhood Investment Fund and Economic Regeneration Fund.

Groundwork’s ‘Young River Leaders’ programme engages young people in Manchester with creative and meaningful activities to help them feel better connected to their local rivers and inspired to make positive changes to their environment.

Young River Leaders in West Gorton had the opportunity to learn the concepts of leadership, conservation and river management in a fun and interesting manner. Their new skills enabled them to take a role in the management and conservation of the River Irk. 30 young people local to the River Irk gained educational qualifications, covering modules from peer leadership to invasive species.

London National Park City Rangers

National Park City Ranger Community

In 2020, London National Park City launched a Ranger Community. Counting artists, rewilders, urbanists, activists, athletes and teachers amongst their ranks, a diverse and passionate group of Londoners collaborate to explore solutions for some of nature’s most pressing challenges in an inner-city environment.

The Ranger Community projects include greening initiatives, conservation activities, education and youth programmes - all aimed at highlighting how London can be a greener, healthier and wilder place for everyone.

The first group of 54 volunteers are stationed across London, working on capital wide projects, actioned locally in each of their communities. One of their first actions was to post social media about them each taking a walk in their local neighbourhood to showcase urban habitats; wildflowers, trees, insects, community gardens, meadows, rivers and homes for wildlife.

The Ranger Community programme is supported by a global lifestyle brand, Timberland.

Keywords

integrated water management, infrastructure delivery and drainage & wastewater management plans, water-sensitive urban design, development frameworks and masterplans, local and city-regional policy, watercourse protection, SuDS, NBS, bluespace access, city assets, partnership-working, water champion

Policy and Partnerships

Strategy

Our Rivers Our City is the story of "Integrated Water Management" (IWM). Planning for water brings multiple benefits, including increased:

- Climate resilience
- Delivering housing and a stronger greener economy
- Enhanced environment and greenspaces

If an IWM approach is not taken, there is risk that development will impact adversely on water availability, quality and sewerage capacity, leading to reduced climate resilience and lower growth.

> A planning approach based on IWM delivers multiple benefits and ecosystem services that contribute to natural capital while mitigating risks, creating more liveable and sustainable places.
>
> *From CIRIA C787A Delivering better water management through the planning system.*

Conversely, the economic power of development can release investment into urban greening and water-sensitive design.

Places for Everyone includes Greater Manchester policy which has been developed based on a robust evidence base of planning for water, including strategic flood risk assessments, decades of experience in catchment planning and river restoration, and an understanding of the natural capital value of the Irwell and Mersey catchments, including our rivers and tributaries.

The most relevant policies which are transferable to the Manchester City context, in order to help deliver Our Rivers Our City are:

- GM-S 5 Flood Risk and the Water Environment
- GM-G 2 River Valleys and waterways
- GM-G 8 Standards for a Greener Greater Manchester

These draft policies, alongside more detailed evidence on the specific challenges facing the City, will allow future Local Plan policies to promote integrated water management with detailed city-specific policy. We have an excellent evidence base on priority areas for waterbody protection and enhancement, SuDS implementation, nature-based solutions, urban greening, habitat banks for biodiversity net gain and access to nature.

The City has an award-winning Green and Blue Infrastructure Strategy and a Parks Strategy. Both have, over the years, protected and promoted the river valleys as places essential to the prosperity, biodiversity and wellbeing on the City.

Further research is required in terms of access to bluespace and benefit-cost analysis of different SuDS and NBS options.

The City Council has a critical role, in partnership with developers, to bring forward place-centred green growth. Early engagement with landowners and developers on the spatial requirements for SuDS and access to watercourses, is critical to optimise masterplans and harness the design energy associated with development.

The City Council has several land-owning departments responsible for parks, housing, highways and economic development. There are various other public sector and regulated landowners such as Transport for Greater Manchester, Environment Agency and United Utilities. Each has a role in delivering SuDS, NBS and water quality enhancement as water travels through their landholdings.

Manchester's Parks team has a unique role in delivery of NBS and SuDS to help reduce flood risk, improve water quality, avoid costs of water treatment and increase sewerage capacity by storing surface water; all in the context of creating parks that meet the needs of Manchester's people and wildlife.

Protocols for widespread adoption of SuDS and NBS will be critical and it is recognised that there is still some justified institutional inertia and developer reluctance around this matter.

Partnerships with the third sector are critical to delivery of many of the outcomes set out in this strategy. Collaborative working with the third sector brings several advantages, including:

- Access to funding streams unavailable to the public or private sector, notably charitable trust funds
- improved access to local community groups who give voice to the needs of local residents or a particular community cohort (e.g. young people, the disabled, LGBTQ community, etc)
- Access to volunteers and organising their input to action delivery
- Facilitating engagement with local residents to support co-creation and co-design of delivery activities, drawing on the trust developed by charities with residents.

The Irwell and Upper Mersey Catchment Partnerships are hosted by the Third Sector (Groundwork Greater Manchester and Mersey Rivers Trust, respectively) and provide a central forum for co-ordination of partnership working on the Irk, Medlock and Mersey between the public, private and third sectors, including with neighbouring local authorities in each river catchment.

Neil Thomas

Outcomes

Development Management
Policy and Practice promotes and delivers the multiple benefits of integrated water management;

Plan-Making
The Local Plan, the Infrastructure Delivery Plan and the Drainage and Wastewater Management Plan all incorporate policy and activity which delivers integrated water management;

Partnerships
The City's Water Champion enables members of Catchment Partnership to work closely with landowners, parks managers, businesses and the community to deliver Our Rivers Our City activity.

Landowners
Corporate Plans of major landowners include commitments to deliver Our Rivers Our City actions, with the public sector working in collaborative partnership;

Design
Good practice in water-sensitive design is followed in new development, including river restoration, access and habitat works;

Awareness
The full spectrum of people engaged in integrated water management is aware of its importance in delivering green growth;

Where and How

Development Management

Development is guided by the National Planning Policy Framework and associated guidance, along with policies adopted by the City and the Greater Manchester Combined Authority. In respect of Our Rivers Our City, there are seven policy areas to consider:

1: Waterbody Protection and Enhancement

For development affecting watercourses and floodzones, the Water Environment Regulations require an underpinning approach of protection, restoration and enhancement. Policy should require developments to assess the hydrological, hydromorphological, water quality and ecological effects and ensure:

- No Deterioration to the Waterbody;
- No adverse effect on the ability of the Waterbody to reach Good Ecological Status or Potential (i.e. Good Condition);
- Improvements to the Waterbody (such as those shown in the Irk City River Park prospectus) to contribute to achieving good condition including biodiversity net gain principles.

2: Sustainable Drainage

All developments should incorporate SuDS and/or sponge City measures where appropriate, not just major developments. Policy should require a suitable hydrological assessment and SuDS / Sponge City plan, taking account of:

- The development's characteristics;
- Its relationship to the City's Urban Blue Network (watercourses, floodzones, surface water flowpaths and surface water accumulation areas – all shown on the Our Rivers Our City webmap);
- The SuDS hierarchy i.e. active consideration of green infrastructural methods of managing water flows, reducing flood risk, improving water quality and improving surface water sewerage capacity;
- Achieving Greenfield Run-off Rates or better
- Long-term SuDS maintenance plans
- Broader Sponge City and Climate-Friendly Neighbourhood guidance (see below)

3: Climate-Friendly Neighbourhoods

Consideration that inner urban development should incorporate a Manchester-specific Urban Green Factor (UGF) to promote use of SuDS and Nature-Based Solutions (permeability and vegetation).

The Our Rivers Our City webmap shows current estimated UGF scores for all land parcels. An early priority for the use of UGF could be the Strategic Regeneration Framework Areas where current UGF could be increased (see the Sponge City and Zero Carbon Key Diagrams).

Early engagement with master developers in these areas is critical because many SuDS and NBS have specific locational and size requirements which should be incorporated in masterplanning at an early stage, to avoid costly retrofitting or re-design.

It will be important to be able to calculate and articulate the economic benefits arising from climate-friendly neighbourhood policy such as avoidance of flooding and disruption, place-making and indirect economic benefits from liveability.

4: Blue Space Access Standard

In recognition of the economically significant health benefits of access to water, a Manchester-specific bluespace access standard should be considered, incorporating measures of accessibility, quality, value and visibility. In the interim, Nature-Deficient Priority Areas shown on the Access Key Diagram can be prioritised.

Development in or near such areas should enable access improvements, in the same way that open space assessments consider existing provisions and contribute to neighbourhood enhancement where a deficiency is identified.

5: Water-Sensitive Design

Policy should promote water-sensitive design. This covers SuDS, NBS, water resources, biodiversity, water quality. In Manchester it should also incorporate, where relevant, participatory design processes where community access to, and use of, waterbodies could be affected by development.

6: Nature Recovery Network

The Greater Manchester Local Nature Recovery Strategy [will need reference] identifies Nature Recovery Networks, allowing for their designation in the Local plan and for them to be material considerations in development management. The River Valley Wildlife Priority Areas will act as an "area of search" for designation of Manchester's NRN.

7: Enabling Development-related Contributions

To enable and release land for development, the process of integrated water management will reduce flood risk, increase sewerage capacity and address legacy issues of poor water quality. It will also deliver the public health benefits of access to water.

Policy on Community Infrastructure and s106 contributions should be updated to enable delivery of neighbourhood-scale AND strategic SuDS within the relevant catchments. River restoration Investment Portfolios, such as Bringing the Irk to Life (BRIL), form part of the place-making imperative needed to release land in Victoria North for development.

Bodiversity Net Gain contributions can be directed to adopted "habitat banks" within the River Valleys.

Infrastructure Delivery and Drainage & Wastewater Management

A growing North West and more extreme weather present challenges for how water is managed over the long term. United Utilities are planning for this through development of a holistic Drainage and Wastewater Management Plan (DWMP). This plan will focus on the future of drainage, wastewater and environmental water quality. The plan is being built with collaboration from local authorities including Manchester City Council and partner organisations and groups that have interests and responsibilities relating to drainage, flooding and protection of the environment. By working in partnership, there is an opportunity to lead the way in sustainable and resilient growth. The plan will be designed to manage risks, mitigating and adapting to climate change, with robust infrastructure.

The City is also developing an Infrastructure Delivery Plan focussing on sustainability. Together, the plans of the City and United Utilities' aim to sustainably manage surface water in respect of development, tackle pollution, enhance places, increase sewerage capacity and address blockers to release of land for green growth. The plans can identify and secure finance for:

- Distributed SuDS which improve sewerage capacity and enhance public realm; development of enhanced Benefit:Cost analyses to include natural capital benefits may deliver more schemes and draw in partners;
- Remedial measures to address Combined Sewer Overflows (CSOs), pollution sources on the highways network and on city-owned land which compromise water quality and hence reduce environmental capacity for green growth;
- River Restoration, particularly where this brings additional flood storage capacity and addresses investment deficits associated with poor place-making. For heavily modified water bodies, mitigation measures will be needed to improve hydromorphology and achieve Good Ecological Potential.

Championing Our Rivers and Working in Partnership

Integrated water management involves many players and special interest groups. Increasing everyone's understanding of the critical role of rivers and waters is vital to good planning. There is an important role for a city Water Champion to help:

- Educate community leaders with environmental information and evidence (such as the Ward Profiles and detailed data available on the Our Rivers Our City webmap);
- Celebrate practitioner and community achievements;
- Innovation and Knowledge Transfer e.g. through a School of Urban Waters and the work of Natural Course and the Catchment Partnerships;
- Advocate the importance of SuDS, NBS and river restoration to the public, politicians, developers and landowners;
- Work across Greater Manchester to tackle up and downstream issues such as natural flood management in the uplands and physical/chemical barriers to fish migration;

Landowner Action

Much of Manchester's land is owned or managed by the City Council and other public sector bodies. Partnership working to implement and adopt SuDS and NBS is critical where water flows across departmental boundaries.

The West Gorton Sponge Park shows the benefits that come from collaborations between the City's parks, housing and highways teams.

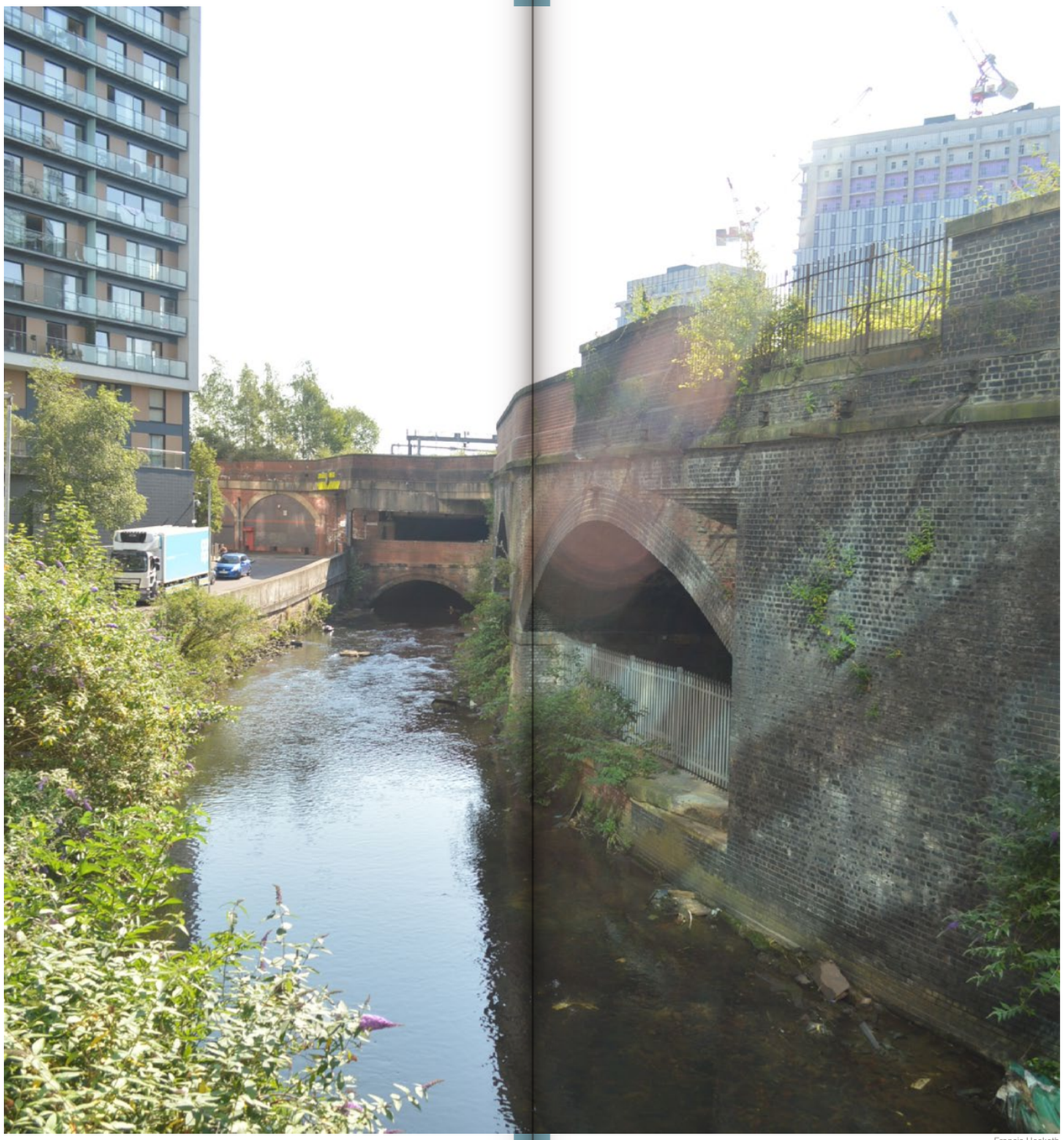
Other cross-departmental collaborations with housing managers, United Utilities and Transport for Greater Manchester will yield opportunities for delivery of SuDS, including revenue savings arising from reduced surface water run-off charges. A cross-departmental compact on adoption of SuDS and NBS will be critical.

Inspiration and Resources

Planning Advice for Integrated Water Management (University of Cambridge Institute for Sustainable Leadership)

This Advice Note aims to de-mystify integrated water management and demonstrate the benefits of building it into plans and planning decisions. It covers:

- How planners in England can work in partnership to take a holistic approach to managing water to achieve multiple benefits for development and local economies, local amenity, public health and wellbeing, the environment and biodiversity.
- The water policy framework, highlighting the relevant planning policy and showing how the different areas of policy fit together and who does what.
- What the catchment based approach is
- What is involved in managing surface water and the benefits of getting it right, including links to flood risk management.
- Constraints on water supply and wastewater disposal, and how to work with water companies and the Environment Agency to integrate water plans with local plans.
- The tools and approaches planners can use with supporting information, evidence and data



Francis Hesketh

Delivering better Water Management Through the Planning System (CIRIA publication C787A)

This guidance document explains the critical success factors required for successful integrated water management. It contains case studies, examples of good planning policy and partnership approaches across the water sector.

CaBA Sustainable Urban Water Management Data Hub, Tools and Guidance

The Catchment Based Approach (CaBA) launched its Urban Water Management Data Hub, Tools and Guidance in May 2021. This includes open-access GIS datasets, assessment tools and guidance for delivering urban water management solutions through collaborative, partnership working.

https://catchmentbasedapproach.org/learn/urban-water-management-and-guidance/

Stockport Town Centre Urban Green Infrastructure Enhancement Strategy

Stockport MBC is implementing its Urban Green Infrastructure Enhancement Strategy with a range of project interventions to enhance the ecosystem services provided by green Infrastructure within the town centre. Delivery of this strategy is predicated on an understanding that the council cannot address and undertake delivery on its own, and that the Council's key roles are coordination, motivation, promotion, partnership development and strategy management.

The council is developing a close partnership with United Utilities to trial and implement a range of surface water management pilot projects. It is developing partnerships with the private sector to access new sources of funding and is supporting Third sector organisations to bid for charitable trust funds to support strategy delivery.

Frank Chou

Greenwich Peninsula

This is a large 20-year mixed-use regeneration of a 190 acre former industrial zone, to deliver 15,000 homes, 3.5m sqare feet of offices and retail units. The site has been subject to long-term masterplanning and design guidance.

The SuDS train includes green roofs, roadside swales and SuDS-enabled tree pits with a central park and ecology area providing additional flood storage in extreme events. The remediation and engineering works allowed for shoreline works including amenity terraces above ground and intertidal terracing providing fish habitats. Water efficiency measures were incorporated into building design.

The masterplan has evolved in parallel with the London Plan and the Royal Borough of Greenwich's Local Plan. As environmental standards and innovations in SuDS have become mainstream, they have been incorporated into the masterplan and design codes. This has been possible due to a strong partnership between the local authority, the master developer, Greater London Authority and Environment Agency, along with many other partners with particular interests in the area's ecology and heritage.

Salford University Living Labs

Urban Greening Factor

The London Plan 2021 requires major developments to be designed to attain at least a minimum UGF. The UGF is calculated by measuring the area of different types of vegetation and/or permeable surfaces as a proportion of the total planning application. High scores are achieved for use of permeable surfacing, street trees, raingardens etc. The aim is to promote the use of SuDS and NBS. The London Plan allows flexibility for boroughs to set their own thresholds, but recommends a minimum score of 0.4 for predominantly residential schemes and 0.3 for commercial schemes.

UGF has been applied on a case-by-case basis since 2018 and has resulted in numerous examples of urban greening e.g. SuDS-enabled tree pits, raingardens, living walls, green roofs.

Salford University's Living Lab showcases several examples of how to achieve higher UGF scores. The image shows rain-gardens, pervious paving and green walls.

TEP

Lee Valley Regional Park

The Lee Valley Regional Park in north-east London and bordering areas of Hertfordshire and Essex is an exemplar of cross-local authority partnership working and collaboration between the public, private and third sector for a key river valley flowing into east London. Since the 1950s, the Lee Valley Regional Park Authority has worked with partners to transform rubbish tips, gravel pits, scrap yards and industrial sites into award-winning open spaces, nature reserves, leisure and recreational facilities that attracted more than seven million visits during 2018-19. It is considered to be a "green lung" for Greater London.

By working closely with private sector partners, the Regional Park generates the majority of its income from commercial and business activities, maximising a range of opportunities in order to lessen the demand on council tax payers. Equally, local authority expenditure has been reduced over many years through developing partnerships with an extensive set of volunteers and "Friends" groups who carry out a wide variety of operational tasks.

Going Digital

Strategy

Big Data, Local Resilience

Data, evidence and monitoring are a critical part of integrated water management (IWM), helping partners to engage a wide audience, agree on the priority issues and solutions, and monitor outcomes.

The growing availability of open data and the increasing power of cloud computing offer huge potential for managing flood risk, tackling pollution and engaging citizens.

Increasingly accurate weather forecasting, plus catchment telemetry measuring rainfall, soil moisture content, river and sewer levels means flood warnings could be raised earlier and issued more directly to affected people; reducing costs, disruption and risks to property and life.

Smart water management systems in developments means rainwater can be managed intelligently. The attenuation capacity of “smart” tanks and blue roofs can be used so that water is released to drainage systems or rivers well ahead of flood events, freeing up capacity to store rainwater when storms arrive. Smart tanks also allow water falling on a development to be re-used, reducing the amount of water discharged to sewers.

This technology is already being deployed in Manchester City Centre (see Bloc case study).

The Story of Water

Effective visualisation of data through maps, infographics and other media helps develop an understanding of complex environmental systems. This eases communication between citizens and organisations who need to work in partnership to improve the water environment. It also enables digital campaigns on wise use of water and tackling pollution.

Rivers Trusts use ‘Story Map’ templates. These help people from government, business and charities, who may have different priorities, languages and cultures, to develop a shared vision for their catchment.

Displays of river and water data raise awareness of the presence and power of rivers in the urban environment. Wuhan’s sponge city approach includes numerous monitoring stations and digital displays to engage the public and embed the concept of a shared enterprise in managing water wisely.

Wayfinding and Citizen Science

Manchester’s river valleys are part of the city’s network of parks and there are exciting prospects for developing the digital experience so that citizens can find more information about local trails, events, volunteering opportunities, businesses and neighbourhood information. Apps and social media, with an interactive component, can enable people to take an active role in exploring and managing the river valleys.

Citizen science is also important in building the evidence base for water management and reporting problems. The Mersey Rivers Trust’s River Guardians scheme encourages people to collect scientific data on water quality and wildlife. As well as the important environmental data that is collected, the scheme builds skills and community spirit.

Next Steps

Technology for digital apps, telemetry and weather forecasting is quite mature, so the next steps in smart water management are concerned with bringing data together, increasing the range of monitoring and sample points, and developing interactive and responsive systems.

The Manchester Environmental Research Institute and the Manchester Urban Observatory with its environmental data hub (Manchester-i) are examples of bringing together data for smart city management, including some hydrological data.

The Our Rivers Our City webmap could be further developed to include real-time data and interactive features for the public to record wildlife and pollution incidents, upload photos etc.

Keywords

early warnings, telemetry, citizen science, feedback loops, data and evidence, soil moisture, river and sewer levels, weather forecasting, smart systems, green/blue roofs, wayfinding, interpretation, citizen empowerment, social media

Nasa

Outcomes

Telemetry
Reliable real-time interconnected data on rainfall, river levels, storage in attenuation features, water quality & weather forecasts becomes available to all water practitioners and interested citizens;

Citizen Science and Awareness
Story Maps about water quality, wildlife, river levels, carbon storage are available and accessible to all, with volunteers adding their survey findings;

Wayfinding and Place-making
River valley trails, destinations, features of interest, reviews and real-time river data are provided via apps and displays;

Citizen Empowerment
Individuals and volunteer groups are engaged in river valley stewardship, using the power of apps to co-ordinate activity, celebrate achievements, report anti-social behaviour and inform River Guides.

Alerts and Education
Warnings about flood risk or pollution alerts, as well as information to householders and businesses about good practice with water and waste are available on widely used and trusted apps.

Data and Evidence
Data for integrated water management is shared and accessible, helping partners to agree on the priority issues and solutions, and monitor outcomes. Manchester is at the heart of the smart city movement in respect of integrated water management.

Where and How

There is now no reason why smart water management systems cannot be deployed in new development in intensively built-up areas. Policy can be developed to set minimum standards, including essential cyber security requirements (see Bloc case study);

There is a need for more and better telemetry across the Irwell and Mersey catchments. This can include watercourse level data, data from CSO's, weather station data. Availability of monitoring data allows for future development of early-warning systems and pro-active water level management. This could form part of water company asset management plans (2025 onwards) and the EA's resilience programme.

Environmental Databanks form the backbone of good evidence and policy development. Manchester Environmental Research Institute has an urban observatory, including an app called Manchester-I, which has the capacity for integrating many environmental datasets for smart city management.

The Our Rivers Our City webmap can be regularly updated with information on discharges, access routes, citizen science findings.

Citizen science is already deployed by the Mersey Rivers Trust and other river trusts to assist their River Guardians to collect information about river wildlife and water quality.

Manchester's Parks Team is developing apps that celebrate Manchester's Great Outdoors and these can include river valley wayfinding, which allow citizens to interact with their local environment.

Street-level displays of river level data and SuDS installations can be trialled to raise awareness of the importance of the water cycle and flood risk reduction (see the Wuhan case study);

Finance for installation and management of smart systems, especially catchment and city-wide telemetry would be required. This might be available from water industry infrastructure improvement funds, the insurance sector and from academic / research sources.

Francis Hesketh

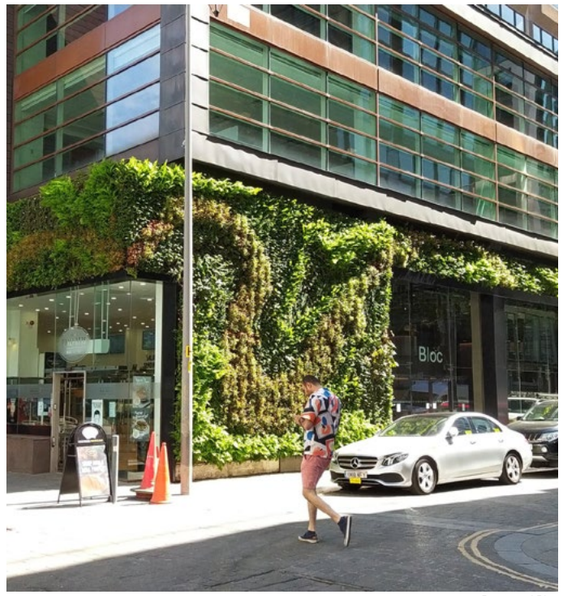
Inspiration

Bruntwood Bloc

Bloc – Marble Street, Manchester

In 2021, Bruntwood retrofitted a smart green/blue roof system and a living wall on its 16 storey city-centre office. The roof incorporates telemetry to record the volumes of water in store, enabling the facility manager to store water for irrigation of the 525m2 wildflower roof.

The smart roof, co-funded by United Utilities, is monitored by a Polypipe © system which can discharge water ahead of the incoming storm at a point where the sewers are empty rather than full. The smart system includes machine-learning capability to optimise its future performance. A two-year research programme will allow United Utilities to assess how storing and re-using rainwater at roof level can reduce the volume of surface run-off entering its sewer network. The “biophilic” design is part of Bruntwood’s corporate response to the climate and ecological emergency.



Bruntwood Bloc

Dave Barlow

Digital Displays

The Sponge City programme in Wuhan uses digital displays at street level to provide information about the SuDS features and how much water is currently within the system

Ross Sneddon

Catchment-Level Information Management

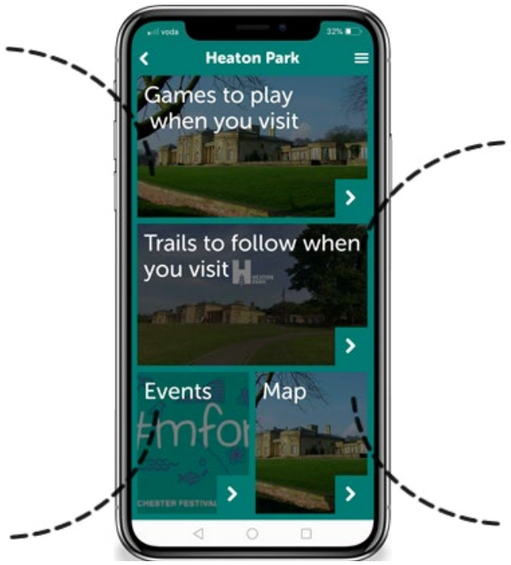
Kisters operate a Datasphere, which provides users with a dashboard to monitor water levels and incoming weather data across a range of sensors. The evidence from historical events becomes a tool for improved predictions and offers a future opportunity to manage smart water tanks to retain or discharge water based on incoming weather.

Mersey Rivers Trust

Apps for Wayfinding, Exploration and Citizen Science

Love Exploring is an app for parks users that encourages people to find out more about their local greenspaces. It is used in Manchester's parks. The app includes the Irk Valley Heritage Trail, which was developed under Manchester's People's Histories project.

The Tyne Rivers Trust uses the My Tyne App for citizens to report on river wildlife, encouraging people that recording and uploading their sightings build a picture of how healthy the river is.



Love Exploring App, Sprytar

Rudolf Peter Bakker

Limburg Netherlands

The town is below sea level and is surrounded by farmlands. The town incorporates a smart system in which water is pumped between ditches at various heights until it can be discharged to the sea. This smart system is optimised so that rainfall does not cause any flood risk to the town, and no ditch is overwhelmed while minimising discharge to the sea, allowing the farmland to draw as much water as possible for irrigation from these ditches during times of dry weather.

Salford University Living Lab

Hubbub

Hubbub is a small charity that designs campaigns that inspire ways of living that are good for the environment. It uses relatable designs and imagery and social media to disrupt conventional ways of thinking, change behaviours and shape systems in a positive engaging way. In Manchester, Hubbub is collaborating with the In Our Nature programme of citizen activists concerned with climate change.

Delivery and Finance

Strategic Intent

What can we deliver?

Our Rivers Our City is a ten year strategy to urgently address some deep-seated environmental problems which will constrain Manchester's green growth. Our delivery plan (see Annexe F) unlocks the city's potential for investment. We focus on a green economy, an equitable society and a response to the climate and ecological emergency:

Green Economy

1. *Place-making and Climate Resilience to sustain a growing population, particularly in the city centre, Victoria North and Eastlands;*
2. *Green jobs and an up-skilled workforce to deliver sustainable water management;*
3. *Support for small and micro-enterprises operating sustainably in river valley greenspaces;*
4. *Promotion of the Mersey Valley as a city-regional river park;*
5. *International recognition of Manchester as a centre of excellence in integrated water management;*

Equitable Society

6. *Welcoming, safer and equitable access to Manchester's river valleys;*
7. *A model of co-design where all Manchester's communities feel they have contributed to how riverside spaces are designed and managed;*
8. *New and enhanced waterside parks and parklets;*
9. *Cleaner rivers for wellbeing, play and wildlife;*

Climate and Ecological Emergency

10. *Recovery of river biodiversity;*
11. *Greener suburbs benefitting from reduced surface water flooding;*
12. *Green Travel in our river valleys for commuting and leisure;*
13. *Securing sustainable drainage and sewerage for the 21st century;*
14. *Improved stewardship and ownership of riverside spaces.*

In Wuhan, a key monitoring indicator is the proportion of the city that is "managed under sponge-city principles".

Keywords

delivery, outcomes, co-design, co-create, co-delivery, shared mission, collaborative funding, green finance, Water Champion, governance, partnerships, sustainability, investors, natural capital, investment portfolio, action plan

Collaborative Delivery

A Shared Mission

This mission requires an unprecedented degree of collaboration. But we know that Manchester has the skills, tenacity and co-operative instinct needed to make it work. After the IRA bombed the city centre in 1996, the city rose to the challenge and rebuilt even better. During the difficult days of the Covid-19 pandemic, the city's leaders, business and communities supported each other with kindness and ambition.

Our ten-year delivery plan has over 80 actions. Not one of them can be delivered without collaboration, as shown in the graphic. Partnership working is key to successful delivery, building on the strengths of different partners across the public, private and Third sector.

Strong collaboration is needed between departments of the City Council, between the City Council and other organisations working in the City, and with neighbouring authorities in the Irwell and Mersey catchments.

The prize of collaboration will be seen locally and regionally. Water quality and access improvements will benefit local communities and their health. In the City centre, a place-making approach focussed on rivers and urban greening will unlock investment and make the city resilient to climate change. Promoting the Mersey as a regional visitor destination and biodiversity hub will unlock green jobs and improve the quality of the environment for green travel.


Dave Barlow

Manchester City Council

The Council has a lead role in championing Our Rivers Our City, co-ordinating activity on its own estate, looking for opportunities to co-invest alongside developers and delivery partners. Much riparian land is owned by the City Council and there are opportunities to use its riparian estate to deliver multiple benefits for wildlife, public access, angling, recreation and social enterprise.

The particular strengths of the City Council are in:

- Policy-making and strategy development;
- Neighbourhood and Streetscene Management;
- Park development, community engagement and wardening;
- Securing funding and promotion of investment opportunities;
- Development management;
- Informing and supporting citizens to adopt water-conscious lifestyles;
- Flood response and risk reduction;
- Sustainable management of its own estate;
- Support for education, training and jobs;
- Taking action against illegal fly tipping and pollution.

Developers, Landowners and Business Leaders

Manchester has an enviable record of attracting inward investment. During the ten years of this action plan, significant development will occur, particularly in the Irk and Medlock river valleys, with tens of thousands of new homes and associated public realm and infrastructure. This provides a one-off opportunity for the rivers to be at the centre of climate-resilient and high-value regeneration.

In terms of delivering Our Rivers Our City, developers and landowners have particular strengths in:

- Place-making and Neighbourhood quality
- Installing Nature-Based Solutions during redevelopment
- Supporting jobs and enterprises that thrive in a high-quality environment
- River and floodplain restoration
- Informing and supporting citizens to adopt water-conscious lifestyles
- Fund-raising

Parks Team

Citizens and Communities

Manchester's people have been actively engaged in formulating the Our Rivers Our City strategy. Many individuals including elected representatives and community leaders have expressed a passion for rivers and a concern that the city must make a real difference in the global task of protecting people and wildlife from the adverse consequences of climate change. Flooding, litter, adverse water quality and poor access to rivers are all issues where our citizens want to be part of the change that needs to happen.

In terms of delivering Our Rivers Our City, citizens and communities have particular strengths in:

- Improving neighbourhood quality
- Informing and supporting citizens to adopt water-conscious lifestyles
- Organising wildlife, angling and clean-up events
- Co-design of welcoming spaces
- Reducing household waste and pollution
- Water and wildlife-friendly gardening
- Campaigning and activism
- Highlighting environmental crimes to be addressed by enforcement bodies

United Utilities

United Utilities is the local water company for Manchester, providing the city with its drinking water supplies and wastewater services. Through its employees and extensive supply chain, United Utilities has unparalleled expertise in integrated water management in urban areas. Virtually everyone who reads this strategy will be served by United Utilities.

United Utilities' investment is regulated by Ofwat to secure good value for customers and to reflect customers' willingness to pay for environmental improvements. The company's investment programme significantly influences how priorities around sewer flooding and CSO will be addressed over the next decade. The water industry regulatory framework provides United Utilities with the ability to access sustainable financing to deliver long-term plans for improvements to the sewerage system within the constraints of maintaining affordable water bills for customers.

In terms of delivering Our Rivers Our City, United Utilities and its supply chain bring particular strengths in:

- Delivering solutions to improve water quality
- Supporting planning and investment in sustainable drainage systems
- Integrated long-term urban water management and place-based planning
- Informing and supporting citizens to adopt water-conscious lifestyles
- Experience in partnership working to co-create solutions
- Securing low-cost finance to deliver investment

Matt Doran

Environment Agency

The Environment Agency has both a regulatory role and an investment role in partnership delivery. In its investment role, the Environment Agency is responsible for maintaining designated Main River which makes up a high proportion of the river channel length within the City's river valleys.

It also has responsibility for investment in flood risk management associated with river flooding, balancing this with its duties for enhancing biodiversity and improving the quality of the water environment. Much riparian land is owned or managed by the Environment Agency and whilst maintaining flood defences is a fundamental statutory duty, there are opportunities to use its riparian estate management service to deliver multiple benefits for wildlife, public access, angling, recreation and social enterprise.

In terms of delivering Our Rivers Our City, the Environment Agency has particular strengths in:

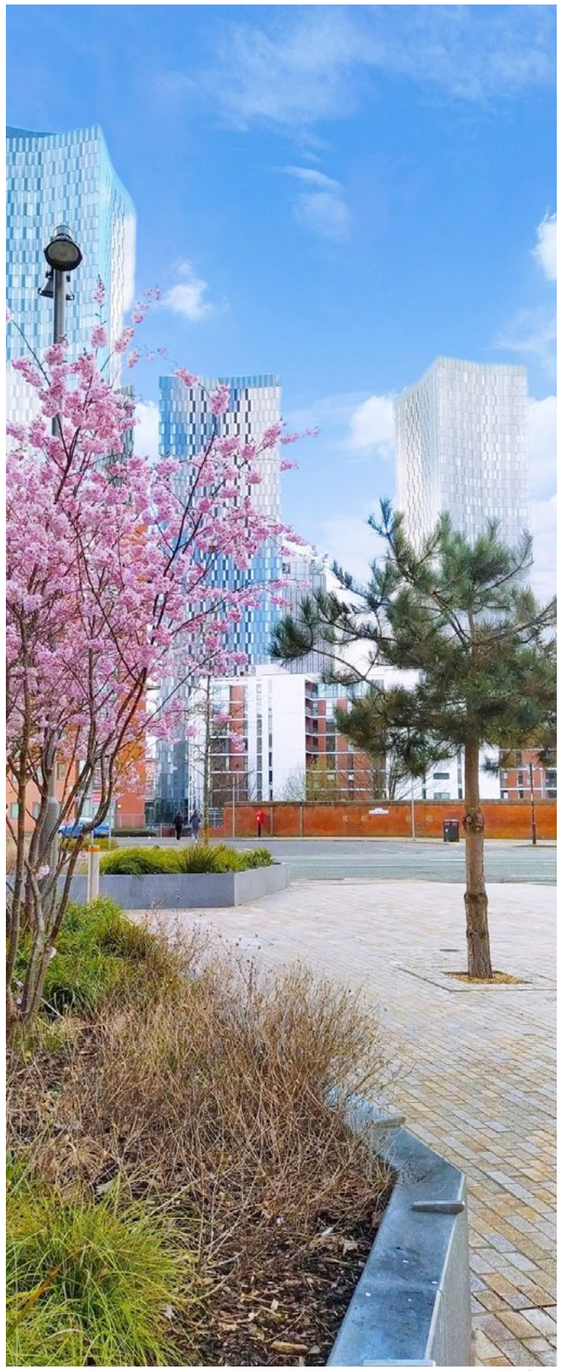
- Flood risk management
- Delivery of flood mitigation measures
- Aquatic biodiversity enhancement
- Aquatic environmental management
- Hydrology, geomorphology, water quality and ecological expertise.

Third Sector

Manchester's voluntary sector is very active and many Third sector organisations have a stake in the outcomes of Our Rivers Our City. This includes groups campaigning and project delivery for wildlife and the river environment, climate resilience, young people and vulnerable adults, employment and skills, equality for disabled people, gender equality, sustainable travel, walking and cycling, recreation, health and well-being.

In terms of delivering Our Rivers Our City, the Third sector has particular strengths in:

- Lobbying for cleaner waters, reduced flood risk and improved access to nature;
- Supporting people to gain skills and jobs in the green sector;
- Fund-raising and accessing charitable grants that are not available to the public and private sector;
- Informing and supporting citizens to adopt water-conscious lifestyles;
- Organising wildlife, angling, water-based recreation and river clean-up events;
- Co-design of welcoming spaces, including outreach to people who do not normally feel engaged with the environment;
- Organising citizen science monitoring;
- Campaigning and activism.



Matt Doran

Regulators and Policy-makers

Environment Agency, Natural England, Ofwat, Defra and Manchester City Council have regulatory and policy-making functions which affect the water environment. The legislative and policy framework affects how much investment reaches Manchester's rivers. Despite real improvements in the health of the City's rivers since the early 1990s, primarily from environmental legislation which has driven a multi-billion pound water company investment programme, substantial issues remain for our rivers reflecting the legacy of the significant impacts on rivers from the City's historic industrial and urban growth.

The pace of change necessary to address this legacy has exceeded the availability of investment, which has been constrained by other priorities plus the affordability limits of consumers and taxpayers.

On the brighter side, in 2021, we have the prospect of much stronger policy and legislation relating to climate change mitigation and adaptation as well as nature recovery. Linked to these changes, there are likely to be new and alternative funding streams that may help overcome the affordability constraints of traditional funding routes.

The National Health Service and Public Health England are developing policy in respect of mental health, ageing well and physical wellbeing. Nature connectedness is one of the foundations of good health, along with community connections. Improving the quality of access to river valleys and finding innovative ways to engage people with nature are critical to the success of this strategy.

Over the ten-year course of the Action Plan, regulators and policy-makers will have particular strengths in:

- Flood response and risk reduction;
- Water quality and pollution control policy and regulation;
- Enabling use of Nature-Based Solutions and SuDs during redevelopment, including mandatory Biodiversity Net Gain requirements;
- Promoting river and floodplain restoration;
- Informing and supporting citizens to adopt water-conscious lifestyles;
- Reducing household waste and pollution;
- Supporting enforcement action against environmental crimes;
- Encouraging co-design of access to river valleys
- Supporting innovation in community engagement and increasing access to open spaces.

Matt Doran

Academic Bodies

Manchester and Salford's universities have an international reputation for science and technology, particularly in its application to urban renewal and water management. National research bodies such as CIRIA are building up an impressive array of evidence and policy to support blue-green infrastructure responses to climate change.

Our academic bodies also have strengths in social science, planning, geography and techniques for co-design (i.e. engaging citizens in management of the public space). These "soft skills" are essential for delivery of our ten-year action plan.

In terms of delivering Our Rivers Our City, our academic bodies have particular strengths in:

- Technological research into remediation techniques, new monitoring tools and data analytics to help improve water quality and surface water management;
- Social research into effective co-design of welcoming spaces;
- Economic research to support investment in integrated water management;
- Informing and supporting citizens to adopt water-conscious lifestyles;
- Supporting jobs and enterprises that thrive in a high-quality environment.

Neighbours and Partners

Our neighbouring local authorities, particularly Rochdale, Oldham, Stockport, Trafford and Tameside have a shared stake in the health and economic vitality of the Irk, Medlock and Mersey valleys, as appropriate. We can only manage floods, clean up our rivers and improve access by working collaboratively within the natural river catchments. The Irwell and Upper Mersey Catchment Partnerships therefore have a critical role to play in co-ordinating activities across administrative boundaries, taking an integrated approach that works with the natural river catchments and involving a wide range of partners. The Natural Course project has been instrumental in raising awareness of the economic importance of river valleys.

In terms of delivering Our Rivers Our City, our neighbours and partners have particular strengths in:

- Lobbying for central government investment in water quality and urban river restoration;
- Research and evidence to support investment in integrated water management;
- Riparian and upper catchment land management to reduce flooding in Manchester;
- River valley access and wardening;
- Collaborative fund-raising.

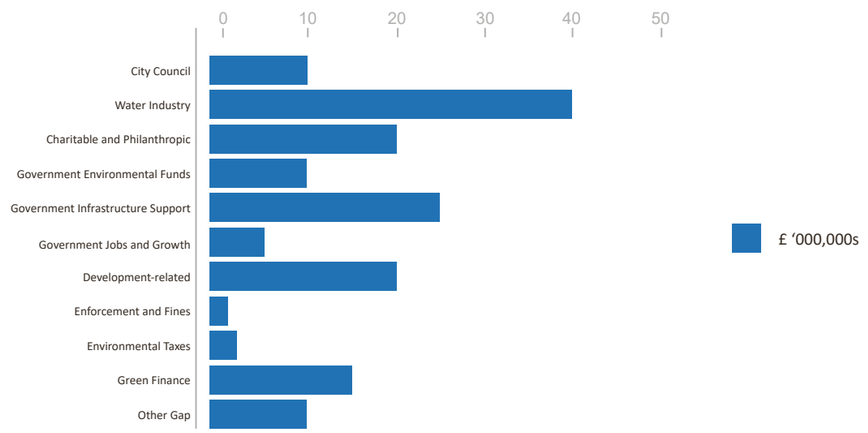
Funding

Initial estimates are that delivery of the ten-year action plan for Our Rivers Our City will require capital investment of between £100m and £200m. The wide range in the estimate is partly because further studies are needed to prioritise activity and partly because the extent and cost of delivery works requires further feasibility testing.

Over and beyond this financial investment, many actions will be delivered during property development, for example new public realm and urban greening measures that are required by City and national policy.

Preliminary assessment of the possible range of funding sources required for the action plan is made in the chart below. At the time of writing, in 2021, almost none of these can be taken for granted.

Our Rivers Our City
Potential Funding Requirements and Sources
2021-2031



For example, water industry funding is tightly regulated by Ofwat against national and regional priorities, and is constrained to ensure affordable water bills for customers.

The water industry national environment programme (WINEP) is a programme of work, developed and managed by the Environment Agency. Water companies are required to deliver to meet their obligations from environmental legislation and UK government policy. The WINEP is a substantial programme of environmental investment, managed in five yearly programmes. The next (AMP8) will run from 2025 to 2030.

Influencing the development of future WINEPs, through opportunities provided by Drainage and Wastewater Management Plans, will be key to prioritising water company environmental investment plans and driving a move towards consideration of catchment systems thinking/ place based outcomes.

It is hoped that a major programme of measures to address surface water and sewer flooding plus CSO remediation in the City can be introduced for the period 2025 to 2030 following the next water industry price review in 2024, but this will require continued lobbying and building of an evidence base on benefits, costs and customer willingness to pay for improvements.

The rules and availability of government funding for environmental management and infrastructure support are uncertain post-Brexit and post-pandemic.

The extent of charitable and philanthropic funding (e.g. National Lottery Heritage Fund, CSR contributions, charitable trust foundations) depends on a strong third sector able to access funds and deliver projects, and the availability of other funding for leverage / match funding.

Development-related funding (s106 contributions, mitigation measures included in planning conditions, biodiversity “net gain” funds and other types of levies for community and infrastructure projects) depend on speed of development and local viability issues. Nevertheless there is an unarguable link between neighbourhood environmental quality and liveability and the City Council cannot, for the sake of its residents and businesses, be shy about securing developer funding necessary to enhance the city’s environment.

Green finance is still in embryonic stages in the UK, but accessing significant funds will almost certainly require partnerships between the City Council, United Utilities, Environment Agency, other Greater Manchester authorities, GMCA, Natural Course and Third Sector partners to create an investible portfolio of natural capital projects that are required to meet statutory duties or deliver natural capital benefits in respect of climate adaptation, flood risk reduction, water quality improvement or nature recovery.

Notwithstanding the caution, as Our Rivers Our City gathers momentum, these funding sources can start to be unlocked through collaborative action.

Governance and Championing

Our Rivers Our City is owned by its partners and is co-ordinated by the City Council. The graphic below shows some of the other strategies and action plans within the same “space” as Our Rivers Our City.

Manchester City Council

The City Council can provide leadership and co-ordination of Our Rivers Our City activity, in a similar way as it does for Green and Blue Infrastructure in the city. This would be a strong partnership-working role, led by an officer, working to an elected member with executive responsibilities for climate change adaptation and environmental quality.

The City Council therefore has the lead role in managing Our Rivers Our City but as many significant actions would be co-funded / co-delivered with others or delivered entirely by others, the City Council will need to:

1. Champion integrated water management because it is critical to the City’s future in a changing climate;
2. Promote sponge city thinking and water quality enhancement in development management;
3. Devise and implement improvements on its own estate;
4. Devise co-investment opportunities with other public sector, private sector and Third sector partners;
5. Encourage and enable citizens and the Third sector to take local actions;
6. Take enforcement action against littering and illegal discharges, working with other enforcement bodies as appropriate.

Our Rivers Our City sits within a cluster of environmental strategies championed by the City Council, all involving partnership working - notably Manchester’s Great Outdoors and the Parks Strategy.

It also informs the emerging Local Plan and the Strategic Regeneration Frameworks and masterplans that will guide much of the development in the city centre, within the lower reaches of the Irk and Medlock valleys.

It will also support the work of the Council’s Neighbourhood teams as they take action to improve local environmental quality and tackle environmental anti-social behaviour.

Finally, the City’s responsibility as Lead Local Flood Authority will be assisted by rapid adoption of sponge city practices, as articulated in this strategy.

United Utilities

Our Rivers Our City will assist United Utilities in the co-creation of prioritised place-based investment plans to support the next price review submission to Ofwat in 2024. United Utilities will need to demonstrate the benefits of any investment proposed for customers and the environment. By working collaboratively to develop a prioritised plan for addressing problematic CSOs and sewer flooding risks in the City, there is a greater likelihood of the investment being included in the price setting for water bills for the period 2025-2030 as determined by Ofwat.

Environment Agency and Natural England

Our Rivers Our City provides the opportunity for improved collaborative working between the City Council and the Environment Agency on shared objectives, including flood risk, access to river valleys, tackling pollution and waste management risks to water quality (including fly tipping and former waste tips/contaminated land risks). This includes collaboration on the development of the Environment Agency’s upper River Mersey strategy, as well as making joint bids for central government funding opportunities (including funds from Defra, MHCLG, DfE and BEIS), plus green finance investment opportunities.

There will be opportunities to collaborate with Natural England in the funding and delivery of nature recovery schemes in the river valleys.

Other Public Bodies, Catchment Partners and Neighbours

Delivery of Our Rivers Our City will include collaborative working with other public bodies to leverage new sources of funding. This includes Highways England and Network Rail, partnership working with GMCA and neighbour local authorities, plus other public sector landowners in the three river valleys.

Our Rivers Our City will support the work of several existing collaborative improvement programmes by articulating the City’s commitment to their aims and objectives. This includes the Natural Course programme, the GM Environment Fund, the GM Local Nature Recovery Strategy, the Upper Mersey and Irwell catchment partnerships and the Bringing the River Irk to Life (BRIL) programme.

Community and Third Sector

Our Rivers Our City will provide policy and evidence to support local initiatives such as My Wild City, RSPB in the Mersey Valley, the plans of Sustrans and Manchester Ramblers to improve access for all, the Mersey Rivers Trust proposals for river restoration and greater citizen involvement in river management, Groundwork Greater Manchester’s schemes for green employment and skills training, plus the work of many other Third Sector organisations operating within the City.

Water Champion

We envisage a water champion role, promoting the Our Rivers, Our City strategy and advocating for sponge city activity, improved river valley access and investment in clean, wild rivers. The water champion would help influence government, encourage collaborative partnership working, raise awareness across the City and engage with the media.

This may be an elected member of the City Council with a water-based portfolio; or it may be a local activist with strong water industry and environmental credentials. This role would not necessarily require additional funding; it could be an honorary role, or it could be delivered by someone who already has a similar portfolio.

Matt Doran

Delivery Plan

Our Delivery Plan is found at Annexe F. It demonstrates how the Our Rivers Our City strategy, objectives and outcomes will be delivered over the next 10 years. The plan identifies sixteen delivery areas and indicates:

- The proposed or confirmed lead owner for each action and co-delivery partners where applicable;
- The delivery location(s);
- The principal Our Rivers Our City objectives and outcomes that each action supports;
- The indicative capital and revenue costs;
- An indication of delivery risk;
- Likely delivery timescales;
- Potential funding sources (or in a small number of cases the confirmed funding sources).

The Delivery Plan sets out strategic-level actions which will need to be further developed into a set of detailed actions by the action owner and co-delivery partners for implementation.

Acknowledgements

TEP, Groundwork Greater Manchester and the Mersey Rivers Trust thank the countless individuals and organisations who helped formulate and guide the production of this strategy and action plan in 2020 and 2021.

Our Stakeholder Engagement report (Annexe C) lists all those who contributed to workshops and events.

Our Steering Group consisted of delegates from Manchester City City Council, Greater Manchester Combined Authority, Environment Agency, United Utilities, Natural England and the Far East Consortium.

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References

[1]London Strategic SuDS pilot study. Available at London Strategic SuDS Pilot Study | lotag Accessed 8th June 2021

[2]GMCA (2018) Irwell Management Catchment: Natural Capital Account and Ecosystem Services Opportunity Mapping (research report by TEP and Vivid Economics available at Natural Capital Account and Ecosystem Services Opportunities Mapping (naturalcourse.co.uk). See Appendix G, values for Irk (Wince to Irwell) and Medlock (Lumb Brook to Irwell)

[3]GMCA (2018) Irwell Management Catchment: Natural Capital Account and Ecosystem services Opportunity Mapping (research report by TEP and Vivid Economics available at Natural Capital Account and Ecosystem Services Opportunities Mapping (naturalcourse.co.uk)

[4]Sheffield City Region Economic Appraisal of Grey to Green Phase 2 works. Available at Appraisal-Panel-Summary-G2G2.pdf (sheffieldcityregion.org.uk)

[5]Based on a calculation of the number of Biodiversity Units within 300m of a river or stream. Biodiversity Units are assessed using the Defra metric available in 2020 (ver 2.0)

[6]de Bell, S. Graham, H. and White, P. (2020) Evaluating Dual Ecological and Well-Being Benefits from an Urban Restoration Project Sustainability | Free Full-Text | Evaluating Dual Ecological and Well-Being Benefits from an Urban Restoration Project (mdpi.com)

[7]Natural Course is an EU-Life funded scheme designing projects to better understand and overcome some of the biggest barriers preventing the achievement of 'good ecological status' under the EU Water Framework Directive in the North West River Basin District.

[8]Environment Agency, Chief Scientist's Group. (2021). The state of the environment: the urban environment.

[9]Beute, F., Davies, Z., de Vries, S., Glanville, J., Keune, H., Lammel, A., Marselle, M., O'Brien, L., Olszewska-Guizzo, A., Remmen, R., Russo, A., Andreucci, M.B. (2020) Types and characteristics of urban and peri-urban blue spaces having an impact on human mental health and wellbeing. Report prepared by an EKLIPSE Expert Working Group. UK Centre for Ecology & Hydrology, Wallingford, United Kingdom

[10]Defra (2020) Monitor of Engagement with the Natural Environment (MENE): Storymap explaining key findings from 10 years of the survey 2009 to 2019/19. At People's engagement with nature (arcgis.com)

[11]Public Health England (2020) Improving Access to greenspace. A new review for 2020

[12]Snaith, B. (2016), "Parks and Prejudice", Landscape: The Journal of the Landscape Institute (Summer)

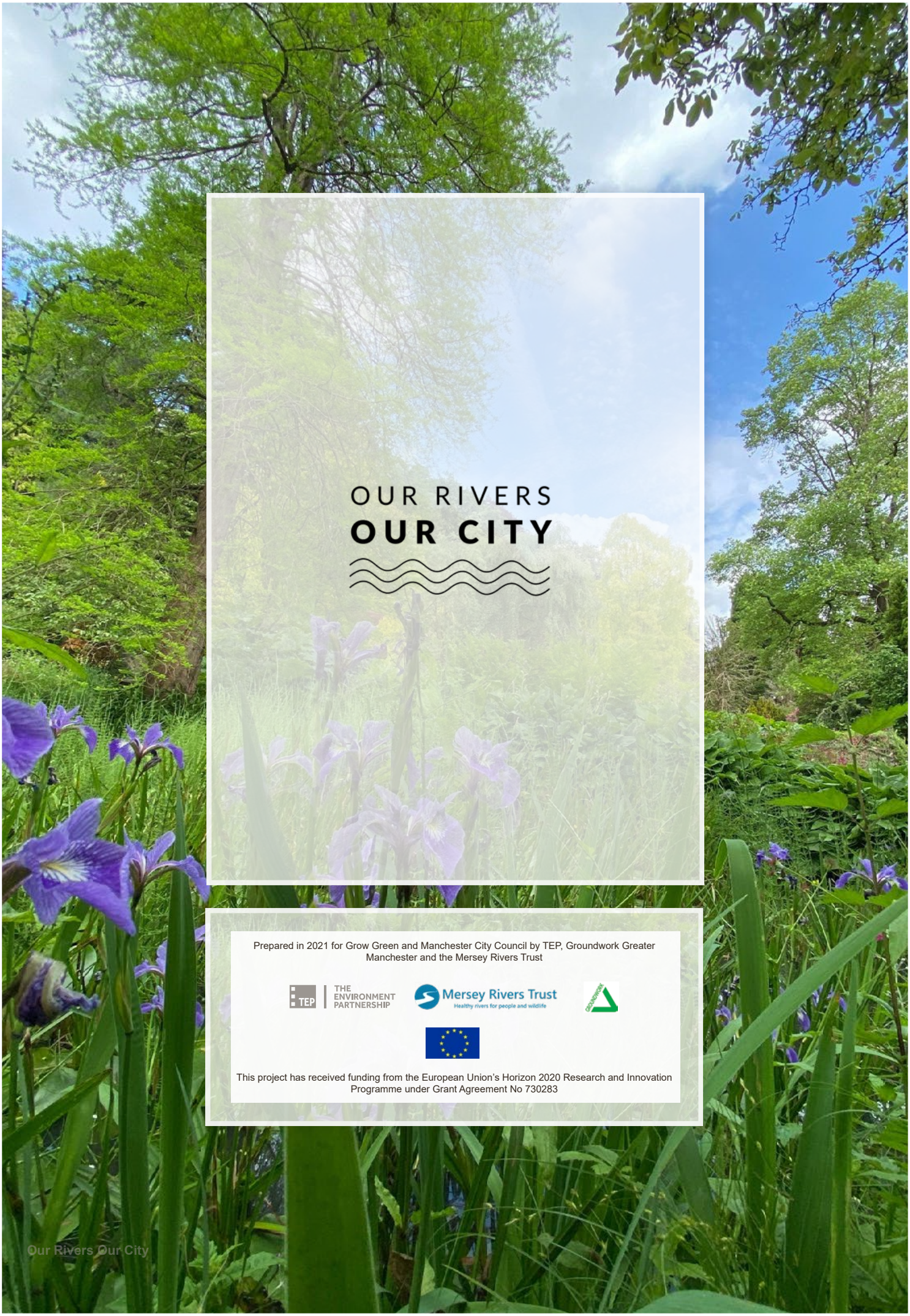
[13]Environment Agency, Chief Scientist's Group. (2021). The state of the environment: the urban environment.

[14]Natural England (2021) Carbon Storage and Sequestration by Habitat 2021 - NERR094 (naturalengland.org.uk)

[15]Water UK (2020) Net Zero 2030 Routemap – Summary for Policymakers Water-UK-Net-Zero-2030-Routemap-Summary-updated.pdf

[16]Manchester Climate Change Partnership (2020) Manchester Climate Change Framework. Manchester Climate Change Framework 2020-25.pdf

[17]Environment Agency (2009) Potential of SUDS in reducing water related greenhouse gas emissions. EA Report: SC070010/R4



OUR RIVERS OUR CITY

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Dave Barlow