MANCHESTER
CITY COUNCIL

Strategic Review

OUR RIVERS
OUR CITY

OUR STRATEGIC REVIEW

INTRODUCTION

This document reviews the strategic context for Our Rivers Our City. It identifies:

1. How the project aligns with, and delivers, global, national and city priorities in areas such as climate change adaptation, river restoration, water resource management, green infrastructure (GI) and health and wellbeing;
2. Current and future plans and projects by organisations in Manchester; and
3. Sources of evidence and best practice that influence the River Valley Action Plans.

This review is organised as follows:

Overview

A two page summary of the detailed review, highlighting how Our Rivers Our City can support the objectives of current and emerging policies for the City's waters, and conversely, what support is needed from future policies to implement Our Rivers Our City.

Part 1: Policy, Strategy and Guidance

Part 1 summarises plans, strategies and guidance in a hierarchical order: national, city-wide and local.

Part 2: Action Plans and Projects

Part 2 lists initiatives, action plans and projects by catchment, city-wide and by river valley.

Part 3: Evidence and Best Practice.

Part 3 signposts sources of evidence and best-practice in river valley management and the concept of "sponge city". As this is a vast bank of knowledge, the aim of Part 3 is to highlight selected examples most relevant to Manchester's river valleys.

Part 4: Informing the Action Plans

A spreadsheet-style summary of key ideas that emerged from this strategic review to take forward into the action plans for Our Rivers Our City

TEP, April 2021

Overview

It is clear from the numerous strategies, policies and previous projects we have reviewed how important green infrastructure and river valleys are to Manchester and how integral they are to its sustainable growth.

Manchester faces many challenges including climate change (increased flood events), air pollution, an increasing population, area of high deprivation, health inequalities and development pressures.

Sustainable development provides an opportunity for Manchester to secure enhancements to its existing green infrastructure to benefit the economy, environment and the communities of Manchester.

From Strategy to Delivery – past success in river valley and sponge city delivery

Manchester has a catalogue of exemplary projects that demonstrate its commitment to improving its green spaces. Back in 2014, a project coordinated by the Irwell Rivers Trust, Manchester City Council (MCC), the Environment Agency, Groundwork and Friends of Clayton Vale saw the removal of Accrington bricks from a 300m stretch of the River Medlock and the removal of a weir to help the river flow naturally through the valley.

The project resulted in the return of wildlife, improved fish migration and increased resilience to flooding.

More recently, West Gorton Community Park is a flagship project which incorporates nature based solutions (NBS) and is referred to as a sponge park for its ability to hold water and reduce flooding. These projects highlight Manchester's ability to enhance and create green spaces that provide wide-ranging Ecosystem Services (ESS) and bring benefits to the City.

Current and Emerging Strategies – already promoting delivery of river valley and sponge city projects

Our Manchester – The Manchester Strategies, Manchester's Green and Blue Infrastructure Strategy, Manchester's Park Strategy, Wild About Manchester and All Our Trees all play a fundamental role in promoting Manchester's open spaces, rivers and river valleys.

There are also a number of strategies within the pipeline which will play a crucial role, including a Drainage and Wastewater Management Plan currently being produced by United Utilities and partners.

Policies set out in the City's Core Strategy and in the emerging "Places for Everyone" (formerly Greater Manchester Spatial Framework) provide mechanisms to secure the enhancement of existing green infrastructure and the creation of new green spaces within new development.

For example, the Mayfield Strategic Regeneration Framework includes the provision for a new park in Manchester, centred on the River Medlock. This will be Manchester's first city centre public park. This will be a huge opportunity for Manchester to create multifunctional green space along the River Medlock with far reaching benefits to Manchester's economy, its people and its environment. Similarly, the Victoria North SRF contains an exciting vision to deliver the City River Park along the river Irk northwards from the city centre.

What should "Our Rivers Our City" learn from current and emerging strategies?

Our Rivers Our City has formulated seven strategic objectives in response to this strategic review and from consultation with stakeholders. The key messages for each of our seven objectives are:

Place-making and Manchester's Economy - Local identity, place-shaping and neighbourhood quality. Build on local character. Promote green jobs and skills. Local Plan policy and designation of rivers as assets.

Wild Rivers – Identifying, protecting and enhancing green and blue infrastructure for wildlife including wildness, core areas, stepping-stones. Community engagement. My Back Yard actions in and near to river valleys.

Clean Waters – Promotion of river restoration action plans such as Bring the River Irk to Life (BRIL), City River Park. Drainage and wastewater management planning. Sponge City policies. Influence corporate plans of MCC, Social Housing providers, United Utilities and the Environment Agency.

Access to Water – Identify river valley tranquil areas. Ensure equity of access for all communities. Create improved waterfront access during Strategic Regeneration. Continually improve quality of access and waymarking. Engage local people.

Sponge City – The addition of Sponge City policies, new integrated water management approaches across Manchester City Council and its partners. The upcoming Drainage and Wastewater Management Plan will also provide an opportunity to provide measures for adaption to climate change.

Zero Carbon – Promotion of active travel routes in and along river valleys. Identifying tree-planting and wetland creation priority areas by looking at the carbon sink values. Pioneering a 'climate district' approach through Strategic Regeneration Frameworks.

People and Neighbourhoods – Identifying and addressing deficiencies in access to blue infrastructure. Promoting and enabling community and voluntary activity. River Valley Wardens to address anti-social behaviour within river valleys.

How do Emerging Policies and Strategies need to support Our Rivers Our City?

Whilst Manchester has a strong foundation of supportive strategies and policies for its river valleys, the strategic objectives of Our Rivers Our City need further help to ensure that its action plans can be secured through new development and initiatives.

In order to maximise the impact of Our Rivers Our City, development of strategies and policies will be required for:

- ≈ Waterbody Protection and Enhancement;
- ≈ Sustainable Drainage and Nature-based Solutions
- ≈ Climate-Friendly Neighbourhoods (including an Urban Greening Factor);
- ≈ Blue Space Access Standards;
- ≈ Water- Sensitive Design;
- ≈ Nature Recovery Networks
- ≈ Digital Technology; and
- ≈ Enabling Development-related Contributions.

PART ONE:

POLICY, STRATEGY AND GUIDANCE

PART 1: POLICY, STRATEGY AND GUIDANCE

This section is organised as follows:

National Plans, Strategies and Policy

The following are the principal documents setting out the policy and regulatory framework which guide Our Rivers Our City. They cover topics of development and use of land, natural capital, GI, biodiversity, water resource planning and climate change.

- National Planning Policy Framework (2012 (updated 2019));
- National Design Guidance (2019 (updated 2021));
- Building for a Healthy Life (2020);
- Our Green Future: A 25 Year Environment Plan (2018);
- EA2025: Creating a better place (2020);
- Environment Bill (2020);
- Planning for the Future White Paper (2020); and
- Making the Country Resilient to a Changing Climate (2018).

National Guidance

The most useful sources of national guidance for Our Rivers Our City are provided in this section under the following topics:

- Development and Use of Land;
- Natural Capital and GI;
- Biodiversity;
- Water Resource Planning;
- Climate Change; and
- Health and Wellbeing (in the context of use of the outdoor environment).

The documents include government guidance and other sources that are endorsed or regularly cited by government.

Development and Use of Land

Given the current and projected population increases in the City, the development management process will be critical to ensuring high quality design and effective use of land, including consideration of access to green spaces and rivers. National Planning Practice Guidance is available on the following topics which are of particular relevance to Our Rivers Our City:

- ≈ Climate Change (2019);
- ≈ Design (2019);
- ≈ Flood Risk (2014);
- ≈ Green Belt (2019);
- ≈ Healthy and Safe Communities (2019);
- ≈ Land Affected by Contamination (2019);
- ≈ Natural Environment (2019);
- ≈ Open Space, Sports and Recreation Facilities, Public Rights of Way and Local Green Space (2014); and
- ≈ Water Supply, Wastewater and Water Quality (2019).

Natural Capital and Green Infrastructure

A Green Future: Our 25 Year Plan to Improve the Environment (2018 (updated 2019)) encourages decision-makers to embed a natural capital approach, aiming to improve the number and functioning of ecosystem services (ESS) provided by land and water. The following guidance has also been considered:

- ≈ Enabling a Natural Capital Approach (2020);
- ≈ National Natural Capital Atlas: Mapping Indicators (NECR285) (2020).

The Department for the Environment, Farming and Rural Affairs (DEFRA) is expected to publish draft GI Standards shortly for consultation, so Our Rivers Our City can align with these, and contribute to the national consultation to ensure urban green and blue infrastructure is promoted as much as possible.

Biodiversity

Biodiversity Net Gain became mandatory with the passing of the Environment Bill 2020 and the following guidance documents have been considered within Our Rivers Our City:

- ≈ Biodiversity Net Gain: Good Practice Principles for Development (2016); and
- ≈ Biodiversity Net Gain Toolkit 2019.

Similarly, Local Nature Recovery Strategies have also become a requirement for local authorities and in this case, Greater Manchester is likely to take a city-regional approach. Natural England has published some guidance on preparation of the Local Nature Recovery Strategies:

- ≈ National Habitat Network Maps User Guidance (2020); and
- ≈ Nature Recovery Network Policy Paper (2020).

Water Resource Planning

The following guidance on water resource planning has been considered as part of Our Rivers Our City:

- ≈ Sustainable Drainage Systems (SuDS) Manual (CIRIA C753F) (2015); and
- ≈ Water Resources Planning Guideline (2021).

Climate Change

The Climate Change Act 2008 (amended 2019) has been considered as part of Our Rivers Our City.

Health and Wellbeing

The Government has published COVID-19 Mental Health and Wellbeing Recovery Action Plan 2021 to tackle the mental health impacts of COVID-19 and access to greenspace is recognised as playing an important part. The role of nature-based social prescribing is also being tested as part of a £5.77m project[1].

City Plans, Strategies and Policy

Our Rivers Our City aligns with relevant adopted and emerging plans, strategies and policies which Manchester City Council (MCC) is currently implementing and listed below. The River Valley Action Plans will deliver several city-wide priorities in respect of the economy, the environment and people. The review of the relevant plans, strategies and policies to the Our Rivers Our Strategy is set out under the following themes:

- ≈ Economy, Place-making and Development;
- ≈ Biodiversity, Water Quality and River Restoration;
- ≈ Parks, Greenspaces, Access and Recreation;
- ≈ Health, Wellbeing, Education and Community; and
- ≈ Climate Change and Air Quality.

Economy, Place-making and Development

The relevant plans, strategies and policies relating to the theme of economy, place-making and development are:

- ≈ Our People Our Place: The Greater Manchester Strategy (2018);
- ≈ Our Manchester – The Manchester Strategy (2016);
- ≈ State of the City Report (2019);
- ≈ Local Plan Core Strategy (2012);

1 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/973936/covid-19-mental-health-and-wellbeing-recovery-action-plan.pdf

- ≈ Greater Manchester's Plan for Homes, Jobs and the Environment: Greater Manchester Spatial Framework Publication Plan (2020)2;
- ≈ Greater Manchester's Local Industrial Strategy (2019);
- ≈ The Northern Gateway Strategic Regeneration Framework (2019); and
- ≈ Powering Recovery: Manchester's Economic Recovery and Investment Plan (2020).

Our People Our Place: The Greater Manchester Strategy

Greater Manchester Combined Authority, 2018

The Strategy's vision is to make Greater Manchester one of the best places in the world to grow up, get on and grow old in. This means creating a place where people live healthy lives and is at the forefront of action on climate change, with clean air and a flourishing natural environment. The aim is for Greater Manchester to become a national leader in protecting and strengthening the natural environment. Furthermore, the Strategy's aim is for Manchester to be a carbon neutral city-region offering a vibrant, stimulating environment for people to live, work and study.

To achieve its aim, the Strategy has ten priorities, the most relevant to Our Rivers Our City is Priority 7: A green city region and a high-quality culture and leisure offer. This priority has two main targets with regards to climate change and the natural environment:

- ≈ By 2020, Greater Manchester will have reduced CO^2 emissions to 11mt, down from 13.6mt in 2014; and
- ≈ By 2020, we will have halved the gap with the national average for the proportion of Greater Manchester residents reporting that they visited the natural environment at least once during the previous seven days.

Whilst these targets have now passed, the River Valley Action Plans can build on them by promoting enhancement of habitats that store carbon to reduce the CO^2 whilst also encouraging access to the river valleys for recreation and sustainable travel.

The Strategy states that the natural environment, and the ESS that Manchester provides, needs to be both protected and, where possible, enhanced in light of increasing pressures from people, the economy and a changing climate. Existing green spaces will be protected and improvements to the quality of parks, rivers and canals will also be made.

The Action Plans for each River Valley align closely with the overall five main aims of this Our Rivers Our City strategy. The Actions Plans will enable Manchester to protect and improve the natural environment within the river valleys and increase access to the natural environment.

Our Manchester – The Manchester Strategy 2016-2025

Manchester City Council, 2016

Our Manchester - The Manchester Strategy sets out a long-term vision for Manchester's future and how it will be achieved. It provides a framework for actions by our partners working across Manchester. The Manchester Strategy highlights that more people are living in ever-bigger cities and by 2050 two thirds of the world's population will live in cities.

[2] Following Stockport Council's departure from the Greater Manchester Spatial Framework, the document will now be referred to as Places for Everyone

By 2025, Manchester will play its part in limiting the impacts of climate change, be clean and attractive and be a place where residents from all backgrounds feel safe, can aspire, succeed and live well. This means making the most out of green spaces, parks and network of waterways and canals.

There are 143 parks and green spaces in Manchester (as of 2016), and it has one of the highest levels of tree cover of any large city at 20% of its area, compared to the UK average of 8.2%.

Whilst the Strategy does not refer specifically to river valleys it does state that developments across the city offer the opportunity to create good-quality outdoor spaces that make the most of the natural environment and existing parks, canals and rivers.

In regards to areas that the MCC want to see a major transformation by 2025, the Irk Valley is mentioned alongside Collyhurst, Ancoats, Corridor Manchester, Etihad Campus, Central Park and Airport City.

Our Rivers Our City, in particular the River Valley Action Plans, will align with the vision and aims of Our Manchester - The Manchester Strategy, in particular it will share the aspiration for improved and better accessibility to green spaces and waterways within the City through further investment and partnerships.

State of the City Report 2019

Manchester City Council, 2019

The State of the City Report published in 2019 provides a progress update on the themes set out in Our Manchester – The Manchester Strategy.

Manchester's population grew rapidly in 2019, especially in the city centre and surrounding wards. The population is set to grow for the next ten years. Despite an increase in Manchester's population, the Report has found that there has been a decrease of 10% in attendance of sport, leisure and parks. However, progress continues to be made on improving green spaces across the City, including small projects as well as large scale landscape initiatives.

The Report makes reference to the Strategic Regeneration Framework for the Mayfield neighbourhood which was refreshed in 2018. The Framework includes a new 6.5-acre city park centred along the River Medlock.

The Report cites that the arrival of HS2 will provide a once in a century opportunity to transform and regenerate the eastern side of the city centre. This could enable further improvements to greenspace within the River Medlock Valley.

The Action Plan for the Medlock River Valley uses the Strategic Regeneration Framework for the Mayfield Neighbourhood as a means to secure improvements through partnerships with the developers involved. Furthermore, in order to maximise the environmental improvements that could be secured through HS2, the Action Plan looks to early planning and partnership building to secure these.

Local Plan Core Strategy 2012-2027

Manchester City Council, 2012

The Core Strategy outlines the MCC's vision for Manchester in 2027, along with planning policies to deliver its vision.

The Core Strategy highlights that the potential of river valleys is now being realised and will act as a vital and vibrant link between the many different initiatives being developed within them, essentially knitting together Manchester and Salford, and linking green spaces.

The GI of Greater Manchester is part of the City Region's life support system. In Manchester, the river valleys and canal corridors form an important element of the 'ecological framework'. They also present opportunities for further landscape and habitat enhancement and creation including the restoration of sections of channelised river, the opening up of culverted sections and 'hidden rivers', and the creation of new fish passes at existing large weirs. Informal open space such as country parks and commons (such as Ashenhurst, Tweedle, Blackley and Nutbank commons in North Manchester), and managed green space in parks, present further significant opportunities for enhancement of their biodiversity value.

Along the river valleys there is still a strong sense of community and prides. North Manchester is roughly divided into two halves by the River Irk, which flows from the northern parts of Oldham towards the City Centre and Rochdale Road. The river valleys in north Manchester link together natural and semi-natural space providing a network of green space providing an essential asset in development North Manchester's role as a high-quality residential area.

A significant feature of East Manchester is the River Medlock which runs east-west through the area, although the corridor is poorly maintained and of low environmental quality. There are also a number of parks and other green spaces, including the large Victorian Philips Park, Clayton Vale and the open space areas associated with the Gorton Reservoirs.

The Core Strategy has 10 key vision points, which includes creating a *"city where residents and visitors regularly enjoy a network of quality open spaces, parks and river valleys, enriched with biodiversity, which provides recreational routes and opportunities for sport across the city".*

Strategic

Policy SP1 Spatial Policy states that the City's network of open spaces will provide all residents with good access to recreation opportunities. The River Valleys and City Parks are particularly important, and access to these resources will be important. Furthermore, this policy ensures that the three river valleys are protected and enhanced because the river valleys are the backbone of the City's GI and provide an important contrast with the urban landscape.

Policy EC 4 North Manchester highlights that the River Irwell will be promoted as part of redevelopment by creating a sense of place and attracting investment. Plans are also in place to improve the open space network along the Irk Valley encouraging walking and cycling to ensure accessibility to new employment opportunities in North Manchester.

Policy EN 1 Design Principles and Strategic Character Areas details the Irk Valley, Medlock Valley and Mersey Valley Character Area. Development within or alongside the Irk Valley should seek to enhance the Valley's semi-natural appearance and function and consideration will need to be given to views into, out of and along the River Valley.

The Medlock Valley (outside the City Centre) character area is divided into three sub groups, with a wider semi-natural area lying area lying to the east of Bankbridge Road, a more

managed landscape with an increase in urban form around Eastlands and Philips Park and a narrower river valley confined by built development to the west of Eastlands.

The Mersey Valley is a wide, flat valley with heavily managed open space and tree cover largely found on the valley perimeter. The Mersey Valley acts as an important visual break between the South Area and Wythenshawe Environs.

Green Infrastructure

Policy EN 9 Green Infrastructure states that new development will be expected to maintain existing GI. This includes the maintenance and management of the Rivers Mersey, Irwell and their tributaries for example the River Irk, River Medlock, Chorlton Platt Gore, Gately Brook Moston Brook and adjoining land, with regard to their multiple functions including recreation, flood management and biodiversity.

Flood Management and Risk

Manchester, along with Salford and Trafford, effectively drains much of Greater Manchester via the River Irwell and River Mersey, both of which flow into the Manchester Ship Canal. Policy EN 14, Flood Risk states that there are many sections of the rivers which are culverted. Where these are indicated beneath a proposed development site, it is encouraged that the river is opened up (where possible), to reduce the associated flood risk and taking advantage of opportunities to enhance biodiversity and GI.

Biodiversity

Policy EN 15 Biodiversity and Geological Conservation states that developers are expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to their site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate.

Furthermore, schemes to enhance biodiversity should take into account climate change, flood risk and the need for flood storage; habitats such as flood meadow reed bed and marsh/fen should be considered along appropriate stretches of river.

The Local Plan is integral to securing improvements within the Action Plans for the river valleys through development. The Local Plan references the River Valleys and seeks to protect and enhance them through policy.

Places for Everyone – formerly Greater Manchester's Plan for Homes, Jobs and the Environment: Greater Manchester Spatial Framework Publication Plan 2020

Greater Manchester Combined Authority, October 2020

The Draft Greater Manchester Spatial Framework (GMSF) states the importance of river valleys and waterways as strategic GI and policy to protect and enhance them is provided by Policy GM-STRAT 13 Strategic Greenspace, Policy GM-G 2 Green Infrastructure Network and Policy GM-G 3 River Valleys and Waterways. Policies GM-STRAT 5 Inner Areas and GM-G 8 Standards for a Greener Greater Manchester are also important in regards to the provision of high-quality open space and improved access to GI within regeneration schemes in Inner Areas access to GI within new development, respectively.

It is important to note that following Stockport Council's decision to withdraw from the GMSF, the document will now be referred to as **Places for Everyone**. The document will be a Joint Development Plan Document for the remaining nine local authorities. The policies described below will be carried forward for consultation in 2021.

Policy GM-G 2 Green Infrastructure Network describes the strategic approach needed to protect, manage and enhance Greater Manchester's GI to subsequently safeguard and enhance the ESS they provide. Opportunity areas are listed for their particular potential for delivering improvements to the Greater Manchester GI Network. In regards to Our Rivers Our City the most notable opportunity areas are the Mersey Valley, Lower Medlock Valley and the Moston Brook Corridor.

Policy GM G 3 River Valleys and Waterways promotes the protection and improvement of river valleys as central components of Greater Manchester's GI network and a vital part of a Nature Recovery Network, making a major contribution to local identity, quality of life and the natural environment. In urban centres they have a significant role for generating and sustaining economic growth as well as providing a unique opportunity to contribute to the quality of the local natural environment. They also provide critical ESS in reducing the urban heat island effect and mitigating air pollution, particularly when reinforced by planting. Furthermore, new development must be designed to ensure river corridors and their associated habitats are integrated within development and enhanced wherever possible.

Policy GM G 3 River Valleys and Waterways states that in making planning decisions and carrying out other associated activities, Greater Manchester's authorities will seek to deliver the following priorities:

1. Retain the remaining open character of the river valleys, avoiding their fragmentation and prominent development on valley edges;

2. Promote public enjoyment of the river valleys, including as key features connecting urban areas to the countryside, providing opportunities for active travel, and enhance their high recreational value as green fingers through densely populated areas;

3. Protect and enhance the mosaic of semi-natural habitats, including: riparian (waterside), clough, broadleaved and ancient woodland; wet and semi-natural grassland; meadow; and lakes and ponds;

4. Retain existing pockets of relatively tranquillity and seclusion, especially within the more tightly enclosed and wooded valleys;

5. Reduce flood risk, through Natural Flood Management (NFM), including careful land management and a catchment-wide approach;

6. Improve water quality, including through land decontamination and the management of diffuse pollution from industry and agriculture;

7. Return rivers to a more natural state where practicable, including through de-culverting and the re-naturalisation of river banks and flood plains;

8. Increase the use of canals and watercourses for active travel, with improved and extended rights of way alongside the water providing walking and cycling routes for both recreation and commuting, thereby increasing access to natural green space; and

9. Ensure that development relates positively to nearby rivers and other waterways, taking advantage of opportunities to integrate GI through:

    a. High quality frontages to the water; and

    b. Public realm alongside the water for both recreation use and maintenance access.

Over 50,000 properties in Greater Manchester have a 1% chance of flooding from main rivers in any year, 20% of these are in Manchester, and that Climate change is expected to significantly increase peak river flows and surface run-off. Policy GM-S 5 Flood Risk and Water

Environment highlights the need, where practical, to return rivers to a more natural state and work with natural processes by adopting a natural flood management approach to slow the speed of water drainage. Furthermore, SuDS should ensure multi-functionality including water quality, nature conservation, recreation whilst being delivered in a holistic and integrated manner.

Policy GM-G 7 states that to stabilise river beds and banks and to intercept pollution more trees and woodland should be planted within river valleys.

Policy GM-Strat 5 Inner Areas is about promoting high quality regeneration schemes in the Inner Areas. The Policy states that new development must include high quality open space as well as improved access to the wider GI network. Protection and enhancement of the site's existing natural environment will be sought.

Policy GM-G 8 Standards for a Greener Greater Manchester states that Greater Manchester will develop standards for access to natural green space. The Accessible Natural Greenspace Standards (ANGSt) published by Natural England will provide the principal starting point as their focus on ensuring good accessibility to different sizes of green space for all residents make them an appropriate approach at a sub-regional level. A Greater Manchester "Green Factor", setting out the amount of on-site green infrastructure that new developments are expected to provide will be published. Local Plans will make more detailed standards for specific habitats, designations, quality or functions of green space.

Whilst the Joint Development Plan Document is yet to be formally adopted, the draft policies emphasise the importance of protecting and enhancing river valleys and waterways. In the future, policies such as Policy GM-STRAT 13 Strategic Greenspace, Policy GM-G 2 Green Infrastructure Network and Policy GM-G3 River Valleys and Waterways will provide an important mechanism to secure improvements to the river valleys set out in the Action Plans.

Greater Manchester's Local Industrial Strategy

Greater Manchester Combined Authority, 2019

Greater Manchester's ambitious Local Industrial Strategy is designed to deliver an economy fit for the future, with prosperous communities across the city-region and radically increased productivity and earning power. The Strategy plans for the environment, to ensure that Greater Manchester becomes carbon neutral in ways that drive local innovation, and improves health and quality of life.

The Strategy aims for Greater Manchester to be carbon neutral by 2038, which is a significant opportunity to deliver environmental health benefits to residents.

Manchester's river valleys provide opportunities for carbon capture to assist in the goals set out by the Greater Manchester Industrial Strategy and the aim to become carbon neutral by 2038. Our Rivers Our City identifies plantable land to increase the carbon capture capacity of river valleys across the Mersey, Irk and Medlock river valleys.

The Northern Gateway Strategic Regeneration Framework

Manchester City Council, February 2019

The Northern Gateway Strategic Regeneration Framework (SRF) has been prepared by MCC to guide the future development of one of the largest regeneration projects in the UK. The SRF

area covers approximately 155 hectares to the north of Manchester City Centre. The Northern Gateway has the potential to deliver 15,000 new homes over the next 15-20 years.

The vision for the Northern Gateway is to deliver a series of vibrant, sustainable and integrated residential neighbourhoods within the extended city centre of Manchester. To achieve this, the Northern Gateway will promote truly sustainable places and provide a varied network of high-quality green streets and public open spaces.

The character of the Northern Gateway is influenced by existing assets including the river valleys. The Northern Gateway will ensure that a sensitive approach is taken to the landscape context, especially along the river valley corridor.

As part of the SRF, Manchester has a unique opportunity to create Manchester's City River Park, which will harness the natural assets of the River Medlock revealing and celebrating the River Medlock through careful and sensitive restoration. A significant green-blue infrastructure network will be created that will enhance the river corridor and will create a new leisure corridor connecting the city centre and North Manchester, as well as improve the ecological status of the River Medlock.

Green and blue infrastructure will be vital to mitigating against flood risk and climate change. Areas of the SRF within the Lower Irk Valley are located in areas of medium and high Flood Risk (Flood Zones 2 and 3). Future mitigation could include river naturalisation: adaption/removal of weirs, de-culverting sections of watercourse, modification to the alignment or form of the river bank revetments or river bed, zoning development to align uses appropriate to topography and flood risk and implementing changes to topography and river bank levels. These restoration techniques have the potential to improve the Irk's ecological status under the WFD, through greatly improving the water quality and biodiversity of the watercourse and its banks.

Powering Recovery: Manchester's Economic Recovery and Investment Plan

Manchester City Council, 2020

The Plan is a collaboration between MCC and the private sector and other stakeholders. The Plan sets out what Manchester is doing to respond to the COVID-19 pandemic and reinvigorate its economy. The Plan sets out how Manchester can play a leading role in the levelling-up agenda, with ambitious plans to build on recent investment in economic assets and infrastructure.

The Plan takes its lead from the Greater Manchester Local Industrial Strategy 2019, with an initial programme of investment under the three pillars – People, Place and Prosperity.

'Place' includes 19 initial projects and a total investment of £450m with a potential boost to the construction sector over the next three years. It will focus on the city centre economy, the engine of growth over the past ten years, major housing initiatives for low or zero-carbon residential retrofit, and a major affordable housing programme.

Businesses made it clear during consultation that the quality of public realm, including a perceived lack of green space in the city centre impacts on their ability to attract investment and broader economic growth. Street greening and GI is noted as an important part of Manchester's green recovery. Community food growing is set to receive £1.3m in investment.

With regards to strategic projects the Medieval Quarter Public Realm and Glade of Light Memorial is located in the city centre and includes a new City Park adjoining historic listed buildings and the River Irwell. £2million has been committed to the work, and a charitable

contribution of £500,000 will fund the memorial. Additional funding of £14.3million is needed to complete the Medieval Quarter City Park Masterplan scheme.

Parks, Greenspaces, Access and Recreation

- ≈ City Wide Open Spaces, Sport & Recreation Study (2009); and
- ≈ Manchester's Park Strategy 2017-2027.

City Wide Open Spaces, Sport & Recreation Study

Manchester City Council, 2009

This study provided an evidence base for the Local Development Framework (LDF) and it underpins development of networks of high-quality open space, to help Manchester become Britain's greenest city.

The Study found that parks and gardens were the most valued open space, although natural and semi-natural open spaces were the mostly frequently visited open spaces. Green corridors were identified in the study as key sustainable movement routes across Manchester.

North Manchester

North Manchester is anticipated to see population growth and change in the future. This in itself will present a number of challenges in the delivery of open space including increased and changing demand and greater pressure on existing sites from development.

North Manchester has a high quantity of open spaces and therefore the focus should be on improving quality.

East Manchester

East Manchester is anticipated to experience significant growth and change over the LDF period. This therefore provides an opportunity to enhance provision and ensure that local needs are fulfilled.

The challenge in the east of the City will be to obtain an appropriate balance between enhancing the quality of facilities and ensuring the appropriate location of sites.

City Centre

The City Centre area will see a significant increase in population over the LDF period and hence it is in this area that demand will increase the most. Meeting this increased demand will be a key challenge for the Council.

Priorities in the city centre will focus on the provision of appropriate public realm as well as ensuring that residents have access to local open spaces.

Central Manchester

Central Manchester perhaps represents the greatest challenge of all. The high density housing exacerbates demand for open spaces as residents have small (or no) gardens and there is limited access to green spaces.

Future priorities in Central Manchester will be to create a variety of new open space provision, innovative solutions and qualitative improvements.

South Manchester

South Manchester contains some of the more affluent suburbs of Manchester and residents have larger gardens than in other areas of the City. Change in this area is anticipated to be significantly lower.

Future priorities focus on qualitative improvements and seizing opportunities to address deficiencies in open spaces.

Wythenshawe

Wythenshawe has an abundance of green space in comparison with other areas of the City. Challenges in this area will focus on a combination of enhancing access to existing facilities, meeting identified deficiencies and improving the quality of existing sites.

This Study is now over ten years old and a lot of development has taken place since its publication in 2009. When the Study is updated in the future, it will be able to provide a steer of how open spaces within the river valley have improved and become more accessible as a result of Our Rivers Our City and its associated Action Plans.

Manchester's Park Strategy 2017-2027

Manchester City Council, 2017

Manchester's Parks Strategy sets out a clear and ambitious goal to create a city where residents and visitors enjoy a network of quality open spaces, parks and river valleys that are enriched with biodiversity whilst providing recreational opportunities for sport across the city. The vision for Manchester's Parks is:

"Together, we want our parks to be the soul, lungs and heart of Manchester by providing the conditions for our people, our environment and our city to flourish."

The strategic themes of the Parks Strategy are:

Strategic Theme 1: Putting Manchester's Parks at the 'heart' of the neighbourhood, providing people with access to green spaces and nature.

Strategic Theme 2: Ensuring that Manchester's parks are vibrant, active places, reflecting and complementing the diversity and activity in the local community.

Strategic Theme 3: Establishing a 'Manchester Quality Standard', which will deliver safe, high-quality parks and green spaces for all residents across the city.

Strategic Theme 4: Having parks that are resourced effectively and sustainably through active and productive partnerships with residents, organisations and businesses.

The Strategy cites that Manchester can be justifiably proud of its wealth of public parks and green spaces that totals over a thousand hectares of land. This comprises significant heritage assets such as Alexandra Park and Philips Park; river valleys that frame the likes of Chorlton Water Park and Boggart Hole Clough; and popular destination parks, such as Debdale Park and Fletcher Moss Gardens.

The Strategy reports that there are over fifty Friends groups and more than 3,300 volunteers actively supporting parks and greenspaces in Manchester providing an invaluable contribution. Consultation held during the formation of Manchester's Park Strategy identified a significant number of people willing to commit time, expertise and resources to support Manchester's parks.

In regards to Manchester's river valleys, the Strategy highlights them as important natural assets providing vital environmental and educational resources; they act as green corridors that help link other areas of green space across the City.

The Strategy states that for every £20 spent on Manchester's Parks, 60p is invested in the River Valleys and Allotments. A Parks Investment Programme is currently being created and this will involve improving the quality of parks, river valleys and green space to achieve "A Manchester Quality Standard".

The funding Strategy for Manchester's parks is underpinned by the principle that money generated by the parks will be re-invested back into them and used to close the gap in their funding. Our Rivers Our City supports the vision and aims of the Park Strategy and provides data on tree coverage, woodland mapping and water and flood catchments. It also includes information on air quality, planting opportunities, enhancing wildlife and habitat (including biodiversity net gain) and improving health outcomes by providing recreation and wellbeing opportunities. Moreover, Manchester's Park Strategy acts as a framework for investment and management that Our Rivers Our City can piggy back on to.

Climate Change, Flooding and Air Quality

- Manchester Climate Change Framework 2020-25;
- Strategic Flood Risk Assessment 2010; and
- Local Flood Risk Management Strategy and Action Plan, 2014.

Manchester Climate Change Framework 2020-2025

Manchester Climate Change Partnership and Manchester Climate Change Agency, 2020

The Manchester Climate Change Framework aspires to make Manchester a thriving, zero carbon climate resilient city with the aim that *"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".* By 2025 Manchester will:

- Be within their carbon budget and reduce direct CO2 emissions by at least 50%;
- Good understanding of indirect CO2 emissions;
- Adapt the city for the changing climate and increasing the climate resilience by increasing; quantity and quality of open spaces and increase urban green space by 10% by 2038;
- Cleaner air by walking and cycling more and having accessible green space in neighbourhoods; and
- Recognised as one of the best places in the world to innovate, invest and roll-out new solutions to climate change.

Nature Based Solution (NBS) are identified as one of the urgent actions required to meet the Framework's commitments. Parks, gardens, woodlands, street trees and other elements of the city's GI have an essential role to play in helping Manchester to meet its climate change objectives and is essential for managing flood risk and heat stress.

Due to the inherent link between climate change and Green and Blue Infrastructure, when the Green and Blue Infrastructure Strategy is refreshed it will be linked to the objectives of the Manchester Climate Change Framework.

Manchester's river valleys provide essential green and blue infrastructure, which will be key to providing climate change resilience. Our Rivers Our City not only aims to protect existing green and blue infrastructure within Manchester's river valleys but also identifies opportunities for additional carbon storage, NBS and education for residents.

Strategic Flood Risk Assessment

Manchester City Council, Salford City Council and Trafford Council, 2010

The Strategic Flood Risk Assessment identifies the main source of flood risk in Manchester as from the Irwell, the Rivers Irk, Medlock and Mersey and Corn Brook. Surface water flooding is also significant and there is residual risk from the Ashton, Rochdale and Bridgewater Canals and several reservoirs.

The Assessment claims that green spaces can be used to manage storm flows and free up water storage capacity in existing infrastructure to reduce risk of damage to urban property, particularly in city centres and vulnerable urban regeneration areas. GI is said to be essential for reducing the risk of flooding and provide compensatory flood storage or serve a sustainable drainage function.

Furthermore, GI can also improve accessibility to waterways and improve water quality, supporting regeneration and improving opportunities for leisure, economic activity and biodiversity.

GI within the river valleys is essential to mitigate flood risk and future climate change events. Our Rivers Our City makes use of existing flood risk data and incorporate existing actions for flood management within the River Valley Action Plans. Our Rivers Our City aims to protect and enhance river valleys to ensure safe and resilient communities.

Local Flood Risk Management Strategy and Action Plan

Manchester City Council, 2014

The overall aim of the Local Flood Risk Management Strategy and Action Plan is to ensure that local flood risk is properly managed by using the full range of options in a coordinated way. To achieve this there are 9 key policies which aims to reduce the likelihood of flooding, work with key stakeholders, monitor and maintain infrastructure, promote awareness and considering flood risk as part of new development. The most relevant policies are LFRM Policy 5 and LFRM Policy 9.

LFRM Policy 5 ensures that local flood risk is properly considered for new development proposals. This is reflected in the Action Pan (LFRMS Action 7), which highlights the need for best practice guidance to assist developers in reducing flood risk to and from their schemes. Long term maintenance will be an important consideration for SuDS schemes.

LFRM Policy 9 aims to contribute towards the achievement of sustainable development in undertaking flood risk management functions. This is reflected in the Action Plan (LFRMS Action 8) which highlights the need to improve awareness of flood risk, which will help communities to engage in the management of the risk, including improving their resilience.

MCC is responsible for leading on local flood risk management. There are two Catchments covering Manchester - the Irwell and the Upper Mersey.

Our Rivers Our City educates people within the Mersey, Irk and Medlock Valleys on flood risk and climate change through the promotion of educational tools such as interpretation boards and online mapping. Our Rivers Our City promotes river valleys as a key GI linkage and important for ensuing sustainable development and climate change.

Our Rivers Our City provides opportunity mapping which identifies key areas for tree planting and habitat enhancement, which will contribute to reducing surface run-off rates. Furthermore, proposed development have been mapped to identify further opportunities linked to new development.

Biodiversity, Water Quality and River Quality

- ≈ Manchester's Great Outdoors: A Green and Blue Infrastructure Strategy 2015-2025 and Stakeholder Implementation Plan 2015-2018;
- ≈ Wild about Manchester: Biodiversity Strategy 2006;
- ≈ All Our Trees 2020; and
- ≈ Manchester Tree Action Plan 2016 to 2020.

Manchester's Great Outdoors: A Green and Blue Infrastructure Strategy for Manchester and Action Plan 2015-2025

Manchester City Council, 2015

Manchester's Green and Blue Infrastructure Strategy celebrates Manchester's green and blue infrastructure as being a fundamental role in the City's success for a number of years. Five river valleys, three canals, over 160 parks, street trees, woodland, private gardens, and other areas of natural environment are well-used components of the city's landscape.

The Strategy's vision is that:

"By 2025 high quality, well maintained green and blue spaces will be an integral part of all neighbourhoods. The city's communities will be living healthy, fulfilled lives, enjoying access to parks and greenspaces and safe green routes for walking, cycling and exercise throughout the city. Businesses will be investing in areas with a high environmental quality and attractive surroundings, enjoying access to a healthy, talented workforce. New funding models will be in place, ensuring progress achieved by 2025 can be sustained and provide the platform for ongoing investment in the years to follow".

The Strategy divides Manchester into six key areas and discusses existing green and blue infrastructure, case studies and future opportunities as summarised below.

North Area

North Manchester has the highest tree cover and the most natural and semi-natural space across the City. Heaton Park is a major recreational asset both for the local and wider area. The potential to improve the use, quality and access to the Park and other key green spaces should be fully explored to maximise their benefits to the wider community.

The Irk Valley is a major asset within North Manchester, providing opportunities for future flood resilience, through SuDs, and the integration and re-naturalisation of water course.

The Irk Valley forms the main green link between the City Centre and Heaton Park. The Irk Valley Local Plan is in place and the delivery of the improvements identified will need to

continue, involving a creative approach to the public realm of North Manchester including arts, heritage and fitness trails as examples of activities that can animate river valleys. Improvements should be focused on the quality of natural waterways, enhancing biodiversity, water quality and recreational use.

East Area

East Manchester has experienced substantial regeneration, successfully attracting employment and people back into the area. Central Park is a key employment and business location within the north of the area. New housing development will take place in the areas closest to the city centre, extending out alongside the River Medlock, Ashton and Rochdale Canals, utilising these blue corridors to create a strong sense of place and provide a high-quality environment.

Existing parks and green spaces, including Philips Park, Clayton Park and Debdale Park, are important multifunctional green assets, which have a vital role to play in improving the quality of life for local residents.

There are opportunities for improvements to the River Medlock, in particular enhancing water quality, biodiversity and re-naturalisation. There are further opportunities to create and enhance linkages, most notably in South Gorton where new corridors can be established and strengthened, linking east to the reservoirs and north to the Medlock Valley. North-south connection along the former Stockport Branch Canal will be formalised as a landscaped recreational trail to link the Gorton Reservoirs with the Ashton Canal and Medlock Valley. Fallowfield loop, an important cross-city route, delivers health and environmental benefits.

City Centre

The City Centre has low levels of green and blue infrastructure and so enhancing appropriate provision is particularly important for the city centre in helping to create an attractive location for residents, workers and visitors.

There are opportunities to enhance blue corridors and create safe, attractive green routes for a walkable/cyclable city, health benefits and accessible ‘lunch hour’ green space for city workers.

Central Area

Central Manchester includes Oxford Road Corridor, the University of Manchester, Manchester Metropolitan University, Central Manchester University Hospitals and the Manchester Science Park. There are restricted opportunities for open spaces however links should be made between the central area and the City Centre including opportunities for biodiverse planting and management.

South Area

South Manchester is one of the most well established and popular residential locations within the City. The area contains the River Mersey, Manchester’s most well-established river valley and has a higher than average proportion of GI. Chorlton Water Park and Fletcher Moss link directly to the River Mersey.

The Mersey Valley should continue to provide flood resilience, recreational opportunities and biodiversity enhancement. There is also potential to enhance Platt Fields Park, Alexandra Park and Chorlton Water Park in this area.

Wythenshawe Area

Wythenshawe is a predominantly residential area. The Mersey Valley and Wythenshawe Park are major green assets used by local residents and visitors from further afield. The River Mersey runs to the north of the Wythenshawe area on the boundary with the southern area, with links to Riverside Park.

Mersey River Valley provides a significant blue and green corridor for pedestrians and cyclists via the Trans Pennine Trail. Furthermore, the Mersey Valley provides flood resilience, recreational opportunities and opportunities for biodiversity enhancement.

Our Rivers Our City strengthens all six areas of Manchester and provides a Strategy for residents, visitors and workers to interact with Manchester's river valleys. Furthermore, it highlights areas of the river valleys that can be enhanced for flood resilience, biodiversity, recreation and climate change mitigation.

Action Plan

There are ten actions to implement the Strategy, which includes continuing to invest in river valleys to provide attractive settings for residential communities, leisure and recreation, health and biodiversity benefits. Furthermore, the actions ensure effective and appropriate tree and woodland management and planting and conserve, protect and enhance biodiversity. The actions also highlight the need to deliver health and wellbeing.

Our Rivers Our City links with the Green and Blue Infrastructure Strategy's Action Plan to ensure that the actions are delivered and explores additional partnerships that could enable their delivery.

Wild About Manchester: Manchester Biodiversity Strategy

Manchester City Council, 2005

Wild About Manchester - Manchester Biodiversity Strategy was developed to support the Greater Manchester Biodiversity Action Plan (2003).

Rivers are identified as a priority habitat in the Strategy and the River Mersey, River Medlock and River Irk are identified as the best examples of river habitats in Manchester. Threats to rivers are identified as:

- Invasive species;
- Recreational pressure;
- Pollution;
- Neglect and poor management;
- Use of herbicide;
- Fragmentation of habitats;
- Agricultural intensification;
- Loss of habitat through development;
- Poor development design; and
- Climate Change.

The Manchester Biodiversity Strategy claims that to conserve biodiversity, existing habitats need to be protected and remain good in quality. By linking habitats together, it enables many different species to move safely from one area to another to feed, mate or hibernate. The designation of Local Nature Reserves (LNR) is a key way of protecting wildlife habitat and natural features together with increasing public awareness of their local environment.

MCC is already conserving biodiversity by managing parkland, environmental campaigns and projects and Green Streets. There are also opportunities as part of large-scale projects to integrate biodiversity and landscape management.

Our Rivers Our City has used the threats identified above to inform actions within the Manchester River Valley Action Plans.

All Our Trees

City of Trees for Greater Manchester Combined Authority, 2020

All Our Trees is a collective tree and woodland strategy for the Greater Manchester local authorities which is underpinned by a set of shared principles and opportunities for more collaborative working, where appropriate, to achieve efficiencies and subsequently greater impact by working at scale, particularly when developing approaches to funding.

The Strategy states that there are an estimated 11,321,386 trees across Greater Manchester, 29.5% of which are in public ownership. Tree density across Greater Manchester is 89 trees per ha, which is much higher than the UK average of 58 trees per ha.

The All Our Trees Strategy identifies the key benefits of trees, the most valuable to Greater Manchester are:

- Carbon sequestration and Storage;
- Air quality;
- Climate Regulation – Urban Cooling and Water Quality Management;
- Health and Wellbeing;
- Habitat and Wildlife; and
- Improving Places.

Our Rivers Our City uses the data from the Strategy on plantable land identified and released for planting, tree coverage by ward, woodland mapping including woodland under active management to inform the Manchester River Valley Action Plans. Our Rivers Our City provides opportunity mapping for air quality, climate regulation, enhancing wildlife and habitat, water quality and flood risk to identify planting opportunities for new development and plantable roadside in high density residential areas.

Manchester Tree Action Plan 2016-2020

Manchester City Council, 2017

The Manchester Tree Action Plan provides details about one of the Manchester's Green and Blue Infrastructure Strategy's key headline actions requiring effective and appropriate tree and woodland management and planting. It is noted that river valleys comprise a large proportion of tree cover in the city, alongside parks and other open spaces.

The Action Plan comprises potential projects and activities under the following headline actions:

- Objective 1: Managing sustainably – This includes mapping and monitoring changes in the amount and distribution of trees across the city, understand the city's tree resource, green and blue infrastructure as part of major new development and encouraging climate-resilient approached to tree and woodland management.

- ≈ Objective 2: Planting appropriately – This objective ensures a healthy and diverse tree canopy cover across the city, planting of community orchards, funding n tree planting and management and developing climate-resilient approaches to tree planting
- ≈ Objective 3: Protecting strongly - Investigate effective tree-replacement and compensation measures, encourage community-led and focused tree projects and increase Sites of Biological Interest (SBI)).
- ≈ Objective 4: Involving creatively – Further research the benefit of trees, raise awareness of the benefit of trees, provide opportunities for community engagement and raise the profile of Manchester as an attractive place to live, work and visit.

As Manchester's river valleys comprise a high proportion of Manchester's tree cover and the Manchester River Valley Strategy and Action Plans will help achieve the objective above by strengthening biodiversity, amenity and education around the river valleys.

Health, Wellbeing, Education and Community

- ≈ Joint Health and Wellbeing Strategy 2016 Refresh; and
- ≈ Manchester Population Health Plan 2018-2027.

Manchester Joint Health and Wellbeing Strategy

Manchester City Council and NHS, 2013 (updated in 2016)

The Joint Health and Wellbeing Strategy is the City's overarching plan for reducing health inequalities and improving health outcomes for Manchester residents. It sets out a ten-year vision for health and wellbeing, and the strategic priorities which have been identified to support this vision.

The Strategy's vision is that in 10 years the people of Manchester will be living longer, healthier and more fulfilled lives. To achieve this, the Strategy aims to support high quality, well maintained green and blue spaces that are an integral part of all neighbourhoods, with access to parks and green spaces and safe green routes for walking, cycling and exercise.

Manchester's river valleys provide essential green and blue infrastructure that is accessible and free to access for residents, which will be key to residents taking responsibility for their own health and wellbeing. Our Rivers Our City aims to enhance existing green and blue infrastructure assets and guide new green and blue infrastructure in the Irk, Mersey and Medlock valleys.

Manchester Population Health Plan 2018-2027

Manchester City Council and NHS, 2018

The Manchester Population Health Plan is the City's overarching plan for reducing health inequalities and improving health outcomes for our residents and incorporates information from the Manchester Joint Health and Wellbeing Strategy 2016-2025.

The Plan states that narrowing the gap in health outcomes requires more intense support and resources for the communities and parts of the City with the greatest needs. People in more disadvantaged communities have worse health outcomes across all age groups. Creating age friendly neighbourhoods and opportunities is vital to tackle social isolation and loneliness.

Manchester has also been identified as having high levels of physical inactivity compared to England and the promotion of green space is key to tackling health inequalities and air pollution.

Manchester's river valleys provide essential green and blue infrastructure that is accessible and free to access for residents, which will be key to tackling health inequality and air pollution. Our Rivers Our City aims to enhance existing green and blue infrastructure assets and guide new green and blue infrastructure in the Irk, Mersey and Medlock valleys.

Local and Thematic Guidance

- Water for Life and Livelihoods: Part 1 North West River Basin District, River Basin Management Plan 2015.

Water for life and livelihoods: Part 1 North West River Basin District, River Basin Management Plan

Department for Environment Food & Rural Affairs and Environment Agency, Updated December 2015

The purpose of a river basin management plan is to provide a framework for protecting and enhancing the benefits provided by the water environment. The Management Plan covers the North West of England.

The significant water management issues identified within the Management Plan are:

- Physical modifications;
- Pollution from waste water;
- Pollution from towns, cities and transport;
- Changes to the natural flow and level of water;
- Negative effects of invasive non-native species;
- Pollution from rural areas; and
- Pollution from abandoned mines.

It is noted that climate change will lead to heavier winter rainfall and intense rain falls, however more research is required to understand the full impact. In the meantime, measures should be implemented to ensure flexibility and increase resilience to extreme weather events and future warming.

Future aims for the Irwell Catchment focus on implementing evidence based measures and projects where benefits for the public and nature will be greatest, make in-stream and riparian habitat improvements, implement catchment wide green infrastructure interventions and remove or bypass significant physical modifications that act as barriers to fish migration and present risks to the public and property.

Future aims for the Upper Mersey Catchment focus on targeted awareness programmes to engage with local communities, identify and take opportunities to improve ecology through habitat creation and enhancement using green infrastructure, evidence-based catchment management across the catchment and opportunity mapping and restoration and re-naturalisation schemes.

The Water Management Issues and Aims set out in this Management Plan have been reviewed to ensure that the River Valley Action Plans have taken them into account so that actions can address issues such as physical modifications and sources of pollution.

PART TWO:

ACTION PLANS AND PROJECTS

PART 2: ACTION PLANS AND PROJECTS

This section is organised on a geographic basis, as illustrated below. It considers current, recent and future initiatives and projects. It takes a broad and inclusive approach, including projects of an aspirational nature that have been formulated but not fully implemented. It includes a review of recent initiatives that can provide useful insights into future action-planning, for example by identifying projects that were not feasible at the time, but could be re-considered.

City and Catchment-wide Action Plans and Projects

River Irk Projects | **River Medlock Projects** | **River Mersey Projects**

City and Catchment-wide Action Plans, Initiatives and Projects

City and Catchment-wide action plans, initiatives and projects includes projects and supporting evidence that have informed the River Valley Action Plans. Some of this evidence extends upstream into the Irwell and Mersey Catchments. The evidence includes some completed projects which have been reviewed to assess their effectiveness and identify if there are outstanding actions that can be re-visited.

Irwell Valley

The following literature relating to action plans and projects within the River Irwell Valley has been reviewed:

- Irwell Catchment Natural Flood Risk Management Group (2017);
- River Irwell Management Catchment – Evidence and Measures Study (2017);
- Nature of Hulme (2017-2018);
- Nature of Manchester Local Action Project (2018);
- My Wild City (2019);
- Ecosystem Services Opportunities Assessment for the Irwell Catchment (2017);
- Sponge City Initiative and Grow Green; and
- Urban Pioneer, Natural Course.

Irwell Catchment Natural Flood Risk Management Group

Groundwork and Natural Course, 2017

The Countryside Stewardship Facilitation Fund resources have enabled Groundwork to establish a network of 21 landowners and managers whose holdings cover over 5320 hectares of land in the Upper Irwell Catchment. The network facilitators enable members of the group to access and interpret the expanding evidence base, partly developed through Natural Course, for the Irwell Catchment. The network also enables knowledge, experience and

opportunities to take forward Natural Flood Management (NFM) approaches to be shared and developed.

The project aims to achieve a step change in downstream flood risk management by maintaining and restoring priority habitats such as blanket bog at the head of the catchment and traditional Pennine clough woodland. Measures such as leaky dams, hedgerows and boundary walls, ponds and gully blocking are to be explored.

River Irwell Evidence & Measures Study

Greater Manchester & Irwell Catchment Partnership and Natural Course, 2016-17

An early priority for Natural Course within Greater Manchester has been to assemble a detailed evidence base for the Irwell Catchment. The Evidence & Measures study brings together existing data packages, made widely available to the local catchment partnerships, alongside further data held by the Environment Agency, United Utilities and the GM Ecology Unit.

The final project outputs will enable Irwell Catchment partners to understand the issues and challenges within the catchment and develop interventions which contribute more effectively to the delivery of WFD objectives and wider integrated water management goals.

The Evidence & Measures Study provides a resource to the Irwell Catchment Partnership and will support the production of a Catchment Management Plan.

Nature of Hulme 2017-2018

Manchester City Council, Westcountry Rivers Ltd and Department for the Environment, Farming and Rural Affairs, 2018

Westcountry Rivers Trust Ltd undertook a community-based environmental appraisal and visioning exercise in Hulme, Manchester. Hulme borders the Bridgewater Canal and River Irwell to the west. The aim is to develop neighbourhoods that area clean, green, healthy, friendly and safe. It incorporates improved GI and SuDS opportunity mapping methods.

According to flood modelling the most likely area to flood is associated with a culverted stream which runs underneath the south east of the ward; therefore, residents may not be aware of the flood risk.

Although there is a good provision of small and medium greenspaces in Hulme, there are some significant areas where people live 300m from a greenspace.

The project also provides a toolbox of NBS, including:

- Green roofs;
- Rainwater harvesting;
- Permeable paving;
- Swales;
- Rain gardens;
- Tree planting;
- Improved greenspace; and
- Nature-friendly gardens.

Our Rivers Our City identifies opportunities through mapping to implement NBS with the aim of reducing flood risk, building climate change resilience and enhancing habitats within river

valleys. By enhancing river valleys with NBS, there will also be a positive impact on air pollution, mental health and wellbeing.

Nature of Manchester Local Action Project

Manchester City Council and Department for the Environment, Farming and Rural Affairs, 2018

Nature of Manchester Local Action Project (LAP) has been a pilot application of the DEFRA LAP in collaboration with MCC. A local, collaborative, natural capital approach designed to work with local communities and practitioners to enhance the value of nature in their local landscape, build community resilience, improve people's quality of life, enhance the local environment and increase local economic prosperity. There is cross over between Nature of Manchester LAP and the Nature of Hulme 2017-18, specifically the tool-box of NBS. The tool box provides crucial information on green and blue interventions in regards to their benefits, cost implications, trade-offs and feasibility.

The project highlighted that Manchester's rivers provide resources and benefits necessary for the development of cities. Yet, in urban areas, rivers were often seen as a threat to infrastructure and human health rather than as a resource, leading to their neglect and degradation. However, rivers are particularly significant in shaping sense of place and improving mental wellbeing.

The Medlock, Mersey and Irwell are heavily modified in places and have suffered industrial pollution. Currently, several stretches of the City's rivers remain inaccessible, huge efforts have been made to increase their amenity value and accessibility. Restoration efforts have been undertaken on the River Medlock to improve the environmental condition and increase the benefits that the rivers provide.

Actions to enhance the benefits provided by blue infrastructure in urban landscapes typically focuses on reducing pollution sources, protecting the water environment or working to improve the physical structure of the river corridor.

The Nature of Manchester LAP provides information on the opportunities and threats to each kind of green and blue infrastructure assets in Manchester, for example, parks, rivers and lakes, trees and SuDS. It also includes a Net- Benefits wheel tailored to Manchester which demonstrates the priorities for the City which has been determined by consultation during a series of workshops and has used this to create a ward-level assessment of the benefit that priority can provide. For example, one of the priorities is Flood Risk (surface Water). Mapping of the Environment Agency's Flood Map for Surface Water combined with locally produced data has been used to provide a ward level assessment of the value of this priority benefit using a gradient from high to low.

Our Rivers Our City builds on this and provides practical actions to enhance and protect green and blue infrastructure in the river valleys Using the information provided in the toolbox. Whilst creating the Action Plans for each river valley we have been conscious to consider the need, wants, opportunity and suitability for such activities whilst also taking into account potential blockers and trade-offs as the LAP has done.

My Wild City

Greater Manchester Natural Capital Group and Lancashire Wildlife Trust, 2019

My Wild City aims to reconnect people and wildlife in Manchester. The vision is that everyone living, working and studying in Manchester can help transform work places, gardens and our

open spaces into a city-wide nature reserve. Lancashire Wildlife Trust (LWT) is working with MCC to deliver a new four year vision for wildlife in the City.

An Action Plan 2020-2022 includes:

1. Greater awareness, engagement and active involvement of people with nature;
2. Greater partnership working to connect more people with nature and deliver more co-ordinated work to improve space for nature; and
3. Improved quality for spaces and corridors for nature in Manchester.

Our Rivers Our City has worked with communities to understand their connection to Manchester's rivers and their awareness and engagement with the river valleys. The actions from the My Wild City Action Plan have been incorporated into the River Valley Action Plans to help communities interact and access the Medlock, Irwell and Irk river valleys.

Ecosystem Services Opportunities Assessment for the Irwell Catchment

Greater Manchester Combined Authority, 2017

Greater Manchester Combined Authority (GMCA) is pioneering an integrated approach to water management in a heavily-urbanised environment.

The Irwell Management Catchment (IMC) presents a range of water management challenges and opportunities with a large number of waterbodies (sections of river) being heavily modified, which prevents them from reaching the environmental quality standards defined by the WFD i.e. Good Ecological Potential.

Channel re-naturalisation is amongst the most expensive interventions to deliver and the most disruptive in the short term to the watercourse but has huge long-term benefits both environmentally and economically. Recent projects have addressed this issue including an innovative project to re-naturalise part of the River Medlock within the constraints of its urban infrastructure and flood risk management function.

Our Rivers Our City promotes investment and delivery of opportunities to protect and enhance their natural capital.

Sponge City Initiative

A sponge city is a new urban construction model for flood management, strengthening ecological infrastructure and drainage systems. It can alleviate the City's waterlogging, water resources shortage, and urban heat island effect and improve the ecological environment and biodiversity by absorb and capture rain water and utilise it to reduce floods. A sponge city must practice:

- Contiguous open space;
- Green roofs;
- Porous design; and
- Water savings and recycling.

The benefits of sponge cities include rainwater capture and reuse, reducing flooding events, reducing urban heat island effect intensity and greener, healthier, more enjoyable urban spaces with rich biodiversity.

Grow Green

Grow Green aims to create climate and water resilient, healthy and liveable cities by investing in NBS. It is important to the City as it explores making nature part of the urban living environment to improve quality of life and to help businesses prosper. Grow Green promotes innovative and inspiring solutions using high quality green spaces and waterways to major urban challenges such as flooding, heat stress, drought, poor air quality and unemployment and will help biodiversity to flourish.

Grow Green has the following objectives:

1) Contribute to the evidence base of nature-based solutions in cities for cost-effective, replicable means of increasing urban climate and water resilience, social, environmental and economic benefits, to underpin the development of NBS policies and the global NBS market

2) Develop an easy-to-use replicable approach to support the development and implementation of NBS strategies in cities, aligned with existing city priorities

3) Support the creation of the required conditions to support, drive and enable the implementation of city NBS strategies by awareness raising and capacity building in cities around the world, supporting the development of the required policy framework, business models for investment in NBS and the global market for NBS.

Manchester suffers from considerable flooding, with the five rivers that flow through it acting as a major flooding source. The Grow Green Project in Manchester looks to address some of these flooding issues, with the creation of the first 'park that drinks water'. Manchester's NBS demonstration project is a park designed to 'drink water' and therefore aims to tackle flooding. Located in the neighbourhood of West Gorton, and opened in June 2020, the 'sponge park' was part of a ten-year regeneration programme for this area. The park includes meadow, woodland and community areas, and has been designed with local residents. The NBS design features in the park includes bioretention tree pits, swales, rain gardens, permeable paving and an irrigation rill. Existing trees were pruned to provide more attractive tree cover, framing the park and contributing to the water retention functionality of the park.

The key outcomes of Grow Green so far are:

- ≈ The community in the West Gorton neighbourhood of Manchester contributed to designs for the NBS demonstration project to reduce flood risk and provide several other benefits;
- ≈ Development of the river valleys action plans to reduce flood risk in the city based on the Sponge Cities concept was procured in March 2020;
- ≈ The Our Rivers Our City campaign to engage citizens in the development of action plans for three of the city's river valleys launched in June 2020; and
- ≈ The demonstration project, a park that drinks water, opened in West Gorton in July 2020.

Urban Pioneer, Natural Course

Greater Manchester Natural Capital Group

Greater Manchester is part of the Urban Pioneer programme testing new tools and methods for investing in, and managing, the natural environment. This is to demonstrate how Manchester can have cleaner air and water. This vision is to make a clear and evident contribution to Greater Manchester's natural environment, engaging and connecting people

with nature, maximising their health and economic benefits through investment in the environment, creating sustainable growth and a good quality of life.

This will be achieved through developing an evidence base, demonstrating a place-based approach to delivering policy and creating a Natural Capital Investment Plan show the benefits of investing in nature and development communication.

Irk Valley

The following literature relating to action plans and projects within the River Irk Valley have been reviewed:

- Creative Futures Irk Valley (2003);
- Irk Valley Local Plan (2010);
- Bringing the Irk to Life 'BRIL' with Irk Restoration Project: Policy and Strategy Review (2019);
- River Irk Restoration Plan (2017);
- Moston Brook – summary report for the evidence and measures project, 2013; and
- Mapping diffuse urban pollution sources on the Rivers Irk and Medlock (Natural Course, 2019).

Creative Futures Irk Valley

Holocene Design, 2003

Creative Futures Irk Valley was a research project which created a long-term vision for sustainability in the Irk Valley in North Manchester. This was in partnership with the Mersey Basin Campaign, testing an innovative toolkit for enabling community and stakeholder participation in ecological planning.

The River Irk is heavily channelised, with narrow, walled channels, giving few opportunities for meandering. Approximately 20% of the river is culverted which reduces habitats and potential for wildlife. Urban development has occurred largely on the natural flood plain.

The research project found that the river needed:

- To be opened up and new development should provide space for the river;
- Derelict or historic buildings on the river should be restored;
- New development in flood plains to be adapted for climate change;
- Support for community planting schemes; and
- Wetlands and developing bioremediation wetlands in the area to be enhanced, building on the positive changes seen at Harpurhey Reservoirs, where wetlands seem to be increasing water capacity.

The project is almost a decade old and several plans and guidance have been implemented to tackle climate change and protect blue infrastructure. However, many of the issues identified in this project exist today and the Our Rivers Our City provides guidance and actions to protect and enhance the Irk River Valley as well as identifying opportunities for future improvements.

Irk Valley Local Plan

Manchester City Council, 2010

Irk Valley Local Plan outlines a comprehensive strategy to realise the value of the Irk River Valley as an important natural landscape within North Manchester. The River Irk is integral to MCC's commitment to sustainable regeneration, supporting people and delivering MCC's strategic objectives. MCC aims to connect, improve, restore, protect and promote the Irk Valley and open space in Norther Manchester, which will assist in creating physically, socially and environmentally sustainable communities.

The Irk Valley Local Plan aims to provide high quality open space and facilities, improve access to open space and linkages, improve image and identity, protect and enhance ecological assets, consolidate ownership and encourage community engagement.

Our Rivers Our City provides an up to date view of the aims, objectives and actions for the Irk Valley as well as reviewing opportunities to make the Irk Valley more sustainable for its communities.

Bringing the Irk to Life with Irk Restoration Project: Policy and Strategy Review

Natural Course, 2018-2019

The Environment Agency has initiated the development of a wide-ranging vision for the River Irk which flows through north Manchester, Oldham and Rochdale. The vision will be a collaborative 10-year initiative covering the river and its tributaries under the title of Bringing the River Irk to Life (BRIL).

River Irk Restoration Plan

Environment Agency and River Restoration Centre (RRC), 2017

The industrial revolution had a large environmental impact within the Irk Catchment. The River and its tributaries have suffered from chronic pollution, but now water quality is improving and fish are starting to return to the River. Now there are aims to maximise the potential of the river by re-naturalising the channel as much as possible, whilst providing a higher quality ecological network and green infrastructure asset.

This project aims to start a planned and strategic approach to restoring the River Irk on a catchment scale. The RRC aims to provide training to stakeholders, produce a restoration plan with details of areas to be improved and opportunity mapping for stakeholders to see improvement areas.

Moston Brook: Summary report for the evidence and measures project & Practical Solutions – Moston Brook

pjHydro Water Management and rUKhydro Ltd, 2013

The project was undertaken to collect evidence and then help stakeholders agree the main causes of poor WFD status (primarily water quality) before moving on to identifying measures to improve the water quality and amenity value of the brook. This document provides a summary of those findings.

Moston Brook is situated in Manchester / Oldham and reportedly has the worst water quality of waterbodies in the North West of England. Significant parts of the brook are culverted and for decades it appears to have suffered from pollution from sewage and old landfills.

Recommendations from the project include:

- ≈ To maintain the positive spirit of cooperation between stakeholders by keeping actions focussed on the evidence-based understanding of causes and designed measures;
- ≈ For stakeholders to work closely to find funding solutions that will allow implementation of the measures and where barriers to this are found to report these to higher levels in their organisation and to DEFRA; and
- ≈ To predict the outcomes of measures in terms of water quality and then monitor and review water quality as appropriate.

Mapping diffuse urban pollution sources on the Rivers Irk and Medlock

Natural Course, 2019

This mapping exercise identified that 13% of the water bodies in the River Basin District are affected by pollution from towns, cities and transport. These pressures on water quality are particularly concentrated in urban and suburban areas such as the catchment of the River Irwell.

Meanwhile, the ability to tackle these pressures is constrained by a wide range of factors including:

- ≈ The congested and historic infrastructure of the urban environment making it difficult to link potential sources of contamination with inputs to watercourses;
- ≈ Fragmented land ownership and uncertain responsibility for tackling diffuse pollution pressures across a number of sectors, organisations and land use types; and
- ≈ Lack of information and evidence about the source and impact of diffuse pollution pressures and the opportunities to tackle these pressures.

The surveys, and especially the photographs, associated with the mapping exercise highlight the multiple EU WFD challenges faced by the Rivers Irk and Medlock. For example, large numbers of the photos show pipes emerging from brick-lined channels, and therefore classed as heavily modified under the WFD.

Medlock Valley

The following literature relating to action plans and projects within the River Medlock Valley have been reviewed[3]:

- ≈ Medlock Valley Strategic Action Plan (2003);
- ≈ Ashton Canal Medlock Valley Evaluation of NWDA Investments (2010);
- ≈ Clayton Vale Leaflet (2009);
- ≈ Countryside on your Doorstep Medlock Valley Leaflet (No Date);
- ≈ Ecological Assessment for the River Medlock Restoration GMEU (2012);
- ≈ Environment Agency Case Study of Clayton Vale (No Date);
- ≈ Groundwork Case Study of Work in the Medlock Valley (No Date);
- ≈ Medlock Fisheries Surveys Report (2018);
- ≈ Medlock Valley Consultation Report (2007);
- ≈ Philips Park Leaflet (2007);
- ≈ River Medlock Restoration - Draft Report v5 (2012);

[3] Action Plan and Projects in italics have been reviewed but a summary has not been included in subsequent paragraphs

- ≈ Grow Green – West Gorton Demonstration Project4; and
- ≈ Mapping diffuse urban pollution sources on the Rivers Irk and Medlock (2019)5.

Medlock Valley Strategic Action Plan

Manchester City Council, 2003

The Medlock Valley Project began in 2003 and was a partnership between several agencies and the local community. It aimed to ensure that the Medlock Valley, including Philip's Park, Clayton Vale, Holt Town and the Lower Medlock, become a focus of everyday life in East Manchester and a green resource for the city. The project works to improve access, usage and address long-term management issues in the valley.

Volunteers are an important part of the project and have helped to improve and promote the Medlock Valley. Some of the work carried out has included:

- ≈ Building a pond-dipping platform at the lake, enabling children to learn more about pond life;
- ≈ Planting pond plants to attract more wildlife and improve ponds appearance;
- ≈ Increasing wildflower areas to complement the biodiversity action plan; and
- ≈ Clean-ups to litter pick fly tipping.

The part of the Medlock Valley known as Clayton Vale was used as a landfill, before it was decided in the 1980s to return Clayton Vale to an urban green space. The 57 hectare site plays a critical role as a significant area of informal open space in the city. It is a key site in terms of biodiversity within East Manchester, and is being looked at as a future Local Nature Reserve (2006). Its regeneration will benefit a large number of neighbourhoods that are directly adjacent to the site and link to the wider regeneration of the area.

Philips Park in the centre of the Medlock Valley is of particular historical interest. Investment from this project focused on linkages to the wider river valley.

The Lower Medlock consists of a series of smaller green spaces along the river valley. There is a need for environmental improvement of these sites and for the continuation of a coherent Medlock Valley Way into the City Centre at Ancoats. In the Lower Medlock, there are additional considerations in terms of the potential of high quality, high value housing development.

The project identified the following priorities for funding:

- ≈ Improve the main footpaths and bridges in Clayton Vale;
- ≈ Access improvements to Clayton Vale at Culcheth Lane;
- ≈ Introduction of Bank Bridge Road entrance; and
- ≈ Footpath improvements to link Lime Kiln Lane to Medlock Valley Way.

Our Rivers Our City builds on the work already undertaken in the River Medlock Valley to continue the re-naturalisation of the River and increase accessibility for local communities, nature conservation, climate change adaption and flood risk resilience.

[4] Reviewed in 2.2
[5] Reviewed in 2.3

East Manchester Countryside: Clayton Vale Leaflet

Manchester City Council and Friends of Clayton Vale, 2009

Clayton Vale Local Nature Reserve is located in the heart of the Medlock Valley in east Manchester. Clayton Vale comprises ponds, woodland, meadows and the River Medlock runs along the northern boundary.

Our Rivers Our City highlights key greenspaces like Clayton Vale within Manchester river valleys to be protected and enhanced for tackling air pollution, climate change resilience and biodiversity. Mapping the river valleys has shown where the opportunity areas are to reduce pollution and re-naturalise rivers.

Countryside on your Doorstep

Manchester City Council, No Date

The Medlock Valley runs through East Manchester providing a valuable resource for people and wildlife. Key accessible greenspaces include Clayton Vale, Philips Park, the Lower Medlock and the Medlock Valley Way.

The Medlock Valley Project began in 2003 with the aim of improving the green spaces in the River Valley so that people and wildlife can benefit from them for many years to come. Since 2003, over £2.5 million has been invested in footpaths, bridges, play areas, an education centre and events to encourage visitors and create a sense of pride for residents in East Manchester.

Our River Our City identifies new funding opportunities to carry on the work enhancing the Medlock Valley, in particular against the current threats of pollution, climate change and decline in biodiversity. It identifies opportunities to improve and naturalise the Medlock River.

Philips Park Leaflet

Manchester City Council, No Date

Philips Park opened on 22nd August 1846 as one of the country's first municipal parks, intended for free use by the public. Furthermore, Manchester's first municipal public cemetery was opened to the north of the Park in 1867, 1872 saw the opening of the city's first bowling green, where the Peace Garden now stands, and in 1891 the city's first open air swimming pool was opened.

The Park is situated in east Manchester next to the City of Manchester Stadium, and can be easily reached by public transport from surrounding areas and the city centre. Access for disabled people is provided. Philips Park has a change of wildlife habitats including amenity grassland, trees, wildflower meadow, pond and Medlock River. The parks also provide opportunity for walking, children's play, Bowling Green, community orchards and community events.

Recent restoration of the Medlock River and its landscape has seen an improvement in water quality and the return of fish and other wildlife (including Kingfisher)

Our Rivers Our City highlights key greenspaces like Philips Park within Manchester river valleys to be protected and enhanced for tackling air pollution, climate change resilience and

biodiversity. Mapping shows where the opportunity areas are to reduce pollution and re-naturalise rivers.

River Medlock Restoration

Manchester City Council, 2014

The River Medlock restoration project was a flagship project to transform one of the most neglected and sterile stretches of river in the UK. Historic canalisation of the river to attempt to control flood risk has restrained and constrained the natural river process and increase Manchester's flood risk.

In 2014, as part of the EU WFD, a 300m stretch of the river was restored to its former, natural self through working with natural processes to increase its resilience to flooding, enhance biodiversity and provide opportunities for people to reconnect with the River. The project saw the removal of thousands of Accrington bricks which were recycled. The project has helped the River to flow more naturally through the valley, encouraging the return of wildlife. Weir removal on site took away a major blockage to fish migration and reconnected the river.

Although a one size fits all approach is not appropriate for complex environmental challenges, the project did demonstrate that restoration of heavily modified and historic watercourses is possible.

Our Rivers Our City has taken the lessons learned from the River Medlock restoration project and identified other potential opportunities for re-naturalisation and restoration further down the Medlock.

Mersey Valley

Stockport Town Centre West: Strategic Regeneration Framework Consultation Draft

Stockport Metropolitan Borough Council, 2019

Stockport town centre is undergoing a renaissance which will see £1bn invested in the centre. The SRF is intended to inspire, excite and engage with existing and future residents and businesses. It establishes a vision, masterplan and deliver strategy for how Stockport's Town Centre West could be reshaped over the next 15-20 years.

The Mersey River is identified in the SRF as a key place-making component and rediscovering the riverside setting is a key regeneration issue. The River Mersey runs along the northern edge of Stockport. The River Mersey is a defining but often forgotten feature in Stockport as it is currently heavily screened by overgrown vegetation and disappears under Merseyway. Businesses back onto the riverside and few streets or pathways interact with the River, which should provide an interesting and enriching natural environment.

The SRF aims to 're-activate' the River Mersey by changing the outlook of historic buildings to overlook, activate roofscape with greenspace, animate the riverside and create new accessible riverside public space.

The SRF seeks to address this through a series of enhancements and will be utilised to create a new gateway into the town, showcasing the river and towns heritage. The River Mersey banks will be opened up to the public, creating better visual and physical relationship with the water. The SRF proposes a new bridge linking across the River Mersey to existing footpath networks. Riverbank planting will be enhanced with a series of pocket spaces to encourage

integration with the river edge. Two areas of the SRF that include the River Mersey include Brinksway and Weirside. The proposals for both areas seek to incorporate the River and enhance its setting.

SuDS will be required throughout the master plan area with potential for rain gardens, permeable paving and tree pits offering surface water management opportunities.

Our Rivers Our City provides a linked up and consistent approach with neighbouring Stockport Metropolitan Borough Council to utilise river valleys for recreation, nature conservation and climate change.

Mersey Life Portfolio

Environment Agency

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.

PART THREE:

EVIDENCE AND BEST PRACTICE

PART 3: RESEARCH

This section provides a brief review of the research and evidence that has inspired and shaped the Manchester River Valley Strategies and Action Plans. These are:

- ≈ Compendium of Nature-based and 'grey' solutions to address climate- and water-related problems in European cities: Grow Green Resource Library;
- ≈ Engaging Municipal departments in developing a nature-based solutions strategy;
- ≈ Building Climate Resilience and Water Security in Cities: Lessons from the Sponge City of Wuhan, China;
- ≈ Irwell Management Catchment Natural Capital Account and ESS Opportunity Mapping (2018);
- ≈ Nature and Ageing Well in Towns and Cities (GI and Aging Population);
- ≈ My Back Yard Action Plan - Gardens and ESS; and
- ≈ The Nature of Manchester Local Action Project.

Compendium of Nature-based and 'grey' solutions to address climate- and water-related problems in European cities

Grow Green, March 2020

Compendium of Nature-based and 'grey' solutions to address climate- and water-related problems in European cities presents nature-based and 'grey' solutions to address climate and water related challenges in European cities. There are 36 NBS, those specific to rivers are listed below:

- ≈ Restoration and management inland wetlands;
- ≈ Restoration and management of floodplains;
- ≈ River restoration for flood control;
- ≈ Restoration and reconnection of seasonal streams;
- ≈ Re-meandering;
- ≈ Reconnection of oxbow lakes;
- ≈ Re-naturalisation of polder areas;
- ≈ Lake restoration; and
- ≈ Floodplain and riparian woodland creation.

Our Rivers Our City focuses on NBS on the first instance to try and remove barriers for people accessing the rivers for recreation and for wildlife. NBS also provide resilience to climate change and intense rain fall events predicated for the future.

Engaging Municipal Departments in Developing a Nature-based Solutions Strategy

Working on NBS requires partnerships and collaborations across the many municipal departments and external stakeholders involved, such as departments responsible for green spaces, stormwater/flood management, highways, health and many others. However, when each department has its own culture and way of working, it can be difficult to build partnerships between them.

An online training session was hosted on 18th May 2020, aimed to discuss this challenge and learn from the experiences of several cities. Frédéric Ségur of Greater Lyon presented the Lyon Metropole Canopy Plan, which, with the Permeable City project, is linked to the city's climate change adaptation plan. Helen Nilsson of the City of Malmo presented the city's

Cloudburst Plan and its Coastal City of the Future Action Plan. The Cloudburst Plan was initiated after a large storm in 2014. It involves several departments to use 'multifunctional solutions' to managing stormwater, which also contribute to improving recreational spaces, climate and traffic environment.

Our Rivers Our City has been prepared with a multidisciplinary team, which includes stakeholders, community and developers to ensure the Strategy works for everyone using it.

Building Climate Resilience and Water Security in Cities: Lessons from the Sponge City of Wuhan, China

Coalition for Urban Transitions and University of Leeds, 2020

In 2013, China's national government launched the "Sponge City Programme" in response to its urban water management challenges. The programme encouraged cities to adopt green and blue infrastructure, rather than grey infrastructure approach. Wuhan – a pilot "sponge city" – has shown that green and blue infrastructure can be employed both quickly and cost-effectively to increase the resilience of urban areas to a changing climate.

The sponge city programme was more than CNY 4 billion (almost $600 million) cheaper than an alternative grey infrastructure-based approach. Furthermore, it has generated wider social and environmental benefits, such as reduced carbon emissions, improved public health, enhanced natural cooling and improved biodiversity conservation.

Specific projects included urban gardens, parks and greenspace designed to allow water to infiltrate during regular precipitation and to direct water away from urban areas during flooding, artificial lakes that draw water away from populated areas during downpours, and water channels that can safely handle very large volumes of water during flooding.

Our Rivers Our City identifies opportunities to implement NBS to mitigate against climate change, improve public health and improve biodiversity conservation.

Irwell Management Catchment Natural Capital Account and ESS Opportunity Mapping

Greater Manchester Combined Authority, The Environment Partnership Limited and Vivid Economics, 2018

This report identifies the natural capital value of the IMC waterbodies, and the opportunities for investment in ESS provided by the IMC's waterbodies.

The Natural Capital Account for the IMC shows the net asset value is at least £7.7bn. The gross asset value is £8.5 billion, tempered by liability costs associated with flood risk (£0.9bn).

Measures to increase ESS include channel re-naturalisation, flood plain re-naturalisation, diffuse pollution attenuation schemes, pollution source control schemes, new waterfront access, community stewardship, health and community cohesion schemes, urban greening, habitat creation and natural flood management.

Our Rivers Our City builds on the recommendations to provide focused and targeted improvements to Manchester's river valleys.

Nature and Aging Well in Towns and Cities

University of Manchester, University of Salford and Manchester Metropolitan University, 2019

Population is growing, aging and increasingly urban. It is already established that living and aging well in towns and cities is inextricably linked to the natural environment, however this projected looked at why that is. Contemporary society faces a particular challenge to secure the essential foundations for healthy urban ageing whilst also ensuring that the decisions made today do not compromise the health and wellbeing of future generations.

Although people with higher incomes live in greener places, even after income is taken into account, people's local health status is still linked to the quantity, quality and proximity of green and blue spaces. The higher the quantity and environmental quality of green and blue spaces found in neighbourhoods, the healthier their residents tend to be. It is not only the amount of cover which is important but also its diversity, i.e. where there is a range of tree, grass, shrub and water cover types.

Older people may have greater health needs, but they often play an active and important role in protecting, maintaining and enhancing urban 'green' (e.g. parks, trees, private gardens) and 'blue' (water-related) spaces.

The recommendations and outcomes of the project were:

- Improving the environmental quality of local public parks and recreation areas could bring further health benefits to older, low income residents. Consider measures like more diversity of land covers and vegetation types, especially in lower income areas;
- When developing interventions, consider the range of wellbeing values that green and blue spaces can provide for different groups of older people;
- Try to use a range of methods - both quantitative and qualitative - to help to understand values, and to develop and assess interventions;
- Consider how social prescribing and activities like dementia walks could be designed and delivered in bespoke ways;
- Consider establishing vegetation barriers. They can be used to reduce concentration levels of some of the very smallest air pollution particles which are known to be harmful for health; and
- Encourage more engagement with urban nature through taking account of the factors which tend to motivate and demotivate older adults to participate.

Our Rivers Our City aims to provide better connectivity and accessibility to green and blue infrastructure throughout the river valleys. Accessibility for the increasingly aging population will be vital and any necessary stakeholders have been consulted with during the consultation process with Groundwork.

My Back Yard: Assessing the Contribution of Domestic Gardens to Urban Ecosystem Services and Action Plan

Manchester Metropolitan University, 2018

Domestic gardens have a vital role to play, making up a significant portion of the land in cities, they can be important patches of green space that provide connectivity between larger green spaces such as parks and recreation grounds. The My Back Yard project developed a new understanding of the benefits that gardens provide to residents in Manchester. The research sought to provide evidence on the amount of green space in gardens, how it is spatially distributed across the city, and how this affects the associated benefits that green space provides. The project focused on MCC but is applicable to all urban areas.

There was a number of actions for MCC, LWT, City of Trees (CoT) and Southway Housing Trust. The delivery mechanisms for the actions will be met through policy and strategy documents, Britain in Bloom, lobbying MPs and master planning/development collaboration.

PART FOUR:

INFORMING THE ACTION PLANS

Document Title	City Wide (including general river valley activity)	Irk	Mersey	Medlock
Our People Our Place: The Greater Manchester Strategy	The Strategy states that the natural environment, and the ESS that Manchester provides, needs to be both protected and, where possible, enhanced in light of increasing pressures from people, the economy and a changing climate. Existing green spaces will be protected and improvements to the quality of parks, rivers and canals will also be made. Whilst the targets within the Strategy have passed, the River Valley Action Plans can build on them by promoting enhancement of habitats that store carbon to reduce the CO^2 whilst also encouraging access to the river valleys for recreation and sustainable travel.			
Our Manchester – The Manchester Strategy 2016-2025	Whilst the Strategy does not refer specifically to river valleys it does state that developments across the city offer the opportunity to create good-quality outdoor spaces that make the most of the natural environment and existing parks, canals and rivers.	In regards to areas that the MCC want to see a major transformation by 2025, the Irk Valley is mentioned alongside Collyhurst, Ancoats, Corridor Manchester, Etihad Campus, Central Park and Airport City.		
State of the City Report 2019				The Action Plan for the Medlock River Valley uses the Strategic Regeneration Framework for the Mayfield Neighbourhood as a means to secure improvements through partnerships with the developers involved. Furthermore, in order to maximise the environmental improvements that could be secured through HS2, the Action Plan looks to early planning and partnership building to secure these.
Local Plan Core Strategy 2012-2027	The Local Plan is integral to securing improvements within the Action Plans for the river valleys through development. The Local Plan references the River Valleys and seeks to protect and enhance them through policy. Policy EN 1 Design Principles and Strategic Character Areas details the Irk Valley, Medlock Valley and Mersey Valley Character Area. Development within or alongside the Irk Valley should seek to enhance the Valley's semi-natural appearance and function and consideration will need to be given to views into, out of and along the River Valley. Policy EN 9 Green Infrastructure states that new development will be expected to maintain existing GI. This includes the maintenance and management of the Rivers Mersey, Irwell and their tributaries for example the River Irk, River Medlock, Chorlton Platt Gore, Gately Brook Moston Brook and adjoining land, with regard to their multiple functions including recreation, flood management and biodiversity.	Policy EC 4 North Manchester highlights that the River Irwell will be promoted as part of redevelopment by creating a sense of place and attracting investment. Plans are also in place to improve the open space network along the Irk Valley encouraging walking and cycling to ensure accessibility to new employment opportunities in North Manchester.		
Places for Everyone – formerly Greater Manchester's Plan for Homes, Jobs and the Environment: Greater Manchester	Policy GM-G 2 Green Infrastructure Network describes the strategic approach needed to protect, manage and enhance Greater Manchester's GI to subsequently safeguard and enhance the ESS they provide. Opportunity areas are listed for their particular potential for delivering improvements to the Greater Manchester GI Network. In regards to Our Rivers Our City the most notable opportunity areas are the Mersey Valley, Lower Medlock Valley and the Moston Brook Corridor.Policy GM G 3 River Valleys and Waterways: new development must be designed to ensure river corridors and their associated habitats are integrated within development and enhanced wherever possible.			

Document Title	City Wide (including general river valley activity)	Irk	Mersey	Medlock
Spatial Framework Publication Plan 2020 -	Policy GM G 3 River Valleys and Waterways states that in making planning decisions and carrying out other associated activities, Greater Manchester's authorities will seek to deliver the following priorities: 1. Retain the remaining open character of the river valleys, avoiding their fragmentation and prominent development on valley edges; 2. Promote public enjoyment of the river valleys, including as key features connecting urban areas to the countryside, providing opportunities for active travel, and enhance their high recreational value as green fingers through densely populated areas; 3. Protect and enhance the mosaic of semi-natural habitats, including: riparian (waterside), clough, broadleaved and ancient woodland; wet and semi-natural grassland; meadow; and lakes and ponds; 4. Retain existing pockets of relatively tranquillity and seclusion, especially within the more tightly enclosed and wooded valleys; 5. Reduce flood risk, through Natural Flood Management (NFM), including careful land management and a catchment-wide approach; 6. Improve water quality, including through land decontamination and the management of diffuse pollution from industry and agriculture; 7. Return rivers to a more natural state where practicable, including through de-culverting and the re-naturalisation of river banks and flood plains; 8. Increase the use of canals and watercourses for active travel, with improved and extended rights of way alongside the water providing walking and cycling routes for both recreation and commuting, thereby increasing access to natural green space; and 9. Ensure that development relates positively to nearby rivers and other waterways, taking advantage of opportunities to integrate GI through: a. High quality frontages to the water; and b. Public realm alongside the water for both recreation use and maintenance access.			
	Policy GM-G 7 states that to stabilise river beds and banks and to intercept pollution more trees and woodland should be planted within river valleys.			
Greater Manchester's Local Industrial Strategy	The Strategy aims for Greater Manchester to be carbon neutral by 2038- Manchester's river valleys provide opportunities for carbon capture to assist in the goals set out by the Greater Manchester Industrial Strategy and the aim to become carbon neutral by 2038. Our Rivers Our City identifies plantable land to increase the carbon capture capacity of river valleys across the Mersey, Irk and Medlock river valleys.			
Victoria North - The Northern Gateway Strategic Regeneration Framework and Eastlands SRF				As part of the SRF, Manchester has a unique opportunity to create Manchester's City River Park, which will harness the natural assets of the River Medlock revealing and celebrating the River Medlock through careful and sensitive restoration. A significant green-blue infrastructure network will be created that will enhance the river corridor and will create a new leisure corridor connecting the city centre and North Manchester, as well as improve the ecological status of the River Medlock.

Document Title	City Wide (including general river valley activity)	Irk	Mersey	Medlock
		Green and blue infrastructure will be vital to mitigating against flood risk and climate change. Areas of the SRF within the Lower Irk Valley are located in areas of medium and high Flood Risk (Flood Zones 2 and 3). Future mitigation could include river naturalisation: adaption/removal of weirs, de-culverting sections of watercourse, modification to the alignment or form of the river bank revetments or river bed, zoning development to align uses appropriate to topography and flood risk and implementing changes to topography and river bank levels. These restoration techniques have the potential to improve the Irk's ecological status under the WFD, through greatly improving the water quality and biodiversity of the watercourse and its banks.		
City Wide Open Spaces, Sport & Recreation Study 2008	Strategic Review says: When the Study is updated in the future, it will be able to provide a steer on how open spaces within the river valley have improved and become more accessible as a result of Our Rivers Our City and its associated Action Plans.	North Manchester has a high quantity of open spaces and therefore the focus should be on improving quality.	South Manchester - Future priorities focus on qualitative improvements and seizing opportunities to address deficiencies in open spaces.	Priorities in the city centre will focus on the provision of appropriate public realm as well as ensuring that residents have access to local open spaces. Future priorities in Central Manchester will be to create a variety of new open space provision, innovative solutions and qualitative improvements.
Parks Strategy and Action Plan 2017 to 2026	The Parks Strategy has four objectives, each of which requires actions in river valleys to help the City achieve its overall aim that parks and green spaces are the soul, lung and heart of the City, providing conditions for people and environment to flourish. Parks at the Heart of the Neighbourhood Action 1 to define standards for accessibility relates to the Our Rivers Our City desire to ensure people can access the river valleys safely. Action 2 to promote links between parks would be delivered by proposals for community greenways and city centre “blue lines”. Our Rivers Our City identifies river valley destination parks Action 4 to increase usefulness and uptake of park facilities relates to Our Rivers Our City’s suggestion for a path and lighting protocol to increase use of river valley paths whilst maintaining biodiversity. And to goals for using destination parks in river valleys as hubs for activity and training Action 6 for parks development projects to enhance functionality, biodiversity and climate resilience could be delivered through more sponge parks and by using City-owned green spaces for co-investment with the water industry to address problematic discharges and reduce pressure on surface water sewerage systems. Vibrant Parks, Vibrant Communities Action 2 re inclusion and co-design is an important theme of Our Rivers Our City Action 3 re enforcement is critical to water quality as well as parks by tackling problems of litter at source, and increasing awareness of environmental damage caused by ASB. Action 4 and 5 relate to Our Rivers Our City promotion of digital technology for information, citizen science, inclusion and enjoyment of river valleys. Manchester Quality Standard Action 1 requires development of a quality and accessibility standard for river valleys Action 4 requires development of new skills in landscape management; this could include training in skills needed for management of SuDS, NBS and community engagement; a priority for successful delivery of Our Rivers Our City. Action 8 for an Age-Friendly Standard is related to Our Rivers Our City’s objective for safe and welcoming access to waterfronts Action 9 relates to digital technology, such as the Love Exploring app which is suitable for river valleys Productive Parks in Partnership Actions 1 and 2 relate to building a case for investment in parks that can stimulate visitor numbers, dwell time, events and improve user experience. This relates to Our Rivers Our City aim for destination spaces in river valleys.	The City River Park would create a series of linked spaces and an investment model for annual maintenance. An Irk Valley community greenway between the City River Park and Heaton Park / Boggart Hole Clough would link several city-owned greenspaces Heaton Park’s links to the Irk Valley and water supply for N. Manchester can be used as the basis of education on the water cycle. Parks in the Irk Valley can be used to develop co-design and inclusive access models, building on the “People’s River” work	Investigation of the Chorlton Water Park / Kenworthy Wood area as an enhanced destination park of sub-regional attraction could raise revenues and catalyse access improvements and micro-enterprises in the Mersey Valley parks Enhancement and increased awareness of the Baguley Brook in Wythenshawe Park Greenways into, and across, the Mersey Valley are critical for north-south green commuting and leisure	A City Centre Medlock “Blue Line” would link the Medlock Valley Way at Ancoats to Castlefield and incorporate the Mayfield Park. A Medlock Valley Community greenway from Great Ancoats upstream to Oldham would link a series of existing open spaces Attraction of developer-related funds from Eastlands regeneration would stimulate park improvements in the Lower Medlock Valley Completion of the river restoration in Clayton Vale and Philips Park could deliver improvements to their functionality and climate resilience

Document Title	City Wide (including general river valley activity)	Irk	Mersey	Medlock
	Actions 3 to 7 relate to building partnerships with business, Friends groups, community, educationalists, staff and volunteers. Much of Our Rivers Our City's objectives relating to Economy and People & Neighbourhoods envisages using the rivers as spaces for people to become hands-on in managing and learning about the environment; for example proposals for River Guides and Voluntary bailiffs, who could work alongside the Parks team in providing a rangering/wardening service.			
Manchester Climate Change Framework 2020-2025	Strategic Review says: Manchester's river valleys provide essential green and blue infrastructure, which will be key to providing climate change resilience. Our Rivers Our City not only aims to protect existing green and blue infrastructure within Manchester's river valleys but also identifies opportunities for additional carbon storage, NBS and education for residents.			
Strategic Flood Risk Assessment	Strategic Review says: GI within the river valleys is essential to mitigate flood risk and future climate change events. Our Rivers Our City makes use of existing flood risk data and incorporate existing actions for flood management within the River Valley Action Plans. Our Rivers Our City aims to protect and enhance river valleys to ensure safe and resilient communities.			
Local Flood Risk Management Strategy and Action Plan	Strategic Review says: Our Rivers Our City educates people within the Mersey, Irk and Medlock Valleys on flood risk and climate change through the promotion of educational tools such as interpretation boards and online mapping. Our Rivers Our City promotes river valleys as a key GI linkage and important for ensuing sustainable development and climate change. Our Rivers Our City provides opportunity mapping which identifies key areas for tree planting and habitat enhancement, which will contribute to reducing surface run-off rates. Furthermore, proposed development have been mapped to identify further opportunities linked to new development.			
Manchester's Great Outdoors: A Green and Blue Infrastructure Strategy for Manchester and Action Plan 2015-2025	There are ten actions to implement the Strategy, which includes continuing to invest in river valleys to provide attractive settings for residential communities, leisure and recreation, health and biodiversity benefits. Furthermore, the actions ensure effective and appropriate tree and woodland management and planting and conserve, protect and enhance biodiversity. The actions also highlight the need to deliver health and wellbeing.	The Irk Valley Local Plan is in place and the delivery of the improvements identified will need to continue, involving a creative approach to the public realm of North Manchester including arts, heritage and fitness trails as examples of activities that can animate river valleys. Improvements should be focused on the quality of natural waterways, enhancing biodiversity, water quality and recreational use.	South area: The Mersey Valley should continue to provide flood resilience, recreational opportunities and biodiversity enhancement. There is also potential to enhance Platt Fields Park, Alexandra Park and Chorlton Water Park in this area. Wythenshawe area: Mersey River Valley provides a significant blue and green corridor for pedestrians and cyclists via the Trans Pennine Trail. Furthermore, the Mersey Valley provides flood resilience, recreational opportunities and opportunities for biodiversity enhancement. Fallowfield loop, an important cross-city route, delivers health and environmental benefits.	There are opportunities for improvements to the River Medlock, in particular enhancing water quality, biodiversity and re-naturalisation. There are further opportunities to create and enhance linkages, most notably in South Gorton where new corridors can be established and strengthened, linking east to the reservoirs and north to the Medlock Valley. North-south connection along the former Stockport Branch Canal will be formalised as a landscaped recreational trail to link the Gorton Reservoirs with the Ashton Canal and Medlock Valley. The City Centre has low levels of green and blue infrastructure and so enhancing appropriate provision is particularly important for the city centre in helping to create an attractive location for residents, workers and visitors. There are opportunities to enhance blue corridors and create safe, attractive green routes for a walkable/cyclable city, health benefits and accessible 'lunch hour' green space for city workers.
Wild About Manchester: Manchester Biodiversity Strategy	Rivers are identified as a priority habitat in the Strategy and the River Mersey, River Medlock and River Irk are identified as the best examples of river habitats in Manchester. Our Rivers Our City has used the threats identified in the Strategy to inform actions within the Manchester River Valley Action Plans.			

Document Title	City Wide (including general river valley activity)	Irk	Mersey	Medlock
All Our Trees	Strategic review says: Our Rivers Our City uses the data from the Strategy on plantable land identified and released for planting, tree coverage by ward, woodland mapping including woodland under active management to inform the Manchester River Valley Action Plans. Our Rivers Our City provides opportunity mapping for air quality, climate regulation, enhancing wildlife and habitat, water quality and flood risk to identify planting opportunities for new development and plantable roadside in high density residential areas.			
Manchester Tree Action Plan 2016-2020	The Action Plan comprises potential projects and activities under the following headline actions: » Objective 1: Managing sustainably – This includes mapping and monitoring changes in the amount and distribution of trees across the city, understand the city's tree resource, green and blue infrastructure as part of major new development and encouraging climate-resilient approached to tree and woodland management.» Objective 2: Planting appropriately – This objective ensures a healthy and diverse tree canopy cover across the city, planting of community orchards, funding n tree planting and management and developing climate-resilient approaches to tree planting» Objective 3: Protecting strongly - Investigate effective tree-replacement and compensation measures, encourage community-led and focused tree projects and increase Sites of Biological Interest (SBI)).» Objective 4: Involving creatively – Further research the benefit of trees, raise awareness of the benefit of trees, provide opportunities for community engagement and raise the profile of Manchester as an attractive place to live, work and visit.As Manchester's river valleys comprise a high proportion of Manchester's tree cover and the Manchester River Valley Strategy and Action Plans will help achieve the objective above by strengthening biodiversity, amenity and education around the river valleys.			
Water for life and livelihoods: Part 1 North West River Basin District, River Basin Management Plan		Future aims for the Irwell Catchment focus on implementing evidence based measures and projects where benefits for the public and nature will be greatest, make in-stream and riparian habitat improvements, implement catchment wide green infrastructure interventions and remove or bypass significant physical modifications that act as barriers to fish migration and present risks to the public and property.	Future aims for the Upper Mersey Catchment focus on targeted awareness programmes to engage with local communities, identify and take opportunities to improve ecology through habitat creation and enhancement using green infrastructure, evidence-based catchment management across the catchment and opportunity mapping and restoration and re-naturalisation schemes.	
Irwell Catchment Natural Flood Risk Management Group		The project aims to achieve a step change in downstream flood risk management by maintaining and restoring priority habitats such as blanket bog at the head of the catchment and traditional Pennine clough woodland. Measures such as leaky dams, hedgerows and boundary walls, ponds and gully blocking are to be explored.		
Nature of Hulme 2017-2018	Strategic review says: Our Rivers Our City identifies opportunities through mapping to implement NBS with the aim of reducing flood risk, building climate change resilience and enhancing habitats within river valleys. By enhancing river valleys with NBS, there will also be a positive impact on air pollution, mental health and wellbeing.			
Nature of Manchester Local Action Project	Strategic review says: Our Rivers Our City builds on this and provides practical actions to enhance and protect green and blue infrastructure in the river valleys Using the information provided in the toolbox. Whilst creating the Action Plans for each river valley we have been conscious to consider the need, wants, opportunity and suitability for such activities whilst also taking into account potential blockers and trade-offs as the LAP has done.			
My Wild City	Strategic review says: An Action Plan 2020-2022 includes:1. Greater awareness, engagement and active involvement of people with nature;2. Greater partnership working to connect more people with nature and deliver more co-ordinated work to improve space for nature; and3. Improved quality for spaces and corridors for nature in Manchester.Our Rivers Our City has worked with communities to understand their connection to Manchester's rivers and their awareness and engagement with the river valleys. The actions from the My Wild City Action Plan have been incorporated into the River Valley Action Plans to help communities interact and access the Medlock, Irwell and Irk river valleys.			

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Ecosystem Services Opportunities Assessment for the Irwell Catchment	Strategic review says: Our Rivers Our City promotes investment and delivery of opportunities to protect and enhance their natural capital.			
Creative Futures Irk Valley		The research project found that the river needed: » To be opened up and new development should provide space for the river; » Derelict or historic buildings on the river should be restored; » New development in flood plains to be adapted for climate change; » Support for community planting schemes; and » Wetlands and developing bioremediation wetlands in the area to be enhanced, building on the positive changes seen at Harpurhey Reservoirs, where wetlands seem to be increasing water capacity. The project is almost a decade old and several plans and guidance have been implemented to tackle climate change and protect blue infrastructure. However, many of the issues identified in this project exist today and the Our Rivers Our City provides guidance and actions to protect and enhance the Irk River Valley as well as identifying opportunities for future improvements.		
Irk Valley Local Plan		Our Rivers Our City provides an up to date view of the aims, objectives and actions for the Irk Valley as well as reviewing opportunities to make the Irk Valley more sustainable for its communities.		
Medlock Valley Strategic Action Plan				Improve the main footpaths and bridges in Clayton Vale; Access improvements to Clayton Vale at Culcheth Lane; Introduction of Bank Bridge Road entrance; and Footpath improvements to link Lime Kiln Lane to Medlock Valley Way. Our Rivers Our City builds on the work already undertaken in the River Medlock Valley to continue the re-naturalisation of the River and increase accessibility for local communities, nature conservation, climate change adaption and flood risk resilience.

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East Manchester Countryside: Clayton Vale Leaflet				Our Rivers Our City highlights key greenspaces like Clayton Vale within Manchester river valleys to be protected and enhanced for tackling air pollution, climate change resilience and biodiversity. Mapping the river valleys has shown where the opportunity areas are to reduce pollution and re-naturalise rivers.
Countryside on your Doorstep				Our River Our City identifies new funding opportunities to carry on the work enhancing the Medlock Valley, in particular against the current threats of pollution, climate change and decline in biodiversity. It identifies opportunities to improve and naturalise the Medlock River.
River Medlock Restoration				Our Rivers Our City has taken the lessons learned from the River Medlock restoration project and identified other potential opportunities for re-naturalisation and restoration further down the Medlock.
Stockport Town Centre West: Strategic Regeneration Framework Consultation Draft			Our Rivers Our City provides a linked up and consistent approach with neighbouring Stockport Metropolitan Borough Council to utilise river valleys for recreation, nature conservation and climate change.	
Mersey Life Portfolio	Strategic review notes that this is an excellent portfolio of projects that has aged well and still provides the inspiration for catchment-scale thinking and local action. Many of the catchment-scale actions have generally been incorporated into the work of the Mersey Catchment Partnership and Natural Course. The portfolio contains a range of other suggestions for catchment –wide community engagement such as schools work, competitions, forums. All of these remain valid and can be incorporated into the Our Rivers Action Plan. One interesting idea is for a Mersey Life centre which would be a sub-regional destination for education and research and collaboration. The portfolio also identifies some projects specific to the River Mersey in Manchester City, as noted in the “Mersey” column to the right. These projects remain valid for Our Rivers Our City action planning		Project ML15: Review and improve access to fisheries in reaches M7 to M9 Mersey01,03&04: Review and improvement management of the riparian zone in flood defence reaches to create more diversity of grassland habitat. Reaches M11,M12,M14 and M15 are highlighted as demonstration sites to prove concept. Mersey07: Investigate in-channel groynes to create more habitat diversity Mersey14: Strategic Water level management review for biodiversity	
Compendium of Nature-based and ‘grey’ solutions to address climate- and water-related problems in European cities	Strategic review says: Our Rivers Our City focuses on NBS on the first instance to try and remove barriers for people accessing the rivers for recreation and for wildlife. NBS also provide resilience to climate change and intense rain fall events predicated for the future.			
Building Climate Resilience and Water Security in Cities: Lessons from the Sponge City of Wuhan, China	Our Rivers Our City identifies opportunities to implement NBS to mitigate against climate change, improve public health and improve biodiversity conservation.			
Irwell Management Catchment Natural Capital Account and ESS	Our Rivers Our City builds on the recommendations to provide focused and targeted improvements to Manchester’s river valleys.			

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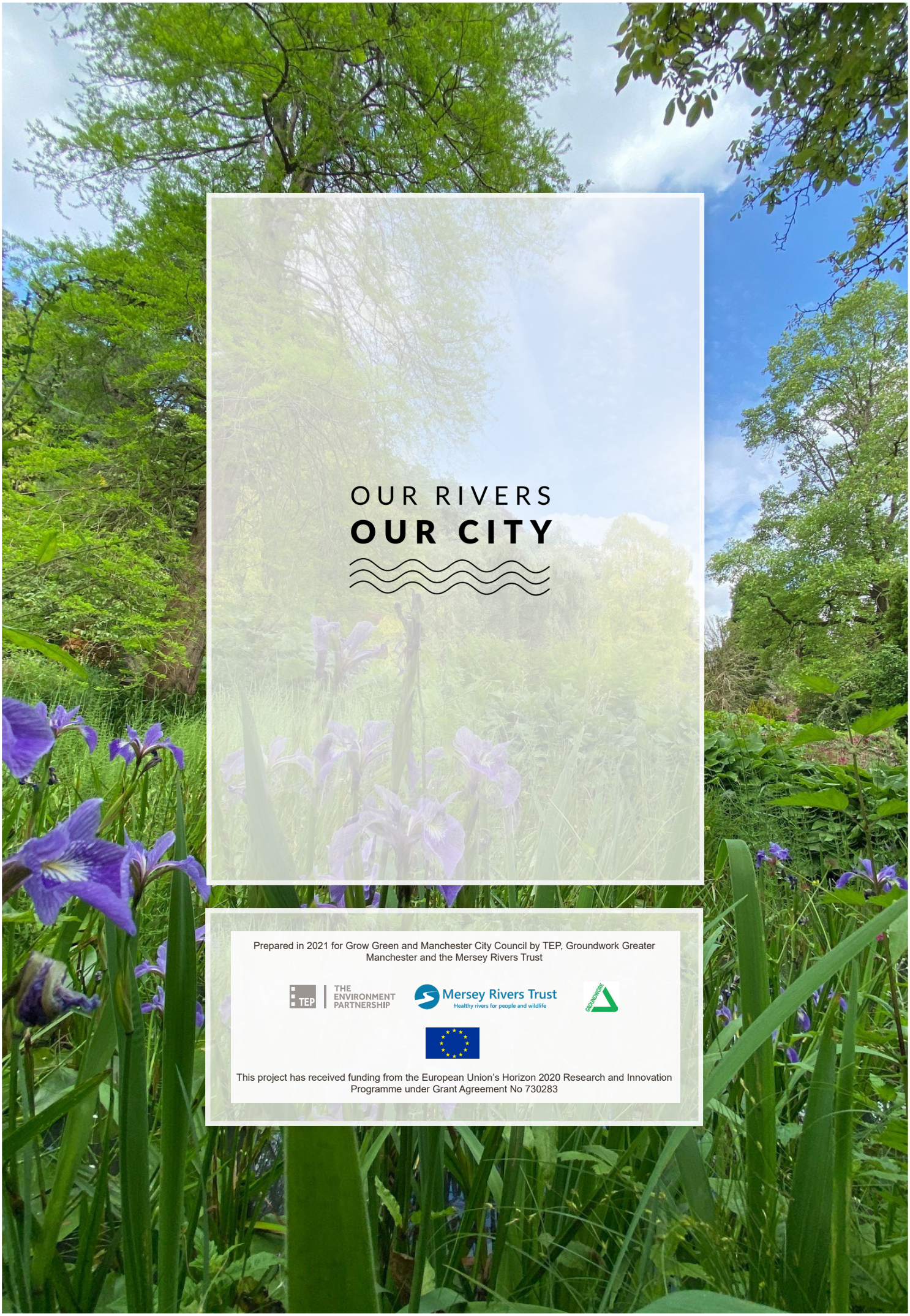
Opportunity Mapping				
Nature and Aging Well in Towns and Cities	Our Rivers Our City aims to provide better connectivity and accessibility to green and blue infrastructure throughout the river valleys. Accessibility for the increasingly aging population will be vital and any necessary stakeholders have been consulted with during the consultation process with Groundwork.			
My Back Yard: Assessing the Contribution of Domestic Gardens to Urban Ecosystem Services and Action Plan	There was a number of actions for MCC, LWT, City of Trees (CoT) and Southway Housing Trust. The delivery mechanisms for the actions will be met through policy and strategy documents, Britain in Bloom, lobbying MPs and master planning/development collaboration.			



OUR RIVERS
OUR CITY

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