MANCHESTER
CITY COUNCIL

Web Mapping and Data Sources

OUR RIVERS
OUR CITY

Our Rivers, Our City Project Web Map Dataset Guide

Introduction

This document provides a summary of the datasets included within the Our Rivers, Our City project web map. Datasets have been acquired from several organisations with various licence conditions associated with their use. Use the below list to navigate to further information about each dataset.

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Boundaries

Manchester City Council Boundary – Office for National Statistics (Open Source)

The spatial boundary of Manchester City Council Authority.

Neighbourhoods (2017) – Manchester City Council

Neighbourhoods as defined by Manchester City Council to support the development of out of hospital and urgent care services at a local level (referred to as 'place-based care'). Each of the 12 Neighbourhoods determine their own priorities and method to achieve them.

Further information: Neighbourhood Profiles | Area Profiles | Manchester City Council

Ward Profiles – TEP Limited

Much of the baseline data produced as part of the project has been aggregated using Manchester City Council ward boundaries to create natural capital profiles. The various charts associated with the profile visualise the aggregated statistics:

- Broad Habitat Types – summary of the area of the Broad Habitat Mapping in each ward.
- Tree Canopy Cover – Area of the ward covered by tree canopy determined using the National Tree Map dataset by Bluesky.
- Total Biodiversity Units and Biodiversity Units Per Hectare – summary of the Biodiversity Units for land parcels calculated as part of the Greening Greater Manchester project completed by TEP Limited.
- Current and Potential Urban Greening Factor (UGF) – The current UGF calculated for each ward using the formula outlined in the London Plan and the baseline land types mapped. A potential UGF was also calculated per ward based on assumptions on how much exising sealed surface could be changed to more sustainable measures such as green roofs and permeable paving.

River Valleys

River Valleys – TEP Limited

Dataset which represents the catchment areas of the Irk, Medlock and Mersey Rivers in Manchester. The boundaries were created through the aggregation of the WFD River Waterbody Catchments Cycle 2 dataset (Environment Agency – Open Source) to define the boundaries for the three river valleys.

Watercourses – Ordnance Survey (Open Source)

Canals and other watercourses as determined by Ordnance Survey.

Reasons for Not Achieving Good Status – Environment Agency (Open Source)

Number of reasons why the waterbody, as mapped by WFD River Waterbody Catchments Cycle 2 dataset (Environment Agency – Open Source), was not identified as 'Good' water quality in 2019.

Further Information: Environment Agency - Catchment Data Explorer

Development and Regeneration

Strategic Regeneration Frameworks – TEP Limited

Boundaries of the Strategic Regeneration Frameworks defined by Manchester City Council, digitised by TEP. The dataset represents areas where growth is coordinated by the City Centre Grown and Regeneration Team at Manchester City Council.

Further information: City centre regeneration areas map | Manchester City Council

Other Strategic Plans – TEP Limited

Areas defined within other notable strategies or development plans in Manchester, digitised by TEP. These include the Medlock Restoration Project, Clean Streams Didsbury and Greater Manchester Hospital.

Conservation Areas – Manchester City Council

Conservation areas as defined in Manchester City Council.

Further Information: Conservation areas | Manchester City Council

Strategic Housing Land Availability Assessment – Manchester City Council

Sites identified as part of the Strategic Housing Land Availability Assessment by Manchester City Council, which have the potential to accommodate new housing in the future.

Further Information: SHLAA | Manchester City Council

Integrated Water Management

Surface Flow Paths – TEP Limited

An open source Digital Terrain Model LIDAR dataset was processed using SAGA-GIS to create a Flow Accumulation (Flow Trace) model. The outputs were then banded and aggregated to define parcels which were most hydrologically connected to the surrounding catchment. These parcels could be considered areas on the surface where most water flows.

Floodzones – Environment Agency (Open Source)

Floodzones 2 and 3 as determined by the Environment Agency. Floodzone 2 denotes land which has between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year. Floodzone 3 denotes land which has a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

Further information: Environment Agency - Flood Map for Planning Risk (environment-agency.gov.uk)

Risk of Flooding From Surface Water – Environment Agency (Open Source)

Areas which are at risk of surface flooding for 1 in 30, 1 in 100 and 1 in 1000 Year flood events.

Further information: Environment Agency - Flood Map for Planning Risk (environment-agency.gov.uk)

Water Quality and River Restoration

Water Framework Directive Waterbody Quality (2019) –

Environment Agency (Open Source)

Overall waterbody quality determined in 2019 as defined by the Water Framework Directive.

Further Information: Environment Agency - Catchment Data Explorer

Culverts – Environment Agency (Open Source)

River channels which run through culverts.

Further Information: Defra Data Services Platform

Consented Discharge Points – Environment Agency (Conditional licence)

Location of consented discharges to controlled waters with conditions as detailed under the Environmental Permit Regulation.

Licence: Environment Agency Conditional Licence - GOV.UK (www.gov.uk)

Further information: Consented Discharges to Controlled Waters with Conditions - data.gov.uk

Fish Barriers – Environment Agency (Open Source)

Identified as part of an assessment of hydropower opportunities in England, this dataset represents the barriers to fish movement, including wiers, locks and waterfalls.

Further Information: Potential Sites of Hydropower Opportunity - data.gov.uk

Water Treatment Works – Environment Agency (Open Source)

Wastewater treatment plants monitored and reported under the Urban Waste Water Treatment Directive (UWWTD) within 1km of Manchester City Council.

Further Information: Urban Waste Water Treatment Directive Treatment Plants - data.gov.uk

Authorised Landfill – Environment Agency (Conditional licence)

Landfill sites that are currently authorised by the Environment Agency under Environmental Permitting Regulations.

Licence: Environment Agency Conditional Licence - GOV.UK (www.gov.uk)

Further Information: Permitted Waste Sites - Authorised Landfill Site Boundaries - data.gov.uk

Historic Landfill – Environment Agency (Conditional licence)

Land that has been used as a landfill site within the past 30 years.

Licence: Environment Agency Conditional Licence - GOV.UK (www.gov.uk)

Further Information: Historic Landfill Sites - data.gov.uk

Irk River Survey Notes and Opportunities – Environment Agency

Opportunities for ecological improvement in the River Irk identified by the River Restoration Centre (2018). The data includes observations from the river surveys and opportunities for improvements.

Potential Modifications to Watercourses – Environment Agency

Recommendations within the Irk, Medlock and Mersey Catchments made by Weetwood Services Limited (2013) for possible modifications to the watercourses which may mitigate negative impacts to their ecological potential. Recommendations were identified through a series of site and desktop surveys to identify technically feasible measures.

Habitat Mapping

Broad and Sub Habitat Mapping – TEP Limited

All land parcels within 1km of Manchester City Council were categorised as one of 7 broad habitats, and one of 24 sub habitats identified in the table below. This was completed using the existing OS information attributed to the land parcel and other datasets such as OS MasterMap Greenspace, OS Open Greenspace. Land uses, such as parks and cemeteries, were divided into their constituent parts (e.g. waterbodies, woodland, buildings etc.).

Broad Habitats	Sub Habitats
Agricultural	Agricultural
Greenspace	Allotments
	Amenity Greenspace
	Institutional Grounds
	Parks and Gardens
	Private Gardens
	Religious Grounds
	Sports Grounds
	Transport
Semi-natural Grassland	Semi-natural grassland
Urban	Building/Structure
	Hardstanding
	Rail
	Road
	Roadside/footpaths
Woodland	Coniferous
	Mixed
	Non Coniferous
	Non Coniferous Ancient
Water	Canal
	Marsh/Saltmarsh
	Pond/Lake/Reservoir
	River
Unclassified	Unclassified

Ignition Baseline Land Form – University of Manchester and Greater Manchester Combined Authority

Land form assigned to Ordnance Survey MasterMap Topography land parcels as part of the Ignition Green Infrastructure Baseline.

Further information: IGNITION _UoM_Baseline_Article.pdf (ontheplatform.org.uk)

Allotments – TEP Limited

The allotment sub habitat type as identified in the Broad and Sub Habitat Mapping detailed above.

Playing Fields – Ordnance Survey (Open Source)

Playing fields identified within Ordnance Surveys Open Greenspace dataset.

Further information: OS Open Greenspace

Ecosystem Services

Current Ecosystem Service Functionality – TEP Limited

Each land parcel was assessed for its ability to perform various ESS which are important to the river valley. Each ESS will be scored using a series of factors (shown in Table 1). For example, the natural flood management score for each land parcel will be calculated based on its location within the catchment, and its potential to be a wetland area.

Table 1: ESS factors which were evaluated

Ecosystem Service Category	Ecosystem Service	Factors	Rationale
Regulatory	Water Quality	Connectivity	Identify potential areas which are near to waterbodies, or areas which are hydrologically connected; and therefore contribute to water quality.
		Land Use	Identify land uses and locations which contribute/reduce the impact on water quality.
		Soil Characteristics	Identify areas where soil type will increase/decrease runoff into watercourses.
		Proximity to water pollution pressures	Identify areas within close proximity of pressures which could cause an impact of chemical, nutrient or organic pollution.
	Air Quality	Proximity to sources of air pollution	Identify areas close to existing sources of air pollution (e.g. main roads).
		Carbon sequestration	Identify areas which contribute to carbon sequestration.
	Natural Flood Management	Urban Greening Factor (UGF) Analysis	The UGF is a measure of green infrastructure, and the benefits which are provided, including natural flood management. In calculating a

Ecosystem Service Category	Ecosystem Service	Factors	Rationale
			UGF baseline, it is possible to identify parcels which contribute to Natural Flood Management and those which could be improved.
		Catchment Analysis	Identify the size of catchments, and therefore the ability to perform natural flood management.
		Potential Attenuation creation areas	Identify potential areas for wetland creation which can increase the lag time to the watercourse.
Cultural/ Production	Amenity and Health	Areas deficient in open space	Open space provides many benefits to health. These benefits are most valuable in areas which are already deficient in open space.
		Tree Cover	Areas of high tree canopy cover contribute to health and amenity. Manchester City Council has a tree coverage of 18%, with the ambition to be increase coverage~~X%~~.
		Healthy Transport Corridors	Blue and Greenspaces within close proximity to active travel routes enhance the route and attract additional users.
		Food Production	Identify areas which provide opportunities for food production.
Supporting	Biodiversity	Proximity to protected sites	Identify areas which are part of or close to ecologically important habitats.
		Biodiversity Score	Identify areas which are considered to have a high biodiversity score under the Defra 2.0 Metric, and areas which could potentially be improved.
		Landscape connectivity	Identify large areas of continuous habitat which provide connectivity for wildlife.

Figure 2 demonstrates the scoring process using flood mitigation as an example.

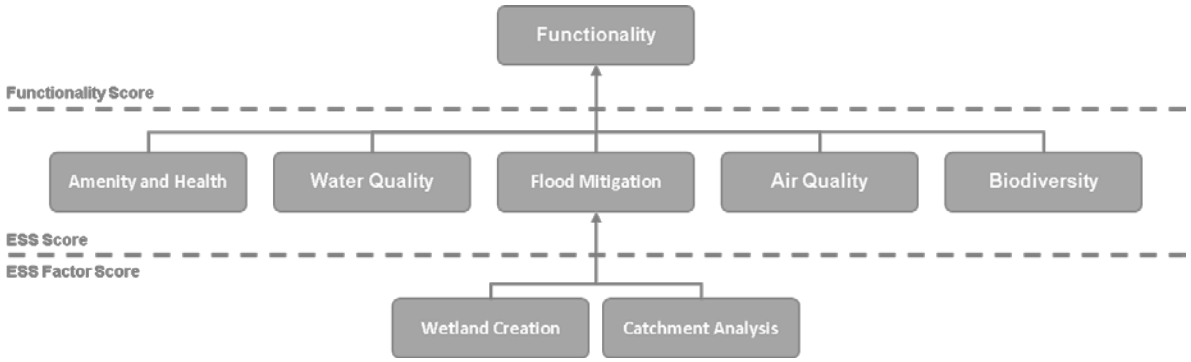

Figure 1: ESS Scoring process (example of flood mitigation)

Each ESS was calculated as a percentage of its potential maximum. The functionality was then be calculated as a percentage of the maximum potential score for all ESS. This demonstrates each parcel's opportunity for improvement.

Ward-Level Assessment of ESS Benefits – West Country River Trust

Produced as part of the *Nature of Manchester* report, this dataset shows the benefits of natural assets at a ward level. Several ESS were assessed, including Water Pollution, Aesthetic Value and Flooding from Rivers. Further detail on the methods used to assess these benefits can be found in the *Nature of Manchester* report.

Further Information: LAP-EnRoute-MCC-Nature-of-Manchester.pdf (wrt.org.uk)

Tree Canopy Cover

Tree Canopy Cover – Bluesky Limited

Aggregated National Tree Map dataset which shows the extent of tree canopy cover in Manchester.

Further Information: National Tree Map | Bluesky International Limited (bluesky-world.com)

City of Trees Opportunity Mapping Score – Manchester City of Trees

The areas in Manchester where trees could potentially be planted. The data is produced by City of Trees based on an analysis of multiple datasets, using the Ordnance Survey MasterMap Topography as a base. The 'priority' mapping score relates to the degree to which each area provides a range of opportunities. Each parcel may provide a particular opportunity from tree planting, such as helping to reduce flooding, or removing particulates from the air. In these cases, the values are presented as meeting the particular need, or significantly meeting the need.

Attribution: Contains Ordnance Survey data © Crown copyright and database right 2019. Data received from City of Trees, licence no 10050594. Shared with GMCA under PSMA (GMCA licence no. 100037229).

Further information: GM Open Data Infrastructure Map | MappingGM

Ignition Baseline Tree Cover – University of Manchester and Greater Manchester Combined Authority

Level of tree cover assigned to Ordnance Survey MasterMap Topography land parcels as part of the Ignition Green Infrastructure Baseline.

Further information: IGNITION_UoM_Baseline_Article.pdf (ontheplatform.org.uk)

Biodiversity Net Gain

Protected Species – Greater Manchester Ecology Unit

Sightings of the following protected species within 2km of Manchester City Council:

- Banded Demoiselle
- Brown Trout
- Daubenton's Bat
- Dipper
- European Otter
- Kingfisher
- White-clawed Freshwater Crayfish

Sites of Biological Importance – Greater Manchester Ecology Unit (Open Source)

Sites of Biological Importance within Manchester as defined by Greater Manchester Ecology Unit.

Further Information:

GM Open Data Infrastructure Map | MappingGM

Review of Sites of Biological Importance Guidelines (tameside.gov.uk)

Local Nature Reserves – Natural England (Open Source)

Statuary designation Local Nature Reserves as defined by Natural England.

Further information: Local Nature Reserves (England) | Natural England Open Data Geoportal (arcgis.com)

Ancient Woodland – Natural England (Open Source)

Ancient Woodland designation as defined by Natural England

Further Information: Ancient Woodland (England) | Natural England Open Data Geoportal (arcgis.com)

Priority Habitats – Natural England (Open Source)

The geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance within Manchester.

Attribution: © Natural England copyright. Contains Ordnance Survey data © Crown copyright and database right 2021.

Further Information: Priority Habitat Inventory (England) - data.gov.uk

Biodiversity Units and UK Habitat Classification – TEP Limited

The Biodiversity Metric 2.0 developed by Defra was applied to calculate the number of Biodiversity Units (BUs) per land parcel. Each Ordnance Survey MasterMap Topography parcel was classified according the UK Habitat, then used in conjunction with open source datasets to calculate the number of BUs. Further information on the method can be found in TEP's Greening Greater Manchester Project.

Further information: The Briefing_GIS_From Grey To Green Biodiversity In Greater Manchester_May 2020 (fliphtml5.com)

Urban Greening Factor (UGF)

Land Cover Type and UGF Multiplier – TEP Limited

As proposed in the new London Plan, the Urban Greening Factor (UGF) is a method to quantify the proposed green infrastructure on a development, to ensure the provision of benefits such as sustainable drainage and reducing the urban heat island effect. The same method was applied in Manchester to establish a baseline UGF for each ward. To calculate this, every Ordnance Survey MasterMap Topography parcel was allocated to a UGF land cover and multiplier. A higher the multiplier implies the parcel is more 'spongy' and contributes more to urban greening. This allowed the calculation of an UGF score per parcel.

Accessibility

Accessible Natural Spaces and 10 Minute Walk Distance – West Country River Trust

Produced as part of the *Nature of Manchester* report, this dataset was created in the assessment of Indicator 1: access to green and blue spaces. It details the accessible natural spaces in Manchester and the surrounding area and a buffer equating to a 10 minute walking distance. Further detail on the methods used to assess these benefits can be found in the *Nature of Manchester* report.

Further Information: LAP-EnRoute-MCC-Nature-of-Manchester.pdf (wrt.org.uk)

Cycle Routes – Transport for Greater Manchester

Cycle routes within Manchester City Council.

Attribution: Contains Transport for Greater Manchester data. Contains OS data © Crown copyright and database right 2018.

Further Information: GM Cycle Routes - data.gov.uk

Bee Network – Transport for Greater Manchester

Transport for Greater Manchester's walking and cycling proposals. Beeways represent the entire network, busy beeways represent sections of the network on busier roads and confirmed infrastructure represents corridors which have confirmed Mayors Challenge Fund schemes which align with the network.

Attribution: Contains Transport for Greater Manchester data. Contains OS data © Crown copyright and database right 2021.

Further Information: GM Bee Network - data.gov.uk

Community

Schools – Manchester City Council

Locations of schools within Manchester City Council.

Leisure Centres – Greater Manchester Combined Authority (Open Source)

Location of Leisure Centres in Manchester operated by the local authority or a local authority arms-length management company.

Sports Centres – Sport England

Locations of all sports sites and facilities within Manchester as identified by Active Places Power.

Attribution: Contains Data © Sport England

Further Information: Active Places Power / Open Data Download

Children Centres – Department for Education (Open Source)

Locations of Children Centres in Manchester registered with the Department for Education.

Further information: Get information about schools - GOV.UK (get-information-schools.service.gov.uk)

GPs – NHS (Open Source)

Locations of General Practitioners within Manchester.

Further Information: The NHS website datasets - NHS (www.nhs.uk)

Social Care Providers – NHS (Open Source)

Locations of Social Care Providers within Manchester.

Further Information: The NHS website datasets - NHS (www.nhs.uk)

Indices of Multiple Deprivation 2019 – Ministry of Housing, Communities and Local Government (Open Source)

Each Lower Super Output Area (LSOA) within England has an overall score for the level of deprivation using 7 indicators: employment, education, health, crime, income, housing and environment. The LSOAs are then ranked and banded into deciles to identify the most and least deprived in England - LSOAs within the first decile are thought to be in the 10% most deprived in England and LSOAs within the 10th decile are thought to be within the 10% least deprived in England.

Further information: Indices of Multiple Deprivation (IMD) 2019 (arcgis.com)

Consultation Responses

Challenges Heat Map – TEP Limited and Groundwork

Responses captured through the *Our Rivers Our City* public consultation. Users were asked to map their responses to the question: *What are the greatest challenges or problems you think Manchester's rivers and streams face?* Point responses have been aggregated to create a heat map.

Further information: OROC-Stakeholder-Engagement-Report-February-2021.pdf (groundwork.org.uk)

Challenges Other Responses – TEP Limited and Groundwork

Line and area responses captured through the *Our Rivers Our City* public consultation. Users were asked to map their responses to the question: *What are the greatest challenges or problems you think Manchester's rivers and streams face?*

Further information: OROC-Stakeholder-Engagement-Report-February-2021.pdf (groundwork.org.uk)

Ideas Heat Map – TEP Limited and Groundwork

Responses captured through the *Our Rivers Our City* public consultation. Users were asked to map their responses to the question: *Do you have any ideas about how we could make a difference to our rivers, streams and nearby green spaces, so that they become a valued and well used part of Manchester?* Point responses have been aggregated to create a heat map.

Further information: OROC-Stakeholder-Engagement-Report-February-2021.pdf (groundwork.org.uk)

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Projects Heat Map – TEP Limited and Groundwork

Responses captured through the *Our Rivers Our City* public consultation. Users were asked to map their responses to the question: *Do you know of any successful projects or activities in your area that could be used as examples of good practice to help improve or develop Manchester's river valleys?* Point responses have been aggregated to create a heat map.

Further information: OROC-Stakeholder-Engagement-Report-February-2021.pdf (groundwork.org.uk)

Projects Other Responses – TEP Limited and Groundwork

Line and area responses captured through the *Our Rivers Our City* public consultation. Users were asked to map their responses to the question: *Do you know of any successful projects or activities in your area that could be used as examples of good practice to help improve or develop Manchester's river valleys?*

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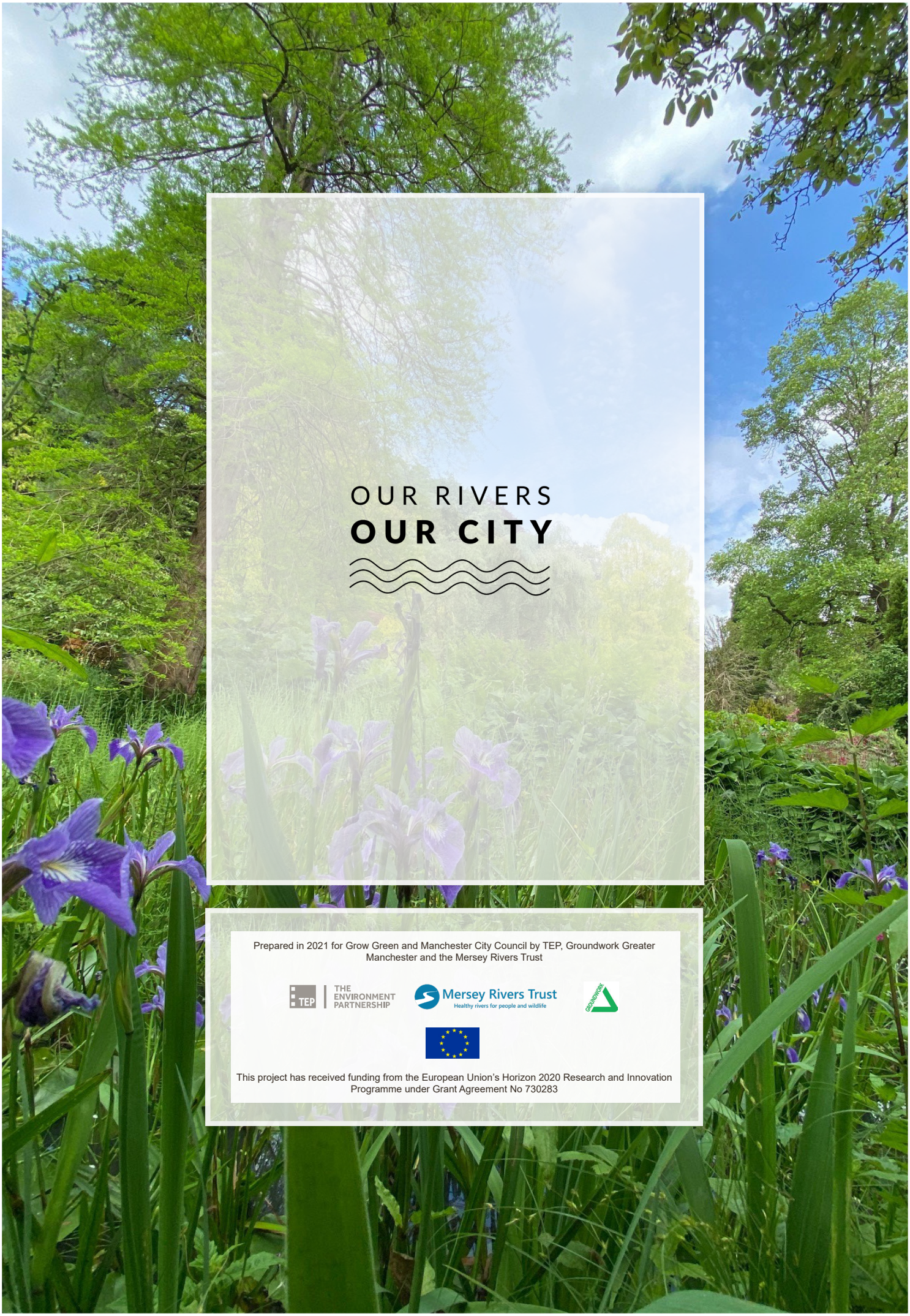

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