GMCA GREATER MANCHESTER COMBINED AUTHORITY

GREATER MANCHESTER
GREEN CITY REGION PARTNERSHIP

DATE: **Thursday 17 October 2024**

TIME: **10.00 am**

VENUE: Virtual Meeting via Teams

AGENDA

1. **Introduction and Apologies (Chair) (3 Minutes)**

2. **Chair's Announcements and Urgent Business (Chair) (5 Minutes)**

3. **Declarations of Interest (Chair) (2 Minutes)** 1 - 4

   To receive declarations of interest in any item for discussion at the meeting. A blank form for declaring interests has been circulated with the agenda; please ensure that this is returned to the Governance & Scrutiny Officer at least 48 hours in advance of the meeting.

BOLTON	MANCHESTER	ROCHDALE	STOCKPORT	TRAFFORD
BURY	OLDHAM	SALFORD	TAMESIDE	WIGAN

Please note that this meeting will be livestreamed via www.greatermanchester-ca.gov.uk, please speak to a Governance Officer before the meeting should you not wish to consent to being included in this recording.

For Agreement

Presented by Mark Atherton, Director of Environment, GMCA.

Report and presentation by Robyn Smith, Project Manager Environment and Low Carbon and Rachel Berman, Principal Researcher (Environment), GMCA and Feedback from Challenge Group Chairs.

For Discussion

Presented by Sam Evans, Head of Natural Capital, GMCA.

Presented by Mia Crowther, Senior Transport Strategy Officer, TfGM.

For Information (20 Minutes)

Presented by Megan Black, Head of Logistics & Environment, TfGM.

Presented by Alice Johnson, Lead Analyst (Environment), GMCA.

Presentation by Sarah Mellor, Head of Consumption and Production, GMCA.

Presented by Sam Evans, Head of Natural Environment, GMCA.

13.   **Date and Time of Next Meeting**

23 January 2025 via Teams at 10.00 am.

For copies of papers and further information on this meeting please refer to the website www.greatermanchester-ca.gov.uk. Alternatively, contact the following
Governance & Scrutiny Officer: Jenny Hollamby
jenny.hollamby@greatermanchester-ca.gov.uk

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Declaration of Councillors' Interests in Items Appearing on the Agenda

Name and Date of Committee: _____

Agenda Item Number	Type of Interest - PERSONAL AND NON PREJUDICIAL Reason for declaration of interest	NON PREJUDICIAL Reason for declaration of interest Type of Interest – PREJUDICIAL Reason for declaration of interest	Type of Interest – DISCLOSABLE PECUNIARY INTEREST Reason for declaration of interest

Please see overleaf for a quick guide to declaring interest at GMCA meetings.

Quick Guide to Declaring Interests at GMCA Meetings

Please note: should you have a personal interest that is prejudicial in an item on the agenda, you should leave the meeting for the duration of the discussion and the voting thereon.

This is a summary of the rules around declaring interests at meetings. It does not replace the Member's Code of Conduct; the full description can be found in the GMCA's constitution Part 7A.

Your personal interests must be registered on the GMCA's Annual Register within 28 days of your appointment onto a GMCA committee and any changes to these interests must notified within 28 days. Personal interests that should be on the register include:

1. Bodies to which you have been appointed by the GMCA.

2. Your membership of bodies exercising functions of a public nature, including charities, societies, political parties, or trade unions.

You are also legally bound to disclose the following information called Disclosable Personal Interests which includes:

1. You, and your partner's business interests (e.g., employment, trade, profession, contracts, or any company with which you are associated).

2. You and your partner's wider financial interests (e.g., trust funds, investments, and assets including land and property).

3. Any sponsorship you receive.

Failure to disclose this information is a criminal offence

Step One: Establish whether you have an interest in the business of the agenda

1. If the answer to that question is 'No' then that is the end of the matter.

2. If the answer is 'Yes' or Very Likely' then you must go on to consider if that personal interest can be construed as being a prejudicial interest.

Step Two: Determining if your interest is prejudicial

A personal interest becomes a prejudicial interest:

1. Where the wellbeing, or financial position of you, your partner, members of your family, or people with whom you have a close association (people who are more than just an acquaintance) are likely to be affected by the business of the meeting more than it would affect most people in the area.

2. The interest is one which a member of the public with knowledge of the relevant facts would reasonably regard as so significant that it is likely to prejudice your judgement of the public interest.

For a non-prejudicial interest, you must:

1. Notify the Governance and Scrutiny Officer for the meeting as soon as you realise you have an interest.

2. Inform the meeting that you have a personal interest and the nature of the interest.

3. Fill in the declarations of interest form.

To note:

1. You may remain in the room and speak and vote on the matter.

   If your interest relates to a body to which the GMCA has appointed you to, you only have to inform the meeting of that interest if you speak on the matter.

For prejudicial interest, you must:

1. Notify the Governance and Scrutiny Officer for the meeting as soon as you realise you have a prejudicial interest (before or during the meeting).

2. Inform the meeting that you have a prejudicial interest and the nature of the interest.

3. Fill in the declarations of interest form.

4. Leave the meeting while that item of business is discussed.

5. Make sure the interest is recorded on your annual register of interests form if it relates to you or your partner's business or financial affairs. If it is not on the Register update it within 28 days of the interest becoming apparent.

You must not:

Participate in any discussion of the business at the meeting, or if you become aware of your disclosable pecuniary interest during the meeting participate further in any discussion of the business, participate in any vote or further vote taken on the matter at the meeting.

Minutes of the Annual Meeting of the Green City Region Partnership

Held Virtually on Tuesday 16 July 2024 at 3.15 pm

PRESENT:

Councillor Mike McCusker (MA)	Bee Committee Representative and Vice-Chair (Chair)
Councillor Steve Adshead (SA)	Waste & Recycling Committee Representative
Councillor Alan Quinn (AQ)	Bury Council
Sue Johnson (SJ)	GMCA Chief Executive Lead for the Green City Region
Wardeh Al-Nasir (WA)	Voluntary, Community, Faith and Social Enterprise (VCFSE) Partnership for Better Health Representative
Louise Blythe (LB)	BBC (Chair Green Communications Challenge Group)
Leigh Broadhurst (LB)	Suez (Vice-Chair Sustainable Consumption & Production Challenge Group)
Hisham Elkadi (HE)	University of Salford
Claire Igoe (CI)	NHS Greater Manchester
Andy Judd (AJ)	(for Ian Crewe) Environment Agency (EA)
Paul Killilea (PK)	Electricity Northwest (ENWL)
Chris Matthews (CM)	(for Anne Selby (Chair Natural Capital Challenge Group)) United Utilities (UU)
Carly McLaughlin (CM)	The University of Manchester (Chair 5 Year Environment Plan (5YEP) Challenge Group)
Roger Milburn (RM)	Arup
Liz Price (LP)	Manchester Metropolitan University
Ian Rutherford (IR)	Greater Manchester Faith Communities
Will Swan (SW)	University of Salford (Vice-Chair Low Carbon Challenge Group)
Mike Taylor (MT)	ENWL

OFFICERS IN ATTENDANCE:

Mark Atherton (MA)	Director of Environment, GMCA
Megan Black (MB)	Head of Logistics & Environment, TfGM
Martin Lax (ML)	Transport Strategy Director, TfGM

OFFICERS IN ATTENDANCE:

Sam Evans (SE)	Head of Natural Environment, GMCA
Dan Griffiths (DG)	Head of Low Carbon Policy, GMCA
Jenny Hollamby (JH)	Governance & Scrutiny Officer, GMCA
Inayah Hussain (IH)	Management Trainee, GMCA
Sarah Mellor (SM)	Head of Sustainable Consumption and Production, GMCA
Nick Leslie (NL)	Head of Climate Action Now, Stockport Council
Garry Parker (GP)	Assistant Director - Environment and Regulatory Services, Bolton Council
Jasmine Tebb (TB)	Policy Officer, Low Carbon, GMCA
Robyn Smith (RS)	Project Manager Environment and Low Carbon, GMCA

Minute No	Resolutions	Responsible
GCP/01/24	**Appointment of Chair of the 2024/25 Municipal Year** a) To note the appointment of Councillor Tom Ross, Portfolio Leader and Sue Johnson as Portfolio Lead Chief Executive for the Green City Region Partnership.	Noted
GCP/02/24	**Appointment of Vice-Chair of the 2024/25 Municipal Year** a) The Green City Region Partnership approved the appointment of Councillor Mike McCusker, Salford City Council as Vice-Chair of the Green City Region Partnership.	Approved/JH
GCP/03/24	**Introduction, Welcome and Apologies for Absence** a) Apologies were received and noted from Councillor Tom Ross (Chair), Patrick Allcorn (DESNZ), Richard Halsey (Catapult), Paul Hooper (Manchester Metropolitan University), Phil Korbel (Carbon Literacy), Bernard Magee (Siemens), Louise Marix-Evans (Quantum), Chris Oglesby (Bruntwood), Christina Poole (UK Health Security Agency) and Anne Selby (Independent).	Noted

GCP/04/24	**Agree Terms of Reference for the Green City Region Partnership**	
	a) The Partnership approved the revised Terms of Reference and governance structure for the 2024/25 Municipal Year including the Chair and Vice-Chair arrangements for the Challenge Groups (Annex 01 of the report).	Approved/JH
	b) The Partnership agreed to accept three new Members (GM Moving plus two Voluntary Sector representatives).	Agreed/JH
GCP/05/24	**Schedule of Meeting Dates for the 2024/25 Municipal Year**	
	a) The Partnership noted that all meetings would take place at 10.00 am virtually unless otherwise stated on 17.10.24, 23.1.25, and 3.4.25.	Noted/JH
GCP/06/24	**Chair's Announcements and Urgent Business**	
	a) Whilst there were no announcements or urgent business introduced, the Chair explained that ten minutes would be made available during the meeting to discuss the recent elections and new Government.	Noted
	b) The Partnership noted the updates provided around the Green Spaces Fund, the Resilience Project, Trafford Energy Park and the Good Landlord Charter.	
GCP/07/24	**Declarations of Interest**	
	a) Councillor Alan Quinn declared a personal interest in Item 6 - Work Programme by virtue of him being a City of Trees Interim Board Member.	Noted/JH
GCP/08/24	**To Approve the Minutes of the Last meeting**	
	a) That the minutes of the last meeting dated 4.4.24 be approved as a correct record.	Approved
	b) GCP/30/23/2 – IR reported that the GM Mayor had confirmed the establishment of the Food Programme Board for Greater Manchester. The Terms of Reference and Membership would be shared.	IR/All

	c)	GCP/30/23/3 – CM recommended that little progress had been made and she would advise when an update concerning Green Wash City may be given at a suitable future time.	CM
	d)	GCP/32/23/5 – Members were asked to contact MA should they want a shortened lobbying asks document. MC and LME expressed an interest.	All
	e)	GCP/32/23/6 – the Partnership approved the continuation of the Green Communications Challenge Group with a rotating Chair. LB to report back should a Vice-Chair be appointed.	Approved/LB
	f)	GCP/47/24/C – SC provided an update on discussions with SE and Krista Patrick regarding a new economic model for Greater Manchester that prioritised nature.	Complete
	g)	GCP/48/24/B – it was reported that tree planting with the City of Trees took place in spring across two closed landfill sites. Case studies would be shared with the Partnership.	MW
GCP/09/24	**Quarter 4 Progress Report – 5 Year Environment Plan (5YEP)**		
	a)	That the progress outlined in the report and latest position set out in the dashboard attached at Annex 01 of the report be noted.	Noted
	b)	SC requested additional support in light of the Bee Net Zero commitment roll out in all ten Districts.	SC/All
	c)	Members objected to the Government's seemingly 'fastest finger first' approach to funding and suggested that this be conveyed.	Noted
GCP/10/24	**Work Programme 2023/24 & Challenge Group Updates**		
	a)	That the progress in developing the Mission Based Approach and the associated Challenge Groups be noted.	Noted
	b)	In terms of engagement, it was recommended that messages to residents were more frequent.	Agreed/MW

	c) Officers were asked to raise with Districts, retailers continuing to provide single-use carrier bags in violation of regulations.	SM	
	d) The Partnership agreed to consider electric mobility across the region at the next meeting on 17.10.24 and that the Local Transport Plan refresh be considered at the appropriate time.	MB/MA	
GCP/11/24	**Behaviour Insights** a) That the presentation be received and noted. b) It was recommended that a similar study be undertaken for business if not already being done though Bee Net Zero.	Noted SM	
GCP/12/24	**Greater Manchester Net Zero Accelerator** a) That the presented be received and noted. b) That the Partnership recognised the support needed from Districts and stakeholders across Greater Manchester to deliver its outcomes. c) That the engagement plans be circulated to the Group. d) That DG speak to RM about the GM Strategic Infrastructure Board and Digital Infrastructure Advisory Group. e) DG to discuss with WS domestic retrofit in detail, including how it aligned with skills development, necessary standards and investment.	Noted DG DG/RM DG/WS	
GCP/13/24	**Draft 5YEP and Carbon Metrics** a) That the Partnership received and noted the presentation. b) It was recommended to include numbers/values and percentages in the graphs. c) That RS explore potential outcomes that could be achieved sooner than a five-year timeframe. d) That IR/RS convene an engagement session on the 5YEP to include the VCFSE sector and GM Networks Connect.	Noted RS RS IR/RS	

GCP/14/24	**Green Summit 2024**	
	a) It was noted that the Green Summit 2024 would be held at the Lowry on 9.12.24.	Noted
GCP/15/24	**Implications of the New Government Manifesto Commitments**	
	a) That the report be received and noted.	Noted
	b) Officers were commended for providing the analysis.	Noted
GCP/16/24	**Green City Region Stakeholder Brief**	
	a) That the Stakeholder Briefing be received and noted.	Noted
GCP/17/24	**Date and Time of Next meeting**	
	a) 17.10.24 at 10.00 am via Teams.	

GMCA GREATER
MANCHESTER
COMBINED
AUTHORITY

Greater Manchester Green City Region Partnership

Date: 17 October 2024

Subject: Quarter 2 Progress Report - 5 Year Environment Plan (5YEP)

Report of: Mark Atherton, Director Environment, GMCA

Purpose of Report:

The report provides the usual update on progress of the Green City Region Partnership for the second quarter of 2024/25 (Jul – Sep 2024) and key milestones for the third quarter (Oct – Dec 2024).

Recommendation:

The Partnership is recommended to:

1. Note and comment upon the progress outlined in this report and latest position set out in the dashboard attached at:
   a. Annex 01 (5 Year Environment Plan Performance Overview) and available online at: [Five Year Environment Plan (2019-24) Progress (gmtableau)](#).

Contact Officer:

Contact Officer: Mark Atherton, GM Director of Environment
                      Mark.atherton@greatermanchester-ca.gov.uk

1.   OVERVIEW OF PROGRESS

The Dashboard update at Annex 01 (5 Year Environment Plan Performance Overview) contains a summary of key progress across all areas within the 5 Year Environment Plan up to and including September 2024. During the last quarter there are a number of key successes to be highlighted, set out below:

1.1   **Energy**

- DEEP Phase 3 (Heat and Energy Network Opportunity Areas) – Oldham is progressing with commercialisation phase. Bolton is progressing with procurement (planned for Q3). Stockport secured Green Heat Network Fund (GHNF) commercialisation funding. Stockport and Trafford have both submitted applications to GHNF Round 8 (capital funding only for Stockport), decision pending and expected early Oct '24. Stockport and Trafford work on Detail Project Design (DPD) and Outline Business Case (OBC) is concluding & awaiting sign off. Rochdale has appointed a consultant who is underway with DPD, aiming for Round 9 GHNF; expected early '25. Bury has appointed a consultant who is underway with a feasibility study. Engagement with five other districts is ongoing to support pipeline development activity. Manchester City Council (MCC) submitted application for Heat Networks Delivery Unit (HNDU) Heat Network (HN) feasibility funding. Wigan, Tameside and Salford are currently preparing for applying to HNDU for HN feasibility funding.
- Local Area Energy Plans (LAEPs) – Net Zero Accelerator Programme fully mobilised. All workstreams active and governance in place. Oldham and Manchester fully contracted and mobilising activity to deliver the LAEP. TfGM have agreed governance and appointed a Project Manager (PM) to lead on mobility strand. KPMG appointed to lead the options analysis for financial delivery models for the LAEP/OBC activity. Additional consultancy being procured to support GMCA pipeline development. GMCA also participating in national knowledge transfer activities.
- Local Energy Advice Demonstrator (LEAD) – "Feel the Benefit" winter communications campaign advertising across Bee Network (buses, trams and stations) live as of 9th September, running through to early December.

- Go Neutral Smart Energy – Study investigating solar site in Rochdale nearing completion. New GM wide solar & wind prospecting and economic assessment study tender launched for delivery in the next 6 months. Study will inform us of suitable technologies & installation sizes, and of viable project locations for larger land based generation in GM on both public and private land. Research study devised to investigate the roles and capability of community energy in the GM region, and the options for public sector partnership. Sector support has been drafted for tender in the coming weeks.

- Smart Energy – Procurement tender for Powering Our Schools (POS) Phase 1 issued with 4 week response time for the installation of solar across 45 schools in Greater Manchester; for delivery in 2025.

- Energy Innovation Agency (EIA) - Progressing relationships with several large end users requiring decarbonisation of their estates; including NHS and Diocese of Salford. Interviews underway for vacant Business Development Lead (BDL) role. Growing pipeline of projects for Innovate GM funding spend.

- Trafford Energy Park – Formal issue of the Agreements for signature now expected Oct '24. Funding bid submitted for Kraft Heinz in Wigan and an extension to the Trafford project (30MW) under the second allocation round. The Highview energy storage plant on the Trafford Low Carbon Energy Park has secured funding. Discussions with prospective offtakers ongoing.

- Bee Net Zero (BNZ) – United Utilities has joined the BNZ board. Workshop held on 2nd July at Salford Innovation Forum with climate and comms officers from each local authority to discuss business engagement on decarbonisation (organised with Growth Company / Green Economy). Organised and held 'Can accountants save the world?' event on 17th September with pro-manchester and the Institute of Chartered Accountants in England and Wales (ICAEW) – will be organising a follow-on event. Marketing Manchester presented their Sustainable Tourism Action Plan to the BNZ board, who fed back comments.

1.2 **Buildings**

- Social Housing Decarbonisation Fund (SHDF) Wave 2.1 - 12 project partners on site with installations.

- Public Sector Decarbonisation Scheme (PSDS) Phase 1 - Commercial discussions ongoing. 'Plan B' approach developed with pilot partners. PSDS 3a - Delivery of delayed completion programme ongoing. Completion evidence to be

prepared for projects achieving Practical Completion. Full programme completion expected Nov '24. 1-2-1 engagement with partners to enable Measurement and Verification (M&V) processes has commenced. PSDS 3a - On going support of programme completion for of all projects due March '25. Circa £1.5M grant available for draw down this Financial Year. PSDS 3b - Delivery of delayed completion programme ongoing. Completion evidence to be prepared for projects achieving Practical Completion. Full programme completion expected Oct '24. 1-2-1 engagement with partners to enable M&V processes commenced.

- Retrofit GM (Your Home Better) – Work underway to consider redevelopment of the retrofit portal to allow for delivery of specific offers to the retrofit market for low carbon technologies.

- ECO4 - NHS Project manager applicant offered post, accepted, and then declined. Alternative options for resourcing being considered. `Improveasy' have commenced targeted engagement of schools and have met this year's signed declaration targets well. Other two installers are on track to meet their targets. `Next' had been showing low figures for Salford, but these are now improving. Improveasy are installing on specific targeted properties outside of their allocated areas where the other two installer figures were low (Oldham, Salford).

- Bee Net Zero (BNZ) – BNZ Trafford Park has now engaged c.30 businesses. Growth Company have redesigned engagement mechanism/process with businesses – currently finalising diagnostic questions. Proposed employee engagement campaign awaiting GMCA Comms team feedback – plan to launch at Green Summit. In process of organising workshop for the Green Summit focusing on business / industrial park decarbonisation, using Trafford Park and Stakehill as examples.

- Good Landlord Charter – CA paper on Good Landlord Charter agreed at 12th July meeting, including budget for implementation unit. Procurement of independent implementation unit initiated in late July, with bids closing at the beginning of September. Good Landlord Scheme trainees completing end point assessments for apprenticeship. Trainees to start diploma course at Middlesex University. Consultation with councils on Good Landlord Scheme tenancy relations pilot.

1.3 **Transport**

- Active Bee Network – 1 scheme was completed in the period 15th April '24 to 15th July '24. delivering 1.4km of Bee Active Network, taking the total completed to 117km.

- Bike Hire Scheme – Availability averaging 1200 Bikes whilst negotiations are made with Operator for Post Recovery Operating model. 35 stations remain suspended pending review to re-open or permanently close.

- City Region Sustainable Transport Settlements (CRSTS) Zero Emission Buses (ZEBs) – Completion of Fleet & Depot Strategy development phase. This has defined 2030 requirement (i.e. assumed number of buses) informed by 2030 patronage growth ambitions, set the high level cost estimates to deliver, and proposed the programme structure. In addition, it has assessed suitability of existing depot estate to deliver ZEBs and engaged with a range of suppliers to understand technical and commercial options to deliver 2030 ambition. In terms of infrastructure, Central Park SOBC has a definition of strategic options developed. Next phase of electrification works at depots generally in final stages of planning and due to commence shortly.

- Deliver the Clean Air Plan – Greater Manchester's Air Quality Administration Committee will meet on 1 October 2024 to consider an update to the Clean Air Plan proposals. Since GM submitted its investment-led plan to government in December 2023, there is a need to update it. There are some changes to the bus investment proposal, and there is now more detail about local measures to manage traffic flows in Manchester and Salford, but the Clean Taxi Fund proposals remain the same.

- Public Transport and Active Travel Usage - Starling Bank bike patronage up 27% on last year and, in contrast to usual seasonal trends, trips increased in August vs July. Total GM cycle activity was up 9% in August compared to last year. The number of rides in August 24 was 91% up on August 23; a result of improved bike availability and the successful delivery of the recovery plan. Metrolink journeys up 17% compared to last year. Reduced patronage during July and August as a result of seasonality, service disruption, and fewer public events. Journey numbers during August were 6% lower than August 2019 (highest patronage year on the network) but 5% higher than August 2023. Bus patronage up 3% year on year. Metrolink closures contributed to the higher than forecast passenger numbers with

some services. New academic year saw the 5th September setting a new record for the Bee Network bus passenger numbers, with another record set on the 6th.

- Salford E-scooter Trial – July/August 2024: average trips per day = 1,694. Around 321,000 people have now used the scheme across 1.27million trips.

- Bus Franchising - Tranche 3 mobilisation well underway; all four operators (Metroline, Stagecoach, GNW & Diamond) on track. Some risk around Fleet readiness but mitigations being worked via contingent vehicles.

- Electric Vehicle Charging Infrastructure Delivery and [Taxi EVI project](#) As of June '24, 1,325 chargers (260 ultra, 284 rapids, 302 fast, 479 slow). This provides around 2,200 public connection points (compared to 1,232 connectors in Feb '23). All 60 taxi electric vehicle chargers commissioned and operational by end of September 2024.

1.4 **Sustainable Consumption and Production**

- Scope 3 Emissions - The review of GMCA's scope 3 emissions is now complete. Report and action plans (especially around procurement and investments) have been finalised. A series of workshops to disseminate information will be held over the next few months.

- Textile Waste Composition Pilot - 49 households recruited in Salford to determine the composition of unwanted textile waste that would normally be disposed of in the residual bin.

- School's Eco Refill Pilot – Wave 1 schools are continuing their shop openings until December before handing over to a new cohort of pupils. Wave 2 funding has been released; including a donation from Suez recycling and recovery UK. Recruitment of schools is underway with a deadline of expression for Expressions of Interest is 18th October. Fourth blog published on the Green City website. Plastic Free July activity was also promoted and hosted.

- Food Waste Prevention – Report on the climate and food-related health impacts regarding food consumption across Greater Manchester has now been commissioned. This is an update on the Environmental Sustainability Technical Assistance (ESTA) 2014 report - Understanding and Reducing Greenhouse Gas Emissions from Food Consumption and Production.

- Climate Change E-learning Module – Draft module on single-use plastics and plastic waste complete.

- Recycle for Greater Manchester (R4GM) – 'Cotton on to Textile Recycling' campaign launched to educate residents on the correct disposal of damaged textiles, including digital display advertising, social media toolkit for local authorities, and a shopping centre takeover in Merseyway, Stockport.

- Place-based Circular Society Innovations (CSI) Project: The GMCA, Manchester, Stockport, and Oldham Local Authorities are cooperating in the development and delivery of the MMU-led CSI project to explore the processes by which places can become more equitable, inclusive and environmentally sustainable.

1.5   **Natural Environment**

- Local Nature Recovery Strategy (LNRS) – Extensive partner and officer engagement on the draft-for-consultation of the GM LNRS undertaken between May-September '24. Draft-for-Consultation and Nature Network opportunity maps of the GM LNRS were both completed on 30th August. The GM LNRS has now entered the pre-consultation period. Draft-for-Consultation of the GM LNRS was sent to all supporting authorities for the strategy for feedback prior to public consultation. The draft has also been sent to all neighbouring Responsible Authorities following the national LNRS regulations and guidance. Communications has supported the design of LNRS document and additional assets, along with development of public consultation materials and approach for November activities.

- Biodiversity Net Gain (BNG) – Habitat banking verification and auditing service now has updated detailed guidance, criteria and a costing template following local authority feedback in July and August. Public versions have subsequently been produced and shared for sign off with Planning Officers Group (POG) on 23rd September and Directors of Place (DoP) on 1st October. The Responsible Body Service has prepared outline costs and initial 1-1 meetings with local authorities. Request from Department for Environment Food & Rural Affairs (Defra) received on 5th September to provide further evidence of GMCAs enforcement policy. GMCA has submitted a response and is awaiting final approval. Update provided to POG on 23rd September and DOP on 1st October. Around Local authorities bringing forward their own sites, the GMCA has engaged with each local authority to understand their current positions on bringing sites in their ownership forward for off-site Biodiversity Net Gain (BNG). Responses reported back to POG on 23rd

September and DoP on 1st October. Awaiting Oldham commission to go out to tender.

- Nature for Health – All delivery partners for Green Social Prescribing (GSP) now in place: START (Salford), Northern Roots (Oldham), Mind (Manchester), Lancashire Wildlife Trust (Bury), Groundwork (Stockport) and Petrus (Rochdale). Delivery has started and referrals being made onto programmes. Pennine Care pushing referrals, expansion of programmes in their early intervention teams, and allowing us to supplement the data with additional health data (blood pressure, weight etc.) Live Well Fund is progressing and almost in a position to begin the roll out process. Not GSP specific but there is expected to be strong demand for funding in this area. Evaluation stakeholder events delivered, directed towards system leaders and commissioners of GSP programmes. Information obtained will go into the final evaluation report, as well as helping to influence these roles.

- Integrated Water Management Plan - Further development of the Integrated Water Management Plan (IWMP) team and the production of role profiles for the IWMP Project Lead and Lead Analyst positions (both based within GMCA). On-going development of the Living Integrated Opportunity Programme (LIOP), including development of the Oldham & Shaw cluster. Support and capacity provided around the development of integrated drainage strategies for Oldham & Stockport. Finalised the scope for the integrated strategy for the Upper Irwell catchment and engaged with Imperial College & UoM around developing a shared evidence base for future collaborative planning and delivery. Consultants assembled case studies outlining a range of sources of investment for projects designed to reduce flood risk and deliver wider water and environmental benefits. Produced scope for Imperial College London to run the Water Systems Integrated Modelling (WSIMOD) framework for Greater Manchester as the first stage in the phased production of an Integrated Catchment Model for GM (by UoM).

1.6   Green Summit

- Green Summit – Sponsorship Pack circulated to list of relevant partners. Current Headline Sponsors: Daikin, Deloitte, Electricity North West, Barker Associates, SSE & United Utilities. Official Partners: Environment Agency. Draft outline of agenda, featuring 3 areas of focus for workshops: Sustainable Green Growth, Young People, & Communities: Sustainability, Innovation & Skills, and Connecting

with Nature. Further workshop proposals invited from partners for end of September. General admission registration link circulated via the GCR News Bulletin 18th September '24. 600+ registrations as of 24th September '24.

1.7 **Greater Manchester 5 Year Environment Plan 2024 onwards**

- A first draft of the plan has been developed and shared for feedback with partners; starting with GM Family organisations and then Challenge Groups. The deadline for final feedback was the 27th September. Development of targets is ongoing. Engagement with local authorities and challenge groups is ongoing.

2. KEY ANTICIPATED ACTION IN THE NEXT QUARTER

As a priority, the following activities will be delivered in the next Quarter:

2.1 **Energy**

- Deep Phase 3 – Bolton and Oldham schemes ongoing with work on commercialisation and preparing for procurement. Stockport to continue with work on commercialisation and Trafford to commence (subject to decision on GHNF funding). Rochdale to continue work on DPD and Bury to continue work on feasibility. MCC, Salford, Tameside and Wigan to await decision on HNDU funding and to commence consultant procurement exercise if successful.
- Local Area Energy Plans (LAEPs) – Work continuing with KPMG, drafting Critical Success Factors (CSF) and developing criteria. Produce interim report on commercial model appraisal. Oldham Green New Deal (OGND) delivery partnership Market Engagement event. Drafting of Procurement Strategy. Completion of Electric Vehicle Charging Infrastructure (EVCI) strategy. Review of Community Led Energy Partnership (CLEP) for Sholver and Westwood. MCC to agree Net Zero work programme with Wythenshawe JV Partner. TfGM internal approval of whole Work Package. Complete evaluation of SHDF (Social Housing Decarbonisation Fund) and SHDF data. Prioritisation criteria for public building decarbonisation pipeline. Appoint Project Manager to Domestic Retrofit team.

- Go Neutral – Commencement of GM wide Levelised Cost Of Energy (LCOE) wind and solar study. Update of new land, building longlist, and pipelines complete. Triaging for new building asset sites can begin using new pipeline tool. Community energy study tendered. New commissions for public sector energy procurement, and an energy storage study to be drafted and tendered. Decision on next steps for the solar site in Rochdale

- Smart Energy – Selection of POS preferred supplier and commencement of activities including initial site surveys to produce quotations. Wrigley Head solar farm in Oldham decision on proceeding with project contract award expected.

- Energy Innovation Agency (EIA) – Majority of projects to be delivered under Innovate GM funding Demonstrator need to have started by end of Q3, as the money must be spent by end of Q4. BDL role to be filled and supporting roll out of further projects

- Trafford Energy Park – Once received, sign Agreements for Trafford Green Hydrogen project. Await outcome on funding applications. Continue discussions with prospective offtakers.

- Bee Net Zero (BNZ) – pro-Manchester's Property & Regeneration Lunch on 10th October – BNZ sponsoring, Manchester Climate Change Agency (MCCA) and Bruntwood presenting on their work on commercial retrofit. Next meeting of BNZ Trafford Park to be confirmed for this quarter (most recent meeting was 23rd September). Ideally to launch at Green Summit: the employee engagement campaign; and BNZ Commitment.

2.2 Buildings

- Social Housing Decarbonisation Fund (SHDF) – Work continuing with KPMG, drafting Critical Success Factors (CSF) and developing criteria. Produce interim report on commercial model appraisal. Oldham Green New Deal (OGND) delivery partnership Market Engagement event. Drafting of Procurement Strategy. Completion of Electric Vehicle Charging Infrastructure (EVCI) strategy. Review of Community Led Energy Partnership (CLEP) for Sholver and Westwood. MCC to agree Net Zero work programme with Wythenshawe JV Partner. TfGM internal approval of whole Work Package. Complete evaluation of SHDF (Social Housing Decarbonisation Fund) and SHDF data. Prioritisation criteria for public building decarbonisation pipeline. Appoint Project Manager to Domestic Retrofit team.

- Public Sector Decarbonisation Scheme (PSDS) – PSDS 1 - Finalise M&V approach/commercials, commence reporting year 1/3. PSDS 3a SY- Support delayed completions, coordinate completion evidence, commence M&V reporting year 1/3. PSDS 3a MY - On going support of programme completion for of all projects due March '25. PSDS 3b - Support delayed completions, coordinate completion evidence, commence M&V reporting year 1/3.
- Retrofit GM (Your Home Better) – Aim to procure digital solutions provider for the redevelopment of the portal. Discuss with successful applicants to the retrofit framework the potential for offers to GM residents for the low carbon technologies.
- ECO4 Flex scheme – Aim to advertise externally for an NHS Project Manager role for the scheme with NHS support. Have applications coming in through the schools campaign. Continue with track record of signed decs/number of installs. Improve on Salford figures. Continue work on the portal. Continue working closely with LEAD. Aim to input into the devo plans.
- Good Landlord Charter – Good Landlord Charter implementation unit to be appointed in October and their work with landlords to begin. Procurement of evaluator for Good Landlord Charter to begin. Apprenticeship graduation event for Good Landlord Scheme trainees on 18th October. Procurement of tenancy relations pilot to begin.
- Net Zero New Development - Development of proposition to Government to deliver 10,000 Truely Affordable Net Zero (TANZ) homes in the parliamentary term.

2.3 Transport

- Active Bee Network – Four additional schemes are forecast to complete in the period 15th July '24 to 15th October '24, which are forecast to deliver an additional 3.3km of Bee Active Network.
- Bus Franchising – Tranche 3 mobilisation (incl fleet) & readiness Electrification of first phase of Hyde Rd & Ashton (Dec), Middleton electrification (Tranche 2) in progress.
- City Region Sustainable Transport Settlements (CRSTS) Zero Emission Buses (ZEBs) – Development of principles of commercial and financing model(s) to support delivery of 100% Zero Emissions fleet by 2030. Completion of Fleet & Depot Strategy development phase. Ongoing delivery of next phase of

electrification works at Bolton, Middleton, Tameside, Queens Road and Hyde Road

- Electric Vehicle Charging Infrastructure Delivery and [Taxi EVI project]() – Working with Local Authorities to roll out Local Electric Vehicle Infrastructure (LEVI) programme. Procurement underway. Publicise the taxi electric vehicle charge points to the taxi community. Continue with EV work programmes which give greater increase of charging options, especially to those without off street parking. Continue with EV work programmes which give greater increase of charging options, especially to those without off street parking.

2.4 **Sustainable Consumption and Production**

- Scope 3 Emissions - Hold workshops to disseminate information with the Senior Leadership Team, 5-Year Environment Liaison Group and Local Authorities in September/October.
- Consumer Behaviour Insights – Complete Wave 11 (October '24) sustainability survey with a focus on sustainable food choices and travel and transport.
- Textile Waste Composition Pilot – Complete analysis of household textile waste to determine the quality (reusable vs non reusable) and material makeup of end of life textiles.
- School's Eco Refill Pilot – Wave 1 to continue to monitor the number of containers refilled and behaviour change of the school community. Wave 2 is to evaluate and select 10 x new schools with a view to on-boarding for November start. Promote borrow cup scheme launches. Ongoing Refill campaign support.
- Food Waste Prevention – Complete report and develop recommendations for Greater Manchester on addressing climate and health impacts from food.
- Climate Change E-learning Module – Finalise and launch new module on single-use plastics and reducing plastic waste.
- Community Hive Project – Progress initiative to support residents across Greater Manchester to make more sustainable lifestyle.
- Small Grants for Schools – Progress final stages including application form, guidance, procurement, finance, legal and data protection requirements with a view to applications opening in November '24.
- Recycle for Greater Manchester (R4GM) – Support for national Recycle Week campaign 'Rescue Me' (14th to 20th October). Launch of communications

campaign to support the change to household recycling of plastics to include pots, tubs and trays.

- Consumer Behaviour Insights – Complete Wave 11 (October '24) sustainability survey with a focus on sustainable food choices and travel and transport.
- Place-based CSI Project: Attend advisory board kick off meetings on 17th-18th October.

2.5 **Natural Environment**

- Local Nature Recovery Strategy (LNRS) – Completion of the pre-consultation and objections period for the GM LNRS. Endorsement of the strategy by the CA and the 10 districts. Endorsement to proceed to public consultation. Commencement of the public consultation. Continue design of LNRS document and supporting assets. Develop public consultation materials and approach for November activities.
- Biodiversity Net Gain (BNG) – Habitat banking verification and auditing service final public outputs presented and signed off by POG on 23rd September '24 and Directors of Place on 1st October '24. GMCA upload documents to GMCA website early October '24. Cooperating local authorities to launch verification service October '24 onwards. Responsible Body Service expects Defra response by 11th October '24, however timescale dependent on submission of requested additional information. Looking to further develop and then launch its Responsible Body Service early '25 pending approval by Defra and GMCA. For Local authorities bringing forward their own sites Oldham Council is looking to go out to procure a third party to deliver procurement first in October '24. GMCA will share procurement documents for other local authorities to use and support them in doing so – October '24. Other local authorities to go out to procurement – October '24 onwards. GMCA to capture learnings and share experience through workshop early '25.
- Green Spaces Fund - Impact Report setting out outputs delivered by the Fund being prepared for publication at the Green Summit, covering projects that have concluded under Rounds 1 and 2. Round 5 winners due to be announced shortly, which is likely to take the total number of projects funded to over 100. Comms: Round 5 successful projects announcement for Green Spaces Fund. 2 x Green Spaces Stories content packages published.

- Nature for Health – Complete evaluation workshops. Ramp up delivery and numbers of referrals. Define legacy outcomes with plan to deliver. Launch Live Well Fund.
- Integrated Water Management Plan - On-going development of the IWMP team with the recruitment of the IWMP Project Lead and advertising Lead Analyst role. Further development of the cluster projects identified through the LIOP process. Imperial College to provide first report on WSIMOD modelling. UoM to commence analysis of existing evidence base and contribute to the development of Upper Irwell Strategy. Accessing Flood & Water investment and funding workshop held in central Manchester 8th September. Site visit to Dovestone Reservoir 1st October ahead of preparation of detailed proposal for a partnership with Rebalance Earth to be presented at the Trilateral board meeting 4th November.

2.6   **Green Summit**

- Sponsorship: Lock down all sponsors and commence communications / announcements introducing the sponsors. Agenda: Speakers for plenary sessions confirmed. All workshops to be locked down. Continue promoting registration until capacity (1,400) reached. Marketplace: Registration link circulated. Develop communications including "Road to the Green Summit" content series, driving ticket registrations, and engaging registered delegates. This will come with event support and a Media management function.

2.7   **Greater Manchester 5 Year Environment Plan 2024 onwards**

- Partner feedback to be incorporated into final draft. Final draft to be shared and presented at the October Green City Region Partnership. Final Draft going to GMCA for approval in November. Plan will be launched at Green Summit on the 9th December. Comms: Design of 5YEP document and supporting assets. Launch of the plan at the Green Summit as part of wider media package. Planning for longer term dissemination / bringing it to life for different audiences.
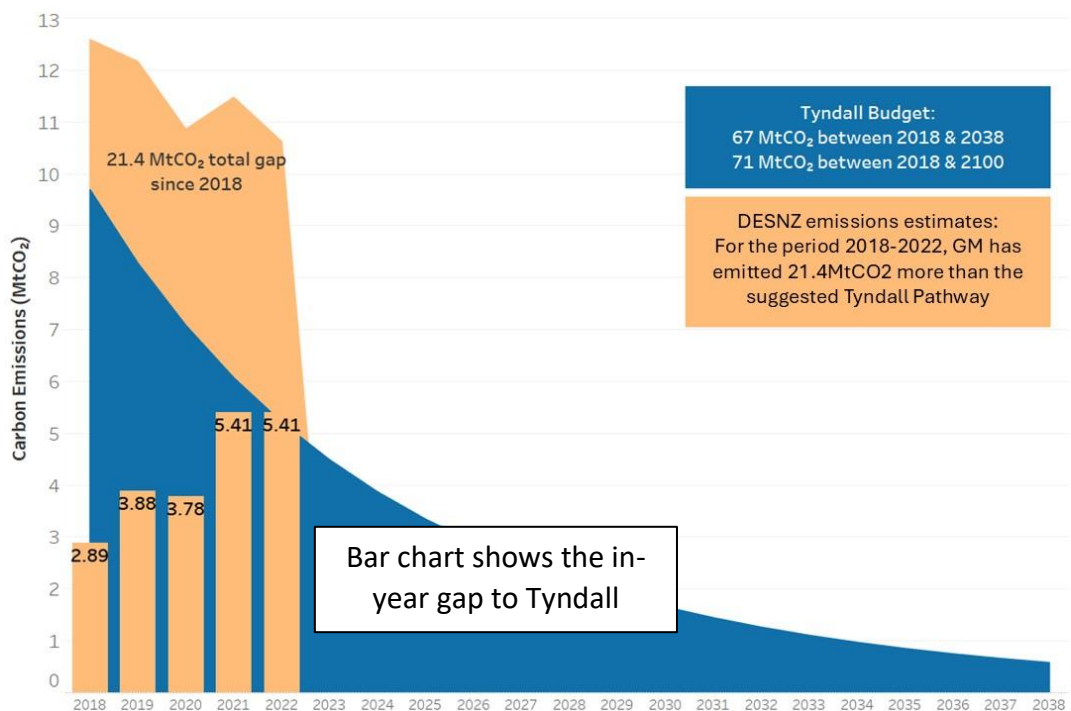
3. IDENTIFIED RISKS AND EMERGING ISSUES

3.1 Officers and sub-groups have identified a number of risks to existing, and particularly future, programme delivery. Mitigation of these risks, as far as possible, will be managed by the responsible Accountable Body.

In terms of the priorities set out in the 5 Year Plan, the following areas remain flagged as "red".

Key risks:

- **Failure of the 5 Year Environment Plan to achieve a step change in reducing carbon emissions**. To achieve the 2038 mission, the GM 5-Year Environment Plan outlines our 'fair' carbon budget contribution of 67 mega tonnes for 20 years (2018-2038). From 2018 to 2022 (the latest full year of data), GM's emissions are 21.4MtCO2 above the Tyndall budget for the same period, i.e. an additional 21.4 MtCO2 savings need to be made on top of the Tyndall budget. In 2022, emissions have decreased again, dropping below the level reached in 2020, although they remain above the Tyndall pathway. The key point is that significant cuts must happen now. At our current rate of emissions, we will have exhausted our carbon budget within the next year.

Tyndall Budget:
67 MtCO$_2$ between 2018 & 2038
71 MtCO$_2$ between 2018 & 2100

DESNZ emissions estimates:
For the period 2018-2022, GM has emitted 21.4MtCO2 more than the suggested Tyndall Pathway

21.4 MtCO$_2$ total gap since 2018

Bar chart shows the in-year gap to Tyndall

- **Failure to accelerate decarbonisation of buildings to meet low carbon heating targets.** Measures continue to be implemented with a focus on accelerating decarbonisation and increasing energy generation including the launch of Social Housing Decarbonisation Fund, Public Sector Decarbonisation Scheme, Go Neutral project including schools solar PV offer, and DEEP project delivery to identify Heat and Energy Network Opportunity Areas across Greater Manchester.

- **Level and depth of retrofit required to meet our overall ambitions is highly challenging.** The decarbonisation of Greater Manchester homes through deeper whole house retrofit is being mitigated by the publication of a Retrofit Report that sets the priorities and framework for action and, as part of that the Retrofit Challenge Group along with the Retrofit Taskforce is focused on delivering home and building retrofit at scale. Progress is also being made with the launch of the 'Your Home Better service' and Octopus Heat Pump offer. Greater Manchester has also joined a consortium, led by the UK Green Buildings Council including West Yorkshire, London and the West Midlands and funded by Climate-KIC to develop proposals for city-led retrofit. Additionally, the GM Skills team have produced a Skills Action Plan which with the newly actioned Low Carbon Finance Challenge Group complements the exist building and energy Challenge Groups which manage the actions arising from the Greater Manchester Retrofit Task Force, Chaired by the Mayor.

- **Failure to enhance our water bodies against level of ambition.** The GMCA, Environment Agency and United Utilities (through their Tripartite Agreement) have published an Integrated Water Management Plan to draw together a collective vision, objectives, and actions, and identify accountability and resources for delivery. The plan will deliver progressive improvements in sustainable water management, enhancement of the natural environment, accelerate natural flood management interventions and reduce the operation of storm overflows.

Previous areas flagged as "red".

- **Failure to meet ambitious recycling and waste diversion targets**. Verified figures for 2022/2203 show a slight decrease in the recycling rate for Greater Manchester to 50.4% from 51.1% in 2021/22, compared to 48.4% in 2020/21. The previous increase in recycling rates in 2021/22 was due to improved recycling facilities across the network of 20 household waste recycling centres operated by SUEZ recycling and recovery UK. This includes new containers for mattresses, carpets, and hard plastics as well as containers where household items can be donated for reuse. Diversion from landfill remains at over 98%. Measures continue to be implemented to increase recycling rates at HWRCs and household kerbside recycling to deliver against 2024 target (55%).

4.0 RECOMMENDATION

The Partnership is recommended to:

- Note and comment upon the progress outlined in this report and latest position set out in the dashboard attached at:

     a. Annex 01 (5 Year Environment Plan Performance Overview)

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Annex 05a

5 Year Environment Plan Performance Overview

Progress Status

Area	Priorities/KPIs (to 2024)	Status	
Energy	Add at least 45MW of local renewable energy by 2024 - TARGET Reached	↑	Green
	Additional 10TWh of low carbon heating by 2024	↔	Red
	Add at least a further 45MW of diverse and flexible load by 2024 - TARGET Reached	↑	Green
Buildings	Retrofit 61,000 homes/year (target 305,000 by 2024, 887,000 in total)	↑	Red
	Build 30,000 net zero carbon social rented homes by 2038.	↑	Green
	Reduce heat demand from existing commercial and public buildings	↑	Amber
SCP	38% reduction in industrial emission by 2025.	↑	Amber
	Limiting any increase in waste to 20%.	↑	Green
	Achieve a recycling rate of 55% by 2024, and 65% by 2035.	↓	Amber
Natural Env.	Managing our land sustainably, including planting 1m trees by 2024.	↑	Green
	Managing our water and its environment sustainably.	↑	Red
	Achieving a net gain in biodiversity for new development.	↑	Amber
	Increasing investment into our natural environment.	↑	Green
	Increasing our engagement with our natural environment - Number of Volunteers.	↑	Green
Transport	Reduce car use to no more than 50% of daily GM trips, by 2040 (remaining 50% to be public, or active travel)	↔	Amber
	Support expansion to 200,000 EVs in city region by 2024	↑	Green

2038 Carbon Target	Costs	Resources	Overall Delivery	Risk
Red	**Green**	**Green**	**Amber**	**Amber**

Key Risks

Risk Event	Risk	Mitigation Plan	Post Risk
Failure of Environment Plan to achieve a step change in carbon emissions.	Red	Regular reporting to Greater Manchester Green City Region Partnership Board and WLT.	Amber
Level and depth of retrofit required to meet our overall ambitions is highly challenging.	Red	Focus on retrofit accelerator proposals as way of overcoming these barriers in a coordinated way.	Amber
Failure to enhance our water bodies against level of ambition.	Red	Intergrated water plan in place to deliver progressive improvements.	Amber
Failure to add an additional 10TWh of low carbon heating by 2024	Red	Focus on acceleration of Retrofit including the launch of the 'Your Home Better' service, Octopus Heat Pump offer and DEEP project delivery.	Amber

Five-Year Environment Plan for GM Dashboard

≡ **Menu**

Dashboard last updated:24/09/2024 15:35   *Version 1.10*   Next update: December 2024

About this dashboard   ⓘ

Greater Manchester faces major environmental challenges that threaten the health and prosperity of our region. We are taking action with the Five-Year Environment Plan, launched in March 2019. The plan sets out our long-term environmental vision – to be carbon neutral by 2038 – and the urgent actions we all need to take between 2019 and 2024 to help achieve this. <u>You can find the plan here.</u>

This dashboard keeps track of our progress against those actions. It is divided into six pages, with a page dedicated to evaluating progress in each of the plan's priority areas. You can use the menu in the top left to navigate between them, or click on the links in the box below. For more on the data used within each screen, click on the info icon in the top right of each box (eg see the one on this box).
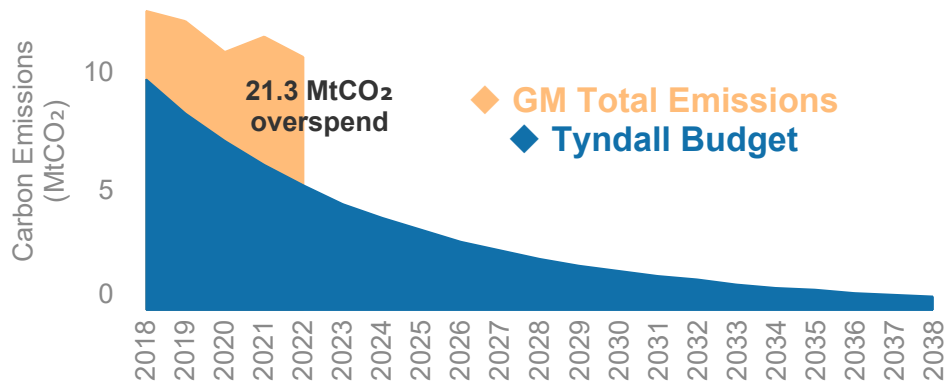
What targets are in the 5YEP and which are being tracked here? (click icon to navigate to page)   ⓘ

Area			Target	Tracking
Emissions		**Goal:**	**Be carbon-neutral by 2038**	See 'Emissions' page
Energy		E1:	Increase local renewable energy (electricity) generation, adding at least 45MW by 2024	See 'Energy' page
		E2:	Decarbonise how we heat buildings, adding at least 10TWh of low carbon heating by 2024	See 'Energy' page
		E3:	Increase diversity & flexibility of electricity supply, adding at least 45MW of diverse & flexible load by 2024	See 'Energy' page
Transport		T1:	Increase use of public transport and active travel, with car use reduced to less than 50% of daily GM trips by 2040	See 'Transport' page
		T2:	Phase out fossil-fuelled private vehicles for zero emission (tailpipe) alternatives, with 200,000 EVs in GM by 2024	See 'Transport' page
		T3:	Tackle the most polluting vehicles on our roads	In development
		T4:	Establish a zero emissions bus fleet, with all buses zero emissions (tailpipe) by 2035	See GMS dashboard
		T5:	Decarbonising freight transport and shifting freight to rail and water transport	In development
Buildings		B1:	Reduce heat demand from existing homes by retrofitting 61,000 homes per year	See 'Homes' page
		B2:	Reduce heat demand from existing commercial and public buildings by 10% by 2025	In development
		B3:	Reduce heat demand in new buildings, with all new development net zero carbon by 2028	In development
SCP		SCP1:	Produce goods more sustainably, reducing emissions from industry by 38% by 2025 compared to 2018 levels	See 'SCP' page
		SCP2:	Become more responsible consumers, with 2024 waste production increased by no more than 20% from 2018	See 'SCP' page
		SCP3:	Manage our waste as sustainably as possible, achieving a recycling rate of 55% by 2024	See 'SCP' page
		SCP4:	Reduce unnecessary food waste	In development
Natural Environment		NE1:	Manage our land sustainably, including planting 1m trees by 2024 and improving greenspace for nature	See 'Natural Env.' page
		NE2:	Manage our water and its environment sustainably, enhancing 542km of waterways by 2027	See 'Natural Env.' page
		NE3:	Achieve a net gain in biodiversity for new development	In development
		NE4:	Increase investment into our natural environment	In development
		NE5:	Increase engagement with our natural environment, through volunteering and access to local greenspace	See 'Natural Env.' page

Icons from <u>https://mulberrysymbols.org</u> - see ⓘ for more details

The Challenge: CO2 emissions across Greater Manchester

≡ Menu

Local Authority

All

How is GM progressing against the 2038 carbon budget? ⓘ

Carbon Emissions (MtCO₂)

10

5

0

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038

21.3 MtCO₂ overspend

◆ GM Total Emissions
◆ Tyndall Budget

What is GM's 'business as usual' emissions forecast? ⓘ

In development

Where are our emissions coming from? ⓘ

Transport - Minor roads 14%

Transport - Motorways 12%

Transport - A roads 10%

Industry - Gas 6%

Comm - Electric 7%

Domestic - Gas 22%

Domestic - Electric 7%

Comm - Gas 4%

Transp: 34%   Domes: 33%   Indust: 15%   Commer: 12%   Public: 5%   Agricul: 0%
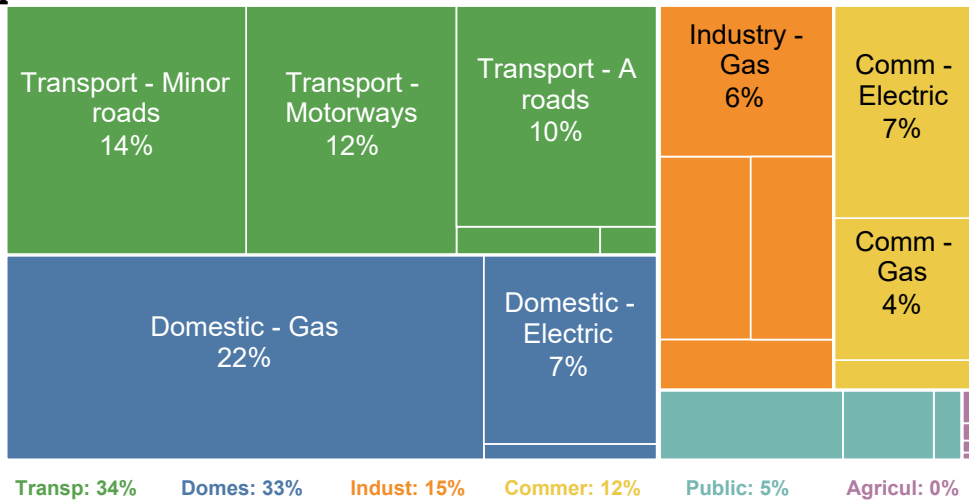
How have our emissions changed over time? ⓘ

Carbon Emissions (MtCO₂)

6

4

2

0

2006 2008 2010 2012 2014 2016 2018 2020

Reduction since 2018

14%
17%
14%
19%
14%

Transport   Domestic   Industry   Commerc.   Public

Data sources: BEIS Emissions & Tyndall Centre - click on the ⓘ buttons for more info

Greater Manchester's Homes

Menu
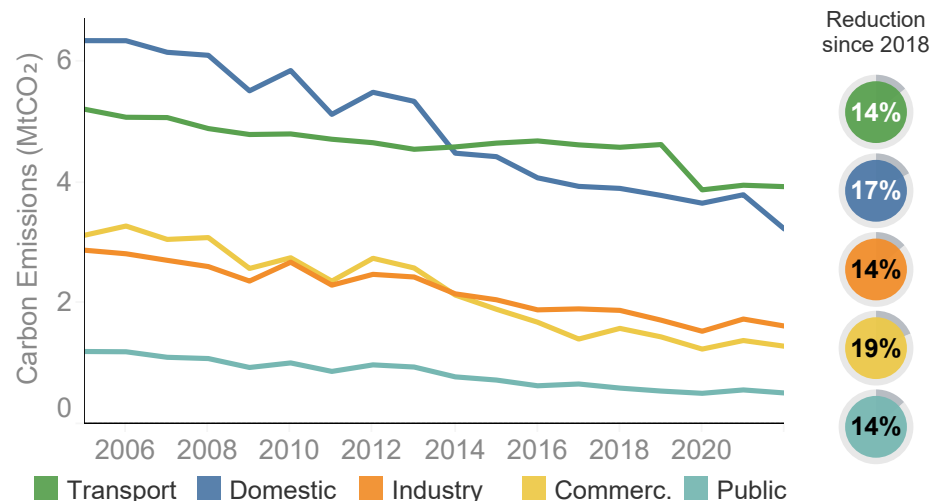
Local Authority
All

Tenure
All

Property Type
All

B1: Retrofit 61,000 homes per year (305,000 by 2024) ⓘ

EPCs moving from D or below to C or above

Legend:
- Gross
- Net

Values by year (Gross / Net):
- 2014-15: 4,609 / 2,284
- 2015-16: 3,181 / 549
- 2016-17: 2,823 / 679
- 2017-18: 2,301 / 1,695
- 2018-19: 3,726 / 2,194
- 2019-20: 5,428 / 3,989
- 2020-21: 6,843 / 4,850
- 2021-22: 9,468 / 7,167
- 2022-23: 11,113 / 9,405
- 2023-24*: 13,199 / 10,828
- 2024-25: 3,007 / 2,686
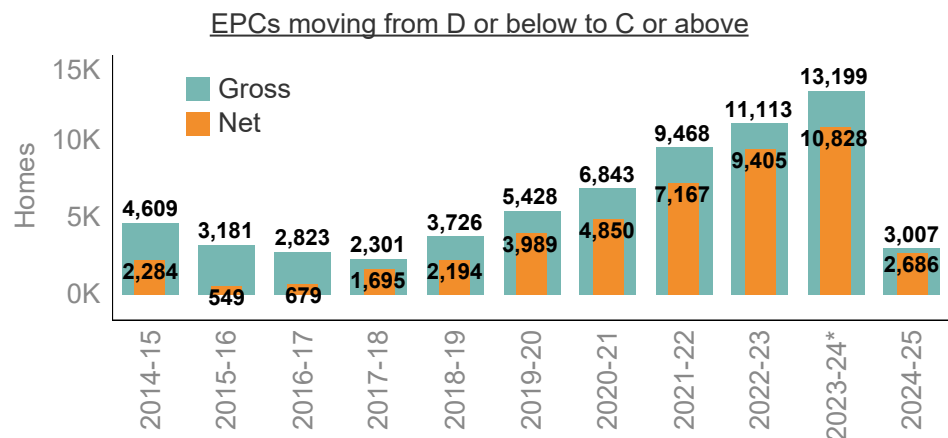
What proportion of inefficient homes are improving each year? ⓘ

% of all homes previously rated D-G now rated C or above

Values by year:
- 2014-15: 3.3%
- 2015-16: 1.6%
- 2016-17: 1.2%
- 2017-18: 0.8%
- 2018-19: 1.2%
- 2019-20: 1.6%
- 2020-21: 1.9%
- 2021-22: 2.4%
- 2022-23: 2.6%
- 2023-24*: 3.0%
- 2024-25: 0.6%
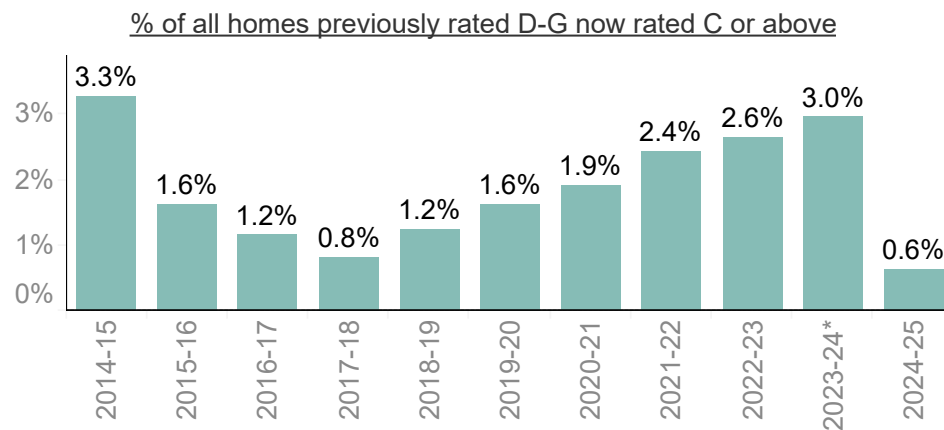
Proportion of EPC certificates in each band (all EPCs to date) ⓘ

Legend: A, B, C, D, E, F, G
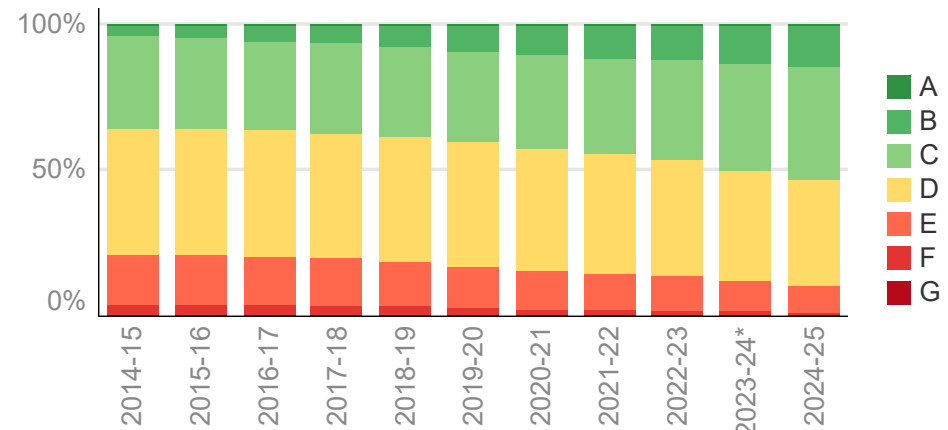
Proportion of EPC certificates in each band (registered in that year) ⓘ

Legend: A, B, C, D, E, F, G

Data covers 01/04/2008 to 30/06/2024   Data source: https://epc.opendatacommunities.org   Click on the ⓘ buttons for more info
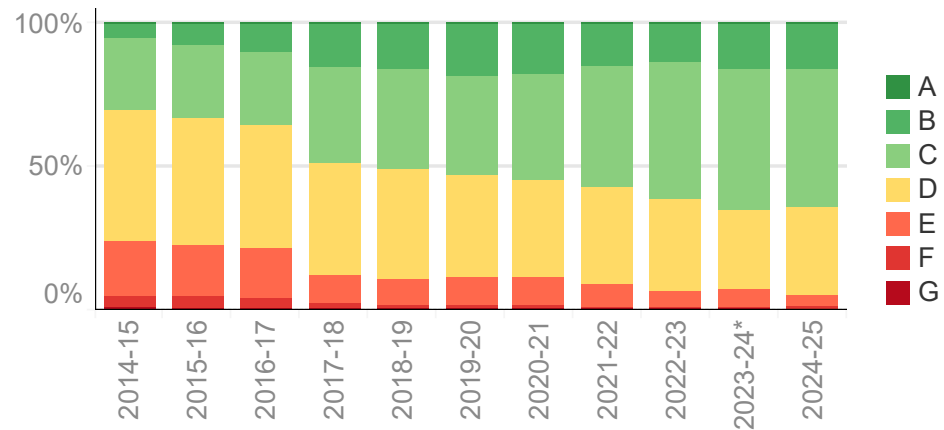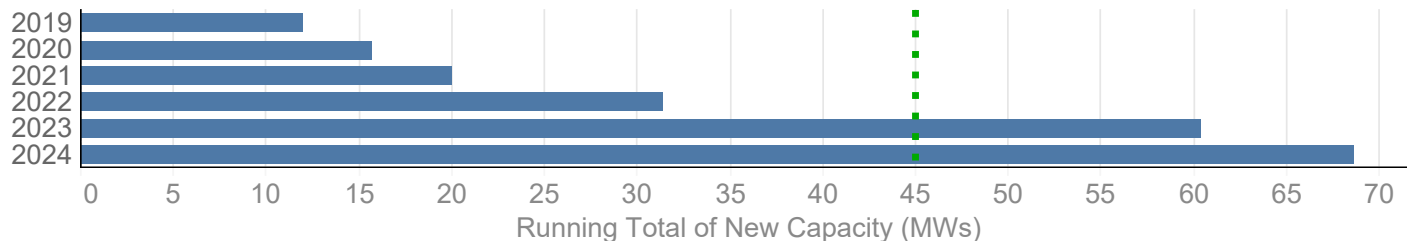
Greater Manchester's Energy Supply

☰ Menu

Choose which local authorities to focus on: Greater Manchester
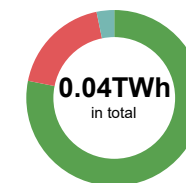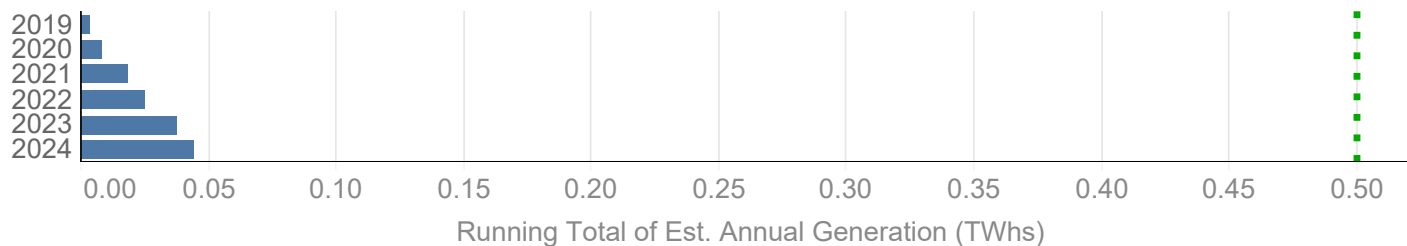
◆ Operational   ◆ Under Construction   - - - Target

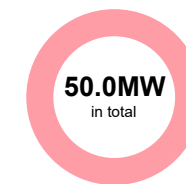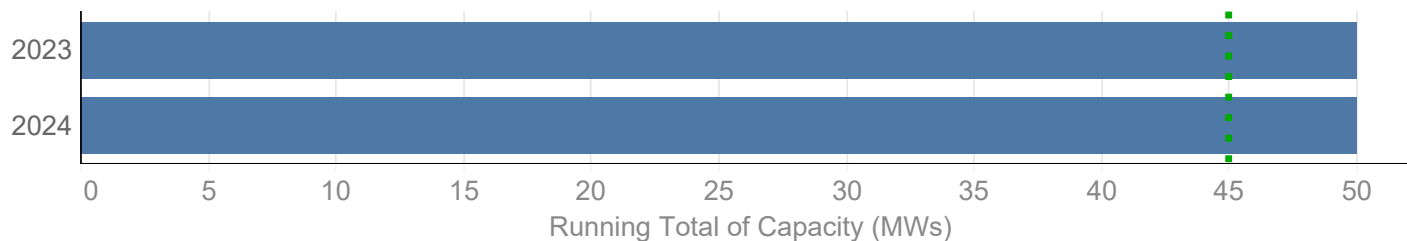## E1: Increase local renewable energy (electricity) generation, adding at least 45MW by 2024   ⓘ

Running Total of New Capacity (MWs)

68.6MW in total
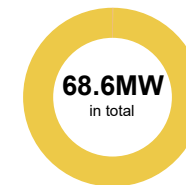
◆ Solar Photovoltaic

E2: Decarbonise how we heat buildings, adding at least 10TWh of low carbon heating by 2024   ⓘ

Running Total of Est. Annual Generation (TWhs)

0.04TWh in total

◆ Ground/Water SHP   ◆ Solar Thermal   ◆ Air SHP

E3: Increase diversity & flexibility of electricity supply, adding at least 45MW of diverse & flexible load by 2024   ⓘ

Running Total of Capacity (MWs)

50.0MW in total

◆ Battery

Data sources: MCS Installations Database, REPD, ENWL ECR, National Statistics - click on the ⓘ buttons for more info

Greater Manchester's Transport and Travel
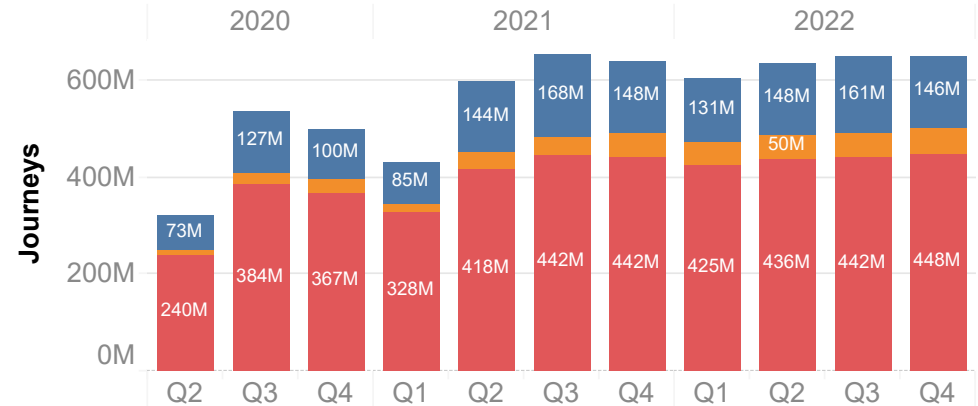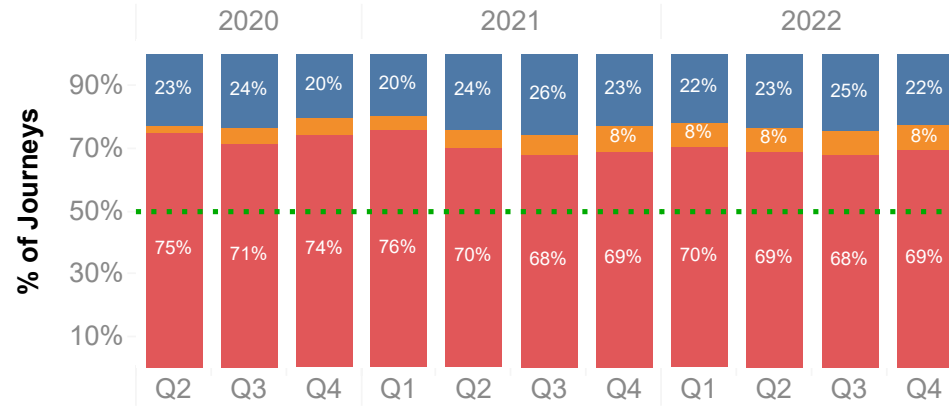
Journey mode

All

Journey quarter

All

T1: Reduce car use to no more than 50% of daily GM trips by 2040 (with the remaining 50% made up of public and active travel) ⓘ
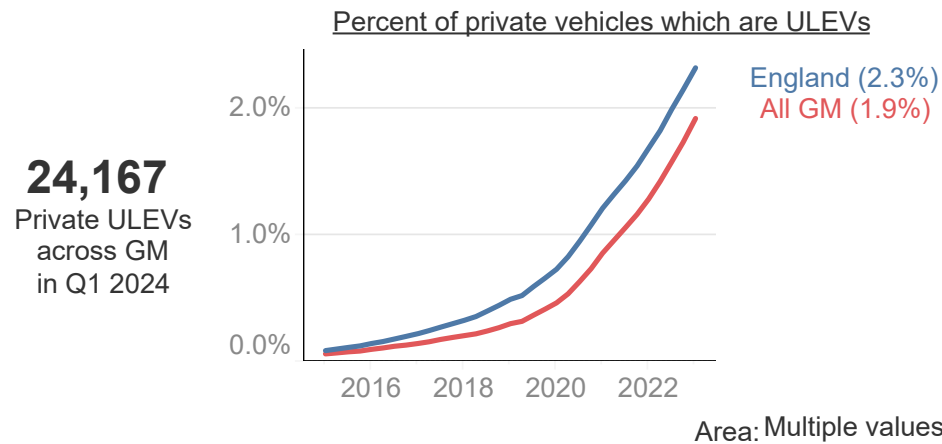
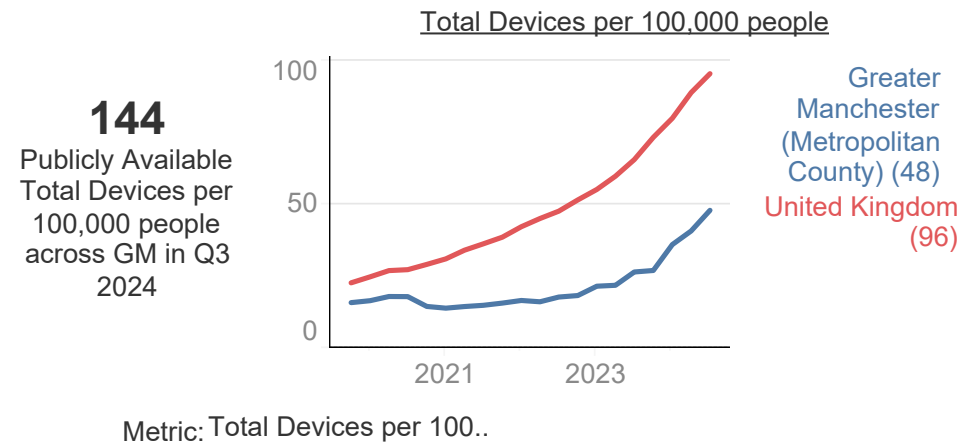■ Active travel ■ Public transport ■ Road transport

2020   2021   2022

% of Journeys

	2020			2021				2022		
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Active travel	23%	24%	20%	20%	24%	26%	23%	22%	23%	25%	22%
Public transport							8%	8%	8%		8%
Road transport	75%	71%	74%	76%	70%	68%	69%	70%	69%	68%	69%

Journeys

	2020			2021				2022		
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Active travel	73M	127M	100M	85M	144M	168M	148M	131M	148M	161M	146M
Public transport									50M		
Road transport	240M	384M	367M	328M	418M	442M	442M	425M	436M	442M	448M

T2: Support expansion to 200,000 EVs in GM by 2024 ⓘ

Percent of private vehicles which are ULEVs

24,167
Private ULEVs across GM in Q1 2024

England (2.3%)
All GM (1.9%)

2.0%

1.0%

0.0%

2016   2018   2020   2022

Area: Multiple values

T2: Increase the number of publicly accessible EV charging points ⓘ

Total Devices per 100,000 people

144
Publicly Available Total Devices per 100,000 people across GM in Q3 2024

100

50

0

2021   2023

Greater Manchester (Metropolitan County) (48)
United Kingdom (96)

Metric: Total Devices per 100..

Data sources: TfGM journey data & DfT Vehicle Statistics - click on the ⓘ buttons for more info

Menu

Greater Manchester's Sustainable Consumption & Production

Filter data by area: Greater Manchester

SCP1: Reduce industrial emissions by 38% by 2025 ⓘ

Emissions KtCO₂e

2,877
KtCO₂e

Target: 38% reduction compared to 2018

1,624 KtCO₂e

3K

2K

1K

0K

2005 2007   2009   2011   2013   2015   2017   2019   2021
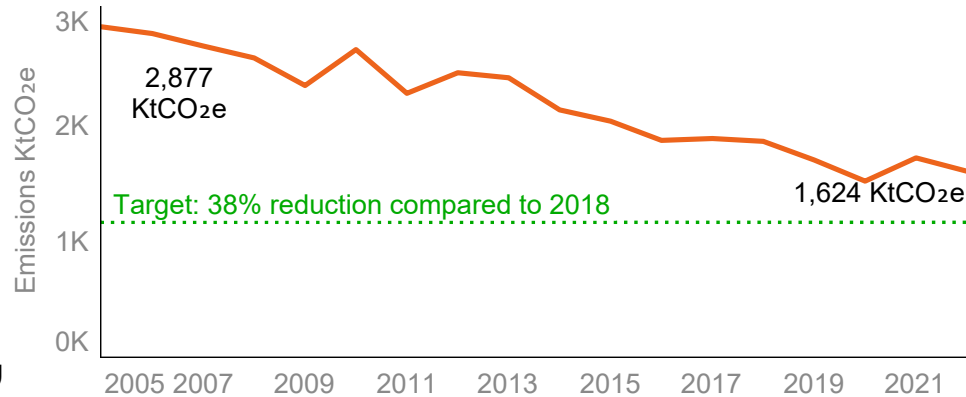
GHG: Carbon Dioxide (C..   Source: All

SCP2: Limit any increase in 2018 levels of waste to 20% by 2024 ⓘ

2017-18	**Domestic residual waste production** 500 kg/hh
2018-19	for GM WDA (excludes Wigan) 480 kg/hh
2019-20	483 kg/hh
2020-21	505 kg/hh
2021-22	452 kg/hh
2022-23	422 kg/hh

GM Limit: 532 kg/hh

0   100   200   300   400   500

SCP3: Achieve a recycling rate of 55% by 2024 ⓘ
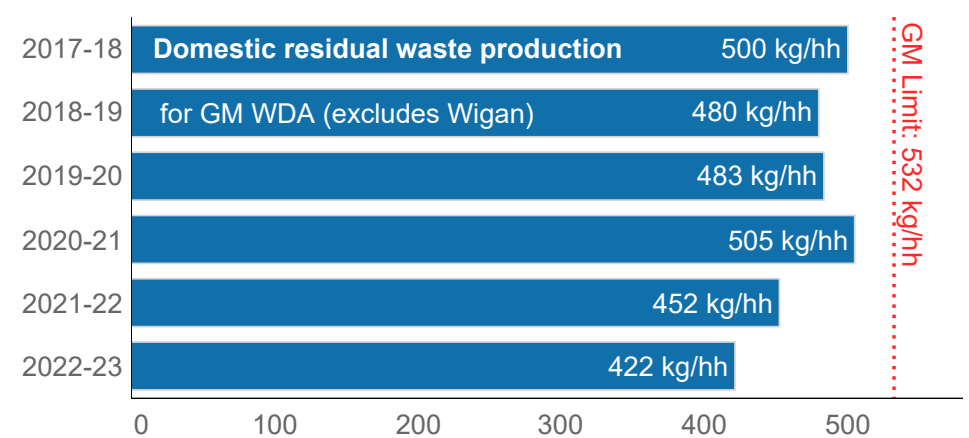
2017-18	**Recycling rate** for Greater Manchester 47.3%
2018-19	48.3%
2019-20	48.3%
2020-21	48.4%
2021-22	51.1%
2022-23	50.4%
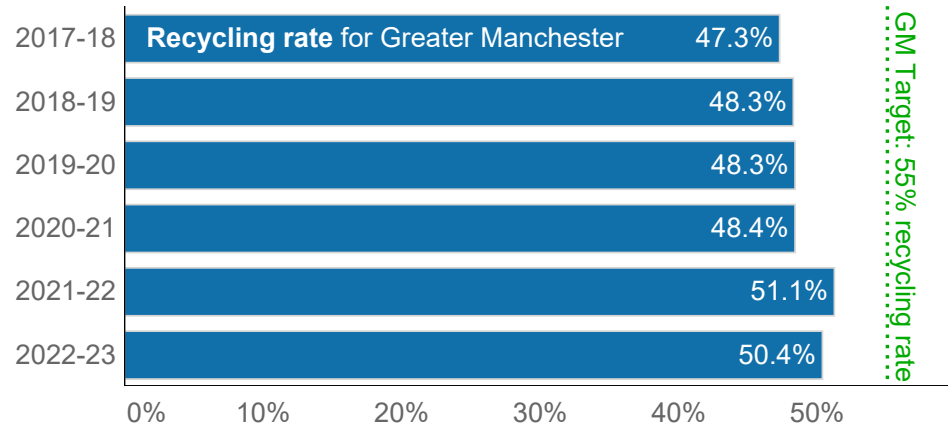
GM Target: 55% recycling rate

0%   10%   20%   30%   40%   50%

In development ⓘ

In development

Data sources: BEIS Emissions & DEFRA ENV18 - click on the ⓘ buttons for more info

Greater Manchester's Natural Environment

Menu

NE1: Plant one million trees by 2024 ⓘ

Target: one million trees by 2024

916,859 trees

◆ **Per year** ◆ **Cumulative**

Number of trees planted

1000K
800K
600K
400K
200K
0K

93,046 | 112,074 | 188,244 | 111,683 | 97,265 | 59,738

2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24
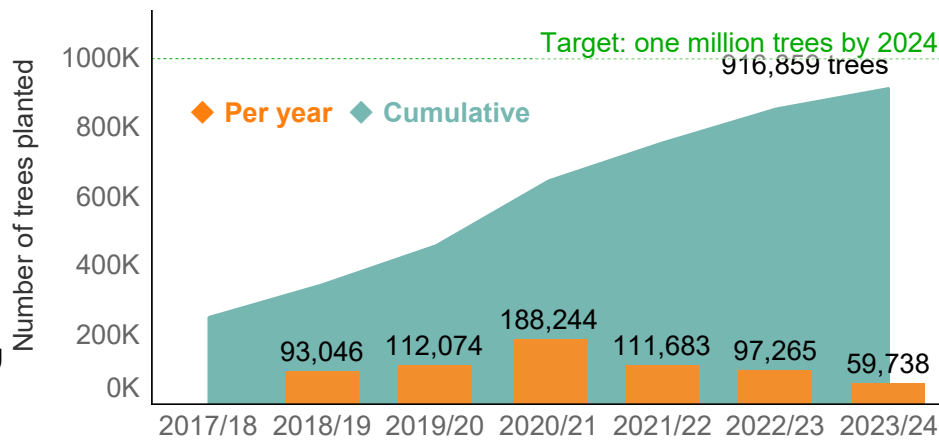
NE1: Improve existing areas of greenspace for nature ⓘ
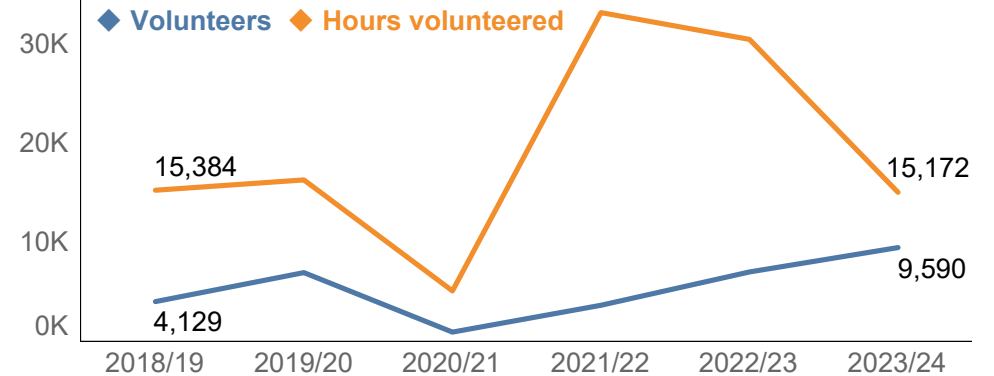
Area of existing greenspace improved for nature (hectares)

2020/21 — 216 ha
2021/22 — 725 ha
2022/23 — 562 ha
2023/24 — 134 ha

0 100 200 300 400 500 600 700
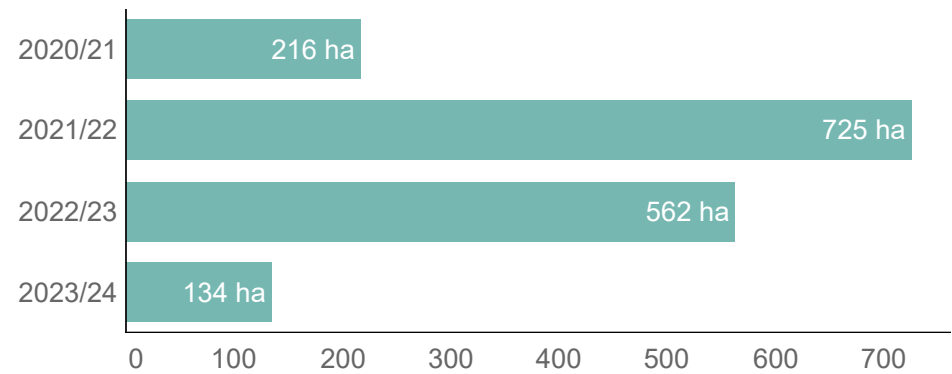
NE2: Enhance 542km of waterways by 2027 ⓘ

Target: 542km enhanced by 2027

◆ **Per year** ◆ **Cumulative**

km of waterway enhanced

600

400

200

0

155km enhanced

2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23*
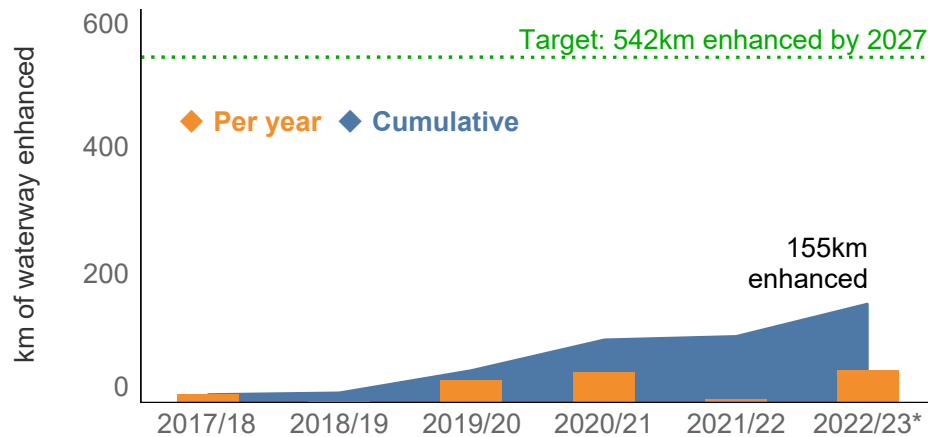
NE5: Increase engagement with natural environment ⓘ

Volunteering related to the natural environment

◆ **Volunteers** ◆ **Hours volunteered**

30K
20K
10K
0K

15,384

4,129

15,172

9,590

2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24

Data sources: partner organisations - click on the ⓘ buttons for more info

Greater Manchester Green City Region Partnership

Date: 17 October 2024

Subject: Draft Five Year Environment Plan 2025 – 2030

Report of: Mark Atherton, Director of Environment, GMCA

Purpose of Report:

The purpose of this report is to present the first draft of the next Greater Manchester Five Year Environment Plan (2025-30) for comment, to provide an overview of the process undertaken to develop the draft to date and the next steps prior to its final approval in November 2024.

Recommendations:

The Partnership is requested to:

1. Provide feedback on the draft new 5 Year Environment Plan
2. Endorse the current draft, subject to final amendments, for submission to GMCA
3. Note the development process and next steps and that a sustainability and equality assessment will be conducted on the final draft document

Contact Officers:

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Robyn.Smith@greatermanchester-ca.gov.uk

BOLTON **MANCHESTER** **ROCHDALE** **STOCKPORT** **TRAFFORD**
BURY **OLDHAM** **SALFORD** **TAMESIDE** **WIGAN**

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1. Introduction/Background

1.1 The first Five Year Environment Plan (5YEP) was published in 2019. It set out the ambition for Greater Manchester to become a carbon neutral city region by 2038. Alongside publishing the plan, a climate emergency was declared by GMCA and the ten Local Authorities and, in 2021, a biodiversity emergency was also declared.

1.2 The first 5YEP ran from 2019 – 2024 and focused on five key priority areas: energy supply, transport and travel, homes and buildings, production and consumption, and the natural environment. The previous plan set of how we would tackle the environmental challenges we face, meet our environmental responsibilities, and secure our economic future and wellbeing.

1.3 Since 2019 there has been significant progress made against the targets in the 5YEP, however achieving the carbon targets remain challenging. To stay on track to achieve carbon neutrality by 2038 there will need to be an acceleration and scaling up of current activities. An overview of the progress made since 2019 can be seen in section 5 of the draft plan. We also intend to insert an infographic at the front of the report.

1.4 Reaching our environmental targets will require significant changes across all sections of society in how we live, travel and work – from individuals and communities to businesses and the public sector. Road transport and domestic heating are the two largest sources of carbon emissions in Greater Manchester. Achieving reductions in these areas is key to achieving carbon neutrality.

1.5 The new 5YEP will run from 2025-30 and builds on the previous ambitions and progress against the first plan. The commitment to be a carbon neutral city region by 2038 remains and the urgency of the climate and biodiversity emergency is reiterated. It is important to note that the carbon budget set under the first plan is likely to soon be exceeded, however we believe that this target should be maintained as a benchmark of our fair and equitable share of global carbon emissions.

1.6 The new plan has eight key aims Energy, Buildings, Transport and Travel, Natural Environment, Circular Economy and Waste, Resilience and Adaptation, Air Quality and Sustainable Growth. Underneath each of these aims sit key objectives which are the specific results needed to achieve the aims.

1.7 Each of these aims form a chapter within the plan that outlines the challenge specific to that area, the action required over the next five years, the co-benefits of delivering each aim and factors that will either enable or inhibit delivery e.g. finance and skills.

1.8 A key focus of the plan has been to ensure that it is reflective of the action needed from all sectors across Greater Manchester showing public sector action as just one part of the journey to 2038, alongside private, third sector and citizen action. The plan also includes enabling actions which will support decision makers to make an environmentally conscious choice.

1.9 Alongside the development of the draft plan, work has been ongoing with ARUP to develop an emissions pathway to 2038. More detail on this can be seen in section 6 of the draft document. We have utilised the best data we have available however, there are some gaps, particularly for industry, where estimations will have to be made. We have tried to make the targets in the new plan challenging but achievable.

2. Development Process

2.1 The plan has been developed throughout 2024 by the GMCA Environment Directorate and TfGM with support from the GMCA Research team. A first draft has now been developed and is being consulted upon with our key partners.

2.2 To develop the plan, officers initially reflected on the previous plan including review of the vision, priorities and the progress made after five years of delivery. Key changes from the first plan include the addition of aims on air quality and sustainable growth.

2.3 After internal development, initial engagement with external partners began to further develop the new Vision, Aims and Objectives for the new plan. External engagement has continued throughout the development process and a key focus has been developing those actions outside of Local Authority control. External organisations have been encouraged to feedback on the specific actions for their sector/organisation.

2.4 In addition to engaging with external partners, the plan in its initial stages has been presented to the equalities panel, the Youth Combined Authority, GM Bee Net Zero Board and the Sustainable Energy Association.

2.5 To develop the Local Authority led aspects within the plan, several surveys were conducted at an officer and councillor level. Feedback from the surveys has particularly informed the Local Authority led actions as can be seen in Annex 3 of the draft document. Local Authorities face particular challenges around financing and resourcing the more ambitious actions in the plan. This has been reflected in the wording of the actions.

2.6 The draft document attached was circulated to Local Authorities in August for initial comments on the structure and any key inaccuracies and omissions. The draft was then amended and has now been circulated for feedback from external partners.

3. Next Steps

3.1 The first draft of the plan was circulated for final comment from Local Authorities and external partners with a deadline of the 27th September 2024. All of the feedback has been considered and, where appropriate, amendments made. These comments have been incorporated into the attached draft (Annex 01) for consideration by the Green City Region Partnership and Board in October.

3.2 Throughout October, work is continuing to finalise the plan, including targets, as highlighted in the draft document. These will then also inform the monitoring framework that is used to track progress throughout the duration of the plan. Additionally, as highlighted in the draft document, there are still small sections of text to be developed over the few weeks as we consider final feedback.

3.3 Following GMCA approval in November 2024 and any final amendments required, the plan will be launched publicly at the annual Green Summit on the 9th December 2024.

Greater Manchester Green City Region Partnership

Date: 17 October 2024

Subject: Greater Manchester Local Nature Recovery Strategy
            Draft for Consultation

Report of: Rachel Morrison, Natural Environment, GMCA

Purpose of Report:

This report presents Greater Manchester's Local Nature Recovery Strategy (draft for consultation). The strategy has been developed over the last 18 months with our Local Authorities and wider stakeholders. The strategy is now ready to progress to public consultation

Recommendations:

The Partnership is asked to:

- Endorse the Greater Manchester Local Nature Recovery Strategy (draft-for-consultation) to proceed to public consultation

- Note its contents, including the vision, aims, targets, priorities and actions to help respond locally to the biodiversity emergency

- Note that the Mayor (as the Responsible Authority) has delegated Councillor Tom Ross, Portfolio Lead for Green City Region, to approve any minor changes to be made to the Greater Manchester Local Nature Recovery Strategy (draft-for-consultation) prior to the public consultation

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Samuel.Evans@greatermanchester-ca.gov.uk

1. INTRODUCTION

The Environment Act (2021) introduced a range of measures to seek to halt and reverse biodiversity decline. This included the requirement for Local Nature Recovery Strategies (LNRS) to cover the whole of England, to set out where and how efforts should be focussed locally to contribute to halting and reversing the decline in biodiversity.

The Greater Manchester Local Nature Recovery Strategy (draft-for-consultation) sets out how and where we should focus action to try to reverse biodiversity decline locally and work towards better access to nature for all. The strategy is aimed at encouraging all organisations, communities and residents to take action to support nature's recovery. It will be of particular importance for landowners and, once adopted, will incentivise investment, particularly through Biodiversity Net Gain and environmental land management schemes.

In preparing the strategy to meet local needs as well as the requirements of the Environment Act (2021), underpinning regulations and statutory guidance, GMCA (on behalf of the Mayor) has been working in consultation with the ten local authorities and stakeholders across the city-region over the past 18 months to develop a draft strategy for public consultation.

To inform the strategy, GMCA also ran a public survey in early 2024, which received over 800 responses, and has held a range of workshops, events and other engagement sessions with public, private and VCSFE organisations over the past year.

2. GREATER MANCHESTER LOCAL NATURE RECOVERY STRATEGY – DRAFT-FOR-CONSULTATION

In alignment with the requirements under the Environment Act 2024, regulations thereunder and the statutory guidance issued to responsible authorities, the strategy covers the following:

Vision: The strategy sets out a shared vision for nature recovery - "*to work together to deliver a resilient network for nature across the city-region, connecting and enhancing wild spaces so that people and nature can thrive*".

Aims: The strategy sets out a series of high-level aims to help deliver on this vision, including:

- Safeguarding, enhancing and restoring our nature rich sites;

- Creating more wildlife-rich resilient spaces, where they will expand and connect spaces for wildlife and people;

- Managing and reducing pressure on our environment and waterways, maximising nature's role in adapting the city-region climate change;

- Working together to take action for nature and embed space for nature and people to thrive across all our communities;

- Improving local access to nature and ensure there are more opportunities to enjoy nature, in those areas which need it the most; and

- Improving engagement with nature and better understanding of its value in our lives.

Targets: New quantitative targets to help track progress towards nature recovery are set. These include:

- Increase the number of GM residents living within 15mins of a decent green space.

- Increase the amount of Greater Manchester protected for nature from 11% to 15% of the city-region.

- Work towards the restoration and creation of 1,800ha of wildlife-rich land and to expand tree canopy cover from 16.5% to 18.5%.

- Bring 50% of our Local Wildlife Sites into active management for nature conservation.

A mapped **Nature Network** across GM to help drive forward nature recovery, including:

- Core local nature sites - existing valuable areas for nature

- Nature recovery opportunity areas – areas where action and investment should be focused across the city-region to build better connect greenspaces for nature and people, alongside other land uses.

Priorities and actions: the strategy sets out specific priorities and actions for a series of different broad habitats found across GM, including urban greenspaces and buildings, and for particularly vulnerable local species.

The draft-for-consultation (Annex A) and Executive Summary (Annex B) of the GM Local Nature Recovery Strategy accompany this report.

3. CONSIDERATIONS

The next steps for the strategy is to progress to public consultation, after which changes will be made to the strategy in response to the consultation feedback. When revised post-public consultation the strategy would then be brought again to the Natural Capital Group, Green City Region Partnership, Green City Region Board and GMCA for endorsement.

When formally adopted in 2025, after the public consultation has been completed, public bodies, which includes the GMCA and local authorities, will have to have regard to the GM Local Nature Recovery Strategy (LNRS) in performing their duties under section 40 of the Natural Environment and Rural Communities Act 2016 when considering what action they can take to "further the general biodiversity objective" of conserving and enhancing biodiversity when delivering their functions.

The Environment Act (2021) sets out that local authorities will need to "have regard" to the LNRSs in local planning policy and decisions. The Levelling up and Regeneration Act (2023) included a clause which creates a new requirement on all relevant plan-makers and requires all tiers of planning to take account of the relevant LNRS. Taken together, these legislative provisions are designed to support development plans and provide closer alignment with the planning system and environmental outcomes.

4. NEXT STEPS

Now that the LNRS (draft-for-consultation) has been prepared, the next step of the process is to undertake a public consultation on the strategy. The consultation will run from mid-November until late January.

Responses to the consultation will be considered ahead of approval of a final strategy in the first half of 2025.

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GREATER MANCHESTER

DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

Nature for All

A new plan for nature recovery for Greater Manchester

Consultation Draft - Statement of Biodiversity Priorities

2nd September 2024
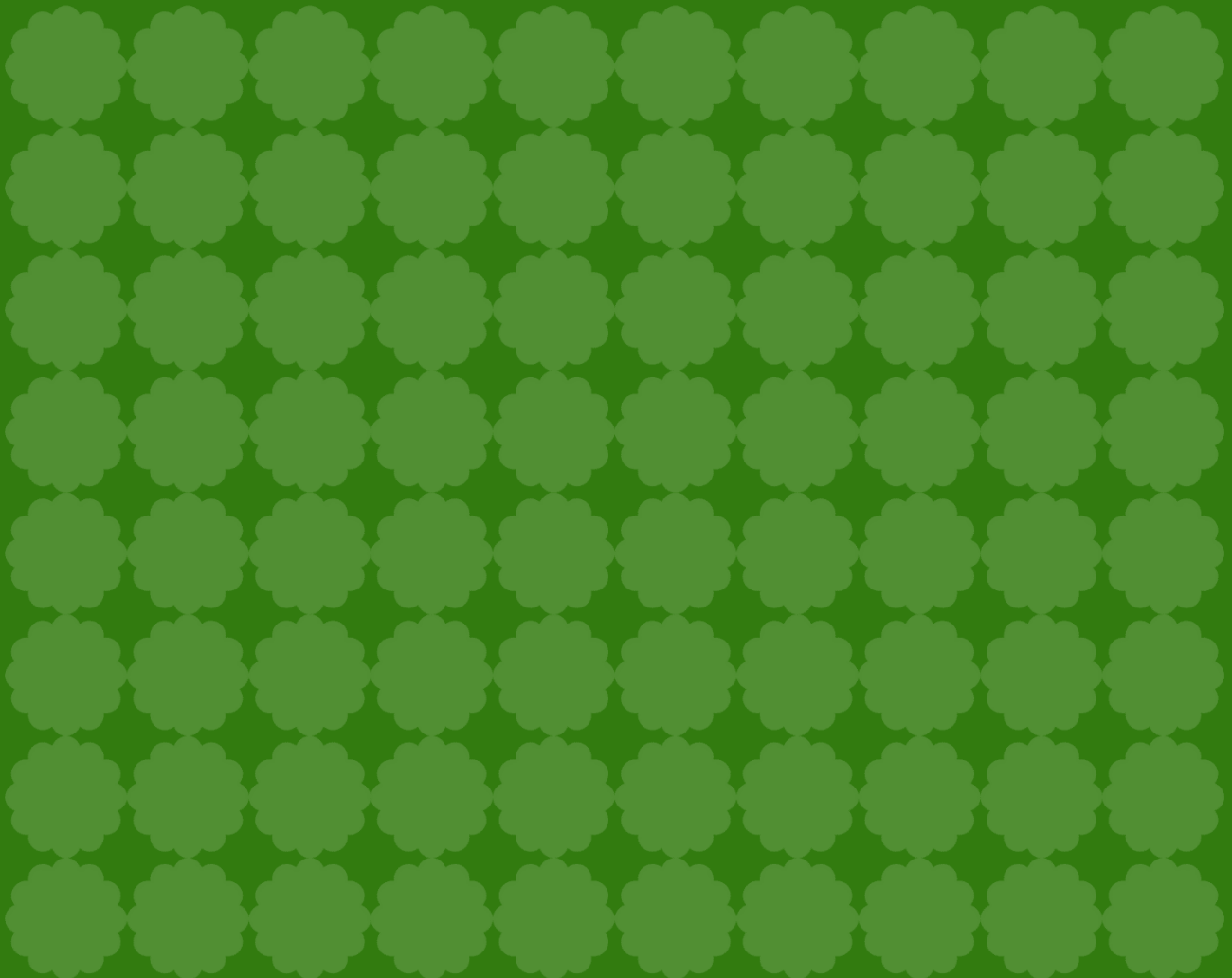
Supporting organisations

This plan was written in collaboration with organisations and partnerships from across Greater Manchester, including:

- Bolton Metropolitan Borough Council
- Bury Metropolitan Borough Council
- Canals and Rivers Trust
- Cheshire Wildlife Trust
- City of Trees
- Forestry Commission
- Greater Manchester Ecology Unit
- Groundwork Greater Manchester
- Irwell Catchment Partnership
- Lancashire Wildlife Trust
- Manchester Metropolitan Borough Council
- National Farmers Union
- National Trust
- Natural England
- NHS Greater Manchester
- Oldham Metropolitan Borough Council
- Peak District National Park
- Rochdale Metropolitan Borough Council
- Royal Horticultural Society
- Salford Metropolitan Borough Council
- Southway Housing
- Stockport Metropolitan Borough Council
- Tameside Metropolitan Borough Council
- The Environment Agency
- Trafford Metropolitan Borough Council
- Transport for Greater Manchester
- United Utilities
- University of Manchester
- Upper Mersey Catchment Partnership
- Wigan Metropolitan Borough Council

Greater Manchester Combined Authority (GMCA) would like to thank all the organisations that helped create the strategy, as well as the many other organisations and people who contributed via events, workshops or surveys.

2

Contents

1. Introduction

1.1. Why do we need a plan for nature recovery?

Greater Manchester is a growing, vibrant, dynamic and diverse city-region. In and around our homes, offices and businesses there are a variety of green spaces – from urban parks, community gardens and local playing fields to windswept upland moorlands and lowland mosslands, ancient woodlands, farmlands and historic parklands. Crossing these is a network of canals, rivers, lakes, wetlands and reservoirs, stretching from the peaks to the Mersey estuary and Cheshire plain.

All these spaces can play a role in supporting local wildlife. They are equally important to our local communities, residents and businesses. Our parks, urban rivers and canals provide crucial spaces for relaxation in our busy urban spaces, helping to improve our mental health and wellbeing[1]. Our woodlands, grasslands, wetlands and uplands help to store and absorb rainwater and carbon, reduce flood risk and air pollution, and help supply local food and water[2].

We all understand the importance of nature, but globally[3], nationally[4] and locally[5] we are witnessing continued decline in our wildlife. Our wildlife is struggling locally, with current and historic reports of falling wildlife populations caused by factors such as habitat loss, fragmentation, intensification of land use and pollution. Access to natural green spaces across the city-region is unequal and many people do not have access to green spaces near to where they live and work[5].

The loss and decline of nature impacts the essential benefits we currently enjoy. It reduces the nature's ability to support our health and wellbeing, to help capture air pollutants and store carbon, support food production and supply water, and can increase our risk of flooding. The loss of these benefits impacts on our everyday lives, the liveability and resilience of the city-region[6].

In recognition of the severity of this issue, Greater Manchester declared a biodiversity emergency in 2022. We know there is huge potential for nature to thrive alongside where we live and work, and we have already witnessed examples of the remarkable potential of nature to return. Former industrial sites, such as the Flashes of Wigan and Leigh, are now national nature reserves, and derelict railway bridges, such as Castlefield Viaduct, converted into vibrant gardens. As Greater Manchester continues to evolve, we all need a strategy that sets us on a pathway towards a city-region where nature can return and thrive, and our residents and businesses can enjoy the benefits of a vibrant and resilient environment.

This Local Nature Recovery Strategy sets out a long-term vision to work towards a resilient network for nature across Greater Manchester, by connecting and enhancing wild spaces so that people and nature can thrive. To drive action, we set out high level targets to help track progress, alongside priorities and actions for different habitats and species. We all need to work towards these targets, priorities and actions, to set us all on the right pathway to help realise this vision.

Over the next decade this will be the guiding strategy for nature across the city-region. Everyone has a role to play in realising this vision and creating a Greater Manchester that is resilient, greener, and more liveable for all.

The Biodiversity Emergency

Our natural world contains a huge variety of life - the plants, animals, insects and microorganisms that live on our planet - which is collectively referred to as 'biodiversity'. Nature is important for its own sake, the unique outcome of millions of years of evolution and natural processes. Nature is also essential for many aspects of our lives. We depend on nature to provide us with clean and plentiful water, produce food and pollinate crops, for medicines and mental health benefits, for the clothes we wear and the homes we build[2,6]. It also holds huge cultural value as part of the places we live and enjoy, as well as for both spiritual and religious reasons.

However, globally, nationally and locally we are seeing the loss and decline of our planet's biodiversity. At the global level, the Living Planet Index[3], a measure of wildlife population size, shows that over the last 50 years we have lost 68% of our global wildlife populations. A quarter of all species are now threatened with extinction and the current rate of global extinction is estimated to be between 100 to 1,000 times higher than natural background extinction rates[7,8].

At the national level, 1 in 6 UK species are now threatened with extinction and over the past 500 years an estimated 200 species have likely been lost[4]. For mammals the threat is higher, with 1 in 4 land mammals in the UK now facing extinction[4]. UK populations of species of greatest conservation concern have also declined by 37% since the 1970s and 25% of all species in England are at historically low levels[8,9]. The UK is now considered one of the world's most nature-depleted countries and is at the very bottom in terms of how much wildlife survives[10].

There have also been declines in key indicator species of wider ecosystem health – including a 16% decline in the average abundance in butterflies over the past 25 years and 44% in breeding birds over the past 45 years[11]. Mammals like hedgehogs are facing serious declines, with surveys in 2011 showing declines of between 25-40% over the previous decade[11].

The decline in nature we are seeing has been caused by habitats and wild spaces being lost, destroyed, fragmented or degraded, by pollution or invasive species, or overused for industry or agriculture. In turn, these changes impact on the ability of the natural environment to provide essential services and put the benefits that we receive from nature, that underpin our economy and society, at risk.

1.2. What is a Local Nature Recovery Strategy?

As Greater Manchester (GM) grows, we need a guiding strategy to set a pathway towards a city-region where nature and people are thriving - **a Local Nature Recovery Strategy**.

To respond to the biodiversity emergency and to meet local aspirations for a greener, more nature friendly, future	⟫	We need a long-term vision for what a nature-friendly city-region should look like
To help us all drive action for nature and people	⟫	We need to set out how we can all work together to help nature recover
To help us all focus our efforts for nature	⟫	We need to set out the best places we can boost action for nature, a Nature Network
To track our progress	⟫	We need to set out clear targets for nature recovery and monitor these

The Environment Act provides GMCA, as Responsible Authority, the statutory basis to co-produce a locally led, evidence-based **Local Nature Recovery Strategy**, to drive more collaborative action for nature. This document is our Local Nature Recovery Strategy for Greater Manchester and will be in place from 2025-2035.

To drive action for nature, this strategy sets out how and where across the city-region we should be taking steps to protect and enhance our natural environment. Over the next ten years, this will be the guiding strategy on the most effective actions for nature recovery and set out the best locations for nature recovery across the city-region. Everyone can play a positive role in delivering on this strategy, whether that is via small scale actions in communities, streets and gardens or large-scale actions, such as the designation of new nature reserve, new parks or as part of the development of an area.

The strategy covers the whole of Greater Manchester - all ten of our Local Authorities (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan) and those areas within them that are part of the Peak District National Park. This strategy sits alongside a wider set of Greater Manchester policies and strategies (see appendix 1).

The LNRS is not a delivery plan – this will be produced to sit alongside the strategy in 2025. It does not override existing plans, policies, processes, best practice and protections that are already in place

for nature, nationally or locally, nor is it binding for landowners. Its preparation has been limited by the GM scale data, resources and capacity available to the GMCA.

1.3. What does this strategy contain?

This strategy is made up of key components that come together to set out how and where across our communities we should all be taking action for nature.

These components include: an overarching vision, individual priorities and targets for both habitats and species, alongside a mapped Nature Recovery Network for Greater Manchester. These key components are each shown and explained below.

State of nature: An overview and description of our natural environment and current trends in our local wildlife and environment.

Vision: An overarching vision for what Greater Manchester could look like when the strategy is delivered.

Aims: The high-level results required to achieve that vision across the city-region.

Targets: Greater Manchester specific targets, set to help us to track progress towards the overarching vision and aim.

Priorities: These are the long-term end results that the strategy is seeking to achieve in terms of habitats and species. Our habitat priorities are divided into different broad habitat types. Our species priorities cover some of the most vulnerable species across Greater Manchester.

Practical actions: The practical actions or measures that would make a positive contribution towards delivering our priorities.

A Nature Network: Consisting of our core local nature areas and nature recovery opportunity areas.

- **Our Core Local Nature Sites** are our best remaining areas for nature across the city region, including all our designated sites and irreplaceable habitats (*these form our areas of particular importance of biodiversity).*
- **Our Local Nature Recovery Opportunity** are areas where the creation and restoration of habitat could have the greatest impact on nature's recovery. They represent areas where we should be more ambitious for nature alongside other land uses (*these form our areas that could become of particular importance for biodiversity).*

Together the Nature Network shows how we can connect our best remaining spaces for nature across the city region and specific practical actions within these areas *(these two components together form the Local Habitat Map for the GM LNRS).*

1.4. How has this strategy been produced?

GMCA has led the preparation of this strategy, supported by the Greater Manchester Ecology Unit, Natural England, the ten Local Authorities, the Peak District National Park and our steering group.
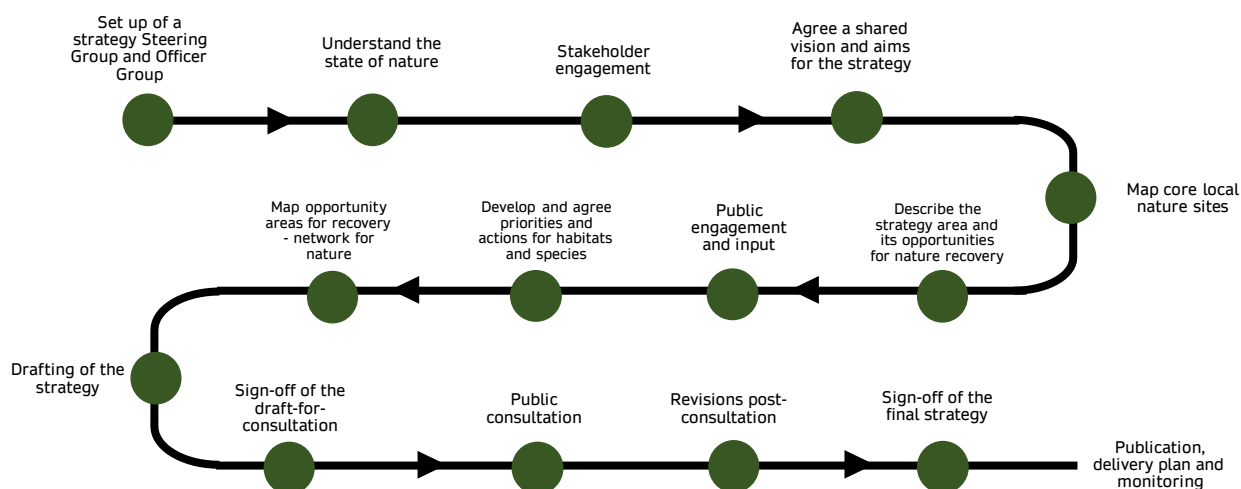
To help us get this strategy right for the local people who know and understand Greater Manchester, in preparing this strategy GMCA has:

- **Co-produced** the strategy with representatives from local environmental charities, infrastructure providers and local partner organisations (see section 8 and appendix 2), who have been involved in all stages of the strategy development through our GM LNRS Steering Group.

- Adopted an **evidence-based approach** by developing Greater Manchester's first State of Nature report to inform the strategy (appendix 3). The report brings together available open-access local environmental data to report on some of the major trends in nature.

- **Involved the public** and different sectors to ensure the strategy is **locally led.** The strategy has been shaped not just by expert organisations but also by the public, via a public survey and events, and by engagement with farmers and landowners, developers, infrastructure providers, environmental professionals, businesses, community groups and residents.

Who's has been involved?

- For farmers and landowners, we held dedicated in-person workshops, farm visits and worked with local nature champions in the agricultural sector.
- For businesses we held dedicated in-person workshops and roundtables to hear views.
- For residents and community groups we ran a large public survey with over 800 responses, collected views and feedback at local festivals, local events and conferences.
- For local councillors we ran webinars and developed dedicated information packs.
- For developers, social housing providers and urban regeneration experts we ran webinars.
- For the NHS, our partners ran conferences and local events to gather views.
- For nature experts and environmental charities, we set up workshops, online meetings, surveys and events to hear views and gather feedback.

Throughout the development of the strategy, we have sought to inform and engage residents and local organisations through regular newsletters, project blogs and social media activity, amplified by our partners and green communications challenge group - see appendix 4 for further information.

1.5. Who is it for and how should it be used?

Everyone can take action for nature and play a part in local nature recovery. This strategy is for everyone, whether you are a local business owner or landowner, an environmental charity, developer or planner, a local resident, parks managers or a community group.

This strategy should be used to understand how and where action should be taken to help nature recover across the city-region. It can be used to guide and inspire action by communities, residents, charities, businesses, farmers and landowners. It sets out the most effective actions and a network for nature recovery for local authorities, developers, policy makers, planners and institutions. You can read more about how you can deliver on this strategy in section 7.

This strategy should be used to:

➢ **Drive collaborative action**: Encourage more joined-up collaborative action.

➢ **Direct investment:** Set out the best places to focus action and resources and strategically significant sites for the delivery of off-site Biodiversity Net Gain.

➢ **Deliver multiple benefits:** Deliver benefits for society and economy, alongside boosting nature, such as reduced flood risk, improved health, local food growth and increased visitors.

➢ **Inform and evidence:** Understand the local state of nature and the best actions we can all take to help nature recover, alongside other land use and development.

➢ **Connect with nature:** Encourage people to understand, engage and get involved with local nature recovery.

➢ **Track progress:** Better monitor how we are tackling the biodiversity emergency.

Different organisations and groups of people will be able to use this strategy in different ways:

➢ **Land managers and owners** can use this strategy as a resource to plan the best actions for nature on their land and estate and show how these actions contribute towards wider nature recovery efforts.

➢ **Environmental organisations** can use this strategy to drive coordinated action and focus action for nature in the places it could be most effective.

➢ **Residents and community groups** can use this strategy to inspire local action, understand how their projects can help wider nature recovery and create more liveable spaces.

➢ **Local authorities** can use this strategy to plan and act on public land and estates, to meet the enhanced biodiversity duty under the Environment Act. It can also inform their local plans and identify where improving nature can support other council services and meet cross-departmental targets.

➢ **Businesses** can use this strategy to consider how to benefit nature, and their business, during day-to-day operation, extreme events, renovations and start up.

➢ **Planners and elected representatives** can use this strategy in the preparation of planning documents and inform planning decisions.

➢ **Developers** should have regard for this strategy in planning how they can work towards development that embraces a nature centric approach to raising building standards and values.

A detailed overview of how this strategy can be used by different audiences will follow this strategy.

2. Why nature matters for Greater Manchester

Nature is important for its own sake, the unique product of a millions of years of evolution and natural processes. For many people, connecting with nature is a source of inspiration and a meaningful reminder that they are part of something bigger, that enriches their daily lives. Nature is also essential for many aspects of our lives. Natural spaces play a vital role in making the city-region an enjoyable place to live and work, providing crucial spaces for relaxation, leisure and tranquillity – helping to boost our health and wellbeing[6]. At the same time, they provide us with vital services: storing water, reducing flooding and air pollution, storing carbon and providing us with water and local food.

2.1. What does nature do for us?

Being in nature is good for you. A huge, and growing, body of evidence tells us that spending time in nature is vital for our mental and physical health[1].

Every year, Greater Manchester residents benefit from an estimated £1bn[6] in essential services from our natural environment. Some of these services include mental health benefits (with an avoided healthcare costs for the NHS estimated at £264m) and improved physical health (£56m); opportunities for leisure, sport and recreation (£372m) and increased amenities and property values (£174m uplift for house prices). These essential benefits are particularly important for our vulnerable groups and can help reducing critical issues across the city-region, such as health inequalities and improve the lives of people with chronic illness or mental health conditions.

However, the benefits that we receive from nature are under threat given the array of challenges facing nature and the continued decline in biodiversity we are seeing. If we do not continue to protect maintain and enhance nature, we will not continue to receive these benefits, with knock-on effects for society and the economy - such as possible additional costs for the NHS.

Helping nature to recover can deliver a range of benefits and help the city-region to thrive:

The benefits for people:

- A green and healthy environment to grow up, get on and grow old
- More recreation and leisure opportunities
- Improved air quality and less noise pollution
- Improved physical health, including better heart health and healthy lifestyles
- Improved mental health, including reduce stress and reduce mental health conditions
- More resilience and adaptation to climate change, including flooding, droughts and extreme heat
- Less water pollution and safer opportunities for water-based recreation
- Greater connection to our natural and historic environment
- Stronger communities, proud of where they live and work
- Healthier soils, ensuring long term sustainability of food supplies

The benefits for businesses:

- A more attractive place to work, visit and do business, encouraging local economic growth
- Increased resilience through reduced risk of, and better adaptation to, environmental hazards
- A healthier, happier and more productive workforce
- Higher land and property values
- Increased green jobs and skills
- More visitors and sustainable tourism opportunities
- More productive land for food security and other resources that can be grown locally

The ecological benefits

- Protection of rare and threatened species and habitats
- Repaired natural cycles and natural processes
- A greater abundance and diversity of wildlife and healthier ecosystems, reversing biodiversity decline
- Capture and sequestration of carbon dioxide, helping tackle climate change
- More resilience to future changes in climate
- Greater resilience of species to pests and diseases

2.2. How do we access nature?

We know that people like to spend time in nature.

- On average **93%** residents surveyed over a 10-year period think that having open greenspace close to where they live is important to them[5,12].
- **Over half residents** (53%) surveyed report that they visit the outdoors for leisure at least once a week[12].
- When spending time in nature, residents reported they enjoyed exercising (70%), peace and quiet (73%), spotting wildlife (87%) and improving their wellbeing (77%)[13].

People from all walks of life value spending time outdoors in nature, but not everyone benefits to the same extent. With nearly three million people now calling the city-region home, our public green spaces are increasingly under pressure.

We know that access to nature looks very different across the city-region. Access to nature is unequal and many people do not have access to nature near to where they live or work. This means that the health and wellbeing benefits that we all get from our natural environment are not shared equally.

- An estimated third of Greater Manchester's population do not live within 15 minutes of a decent sized green space[14] (as set out in national standards[15]).
- Only an estimated 40% of our population live close (within 200m) of a small greenspace (0.5ha or bigger)[14].
- Echoing national trends[16], people experiencing multiple inequalities in Greater Manchester tend to live in areas with less green space, compared to more affluent areas[17].
- Communities experiencing racial inequalities are nearly twice as likely to live in areas with the least green space[14].

2.3. What action do people want?

Over 800 residents, community groups, charities, businesses, farmers and landowners across the city-region have engaged with us during the preparation of this strategy (see appendix 4 and 5.)

In our survey on developing a [Greater Manchester Plan for Nature](#) one of the most common responses was a desire for a greener, cleaner and wilder city-region – with many respondents prioritising the maintenance, protection and enhancement of our existing green and blue spaces for nature as the top action they would like to see included in this strategy.

For the future, residents envision a greener, more wooded, cleaner, more biodiverse, more natural and more accessible Greater Manchester.

Views on the state of nature

Through surveys, workshops, events and webinars, we have heard what people think about the state of our natural environment.

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- Although most Greater Manchester residents (69%) are proud of their local area[18], 55% of survey respondents think that the natural environment where they live is getting worse[13].
- Almost half of survey respondents said they currently think the state of nature in Greater Manchester is poor (41%) and a further third thought it was in moderate condition (37%)[19].
- Residents stated that they are put off spending time in nature due to a lack of accessible quality green space (14%), a lack of biodiversity (16%), increasing need for land for housing and employment (16%) and green spaces in poor condition (18%)[19].

These responses indicate a strong concern about the state of Greater Manchester's natural environment and its decline.

Views on the local actions that are already helping to support nature

- Nearly a quarter of survey respondents (24%) identified community action, projects, and volunteering as the most common actions already working to support local wildlife, followed by tree planting (9%), parks and public green and blue spaces (8%), and environmental NGOs and partnerships (7%)[19].

Views on what we all need to do to best improve nature locally

- Residents expressed a desire to see action for our most vulnerable wildlife, specifically mentioning the need for action for hedgehogs, birds, bees and otters, as well as the reintroduction of lost species such as beavers[19].
- The top actions residents want to be taken across the city-region include:
    - Creation and restoration of more green spaces for nature and people
    - More wildlife-friendly development or less development
    - Maintenance, protection, and enhancement of existing green and blue spaces
    - Education and awareness raising
    - More tree planting and new woodlands
    - Improved water quality and reduced pollution
    - More wildflower meadows and verges
    - More support for community projects and volunteering
    - Less litter and cleaner areas
    - Increased habitat diversity

I would like a more nature friendly Greater Manchester to have:

- *"Opportunities for communities to meet together to look after nature"*
- *"Greener - creating valuable habitats and pockets for wildlife in an urban concrete jungle"*
- *"Wild accessible green spaces"*
- *"More green and blue environments with a diverse mix of species"*
- *"Lower air and water pollution levels"*
- *"Green architecture, with more green roofs"*

See appendix 5 for the full results of our survey.

3. Nature in Greater Manchester: Where are we now?

We know nature is struggling across the city-region. In this section, we describe the existing land and habitats in Greater Manchester and the state of these habitats (detailed descriptions of our landscapes and habitats can also be found in appendix 6), along with the main trends in our species, best sites for nature and the key pressures on nature across the city region. This section of the strategy is drawn from our Greater Manchester State of Nature Report (appendix 3).

3.1 Our habitats and species

In total, Greater Manchester extends over 127,600 hectares (ha) of land. The city-region is dominated by its urban and suburban areas, which cover around nearly half of Greater Manchester. Across the city-region, nature reserves and protected wildlife sites provide some of our best spaces for nature and act as vital refuges for wildlife. 11% of land in Greater Manchester, over 14,000 ha, is safeguarded in some way for nature through a variety of designations. These sites are often isolated or fragmented by urban areas and infrastructure, meaning that species can struggle to move between them.

Nature is not just confined to our protected sites and nature reserves. Within and around our built-up areas, Great Manchester hosts a range of different habitats including woodlands, upland heath and moorlands, grasslands, lowland mosslands and other wetlands. Rivers, waterways and waterbodies, including the River Mersey and River Irwell, canals, reservoirs, lakes and ponds, cross the city region. An estimated 30% of our land is used for agriculture, although the uptake of grants for nature-friendly farming is thought to be lower than in surrounding areas[5].

In our urban and suburban areas our ten Local Authorities are custodians of a huge array of different green spaces from public parks, local nature reserves to civic squares, cemeteries and riverbanks. Amenity and leisure spaces, such as public parks, school grounds, and sports pitches provide key urban green spaces.

Despite the biodiversity emergency we are facing, there are many reasons for optimism and stories of the successful return of nature across Greater Manchester. Many of these successes are due to the hard work and dedication of a committed network of local people, organisations and partnerships working across the city region.

3.1.1. Designated sites

Overview

Greater Manchester has 23 nationally significant Sites of Special Scientific Interest (SSSIs) covering our particularly significant areas of semi-natural grasslands, woodlands and heath, as well as some of our wetlands of lowland raised bogs, flashes and lakes. Greater Manchester hosts six Special Protected Areas (SPAs) and Special Areas for Conservation (SACs). These range from expansive upland moorland of the South Pennines to the Rochdale Canal. Alongside these are 531 Local Wildlife Sites (also called Sites of Biological Importance), as well as 78 local nature reserves and one national nature reserve. Irreplaceable habitats[20] are also found in Greater Manchester, including ancient woodlands and veteran trees, blanket bog and lowland fens.

State

Extent

Since the 1980s, the areas of land safeguarded for nature in Greater Manchester have increased, from around 5,000ha to over 14,000ha through the work of the Greater Manchester Ecology Unit, Local Authorities, Natural England, environmental charities and local communities.

Our designated sites now cover 11% of Greater Manchester, a lower proportion than achieved in Liverpool (14%) and Lancashire (24%). Over the last decade our positive trend of increasing the amount of our land designated for nature has plateaued. Although new sites have been celebrated and designated, such as the Flashes of Wigan and Leigh National Nature Reserve and Local Nature Reserves at Springwater Park in Bury – some sites, or parts of sites, are also being lost due to lack of appropriate management and land use change.

When looked at as a network, these sites are now isolated and fragmented, meaning there are large distances between them, and they are not well-connected. Many sites are small, with habitat loss the area remaining under protection is not enough to support species recovery. To enable nature to recover these sites need to not only be bigger but crucially more joined up, allowing species to move between them.

Condition

Many of our best sites for nature, are not in as good condition as they need to be to support local species.

At present only 5% of our SSSI (less than 300ha) are in "favourable" condition, with a further 75% in "unfavourable – recovering" condition. Since 2000, most of our SSSI sites have improved and have moved towards being managed for recovery rather than remaining "unfavourable – no change". Compared to the rest of the Northwest and nationally, Greater Manchester has significantly fewer SSSIs in "favourable" condition, but more sites recovering[5].

Due to several factors, condition reporting by national organisations across our nationally and locally designated sites can be inconsistent and not up to date. These are the key building blocks for nature recovery, we need to know more about how many are in active conservation management and work with landowners and managers to bring more into active management to improve their condition.

3.1.2. Species

Despite its predominantly urban landscape, Greater Manchester has a diverse array of wildlife, including species protected by legislation like great crested newts, water voles and badgers. Even in the heart of the city peregrine falcons, swifts and swallows are known to make their homes. Six different species of bats can be found along our urban canals and rivers, while foxes use our urban gardens and tram embankments to feed and raise their cubs.

Amphibians and reptiles, newts, as well as common frog and common toad, slow worm, grass snake and common lizard, live and breed in our ponds and grasslands.

Grassland and brownfield sites are strongholds for declining insect populations, while **damselfly and dragonfly** are found across the city-region, including the banded demoiselle on many of our rivers and canals.

Mammals seen in our different districts include badger, hedgehog, bats, as well stoat and weasel, foxes, otter and rabbits, brown hare and mountain hare. Roe deer are also an increasingly common in some woodlands on the edges of Greater Manchester, whilst water voles are under threat.

Rare **plant** species can also be found in the city-region, such as carline thistle, hemp nettle and oak fern, aquatic plants like floating water plantain and several species of bog moss.

Fungi are found in all habitats, from woodland to grassland to gardens. Some of our upland sites hold nationally significant grassland fungi populations.

Birds such as herons and kingfishers are seen along our rivers. Woodpeckers in some of our urban woods and parks. Our uplands support specialist moorland birds, such as curlew, golden plover and twite. Our farmlands, particularly areas of Bury, Wigan, Trafford and Stockport, support skylark, tree sparrow and barn owl. Wigan is a stronghold for the nationally rare willow tit.

We have limited data on population trends of our local species. The data that we do have available for key species of birds and mammals, echoes the wider national picture of species decline:

- Bird populations are used to provide a good indication of the broad state of wildlife across the UK. Mirroring national trends, we have seen some worrying declines in our bird species. Between 1980-2011 individual bird species populations across a range of habitat types have shown declines of between 9-40%[5,21].

- Trends in population for our mammals are relatively poorly known in Greater Manchester and we are reliant on data for the whole of Northwest England. 25-year trends show us that Greater Manchester and its surrounding areas are losing not just rare but once common species, with reported declines in red foxes of -44%, rabbits -64%, brown hare -8% and hedgehog -24%[5,22].

These population declines are driven by a range of different factors including habitat loss, habitat fragmentation, pressure from pollution, invasive species and urbanisation, as well as new threats like climate change.

3.1.3. Urban and suburban green spaces

Overview

Urban and suburban areas dominate much of our city-region, from the dense city centres of Manchester and Salford to the many towns across Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford and Wigan.

Across our urban areas are a variety of well-loved parks, gardens, rivers and playing fields, golf courses, canals and allotments, that all provide valuable open green spaces for people and refuges for wildlife. Traversing through these areas are rivers, brooks and canals, many of which have been modified and built over.

Our ten Local Authorities, schools and institutions including the NHS, are custodians of a huge array of green spaces. Even incidental public urban green spaces, found on road verges or cemeteries are managed by our local authorities and can form valuable space for wildlife across the city region. Commercial land also provides green space for businesses and their staff to operate, ranging from the large-scale office spaces and smaller scale retail and leisure spaces.

Our residential gardens account for 15% of our land. These can be fantastic urban refuges for nature, and home to species like swifts, sparrows and hedgehogs and support pollinators like bees, wasps and hoverflies.

These spaces are hugely important for local communities, providing spaces for social interaction, relaxation and leisure. They also encourage active lifestyles, helping improve our mental and physical health and reducing the burden on the NHS. They are essential to the liveability of urban areas, improve the quality of our places. At the same time, they help manage rainwater and reduce air pollution, and reduce overheating. They also provide critical transport routes for pedestrians and cyclists for commuting and leisure.

State

Our urban green spaces are of huge significance to many residents on a day-to-day basis. However, the distribution of urban green spaces across Greater Manchester is by no means equal.

Our dense urban areas often host very few parks and those that do exist are often small and serve large local populations, a legacy of historic and current growth of Greater Manchester. Those urban green spaces that we do have are often under pressure from multiple competing demands on urban land, as well restricted management due to vastly reduced public estate and park service budgets.

Access to green spaces in Greater Manchester does not currently meet national standards recommended by Natural England.

- An estimated third of Greater Manchester's population do not live within 15 minutes of a decent sized green space, as defined by national standards[5].
- Only an estimated 40% of our population live close (within 200m) of a small greenspace (0.5ha or bigger)[23].

This lack of good access to green spaces compounds health inequalities across Greater Manchester and reduces the potential for these communities to benefit from these spaces.

In denser urban areas, like Manchester, 1 in 5 (20%) of all properties do not have access to a private or shared garden. Those that do have gardens are also thought to be becoming less green. Research by the Manchester Metropolitan University has revealed that, in Manchester, only 50% of the average garden is greenspace[24].

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Successes

The importance of green spaces in our urban and suburban areas is being recognised more and more and integrated into new development and regeneration schemes.

- Opened in 2022, **Mayfield Park** in Manchester was the first new city park for 100 years. The 6.5-acre parkland and new neighbourhood, brought the River Medlock back to life, removing it from its concrete culverts and daylighting it for the first time in over 50 years.

- Opened in 2024, the 2-acre **Viaduct Park** is a key part of the regeneration of Stockport town centre. The park sits above the town centre's new bus station, providing a new greenspace for residents, alongside 200 new apartments and a new cycling and walking route.

- There are many smaller scale examples of green space being made a central part of new development and infrastructure. They include the opening of **Elizabeth Park** in Bolton and **Jubilee Park** and **Chadderton Park** in Oldham, both at the heart of areas of the town centres that are being extensively regenerated. In Manchester, the **Castlefield Viaduct**, redundant for 50 years has been transformed into an urban park. In Salford, Europe's largest living wall has been built at the 12-storey **Eden Building**. Salford has also championed the addition of raingardens in their streets, at places like Liverpool Road, while Trafford has retrofitted raingardens into Altrincham high street.

- Communities and environmental charities have worked to add green spaces into our urban areas. There are some fantastic examples of **alleyway greening in Manchester's Moss Side** neighbourhood, the **Ginnel Garden project in Edgeley,** Stockport. The GMCA Green Spaces Fund has supported 86 new or improved community green spaces, including projects like the **Northern Lily GROWE Community Garden in Oldham** and the **community orchard being delivered by SNUG in Longsight**. New accessible green spaces are being developed around NHS sites in Oldham and Wythenshawe.

3.1.4. Rivers, canals and waterbodies

Overview

Greater Manchester boasts an extensive network of rivers, canals, lakes, reservoirs and other water bodies, that weave through our communities and are deeply connected to our industrial heritage. Emerging from the Pennines and Peak District, they connect our urban centres with open countryside and our uplands and lowlands, acting as vital highways for wildlife.

Totalling over 884km of rivers, 160km of canals and 400ha of lakes, our waterways not only define the landscape but provide critical habitats supporting our wildlife. While rivers like the Irwell and Mersey are well known, countless others cross the region. Like much of the rest of Greater Manchester's environment, our rivers and waterways have been extensively modified.

People across Greater Manchester still seek out rivers, reservoirs, lakes and canals to connect with the natural environment. They play a key role in local identity, culture and heritage, and many of our canals, such as the Manchester Ship Canal and Rochdale Canal, have played important roles in our industrial past and now support nature.

State

Across the city region an estimated 80% of our water bodies have been heavily modified by human activities and 112km of our rivers now lie buried or piped below our streets and buildings. There are over 1,000 obstacles and barriers to species movement in our rivers. Many of our riverbanks have been modified or canalised making them less valuable as species habitats. Invasives species are also

increasingly problematic, our riverbanks are often impacted by species such as japanese knotweed and himalayan balsam.

While our industrial heritage left many of our rivers and waterways heavily polluted, clean-up efforts beginning in the 1980s have significantly improved our river water quality, enabling fish, otters and aquatic invertebrates to return. Despite improvements over the last 40 years, none of our rivers are classed as in good ecological condition and 11% remain in poor or bad condition. As well as being a threat to aquatic wildlife, the pollution of our waterways can affect public health.

Pollution, from rural areas, towns and cities, transportation, as well as the wastewater network are all drivers of poor water quality. Built in the Victorian era our sewerage system cannot always cope with the intensity and volume of rainwater runoff our changing climate and increasing urbanisation is creating, leading to polluted water spilling directly into our waterways via storm overflows. Overflows were developed to reduce the risk of sewage backing up during heavy rainfall. Greater Manchester has 793 storm overflows, roughly 30% of all storm overflows in Northwest England. These overflows spilt an estimated 21,391 times in 2022 for an average of 4.5 hours per spill.

In Greater Manchester, between 2025-2030 United Utilities are proposing to invest to improve 100 storm overflows, to protect more of the Upper Mersey and Irwell rivers and improve water quality. Further investment is proposed for sustainable rainwater management to provide more space for rainwater in our public spaces, to further reduce spills.

Successes

Despite still facing challenges, our waterbodies have improved dramatically over the past 40 years. In the 1970s and 1980s for example, aquatic life was virtually absent from the River Mersey whereas today an increasing proportion of our rivers are moving to moderate condition. Key successes include:

- **Otters** have been sighted in over half of Greater Manchester's catchment after having dwindled to near extinction – this is a strong indication they are now resident here and increasing.

- **Fish** were equally absent from the **River Mersey** in the **1980s**, whereas they have now returned, along with mayflies, to all areas of the river.

- The **restoration of major canal routes**, including the **Rochdale canal**, have created popular recreation routes from derelict under used spaces.

- The **Medlock Valley Nature Partnership**, led by Groundwork Greater Manchester, is working towards habitat improvements along 30ha of the Medlock River valley.

- Work to install natural flood management measures including leaky dams, used to slow the flow of water and reduce flood risk, have recently been undertaken at **Moston Brook, Crompton Moor, Brownley Brook and Smithills**.

3.1.5. Woodlands, trees and hedgerows

Overview

There are estimated to be over 11.3 million trees across Greater Manchester, with a combined tree canopy covering just over 16% of city region - equivalent to 22,260 hectares[25]. Our woodlands include broadleaved mixed woodlands, ancient woodlands, clough woodlands and wet woodlands, upland oak woodlands and wood pasture, alongside veteran and notable trees, newly planted trees and plantations.

Some important woodlands have been designated as Sites of Special Scientific Interest and Local Wildlife Sites, such as Sunnybank Wood Woods, but many more woodlands are unprotected. Almost

850ha is designated as ancient and, along with a large number ancient and veteran trees, is considered irreplaceable habitat[20].

Our woodlands are mainly broadleaved – with species such as oak, sycamore, ash, birch, willow, hawthorn, hazel and holly. We have 13 commercial woodlands, covering an area of 313 ha across the city region. Smaller areas of evergreen conifers are also found – often planted on old industrial, ex-agricultural and mineral sites.

In urban areas, trees play a vital role in greening our streets. The city-region is also home to one of the UK's rarest native trees, the Manchester Black Poplar - its association originates from the industrial revolution, where it was found to be one the few trees that could cope with the high levels of pollution. Alongside providing habitat, some of our woods, hedgerows and trees are open to public access provide a wide range of other benefits, such as providing shade and shelter on streets and public spaces, sequestering and storing carbon, reducing flood risk, stabilising riverbanks and reducing soil erosion.

State

At 16% Greater Manchester's tree canopy is above the national average, but below that of other cities like London. Our tree canopy cover is not evenly distributed, and our most densely populated areas often have very low tree cover. Generally, our woodlands are fragmented, with greater concentrations along river valleys in the northwest and southeast of the city-region. There is much lower tree cover in the uplands of the South Pennines and Dark Peak, where it is generally restricted to cloughs.

Some woodlands are in good or recovering condition, however the vast majority generally remain in poor condition and funding for their long-term management is lacking. We also know that Greater Manchester has a high proportion (66%) of unmanaged woodlands. There is potential to improve the management of these woodlands to better support biodiversity and reduce the impact of key issues including disease (such as ash dieback) and high impact invasive plans (such as himalayan balsam).

Hedgerows in both our urban and rural areas can act as corridors for species – allowing wildlife to move across landscapes and providing food, shelter and homes for species such as birds, bats and small mammals. Over recent decades more and more of our hedgerows have been removed and replaced with fencing.

Significant efforts are being made to increase the number of trees and hedgerows being planted across the city-region. An estimated 917,000 trees have been planted in Greater Manchester since 2017, coordinated by City of Trees, as part of a landscape scale ambition for a northern forest[26].

Successes

- **Between 1991 and 2016, Red Rose Forest[27]** and its **six local authority** partners, **delivered over 1200 hectares of new planting totalling more than 2.4 million trees**. These schemes now provide habitats for a wide range of birds, insects, mammals and have provided urban communities with the opportunity to experience wildlife on their doorsteps.

- The schemes included projects such as: **Dainewell Woods in Trafford** where a 40ha planting scheme was delivered in 1995; a 25ha woodland at G**iants Hall in Standish Wigan** and a 15-hectare woodland planted as part of the new **Cutacre Country Park in Bolton**. **New woodlands were also planted on former landfill sites** in Salford, Bolton, Bury, Manchester and Trafford, which have adapted well to the tough site conditions and are now important places for wildlife.

- Red Rose Forest became City of Trees, expanding across the rest of Greater Manchester and building on this legacy and working towards a target to plant 3 million more trees.

3.1.6. Lowland wetlands and mosslands

Overview

Western areas of the city-region (parts of western Salford, Trafford and parts of south-eastern Wigan) are home to much of our remaining lowland wetlands and mosslands. Together with neighbouring areas, these form part of the Great Manchester Wetlands Nature Improvement Area[28].

'Mossland' is a local term for lowland raised bogs and areas that were formerly bogs, much of which have now been converted to farmland due to the highly productive underlying peat soils. They are distinctive flat, boggy, open landscapes, with remnant pockets of ecologically important lowland raised bog, alongside fen, wet woodland, wet grassland and freshwater habitats. They support a range of species, such as common lizard, brown hare, black darter dragonfly and rare sundew plants

Greater Manchester is also home to unique wetland habitats called flashes, a result of the industrial legacy of ground subsidence following mining. These former mines, along with spoil heaps have often been reclaimed by nature, creating a network of open water and lowland wetland habitats. This mosaic of wetland habitats supports an array of rare wetland species such as bittern, willow tit, water vole, as well as great crested newts and invertebrates. A variety of other habitats are also found outside of these areas, such as wet woodlands, wet heath and grasslands, former floodplain meadows, reedbeds, ponds.

Together our lowlands wetlands and mosslands form a unique and diverse landscape of water, fen, wet grassland, wet woodland and lowland raised bog and offer a rich mosaic of semi-natural landscape for wildlife.

State

These habitats were once much more extensive, however much of our original lowland raised bog (an estimated 95-97%), fens and other wetland habitats have been lost or drained for conversion to agriculture, peat extraction and development.

Now only fragments of a once extensive area remain and lowland raised bog is one of Western Europe's most threatened habitats. The significance of these remaining habitats is recognised in designations, such as the Manchester Mosses Special Area of Conservation. These designated areas are often poorly connected and there are large parts where the landscape is degraded.

Around 5,000ha of peat soils are estimated to lie underneath lowland, largely agricultural areas and remaining lowland raised bogs and wetlands[29]. Agricultural use (such as turf production, cropland, intensive grassland), on these peat soils, means that these areas are estimated to be emitting around 130,000 tonnes of CO_2-equivalent per year, contributing to the climate emergency[29].

Successes

After years of degradation, including by heavy industry and the mineral extraction, work to restore areas of our lowland wetlands and mosslands is demonstrating the power of nature to recover.

- The **Flashes of Wigan and Leigh** were formed on land that had subsided after coal mining activities. Previously a former industrial wasteland, the area is now a mosaic of wetland habitats for people to enjoy, supporting rare species such as **Bitterns** and **Willow Tits**, and declared in 2022 as an 1800-acre National Nature Reserve.

- On **Chat Moss** which spans Salford and Wigan, an area that was originally lowland raised bog (a rare and threatened habitat) has been degraded by agriculture and peat extraction. However, restoration efforts have seen nature recover in these areas, such as **Astley and Bedford Mosses**, **Cadishead Moss** and **Little Woolden Moss**. Species such as Nightjar, the Large Heath Butterfly and Sundew (one of the UK's few carnivorous plants) can now be found on the mosslands.

3.1.7. Upland moorlands

Overview

Upland areas extend along the northern and eastern edges of the city-region and form part of a much larger expanse of upland moorlands, stretching into the Peak District and Lancashire.

Our upland moorlands have been shaped not just by the underlying geology and location but also by centuries of historical clearance, industrial pollution and contemporary management practices, which has created a unique blend of habitats. Characterised by deep valleys and open moorland plateaus, our upland habitats include expanses of blanket bog and heath, clough woodlands, alongside acid grassland and freshwater areas. The importance of these habitats is reflected in a range of international, national and local designations.

The intense rural character and isolation of the uplands stand in striking contrast to our urban areas, offering panoramic vistas and a sense of remoteness. They are crucial spaces not just for nature but also for outdoor recreation, offering long-distance trails and popular reservoirs. They also remain working landscapes and managed places used for raising livestock or grouse and supplying water.

State

Our uplands have been subject to drainage, pollution, grazing, burning and management over the 20th Century. In a healthy state, many of moors surrounding Greater Manchester would be much wetter than they are now. A high-water table is critical for blanket bog habitat to become active, and grow peat rather than losing it, this helps reduce fire risk and sequester more carbon.

At present only 10% of upland moorlands, over deep peat, are thought to be in good condition, 66% needs improvement and 24% is in poor condition[29]. As a result, peat soils in our uplands are emitting an estimated 60,000 tonnes CO_2 equivalent per year, rather than locking more carbon away.

Concerted efforts are being made to restore blanket bog and a diverse mosaic of other upland habitats (including upland clough and oak woodlands), not only as space for nature but also to reduce carbon emissions, improve the quality of our water supply and reduce flood risk downstream. However, the scale of the challenge is significant and there is potential to scale up efforts to deliver better habitats for nature and vital public services for people.

Our upland habitats are particularly vulnerable to climate change and more extreme weather. With our changing climate, increased risk of wildfire will put these habitats and species, like mountain hare, under more pressure.

Successes

Some upland areas were damaged by acidification during the industrial revolution. Efforts to restore them can provide spaces for nature and people to enjoy, as well as storing more carbon and water to reduce flood risk downstream.

- At **Dovestone Reservoir**, conservation work has been carried out to make the bog wetter again, blocking the gullies and revegetating the bare peat by planting sphagnum mosses with the help of local volunteers. This prevents peat being washed out into our drinking water, helps lock in carbon to tackle climate change, and also provides habitat for upland birds.

- On **Saddleworth Moor,** conservation efforts have helped bring degraded moorlands back to life by blocking gullies and re-vegetating bare peat to benefit wildlife and reduce flood risk in urban areas. Over 2,000 dams have been installed to stabilise the peat and help establish growing conditions for moorland plants including heather, bilberry and cross leaved heath and sphagnum.

- On **Crompton**, 4,000 trees have been planted covering an area of 2 hectares and nearly 4,000 sphagnum plugs which will hold water back on the moor and help reduce flooding.

- On **Holcombe Moor**, local communities, upland farmers, environmental charities and universities are working together on innovative methods of peatland restoration. 3,500 bunds have been constructed, rewetting the deep peat plateau and creating favourable conditions to plant over 500,000 sphagnum plants. Benefits including increasing carbon and water storage.

3.1.8. Grasslands and farmland

Overview

Grasslands and farmland, including pasture for livestock and croplands, cover almost 30% of the total land in the city-region. The vast majority of this land has been altered, or modified, for other uses and could support more wildlife. Historically our agricultural land has been largely for livestock rearing and arable uses. Livestock farming still dominates the northern and eastern edges of Greater Manchester and maintains large areas of more pasture and upland acid grassland. Arable areas and croplands are largely found along the western edges of the city-region.

There are now very few remaining species-rich semi-natural grasslands (such as neutral grasslands and marshy grassland) in Greater Manchester. Species rich grasslands[30] have been less altered through reseeding, application of fertiliser or drainage and tend to have more flowers and wildlife. Those that do remain are often restricted to nature reserves, designated sites, and are found in areas like road verges, recreational sites, churchyards, and urban brownfield sites, often forming mosaics with other habitats. Despite this, those species-rich grasslands that do remain, such as former flood meadows along the Mersey, still support rare species such as orchids, wildflowers and fungi.

State

Our semi-natural grassland habitats and lowland heaths are considered some of the most threatened habitats in Greater Manchester. Despite their increasing scarcity, these remaining semi-natural grasslands are of high ecological value, hosting a variety of plant and animal species. They are often highly fragmented, making it difficult for species to move between them. Pressures from urbanisation, land-use or land management change, can also threaten these remaining habitats.

Most of our agricultural grasslands have been modified for livestock farming or crop production due to national policy and financial incentives over the last 70 years. As a result, these spaces have the potential to support more wildlife than they currently do. Greater Manchester is also known to be a historically 'cold spot' for the uptake of agricultural environment grant schemes – which pay farmers for wildlife-friendly actions. Greater uptake of these schemes could help reward farmers for more wildlife-friendly food-production.

Successes

- The **South Pennines Grasslands Project**, covering Greater Manchester and Lancashire, created 50ha of new species-rich grassland and brought 200ha into positive management.

- At the **Roch Valley**, Rochdale Council and Groundwork Greater Manchester have established 8 ha of new lowland hay meadows and new native hedgerows.

- Our Local Authorities are increasingly championing '**No Mow May'**, leaving more areas of public grasslands as urban meadows. Rochdale has created ten annual wildflower verges to attract bees. Trafford Council has introduced better habitats for insects and pollinators by creating wildlife corridors, meadows and beds in seven parks. Stockport Council has introduced differential mowing in several urban sites to increase areas for nature.

3.2. Pressures on nature

Across the city-region there are several major pressures on our natural environment.

3.2.1 Urbanisation

Land in Greater Manchester is limited and is under increasing demand to meet the variety of needs of those that live and work here. These include: to provide new affordable homes and commercial space, transport and utilities, to support energy generation, for food growing and recreation. If these activities are not carefully planned and designed with nature at their heart, they will act to further restrict space for nature. Without careful planning and decision making our remaining natural spaces will progressively become smaller and more isolated, preventing nature from adapting to changes in our climate. Making space for nature alongside other uses of our land is critical to reducing the pressure on wildlife.

3.2.2. Pollution and litter

Pollution from urban areas and agricultural land, including runoff from roads and other forms of contamination such as micro and macro plastics and phosphates, is a key problem for our water quality. An extensive network of combined sewer overflows also impacts our water quality. The 793 overflows in the city-region spilt an estimated 21,391 times in 2022. Poor water quality in turn impacts aquatic wildlife and can affect public health. Providing more space for water, through features like raingardens, can help capture and filter polluted water. Greater Manchester also has a significant legacy of land contamination and has large areas of land used as waste tips and issues around littering in our green spaces. Air and light pollution also have an adverse effect on sensitive wildlife, particularly nocturnal wildlife, such as bats and badgers.

3.2.3. Agricultural intensification

Food production is a key part of rural identity. As stewards of more than 30% of Greater Manchester's land, the agricultural sector can have a significant influence over nature recovery across the city region. Agricultural policies, subsidies and incentives, as well as low profit margins, have encouraged the intensification of agriculture, reducing space for wildlife across many of our remaining agricultural areas. Changes to these policies and the introduction of new incentives are providing new opportunities for farmers to further enhance their land for nature.

3.2.4. Climate change

Rising temperatures will impact sensitive habitats and increase the vulnerability of species, whilst more unpredictable weather and increased wildfire risk may force wildlife to move. Our upland species, adapted to cool conditions, are particularly at risk[31]. Climate change may also reduce the ability of our natural environment to provide us with benefits such as carbon storage - by reducing the area and sustainability of peat-forming bog systems. Across Greater Manchester, increased drought could also impact calcareous grasslands, especially on thin soils and may result in rivers, streams and ponds becoming more seasonal and at risk of drying up. With changing temperatures, we will also see the increasing arrival of new species.

3.2.5. Diseases and high-impact invasive species

High-impact invasive species, such as himalayan balsam, japanese knotweed and giant hogweed, and disease, such as ash dieback, are found across Greater Manchester[32] and impact upon the quality of our remaining habitats and their ability to support wildlife.

4. Vision and targets: Where do we need to get to?

Despite some progress over past decades, when looked at as a network we know that our best remaining spaces for nature are now often highly isolated and fragmented. This means that wildlife currently struggles to move between these sites, as there are often large distances between them. Many sites are also small and with habitat loss the area remaining is not enough to reverse the decline of local species. To enable nature to recover our remaining spaces for nature need to be not only bigger but crucially more joined up, allowing wildlife to move between them.

Given the continued pressures facing nature, we need to plan proactively to ensure that the city-region has resilient spaces for wildlife and people to thrive. This will help nature to bounce back and at the same time providing spaces that improve our health and well-being, reduce flood risk, improve water quality and better adapt the city-region to climate change. One of the best ways we can do this is by not just expanding those areas we have for nature but also by creating more connections between these often isolated and fragmented sites. As Greater Manchester grows, we can also grow a better network for nature, in and around our homes, offices and businesses.

The Lawton Review

This approach echoes that set out in the 2010 Lawton Review, called 'Making Space for Nature'[33]. The Lawton Review concluded that England's wildlife sites, despite their diversity, did not comprise a coherent and resilient ecological network, let alone one capable of coping with the challenge of climate change and other pressures. To address this, the Lawton Review called for the creation of a healthy ecological network operating across the landscape as a whole, not in isolated sites. To do this, Lawton says, we need to make our network of sites bigger, better and more joined up.

This means:

- Protecting and enhancing what we have, with better management
- Increasing the size of wildlife sites
- Enhancing connection by creating new wildlife corridors or stepping stones
- Creating new sites
- Reducing pressure on wildlife by improving the wider environment

The recommendations of the Lawton Review are now being taken forward across the UK, and elsewhere in the world. It is integral to the Environment Act and has shaped current national policy government ambitions for a national nature recovery network, which this strategy will form part of.

4.1. Vision

To halt, and in time, reverse local biodiversity loss and to help nature recover, we need everyone to work together and play their part. Nature needs space to be able to recover – this means enhancing and protecting our best nature rich sites and creating and restoring sites where there is opportunity. By reconnecting these sites, we can all create a network for nature and, at the same time, green spaces and recreational routes for people to enjoy.

Our collective vision for nature recovery in Greater Manchester is to work together to deliver a resilient network for nature across the city-region, connecting and enhancing wild spaces so that people and nature can thrive.

What is a nature recovery network?

Nature recovery is about enhancing and protecting our best nature rich sites and creating and restoring sites where there is opportunity. Across the city-region many of our best remaining sites

for nature are fragmented and isolated. By connecting these sites, we can all work towards corridors for nature and new green recreational routes for people to enjoy – a Nature Network.

4.2. Aims

This vision can only be achieved by working together across our city-region, with communities, developers, local authorities, businesses, charities and institutions all playing a part. To deliver on this vision we need Greater Manchester to be a place where we are all:

- **Enhance and protect:** Safeguarding, enhancing and restoring wildlife-rich spaces
- **Create and connect:** Creating more wildlife-rich resilient spaces, where they will expand and connect spaces for wildlife and people
- **Build resilience:** Managing and reducing pressures on our environment and waterways, and maximising nature's role in adapting the city-region to climate change
- **Act together:** Working together to take action for nature and embed space for nature and people to thrive across all our communities
- **Improve access:** Improving local access to nature and ensure there are more opportunities to enjoy nature, in those areas which need it the most
- **Engage and value:** Improving engagement with nature and better understanding of its value in our lives

4.3. Targets

To track progress towards our vision and aims, we need to set clear and monitorable targets.

Working with partners we have selected some headline targets for our key aims, to drive forward nature recovery over the decade and be monitored regularly. Action beyond these targets is crucial but these targets will be used to focus action and report regularly and accurately on progress.

By 2035:

Protect:	**Enhance**:
To increase the amount of land designated for nature from 11% to 15% of the city-region	To bring 50% of our Local Wildlife Sites into active management for nature conservation

Create:	**Connect:**
To work towards the restoration and creation of 1,800ha of wildlife-rich land To expand our tree canopy cover from 16.5% to 18.5%	To target the delivery of new wildlife-rich land and tree planting within the Nature Network

Improve access:

To increase the number of residents living within 15mins of a decent green space

These are the headline targets for the strategy – a list of all the targets and monitoring framework for the strategy will be published in 2025.

5. Nature Network: Where is best for nature?

5.1. A spatial strategy for nature's recovery

To drive nature recovery, we need to set out the best places to act for nature across Greater Manchester. A key purpose of this Local Nature Recovery Strategy is to identify locations to create or improve habitats, where it is most likely to provide the greatest benefit for nature, communities and the wider environment. This is to enable effort and resource to be targeted where it will have greatest impact and to encourage more coordination in habitat creation and improvement.

This section outlines a long-term spatial vision for nature's recovery, showing those areas already important for nature and areas where there are opportunities to work towards a network for nature across Greater Manchester – one that connects with areas beyond our boundaries as part of National Nature Recovery Network. Working towards a national network for nature is central to the government's goal for improving nature by joining up our remaining natural spaces across England [as outlined in the Environment Act] and achieving the biodiversity duty.

The Nature Network is based on established evidence and thinking on nature recovery in the UK, in particular the Lawton principles of "bigger, better, more and joined". This involves recognising our best remaining wildlife sites as the building blocks for our Nature Network and taking action to:

1.   Improve their quality by better habitat management.

2.   Increase their size.

3.   Enhance the connections between them – through corridors or stepping stones.

4.   Create new sites altogether.

5.   Reduce pressures on nature by improving the wider environment.

The Nature Network aims to have a positive influence on the growth and development of the city-region, targeting efforts by charities and partnership and helping planners and developers to understand and contribute towards nature recovery, alongside the delivery of new neighbourhoods, offices and commercial spaces.

Action outside of this Nature Network is just as crucially important to reduce pressures on nature by creating a more wildlife-friendly city region. Alongside the Nature Network action can take place anywhere across the city region to help nature recovery. There are many opportunities to do this in every community and everyone can play a part in delivering action.

You can read more about how our Nature Network was developed in appendix 2.

5.2.   The Greater Manchester Nature Network

5.2.1. What makes up the Greater Manchester Nature Network?

To put these principles into practice across Greater Manchester, our Nature Network is made up of our core local nature sites and opportunity areas for nature recovery, which are described in more detail below[34]. Our Nature Network shows our best areas to boost ecological connectivity – where action for nature will have the biggest impact and where funding for nature recovery should be concentrated. Targeting action within the Nature Network can help build resilient spaces for wildlife and deliver new better connected green spaces for people.

Core local nature sites:

What are they? These are our best remaining wildlife sites across the city-region (our "areas of particular importance for biodiversity"). They are sites that are already designated to some degree for their value for nature. For Greater Manchester they include nationally designated sites for their value to nature, including: Sites of Special Scientific Interest (SSSIs); Special Protected Areas (SPAs), Special Areas of Conservation (SACs), National Nature Reserves (NNRS), Local Nature Reserves (LNRs), locally designated Sites of Biological Importance (SBIs), Local Wildlife Sites (LWSs) and irreplaceable habitats[20].

What we need to do? These sites cover 11% of Greater Manchester and are fragmented, poorly connected and often not in as good condition as they could be. We need to improve their condition through better management. At the same time, we need to identify opportunities to expand and better connect these sites.

GM Core local nature sites
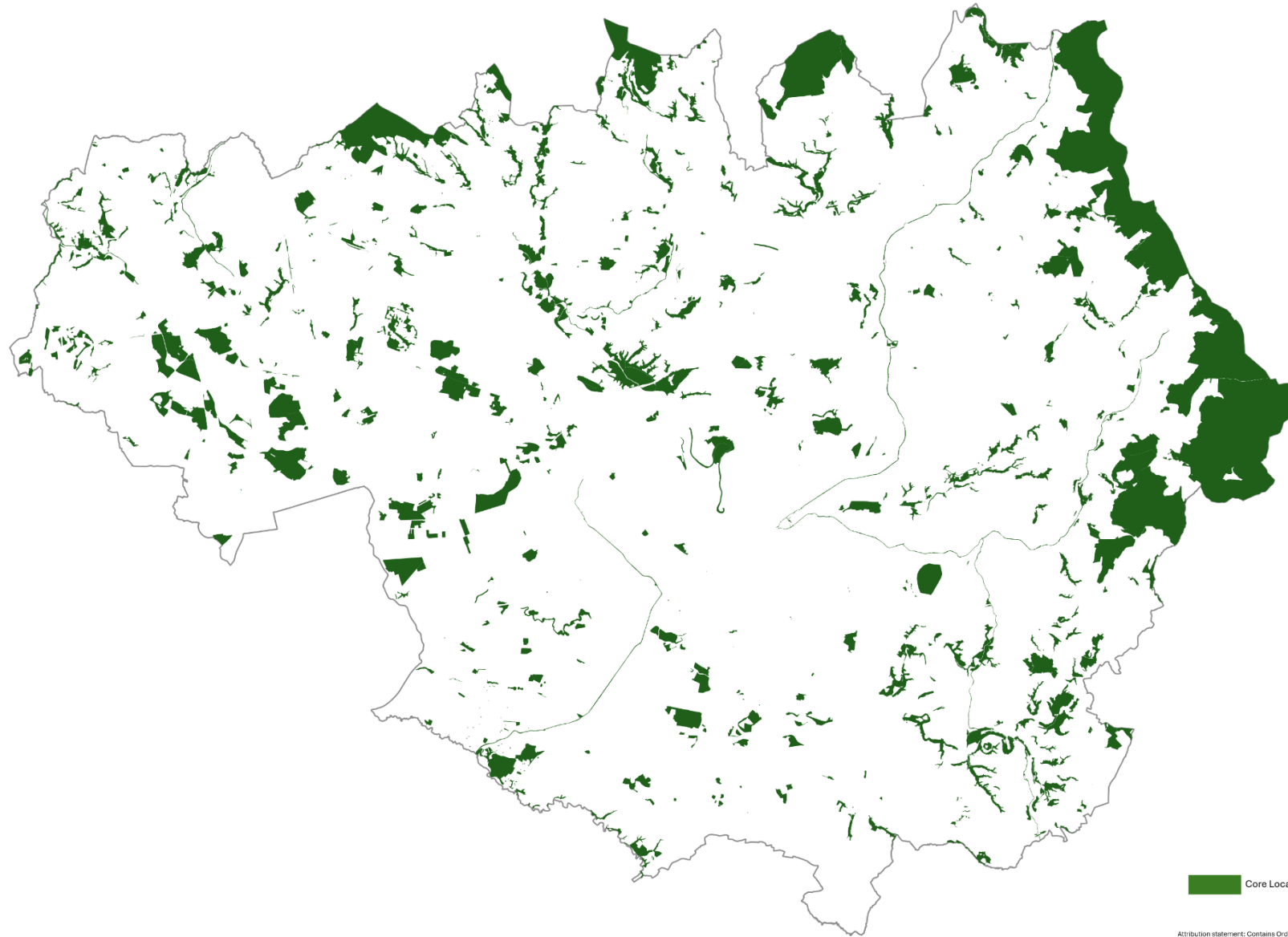
Core Local Nature Recovery Sites
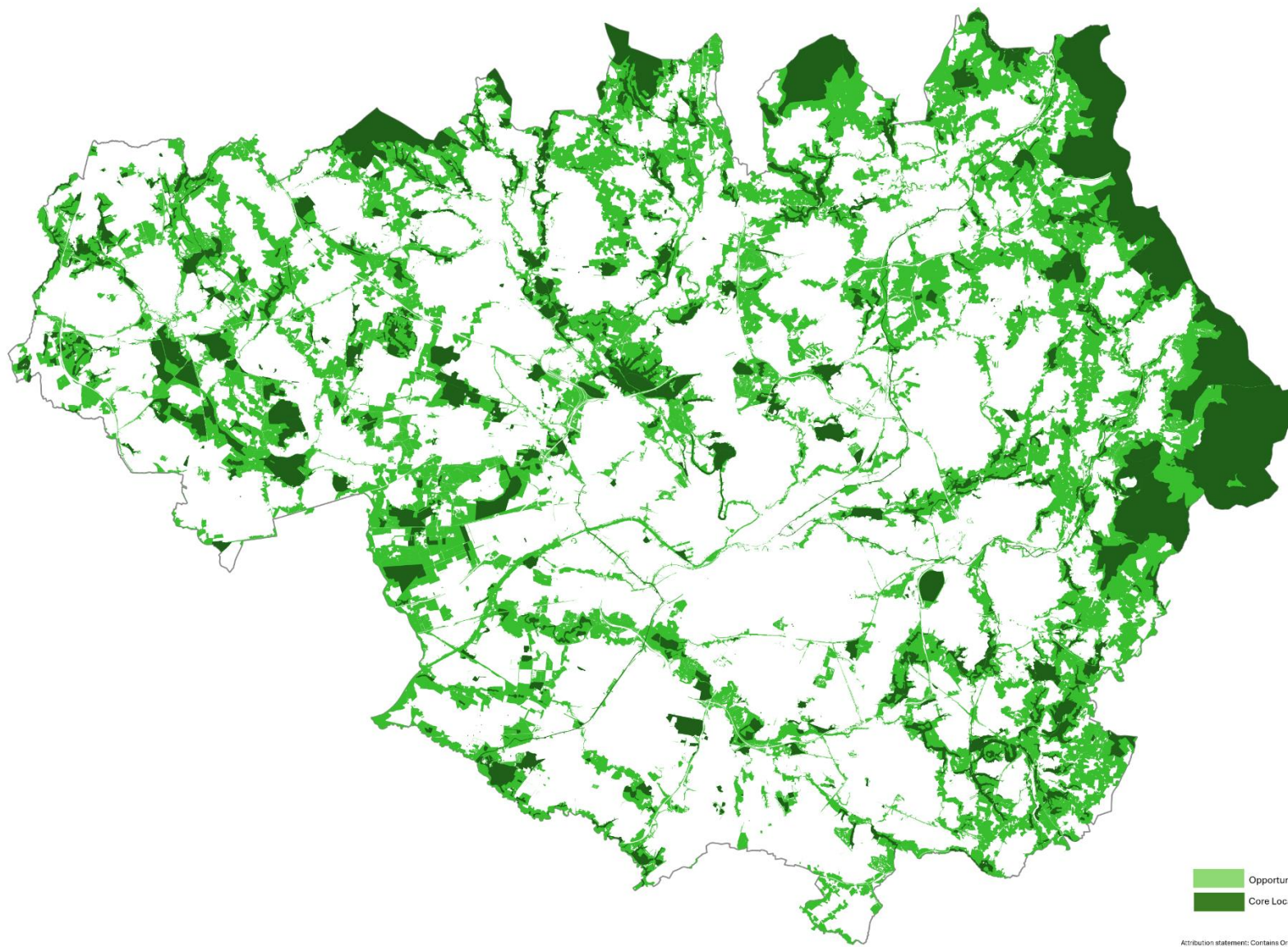
Nature Recovery Opportunity Areas:

What are they? These are areas where action to enhance, restore or create different types of habitats (i.e. woodlands, grasslands, moorlands, waterbodies and wetlands) would expand and better connect our core local nature sites (our "areas which could become of particular importance for biodiversity"). These are our opportunity areas for nature recovery, where more ambitious action for nature should be prioritised and are where we can have the greatest impact by planning, coordinating and focusing efforts and resources. Our opportunity areas set out specific mapped locations that are potentially suitable for carrying out different habitat actions to help achieve the priorities set out in this strategy. Only certain actions have been mapped within the Nature Network (see appendix 2), as many actions are not geographically specific and are possible and beneficial across much of the city region.

What we need to do? These are areas where the creation and restoration of habitat could have the greatest impact on nature's recovery. They are spaces that are often used and managed in a range of different ways and for different purposes (e.g. for food production or recreation). They are also strategically important for the Nature Network, and we need to deliver for nature alongside these other land uses. These areas are not designated or protected, nor are they barriers to development. Development within these opportunity areas (or where it could have an impact on these areas) should seek to support and deliver on the priorities set out for these areas and help to work towards the wider ambitions of the Nature Network. Some of these opportunity areas might eventually, with landowner permission and if conditions are met, become core local nature recovery areas.

For nature to recover, action is also still hugely important outside of the Nature Network, to make our wider urban and rural landscapes more wildlife friendly and to boost access to nature across the city-region.

**GM Nature Recovery Opportunity Areas**

Opportunity areas for nature recovery

Core Local Nature Recovery Sites

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Across the opportunity areas different locations have been mapped that are potentially suitable for carrying out different habitat actions to help achieve the priorities set out in this strategy

The image below shows an example of some of detail available within the nature recovery opportunity maps for different mapped actions, using some of our woodland actions as an example. Each of the different colours shown on image denote a different mapped action, such as action to 'safeguard, enhance and celebrate ancient, long-established and designated woodlands, veteran and notable trees' or locations to 'target native woodland, hedgerow, and scrub creation, where it will connect existing woodlands across urban and rural landscapes'.
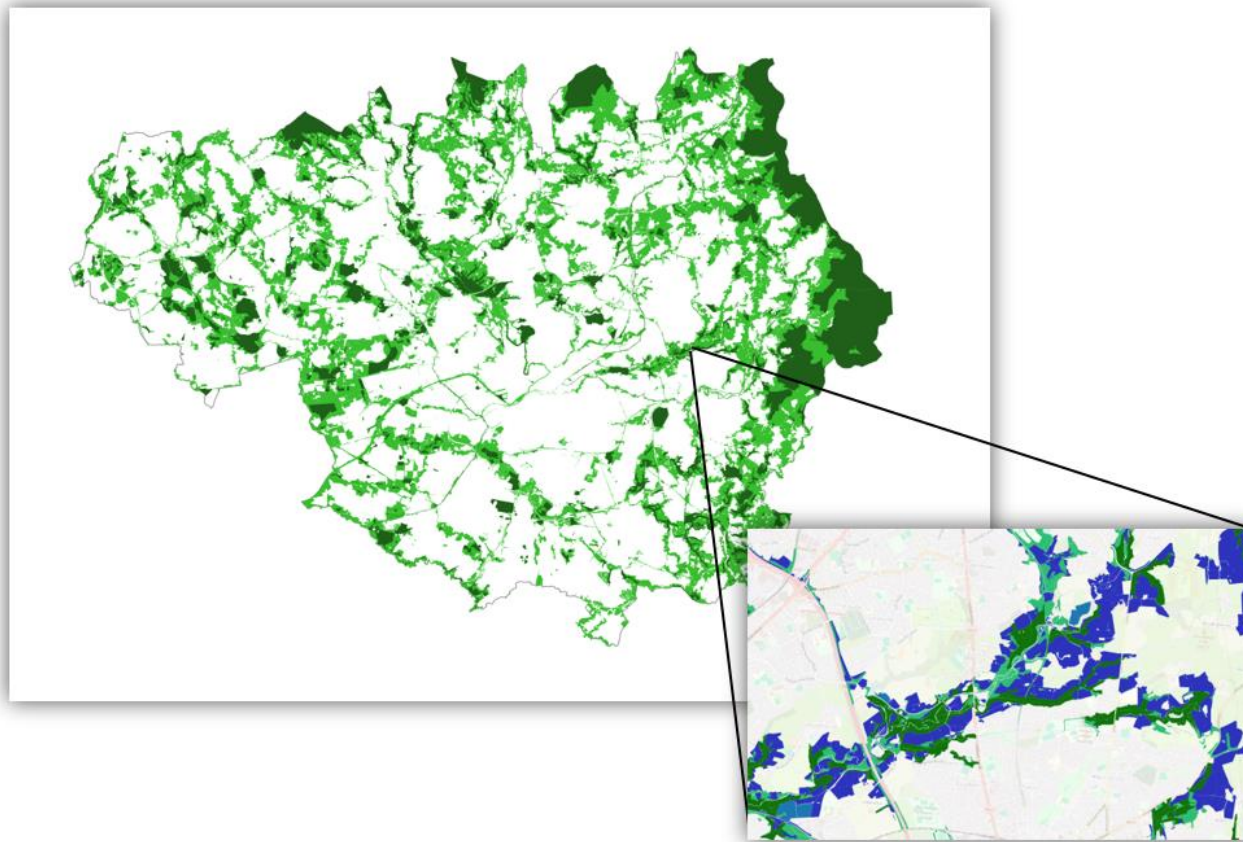
5.2.2. Taking action within the Nature Network

To help guide deliver of the Nature Network we have identified and mapped where action to enhance, restore or create different types of habitats (for example woodlands, grasslands, moorlands, waterbodies and wetlands), might be possible and most beneficial.

Understanding and using our opportunity areas

➢ Our opportunity areas set out mapped locations that are potentially suitable for carrying out different habitat actions to help achieve the priorities set out in this strategy. For example, areas have been identified for woodland habitat creation and species-rich grassland habitat enhancement. Targeting action in this way is crucial for effort and resources to be focused where they will have the greatest impact and to encourage more coordinated action.

➢ When using our opportunity areas, it is still important to follow our overarching principles of habitat enhancement, creation and restoration (set out in section 6.1).

➢ As space is limited in the city-region, many of our opportunity areas have the potential for the delivery of actions for multiple habitat types. This means that opportunity areas for the different habitats (i.e. woodlands, wetlands and grasslands) often overlap. In locations that are good for multiple habitats, follow our habitat principles (section 6.1); undertake local site assessment; involve local ecological experts, communities and landowners; consider patchworks (or mosaics) of different habitats rather than pursuing one to the detriment of another.

➢ For nature to recover, action is also still hugely important outside of the Nature Network (see section 5.3), to make our wider urban and rural landscapes more wildlife friendly. Only certain actions have been mapped within the Nature Network – this is because many actions are not geographically specific, being possible and just as beneficial across much of the city region[35].

➢ Areas mapped for action within the Nature Network, including both the opportunity areas and the core local nature sites, are particularly suitable for the delivery of offsite biodiversity net gain and are classed as strategically significant in terms of the Defra Biodiversity Metric. For the purposes of the Statutory Guidance on Local Nature Recovery Strategies they form the Local Habitat Map for the Greater Manchester Local Nature Recovery Strategy.

5.2.3. Permissions, consultation and licences

➢ The opportunity areas mapped within the Nature Network do not confer permission to create or restore habitat without following appropriate existing decision-making frameworks, consultation, permissions, permits or licenses, or to in any way circumvent standard pre-existing procedures or good practice around habitat creation, restoration or enhancement.

➢ The opportunity areas mapped within the Nature Network are not binding for the landowner or land manager. They do not require the owners and managers of the land identified to make any changes.

➢ The Nature Network is not a barrier to development. The network highlights those areas where we all need to be more ambitious for nature and take steps to connect spaces for nature to deliver resilience for our wildlife. Development within these opportunity areas (or where it could have an impact on these areas) should seek to support and deliver on the priorities set out for these areas and help to work towards the wider ambitions of the Nature Network.

5.2.4. Planning status

The Environment Act sets out that local planning authorities and decision-makers must have regard to this LNRS in their policies, including those in their local plans. The Levelling up and Regeneration Act requires all relevant plan-makers and tiers of planning to take account of LNRS. All of this is designed to support development plans and provide closer alignment with the planning system and environmental outcomes.

Opportunity areas are not designated or protected, nor are they barriers to development. Development within these opportunity areas (or where it could have an impact on these areas) should seek to support and deliver on the priorities set out for these areas and help to work towards the wider ambitions of the Nature Network.

Areas mapped for action within the Nature Network are key target areas for the delivery of offsite biodiversity net gain sites across Greater Manchester. They are classed as strategically significant in terms of the Defra Biodiversity Metric.

5.3. Beyond the Nature Network

The Nature Network indicates where habitat enhancement, creation or restoration could be particularly beneficial or possible. However, that does not mean that taking this action should not be pursued in many other locations across Greater Manchester.

Action can take place anywhere across the city region to help realise the priorities in this strategy and help work towards nature recovery. There are many opportunities to do this in every community.

Everyone can play a part in delivering action whether it is via the creation of new nature reserves or pocket parks, wildlife-friendly gardening or the development of an area.

The wider environment:

What is it? These are areas that are not mapped as part of the Nature Network. However, this does not mean action there is not just as important. In the areas that are not mapped, action is still crucial for local people and wildlife and can make a huge contribution towards delivering a more sustainable and wildlife-friendly city region.

What we need to do? In the wider environment, we can still take action by making these areas more wildlife friendly and nature rich. Even small areas like gardens and streets can be made more wildlife friendly through planting street trees, creating ponds and or new community growing spaces.

6. Priorities and Actions: What do we need to do?

The priorities set out in this section are the long-term end results of the strategy that we all need to work towards. Delivering on these priorities will help us to achieve the overarching vision and aims for local nature recovery.

Each priority is an outcome (i.e. what is to be achieved). Each priority is accompanied by several practical actions or measures – these are the activities that if taken would make a positive contribution towards delivering on this priority. Each priority may have several practical actions linked to it – working towards one or a number of these actions can help achieve a priority.

To help cover the different types of places and spaces across Greater Manchester, we have divided priorities by broad habitat types and priority species. We have also included priorities for the urban buildings and urban green spaces which make up nearly 50% of the city region[36].

Our habitat priorities will be of huge benefit to many species, as well as delivering wider social and economic benefits. Some species, or groups of species, are particularly at risk locally and need bespoke action beyond wider habitat priorities set out in this strategy. It is these particularly vulnerable local species that require focused attention and have been selected as priority species for this Local Nature Recovery Strategy in section 6.2.

For some priorities, we have included further technical details in appendix 7 that may be more informative for some users of this strategy.

6.1. Habitat priorities and actions

Principles for habitat enhancement, restoration and creation

Across all our habitat priorities there are several common principles that should be followed. These principles apply to all priorities and actions.

Right habitat in the right place	Ensure that habitat restoration and creation proposals occupy suitable sites and are not to the detriment of existing or other quality habitats, by following existing principles (example: 'right tree, right place, right reason'). Ultimately, this requires using this strategy as a starting point and then undertaking site-specific assessment for what works best on the land.
Follow best practice and standards	Ensure that you use and comply with legal requirements, standards, guidance, decision frameworks and best practice, as well as any permits and licences when creating and restoring habitats (example: 'Decision Support Framework for Peatland Protection').
Think long term	Plan proactively for long term habitat management, maintenance and funding.
Aim high	When creating or restoring habitats work towards achieving good condition, well-functioning habitats that support a greater abundance of species.
Build resilience	Work proactively to build resilience against climate change, future pests and diseases.
Maximise multiple benefits	Deliver wider benefits wherever possible, such as improving health and wellbeing, storing carbon or reducing flood risk.
Involve residents and communities	Work collaboratively from the outset with local residents, communities, partnerships and business towards nature recovery.
Improve access	Support and work toward better access for residents and communities, wherever possible and appropriate.
Monitor success	Monitoring or tracking progress is crucial to understand success of efforts, this can be aided by involving communities and residents.
Support landowners and manager	Support, and work in partnership with, landowner and managers, for example on the uptake of agricultural environment schemes.

6.1.1. Urban green spaces and buildings

Opportunity

There are huge opportunities to make the urban areas where we live and work greener and more wildlife friendly. Creating space for nature has knock-on benefits in our everyday lives, improving our health and wellbeing, as well as helping to adapt the city region to climate change. Our urban green spaces already provide vital refuges for wildlife and spaces for people to relax. These spaces have significant potential to become more nature-rich and at the same time better adapted to climate change.

Over recent years we have seen some inspiring examples of the greening of disused spaces for nature and people, such as Castlefield Viaduct in Manchester, Elizabeth Park in Bolton and Jubilee Park in Oldham, helping us to better meet national green space standards. There are many more unused and unloved spaces that could be converted to new community gardens, allotments or pocket parks through community-led action, creating healthier urban spaces for our future. Installing new green spaces in our streets and public spaces will help tackle inequalities in access to green space and better adapt the city-region to climate change. As we create new infrastructure and regenerate different parts of the city-region there is potential at the same time to better connect our existing green spaces using green, resilient, active travel routes.

Actions at any scale, whether it's a street tree, swift box, community garden or a new pocket park, can make a difference for both nature and local people. Supporting and involving communities is vital to ensure the success of any newly enhanced or created green spaces.

Priorities

➢ More schools, hospitals, public, commercial and community buildings have nature-rich accessible spaces, better for wildlife and people

➢ Better parks and open spaces, enhanced and managed to be nature-rich and climate-adapted, with a range of habitats for wildlife supported by local communities

➢ More streets, roads, pedestrian and cycle routes are greener and tree-lined, acting as corridors for nature and adapted to climate change

➢ Town and city regeneration and development driving new and enhanced nature-rich green space creation, building more biodiverse, accessible and climate-adapted places

➢ More nature-friendly and climate-adapted gardens, balconies, yards and driveways

➢ More community-led creation of new nature-rich green spaces and increased opportunities for local food growing

These priorities cover a range of urban habitats and land including parks, gardens, playing fields and spaces, sports groups, urban trees, allotments, incidental urban green spaces like road verges and other urban green spaces including cemeteries, golf courses and civic spaces, that can all form

valuable space for wildlife across the city region. Many of rivers, canals and waterbodies pass through urban areas, these are covered by separate priorities on rivers, waterbodies and canals.

Wider benefits

These priorities will have benefits beyond just helping nature recover including:

- Improving our health and wellbeing
- More opportunities for social interaction and community building
- Reducing health inequalities and creating healthy resilient places to live and work
- Encouraging more visitors and supporting businesses
- Better managing extreme weather events including heavier intense rainfall
- Increasing property values and providing quality places
- Reducing air pollution

Species supported

These priorities will benefit many urban species including:

- Hedgehog
- Peregrine falcon
- Wild Cherry
- Robin
- Common Pipistrelle Bat
- Starling
- Blue Tit
- Fox

Actions

Priority	*Practical actions*
More schools, hospitals, public, commercial and community buildings have nature-rich accessible spaces, better for wildlife and people	• Enhance and increase the diversity of existing green spaces and create dedicated wilder set-aside areas for nature. • Create more nature-friendly multiple-use spaces, such as wellbeing gardens, community grow spaces or orchards, that provide habitats for urban species and benefit people. • Support species by installing homes for wildlife and reducing barriers to species movements across and between green spaces. • Create or allow more space for water and install sustainable drainage, providing water for wildlife and adaptation to climate change. • Support and involve local communities in the creation and maintenance of spaces for nature.
Better parks and open spaces, enhanced and managed to be nature-rich and climate-adapted, with a range of habitats for wildlife supported by local communities	• Enhance and increase the diversity of existing green spaces and create dedicated wilder set-aside areas for nature. • Create and maintain longer grasses and wildflower strips. • Support species by installing homes for wildlife and reducing barriers to species movements across and between green spaces. • Create or allow more space for water and install sustainable drainage, providing water for wildlife and adaptation to climate change. • Create more nature-friendly multi-use spaces, with improved access for all, such as pocket parks and community grow spaces that benefit urban species and people. • Support and involve local communities in the creation and maintenance of spaces for nature and improve public awareness of the benefits of nature recovery.
More streets, roads, pedestrian and cycle routes are greener and tree-lined, acting as corridors for nature and climate-adapted	• Enhance and increase the diversity of streets and highways verges, with longer grasses, native wildflower strips and meadows and more dedicated spaces for nature. • Create greener spaces, and more connected habitats, along existing and new streets, highways and cycleways (our Bee Network). • Create or allow more space for water and install sustainable drainage along our existing and new streets, highways and cycle paths (our Bee Network). • Reduce key barriers to wildlife movement across our major highways • Support and encourage more community involvement and more community adoption of unused green spaces

Town and city regeneration and development driving new and enhanced nature-rich greenspace creation, building more biodiverse, accessible and climate-adapted places	• Safeguard and enhance important local habitats and green spaces. • Restore, expand and connect existing local habitats and green spaces. • Create dedicated new multifunctional and inclusive green spaces as part of new development and regeneration, to meet the national Urban Greening Factors of 0.3 on commercial and 0.4 on residential development or the local authority set Urban Greening Factor[37]. • Support species by installing homes for wildlife on buildings and reducing barriers to species movements across and between green spaces. • Create dedicated space for water and wetter habitats by installing sustainable drainage and providing sufficient space for river corridors. • Support and involve communities in the design and creation of new or regenerated green spaces.
More nature-friendly and climate-adapted gardens, balconies, yards and driveways	• Plant gardens, yards and balconies that support local wildlife, using pollinator-friendly planting or planting size appropriate shrubs or trees • Support species by installing homes for wildlife and reduce barriers to species movements across and between gardens. • Manage spaces in a wildlife-friendly way by leaving areas of longer grass for wildlife in gardens or reduce mowing, reducing use of pesticides and herbicides. • Create more space for water in gardens and encourage more sustainable water use. • Boost awareness of the need for wildlife friendly gardening.
More community-led creation of new nature-rich green spaces and increased opportunities for local food growing	• Encourage or enable the creation of new community-led green spaces in our least green areas. • Enable more opportunities for community-led action and community adoption of local green spaces. • Support more opportunities for local food growing and the 'right to grow'. • Boost awareness and skills in nature recovery and connection to nature.

6.1.2. Woodlands, trees, scrub and hedgerows

Opportunities

Woodlands, trees and hedgerows across Greater Manchester could better support biodiversity. There are opportunities to enhance and better manage existing woodlands, orchards, hedgerows, veteran and ancient trees, so they are more resilient and in better condition. Well-managed, healthier, woodlands can deliver more benefits to people and better deal with pests, disease, invasive species and climate change.

The remaining woodlands across Greater Manchester could also be better connected. Many existing woodlands and trees are fragmented; reconnecting these by creating corridors or stepping stone of new woodlands, trees, hedgerows or scrub, between them, would benefit the movement of woodland wildlife and at the same time create new green routes for people. More trees and woodlands along our river valleys are a particularly crucial way we could enhance connectivity for woodland species. Healthy well-managed and connected hedgerows can also play a key role as wildlife corridors. In rural areas, more trees across farmed land, whether through agroforestry, low density in-field planting or more small woodlands, could help make farmed areas better for woodland species, and at the same time improve animal welfare and support climate change mitigation and adaptation.

Our existing woodlands could also be more accessible, with better paths, signs and less high-impact invasive species, enabling more people to engage with nature nearby to where they live. Where more street trees can be introduced these can play a significant role in greening some of our dense urban neighbourhoods and at the same time improving air quality and regulating climate change by helping to better manage rainwater[38]. Community orchards can provide great habitats for local wildlife as well as multiuse, accessible, communal spaces for growing local food.

Priorities

➢   More existing woodlands, hedgerows, trees and scrub are safeguarded, restored and resilient

➢   Bigger and better-connected woodlands, trees and scrub, integrated with patchworks of other habitats

➢   New urban street trees, urban community orchards and woodlands, improving access to nature and climate adaptation

➢   More native hedgerows created and maintained, linking together spaces for wildlife

➢   More varied trees, scrub, parkland and woodland habitats incorporated into our farmlands and more productive woodlands delivering nature recovery.

These priorities cover trees, woodlands and forests, hedgerows, scrub and parkland, wood pasture and agroforestry.

Wider benefits

Our trees, woodlands, hedgerow and scrub play a particularly critical role in not just providing habitat, but also:

•   Storing carbon

- Managing rainwater
- Regulating temperatures
- Reducing air and water pollution
- Improving our health and wellbeing
- Providing local sources of food and timber
- Improving livestock welfare by providing shelter and shade

Species supported

Delivering on these priorities will benefit many woodland species including:

- Bluebell
- Badger
- Tawny Owl
- Woodpecker
- Wood anemone
- Hawthorn
- Oak
- Birch
- Fly agaric

Actions

Priority	Actions
More existing woodlands, hedgerows, trees and scrub are safeguarded, restored and resilient	• Safeguard, enhance and celebrate ancient, long-established and designated woodlands, veteran and notable trees. • Enhance existing woodlands, scrub, and hedgerows and diversify, where appropriate, to increase resilience to pests, disease and climate change. • Promote better understanding of the value of woodland, scrub, trees, hedgerow, wood pasture and agroforestry habitats. • Encourage wildlife-friendly recreational use of woodlands.
Bigger and better-connected woodlands, trees and scrub, integrated with patchworks of other habitats	• Target native woodland and scrub creation where it will connect existing woodlands and scrub. • Expand existing woodland, scrub and other woodland fringe habitats. • Encourage the planting of trees, woodland and scrub where they will play a role in natural flood management, control of pollution or reduce soil erosion. • Ensure new woodlands are well managed to optimise biodiversity, accessibility and support a variety of locally appropriate woodland types, mixes and scrub. • Involve local communities in new tree planting, woodland and scrub creation.
New urban street trees, urban community orchards and woodlands, improving access to nature and adaptation to climate change	• Target urban tree and woodland planting where it will increase connectivity, climate adaptation and accessibility. • Create new and enhance old or traditional orchards and urban community woodlands, and work to ensure better access for communities. • Improve woodland path networks to diversify access for all users. • Support and engage diverse local groups with local woodlands, orchards and trees and encourage positive recreational use of woodlands.
More native hedgerows and scrub created and maintained, linking together spaces for wildlife	• Safeguard, manage, and restore the species diversity and structure of existing hedgerows. • Create more native hedgerows, particularly, where they act as corridors between existing trees and woodlands, or where they could intercept diffuse pollution or reduce soil erosion. • Encourage more mature trees in hedgerows

More varied trees, parkland, scrub and woodland habitats incorporated into our farmlands and more productive woodlands delivering nature recovery	• Enhance productive woodlands, parklands, scrub and orchards to maximise benefits to biodiversity alongside the production of timber, food and environmental benefits, such as flood risk reduction. • Encourage wildlife-friendly farm diversification opportunities which will enable more woodland, tree and hedgerow planting as well as agroforestry.

6.1.3. Rivers, canals and waterbodies

Opportunities

Improving our extensive network of rivers, canals, brooks, streams, reservoirs and ponds could help nature recover across the city-region. Our waterways and waterbodies are our remaining key nature corridors, enhancing and creating habitats along these corridors will play a crucial role in developing a local nature network. There are a range of opportunities to improve our rivers and waterbodies and better integrate them into our urban areas, to reduce flood risk and increase their value as community assets, but the scale of the challenge is significant.

Our waterbodies have been heavily modified to accommodate urban infrastructure, there are multiple barriers across them, many are also buried under roads or buildings. Uncovering or opening-up our rivers, naturalising them where feasible and removing high impact invasives would significantly help the movement of aquatic species, giving our rivers space to cope with climate change and at the same time deliver social benefits. The opening up of access to the River Medlock at Mayfield Park and the River Mersey at Stockport Interchange has provided new visitor attractions and spaces for leisure and recreation.

Improving our water quality is one of the biggest opportunities for nature recovery but also the most challenging. Multiple significant issues impact our water quality, including microplastics and litter, diffuse agricultural, urban and industrial pollution, as well as pollution from the many combined sewer overflows and landfills. Creating more spaces for water and better managing our rainwater, using natural flood management and sustainable drainage, can also play a big role in improving the quality of water entering our waterways and at the same time reducing the risk of flooding of homes and businesses.

Priorities

➢ More accessible and visible rivers, canals and waterbodies, with fewer barriers to species movement

➢ Cleaner, more natural and resilient rivers and waterbodies, that are well protected, maintained and biodiverse

➢ Increased habitat connectivity along our river corridors, canals and waterbodies

➢ More space for water and natural flood management in our communities and across catchments

➢ Cleaner canals, restored for nature and people

These priorities cover a range of different water bodies including rivers, streams, brooks, canals, lakes and reservoirs.

Wider benefits

Our rivers and waterbodies play a significant role in:

- Managing our rainwater and flood risk
- Opportunities for leisure and recreation
- Improving health and wellbeing
- Regulating temperatures
- Supplying our water

Species supported

Delivering on these priorities will benefit many aquatic and waterside species including:

- Otter
- Kingfisher
- Daubenton's bat
- Grey wagtail
- Marsh marigold
- Common frog
- Great crested grebe
- Hawker dragonflies
- Yellow flag iris
- Salmon

Actions

Priority	Practical actions
More accessible and visible rivers, canals, and waterbodies, with fewer barriers to species movement	- Unblock, improve, and extend rights of way along waterbodies and improve connections between these networks and our wider ecological corridors and recreational routes. - Expansion, creation or restoration of a variety of waterside habitats, including woodlands, wetlands and grasslands, where it will better connect up existing habitats along our rivers, supporting species movement. - Improve mobility for aquatic creatures by removing barriers, daylighting buried or covered waterbodies or installing by-pass structures, where feasible. - Celebrate rivers, canals, and waterbodies as part of the local identity and increase understanding of their value and management.

Cleaner, more natural and resilient rivers and waterbodies, that are well protected, maintained and biodiverse	• Make water channels more natural and complex, re-meander channels and reconnect to floodplains where feasible. • Enhance existing habitats within our waterbodies and adjacent grassland, wetland and woodland habitats to increase species richness. • Restore more natural riverbanks, in appropriate locations, and reduce invasive species. • Reduce point source pollution by identifying and tackling critical locations. • Reduce urban diffuse pollution using sustainable drainage and tackling litter and plastic pollution. • Encourage agricultural, industrial and land management practices that deliver water quality improvements.
Increased habitat connectivity along our river corridors, canals and waterbodies	• Expansion, creation or restoration of a variety of waterside habitats, including woodlands, wetlands and meadows, where they will better connect existing habitats. • Improve mobility for aquatic creatures by removing barriers, daylighting buried or covered waterbodies or installing by-pass structures, where feasible.
More space for water and natural flood management in our communities and across catchments	• Install more sustainable drainage schemes, natural flood management schemes and permeable surfaces, in areas that will benefit nature and are most at risk of surface water flooding. • Increase awareness and understanding of sustainable drainage and natural flood management schemes.
Cleaner canals, restored for nature and people	• Restoration and reconnection of habitats alongside canals, including targeted woodland creation and tree planting. • Softening manmade canal banks using natural materials and native plants. • Reduce litter and pollution in canals. • Encourage responsible recreational use of canals and maintain a good balance between more natural and diverse vegetation and keeping canals clear for recreation.

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6.1.4. Lowland mosslands and wetlands

__Opportunities__

Lowland mosslands and wetlands form a unique and diverse landscape of water, fen, wet grassland, wet woodland and lowland raised bog and other wetland habitats.

Much of our original lowland raised bog habitat has been converted to agriculture or lost to peat extraction or development. In some post-industrial sites we have regained wetlands or flashes and wet woodlands. Working to restore more degraded areas of former lowland raised bog fens, reedbeds, bogs, wet woodland and heath, and ponds, where viable, will not only provide new spaces for people to enjoy and habitats for wildlife, but also act to reduce carbon emissions in areas with underlying peat soils and store more water.

As well as restoring lost habitats, we can also work to better connect our remaining habitats, by expanding (or buffering) existing sites, creating stepping stones and new corridors of habitats between them. This will enable the easier movement of species across these landscapes. Alongside habitat creation, there are also crucial opportunities to boost the resilience of these important habitats, by creating where possible more compatible land use surrounding them. Reducing land drainage in these surrounding areas, through the adoption of wetter farming or paludiculture, is particularly important to help maintain water levels. In turn, storing more water in these areas should help reduce flood risk to nearby communities.

Often isolated and hard to reach, our lowland mosslands are thought to be much less visited than our woodlands, rivers and uplands. Enabling more people to visit and enjoy these spaces will help encourage their management and restoration. There are opportunities to improve access to them, with new cycle ways and paths allowing more people to engage with the cultural and natural heritage of these areas.

__Priorities__

➢ More lowland bogs, fens and other wetland habitats are restored and better managed for nature, able to store more water and emit less carbon

➢ Bigger mosslands and wetlands, with more habitat corridors and stepping stones reconnecting and expanding remaining habitats

➢ More of our historic wetlands and restorable peat are wet

➢ Reconnect local communities to mosslands and wetlands, and their heritage

➢ Better quality and better-connected ponds

These priorities cover a range of wetland habitats including lowland raise bog, fen, marsh, swamp, wet woodlands, wet grasslands and ponds.

__Wider benefits__

• Rainwater storage and flood resilience

- Reduced carbon emission and increased storage of carbon
- Recreation and leisure
- Improved water, soil and air quality

Species supported

Delivering on these priorities will benefit many mossland and wetland species including:

- Sphagnum
- Willow tit
- Lapwing
- Curlew
- Meadowsweet
- Bitten
- Manchester Argus
- Nightjar
- Water vole
- Great crested newt

Priority	Practical actions
More lowland bogs, fens and other wetland habitats are restored and better managed for nature, able to store more water and emit less carbon	- Enhance and manage existing and remnant areas of lowland raised bog, fens and other wetland habitats over the long term, to improve diversity. - Enhance patchworks of semi-natural habitats surrounding our remaining lowland raised bog, fens and other wetland habitats to improve resilience. - Reintroduce lost species across a range of mossland and wetland communities.
Bigger mosslands and wetlands, with more habitat corridors and stepping stones reconnecting and expanding remaining habitats	- Restore degraded wetland sites and areas of restorable deep peat, particularly where they will connect remaining wetland habitats. - Create more patchworks of wetland habitats and transitional habitats, particularly around remaining and restored lowland raised bog, fens and other wetland habitats. - Maintain and enhance restored sites and new corridors over the long term to maximise benefits for nature, carbon emissions reductions and water management.
More of our historic wetlands and restorable peat are wet	- Identify former wetland habitats and investigate their potential for restoration to contribute to climate resilience and nature recovery. - Reduce land drainage and positively manage the hydrology of land adjacent to lowland raised bog, fens and other sensitive wetland habitats, to increase climate resilience - Encourage the uptake of wetter farming and commercial paludiculture.
Reconnect local communities to mosslands and wetlands, and their heritage	- Enable more well-managed recreational access to mosslands and wetlands. - Increase awareness of the importance and benefits of healthy mosslands and wetlands. - Enhance and extend networks and other access opportunities for walkers, cyclists, horse-riders and other outdoor recreational pursuits, in ways that are compatible with habitat enhancement.
Better quality and better-connected ponds	- Safeguard, enhance and appropriately manage existing ponds and encourage good connectivity to surrounding habitats. - Create a variety of new ponds, in the right places to connect existing ponds.

6.1.5. Grassland, farmland and lowland heath

Opportunities

Grassland covers an estimated 30% of land in the city-region. The vast majority of this grassland has been altered and could support more wildlife through changes in land use and land management practices. Those species-rich grasslands that do remain are predominantly found outside of agricultural land in nature reserves and designated sites, but also in areas like road verges, churchyards, and urban brownfield sites.

To act for nature, we need to safeguard remaining semi-natural grasslands and lowland heaths before they are lost. We can then enhance or restore these habitats so they can support more species, such as lapwing, grasshoppers, barn owls and bees. In rural areas, with the right incentives and support, our farmers can be at the heart of creating healthier soils and more species-rich grasslands and croplands, alongside food production. Healthy populations of pollinators and healthy soils can in turn can support food production. In our urban areas, many of our grasslands are closely mown and there are opportunities to allow areas of longer grass to flower and wilder areas, benefiting bumblebees and other pollinators and providing more food for urban birds such as swifts.

By creating or restoring grasslands, field margins or road verges, where they will connect remaining semi-natural grasslands across river valleys and between different landowners, we can create networks for grassland species alongside where we live and work.

Priorities

➤ Species-rich and semi-natural grasslands and lowland heath are safeguarded, well-managed and restored

➤ More species-rich grasslands and lowland heath created, particularly where they will connect existing habitats

➤ More urban meadows, with native wildflower species and longer grasses

➤ More dedicated spaces for wildlife integrated into farmland and buildings, alongside food production

➤ More biodiverse farmland, with healthier soils, better water management and fewer intensively managed areas

These priorities cover a variety of grassland habitat types, as well as croplands, pasture and lowland dry heath.

Wider benefits

- Opportunities for leisure and recreation
- Reduced carbon emission and increased storage of carbon
- Building community interaction through establishing or managing local grassland areas
- Short-term storing of rainwater and managing flood risk
- Wildlife-friendly food production, and healthier soils

Species supported

Delivering on these priorities will benefit many grassland and farmland species including:

- Orchid
- Barn owl
- Lapwing
- Kestrel
- Bumblebees
- Cinnabar (Ragwort)
- Orange-tip (Cuckooflower)
- Grasshopper
- Waxcap fungi

Actions

Priority	Practical actions
Species-rich and semi-natural grasslands and lowland heath are safeguarded, well-managed and restored	- Identify and safeguard remaining notable semi-natural grasslands. - Enhance and appropriately manage remaining semi-natural grasslands and lowland heath, including increasing species richness. - Showcase successful grassland and heath management and encourage awareness of the value of these habitats.
More species-rich grasslands and lowland heath created, particularly where they will connect existing habitats	- Creation or restoration of species-rich grasslands and lowland heath, particularly where they will expand or act as stepping stones or corridors. - Ensure appropriate long-term management of newly created grassland to achieve increased species-richness, and lowland heath. - Enhance and manage improved or semi-improved grasslands to boost species richness.
More urban meadows, with native wildflower	- Allow areas of urban grasslands to grow long and flower and increase species diversity through planting or other measures. - Encourage greater understanding and acceptance of long grass and less intensively managed grasslands.

species and longer grasses	
More dedicated spaces for wildlife integrated into farmland and buildings, alongside food production	- Install or enable more accessible homes for birds and bats on and around farms and rural buildings. - Set aside dedicated patches of unmanaged or uncropped areas, along field boundaries, margins, corners or less productive areas, particularly where they will connect. - Create and maintain forage areas and homes for species on farmland, alongside food production. - Grow and maintain multi-species cover crops, and cut later in the year, to provide food and cover for wildlife. - Support and collaborate with farmers, landowners and managers to enhance their land for nature, alongside food production, and involve farmers in targeted species conservation programmes.
More biodiverse farmland, with healthier soils, better water management and fewer intensively managed areas	- Manage grassland and cropland at lower intensity and with low inputs. - Reduce soil erosion, minimise bare ground and encourage soil recovery. - Support switch to diversified plant species for grazing livestock, establish and maintain herbal lays or species-rich hay meadows. - Improve water quality and pollution management on farmland, in farmyards and control livestock access to waterbodies.

6.1.6. Upland moorlands

Opportunities

Our upland moorlands, from the Peak District National Park to the West Pennine Moors, are where many residents across the city-region spend time in nature and hold significant cultural value for local communities and visitors. They are also ecologically significant, forming part of a much larger expansive upland moorland habitats stretching up to the Scottish borders. Our uplands often appear wild and untouched, but they have been subject to drainage and pollution for many decades, heavily managed and used for agriculture and sporting land uses.

As some of our biggest remaining natural spaces, our uplands could play a crucial role in large scale nature recovery. There is potential to enhance and restore more extensive areas of our uplands. Where areas of bare peat still remain, there is potential to work faster and on larger scale to revegetate, rewet and restore these areas towards active blanket bog. Greater diversity could also be encouraged by creating patchworks of different habitats, including trees, scrub and rare upland oak woodlands, in the right places.

Restoring and increasing the diversity of our upland moorlands will help deliver wider benefits and adapt the city-region to climate change. Restoring blanket bog reduces carbon emissions from peat soils and helps draw down more carbon, as well as encouraging higher water tables which reduces risk of wildfires. Areas of restored blanket bog also improve our drinking water quality and stores more water, reducing the risk of flooding downstream.

Upland communities, landowners, land managers and farmers, all of whom already shape these landscapes, have a critical role to play in the legacy of this landscape for nature. There are opportunities to support these communities to meet the multiple demands on their land, whether it is recreation, nature recovery, food production or other uses.

Priorities

- Restore and rewet bare upland peat to active blanket bog and wet heath, to retain more carbon and hold more rainwater

- More varied and well-functioning upland habitats, with patchworks of restored bog, heath, trees, springs and flushes, reducing flood and wildfire risk

- More of our upland flushes are thriving, rich with sphagnum moss, rushes and sedges, supporting a diverse range of species

- More trees, small woods and scrub are naturally regenerating, across our uplands, helping slow and store water

- More upland communities, land managers and landowners are rewarded for helping nature recover

These priorities cover a range of moorland habitats, including blanket bog, upland heath, upland springs, flushes and fens, upland woodlands and grasslands.

Wider benefits

- Carbon storage
- Recreation and leisure
- Water storage
- Water quality
- Reduced wildfire risk

Species

Delivering on these priorities will benefit many upland species including:

- Red grouse
- Brown and Mountain Hare
- Heather
- Cotton grass
- Kestrel
- Meadow Pipit
- Sphagnum
- Bilberry

Actions

Priority	Practical actions
More varied and well-functioning upland habitats, with patchworks of restored bog, heath, trees, springs and flushes, reducing flood and wildfire risk	- Stabilise, rewet and restore deep bare peat towards active blanket bog, where appropriate - Encourage more diverse native vegetation and more flower-rich habitats, in appropriate places, on existing upland moorlands. - Create transitional habitats or corridors to increase linkage between our uplands and lowland habitats, where conditions allow. - Improve wildfire risk management by creating natural fire breaks and boost awareness.

More of our upland flushes are thriving, rich with sphagnum moss, rushes and sedges, supporting a diverse range of species	- Restore more naturalised wet areas, flushes and ponds. - Create rough, diverse grasslands around flushes and wetlands, wet in some areas with rushes around flushes and springs. - Reduce and slow land drainage and encourage natural flood management.
More trees, small woods and scrub are naturally regenerating, in appropriate places, across our uplands, helping slow and store water	- Encourage the restoration and regeneration of existing upland woodlands and clough woodlands. - Increase woodland and tree regeneration and planting, in appropriate places, with varying density from closed canopy woodland in places to scattered trees in others. - Encourage moorland and clough edges to 'scrub up', in appropriate places, to improve diversity, securing soils and slowing water flow. - Target woodland creation, tree planting and the creation of leaky dams, where they will also contribute towards slowing water flow.
Restore and rewet bare peat to active blanket bog and wet heath, to retain more carbon and hold more rainwater	- Stabilise, rewet and restore deep bare peat towards active blanket bog and wet heath, where appropriate. - Work at scale to restore larger areas of remaining blanket bog faster.
More upland communities, land managers and landowners are rewarded for helping nature recover	- Support the switch to land management practices that will further enhance the diversity of upland habitats. - Encourage a reduction in the intensity of upland grazing and less intensive management of uplands. - Maintain, restore and increase upland hedgerows, hedgerow trees and field boundaries as important habitats. - Encourage sustainable recreation and reduce activities that damage upland habitats.

6.2. Species priorities and actions

Working to enhance, create and connect habitats across Greater Manchester will be of huge benefit to many species. Some species and groups of species are particularly at risk locally, needing bespoke action beyond wider habitat priorities set out in this strategy. Focused attention can help these species bounce back and avoid local species loss.

To identify priority species for this strategy, we have focused on those local species particularly at risk that need targeted action beyond our habitat priorities. Guided by a national process set out by Natural England and working with local species experts (see appendix 2), 16 priority species and species groups have been selected for this first iteration of the Local Nature Recovery Strategy. The following factors were considered in the selection of these species from a long list of over 400 species:

- **Conservation status:** Particularly threatened, vulnerable or endangered species (according to International Union for Conservation of Nature red lists, national red lists of species at risk of extinction[39] or Biodiversity Action Plan Section 41 UK lists)

- **Bespoke requirements:** Specific action required to aid these species recovery beyond the habitat priorities

- **Urgency:** Urgent action needed to stabilise species loss

- **Deliverability:** Feasibility of actions that could be delivered within Greater Manchester to aid recovery

- **National Significance:** National significance of the population in Greater Manchester

- **Wider benefits:** Benefits for other species and wider ecosystem services, such as flood risk reduction or carbon sequestration

- **Climate change:** Vulnerability to current and future climate change

- **Local significance:** Species that are locally significant in Greater Manchester

There are of course many vulnerable species beyond those that we have been able to prioritise within this strategy. We hope that actions taken to help conserve these species mean that other species can be prioritised in future updates to this strategy.

6.2.1. Priority species and actions

Species and groups of species for prioritised local nature recovery are stated below. Where several species requiring similar actions have been identified then they have been collected into a group.

Individual priority species

- Mountain hare

- Water vole

- Willow tit

- Black-necked grebe

- Hedgehog

- European hornet

- Black poplar

- Slow worm

Priority species groups

- Upland bees, butterflies and moths: *Bilberry bumblebee, Tormentil mining bee, Small copper butterfly, Wall butterfly, Small Heath butterfly, Dark green fritillary butterfly, Gypsy bumblebee, Manchester treble-bar moth*

- Urban birds: *Swift, house martin, black redstart*

- Farmland birds: *Tree sparrow, Corn bunting, Linnet, Yellow wagtail and Yellow hammer*

- Grassland fungi: *Pink waxcap, Jumbilee waxcap, Oliver earthtongue, Powdercap strangles, Volet coral*

- Migratory fish: *Atlantic salmon, European Eel*

- Grassland ground-nesting birds: *Curlew, Lapwing, Twite, Skylark, Golden plover, Dunlin, Snipe*

- Brownfield insects: *Dingy skipper, Common blue, Trifurcula cryptella*

- Mossland insects: *Large Heath, Crambus hamella, Gelechia cuneatella, Glyphipterix haworthana, Lampronia fuscatella, Large red-belted clearwing, Monochroa suffusella, Phiaris schulziana, Purple-bordered gold*

Priority species or species groups	Practical actions
Mountain hare	*Bespoke actions:* • Protection from predators and livestock using fencing or other exclusion methods • Identification and monitoring of population hotspots and breeding areas • Reduction in barriers to movement across key roads and railways near population hotspots • Landowner and land manager engagement and support *General habitat actions that will support recovery:* • Stabilise, rewet and restore any remaining deep bare peat towards active blanket bog. • Encourage more diverse native vegetation and more flower-rich habitats, in appropriate places, on existing upland moorlands and heath • Improve wildfire risk management by creating natural fire breaks and boosting awareness.
Water vole	*Bespoke actions:* • Identification, monitoring and safeguarding of key remaining population strongholds and breeding areas • Protection from predators (Mink) and livestock • Carefully management of water bodies and water courses or ditches where water vole populations are present *General habitat actions that will support recovery:* • Enhance existing habitats within our waterbodies and grassland, wetlands and woodlands habitats alongside waterbodies. • Restore more natural riverbanks, in appropriate locations, and reduce invasive species. • Improve water quality by reducing point source and diffuse pollution
Willow tit	*Bespoke actions:* • Identification and safeguarding of key remaining nesting sites and population strongholds • Monitoring of key population strongholds, particularly for the impacts of competition or predation • Increase availability of specialist nest sites in key population strongholds • Creation and maintenance of young wet woodlands, with a dense under canopy and availability of dead wood

	• Improvement in connectivity of remaining populations through targeted creation of young wet woodlands
Black-necked grebe	*Bespoke actions:* • Safeguarding of existing breeding sites • Bespoke wetland habitat creation and management, including management of water levels, creation of shallow water areas and reedbeds, removal of high-impact invasive species • Protection from disturbance, particularly from water sports or recreation at breeding sites • Protection from predation • Reduced litter at key breeding areas and population strongholds *General habitat actions that will support recovery:* • Improve water quality by reducing point source and diffuse pollution
Hedgehog	*Bespoke actions:* • Creation of habitat piles or hedgehog homes • Reduced barriers to movement through the creation of hedgehog highways between gardens, with 13cm square gaps in fences to allow movement between gardens • Reduction in light pollution and litter in parks and gardens • Increased awareness and education *General habitat actions that will support recovery:* • Manage spaces in a wildlife-friendly way by leaving areas of longer grass for wildlife in gardens or reduce mowing, reducing use of pesticides and herbicides. • Create greener spaces, and more connected habitats, along existing and new streets, highways and cycleways
European hornet	*Bespoke actions:* • Increased awareness raising and education • Increased monitoring and identification of population strongholds • Reduced nest disturbance or destruction
Manchester black poplar	*Bespoke actions:* • Identification, safeguarding and monitoring of existing trees

	• Good management of existing trees, including management of pests and diseases • Increased planting of black poplar in the right locations, using locally appropriate source stock • Improvement of genetic variability in newly planted trees
Slow worm	*Bespoke actions:* • Increased awareness and education • Identification, monitoring and safeguarding of population hotspots • Creation of hibernation refuges or shelters • Creation of sunny shelter basking spots • Reduced light pollution in population hotspots
Upland bees, butterflies and moths: *Bilberry bumblebee, Tormentil mining bee, Small copper butterfly, Wall butterfly, Small Heath butterfly, Dark green fritillary butterfly, Gypsy bumblebee, Manchester treble-bar moth*	*Bespoke actions:* • Identification and monitoring of population hotspots • Specialist habitat creation and management to ensure forage areas and nesting sites (such as south facing embankments) and good variation in heath age and structure or hedgerows • Landowner and land manager engagement and support to avoid use of pesticides, herbicides and nitrates • Avoidance of overgrazing and recreational pressures in population hotspots • Prevention of wildfires *General habitat actions that will support recovery:* • Encourage more diverse native vegetation and more flower-rich habitats, in appropriate places, on existing upland moorlands and heath
Urban birds: *Swift, house martin, black redstart*	*Bespoke actions:* • Increased awareness and education • Identification, monitoring and safeguarding of nesting sites • Installation of species-appropriate nesting boxes, such as swift bricks or boxes, house martin nesting cups • Creation of bog gardens and areas of long grass *General habitat interventions that will support recovery:* • Manage spaces in a wildlife-friendly way by leaving areas of longer grass for wildlife in gardens or reduce mowing, reducing use of pesticides and herbicides.

	• Support species by installing homes for wildlife on buildings.
Farmland birds: *Tree sparrow, corn bunting, linnet, yellow wagtail and yellow hammer*	*Bespoke actions:* • Supplementary feeding stations over the winter • Sow winter bird seed crops • Avoid mowing or crop harvesting during periods where nests will be impacted *General habitat interventions that will support recovery:* • Grow and maintain multi-species cover crops, and cut later in the year, to provide food and cover over the winter. • Set aside dedicated patches of unmanaged or uncropped areas with tall grasses, along field boundaries and margins, field corners or less productive areas, particularly where they will connect. • Install homes for birds on and around farms and rural buildings, to improve farmland species diversity. • Safeguard, manage, and restore the species diversity and structure of existing hedgerows. • Create more native hedgerows
Migratory fish: *Atlantic salmon, european eel*	*Bespoke actions:* • Maintain and encourage in river plant communities and remove high-impact invasive species • Encourage more natural river geomorphology that will deliver a mixture of water speeds (areas of slower and faster flow) and riverbed substrates • Avoid impacting White Clawed Crayfish *General habitat interventions that will support recovery* • Improve mobility (restoring migratory pathways upstream) by removing barriers such as weirs, daylighting buried or covered waterbodies or installing by-pass structures, where feasible. • Improve water quality by reducing point source and diffuse pollution
Grassland fungi: *Pink waxcap, jubilee waxcap, oliver earthtongue, powdercap strangler, violet coral*	*Bespoke actions:* • Identification, safeguarding and monitoring of important remaining sites • Landowner and land manager engagement and support *General habitat interventions that will support recovery*

	• Enhance and appropriately manage remaining semi-natural grasslands to good condition, including avoiding use of pesticides, herbicides and nitrates and appropriate grazing and livestock management • Showcase successful grassland management and encourage awareness of the value of our remaining semi-natural grassland
Grassland ground nesting birds: *Curlew, lapwing, twite, skylark, golden plover, dunlin, snipe*	*Bespoke actions:* • Identification, safeguarding and monitoring of nesting sites • Protection of nesting sites from predators, livestock and human disturbance using fencing, signage or other exclusion methods • Landowner, land manager and public awareness, engagement and support *General habitat interventions that will support recovery* • Encourage more diverse native vegetation and more flower-rich habitats, in appropriate places • Improve wildfire risk management by creating natural fire breaks and boosting awareness.
Brownfield insects: *Dingy skipper, common blue, trifurcula cryptella*	*Bespoke actions:* • Identification and monitoring of important sites • Landowner and land manager engagement and support
Mossland insects: *Large heath, crambus hamella, gelechia cuneatella, glyphipterix haworthana, lampronia fuscatella, large red-belted clearwing, monochroa suffusella, phiaris schulziana, purple-bordered gold*	*Bespoke actions:* • Identification, safeguarding and monitoring of important remaining sites • Specialist habitat creation and management to ensure good availability of flower-rich areas as pollen and nectar sources, forage areas and nesting sites • Landowner and land manager engagement and support • Appropriate grazing and livestock management *General habitat interventions that will support recovery* • Encourage more diverse native vegetation and more flower-rich habitats, in appropriate places • Manage land at lower intensity and with low inputs, reduce herbicide, pesticide use and minimise use of nutrients.

6.2.2. Reintroductions

Alongside prioritising action to help vulnerable species, there is public interest in the reintroduction of lost species. In a public survey of priorities for this strategy, the reintroduction of lost species was the second most requested action for species (see appendix 5).

Reintroductions are possible in urban areas. For example, over the last decade the Greater Manchester Wetland Partnership have successfully reintroduced the Manchester Argus Butterfly (Large Heath Butterfly) at Astley Moss in Wigan and are working towards further species reintroductions. Based on responses to the public survey the most popular species for local reintroduction is the Beaver. Alongside Beavers, other popular candidates for reintroduction included the Red Squirrel, Pine Marten and large birds of prey such as the Red Kite or Hen Harrier.

- **Beaver:** Successful reintroductions of Beavers have taken place in several locations nearby to Greater Manchester, including at the Hatchmere Nature Reserve in Cheshire, Willington Wetland Nature Reserve in Derbyshire, and Cors Dyfi Nature Reserve in Montgomeryshire. The development of a reintroduction group, concerted landowner engagement and the identification of viable reintroduction sites would all be key actions on the journey to reintroduce this species.

- **Birds of prey:** The reintroduction of large birds of prey species such as the Red Kite have been successfully undertaken in Leeds, Oxfordshire, Gateshead and Cumbria over the last 20 years. Based on records of Red Kite sightings since the initial reintroductions in Yorkshire, Cumbria and Gateshead populations of Red Kite have successfully expanded across northern England and should eventually reach Greater Manchester. The development of a supportive reintroduction group for large birds of prey to track and monitor progress, as well as pubic and landowner engagement and education, could help to ensure the successful return of this species to Greater Manchester.

- **Pine marten:** Pine martens are not currently thought to be present in Greater Manchester. Initial translocation and release projects are underway in the UK to boost remaining remnant population in Wales and the creation of a new population nearby in the Forest of Dean. Pine martens are thought to be slowly naturally recolonising northern England from existing Scottish populations, with sightings in Kielder Forest, Northumberland and the North York Moors over recent years. Action now to boost the size, condition and connection between our woodlands will help future recovery efforts, either through reintroduction or natural recolonisation.

- **Red squirrel:** Significant populations of grey squirrel across the city-region mean that a reintroduction of red squirrels would be unlikely to be successful due to the high risk of squirrel pox transfer from grey to red squirrels. For a reintroduction to be considered in the future, grey squirrel populations would have to undergo significant population management.

7. Delivery: How you can deliver on the strategy

7.1. Who can do what?

We want this strategy to inspire everyone across Greater Manchester to take action to help nature's recovery. The smallest actions – at home and in our local communities – can add up to make a big difference and make space for nature in every community. Larger initiatives can also have a transformational impact, providing space at a landscape-scale for nature to recover.

What each of us can do will vary – we all have different ways we can support the implementation of the strategy. Below, we cover the following:

- Those who own or manage land;
- Those who are involved in developing land for new homes or commercial spaces;
- Those who run or manage businesses or other organisations;
- Those who are involved in community-led groups and action;
- Those who run or manage environmental charities or partnerships; and
- Those of us who live, study or work in Greater Manchester.

The actions set out and the areas for which they are identified are not intended to be prescriptive; instead, they can help guide existing or planned nature recovery activities.

7.1.1. Landowners and land managers:

Why?

Those who own and/or manage land in Greater Manchester can make a significant contribution to implementing the strategy, particularly those responsible for agricultural land (32% of GM's land use), amenity spaces (19% of GM's land use) and transport infrastructure, like roads and railways (13% of GM's land use). This land might be used for another primary purpose – such as growing food, providing transport routes or providing space for leisure activities or for people to enjoy – but with opportunity to provide more space for nature alongside this.

How?

Landowners and land managers can use the strategy to:

- Understand how their land fits within the Nature Network;
- Inform the actions they could carry out on their land; and
- Inform and support applications for funding and delivery of projects on their land.

7.1.2. Developers and planners:

Why?

There are plans to build over 175,000[40] homes over the next decade and a half within the nine local authorities[41] part of the Places for Everyone Joint Development Plan, as part of a wider strategy to bring forward development at a scale which can drive transformational change across the city-region and play a role in delivering on the ambitions for a Nature Network[42]. Future growth and development of the city-region will rely on a healthy natural environment and provides an opportunity to fully integrate nature into plans for how we grow and develop the city-region.

Developers and planners can use the strategy to:

- Support the integration of nature into the planning and development process;
- Understand how development sites fit within the Nature Network;
- Deliver for nature alongside the development of the land;
- Inform the selection of on-site and off-site Biodiversity Net Gain sites; and
- Inform the selection, master planning and design of development sites.

Under the Environment Act 2021, local planning authorities and decision-makers must have regard to this Local Nature Recovery Strategy in their policies, including those in their local plans (see section 5.2.4 for further details). Taking account of the LNRS proposed developments can help developers move more smoothly through planning process.

7.1.3. Businesses:

Why?

There is substantial evidence of the multiple benefits a healthy natural environment can have on for businesses and other organisations. Premises can benefit from features such as green walls and green roofs (e.g. in reducing energy use and providing natural cooling), employee retention, wellbeing and productivity, as well as beneficial marketability if nature is incorporated into the workplace. Installing SuDS such as raingardens near businesses can reduce the risk of flooding[43].

How?

Businesses and other organisations can use the strategy to:

- Inform their own corporate plans for their contribution to nature recovery;
- Create or enhance green space or raingardens on their premises, involving the local community; and
- Support community-led projects in the local area that deliver nature recovery.

7.1.4. Community groups:

Why?

Community groups across Greater Manchester are at the forefront of action to help nature recover. In coming together to improve their local natural environment, they bring people together to help them connect with nature, gain new skills, strengthen the community and improve the places where they live. This has wider benefits for people's health and wellbeing, as well as providing spaces for nature in people's communities.

How?

Community groups can use the strategy to:

- Understand how their local natural environment (e.g. green spaces) fit within the Nature Network;
- Inform the actions they could carry out in their local community; and
- Support applications for funding and delivery of projects.

7.1.5. Environmental charities and partnerships:

Why?

Environmental charities and partnerships, such as the Greater Manchester Wetlands Partnership, the Great North Bog Partnership or the Irwell Catchment Partnership, are already undertaking crucial work to help wildlife bounce back and empower communities and landowners to take action. These organisations are at the forefront of driving forward action for nature across the city-region, helping to bring forward new projects and initiatives to restore habitats, reintroduce species and work with communities. Many of these charities have been closely involved in development of this strategy.

How?

Environmental charities can use this strategy to:

- To target funding and investment towards the Nature Network;
- To build collaborative projects and coordinate action;
- To inform their priorities and actions; and
- To work with and engage communities, businesses, local authorities and landowners.

7.1.6. The NHS, schools and other local institutions:

Why?

Organisations and institutions like the NHS, local schools and other local institutions such as universities are often significant land owners and managers, with large estates and campuses which could become assets for nature and people to enjoy. For organisations like the NHS, schools and universities, promoting the health benefits of spending time in nature and integrating nature in estates can help to boost the wellbeing of patients and students, improve recovery times and learning outcomes, as well as wider mental health and wellbeing benefits.

How?

The NHS, schools and other local institutions can use this strategy to:

- To inform how they create or enhance green space or gardens on their premises, such as a therapeutic or sensory gardens;
- To build and inspire nature based educational or health programmes, such as green social prescribing programmes;
- To inform how they could change the management of their green estate to benefit nature; and
- To engage local communities with action for nature on their estates.

7.1.7. Residents:

Why?

With a population of nearly three million people, Greater Manchester's residents carry huge potential to contribute to nature recovery. Private gardens - which make up around 15% of total land use in the city-region - are ideal spaces to take action. Yards, balconies and alleyways can also be greened and act as valuable space for nature, particularly pollinators. Working together with neighbours and the local community can help improve bigger areas and support initiatives to improve a variety of spaces for nature across neighbourhoods.

How?

Residents can use the strategy to:

- Understand how their local natural environment (e.g. green spaces) fit within the Nature Network;
- Understand what they can do to take action or expand on existing activities.; and
- Inspire them to get involved in local community initiatives to support nature's recovery.

7.2. What more do we need to be successful?

There are several key factors that will enable successful implementation of the strategy. These include the need for funding, skills and capacity and partnerships to deliver.

7.2.1. Funding

Delivering the priorities in this strategy will require funding. To do this, we need to maximise the extent and impact of any public funding in the city-region. However, given the scale of action required, nature recovery cannot be achieved through public funding alone (such as agricultural environment schemes and grant funding), and accessing private finance will be crucial. Integrated approaches for ambitions like water quality improvement, flood risk reduction and benefits for nature and people, will need to make the most effective use of public money. To maximise private funding, we need to:

- Develop <u>business models</u> to facilitate other sources of funding, focussing on initiatives such as on-site and off-site Biodiversity Net Gain, carbon offsetting particularly through private finance;
- Continue to develop and implement <u>policies</u> locally that incentivise funding into the natural environment; and
- Put in place the right <u>governance</u> arrangements to facilitate the involvement of different funders and provide evidence and confidence in delivery on the ground.

7.2.2. Skills and capacity

Delivering the strategy will require a range of skills and capacity across a range of sectors, including:

- Practical habitat creation, restoration and management work;
- Integrating the natural environment into a range of other sectors, including housing development, infrastructure planning, engineering, development and healthcare; and
- Developing knowledge of the natural environment in other supporting sectors to support delivery, such as financial and legal.

7.1.3. Partnerships

There is a strong record of private, public and voluntary/community (VCSFE) sectors working together to deliver improvements to the natural environment. This spans from the strategic city-region wide partnerships like the Greater Manchester Local Nature Partnership, to partnerships on specific projects and in particular locations. We need to continue to deepen and strengthen these partnerships to deliver this strategy.

7.3. How will we know if we're successful?

Over the next ten years, monitoring the delivery of the targets and ambitions in this strategy will be crucial in understanding our progress in tackling the biodiversity emergency. To track progress a monitoring framework will enable us to track progress towards some of the most important elements of this strategy

GMCA will set up a monitoring group on the delivery of the strategy as part of the Natural Capital Group (Local Nature Partnership) and work with the Greater Manchester Ecology Unit and partner organisations to monitor progress on this strategy. This group will monitor and track progress on the main targets set out in the strategy and monitoring framework. Annual updates will be produced to report on progress against the targets and delivery of the strategy.

8. Acknowledgements

GMCA would like to thank all those who contributed their time and effort to help co-produce this strategy for Greater Manchester.

We would particularly like to thank the contributions made by those in our -

Steering Group:

- Canals and Rivers Trust
- City of Trees
- Envance
- Greater Manchester Ecology Unit
- Groundwork Greater Manchester
- Irwell Catchment Partnership
- Lancashire Wildlife Trust
- National Farmers Union
- National Trust
- Natural England
- NHS Greater Manchester
- Peak District National Park
- Royal Horticultural Society
- Southway Housing
- The Environment Agency
- The Forestry Commission
- Transport for Greater Manchester
- United Utilities
- University of Manchester
- Upper Mersey Catchment Partnership
- Wigan Metropolitan Borough Council

Officers Group:

- Bolton Metropolitan Borough Council
- Bury Metropolitan Borough Council
- Manchester Metropolitan Borough Council
- Oldham Metropolitan Borough Council
- Rochdale Metropolitan Borough Council
- Salford Metropolitan Borough Council
- Stockport Metropolitan Borough Council
- Tameside Metropolitan Borough Council
- Trafford Metropolitan Borough Council
- Wigan Metropolitan Borough Council
- Greater Manchester Ecology Unit
- Natural England

Species Expert Advisory Group:

- David Earl, GM, Lancashire and North Merseyside County Recorder, BSBI
- Gary Hedges, Liverpool Museum
- John Harrison, Assistant Vice County Recorder, South Lancashire Bat Group
- Steve Hindle, National Trust Grassland Fungi Project Officer
- Karen McCartney, County Recorder for aculeate Hymenoptera for Greater Manchester, BWARS
- Kevin Nash, the Environment Agency

- Lorna Drake, Species Recovery and Reintroductions Higher Officer for Cheshire to Lancashire, Natural England
- Martyn Walker, Lancashire Wildlife Trust
- Paul Barrington, Greater Manchester Ecology Unit
- Stephen Palmer, Lancashire Vice County Recorder, Lancashire Moths
- Steve Atkins, County Bird Recorder Greater Manchester
- Stuart Fraser, Greater Manchester Ecology Unit
- Tony Parker, Cheshire, Merseyside, Lancashire, Greater Manchester Mammal Recorder, Mammal Society

9. List of Appendices

Appendix 1. Relationship between the GM LNRS and other GM policies and strategies

Appendix 2. Evidence and processes used in preparing the GM LNRS
- Appendix 2a. Process and evidence used to develop priorities and actions (measures) for the GM LNRS
- Appendix 2b. Outline of key inputs and process involved in developing the species priorities and actions (measures)
- Appendix 2c. Processes and key steps in mapping opportunity areas for the GM LNRS
- Appendix 2d. List of mapped actions (measures) in the GM LNRS opportunity areas
- Appendix 2e. List of existing strategies and plans used to inform the priorities and actions in the GM LNRS

Appendix 3. Greater Manchester State of Nature Report

Appendix 4. Stakeholder Engagement undertaken for the GM LNRS

Appendix 5. Greater Manchester Plan for Nature Public Survey Results

Appendix 6. Detailed Description of Greater Manchester landscapes and habitats.

Appendix 7. Greater Manchester Habitat Priorities and Actions, including technical details

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GREATER MANCHESTER

DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

Greater Manchester Local Nature Recovery Strategy

Consultation Draft - Executive Summary

30th August 2024
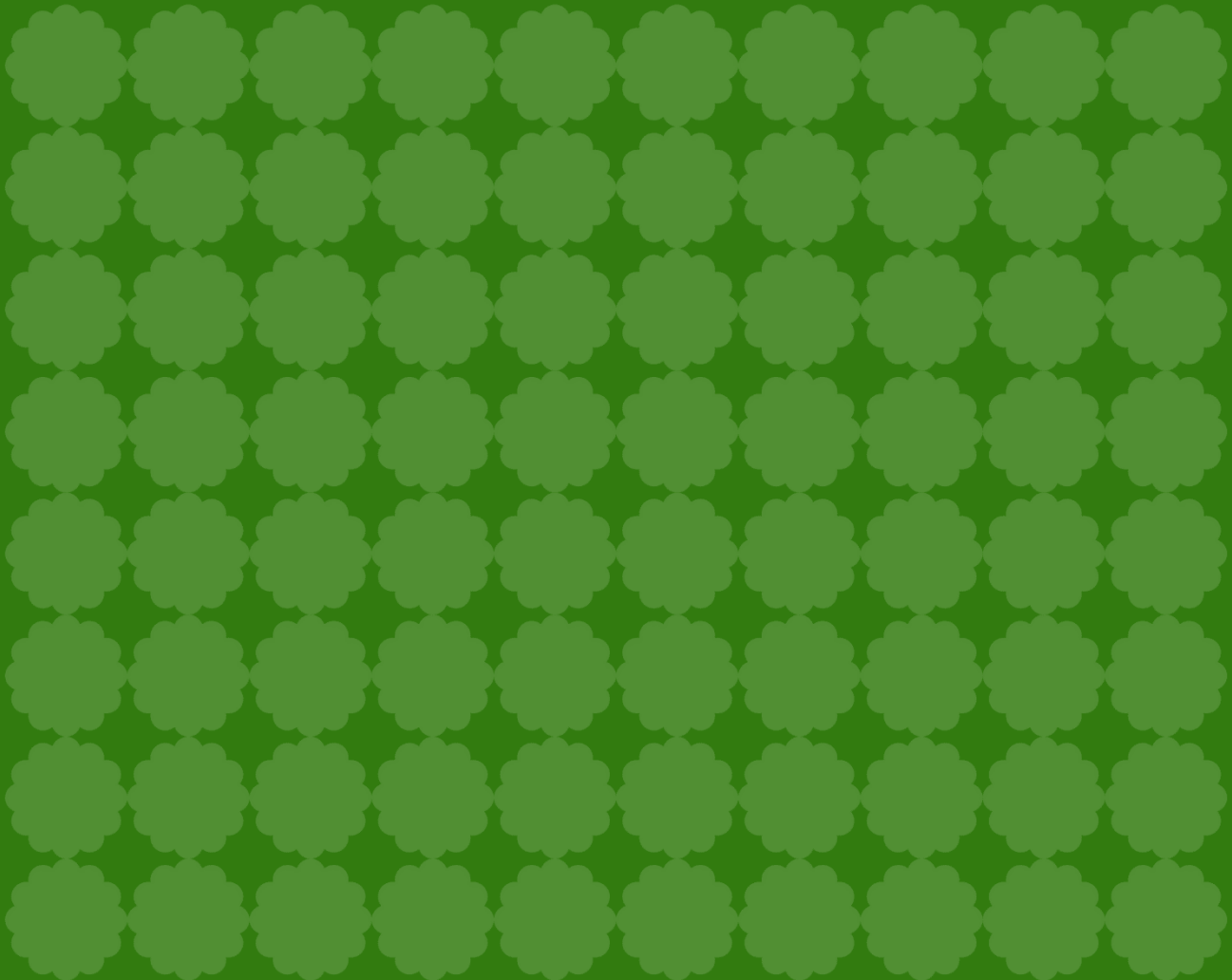
What is a Local Nature Recovery Strategy?

England is currently one of the most nature-depleted countries globally – and the situation in Greater Manchester is no different. To address this decline, Local Nature Recovery Strategies were made mandatory in 2021 under the Environment Act.

Greater Manchester's Local Nature Recovery Strategy will act as a roadmap for how we tackle the biodiversity emergency across the city-region over the next decade. It is a statutory, locally-led and evidence-based strategy that sets out how and where we should focus action to achieve this.

The strategy outlines a long-term vision, aims and targets that will help make Greater Manchester a place where people and nature to thrive. It sets out what we need to do - priorities and practical actions. It tells us where we need to focus action - how we can create a nature network across Greater Manchester, supporting biodiversity and delivering better local access to green spaces.

It covers the ten local authorities within Greater Manchester – Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan – and will be in place from 2025-2035.

The strategy has been developed collaboratively, led by Greater Manchester Combined Authority (GMCA), and involved representatives from all ten local authorities, local environmental charities, infrastructure providers and other partner organisations. Public engagement has ensured that our strategy is locally driven.

Why do we need a Local Nature Recovery Strategy in Greater Manchester?

Greater Manchester continues to grow and evolve rapidly around us, meaning the respite provided by our green spaces is ever more important. Access to nature is vital for Greater Manchester's residents, with 93% of them stating that having open green space close to their home is important and over half saying that they access the outdoors for leisure at least once a week.

Nature is good for us. It is key to us leading healthy lives and underpins the resilience of our city-region. Every year, the city-region benefits from around £1bn in essential benefits and services from our natural environment – including mental and

physical health benefits, opportunities for recreation, reduced flood risk and air pollution, supporting local food production and water supplies.

But our nature is struggling. We are in the throes of a biodiversity emergency that puts these vital benefits – and the resilience of our city-region – under threat. There will be knock-on effects if nature continues to decline, including greater pressure on public services like the National Health Service.

Access to nature already looks very different across our 2.8 million residents. Many people are not able to enjoy access to nature at home or near where they live or work, meaning the benefits of being in and close to nature are not shared equally. A third of residents do not live within 15 minutes of a decent sized green space and communities experiencing inequalities tend to live in areas with less green space.

But nature can recover and thrive alongside a growing city-region, particularly where communities and partnerships come together to help reconnect spaces for nature and people. This strategy sets out a pathway for nature to recover, to reverse biodiversity decline and benefit our residents and our economy.

The State of Nature in Greater Manchester

Greater Manchester is home to an array of wildlife, some of which can be found in even the most urban parts of the city-region. The Greater Manchester State of Nature report sets out the urgency of the biodiversity emergency locally, but also the opportunities to support nature's recovery.

Echoing national trends, the State of Nature Report tells us that key species of birds and mammals in Greater Manchester and the North West of England are declining. Individual bird species population show declines of up to 40% over the last 40 years and the abundance of once common mammals (such as foxes, hedgehogs and rabbits) has dropped by between 20-40% since 1995.

Our protected sites provide valuable refuges for nature, but they cover just 11% of Greater Manchester and are highly fragmented, rather than forming a connected network for nature. Although recovering at present, they are not in as good condition as they could be. These sites have become increasingly fragmented and isolated from one another – they are too disjointed for wildlife to thrive and move between

them, meaning they do not provide a good enough foundation from which nature can recover.

We have also witnessed examples of the remarkable potential of nature to return. Nature has flourished on former industrial sites such as the Flashes of Wigan and Leigh, now a national nature reserve. Species such as otters and the Manchester Argus butterfly have returned. Woodlands have been planted on former landfill sites.

However, nature – and the successes we have seen over recent years – are under threat from a variety of sources. This includes pollution and litter, urbanisation, agriculture and climate change. These pressures make action to tackle the biodiversity emergency even more important.

Where do we need to get to?

Vision and Aims

Given the continued pressures facing nature, we need to plan proactively to ensure that the city-region has resilient spaces for wildlife and people to thrive. This will help nature to bounce back and at the same time provide spaces that improve our health and wellbeing, reduce flood risk, improve water quality and better adapt the city-region to climate change.

The fragmented and isolated nature of our best remaining sites, coupled with them not being in as good a condition as they could be, means that they do not currently provide the foundation from which nature can recover. To allow nature to recover our remaining spaces for nature need to not only be bigger and better, but crucially more joined up, allowing wildlife to move between them.

Vision:

To halt – and in time reverse – local biodiversity loss and to help nature recover, we need everyone to work together and play their part.

> **Our vision for nature recovery in Greater Manchester is for everyone to work together to deliver a resilient network for nature across the city-region, connecting and enhancing wild spaces so that people and nature can thrive.**

Aims:

This vision can only be achieved by working together across our city-region, with communities, developers, local authorities, businesses, charities and institutions all playing a part.

To deliver on this vision we need Greater Manchester to be a place where we are all:

Enhance and protect	Safeguarding, enhancing and restoring our nature rich sites.
Create and connect:	Creating more wildlife-rich resilient spaces, where they will expand and connect spaces for wildlife and people.
Build resilience	Managing and reducing pressure on our environment and waterways, maximising nature's role in adapting the city-region climate change.
Act together	Working together to take action for nature and embed space for nature and people to thrive across all our communities.
Improve access	Improving local access to nature and ensure there are more opportunities to enjoy nature, in those areas which need it the most.
Engage and value	Improving engagement with nature and better understanding of its value in our lives.

Targets

To track action on progress towards this vision and aims we need to set clear focused targets and monitor everyone's progress against these.

Working with partners we have selected some headline targets for our key aims. Action beyond these targets is crucial, but they will be used focus action and report on progress.

Our ambitions, by 2035, are to:

Protect	Increase the amount of Greater Manchester protected for nature from 11% to 15% of the city-region.
Enhance	Bring 50% of our Local Wildlife Sites into active management for nature conservation.
Create	Work towards the restoration and creation of 1,800ha of wildlife-rich land and to expand tree canopy cover from 16.5% to 18.5%.
Connect	Target the delivery of new wildlife-rich land and tree planting within the GM Nature Network.
Improve access	Increase the number of GM residents living within 15mins of a decent green space.

These are the headline targets for the strategy – a list of all the targets and monitoring framework will be published in 2025.

Nature Network

A spatial strategy for nature's recovery

To drive nature recovery, we need to set out a long-term spatial vision for nature recovery and focus delivery efforts on the places that will make the biggest difference for nature and the wider environment. This is to enable the targeting of effort and resources, encouraging collaboration and coordination where it will have the most impact.

This is our Nature Network for Greater Manchester, based on the established principles of "bigger, better and more joined up" set out in the Lawton review (2010).

Action outside of this Nature Network is still vitally important to reduce pressures on nature by creating a more wildlife-friendly city region.

The Greater Manchester Nature Network

The Greater Manchester Nature Network is made up of the following:

- **Core local nature sites** – sites that are already protected to some degree but are fragmented, isolated and poorly connected. We need to prioritise improvements in the condition and management of these sites.

- **Nature recovery opportunity areas** – areas where there are opportunities to expand and better connect our core local nature sites. We need to prioritise efforts in these locations for the creation and restoration of habitat, alongside other land uses.

Taking action in the nature network

To help guide action on nature recovery, our opportunity areas identify and map where action to enhance, restore or create different types of habitats might be possible and most beneficial. For example, areas are mapped where woodland enhancement should be encouraged or where woodland creation would be beneficial. These actions are not binding for landowners and managers but identify the areas, and types of action, that could be particularly beneficial in creating a Nature Network.

Areas mapped within our Nature Network are particularly suitable for the delivery of offsite biodiversity net gain and are classed as strategically significant in terms of the Defra Biodiversity Metric. The Nature Network does not introduce any new designations or protections, nor does it create any barriers to development. Development within these opportunity areas (or where it could have an impact on these areas) should seek to support and deliver on the priorities set out for these areas and help to work towards the wider ambitions of the Nature Network.

Taking action outside the Greater Manchester Nature Network

Identifying a Nature Network does not mean that taking action should not be pursued in other locations across the city-region. Action can take place anywhere across the

city-region to help realise the priorities in this strategy. There are many opportunities to do this in every community. Everyone can play a part, whether it is via the creation of pocket parks, wildlife-friendly gardens or new community growing spaces.

Greater Manchester Nature Network
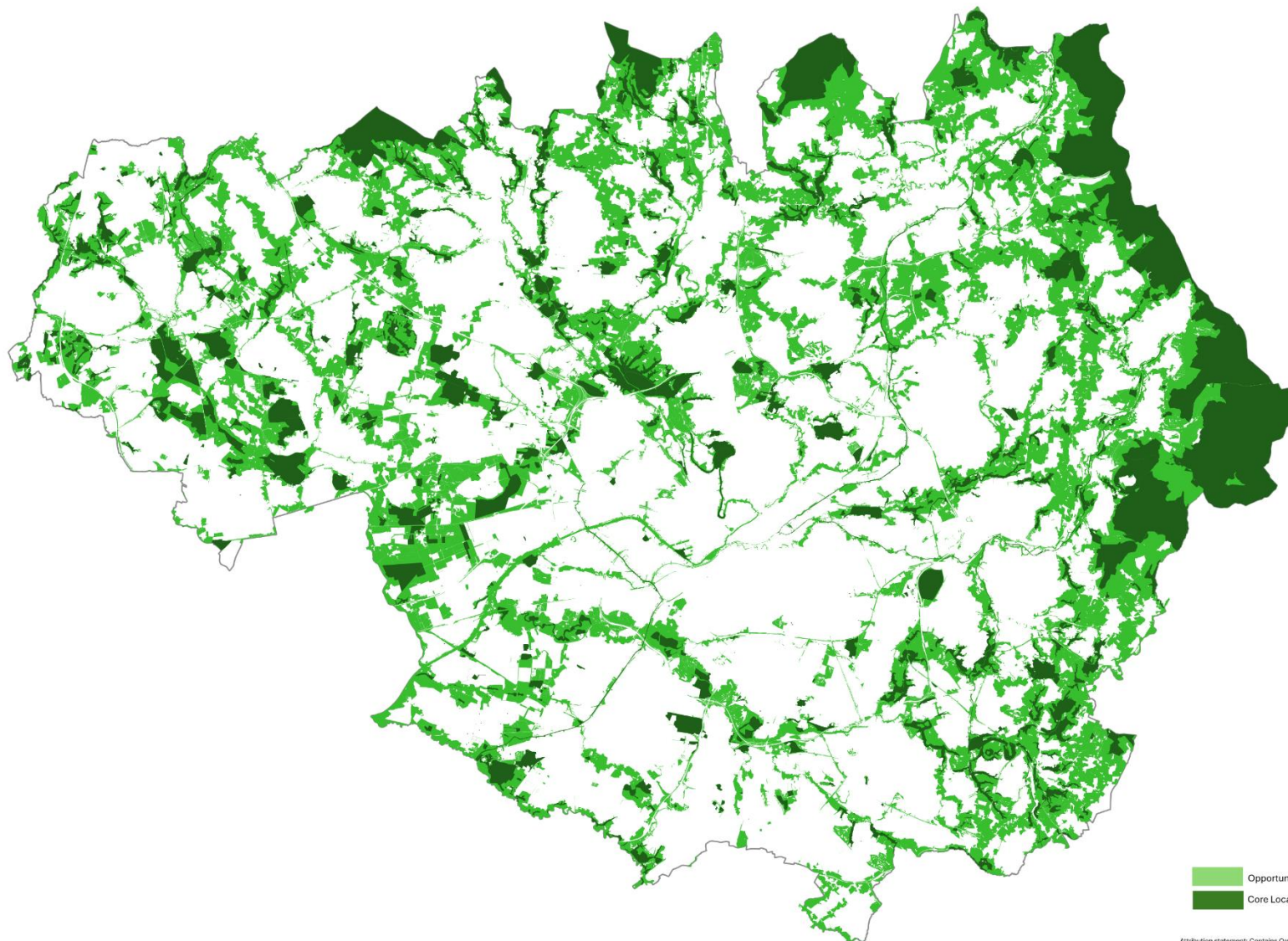
Opportunity areas for nature recovery

Core Local Nature Recovery Sites

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Priorities and actions

<u>Our approach to priorities and actions:</u>

To deliver our vision, aims and targets, and focus action in the Nature Network, the strategy sets out priorities – the end results that we all need to work towards. Each priority is accompanied by several practical actions, or measures – the activities that would make a positive contribution towards delivering on each priority. Each priority may have several practical actions linked to it – working towards one or a number of these actions can help achieve a priority.

<u>Habitat priorities:</u>

To help cover the different types of places and spaces across Greater Manchester, we have developed priorities covering each of the major habitat types found in the city-region:

- Grasslands, farmland and lowland heath

- Lowland mosslands and wetlands

- Rivers, canals and waterbodies

- Upland moorlands

- Urban green spaces and buildings

- Woodlands, trees, scrub and hedgerows

<u>Species priorities</u>

Our habitat priorities will be of huge benefit to many species. Some species, and groups of species, are particularly at risk locally and need bespoke action beyond these wider habitat priorities. It is these particularly vulnerable local species that require focused attention.

Working with local experts, 16 priority species and groups of species have been identified as priorities for this strategy. This list includes species like the willow tit,

9

water vole and bilberry bumblebee, swift and mountain hare, hedgehog and black poplar.

Delivery

Mapping out a network for nature and identify priorities and actions is just the first step — the real prize is bringing the maps to life by delivering on nature recovery alongside how we grow nature across the city-region.

We want this strategy to inspire everyone across Greater Manchester to take action to help nature's recovery. The smallest actions – at home and in our local communities – can add up to make a big difference and make space for nature in every community. Larger initiatives can also have a transformational impact, providing space at a landscape-scale for nature to recover.

We all have different ways we can support the implementation of the strategy and in what capacity we can do so. The strategy is particularly important for:

- Those who own or manage land
- Those who are involved in developing land for new homes or commercial spaces
- Those who run or manage businesses or other organisations
- Those who are involved in community-led groups or environmental charities
- Those who live, study or work in Greater Manchester

Across these groups, there are several key factors that will enable successful implementation of the strategy. This includes:

- Funding – maximising its impact and accessing public and private finance.
- Skills and capacity – across a range of sectors.
- Collaboration – to bring people together to deliver projects and partnerships

How will we know if we're successful?

Over the next ten years monitoring the delivery of the targets and actions in this strategy will be crucial in understanding our progress in tackling the biodiversity emergency. To track progress towards some of the most important elements of this strategy a monitoring framework, for the headline targets for this strategy, will be published in 2025. GMCA will report on progress of the strategy and its main targets annually.

Bee Network Committee

Date: Thursday 26th September 2024

Subject: Electromobility: Zero Emission Travel

Report of: Martin Lax, Transport Strategy Director, TfGM

Purpose of Report

This report provides an overview of the current situation relating to Electromobility in Greater Manchester.

Recommendations:

The Committee is requested to:

1. Note the current progress relating to electromobility in the GM region;
2. Note that forecast growth and demand for charging infrastructure will be used to inform the emerging Local Transport Plan;
3. Endorse the introduction of an indicator which will track GM's progress in facilitating charging for households without off-street parking;
4. Endorse the introduction of a zero-emission journey tracker; and
5. Note the update on the Electric Vehicle Infrastructure programmes of work.

Contact Officers

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Equalities Impact, Carbon and Sustainability Assessment:

Recommendation - Key points for decision-makers

This report details a number of ways in which Greater Manchester is working towards decarbonising the transport system. It includes a number of ways in which this progress can be tracked.

Impacts Questionnaire

Impact Indicator	Result	Justification/Mitigation
Equality and Inclusion		
Health		
Resilience and Adaptation	G	Ensuring the future transport network assists in meeting carbon obligations
Housing		
Economy	G	
Mobility and Connectivity	G	Ensuring the future transport network assists in meeting carbon obligations
Carbon, Nature and Environment	G	Enabling transition to zero emission carbon
Consumption and Production		
Contribution to achieving the GM Carbon Neutral 2038 target		Tracking progress of carbon neutrality in transport will provide substantial benefits. Plans for charging infrastructure will provide significant carbon benefits
Further Assessment(s):	N/A	

G	Positive impacts overall, whether long or short term.	A	Mix of positive and negative impacts. Trade-offs to consider.	R	Mostly negative, with at least one positive aspect. Trade-offs to consider.	RR	Negative impacts overall.

Risk Management

Local Electric Vehicle Infrastructure (LEVI) fund is a significant programme of activity to significantly increase the deployment of local, primarily low power, on-street charging infrastructure within GM. Ensuring Local Authorities have resource to aid with this programme will mitigate delivery challenges. There are currently legal issues relating to the procurement approach that authorities can use, these are being discussed with Office for Zero Emission Vehicles.

Legal Considerations

In addition to the procurement issue referenced above, there are legal considerations relating to the underpinning MoUs (between TfGM and LAs) and commercial arrangements (between the LAs and CPO). Localised permissions and consents including planning agreements, leases and/or licences with regard to land, street works licences and host agreements will be progressed and managed by the relevant LA(s).

Financial Consequences – Revenue

Commercial arrangements to be agreed with charge point operators.

Financial Consequences – Capital

90% of Local Electric Vehicle Infrastructure Fund (LEVI) received . 10% held by OZEV pending agreement of procurement submission. Proposals for LA's CRSTS allocations to LAs need finalisation.

Number of attachments to the report: None

Comments/recommendations from Overview & Scrutiny Committee

N/A

Background Papers

GMCA March 2022, Item 24 Electric Vehicle Charging Tariff

GMCA March 2023 Item 28b Electric Vehicle Charging Infrastructure

BNC March 2024, Item 8, Capital Programme

Tracking/ Process

Does this report relate to a major strategic decision, as set out in the GMCA Constitution?

No

Exemption from call in

Are there any aspects in this report which means it should be considered to be exempt from call in by the relevant Scrutiny Committee on the grounds of urgency?

N/A

Overview and Scrutiny Committee

N/A

1. Introduction

1.1. Electromobility (sometimes referred to as Electric Travel or E-Mobility) is an umbrella term covering the use of electric cars, and other modes of transport such as electric buses. The common feature of all of them is that they are driven electrically, have a means of storing energy on board, and obtain their energy mainly from the power grid.

1.2. Greater Manchester has set an ambitious target to become carbon neutral by 2038, which is 12 years ahead of the national net zero goal in 2050. To achieve this, the region needs to drastically reduce its greenhouse gas emissions from various sectors, including transport, which accounts for 30% of the total emissions in Greater Manchester. An increase of Electromobility, alongside a reduction in private car use, is important to Greater Manchester's ability to reduce transport emissions.

1.3. One of the key strategies to decarbonise transport is to promote the switch to electric vehicles (EVs) and the deployment of electric charge points (ECPs) across the region. EVs have the potential to reduce air pollution, improve public health, and lower fuel costs for drivers. Electric charge points (ECPs) are essential to support the growth of EVs and to ensure that drivers have convenient and reliable access to charging facilities.

1.4. Achieving zero emission journeys for all modes of transport is a challenging goal for Greater Manchester, as it aims to become carbon neutral by 2038. However, this cannot be done by local government alone. It requires a concerted effort from national government, businesses, communities and individuals to make the transition to cleaner and greener travel options.

1.5. This report provides an overview of:

- Growth and forecast demand of Electric Vehicles and Charging Infrastructure
- Progress to electrification across taxi, bus, rail, e-cargo bikes, cycle hire and scooter
- Update on EV programmes including the Local Electric Vehicle Infrastructure (LEVI) fund, and issues relating to charge point siting.
- A proposal to monitor the transition to zero emission journeys in the region, through the adoption on a Zero Emission Journey Tracker and a tracker to monitor progress towards facilitating charging infrastructure in residential areas without any, or any significant amount of, off-street parking.

2. Growth and Forecasting Demand

EV Trends and Forecasting

2.1. Within the Greater Manchester EVCI strategy, published in 2021 and when the 2030 target on phasing out new petrol and diesel engines was still in place, there is commentary on the level of EVCI charging needed. It states "*The development of the EVCI strategy needed a planning scenario to allow a plan of interventions to be developed, and this in turn needs an input level of transition to electric vehicles to aim for. National Grid's 2019 Future Energy Scenarios (FES) set out four main scenarios for EV transition. The scenario with the fastest uptake in the near-term projects that 8.18% of vehicles will be electric in 2025, rising to 75% by 2035. Using the FES 2019 scenario of 8.18% of the whole UK vehicle fleet being EVs in 2025, this projection gives a planning scenario with charger requirements of 2,700 fast, and 300 rapid public chargers in GM by 2025.*"

2.2. Transport for the North (TfN) launched the TfN EV Visualisation tool in October 2022. This is a mapping tool which outlines the scale and pace of change required across our regions to support a rapid and inclusive transition to electric vehicles. The TfN tool can be used to reforecast the levels of EV infrastructure that is needed within the 10 Greater Manchester Local Authorities.

2.3. Department for Transport datasets have been used to plot growth between 2015 and 2023. The TfN forecasting tool has been used to forecast growth of EV cars and the anticipated required amount of charging.

Electric Vehicle Uptake

- Where we are: In 2015, there were 752 electric cars registered in Greater Manchester and by 2019 this had increased to 2,000 cars. By the end of 2023, EV ownership increased to around 18,000[1] and are now circa 1.5% of the total GM vehicle fleet.

- GM Travel Diary Surveys (TRADS) 2023 survey estimated that 3% of the distance driven in a car/van by GM residents was in an EV.

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[1] In Q2 2020 a national leasing company began registering vehicles to a postcode in the Stockport Council area. From this date, Stockport's figures have been excluded from these figures.

- <u>Where we need to be</u>: TfN's Decarbonisation tool shows that across the North, a minimum of 51% of the vehicle fleet will need to be battery electric in 2035 to support their decarbonisation trajectory.

EV Charging

2.4.   The vast majority of the publicly available charging infrastructure in Greater Manchester is owned and operated by the private sector.

- <u>Where we are</u>: In 2019, there were around 450 publicly available chargers across Greater Manchester, providing circa 900 connection points. As of June 2024, this figure increased by circa 300% to 1,325 chargers (260 ultra, 284 rapids, 302 fast, 479 slow). This provides around 2,200 public connection points[2]. ENW also advise that there are circa 11,500 home chargers in April 2024.

- The 2021 GM EV strategy provided a planning scenario with charger requirements of 2,700 fast and 300 rapid public chargers in GM by 2025.

- <u>Where we need to be</u>: The stated TfN EVCI visualisation tool requirement is over 23,000 public chargepoint connections in Greater Manchester by 2035. This is a 10 fold increase over the next decade. The Greater Manchester Local Area Energy Plan states that EV ownership is projected to significantly outstrip the number of homes with off-street parking.

2.5.   The forthcoming Greater Manchester Local Transport Plan, currently in development, will set out GM's future ambition for EVCI, taking account of stakeholder and public engagement and the emerging priorities of the new government[3].

2.6.   The table at Appendix 1 sets out the number of publicly available charging points in GM, the numbers of home chargers, and Electric Vehicles within private keepership and that are company registered by Authority.

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[2] Zap Map data acquired by TfN

[3]The Labour Manifesto of June 2024 stated, "Labour will support the transition to electric vehicles by accelerating the roll out of charge points, giving certainty to manufacturers by restoring the phase-out date of 2030 for new cars with internal combustion engines, and supporting buyers of second-hand electric cars by standardising the information supplied on the condition of batteries."

3. Progress Across Other Modes

Taxi

3.1. Taxis play a crucial role in Greater Manchester's transport offer. They provide people with the flexibility of door-to-door transport on-demand, without needing to use or own their own vehicle. Given that over a quarter of households in Greater Manchester do not have access to a car of their own, taxis provide vital options for journeys that the public transport network cannot fulfil, for example for those with a disability or for out-of-hours journeys. They support our visitor and night-time economy for safe door-to-door travel. The Greater Manchester Travel Diary Surveys[4] (TRADS) shows that in 2023 GM residents made c.100,000 trips per day (c.37m trips per year) by taxi.

3.2. GM's vision for taxis is for them to offer safe and high-quality services which integrate with the wider transport network, providing greater public confidence in this important mode of travel.

3.3. In the 2017 LTP, the stated long-term aim is to "achieve more consistency across the conurbation, in order to provide a better, more integrated service to the customer and to ensure that taxis entering the Regional Centre and main town centres meet the highest environmental standards."

3.4. By switching to electric vehicles, taxis can contribute to the region's goal of achieving carbon neutrality by 2038, and improve the air quality. The table below sets out the number of zero emission private hire and Hackney vehicles currently licensed by a Greater Manchester Authority as of August 2024.

Table: PHV/Hackney Electrics by LA

	PHV Electric	Hackney Electric	Total	Total Number of Licensed Vehicles	% of Licensed Vehicles that are EVs
Bolton	8	0	8	1544	0.52%
Bury	5	1	6	747	0.8%
Manchester	39	26	65	4,002	1.62%
Oldham	13	1	14	1,607	0.87%
Rochdale	6	0	6	1,701	0.35%
Salford	13	0	13	968	1.34%
Stockport	16	0	16	1,023	1.56%
Tameside	10	8	18	781	2.3%
Trafford	11	0	11	1,005	1.09%
Wigan	21	3	24	977	2.46%

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[4] Greater Manchester Travel Diary Surveys | Bee Network | Powered by TfGM

| Total | 142 | 39 | 181 | 14355 | 1.26% |

Bus

3.5. In July 2023, the GM Bus Strategy set out Greater Manchester's intention to move to a fully electrified bus fleet by 2032. The Mayor has subsequently set out an ambitious goal for this transition to be completed by 2030, supporting the city region's wider vision of carbon neutrality by 2038.

3.6. As of July 2024: There are 132 ZEBs operating in Greater Manchester. This includes 100 Bee Network buses acquired using City Region Sustainable Transport Settlements (CRSTS) funding – 50 operating from Bolton depot, and 50 from Oldham depot; And 32 ZEBs currently operated by Stagecoach from Sharston depot, Wythenshawe, which will join the Bee Network from January 2025.

3.7. By the end of 2025, further ZEBs are due to come into operation in Greater Manchester taking the total electric fleet to approx. 25%.

3.8. In terms of bus depot electrification, TfGM have delivered a major programme of works over the past 12 months, including the electrification of Bolton and Oldham depots; and work will shortly be commencing on the electrification of another 4 depots at Middleton, Hyde Road, Ashton and Queens Road, as well as charging units on Piccadilly Approach as well adding more charging units to Bolton depot. Stockport and TfGM officers continue to work closely to deliver a new Zero Emission Bus fleet depot in Stockport.

3.9. TfGM is currently developing a fleet and depot strategy which will provide a roadmap for the electrification (including supporting infrastructure) of the remainder of the GM bus fleet. An update on this work will be brought to the Committee later this year.

Rail

3.10. Since the early 2010's there has been a series of projects to electrify rail lines in Greater Manchester the progress and plans of electrifying various rail lines in Greater Manchester, which allows the conversion of diesel traction to electric.

3.11. The government's deadline of 2040 for the use of diesel only trains, and the expectation that new train fleets will use alternative technologies such as battery or hydrogen, or have bi-mode capability to operate on non-electrified lines, will help the journey to zero emission travel.

3.12. Rail Operators have plans for the replacement of the old diesel trains used on local services, and both Northern and TransPennine Express are looking for new bi-mode trains. Some freight operators are introducing bi-mode and tri-mode locomotives, but the lack of full electrification is a barrier to faster adoption of sustainable traction.

3.13. More detail is set out at Appendix 2.

E Scooters, E-Bikes and E-Cargo Bikes

3.14. E-bikes, scooters and e-cargo bikes are important for the last mile for decarbonisation because they offer a low-carbon, low-cost, and convenient way to complete short trips. e-bikes and scooters can reduce greenhouse gas emissions, air pollution, and traffic congestion by replacing car trips or complementing public transport. They can also improve the accessibility and connectivity of public transport by expanding the catchment area and reducing the walking time to and from the stations. e-bikes and scooters can enhance the mobility and quality of life of urban residents by providing more options and flexibility for their daily travel.

3.15. E-cargo bikes are electrically assisted bicycles that can carry heavy loads of goods. They offer a low-carbon, low-cost, and convenient way to complete the last mile deliveries, e-cargo bikes can improve the efficiency and sustainability of urban logistics, and enhance the quality of life for city dwellers.

3.16. Both Amazon and Zedify are using e-cargo bikes for last mile deliveries within Greater Manchester. Greater Manchester was chosen for pilots of this infrastructure, in part, due to the cycling infrastructure meeting the requirements of e-cargo bikes.

3.17. To support a 'green' restart of local travel and help mitigate reduced public transport capacity, in July 2020, the Department for Transport (DfT) made regulations allowing trials of rental e-scooters to be fast tracked and expanded.

3.18. As a result, a trial in Salford has been developed and continues to run with the operator Lime – the latest trial extension has given a license for local authorities to continue until May 2026, when legislation is expected on the legality of this mode.

3.19. Whilst this is still in a trial phase, as of July 2024, there have been 1.2m trips on E-Scooters (as part of the Lime E-Scooter Scheme in Salford), with usage currently averaging 1,745 trips per day and 2.3 trips per vehicle per day (July 2024). Trip numbers have benefitted recently due to an increased vehicle fleet (was 550 now

800 vehicles) and an expanded trial area, which has been agreed by Salford City Council and the Department for Transport, to expand the scheme into Eccles and Patricroft. This also connects the scheme with Rail and Metrolink infrastructure.

3.20. It is estimated that approximately 1 in 4 e-scooter trips replace a car trip (either private or taxi). This contributes to a reduction in personal car use and allows for short trips to be taken via e-scooter. Around 55% of e-scooter users in Salford have stated they have used or would use e-scooters to connect with public transport.

3.21. The current Starling Bank Bike Hire scheme has 20% eBikes (~300) and these outperform standard bikes as they are ridden at least twice as often. In May 2024 there were 2.71 rides per eBike per day and 1.26 rides per standard bike per day.

3.22. There is also evidence to support eBikes enabling access to destinations that are further afield. Starling Bank eBike rides tend to be longer in duration and distance than standard bike rides. In May 2024 the average eBike ride was 17 minutes vs 15 minutes on a standard bike (or 3 kms on an eBike vs 2.5kms on a standard bike).

Commercial Vehicles

3.23. Electric vans, in particular, are increasingly attractive as their price relative to conventionally fuelled vehicles reduces; range increases; and lifecycle costs become more certain. Sales of electric vans are increasing, albeit from a low base and a lower market share than electric cars. At end December 2023, DfT data shows that there were circa 700 electric vans registered in Greater Manchester[5]. Public sector fleet transition is an on-going 'early mover' which can demonstrate benefits to the commercial fleet.

3.24. In terms of Heavy Goods Vehicles, there are a number of pilots the UK underway to demonstrate that electric HGV transportation is commercially viable. In line with Government regulation all new HGVs sold in the UK are required to be zero emission by 2040. Fuel cell technology, where hydrogen and oxygen are combined through an electrochemical reaction to generate electricity is an area of development.

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[5] In Q2 2020 a national leasing company began registering vehicles to a postcode in the Stockport Council area. From this date, Stockport's figures have been excluded from these figures.

Metrolink

3.25. Metrolink is the largest light rail network in the UK and runs on 100% renewable electricity, and does not produce any tailpipe emissions.

Power Purchase Agreement

3.26. In anticipation of an increase in electricity demand for public transport, TfGM are progressing work on the procurement of a Power Purchase Agreement (PPA). A PPA is a contract between a buyer and a seller of electricity, which will be from incremental renewable sources to the national grid. The buyer agrees to pay a fixed price for a certain amount of electricity over a specified period of time, while the seller guarantees to deliver the electricity from a specific renewables project.

3.27. PPAs provide a stable and predictable cash flow allowing investors them to raise the necessary capital to fund investment in renewable energy sources; and to protect buyers from the significant 'spikes' that have occurred in energy prices in recent years

3.28. PPAs also enable buyers to reduce their greenhouse gas emissions and meet their sustainability targets by sourcing clean energy at a competitive price.

3.29. An initial PPA for Metrolink's electricity consumption, would act as a pathfinder, enabling future PPAs to address future demand growth from an electrified bus fleet and to encompass other organisations within GM.

3.30. It is anticipated that the Pathfinder PPA will be concluded in 2025 with energisation of the renewable power facility anticipated to be in 2027 / 2028, subject to the final agreement. An update will be provided to the Committee as the procurement progresses.

4. Updates on EV Programmes

4.1. The delivery and operation of Greater Manchester's publicly funded Electric Vehicle Charging Infrastructure (EVCI) has been co-ordinated by Transport for Greater Manchester (TfGM) since 2013 to ensure a consistent and co-ordinated approach across the city region.

4.2. TfGM and its local authority partners have launched various policies and initiatives to support the switch to EVs and ECPs in the region.

Dedicated Taxi Electric Vehicle Charging Instructure

4.3. The Taxi EV project includes the rollout of 60 rapid charging points across Greater Manchester dedicated for EV private hire (PHV) and hackney vehicles licensed by a Greater Manchester Authority.

4.4. 57 charging points are now live, with the remaining chargers due to go live by end of 2024.

Early Measures – EV Awareness and Infrastructure

4.5. Since the Joint Air Quality Unit Early Measures funding was awarded in March 2018 TfGM has delivered 23 out of the 25 rapid publicly accessible charging points, final sites will be live by mid-September 2024.

4.6. Additionally, through the Early Measures project TfGM have delivered 18 promotional events for business and the general public, an Electric Travel website [Home | TfGM Electric Travel](). TfGM have also directly engaged with over 50 businesses and Local Authorities in the Greater Manchester area around various Electric Vehicle opportunities, including fleet; and providing charging points to improve their commitment to electric vehicles.

Local Electric Vehicle Infrastructure (LEVI) fund

4.7. LEVI funding is designed by Office for Zero Emission Vehicles (OZEV) to move away from previous funding models of an owner-operator model, into that of a more commercial arrangement. This strategic direction links closely with the recommendations noted by the GMCA in March 2023.

4.8. The stated aims of OZEV's LEVI fund are to:

- Deliver a step-change in the deployment of local, primarily low power, on-street charging infrastructure across England; and to

- Accelerate the commercialisation of, and investment in, the local charging infrastructure sector.

4.9. The Capital element of GM's LEVI allocation has been confirmed as £16,158,000.

4.10. To meet OZEV's requirements for collaboration in delivery TfGM are responsible for managing the procurement and delivery of the programme, and the local authorities will be responsible for managing the operations and maintenance (with the Charge Point Operator) once the charging points are operational.

4.11. GM's initial submission to OZEV outlined GM's intention to install between 3,300 and 4,500 charging points across Greater Manchester.

4.12. TfGM are managing the procurement and delivery and Local Authorities will be responsible for managing the operations and maintenance (with the Charge Point Operator) once operational. Following GMs initial submission the preferred procurement route was stayed pending guidance being received from HMG regarding its lawfulness. GM is with other LAs exploring alternative options including running its own procurement exercise. TfGM anticipates that this programme of work will result in the installation of chargers in 2026.

4.13. The LEVI funding allocation for each authority will not be based on a predetermined formula, as this would not reflect the actual costs and needs of each area. Instead, the funding will be distributed after the competitive procurement process, where the successful bidders will have to demonstrate their costs, which will include the energy distribution costs, the type and number of charging points, and the local authority infrastructure preferences. This approach will ensure that the funding is used efficiently and effectively to meet the demand and the objectives of the scheme.

4.14. The key considerations in installing infrastructure include;

- Finding suitable locations for the chargers that are accessible, convenient, and safe for EV drivers, as well as compatible with the existing electricity network, Streets for all Design Guide[6] and planning regulations.

- Individual Local Authority appetite for on-street charging (compared to off street charging, in for example, Local authority car parks)

- Local Authority interest in different types of chargers for example flush fitting chargers or pedestal chargers and the potential, and the mechanism, for charging from street lighting columns which has been implemented successfully elsewhere in the country but not, to date, in Greater Manchester.

- Securing the cooperation and consent of landowners, and other stakeholders who are involved in the installation and maintenance of the chargers.

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[6] any public on-street EV charging facilities and equipment such as feeder pillars should not compromise footway width

4.15. An alternative to the installation of electric charge points are cable channels. A cable channel for a house without off street parking is installed in the pavement that allows the vehicle owner to charge their electric vehicle from their home without leaving a cable across the pavement, an offence under the Highways Act 1980 if they do not have the consent of the highway authority. The channel typically has a lid that can be opened and closed to store and access the cable when needed. The channel connects to a socket in the home and runs under the pavement to a point near the vehicle. This way, the cable does not create a trip hazard or an obstruction for pedestrians or other road users.

4.16. LEVI funding could be allocated to support the installation of these channels. However, Local Authorities, as the highway authorities, must evaluate liability and maintenance concerns prior to approving their installation. There is currently no agreement across the metropolitan area regarding the implementation of cable channels. Officers are working together to evaluate the options to come to a clear position in the New Year.

CRSTS Funding

4.17. £8.5m of CRSTS[1] funding was allocated for the roll-out of EVCI. In March 2023, GMCA endorsed a funding distribution model for CRSTS funds based on population, the proportion of rural areas in a Local Authority area (as these are often less likely to be served by the commercial market) and the level of housing stock which has neither off-street parking nor access to charging within five minutes' walk.

4.18. The Bee Network Committee, on 21 March 2024, approved the drawdown of a further £1.086m CRSTS funding, to be allocated across the 10 GM local authorities to support LA capability requirements in progressing the commercialisation and investment in on-street charging infrastructure across GM through OZEV's LEVI capital fund.

4.19. The remainder, using a formula agreed at the GMCA in March 2023, allows authorities to bring forward proposals of their own or to include their allocation in LEVI procurement.

5. Monitoring Electric Travel

5.1. Zero Emission travel is a term that refers to the use of transport modes that do not emit any greenhouse gases or air pollutants from their operation. Zero emission journeys will help to reduce the environmental impact of transport and contribute to ambition for the city region to be carbon neutral by 2038.

5.2. It is proposed that GM adopts two new indicators:

- The percentage of residential properties (without access to off-street parking) that are within 300m) of charging infrastructure. The percentage of residential properties (without access to off-street parking) that are within 300m[7] of a charging point. This allow Greater Manchester to track progress towards facilitating charging infrastructure in residential areas without a significant amount of off-street parking.

  The methodology is developed based on data provided by Transport for the North. This data employs artificial intelligence and satellite imagery to determine the number of houses without off-street parking. Using Zap Map data to monitor the number of charge points, TfGM can calculate the number of residential properties (without access to off-street parking) that are within 300m[8] of a charging point. The current baseline for Greater Manchester is 22%. To be reported quarterly.

  This Greater Manchester figure can be disaggregated by Local Authority and can be seen at Appendix 3

- A Zero Emission Journey Tracker to allow GM to monitor the progress of journeys by mode that do not emit any greenhouse gases or air pollutants from their use, which supports the ambition for the city region to be carbon neutral by 2038. This recognises that we need to see a switch to transport modes that do not emit any greenhouse gases or air pollutants from their use. The current baseline for Greater Manchester is 36%. To be reported annually.

  The table at Appendix 4 outlines the journey types the tracker will monitor along with the zero emission positions for each of them, along with the

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[7] This distance is approximately 5 minutes' walk
[8] This distance is approximately 5 minutes' walk

baseline data for each journey type, such as the current percentage of zero emission journeys and the ambition for electrification.

5.3. Both these indicators will be reported as outcomes in GM's 5 Year Environment Plan.

Appendix 1 Publicly accessible devices, home chargers & vehicles

The table below sets out the number of publicly available charging in GM, the numbers of home chargers, and Electric Vehicles within private keepership and that are company registered by Authority.

	Charge Points								Battery Electric Vehicles[9]		
	Publicly Available Devices[10]							Home Chargers[11]	Car Private Keepership	Car Company Registered	Light Goods Vehicles
Authority	Locations	Devices	Connectors	Ultra	Rapid	Fast	Slow				
Bolton	28	71	116	8	19	27	17	1,112	1,082	662	32
Bury	34	58	117	19	14	12	13	974	866	746	43
Manchester	98	400	557	54	27	79	240	1,173	1,240	2,237	275
Oldham	48	110	190	34	31	18	27	652	741	501	32
Rochdale	28	67	140	9	25	18	15	750	802	478	67
Salford	60	141	258	10	24	53	54	820	827	567	112
Stockport	40	86	169	13	44	14	15	1,999	1,715	81,656[12]	3829[10]
Tameside	26	47	93	8	15	11	13	769	704	394	38
Trafford	54	218	347	89	49	29	51	1,895	1,644	882	47
Wigan	41	127	189	16	36	41	34	1,394	1,356	569	43
Total	457	1325	2176	260	284	302	479	11,538	10,988	88,694	4518

[9] DfT Statistics end Q4 2023
[10] Data supplied by TfN/Zap Map July 2024 data
[11] Supplied by ENW April 2024
[12] In Q2 2020 a national leasing company began registering vehicles to a postcode in the Stockport Council area.

| BOLTON | MANCHESTER | ROCHDALE | STOCKPORT | TRAFFORD |
| BURY | OLDHAM | SALFORD | TAMESIDE | WIGAN |

Appendix 2 – Rail Decarbonisation

Since the early 2010's there has been a series of projects to electrify rail lines in Greater Manchester, allowing the conversion of diesel traction to electric traction. The lines which have been electrified are Manchester – Newton-le-Willows – Liverpool, Manchester – Bolton – Preston – Blackpool and Wigan – Liverpool. Ongoing projects are electrifying Wigan – Bolton and Manchester – Stalybridge, with plans to convert more services to electric traction in 2026, while the TransPennine Route Upgrade will electrify the full Manchester – Huddersfield – Leeds – York route by the early 2030's.

In addition, the Manchester Task Force are progressing designs and Business Case for the modernisation of the CLC line (Manchester – Warrington – Widnes – Liverpool), which includes electrification and there remain aspirations for further electrification of key routes, such as Hope Valley (mentioned in Network North), Calder Valley and Atherton lines.

In the meantime, the Government have set a deadline of 2040 for the use of diesel only trains, with the expectation that new train fleets will make use of alternative technology (battery or hydrogen) or have bi-mode capability to operate on the non-electrified lines. TransPennine Express currently have a fleet of 19 bi-mode (diesel / electric) trains on the North TransPennine route and one of these is currently being trialled with battery technology with a view to future replacement of the diesel engines with battery capability. Avanti West Coast are also replacing their remaining diesel trains with electric or bi-mode trains in order to eliminate operation of diesel trains under the wires on the West Coast Main Line.

The majority of diesel trains used on local services are between 30 and 40 years old and plans are underway for the replacement of these, with Northern recently issuing a Prior Indication Notice to the market. In addition, TransPennine Express have also commenced expressions of interest for new trains as part of the TransPennine Route Upgrade. It is expected that both train fleets will make use of bi-mode technology.

Rail Freight currently remains largely reliant on diesel technology, with extensive use of class 66 locomotives purchased in the early 2000's, which are considered to be mid-life. However, as thoughts turn to future replacement of these locomotives,

BOLTON   **MANCHESTER**   **ROCHDALE**   **STOCKPORT**   **TRAFFORD**
BURY   **OLDHAM**   **SALFORD**   **TAMESIDE**   **WIGAN**

bi-mode and tri-mode freight locomotives are currently in development. Rail Operations Group are introducing a class 93 tri-mode (electric / diesel / battery) locomotive, with 10 on order, while GBRF have ordered 30 more powerful class 99 dual mode (electric / diesel) locomotives. While there are benefits to electric traction in terms of haulage capability and speed, the lack of full electrification on many lines, along with a lack of Government commitment for further electrification is proving a barrier to speedier adoption of sustainable traction within the rail freight sector.

Appendix 3- Percentage of Residential Properties (without access to off-street parking) that are within 300m of Charging Infrastructure

The table below show the percentage of residential properties without access to off-street parking that are within 300m of Electric Vehicle Charging Infrastructure. This distance is approximately 5 minutes' walk.

Local Authority	% of residential properties without access to off-street parking that are within 300m of charging infrastructure
Bolton	11%
Bury	14%
Manchester	30%
Oldham	19%
Rochdale	13%
Salford	35%
Stockport	16%
Tameside	17%
Trafford	25%
Wigan	13%
GM Total	**22%**

Appendix 4 – Zero Emission Journey Tracker

The table below outlines the journey types the tracker will monitor along with the zero emission positions for each of them, along with the baseline data for each journey type, such as the current percentage of zero emission journeys and the ambition for electrification.

Journey Type	Zero emission positions	Baseline annual trips – 2023	GM Ambition
Walking	100%	630,400,000	To connect all communities in Greater Manchester with a comprehensive walking, wheeling and cycling network of safe and attractive routes that connect people to the places they want to go to make active travel the natural choice for short journeys– see Home	TfGM Bee Active
Cycling	100%	44,500,000	
Bus	5%	83,000,000	The full electrification of Greater Manchester's bus fleets (and supporting infrastructure) by 2032, with 50% of the fleet to be zero emission by 2027 – see Greater Manchester Bus Strategy	Bee Network	Powered by TfGM
Metrolink	100%	28,000,000	To extend the Metrolink network to new areas and to increase the frequency and capacity of the existing lines – see The future of rapid transit	Bee Network	Powered by TfGM
Local Rail	35%	21,300,000	To work with the wider rail industry to maximise decarbonisation through extending electrification, replacing diesel trains through bi- or tri-mode trains and removing diesel operation under electrified lines.
Cars	1%	1,180,100,000	To promote the shift to electric vehicles as well as plan for growth in a way that reduces dependency on the car by ensuring that communities have easy and local access to amenities while encouraging sustainable modes of transportation.
Taxi	1%	38,600,000	To enable the transition to Low Emission Vehicles for the GM taxi fleet.
All Trips Considered	36%	2,025,900,000	An integrated London-style transport system which will join together buses, trams, cycling and walking and rail.

The table above used TRADS data which only considers trips made by GM residents, and as such a freight baseline cannot be set using the methodology. TRADS data is based upon an annual survey of the travel of members of 2,000 households in GM over a 24-hour period. The study is designed to proportionally represent each GM district based upon the demographics of the resident population. The forthcoming Local Transport Plan will set out the issues and opportunities for zero carbon logistics.

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Greater Manchester Green City Region Partnership

Date: 17 October 2024

Subject: Greater Manchester Climate Change Risk Assessment

Report of: Sam Evans, Head of Natural Environment, GMCA

Purpose of Report:

The purpose of this report is to note the development of a Greater Manchester Climate Change Risk Assessment (Annex), highlight its publication as a technical Annex alongside the forthcoming 5-Year Environment Plan and outline the next steps in publishing a GM Climate Adaptation Strategy and Implementation Plan.

Recommendations:

The Partnership is asked to:

1. Note and comment upon the Greater Manchester Climate Change Risk Assessment
2. Endorse the plan for publication alongside the forthcoming 5-Year Environment Plan.
3. Note the next steps in producing a Greater Manchester Climate Adaptation Strategy and Implementation Plan.

Contact Officers:

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Jessica.Skeggs@gratermanchester-ca.gov.uk

1.0 INTRODUCTIONS

The impacts of climate change and the climate emergency are now being felt across the globe, including in the UK. Several extreme events have been attributed to climate change, including the flooding and extreme heat events experienced in Greater Manchester over recent years, such as the 2015 Boxing Day floods, and the July 2022 extreme heatwave; both of which have been found to be more likely to occur because of climate change. These events are projected to become more frequent and intense over the coming decades as the climate continues to change.

Two policy responses are required to tackle this:

- **<u>Mitigation</u>** – reducing greenhouse gas emissions to reduce the degree and severity of climate change and its impacts, and
- **<u>Adaptation</u>** – adjusting to actual or expected future climate change, reducing risks and aiming to benefit from any associated opportunities where possible

Both adaptation and mitigation are necessary as adaptation is needed to reduce the associated risks of climate change that are now locked in. The first step in ensuring our city-region is well-adapted to the increasing impacts of climate change is to understand the risks and opportunities that we face from a changing climate. To do this, the Greater Manchester Climate Change Risk Assessment has been developed.

2.0 GREATER MANCHESTER CLIMATE CHANGE RISK ASSESSMENT

63 climate risks and opportunities for Greater Manchester have been identified in the development of the Greater Manchester Climate Change Risk Assessment, across the following themes: Natural Environment; Business and Industry; Infrastructure; Built Environment, Health and Communities; and International Dimensions (which are international in nature but will have some impacts in Greater Manchester).

The UK's Third Climate Change Risk Assessment (UK CCRA3), developed by the Climate Change Committee, was used as the primary resource for identifying climate risks and opportunities. Using climate projection data for Greater Manchester, stakeholder workshops and expert input, these were re-assessed for Greater Manchester, including their risk magnitude scores.

Of these 63 climate risks, 14 have been classed as of High or Very High Magnitude for Greater Manchester in the present day, and 27 have been classed as of High or Very High Magnitude by the 2050s.

3.0 GREATER MANCHESTER CLIMATE ADAPTATION STRATEGY AND IMPLEMENTATION PLAN

A joint bid from Greater Manchester Combined Authority and Manchester City Council has been successful in securing ~£180,000 of Horizon Europe funding as part of their Pathways2Resiliece Programme. The programme runs for 18-months from September 2024 and aims to increase the resilience of European regions and communities in the face of climate change by helping them to develop a Baseline Report as well as a Climate Resilience Strategy, Action Plan and Investment Plan.

The outputs will be developed at a city region scale by Greater Manchester Combined Authority with Manchester City Council helping to understand how this can be applied to a local authority level. The strategy and implementation plan will help to provide the strategic direction to realise the vision of a well-adapted, resilient and climate-ready Greater Manchester. It will include outline appraised adaptation actions and seek to integrate adaptation into relevant projects, policies and plans.

4.0 NEXT STEPS

The Greater Manchester Climate Change Risk Assessment is due to be published in December 2024, alongside the forthcoming 5 Year Environment Plan. Following publication, the Greater Manchester Climate Change Risk Assessment can be used by GM local authorities, public and private sector to support the development of local-level or organisational-level climate change risk assessments – a key stage to increasing climate resilience and adapting to climate impacts. It can also be used by GMCA Directorates to identify relevant climate risks in Directorate risk registers and business plans, helping to embed climate resilience and adaptation action across relevant service areas.

For the Pathways2Resilience project, the Baseline Assessment is due in June 2025 and all other deliverables (Climate Resilience Strategy, Action Plan and Investment Plan) are to be delivered by February 2026.

Greater Manchester Climate Change Risk Assessment

October 2024

Table of Contents

Executive Summary

The impacts of climate change and the climate emergency are now being felt across the globe, including in the UK. Several extreme events have been attributed to climate change, including the flooding and extreme heat events experienced in Greater Manchester over recent years, such as the 2015 Boxing Day floods, and the July 2022 extreme heatwave; both of which have been found to be more likely to occur because of climate change.

The climate in Greater Manchester has already changed; 5 of the warmest years on record have occurred since 2006, and the most recent decade (2012 to 2021) has been on average 1.0°C warmer than the 1961 to 1990 average. Seasonal rainfall has also changed significantly, with decreasing summer rainfall and increasing winter rainfall.

Climate projections show that for Greater Manchester, we can expect to see:

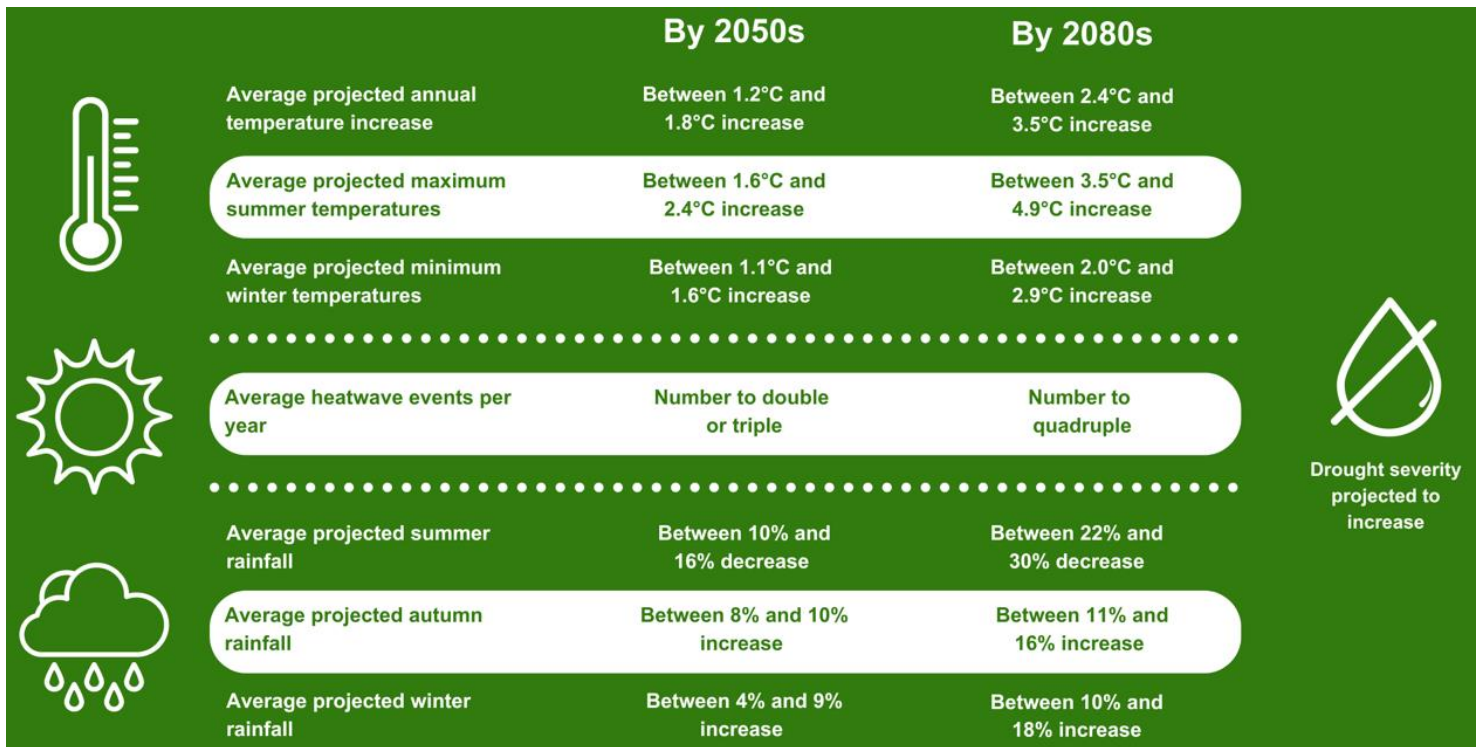This is projected to bring the following climate-related impacts:
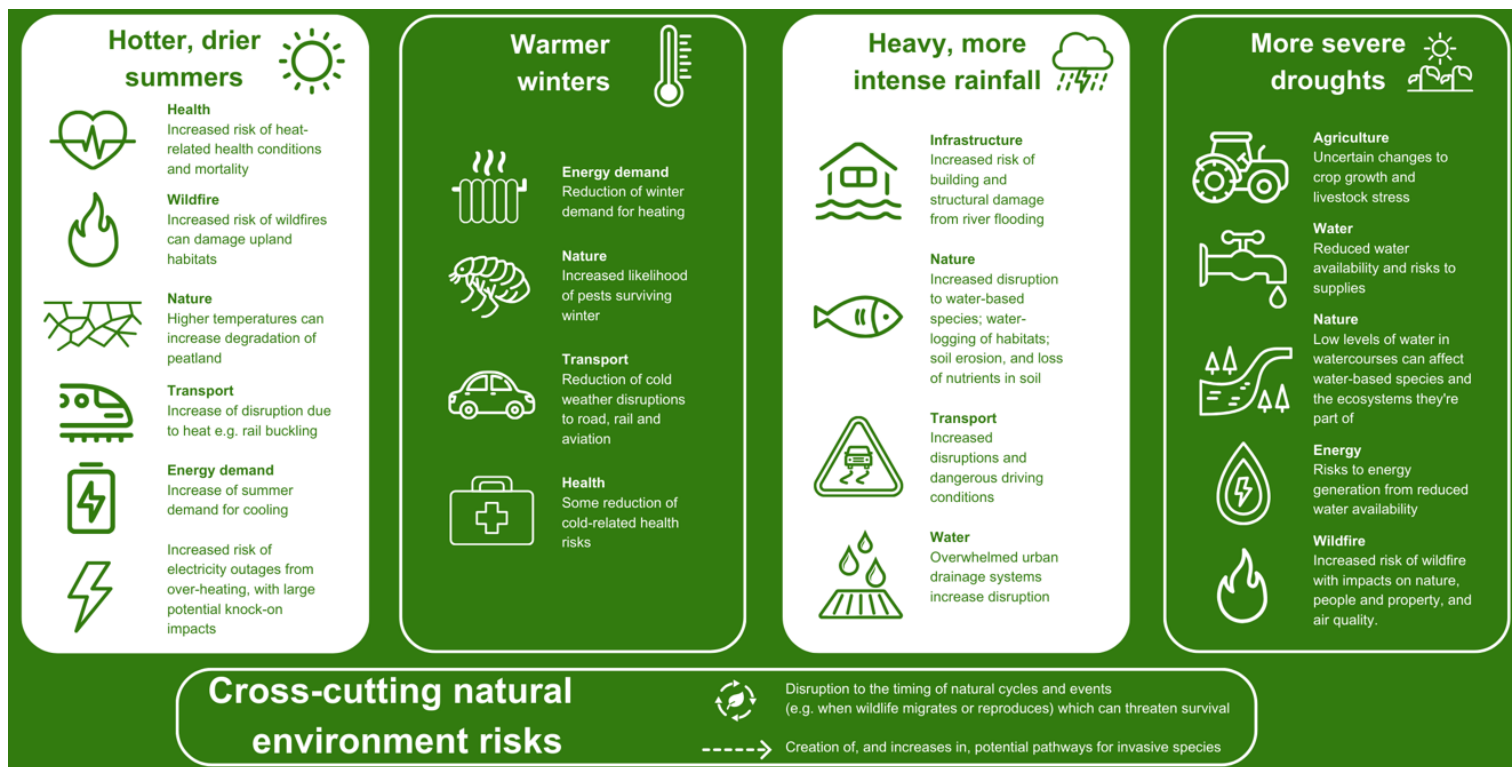
Climate projections make use of different global greenhouse gas emission scenarios to project a range of potential changes in climate. In Greater Manchester, our climate is projected to change in several ways, shown in the infographic below.[1, 2] These changes are relative to the 1981-2010 baseline period.[3]

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[1] Range of values taken from Met Office UK Climate Projections using a medium-high carbon emissions scenario and a high carbon emissions scenario (RCP 6.0 and RCP 8.5). More information can be found at: Met Office (2018) UKCP18 Guidance: Representative Concentration Pathways, link.

[2] Drought Severity Index is calculated with 12-month rainfall deficits provided as a percentage of the mean annual climatological total rainfall (1981–2000) for that location. It measures the severity of a drought, not the frequency. Higher values indicate more severe drought. It uses Met Office UK Climate Projections 18 (UKCP18) data. link.

[3] The range of values are taken from the Met Office UK Climate Projections 18 (UKCP18) data, using a medium-high carbon emissions scenario and a high carbon emissions scenario.

	By 2050s	By 2080s
Average projected annual temperature increase	Between 1.2°C and 1.8°C increase	Between 2.4°C and 3.5°C increase
Average projected maximum summer temperatures	Between 1.6°C and 2.4°C increase	Between 3.5°C and 4.9°C increase
Average projected minimum winter temperatures	Between 1.1°C and 1.6°C increase	Between 2.0°C and 2.9°C increase
Average heatwave events per year	Number to double or triple	Number to quadruple
Average projected summer rainfall	Between 10% and 16% decrease	Between 22% and 30% decrease
Average projected autumn rainfall	Between 8% and 10% increase	Between 11% and 16% increase
Average projected winter rainfall	Between 4% and 9% increase	Between 10% and 18% increase

Drought severity projected to increase

Climate adaptation is one of two key policy responses to climate change, alongside mitigation (or reduction of greenhouse gas emissions). Both adaptation and mitigation are necessary as adaptation is needed to reduce the associated risks of climate change that are now locked in. The first step in ensuring our city-region is well-adapted to the increasing impacts of climate change is to understand the risks and opportunities that we face from a changing climate.

To do this, 63 climate risks and opportunities for Greater Manchester have been identified in the development of this Greater Manchester Climate Change Risk Assessment, across the following themes: Natural Environment; Business and Industry; Infrastructure; Built Environment, Health and Communities; and International Dimensions (which are international in nature but will have some impacts in Greater Manchester).

The UK's Third Climate Change Risk Assessment (UK CCRA3) was used as the primary resource for identifying climate risks and opportunities. Using climate projections data for Greater Manchester, stakeholder workshops and expert input, these were re-assessed for Greater Manchester, including their risk magnitude scores.

Of these 63 climate risks, 14 have been classed as of High or Very High Magnitude for Greater Manchester in the present day, and 27 have been classed as of High or Very High Magnitude by the 2050s (see **Table 1** and **Table 2** below); (**Chapter 3** has the risk descriptions and summary of evidence underpinning the risk magnitude scores for Greater Manchester). It should be noted that risks in the 'International Dimensions' theme in the UK CCRA3 have not been reassessed for Greater Manchester, as these are national-level risks and are unlikely to be influenced greatly by local/regional context and activity. These International Dimensions risks have therefore been included in the GM CCRA using the UK-level CCRA risk magnitude scores.[4] These are highlighted in grey in the tables below.

This report looks at how our climate in Greater Manchester has already changed, how it is projected to change over the coming decades, and the climate-related risks and opportunities that could be experienced in Greater Manchester as a result of this climate change, to develop a Greater Manchester Climate Change Risk Assessment. It has been developed alongside key stakeholders and local experts from across Greater Manchester.

This Greater Manchester Climate Change Risk Assessment is a key part of the evidence base to inform the development of a Climate Change Adaptation Strategy and Action Plan for Greater Manchester. This Strategy and Action Plan will provide the strategic direction to realise our vision of a well-adapted, resilient and climate-ready Greater Manchester, outline appraised adaptation actions, and seek to integrate adaptation into relevant projects, policies and plans.

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[4] Full information on these climate risks is available in Chapter 7 of the UK CCRA3.

Table 1. Present day High Magnitude risks and opportunities for Greater Manchester.

Theme	Risk or Opportunity	Risk Magnitude Score
Natural Environment	N1 Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)	High
	N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change, water scarcity and wildfires	High
	N12 Risks to freshwater species and habitats from pests, pathogens and invasive species	High
Infrastructure	I1 Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	High
	I2 Risks to infrastructure services from river, surface water and groundwater flooding	High
	I10 Risks to energy from high and low temperatures, high winds, lightning	High
Health, Communities and Built Environment	H1 Risks to health and wellbeing from high temperatures	High
	H3 Risks to people, communities and buildings from flooding and storms	High
	H7 Risks to health and wellbeing from changes in indoor and outdoor air quality	High
	H9 Risks to food safety and food security	High
Business	B1 Risks to business sites from flooding	High
International Dimensions	ID1 Risks to UK food availability, safety, and quality from climate change overseas	High (UK Score)
	ID9 Risk to UK public health from climate change overseas	High (UK Score)

Theme	Risk or Opportunity	Risk Magnitude Score
	ID10 Risk multiplication from the interactions and cascades of named risks across systems and geographies	High (UK Score)

Table 2. 2050s High Magnitude risks and opportunities for Greater Manchester.[5]

Theme	Risk	Risk Magnitude Score
Natural Environment	N1 Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)	High
	N2 Risks to terrestrial species and habitats from pests, pathogens and invasive species	High
	N4 Risk to soils from changing climatic conditions, including seasonal aridity and wetness.	High
	N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change, water scarcity and wildfires	**Very High**
	N11 Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts.	High
	N12 Risks to freshwater species and habitats from pests, pathogens and invasive species	High
	N18 Risks and opportunities from climate change to landscape character	High

[5] Assuming a 2°C end-of-century global warming level, compared to pre-industrial levels.

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Theme	Risk	Risk Magnitude Score
Infrastructure	**I1 Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures**	**Very High**
	I2 Risks to infrastructure services from river, surface water and groundwater flooding	**Very High**
	I4 Risks to bridges and pipelines from flooding and erosion	High
	I9 Risks to energy generation from reduced water availability	High
	I10 Risks to energy from high and low temperatures, high winds, lightning	High
	I12 Risks to transport from high and low temperatures, high winds, lightning	High
	I13 Risks to digital from high and low temperatures, high winds, lightning	High
Health, Communities and Built Environment	**H1 Risks to health and wellbeing from high temperatures**	**Very High**
	H3 Risks to people, communities and buildings from flooding and storms	**Very High**
	H6 Risks and opportunities from summer and winter household energy demand, (a) **Opportunity** -winter	High
	H9 Risks to food safety and food security	High
	H12 Risks to health and social care delivery from extreme weather	High
	H15 Social inequalities exacerbated as a result of climate change, with disadvantaged and vulnerable groups facing disproportionate climate impacts	High
Business	B1 Risks to business sites from flooding	High
	B6 Risks to business from disruption to supply chains and distribution networks	Unknown magnitude as difficult to quantify, but **High Priority** due

Theme	Risk	Risk Magnitude Score
		to potentially very large impacts
	B7 Opportunities for business from changes in demand for goods and services	High
International Dimensions	ID1 Risks to UK food availability, safety, and quality from climate change overseas	High (UK Score)
	ID6 Opportunities from climate change on international trade routes	High (UK Score)
	ID9 Risk to UK public health from climate change overseas	High (UK Score)
	ID10 Risk multiplication from the interactions and cascades of named risks across systems and geographies	High (UK Score)

1. Introduction

Climate adaptation and mitigation

The impacts of climate change and the climate emergency are already being felt across the world, including through the increased frequency and intensity of flooding, droughts and extreme heat events. In Greater Manchester, the flooding and extreme heat events experienced over recent years, such as the 2015 Boxing Day floods, and the July 2022 extreme heatwave, have been made more likely because of climate change[6,7,8]. These events are projected to become more frequent and intense over the coming decades.

Two policy responses are required to tackle this:

- Mitigation – reducing greenhouse gas emissions to reduce the degree and severity of climate change and its impacts.
- Adaptation – adjusting to actual or expected future climate change, reducing risks and aiming to benefit from any associated opportunities where possible.[9]

Both these responses are crucial, as is the link between them – the greater the progress in mitigation, the fewer adjustments that will be required to be made to a changing climate. However, even if we were to reach net-zero carbon emissions tomorrow, a certain level of climate change is already locked into the global climate system – further global temperature increases, beyond what is already being experienced, are now unavoidable. Adaptation will therefore be needed to reduce the associated risks of climate change. There will be significant costs (both economic and social) from adaptation inaction; that is, where we do not adapt sufficiently to climate change, meaning the negative impacts from climate events will be greater. The annual economic cost of climate change in Greater Manchester has been estimated by the London School of Economics[10] at around 2.5% of our Gross Domestic Product (GDP) by the 2050s, assuming current policies on climate and

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[6] Friederike E L Otto et al 2018 Environ. Res. Lett. 13 024006, link

[7] Met Office (2020) Chances of 40°C days in the UK increasing, link.

[8] Met Office (2022) UK and Global extreme events – Heatwaves, link

[9] LSE (2021) What is Climate Change Adaptation? Link

[10] LSE (2022) What will climate Change Cost the UK? Link

carbon continue,[11] or around 1.7% of GDP under a high mitigation scenario.[12] Adaptation is therefore required to help reduce these costs, and the impacts felt by wider society.

In addition, there is a strong body of evidence that there are potentially high economic benefits from further adaptation for many climate risks and opportunities, with many early adaptation investments delivering high value for money.[13] **Figure 1** from the UK Climate Change Risk Assessment shows that the benefit-cost ratios often range from 2:1 to 10:1; meaning every £1 invested in climate adaptation could result in £2 to £10 in net economic benefits. The analysis also found that adaptation also often leads to important co-benefits, and that there are benefits from taking further adaptation action for almost every risk assessed in the CCRA report.
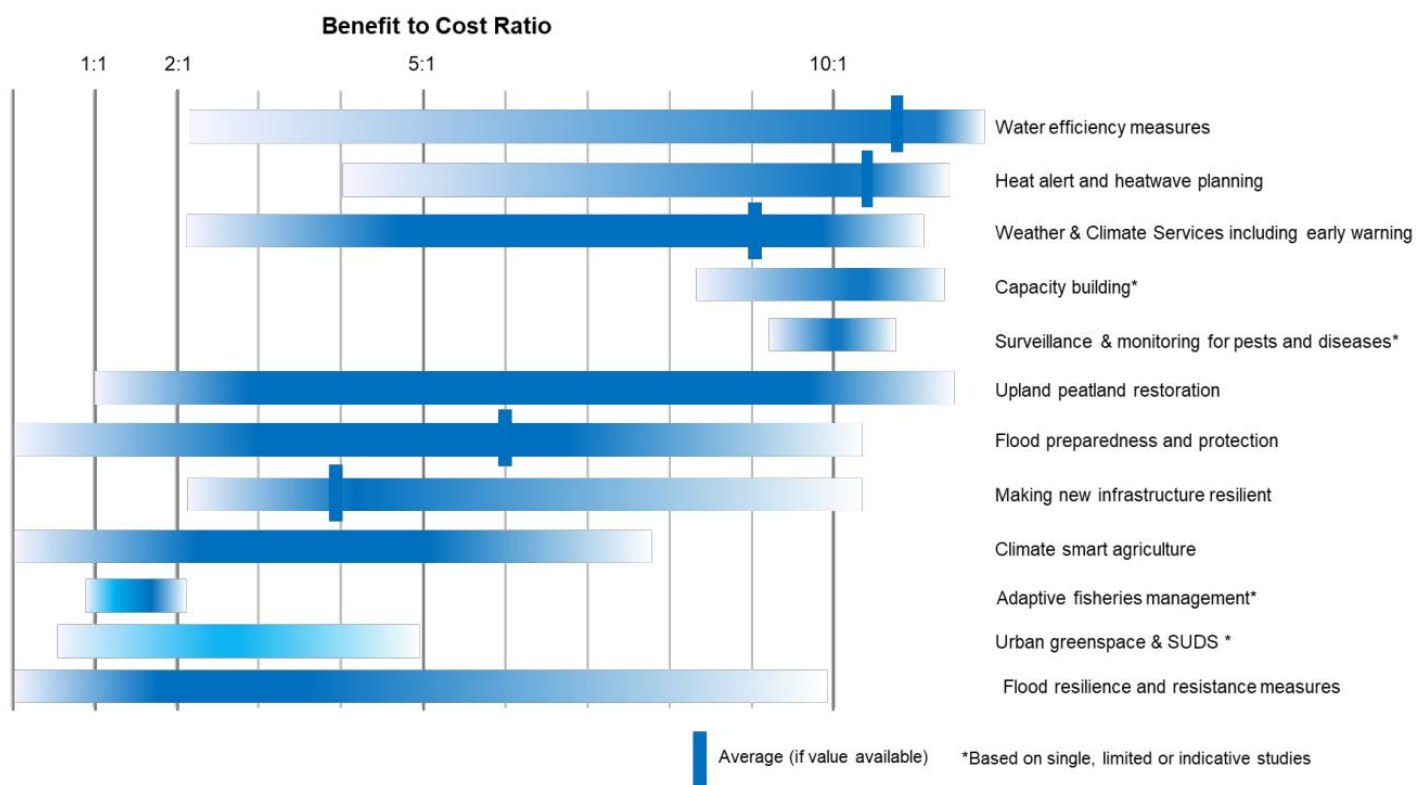

Figure 1. Benefit to Cost ratios for Adaptation for selected measures.[14]

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[11] The 'current policies' scenario is characterised by a lack of climate policy ambition and global coordination. CO2 emissions and global temperatures continue to increase.

[12] The 'high mitigation' scenario is characterised by sustainable action through strong investments in green technologies. Global emissions fall throughout the century and become net-negative after 2075 through carbon dioxide removal; global temperatures increase but by a lower level than in the 'current policies' scenario.

[13] Watkiss P, Cimato F and Hunt A (2021) Monetary Valuation of Risks and Opportunities in CCRA3. UK Climate Risk, Report to the Climate Change Committee as part of the UK Climate Change Risk Assessment 3. Link

[14] Notes: Figure shows the indicative benefit: cost ratios and ranges for a number of adaptation measures. It is based on the evidence review undertaken in the CCRA3 Valuation study, which was co-funded by the EU's Horizon 2020 RTD COACCH project (CO-designing the Assessment of Climate Change costs). Vertical bars show where an average Benefit-Cost Ratio (BCR) is available, either from multiple studies or reviews. It is stressed that BCRs of adaptation measures are highly site- and context-specific and there is future uncertainty about the scale of climate change: actual BCRs will depend on these factors.

The purpose of the GM CCRA

The first step in ensuring our city-region is well-adapted to the increasing impacts of climate change is to understand the risks and opportunities that we face from a changing climate. To do this, we need to understand, for Greater Manchester:

- How our climate is already changing.
- How our climate will change in the future.
- What this means for future climate risks and opportunities.

This is the purpose of this Greater Manchester Climate Change Risk Assessment (GM CCRA). It is also important to recognise that the impact of climate risks will be unequal; many climate risks will affect the most vulnerable in our city region the most severely. Climate hazards can interact with and exacerbate risks from other challenges, such as poverty, poor health or poor housing. This has been accounted for in this GM CCRA through desk-based research and stakeholder workshops.

The GM CCRA will form a key part of the evidence base to inform the development of a future Climate Change Adaptation Strategy and Action Plan for Greater Manchester. This Strategy and Action Plan will provide the strategic direction to realise our vision of a well-adapted, resilient and climate-ready Greater Manchester, outline appraised adaptation actions, and seek to integrate adaptation into relevant projects, policies and plans.

Who is this GM CCRA for and how can you use it

This GM CCRA can be used by Local Authorities, public and private sector organisations, infrastructure providers, community groups and residents in Greater Manchester to better understand the relevant climate risks and opportunities across the city-region.

A GM CCRA helps to improve our understanding of how climate risks will be felt locally and allows for a collaborative, coordinated approach to adaptation action to address the climate risks and opportunities identified.

The climate risks and opportunities assessed for Greater Manchester can also be translated into a CCRA specific to an organisation, service area or local area in Greater Manchester, and prioritised based on local/organisational need, context and priorities, to produce a local/organisational CCRA.

How it was developed

This GM CCRA has primarily followed Adaptation Scotland's Public Sector Climate Adaptation Framework.[15] This framework outlines 5 stages that make up the adaptation process, shown in **Figure 2** below. This GM CCRA forms a key part of Stage 2: 'Understand the impacts of climate change', and will be a key input used to inform Stage 3: 'Identify and prioritise actions'.


Figure 2. Adaptation Framework.

The GM CCRA has drawn upon national resources, stakeholder engagement and regional and local evidence to identify 63 climate-related risks and opportunities of

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[15] Adaptation Scotland (2020) Public Sector: The Framework, link

relevance to GM. The assessment has assigned risk magnitude scores ranging from low to very high for both present-day risk and risk by the 2050s, under a 2°C Global Warming Level.[16] A brief methodology is outlined below, with the full methodology in Appendix A: Methodology.
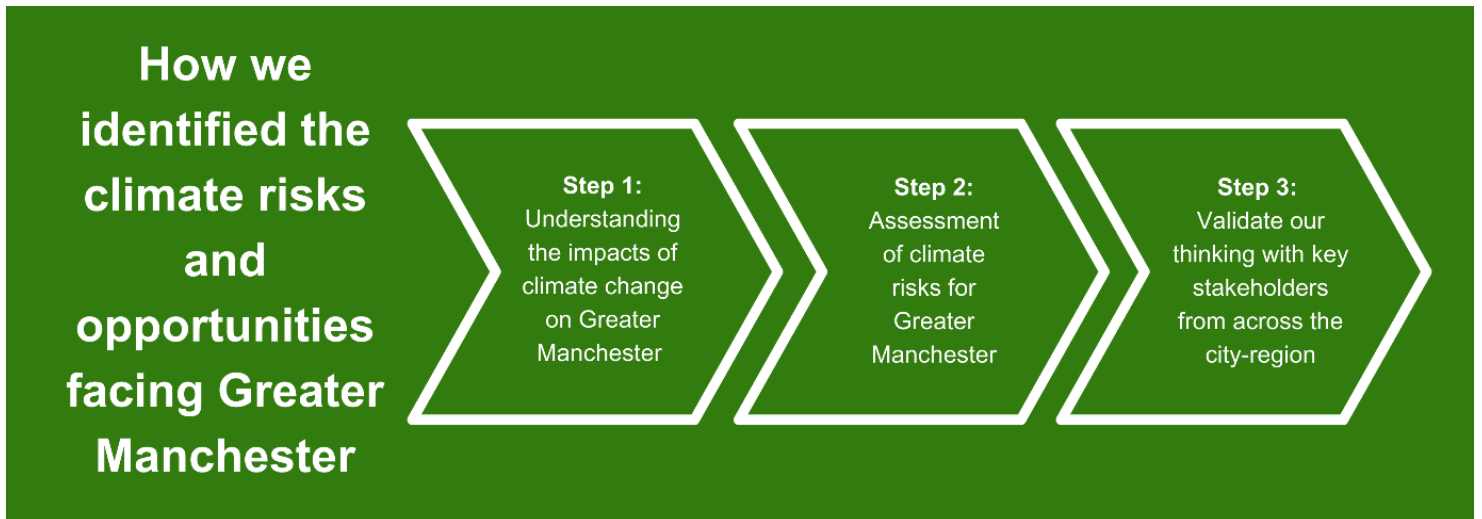
Step 1: Understanding the impacts of climate change

Research was undertaken to understand how past weather events have impacted Greater Manchester, and therefore how similar events may impact us in the future as they become more frequent or intense due to climate change.

The evidence base for how the climate is projected to change in Greater Manchester was developed, primarily using the UK's Third Climate Change Risk Assessment (UK CCRA3), Met Office UKCP18 data, alongside GMCA-commissioned data, Climate Just and others.

Step 2: Assessment of climate risks for Greater Manchester

The UK CCRA3 was used as the primary resource for identifying climate risks and opportunities.[17] Using understanding developed in Step 1, alongside desk-based research, stakeholder workshops and expert input, these UK climate risks were re-

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[16] 2°C increase in Global Warming Level by 2100 compared to pre-industrial levels. This mirrors the approach taken in the UK CCRA3.
[17] The UK CCRA3 is the national climate change risk assessment, developed by the Climate Change Committee. A UK CCRA is developed every 5 years; the Third UK CCRA was published in 2021.

assessed for Greater Manchester. [18] This involved assessing relevant evidence to understand the impacts of these risks and opportunities, and their appropriate risk magnitude score, specific to Greater Manchester. This resulted in the development of the GM CCRA Evidence Base report (link to report TBC).

Climate risks and opportunities, as well as their risk magnitude scores, were then identified for Greater Manchester.

Step 3: Validate with stakeholders

The climate risks and opportunities identified for Greater Manchester, and their risk magnitude scores, were confirmed with further discussions with key stakeholders.

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[18] Risks in the 'International Dimensions' theme in the UK CCRA3 have not been reassessed for Greater Manchester, as these are national-level risks and are unlikely to be influenced greatly by local/regional context, activity and/or policy. These International Dimensions risks have therefore been included in the GM CCRA using the UK-level CCRA risk magnitude scores from the UK CCRA3.

2. How has our climate changed already?

About Greater Manchester

Greater Manchester is located in the North-West region of England, which includes Cheshire, Merseyside, Greater Manchester, Lancashire and Cumbria.[19] The range of topography and altitude in North-West England provides a varied climate. Southern and Western areas of Greater Manchester are lower-lying, with Northern and Eastern areas of the city-region at higher elevations (**Figure 3**).

Greater Manchester has a mean annual temperature of around 10°C, with slightly cooler temperatures in upland areas. These upland areas also receive high levels of rainfall (around 1100mm/year), with lower lying areas receiving less rainfall, including the large urban area of Manchester, which receives around 800mm of rainfall/year.[20]

North-West England is also a relatively exposed area of the UK and experiences strong winds, with the strongest coming off the Irish Sea, often during the winter period.
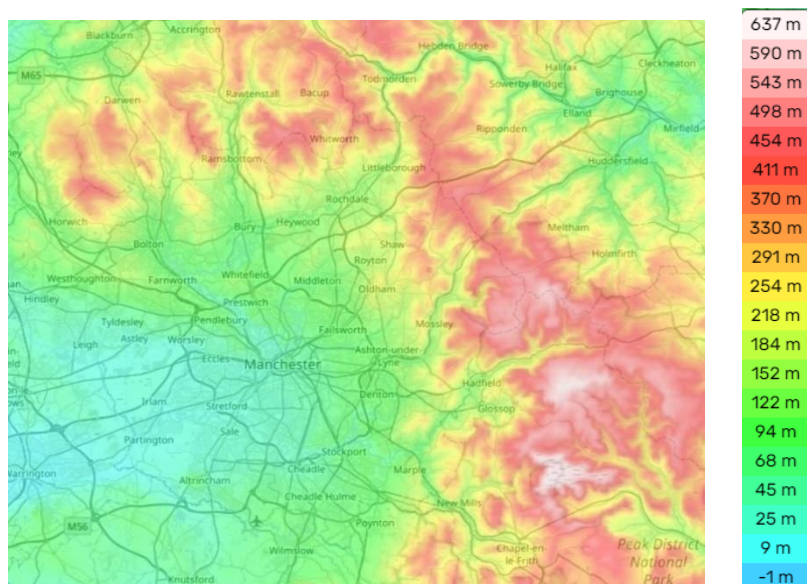

Figure 3. Greater Manchester topographic map.[21]

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[19] Met Office (2019) North West England & Isle of Man: climate. Link
[20] Met Office: UK Climate Averages. Link
[21] Topographic Map website: Greater Manchester topographic map, link

Climate baseline summary

Greater Manchester has a generally temperate climate, with cool, wet winters and warm, drier summers. **Figure 4** shows the mean monthly temperature and mean monthly rainfall for two climate stations in Greater Manchester: Stockport and Rochdale (southern and northern Greater Manchester, respectively), for the period 1981-2010.
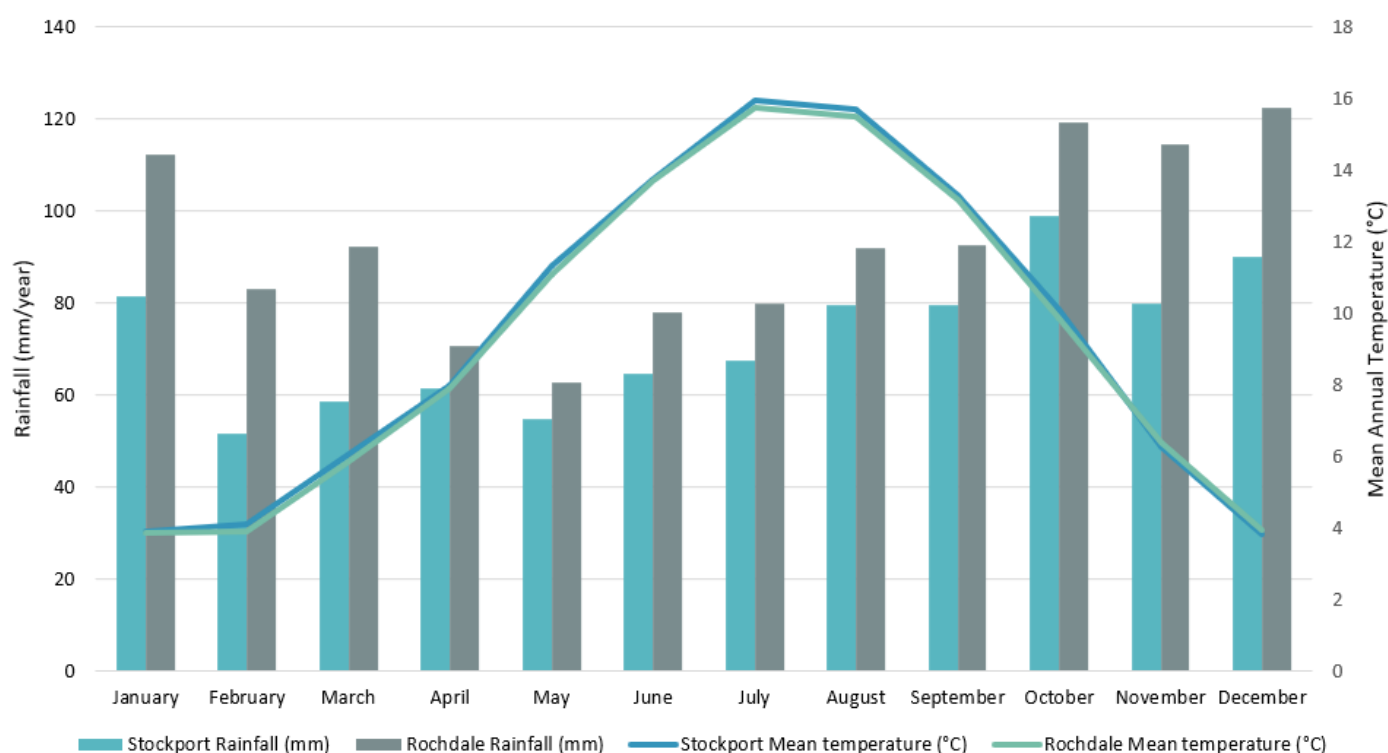

Figure 4. Climate averages for Stockport and Rochdale climate stations, Greater Manchester, for the period 1981-2010.[22]

Observed Climate Trends

The five warmest years on record in Manchester have all occurred since 2006 (shown in **Figure 5**). For the UK, the most recent decade (2012 to 2021) has been on average 1.0°C warmer than the 1961 to 1990 average.[23]

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[22] Met Office – UK Climate averages, Woodford climate station. Accessed here.
[23] UK Government Department for Energy Security and Net Zero (2023) Climate Change Explained, link
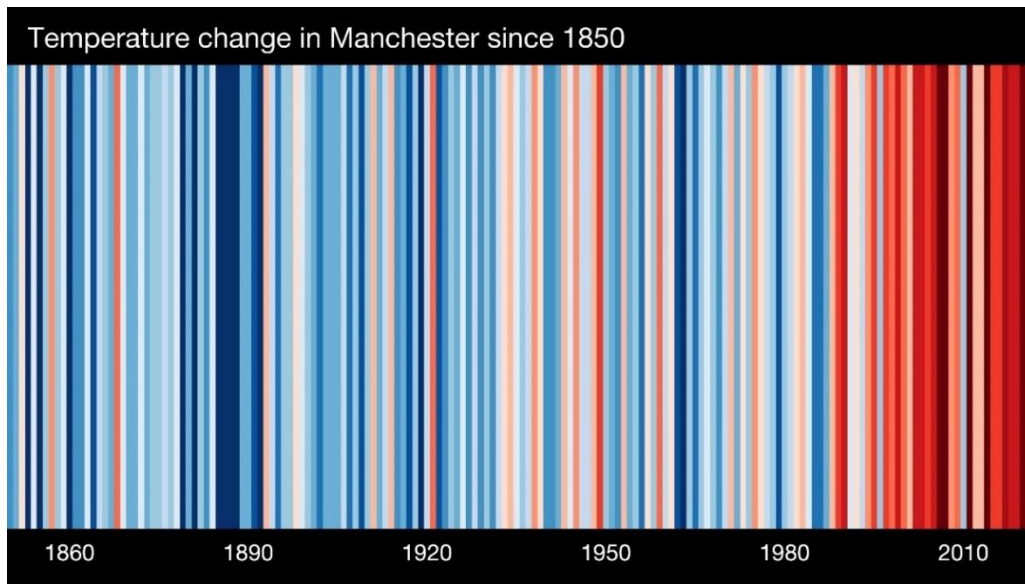
Figure 5. Temperature change in Manchester for period 1850 to 2022; relative to average of 1971-2000.[24]

Historical climate data shown below is from the Ringway climate data station in south Manchester. This station closed in 2004, and therefore data is only presented up to 2004. No other historic climate data stations exist in Greater Manchester.

This data shows that observed mean annual temperatures increased substantially (by nearly 1.5°C) over the period 1961-2004 (**Figure 6**), with average annual rainfall also seeing some increase over the same period (**Figure 7**).[25]

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[24] Climate Stripes, National Centre for Atmospheric Science, University of Reading, Accessed here
[25] Met Office Historic Station Data: Ringway, Location: 53.356, -2.279; Opened: 1946, Closed: 2004. Accessed here.
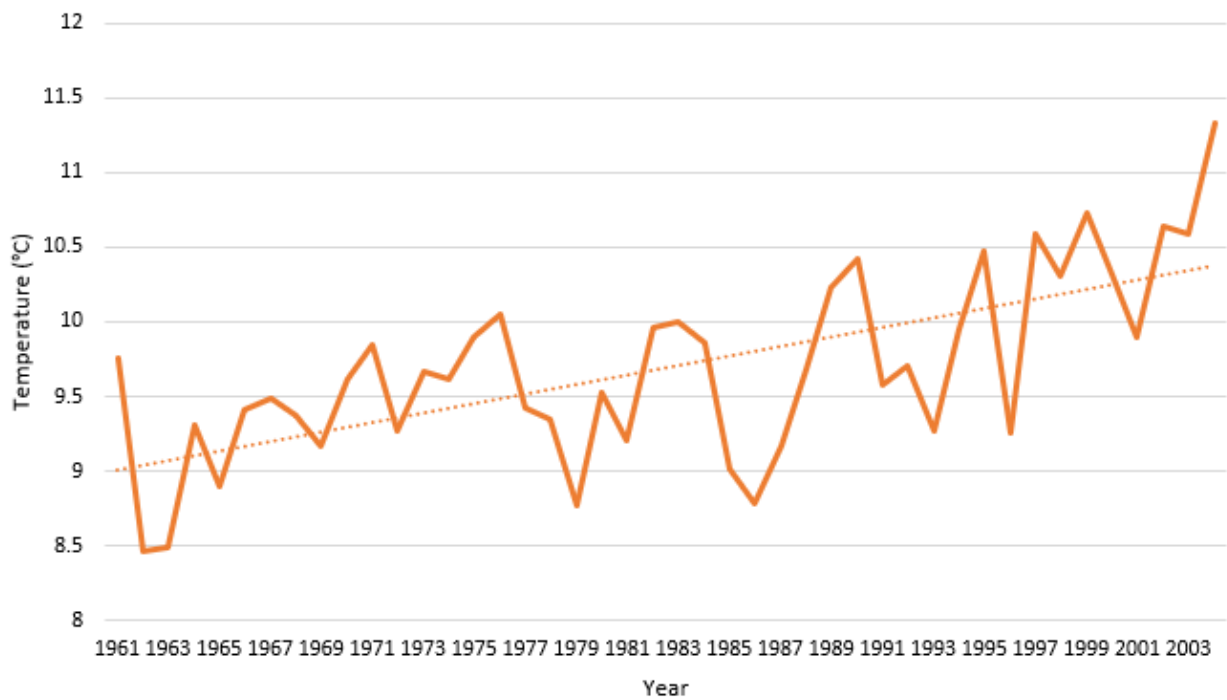
19

Figure 6. Historical Average Annual Temperature in Manchester (1961-2004).
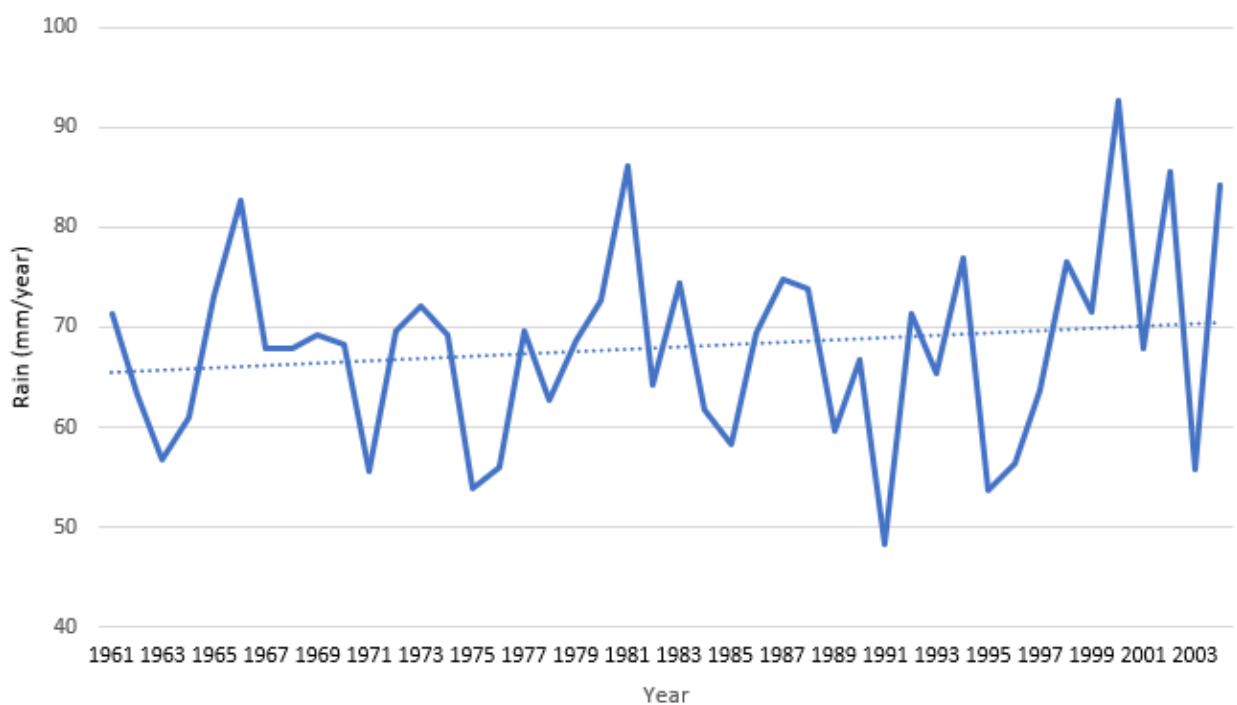

Figure 7. Historical Average Annual Rainfall in Manchester (1961-2004).

Whilst historical average annual rainfall shows a modest increase over the same period, by around 5mm or ~7%, annual rainfall can mask the significant changes

observed in *seasonal* rainfall. Met Office climate observations (**Figure 8**) show that winter precipitation has increased by between 10 and 50% across Greater Manchester, for the period 1961-2006; over the same period, summer precipitation has decreased by between 10 and 25% across much of Greater Manchester and North-West England.[26]
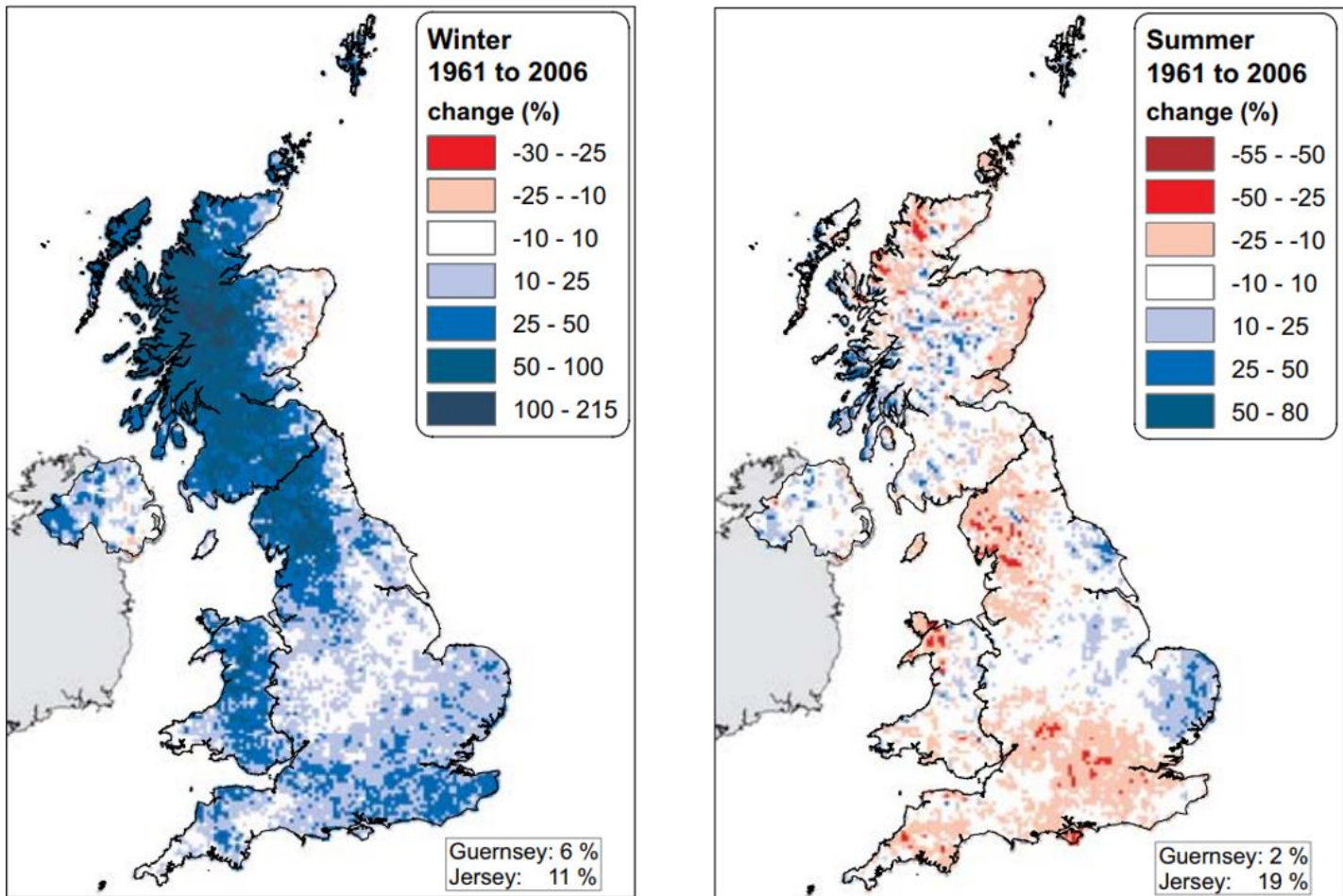

Figure 8. Percentage change in total precipitation amount from 1961-2006 based on a linear trend, for the winter season (left) and summer season (right).

Similarly, average annual temperatures show a direction of travel, but it is also important to understand how maximum and minimum temperatures have changed, as these often have a greater impact on human health, society and the natural

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[26] Jenkins, G.J., Perry, M.C., and Prior, M.J. (2008). The climate of the United Kingdom and recent trends. Met Office Hadley Centre, Exeter, UK. Accessed here.

environment. **Figure 9** and **Figure 10** show the observed average summer maximum temperatures and average minimum winter temperatures from the Met Office Historic Climate Station in Manchester – both of which have increased significantly over the period 1961-2004. Average summer maximum temperatures are now almost 1.5°C hotter over this period, and average winter minimum temperatures have increased by over 1°C.
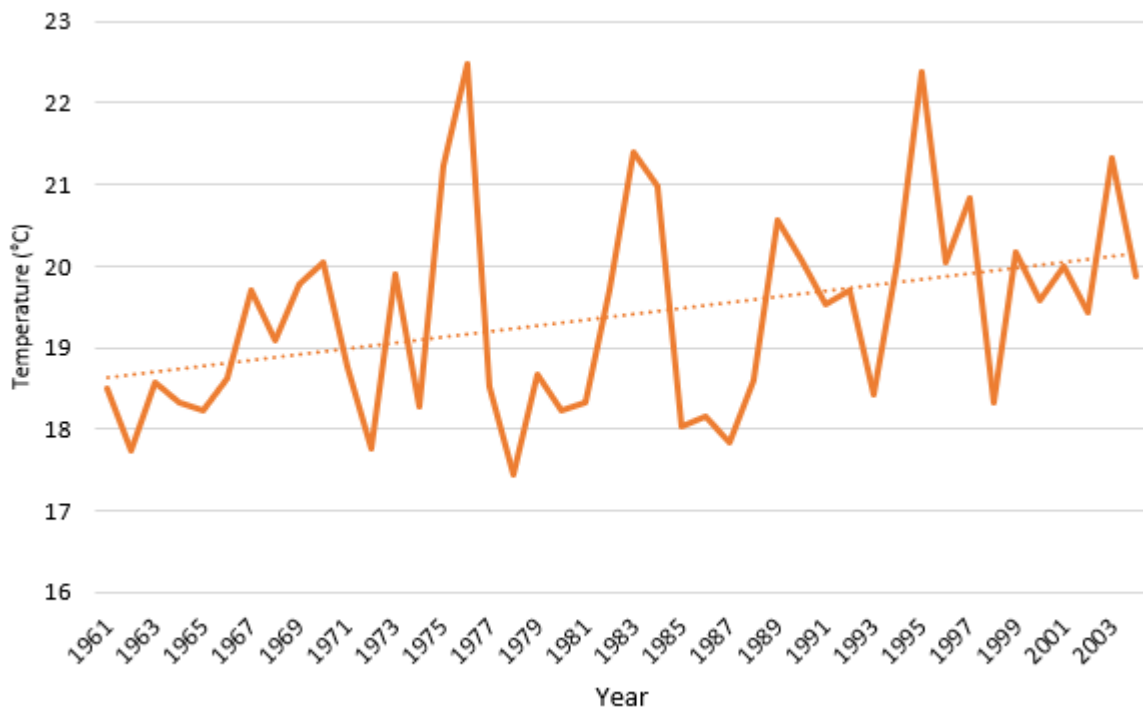

Figure 9. Historical Average <u>Maximum</u> Summer Temperatures in Manchester (1961-2004).
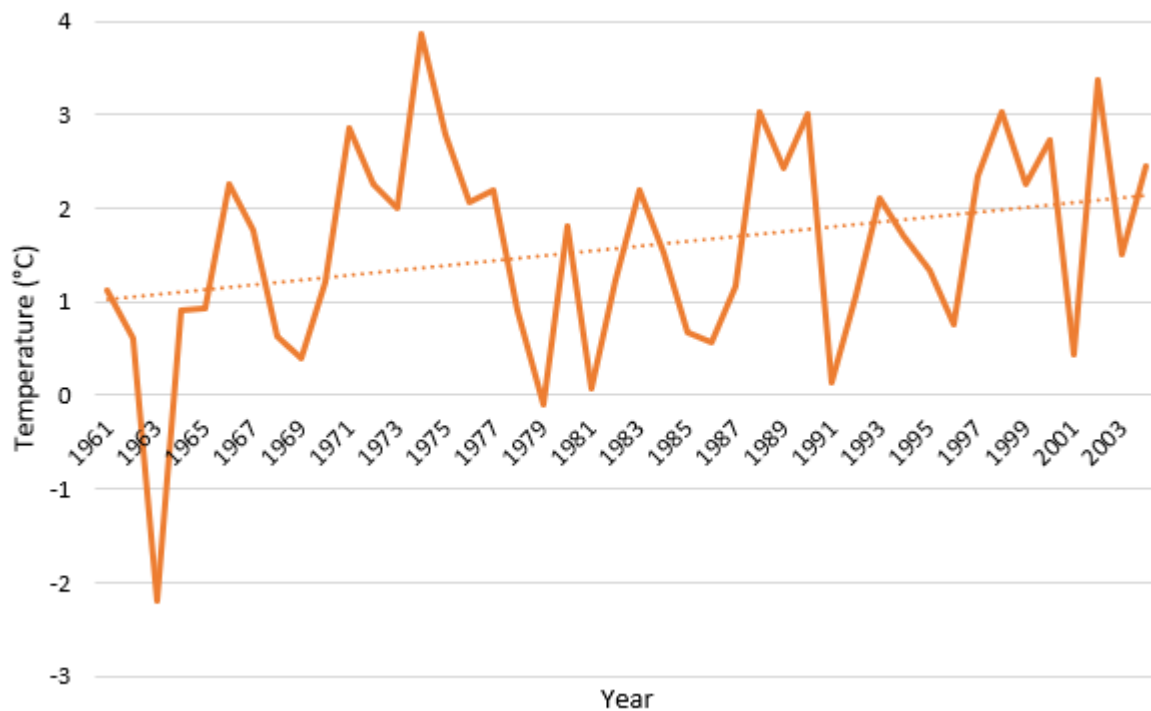
Figure 10. Historical Average <u>Minimum</u> Winter Temperatures in Manchester (1961-2004).

A summary of recent, significant weather-related historical events in Greater Manchester can be found in Appendix B: Summary of past weather-related events in Greater Manchester.

3. How will our climate change in the future?

This section presents the summary of climate projections for Greater Manchester.

Our future climate will be determined by current and future global greenhouse gas emissions. According to Met Office UK Climate Projections (UKCP18), as a result of climate change Greater Manchester can expect to see:

This UKCP18 climate projections data is available for different future time horizons, and for different global greenhouse gas emissions scenarios (i.e. how much global greenhouse gas is emitted over the coming decades).

Future global greenhouse gas emissions, or 'Emissions Scenarios', can also be expressed as 'Representative Concentration Pathways' (RCPs).[27] Different RCPs assume different emissions of greenhouse gases to the end of the 21st century. They include a wide range of assumptions regarding population growth, economic development, technological innovation and attitudes to social and environmental sustainability.

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[27] Met Office (2018) UKCP18 Guidance: Representative Concentration Pathways link

For the purpose of this CCRA, we have assessed climate projections (UKCP18)[28] for the following time horizons and global emissions scenarios:

- The 2040s, 2050s and 2080s time horizons
- A 'medium-high' greenhouse gas emissions scenario (RCP 6.0) and a 'High' emissions scenario (RCP 8.5).

Any changes are relative to the 1981-2010 baseline period.

More detail on the global emissions scenarios, the rationale behind the selected emissions scenarios, and the rationale for the chosen time periods, is in Appendix D: Information on climate projections. In summary, it is good practice to select a range of emissions scenarios because future greenhouse gas emissions are unpredictable. This assessment has used the medium-high (RCP 6.0) emissions scenario as this scenario most closely aligns to the estimated end-of-century global temperature increases that will be experienced if current national climate policies around the world are assumed.[29] This assessment has also used the high (RCP 8.5) emissions scenarios, as this provides an upper range within which climate change is projected to take place.

It is also good practice to select mid-century time horizons to align with medium (2040s) and longer-term (2050s) regional plans, alongside an end of century time horizon (2080s) which helps show the full available extent of projected climate change associated with each emissions scenario.

The infographic in the section below, and Table 8 in Appendix C: Greater Manchester Climate Projections, shows the climate projections summary for Greater Manchester, for the baseline period 1981-2010, and then for the 2040s, 2050s and 2080s time horizons, under both the medium-high (RCP 6.0) and high (RCP 8.5) emissions scenarios.

More detail on how the climate is projected to change in Greater Manchester, including spatial maps of this data, is available here (GM dashboard link TBC).

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[28] Data taken from UKCP18 Probabilistic Projections, Median Values (50th percentile)
[29] Estimates based on the assumption of current national climate policies suggest a median warming level in the region of 2.7°C by 2100, compared to pre-industrial levels (see Figure 1B), Link.

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Projections for a range of Climate Indicators

Climate projections data for key climate indicators are shown below for Greater Manchester. **Table 8** in **Appendix C: Greater Manchester Climate** Projections gives Greater Manchester's climate projections for a wider range of climate indicators.

How the climate is projected to change in Greater Manchester*

*relative to 1981-2010 baseline period

Range of values taken from Met Office UK Climate Projections using a medium-high carbon emissions scenario and a high carbon emissions scenario.

	By 2050s	By 2080s
Average projected annual temperature increase	Between 1.2°C and 1.8°C increase	Between 2.4°C and 3.5°C increase
Average projected maximum summer temperatures	Between 1.6°C and 2.4°C increase	Between 3.5°C and 4.9°C increase
Average projected minimum winter temperatures	Between 1.1°C and 1.6°C increase	Between 2.0°C and 2.9°C increase
Average heatwave events per year	Number to double or triple	Number to quadruple
Average projected summer rainfall	Between 10% and 16% decrease	Between 22% and 30% decrease
Average projected autumn rainfall	Between 8% and 10% increase	Between 11% and 16% increase
Average projected winter rainfall	Between 4% and 9% increase	Between 10% and 18% increase

Drought severity projected to increase

Projections on other climate hazards, including drought severity, river flooding risk and surface water flooding risk, are available in a different format to that used in the infographic above, and in Table 8. For example, drought severity projections are available under different global warming levels (GWL) (i.e. the global temperature increases that may be observed by the end of the century, compared to pre-industrial levels), rather than global greenhouse gas emissions scenarios, and river and surface water flooding projections are available from GMCA-commissioned projects, rather than directly from UKCP18 data. For this reason, these climate hazards are presented separately below.

Projections for Drought Severity

The Drought Severity Index (DSI) measures the severity of a drought, not the frequency. [30,31] **Higher values indicate more severe drought**. DSI projections in **Table 3** are shown for an end-of-century global warming level (GWL) of 2°C and 4°C.

Projections are also shown for the Lake District as Greater Manchester gets a majority of its drinking water from this area, with much of the remainder from local sources.

For context, the highest DSI value for the 2°C global warming level is 20% in south-west England, and for the 4°C global warming level is 17% in south-west England.

Table 3. Drought Severity Index projections for Greater Manchester and wider North-West England.

Location	Baseline (1981-2000)	DSI (GWL 2°C)	DSI (GWL 4°C)
North-East Greater Manchester	5%	14%	13%
North-West Greater Manchester	6%	7.5%	8%
South-West Greater Manchester	6%	6%	8%

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[30] Met Office Climate Data Portal (2024) Drought Severity Index, 12-Month Accumulations - Projections, link
[31] DSI is not threshold based, but rather, it is calculated with 12-month rainfall deficits provided as a percentage of the mean annual climatological total rainfall (1981–2000) for that location.

South-East Greater Manchester	6%	6%	8%
Lake District (major reservoir locations for Greater Manchester)	6-7%	8-9%	8-11%

Projections using the Drought Severity Index are also shown spatially in

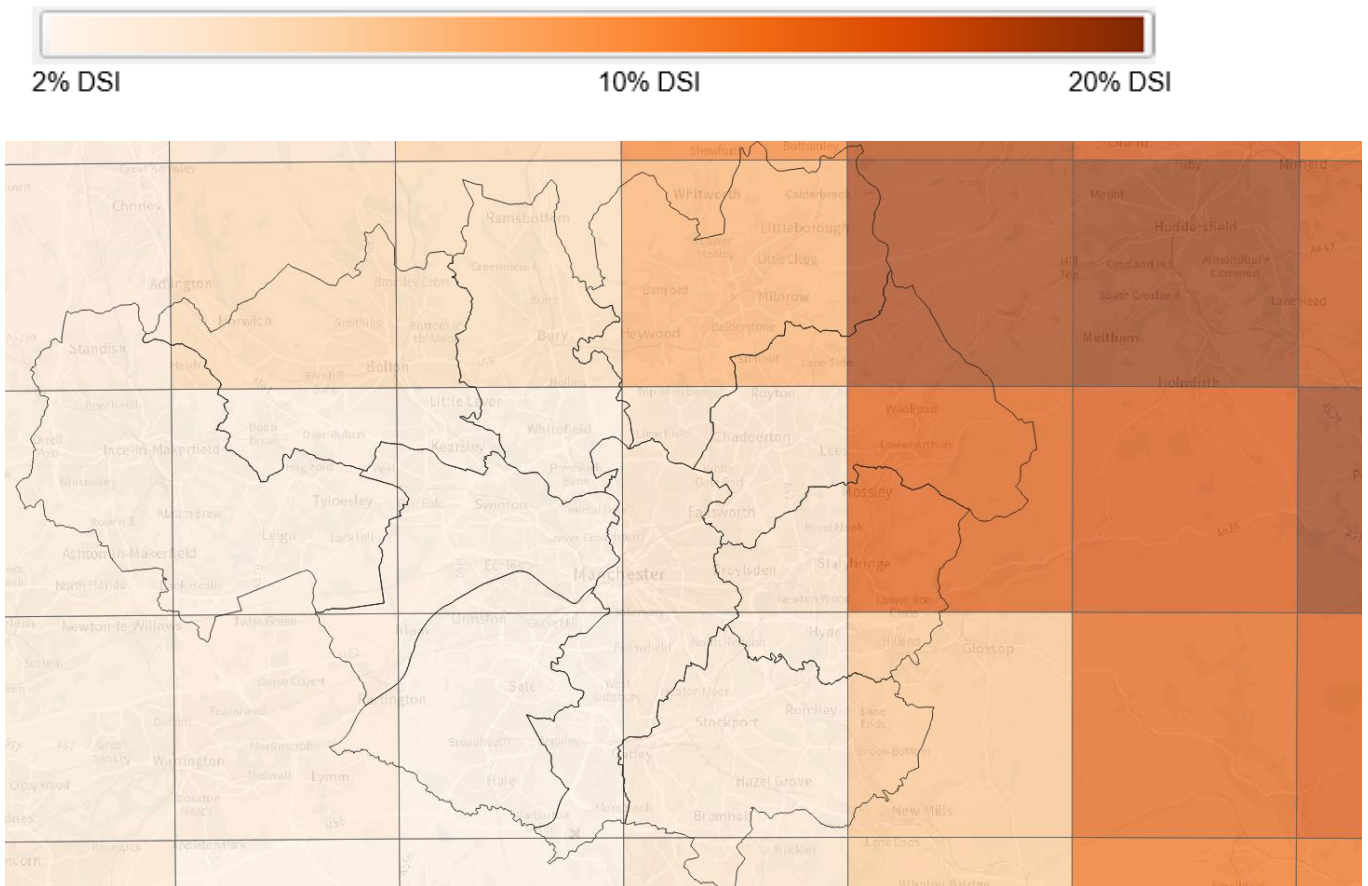**Figure *11*** below, assuming a 2°C global warming level.

Figure 11. Projected 2050s Drought Severity Index under a 2°C Global Warming Level for Greater Manchester and surrounding areas.

Projections for River Flooding risk

Projected river flooding risk under different climate change scenarios has been modelled through a GMCA-commissioned project.

River flooding risk with both a 35% increase in peak river flow due to climate change by the 2070s, and a 70% increase in peak river flow by the 2070s, have been modelled (based on Environment Agency climate change allowances using medium and high emissions scenarios, respectively).[32,33]

This shows projected future river flooding extents over and above present day/baseline river flooding risk zones, for the time horizon 2070s.

Figure 12 shows these projected river flooding extents and has modelled *including* the flood defences ("Defended") and modelled *excluding* these flood defences ("Undefended") for a worst-case scenario.

This shows significant potential additional river flooding impacts in central Wigan, the Salford-Trafford border, south and central Manchester, and the east of Oldham.

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[32] Map available from mappingGM.org.uk

[33] This work considered the 35% and 70% allowances as that was the previous guidance. EA peak river flow allowances guidance for Management Catchment Areas were updated in 2022. Current guidance recommends looking at the Central and Higher allowances for a strategic understanding of risk. At site level this is then based on type of land use. All of the Higher allowances in the current guidance fall within the previous allowance values of 70%.
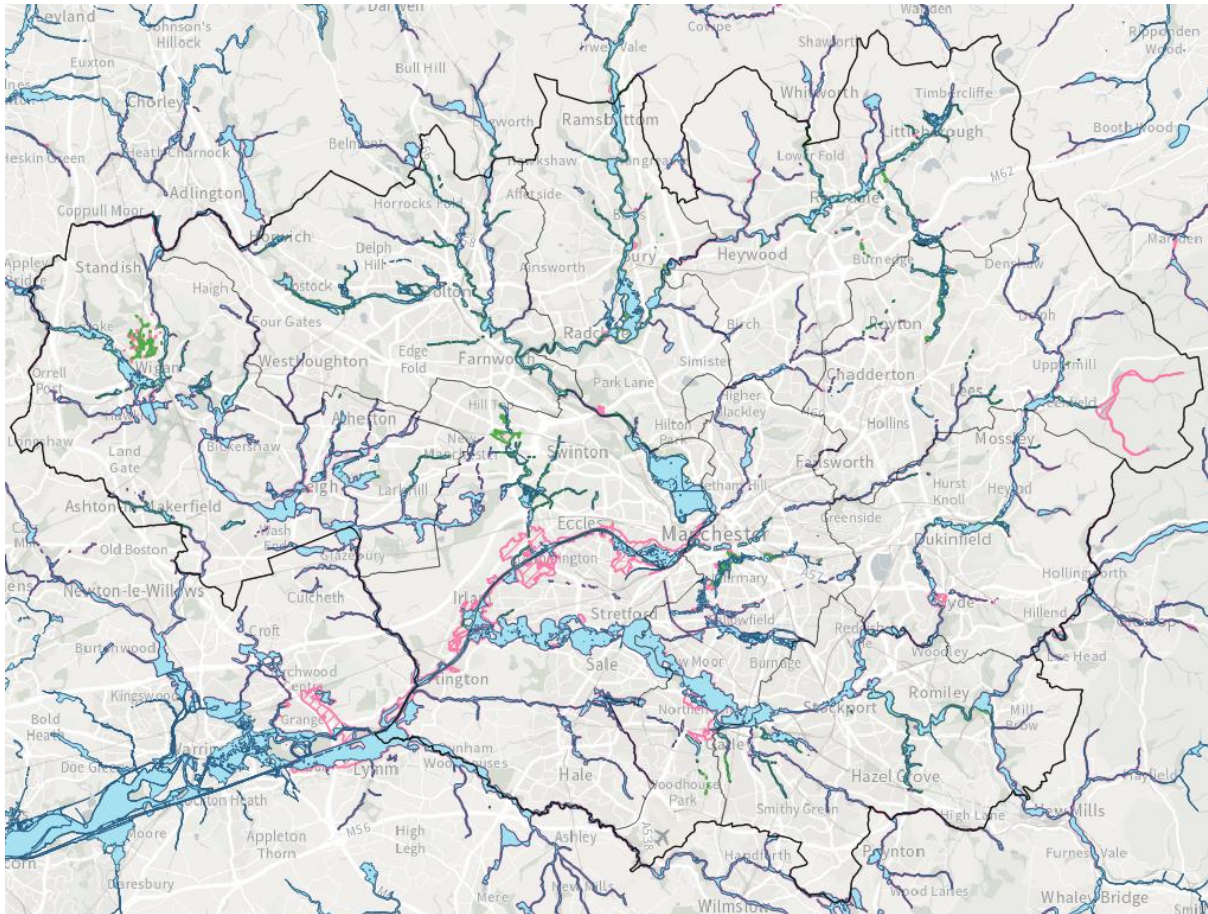
	RoFRS_Baseline_Flood Zone_2_AEP 0.1%_Undef
	RoFRS_Baseline_Flood_Zone_3_AEP 1%_Undef
	RoFRS_CC35% Flow Increase_Undef_Extent (AGMA)_2070s
	RoFRS_CC35% Flow Increase_Def_Extent (AGMA)_2070s
	RoFRS_CC70% Flow Increase_Undef_Extent (AGMA)_2070s
	RoFRS_CC70% Flow Increase_Def_Extent (AGMA)_2070s

Figure 12. Projected river flooding extent in Greater Manchester under medium and high emissions scenarios (2070s).

Projections for Surface Water Flooding risk

Using a GMCA-commissioned model estimating present-day surface water flood risk at a granular level, a spatial indication of present-day surface water flood risk has been developed (see **Figure 13**).[34] More details can be found in Appendix D: Information on climate projections.

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[34] JBA Consulting for GMCA: Flood Risk Heat Mapping

Douglas MCA
Irwell MCA
Mersey Lower MCA
Mersey Upper MCA
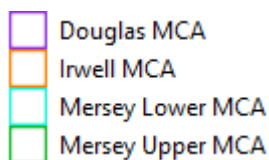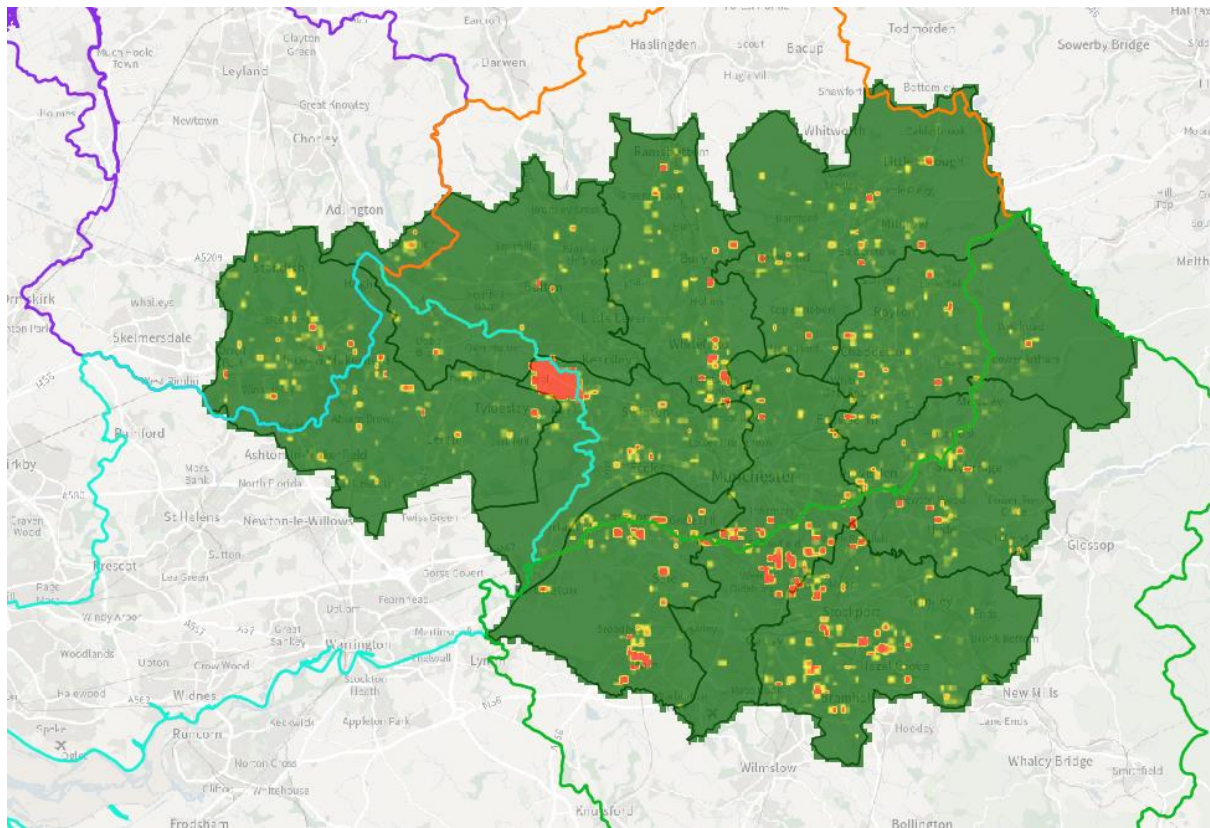
Figure 13. Surface water flooding hotspot areas (present day) with Management Catchment Areas shown.

Surface water flooding risk depends on a range of factors, including: ground conditions (how waterlogged the ground is prior to a rainfall event); extent of impermeable surfaces; drainage capacity or blocked drains, and topography of the land.

Projecting future surface water flooding risk is difficult as it depends on a combination of these factors. **Intense rainfall** is a key driver of surface water flooding. Therefore, to get an understanding of future surface water flooding risk in Greater Manchester, we also need to understand how rainfall intensity is projected to change over the 21st century.

Environment Agency climate change allowances[35] (CCA) are predictions of anticipated change for peak river flow and **peak rainfall intensity** in the future,

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[35] Environment Agency (2022) Climate Change Allowances: peak rainfall intensity, link

under different climate change scenarios.[36, 37] **Table 4** shows the projected percentage increases in peak rainfall intensity for the four Management Catchment Areas (MCA) in and around Greater Manchester, for the Central and Upper end climate change allowance and for the 2050s time period.

Table 4. Peak Rainfall Allowances for relevant Management Catchment Areas by the 2050s.

Scenario	Irwell MCA	Upper Mersey MCA	Lower Mersey MCA	Douglas MCA
Central, 3.3% Annual Exceedance Rainfall Event	+25%	+20%	+20%	+25%
Upper End, 3.3% Annual Exceedance Rainfall Event	+35%	+35%	+35%	+35%
Central, 1% Annual Exceedance Rainfall Event	+25%	+25%	+25%	+25%
Upper End, 1% Annual Exceedance Rainfall Event	+40%	+40%	+40%	+40%

This increase in peak rainfall intensity across these Management Catchment Areas will bring significant associated surface water flooding risks for Greater Manchester, in particular in existing surface water hotspot areas.

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[36] Climate Change Allowances (peak river flow allowances) data available from link
[37] The central allowance is based on the 50th percentile; upper end allowance is based on the 95th percentile

4. What are the risks and opportunities from climate change for Greater Manchester?

In light of the projected future changes to Greater Manchester's climate and to make an assessment of the risks and opportunities this will bring, we have drawn upon national resources (primarily the UK CCRA3),[38] stakeholder engagement and regional and local evidence to identify 63 climate-related risks and opportunities of relevance to Greater Manchester (of which, 10 relate to International Dimensions, which are international in nature but will have some impacts in Greater Manchester). The assessment has assigned risk magnitude scores ranging from low to very high for both present-day risk and risk by the 2050s, under a 2°C Global Warming Level.[39] Of those 63, the spread of climate risks and opportunities by risk magnitude score and theme, for the time horizon 2050s, are shown in **Figure 14** below.

The assessment has incorporated evidence from desk-based research and stakeholder workshops to better understand how climate hazards may impact different communities and demographics in Greater Manchester, our regional natural environment, infrastructure, economy, and wider society, and therefore assign risk magnitude scores appropriate for Greater Manchester to each risk or opportunity. A summary of this evidence for each climate risk and opportunity is available in the Greater Manchester Climate Risks Evidence Report (link to report TBC).

The 63 risks and opportunities have been categorised using the same themes as the UK CCRA3, namely:

- Natural Environment and Assets
- Infrastructure
- Health, Communities and the Built Environment, and
- Business and Industry

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[38] Climate Change Committee (2021) Third UK Climate Change Risk Assessment (UK CCRA3), link
[39] 2°C increase in Global Warming Level by 2100 compared to pre-industrial levels; this was used in the UK CCRA3 assessment.

- International Dimensions

It should be noted that risks in the 'International Dimensions' theme in the UK CCRA3 have not been reassessed for Greater Manchester, as these are national-level risks and are unlikely to be influenced greatly by local/regional context, activity and/or policy. These International Dimensions risks have therefore been included in the GM CCRA using the UK-level CCRA risk magnitude scores.[40]

Those risks or opportunities with a 'High' or 'Very High' risk magnitude score are classed as High Magnitude risks and opportunities. High Magnitude risks and opportunities for Greater Manchester in the present day are shown in **Table 5**, and for the 2050s (assuming an end-of century Global Warming Level of 2°C) in **Table 6.**

More detail can be found in the Methodology section in Appendix A: Methodology.
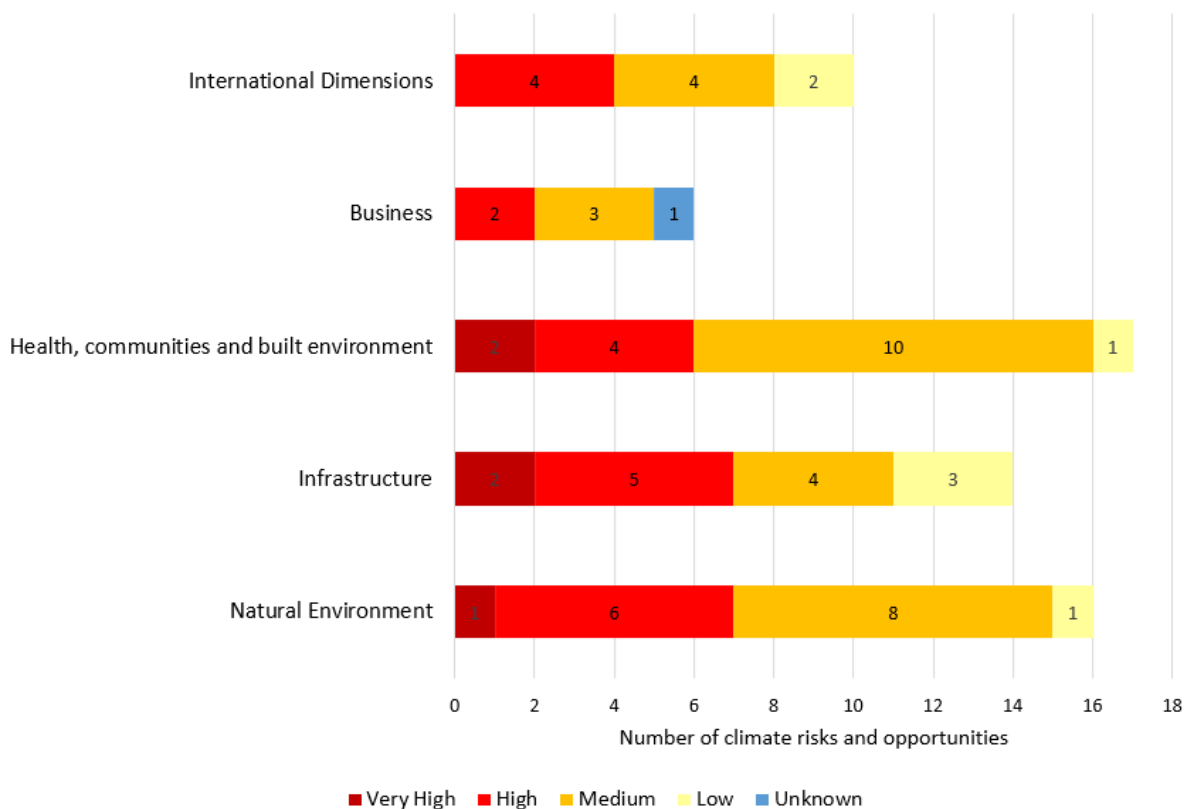
Figure 14. Spread of Greater Manchester climate change risks and opportunities by risk score and theme (2050s).

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[40] Full information on these climate risks is available in Chapter 7 of the UK CCRA3.

High Magnitude Climate Risks and Opportunities for Greater Manchester

Climate risks and opportunities with a 'High' or 'Very High' risk magnitude score are shown in **Table 5** (present day) and **Table 6** (2050s) below. There are 14 identified High Magnitude climate risks for Greater Manchester in the present day, rising to 27 High Magnitude climate risks by the 2050s.

The full list of all 63 climate risks and opportunities in **Table 7** includes a description of each risk and a brief summary of the rationale for each risk magnitude score for Greater Manchester. The full evidence base that underpins this rationale for the risk scoring for Greater Manchester can be found in the Greater Manchester Climate Risks Evidence Report (link to report TBC).

Table 5. Present day High Magnitude risks and opportunities for Greater Manchester.

Theme	Risk or Opportunity	Risk Magnitude Score
Natural Environment	N1 Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)	High
	N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change, water scarcity and wildfires	High
	N12 Risks to freshwater species and habitats from pests, pathogens and invasive species	High
Infrastructure	I1 Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	High
	I2 Risks to infrastructure services from river, surface water and groundwater flooding	High
	I10 Risks to energy from high and low temperatures, high winds, lightning	High
Health, Communities and Built Environment	H1 Risks to health and wellbeing from high temperatures	High
	H3 Risks to people, communities and buildings from flooding and storms	High
	H7 Risks to health and wellbeing from changes in indoor and outdoor air quality	High
	H9 Risks to food safety and food security	High
Business	B1 Risks to business sites from flooding	High
International Dimensions	ID1 Risks to UK food availability, safety, and quality from climate change overseas	High (UK Score)
	ID9 Risk to UK public health from climate change overseas	High (UK Score)

Theme	Risk or Opportunity	Risk Magnitude Score
	ID10 Risk multiplication from the interactions and cascades of named risks across systems and geographies	High (UK Score)

Table 6. 2050s High Magnitude risks and opportunities for Greater Manchester

Theme	Risk	Risk Magnitude Score
Natural Environment	N1 Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)	High
	N2 Risks to terrestrial species and habitats from pests, pathogens and invasive species	High
	N4 Risk to soils from changing climatic conditions, including seasonal aridity and wetness.	High
	N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change, water scarcity and wildfires	**Very High**
	N11 Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts.	High
	N12 Risks to freshwater species and habitats from pests, pathogens and invasive species	High
	N18 Risks and opportunities from climate change to landscape character	High

Theme	Risk	Risk Magnitude Score
Infrastructure	**I1 Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures**	**Very High**
	I2 Risks to infrastructure services from river, surface water and groundwater flooding	**Very High**
	I4 Risks to bridges and pipelines from flooding and erosion	High
	I9 Risks to energy generation from reduced water availability	High
	I10 Risks to energy from high and low temperatures, high winds, lightning	High
	I12 Risks to transport from high and low temperatures, high winds, lightning	High
	I13 Risks to digital from high and low temperatures, high winds, lightning	High
Health, Communities and Built Environment	**H1 Risks to health and wellbeing from high temperatures**	**Very High**
	H3 Risks to people, communities and buildings from flooding and storms	**Very High**
	H6 Risks and opportunities from summer and winter household energy demand, (a) **Opportunity** - winter	High
	H9 Risks to food safety and food security	High
	H12 Risks to health and social care delivery from extreme weather	High
	H15 Social inequalities exacerbated as a result of climate change, with disadvantaged and vulnerable groups facing disproportionate climate impacts	High
Business	B1 Risks to business sites from flooding	High
	B6 Risks to business from disruption to supply chains and distribution networks	Unknown magnitude as difficult to quantify, but **High Priority** due

Theme	Risk	Risk Magnitude Score
		to potentially very large impacts
	B7 Opportunities for business from changes in demand for goods and services	High
International Dimensions	ID1 Risks to UK food availability, safety, and quality from climate change overseas	High (UK Score)
	ID6 Opportunities from climate change on international trade routes	High (UK Score)
	ID9 Risk to UK public health from climate change overseas	High (UK Score)
	ID10 Risk multiplication from the interactions and cascades of named risks across systems and geographies	High (UK Score)

All Climate Risks and Opportunities for Greater Manchester

The full list of 53 climate risks and opportunities re-assessed for Greater Manchester is shown in **Table 7** below (with the additional 10 International Dimensions risks, which have not been re-assessed for Greater Manchester, as previously explained, are listed underneath). Each risk or opportunity has been assessed for both the present day, and for the 2050s under a 2°C end-of-century global warming level (GWL).[41] They have been categorised using the same themes as the UK CCRA3, namely:

- Natural Environment and Assets
- Infrastructure
- Health, Communities and the Built Environment, and
- Business and Industry

A brief description of each risk, alongside a summary of the rationale for each Greater Manchester risk magnitude score, is provided in the table below.[42] The full evidence base that underpins this rationale for the risk scoring for Greater Manchester can be found in the Greater Manchester Climate Risks Evidence Report (link to report TBC).

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[41] 2°C increase in global temperatures by the end of the 21st century, compared to pre-industrial levels.
[42] Summaries primarily based on the UK CCRA3 risk descriptions

Table 7. All present day and 2050s climate risks and opportunities for Greater Manchester.

Risk or Opportunity	England: Present Day Risk Score	GM Present Day Risk Score	England: 2050s, 2°C GWL, Risk Score	GM 2050s, 2°C GWL, Risk Score	Risk Description and Greater Manchester (GM) Risk Score Summary
N1 Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)	High	High	High	High	There is substantial evidence on the current and potential future effects of climate change and associated drivers on terrestrial biodiversity in the UK. This includes impacts on individual species and their distribution, as well as the composition and abundance of populations. Expected climate changes, including increasing temperatures, changes in rainfall and wildfire, can lead to losses or gains of species in a community or geographic area. Due to a lack of regional evidence, and to ensure the broad range of species and habitats are properly accounted for, the GM risk magnitude scores remain consistent with the England CCRA scores.
N2 Risks to terrestrial species and habitats from pests, pathogens and invasive species	Medium	Medium	High	High	New and emerging pests, diseases and Invasive Non-native Species (INNS) have been identified as important risks due to their negative effects on biodiversity. Due to a lack of regional evidence the GM risk magnitude scores remain consistent with the England CCRA scores.
N3 Opportunities from new species colonisations in terrestrial habitats	Medium	Medium	Medium	Medium	As species respond to climate change by moving and/or expanding their ranges northwards, they could colonise new areas including the UK and GM. Due to a lack of regional evidence the GM risk magnitude scores remain consistent with the England CCRA scores.
N4 Risk to soils from changing climatic conditions, including seasonal aridity and wetness.	Medium	Medium	High	High	Soil health is crucial for the terrestrial natural environment. There is increasing evidence of the negative impacts of climate change on soil resources, often in combination with other factors (notably land use). Due to a lack of regional evidence relating to soil condition and projected changes in soil condition as a result of climate change, the GM risk magnitude scores remains consistent with the England CCRA risk score.
N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions,	Medium	High	High	Very High	*This risk for GM relates primarily to risks for natural carbon stores and associated GHG emissions.* The natural environment – particularly soils and vegetation – store large amounts of carbon. As the climate changes, these carbon stores will come under increasing pressure from extreme weather which may threaten their ability

Risk or Opportunity	England: Present Day Risk Score	GM Present Day Risk Score	England: 2050s, 2°C GWL, Risk Score	GM 2050s, 2°C GWL, Risk Score	Risk Description and Greater Manchester (GM) Risk Score Summary
including temperature change, water scarcity and wildfires					to store existing carbon and lock away more, and wildfires which can damage huge swathes of peatland. GM has important natural carbon stores in its peat but much is degraded / in poor condition; this combined with the projected increase in conditions conducive to peatland degradation due to climate change, and increased wildfire risk in GM mean the risk magnitude scores for GM are deemed to be higher than the England CCRA score, at 'Very high'.
N6a Risks to agricultural productivity from extreme events and changing climatic conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind and saline intrusion).	Medium	Medium	High	Medium	Weather and climate variations will affect agricultural productivity from changing patterns of heat and cold, wetness and drought, presenting both opportunities and risks. Due to the small size of this sector in GM (in terms of both employment count and Gross Value Added (GVA)), the risk magnitude score for GM is deemed to be lower than the England CCRA, at 'Medium'.
N6b Opportunities for agricultural productivity from extreme events and changing climatic conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind and saline intrusion).	Medium	Medium	High	Medium	Weather and climate variations will affect agricultural productivity from changing patterns of heat and cold, wetness and drought, presenting both opportunities and risks. Due to the small size of this sector in GM (in terms of both employment count and GVA), the 2050s risk magnitude score for GM is deemed to be lower than the England CCRA, at 'Medium'.
N6c Risks to forestry productivity from extreme events and changing climatic conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind and saline intrusion).	Medium	Medium	High	Medium	Weather and climate variations will affect forestry productivity from changing patterns of heat and cold, wetness and drought, presenting both opportunities and risks. Due to the small size of this sector in GM (in terms of both employment count and GVA), the risk magnitude score for GM is deemed to be lower than the England CCRA, at 'Medium'.
N6d Opportunities for forestry productivity from extreme events and changing climatic conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind and saline intrusion).	Medium	Medium	High	Medium	Weather and climate variations will affect forestry productivity from changing patterns of heat and cold, wetness and drought, presenting both opportunities and risks. Due to the small size of this sector in GM (in terms of both employment count and GVA), the risk magnitude score for GM is deemed to be lower than the England CCRA, at 'Medium'.
N7 Risks to agriculture from pests, pathogens and invasive species	Medium	Medium	High	Medium	Pests, pathogens and invasive non-native species present significant risks to agricultural productivity, with impacts on livelihoods and businesses. Large-scale

Risk or Opportunity	England: Present Day Risk Score	GM Present Day Risk Score	England: 2050s, 2°C GWL, Risk Score	GM 2050s, 2°C GWL, Risk Score	Risk Description and Greater Manchester (GM) Risk Score Summary
					outbreaks or invasions may also have consequences for food security. Due to the small size of this sector in GM relative to the England average (detailed in risk N6a), the risk magnitude score for GM is deemed to be lower than England CCRA, at 'Medium'.
N8 Risks to forestry from pests, pathogens and invasive species	Medium	Medium	High	Medium	Pests, pathogens and invasive non-native species present serious risks to forest productivity, with consequences for livelihoods and businesses, and for the multiple ecosystem services that forests provide. Due to the small size of this sector in GM relative to the England average (detailed in risk N6b), the risk magnitude score for GM is deemed to be lower than England CCRA, at 'Medium'.
N9 Opportunities for agricultural and forestry productivity from new/alternative species becoming suitable.	Medium	Medium	High	Medium	Future climate change, especially warming, will increase climate suitability for new crops. Due to the small size of these sectors in GM relative to the England average (detailed in risk N6a and b), the risk magnitude score for GM is deemed to be lower than England CCRA, at 'Medium'.
N11 Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts.	Medium	Medium	Medium	High	Freshwater habitats and species are particularly vulnerable to reduced water availability and higher water temperatures due to climate change, as well as impacts relating to flood events. GM has significant interacting water management risk factors, including the capacity of its sewer and water treatment infrastructure, which negatively impacts upon water quality, freshwater species and habitats. GM also has poor quality waterways currently. The GM 2050s risk is therefore deemed to be 'High', above the England CCRA risk score of 'Medium'.
N12 Risks to freshwater species and habitats from pests, pathogens and invasive species	High	High	High	High	New and emerging pests, pathogens and invasive species have been identified as important risks due to their negative impact on biodiversity. Negative impacts on native freshwater species from an increased number of pests, pathogens and invasive non-native species (INNS) on native UK freshwater species could increase, with warmer, wetter winters a significant driver. There is a lack of further regional evidence and so the GM risk magnitude scores are deemed to be consistent with the England CCRA.

Risk or Opportunity	England: Present Day Risk Score	GM Present Day Risk Score	England: 2050s, 2°C GWL, Risk Score	GM 2050s, 2°C GWL, Risk Score	Risk Description and Greater Manchester (GM) Risk Score Summary
N13 Opportunities to freshwater species and habitats from new species colonisations	Low	Low	Low	Low	The arrival of new species in the UK as the climate changes has the potential to enhance species richness and contribute to community adaptation to climate change. Climate change may support changes to aquatic and riparian species composition (e.g. fish and invertebrates, trees, macrophytes), presenting as both a risk and an opportunity depending on the species. There is a lack of further regional evidence and so the GM risk magnitude scores are deemed to be consistent with the England CCRA.
N18 Risks and opportunities from climate change to landscape character	Medium	Medium	High / High	High / High	This risk includes risks and opportunities relating to landscapes, landscape character and the historic environment and considers both prevention of landscape character changes and planning for inevitable projected changes. There is a lack of further regional evidence and so the GM risk magnitude scores are deemed to be consistent with the England CCRA.
I1 Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	High	High	High	Very High	Infrastructure operates as a 'system of systems'. Therefore, vulnerabilities on one part of a network can lead to problems in other networks, with impacts felt far beyond the infrastructure sector. The spatial distribution of risk from cascading failures between infrastructure systems has been mapped, showing hotspot areas of infrastructure criticality in the UK, with Greater Manchester found to be a key hotspot area. GM has critical infrastructure assets on moorlands, which face increasing wildfire risks. GM is also increasing the electrification and digitisation of key, interconnected sectors and assets, including transport systems, which will increase vulnerability to cascading failures (e.g. (Metrolink, further roll-out of electric buses). GM 2050s risk is therefore deemed to be greater than the England CCRA3 score, at Very High
I2 Risks to infrastructure services from river, surface water and groundwater flooding	High	High	High	Very High	River and surface flooding is a perennial risk to UK infrastructure. Risks to energy infrastructure from flooding include the flooding of facilities, damage to power lines and disruption to power stations. Major flood events can lead to power outages, which can have knock-on impacts across different sectors including transport, water and digital/telecoms. Flooding can also directly damage

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	Red	Red	Red	Dark red	/ impact upon various assets. GM faces significant flood risk due to several interacting factors. Peak rainfall intensity and peak river flows are projected to increase in GM catchment areas. GM 2050s risk is therefore deemed to be greater than the England CCRA3 score, at Very High.
I3 Risks to infrastructure services from coastal flooding and erosion	Medium	Medium	Medium	Low	Sea levels are currently rising and the rate of rise is accelerating, including around the UK. Coastal flood and erosion risk to infrastructure services, including those associated with the energy, transport, water, telecoms and ICT sectors, will therefore increase. There may be low indirect impacts to GM as a result of this coastal risk. However, due to GM being in-land, the overall impacts from this risk are judged to be low.
I4 Risks to bridges and pipelines from flooding and erosion	Medium	Medium	Medium	High	Flooding, erosion or scour (the eroding of soil around foundations, including bridges) due to increased rainfall can lead to travel disruption, significant repair costs and the potential isolation of remote communities. EA guidance states that for strategic flood risk assessments, essential transport infrastructure must use the 'higher' range of values associated with EA peak river flow projections. For GM catchment areas, the 'higher' peak river flow values are above the standard national EA peak river flow allowance value. Due to the 'Higher' scenario peak river flow allowance values for GM's catchment areas being above the standard EA national allowance figure, the GM 2050s risk magnitude score is deemed to be higher than the England CCRA score, at 'High'.
I5 Risks to transport networks from slope and embankment failure	Medium	Medium	Medium	Medium	Slopes and embankments support transport infrastructure. Deterioration and failure of these assets, which are often associated with heavy rainfall and flood events, have significant negative impacts on transport networks through damage, travel delays and accidents. Whilst GM faces flood risks and has upland areas in its boundary and in neighbouring areas, the number of recorded landslides (and thus an indication of areas prone to landslips) is relatively low. Within GM, Bury, Oldham, Rochdale and Tameside have the greatest exposure of transport networks

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					in proximity of past landslide events. The GM risk scores therefore remains consistent with the England CCRA.
I6 Risks to hydroelectric generation from low or high river flows (risk)	Low	Low	Medium	Medium	Hydroelectric generation is vulnerable to both low river flows and extremely high river flows, which are dependent on rainfall amounts. Low flows reduce power output. Very high flows can damage generation equipment and the associated infrastructure. Hydroelectric power currently represents a small proportion of UK energy capacity, but may grow in the future. There is a lack of regional evidence available on assessing the future hydroelectric energy potential under different climate change scenarios and the current size of energy generation from hydro in GM is relatively small – therefore the GM risk scores remains consistent with the England CCRA.
I6 Risks to hydroelectric generation from low or high river flows (**opportunity**)	Low	Low	Medium	Medium	Hydroelectric generation is vulnerable to both low river flows and extremely high river flows, which are dependent on rainfall amounts. Moderate high flows have the potential to improve the output. There is a lack of regional evidence available on assessing the future hydroelectric energy potential under different climate change scenarios and the current size of energy generation from hydro in GM is relatively small – therefore the GM risk scores remains consistent with the England CCRA.
I7 Risks to subterranean and surface infrastructure from subsidence	Low	Low	Medium	Low	Infrastructure assets can be damaged due to subsidence. Most subsidence is a result of shrinkage and swelling of high plasticity clays. The North-West of England does not have high plasticity clays and so British Geological Society have classed this area as being 'highly unlikely' to experience shrink-swell subsidence. Therefore, the risk magnitude scores for this risk in GM is classed as Low.
I8 Risks to public water supplies from reduced water availability	Medium	Medium	High	Medium	The UK faces an increased demand for water in a changing climate as well as reduced supply during dry spells. However, the North-West England water resource zone (of which GM sits in) is projected to see a small supply-demand balance surplus by the 2050s (under 2°C GWL, central population growth by mid-

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					century). Therefore the risk magnitude scores for this risk in GM are classed as Medium.
I9 Risks to energy generation from reduced water availability	Low	Low	Medium	High	Thermal power generators that rely on freshwater for cooling are the main type of energy generation vulnerable to a reduced water supply as it could affect their ability to use water as a coolant. Whilst conventional thermal energy generation will reduce to meet net zero commitments, Trafford is working to develop a green hydrogen production hub, with significant associated water requirements. This therefore has the potential to increase GM energy systems' vulnerability to reduced water availability over the coming decades. The GM 2050s risk magnitude score is therefore deemed to be High.
I10 Risks to energy from high and low temperatures, high winds, lightning	High	High	High	High	The risks to energy infrastructure from extreme weather are already an issue in the present day. However, high temperatures in particular are projected to become more frequent and intense. High temperatures can affect the energy sector through several different mechanisms, including line sag, faults on the electricity network, reduced electricity generation, and others. Heatwaves and high temperatures are projected to increase across GM and England. The GM risk magnitude score is deemed to remain consistent with the England CCRA.
I11 Risks to offshore infrastructure from storms and high waves	Low	Low	Medium	Low	Offshore infrastructure includes equipment used by the oil and gas industry, wind, tidal and wave energy, and gas pipelines and power cables on or under the seabed. Vulnerabilities to these assets can occur from storms and high waves. There may be low indirect impacts to GM as a result of this coastal risk, for example if the infrastructure damaged was of wider regional importance or had implications for energy security in parts of GM. The 2050s GM risk magnitude score is deemed to be lower than the England CCRA, at 'Low'.
I12 Risks to transport from high and low temperatures, high winds, lightning	Medium	Medium	High	High	Impacts from extreme weather on transport include heat-related buckling of rail lines, sagging of overhead cables, failure of signals, and the prevention of maintenance from being performed; road melt; wind, and lightning. Transport disruption from icy conditions is projected to decrease, but disruption due to high

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					temperatures is projected to increase across GM. GM has significant electrification of transport infrastructure, with further roll-out of bus electrification also underway; these transport assets are more vulnerable to potential disruption from power outages due to extreme weather. The GM risk magnitude scores are deemed consistent with the England CCRA.
I13 Risks to digital from high and low temperatures, high winds, lightning	Low	Low	Medium	High	Increasingly, infrastructure such as water, power and transport are controlled over the telecommunications networks. Failure of telecommunications can lead to reduced capacity in a wide range of other essential services. Climate related-risks to digital include: severe weather damaging assets; over-heating of assets including data centres; additional demands for cooling on energy networks increasing risk of brown outs. GM has the second highest number of data centres in UK, behind only London. Due to the significant potential impacts and the large digital sector in GM, the 2050s risk magnitude score for GM is deemed to be greater than the England CCRA score, at 'High'.
H1 Risks to health and wellbeing from high temperatures	High	High	High	Very High	High temperatures will lead to increased numbers of people becoming ill or dying across the UK. Climate change is already making extreme heat events more likely, and by the 2050s, the frequency of Met Office heatwave events are projected to double across GM, and maximum summer temperatures are projected to increase by between around 1.6°C. Risks to health from high temperatures are increased for people with pre-existing health conditions, older adults and the very young. GM has high levels of deprivation and poorer health outcomes than the national average, and so GM's population is more vulnerable to this risk. GM also has an ageing population, with Trafford, Wigan and Stockport projected to see greater increases in over 55s over the coming decades. GM has high employment levels in at-risk sectors with workers in outdoor and manual labour, including the Construction, Agriculture and Manufacturing & Industry sectors; GM also has high numbers of homeless people who are highly vulnerable to this risk. Digital exclusion can mean that people are less able to receive upcoming weather

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					warnings, heat alerts, and advice on staying safe in the heat: disabled people, and people aged over 75, are more likely to be digitally excluded in some way in GM. Some older residents and people with certain health conditions may be more likely to spend more time in their home, which can increase their exposure to high temperatures, especially for those who live in poor quality housing. Due to the combination of these factors, the GM 2050s risk magnitude score is deemed to be greater than the England CCRA score, at 'Very High'.
H2 Opportunities for health and wellbeing from higher temperatures (warmer summers and winters)	Low	Low	Low	Low	Possible beneficial outcomes from warmer summers may include an increase in use of outdoor space for both physical activity, leisure activities, cultural activities, and domestic tourism, as well as significant mental health benefits. Possible beneficial outcomes from warmer winters include a partial reduction in the burden of cold-related mortality as winters become warmer on average. The GM risk magnitude scores are deemed consistent with the England CCRA.
H3 Risks to people, communities and buildings from flooding and storms	High	High	High	Very High	The risk of flooding to people, communities and buildings is one of the most severe climate hazards for the population, both now and in the future. Both fluvial and surface water flooding are significant present-day challenges for GM from a water management perspective, and this risk is projected to increase as a result of climate change, with both peak rainfall intensity and peak river flows projected to increase. Currently, 3.9% of GM residential properties are at some risk of fluvial flooding, with the majority (2.5%) at Low risk (less than the ~9% of English households at some risk of fluvial flooding). Salford and Manchester districts have significantly higher numbers of households at fluvial flood risk. 8.5% of GM residential properties are at some risk of surface water flooding, slightly less than the 11% of English residential properties. Oldham, Rochdale, Tameside and Bury have the highest proportion of residential properties at surface water flood risk. GM also has a high proportion of combined sewers with implications for resilience constraints regarding Combined Sewer Overflows and sewer flooding risk. More intense hourly rainfall and increased autumn and winter rainfall will increase both

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					fluvial and surface water flood risk in GM, and NW England is projected to see one of the highest increases in winter storm frequency. Analysis using spatial modelling commissioned by GMCA has found the 25 LSOAs across GM with the highest number of households in a present-day surface water flood risk hotspot area; Salford CC has 10 of these 25 LSOAs with the highest number of households in risk hotspot areas, followed by Manchester City Council with 5 LSOAs. GM has a high proportion of LSOAs at high risk of **both** flooding **and** high levels of social vulnerability, which is projected to increase by 2050s. Older people can also experience greater impacts from flood events. Floods can restrict local medical services, including access to medicines and access to social care. Some older people can be highly vulnerable during an event, e.g. power cuts that impact medical equipment, or mobility scooters / stairlifts. The GM 2050s risk magnitude score is deemed to be Very High.
H4 Risks to people, communities and buildings from sea level rise	Low	Low	Medium	Low	This risk focuses on coastal change caused by erosion, coastal landslip, permanent inundation or coastal accretion that is of such severity that the long-term sustainability and viability of coastal communities is threatened. Parts of the south and east coasts of England and the west coast of Wales already face risks to their viability because of coastal erosion. Indirect impacts felt in GM may include increased internal migration from coastal communities to GM. Overall, the risk for GM by the 2050s is deemed to be Low.
H5 Risks to building fabric from moisture, wind and driving rain	Medium	Medium	Medium	Medium	Climate hazards that can damage building fabric include subsidence caused by drought and dry soil, excessive moisture due to flooding and heavy rain, and structural damage due to high winds. These can cause harm to occupant health and wellbeing and create significant repair costs for homeowners. Some research projects that North-West England will see one of the highest increases in winter storm frequency, (+15% under a 3°C global warming level), but we do not know whether these storms will be more severe than currently experienced. Wind-driven rain may increase as storm frequency potentially increases. There is a lack

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					of further regional evidence; therefore the GM risk magnitude scores remain consistent with the England CCRA.
H6 Risks and opportunities from summer and winter household energy demand (a) **Opportunity** - winter	Low	Low	High	High	Household heating demand dominates energy use in housing at present. Future heating demand will be reduced by climate change due to warmer winters. Heating Degree Days are projected to decrease by 14% in GM by the 2050s compared to the baseline period. The economic benefits of these reductions in energy demand are estimated to be significant and will bring disproportionally larger benefits for households in fuel poverty, of which GM has a significant proportion. The opportunity magnitude score is assessed as High for GM by 2050s.
H6 Risks and opportunities from summer and winter household energy demand (b) Risk - summer	Medium	Medium	High	Medium	This risk relates to the potential increased economic cost of cooling to households, as average and maximum summer temperatures continue to increase and heatwaves become more frequent and intense. Reduced heating demand may reduce winter fuel poverty, but 'summer fuel poverty,' where householders may not be able to afford cooling, could rise. However, changes in cooling demand with climate change are mostly projected for the South East of England, and passive cooling should, generally speaking, be sufficient to maintain comfort levels in all areas of the UK outside London and the South-East (although extreme heat events will lead to low comfort levels and potential health impacts (risk H1)). Therefore, the GM 2050s risk magnitude score is deemed to be Medium.
H7 Risks to health and wellbeing from changes in indoor and outdoor air quality	High	High	Medium	Medium	Certain weather patterns associated with climate change may exacerbate poor air quality. Climate change is also projected to increase levels of ozone, particularly in summer. As wildfire risk increases, so does the associated health impacts from the resulting significant increase in air pollution. The emission of pollutants is likely to outweigh the impacts of physical climate change: Air pollution emissions from combustion are falling rapidly and are expected to decline significantly under most Net Zero pathways. The GM risk magnitude scores remain consistent with the England CCRA.

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H8 Risks to health from vector-borne diseases	Medium	Medium	Medium	Medium	Some diseases transmitted by insects and ticks (vectors) are likely to change in prevalence in the future due to warmer temperatures and milder winters, contributing to a changing of the distribution of the vector in the UK, and therefore of the associated health impacts. Due to a lack of further regional evidence, the GM risk magnitude score remains consistent with the England CCRA.
H9 Risks to food safety and food security	High	High	High	High	Increases in extreme weather patterns, variations in rainfall and changing annual temperatures will impact the occurrence and persistence of bacteria, viruses, parasites, harmful algae, fungi and their vectors in crops and livestock produced in the UK (and thus food safety). Climate change may also affect food security due to disruptions to the supply chain, arising from weather events and climate hazards both in the UK and abroad. There is a lack of further regional evidence and so the GM risk magnitude scores remains consistent with the England CCRA.
H10 Risks to health from water quality and household water supply, (a) water quality	Medium	Medium	Medium	Medium	Climate change may increase the risk of contamination of drinking water through increased runoff and more frequent flooding events that may overwhelm current water treatment approaches, potentially increasing virus and pathogen loads. Treatment failures have been reported in all UK countries associated with extreme weather events, particularly heavy rainfall. Private water supplies are most vulnerable to current and future climate hazards that affect water quality (outbreaks/contamination) and are particularly important for more isolated communities. The majority of GM is on mains water. Risks from wildfires include reservoirs suffering from significant contamination if ash and organics enter them from wildfires. The GM risk magnitude scores are deemed to be consistent with the England CCRA; despite our predominate use of mains water, the other risk factors such as flooding and wildfires are of significant importance in GM.
H10 Risks to health from water quality and household water supply, (b) water quantity	Medium	Medium	High	Medium	Reduced summer precipitation resulting from climate change will increase the likelihood of periods of water scarcity which, together with demand increases from economic and population growth, may lead to interruptions of household water supplies. This would have health, social and economic impacts, particularly for

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					vulnerable households. Private water supplies are most vulnerable to current and future climate hazards that affect water quantity (interruption of supply) and are particularly important for more isolated communities. As outlined in risk I8, North-West England water resource zone is projected to see a small supply-demand balance surplus. Given the supply-surplus forecast for the North-West, and the fact GM is predominately on mains water, the risk magnitude for GM is deemed to be medium by 2050s (lower than the risk magnitude for England).
H11 Risks to cultural heritage	Medium	Medium	Medium	Medium	This risk describes effects of climate change on cultural heritage, including moveable heritage (museum collections and archives), archaeological resources, buildings and structures, cultural landscapes and associated communities, and intangible heritage (folklore, traditions, language, knowledge and practices). GM has strong industrial and cultural heritage. The GM risk magnitude scores are consistent with the England CCRA.
H12 Risks to health and social care delivery from extreme weather	Medium	Medium	Medium	High	Climate change will impact upon health and social care services through the effects of floods, heatwaves and other extreme weather on hospitals and other health and care infrastructure. It will also lead to an increase in demand for services, as the negative effects of extreme weather impacts upon people's health and wellbeing more frequently due to climate change. This risk will likely further exacerbate existing inequalities, with people living with ill-health and some older people likely to be disproportionally impacted. Due to the high levels of poor health in GM (see risk H1), combined with high concentrations of health and social support sites at risk of flooding, and around 15% of the total healthcare facilities in north-west England projected to be in areas of high or acute levels of heat disadvantage, the GM risk magnitude score for 2050s has been assessed as High.
H13a Risk to delivery of education from extreme weather	Medium	Medium	Medium	Medium	Climate change is likely to cause increased disruption to education services as extreme events like flooding and extreme heat become more common. These sectors, which include schools, universities, nurseries and other early years settings, have seen disruption in recent years from flooding and heavy rainfall.

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					There is a lack of further regional evidence and so the GM risk magnitude scores are consistent with the England CCRA
H13b Risk to delivery of prison services from extreme weather	Medium	Medium	Medium	Medium	These sectors, which include prisons, courts and secure units, have seen disruption in recent years from flooding and heavy rainfall. Overheating is a key risk to prisons as high temperatures impact the welfare of inmates, staff and visitors. UK prisons are vulnerable to high temperatures due to their high levels of insulation and specific building materials. There is a lack of further regional evidence and so the GM risk magnitude scores are consistent with the England CCRA
H14 Risks to people, communities and built environment from wildfire *(new GM risk)*		Low		Medium	Wildfire can damage property and infrastructure assets, result in serious localised damage or loss of habitats and species, which may show varying degrees of recovery in the years afterwards, and can also cause serious localised air pollution, leading to implications for human health. GM and surrounding areas have already experienced significant wildfire events with widespread impacts. Conditions conducive to wildfires are projected to increase in GM by 2050s. GM also has significant populated areas at the 'urban-rural interface', (i.e. populated areas bordering moorland, grass scrubland, rural land) where rural wildfires can cause damage to urban properties and communities. It is therefore deemed important to add this as a risk in its own right for GM, with a 2050s risk magnitude score of Medium.
H15 Social inequalities exacerbated as a result of climate change, with disadvantaged and vulnerable groups facing disproportionate climate impacts *(new GM risk)*		Medium		High	People and communities are not all affected equally by the same climate-related event, such as heatwaves or floods. Some places are more likely to be exposed to floods or heatwaves, and some places have populations which are more socially vulnerable to such hazards. Disadvantaged groups can experience greater impacts from climate change, for example if they live in poor quality/overcrowding housing, which would exacerbate impacts from over-heating. GM has high levels of deprivation, closely linked to high levels of poor health, which (among other factors) increase the vulnerability of those populations to climate hazards. Other

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					vulnerable populations It is therefore deemed important to add this as a risk in its own right for GM, with a 2050s risk magnitude score of High.
B1 Risks to business sites from flooding	High	High	High	High	Current and future risks to business sites and functions from flooding are significant. There are 7,800 non-residential properties at risk of fluvial flooding in GM, with Stockport, Salford and Manchester seeing the highest numbers. Bury (1.85%), Rochdale (1%) and Wigan (0.7%) have the highest percentage of non-residential properties at High risk of fluvial flooding in GM, compared to the England average of 0.63% of non-residential properties at High risk. 18,000 non-residential properties are at risk of surface water flooding in GM, with 4,000 at High or Medium Risk. 4.5% of England's non-residential properties at risk of surface water flooding are in GM. GM faces significant surface water and sewer flood risk due to several interacting factors. The manufacturing sector is expected to face high losses due to location-specific risks, particularly flooding, with relocation being a less viable option – a major sector of employment in GM, and the third largest sector by GVA. The GM risk magnitude score is therefore High.
B2 Risks to business locations and infrastructure from coastal change from erosion, flooding and extreme weather events	Medium	Low	High	Medium	A considerable amount of industrial and commercial activity and infrastructure exists along the coast for most of the UK. Damages to business locations and infrastructure can arise directly from coastal change caused by erosion, coastal landslip, permanent inundation or coastal accretion that is of such severity that the long-term sustainability and viability of these sites is threatened. Whilst GM is in-land, indirect impacts may include knock-on impacts from port disruption felt in the Manchester Ship Canal, impacting freight and logistics movements – with associated impacts on supply chains, which could cause economic risks in GM (more in risk B6). The GM risk magnitude score for the 2050s is deemed to be lower than the England CCRA, at Medium.

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Risk or Opportunity	England: Present Day Risk Score	GM Present Day Risk Score	England: 2050s, 2°C GWL, Risk Score	GM 2050s, 2°C GWL, Risk Score	Risk Description and Greater Manchester (GM) Risk Score Summary
B3 Risks to businesses from water scarcity	Low	Low	Medium	Medium	Water is used by businesses for cooling and heating, washing products, dissolving chemicals, suppressing dust and also as a direct input to products; and by employees for drinking and washing. As outlined in risk I8, by 2050s North-West England water resource zone is projected to see a small supply-demand balance surplus. Water-intense manufacturing sub-sectors such as chemicals and chemical products, basic metals, paper and paper products, beverages and food products are more vulnerable to water scarcity. As outlined in risk B1, the manufacturing sector is an important sector in GM. Energy generation may take precedent for water abstraction over business need in times of drought; as outlined in risk I9, as the Trafford Green Hydrogen hub increases capacity, its water requirements will be very high and thus this may have knock-on impacts on businesses. Although there is a projected 2050s water supply-surplus forecast for the North-West, the projected large water requirements of Trafford green hydrogen hub (risk I9), the relatively large manufacturing sector in several GM boroughs, and a significant employment count dependent on water-intense manufacturing sub-sectors, means the GM risk magnitude score is deemed to be consistent with the England average, at Medium for the 2050s.
B4 Risks to finance, investment and insurance including access to capital for businesses	Medium	Medium	Medium	Medium	Risks to the UK's financial stability from the climate are currently moderate but expected to increase due to the scale of physical damage affecting assets, products, and services in the UK and abroad. Flooding is the most significant domestic risk for the financial system with financial impacts on insurance, mortgages and investment. Increasing flood risks may lead to higher premiums or a lack of insurance cover, which in turn can hinder access to finance, as Asset Finance for example requires goods to be insured against all risks. More broadly, risks to businesses (in particular SMEs) also include not being able to access finance in general, as financial institutions are increasingly incorporating climate risk assessments and ESG criteria into their lending criteria. The GM risk magnitude scores are deemed to be consistent with the England CCRA.

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B5 Risks to business from reduced employee productivity due to infrastructure disruption and higher temperatures in working environments	Low	Low	Medium	Medium	High temperatures can have negative impacts on employees' health and wellbeing, productivity, and ability to commute to work. Flooding can cause significant travel/commuting disruption. Hot weather and flood events are both projected to increase in frequency and intensity. The GM risk magnitude score is deemed to be consistent with the England CCRA.
B6 Risks to business from disruption to supply chains and distribution networks	Medium	Medium	Unknown	Unknown, but high priority	Extreme events are already a significant cause of supply chain disruption across all sectors. Climate change is likely to contribute to an increase in exposure to supply chain disruption by driving an increasing frequency of adverse weather events and evolving climate hazards both in the UK and overseas. This risk is particularly difficult to assess and quantify as it requires business-specific deep-dive risk assessments to fully understand. However, the potential impacts arising from this risk to supply-chains and wider disruption are significant, and therefore this risk is classed as having an Unknown risk magnitude, but is of a high priority.
B7 Opportunities for business from changes in demand for goods and services	Low	Low	Medium	High	Climate change will affect the production costs, comparative advantage, and demand for certain goods and services in the UK. There are some business opportunities arising from the impacts of climate change, including through shifts in demand for certain goods and services. GM is well-placed to take advantage of opportunities from changes in demand for goods and services, with strong advanced manufacturing, digital and knowledge sectors. The GM 2050s risk magnitude score is deemed to be higher than the England CCRA score, at High.

Risks identified by the UK CCRA3 under the theme of International Dimensions are listed below. These have not been included in **Table 7** as they have not been re-assessed for Greater Manchester, as these are national-level risks and are unlikely to be influenced greatly by local/regional context and activity. The International Dimensions risks have therefore been included in the GM CCRA using the UK-level CCRA risk magnitude scores.

'International Dimensions' Risk or Opportunity	Present Day Risk Score (UK Score)	2050s, 2°C GWL, Risk Score (UK Score)
ID1 Risks to UK food availability, safety, and quality from climate change overseas	High	High
ID2 Opportunities for UK food availability and exports from climate impacts overseas	Low	Low
ID3 Risks and opportunities to the UK from climate-related international human mobility	Low	Low
ID4 Risks to the UK from international violent conflict resulting from climate change on the UK	Low	Medium
ID5 Risks to international law and governance from climate change overseas that will impact the UK	Low	Medium
ID6 Opportunities from climate change (including arctic ice melt) on international trade routes	Low	High
ID7 Risks from climate change on international trade routes	Medium	Medium
ID8 Risk to the UK finance sector from climate change overseas	Low	Medium
ID9 Risk to UK public health from climate change overseas	High	High
ID10 Risk multiplication from the interactions and cascades of named risks across systems and geographies	High	High

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Stakeholders agreed to include 2 additional risks that were not in the UK CCRA3, which have been added to the GM CCRA and highlighted in the table above. These are: 'Risk H14: Risks to people, communities and buildings from wildfire', and 'Risk H15: Social inequalities exacerbated as a result of climate change, with disadvantaged and vulnerable groups facing disproportionate climate impacts'.

Stakeholders also agreed for 'wildfires' to be added to Risk N5 and Risk H3. Risk N5 now states: 'N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change, water scarcity and wildfires.' Risk H3 now states: "H3 Risks to people, communities and buildings from flooding and storms."

Stakeholders also agreed that 'Risk H13 Risk to delivery of education and prison services from extreme weather' be split out into 'Risks to delivery of education from extreme weather', and 'Risks to delivery of prison services from extreme weather' as these risks will be managed by very different groups and will require different approaches to manage these risks.

5. Next Steps

This report provides the evidence base for understanding present day and future climate risks and opportunities in Greater Manchester. It will inform the development of a future Climate Change Adaptation Strategy and Action Plan for Greater Manchester. This Strategy and Action Plan will provide the strategic direction to realise our vision of a well-adapted, resilient and climate-ready Greater Manchester, outline appraised adaptation actions, and seek to integrate adaptation into relevant projects, policies and plans.

Appendix A: Methodology

The methodology taken to produce this GM CCRA is outlined below. This broadly follows the climate adaptation framework developed by Adaptation Scotland and the EU Urban Adaptation Support Tool, which are both seen as good practice amongst Local Government adaptation plan development.[43] [44]

The Adaptation Scotland framework outlines 5 stages that make up the adaptation process, shown in **Figure 1A** below. This GM CCRA forms a key part of Stage 2: 'Understand the impacts of climate change', and will be a key input used to inform Stage 3: 'Identify and prioritise actions'.

Figure 1A. Adaptation Framework.

- **Step one: Getting Started**
  - This involved raising awareness of the need for climate adaptation within the GMCA, including amongst key decision makers, to enable the climate adaptation work programme to be signed off.
  - It also involved discussions with key directorates and service areas within the GMCA at an early stage, to demonstrate how climate change may impact their work areas.

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[43] Adaptation Scotland (2020) Public Sector: The Framework, link
[44] European Climate Adaptation Platform Climate-ADAPT (2024) Urban Adaptation Support Tool, link

- o This stage will be a continuous element of work, seeking to raise awareness of the climate adaptation programme amongst all relevant stakeholders, both internally and externally.
- **Step two: Understanding the impacts of climate change**
  - o Research was undertaken to understand how past weather-related events have impacted Greater Manchester and the North-West, to better understand how we may be impacted by such events in the future as they become more frequent and/or intense. It gives an indication as to the financial, societal, and environmental impacts that may be experienced.
    - Output: Summary of past weather-related events in Greater Manchester and their associated impacts (Appendix B: Summary of past weather-related events in Greater Manchester).
  - o Greater Manchester's baseline climate was assessed, and how this has changed over the 20th century
    - Output: Baseline climate data and climate trends data produced for Greater Manchester (Chapter 2: How has our climate changed already?
  - o The evidence base for projected climate change in Greater Manchester and the associated medium and long-term impacts was assessed, primarily using Met Office UKCP18 data, alongside spatial data from GMCA-commissioned modelling, Climate Just and others
    - Outputs: Climate Projections spatial layers; Summary of climate projections for GM (Chapter 3: How will our climate change in the future?
- **Step three: Assessment of climate risks for Greater Manchester**

  - o Using the UK CCRA3 as a key resource, climate risks and opportunities relevant for GM were identified, and presented at a workshop with stakeholders from across a range of areas, all of which will be impacted by climate change, and/or will have some responsibility for managing climate impacts and risks within their sectors and organisations going forward.
  - o These workshops were comprised of attendees from the following:
    - Greater Manchester Local Authorities and the Greater Manchester Combined Authority, including from
      - Public Health
      - Planning
      - Housing
      - Emergency Response
      - Civil Contingencies
      - Education
      - Digital
      - Highways
      - Investment

- Natural Environment
- Business
- Ageing
- Neighbourhood and Community
- Sustainability and Environment
  - Greater Manchester NHS, including
    - Emergency Preparedness, Resilience and Response
    - Public Health
    - Net Zero and Sustainability
  - Transport for Greater Manchester, including
    - Resilience
    - Carbon
  - Greater Manchester Resilience Unit
  - Natural England
  - Environment Agency
  - British Red Cross
  - Greater Manchester Business Growth Company
  - Greater Manchester Business Board
  - Private housing developers
  - Social Housing Providers
  - National Farmers Union
  - United Utilities (regional water company)
  - Electricity North West (regional electricity company)
  - Manchester Climate Change Agency
- Local and regional evidence was gathered via desk-research and these stakeholder workshops to identify relevant evidence to analyse the implications of the climate risks and opportunities for Greater Manchester. This was used to support the risk magnitude assessment for Greater Manchester. The climate risks and opportunities that were assigned a different risk magnitude score to the UK CCRA3 are shown in **Table 7.**
  - International Dimensions risks in the UK CCRA3 have not been reassessed for Greater Manchester, as these are national-level risks and are unlikely to be influenced greatly by local/regional context, activity and/or policy.
- *Vulnerability has been considered through existing assessments and was considered during stakeholder workshops on the potential for the most significant, or widespread economic, social or environmental impacts on receptors.*

- Stakeholders agreed to include 2 additional risks that were not in the UK CCRA3, which have been added to the GM CCRA. These are:
  - 'Risk H14: Risks to people, communities and built environment from wildfire', and

- ▪ 'Risk H15: Social inequalities exacerbated as a result of climate change, with disadvantaged and vulnerable groups facing disproportionate climate impacts'.
  - o Stakeholders also agreed for 'wildfires' to be added to Risk N5. Risk N5 now states: 'N5 Risks and opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change, water scarcity *and wildfires.'*
  - o Stakeholders agreed for 'and storms' to be added to Risk H3. Risk H3 now states: 'H3 Risks to people, communities and buildings from flooding and storms.'
  - o Stakeholders also agreed that 'Risk H13 Risk to delivery of education and prison services from extreme weather' be split out into 'Risks to delivery of education from extreme weather', and 'Risks to delivery of prison services from extreme weather' as these risks will be managed by very different groups and will require different approaches to manage these risks.
  - o Relevant evidence (desk-based, stakeholder / expert input) to understand the impacts of these risks and opportunities specific to Greater Manchester was also assessed, and supported the development of the GM CCRA Evidence Base report (link to report TBC). Climate risks and opportunities, as well as their risk magnitude scores, were identified for Greater Manchester.
  - o The risk magnitude score for 10 climate risks has been increased for the GM CCRA, compared to the national UK CCRA3. 12 risks and opportunities have had their risk magnitude lowered for the GM CCRA compared to the national CCRA.
  - o Climate risks deemed not relevant to Greater Manchester have also been removed. These are coastal or ocean-related and have been deemed to likely have minimal direct or indirect impacts upon Greater Manchester, and include:
    - ▪ N10 Risks to aquifers and agricultural land from sea level rise, saltwater intrusion
    - ▪ N14 Risks to marine species, habitats and fisheries from changing climatic conditions, including ocean acidification and higher water temperatures.
    - ▪ N15 Opportunities to marine species, habitats and fisheries from changing climatic conditions
    - ▪ N16 Risks to marine species and habitats from pests, pathogens and invasive species
    - ▪ N17 Risks and opportunities to coastal species and habitats due to coastal flooding, erosion and climate factors
    - ▪ H4 Risks to people, communities and buildings from sea level rise
    - ▪ B2 Risks to business locations and infrastructure from coastal change from erosion, flooding and extreme weather events

- Outputs: Greater Manchester Climate Change Risk Assessment, **Table 7.**
- **Step four: Validate with stakeholders**
  - The climate risks and opportunities identified for Greater Manchester, and their risk magnitude scores, were confirmed with further discussions with key stakeholders.
  - Risks with high or very high risk magnitude scores are assigned as High Magnitude risks and opportunities for present day **(Table 5)** and 2050s (**Table 6**).
  - GM CCRA finalised and published.

Appendix B: Summary of past weather-related events in Greater Manchester

Table 1A. Summary of past weather events in Greater Manchester

Weather Event	Hazard	Areas Affected	Impacts
2022 summer heatwave	Extreme Heat	Greater Manchester-wide	According to ONS data on Excess mortality during heat-periods, from the 1st June to 17th August 2022 there were approximately **70 excess deaths in Greater Manchester**, out of a total of 3,555 excess deaths for England.[45] Extreme heat events can also lead to significant impacts on NHS elective surgery. A study found that the 2022 summer heatwave resulted in a fifth of UK hospitals being forced to cancel operations during the three days of the extreme heatwave (16 – 19 July 2022).[46] In 2022/23 there were 1,361 over-heating events[47] in GM's hospitals, 20% of the England total.[48] The majority of such events were seen in the Wrightington, Wigan and Leigh Trust. According to the CCRA3 Technical report, the number of heat-related deaths in the UK could increase to 7,040 deaths per year by 2050.[49] A study by the Met Office found the return time for a 40°C threshold under a 'natural' environment with no human induced climate change was 1 in 1,000 years.[50] [51] However, **due to human induced climate change, the present-day return time for a 40°C threshold is now 10 times greater,** at around 1 in

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[45] ONS (2022) Excess mortality during heat-periods, England and Wales, link
[46] University of Birmingham (2023) 2022 heatwave struck off surgery in fifth of UK hospitals, link
[47] Overheating occurrences triggering a risk assessment, recorded under the Estates Returns Information Collection, Summary page and dataset for ERIC 2022/23; link
[48] Hospitals within the NHS GREATER MANCHESTER Integrated Care Board
[49] Betts, R.A. and Brown, K.(2021) Introduction. In: The Third UK ClimateChange Risk Assessment Technical Report [Betts, R.A.,Haward, A.B. and Pearson, K.V.(eds.)]. Prepared for the Climate Change Committee, London, link
[50] Met Office (2020) Chances of 40°C days in the UK increasing, link.
[51] Met Office (2022) UK and Global extreme events – Heatwaves, link

Weather Event	Hazard	Areas Affected	Impacts
			100 years, and by 2100 could be as little as every 3 or 4 years under a very high emission scenario (RCP 8.5). Under a medium-high emissions scenario (RCP 6.0), the return period for a 40°C threshold by 2100 is projected to be around 1 in 15 years.
Summer 2018 heatwave and drought	Wildfire	Winter Hill, Bolton and Saddleworth Moor, Oldham.

Significantly elevated $PM_{2.5}$ was observed in Oldham, Manchester, Bolton, Wigan, as well as further afield. | Summer 2018 saw prolonged high temperatures and low rainfall. Significant wildfires broke out in Saddleworth Moor (Oldham) and Winter Hill (Bolton). Impacts included:

• Collectively, 11km^2 of upland moor was burned at Winter Hill and Saddleworth Moor, with 57 fire engines and over 200 firefighters required to tackle the fires. Impact on air quality forced the evacuation of 34 homes and the closure of 4 schools.[52]
• The impact of mortality due to exposure to $PM_{2.5}$[53] from the fires on the economy was found to be £21.1 m.[54]
• Biodiversity and habitat destruction, which will take years to recover. 180ha of internationally significant blanket bog and 20 ha of dry heath/grassland damaged at RSPB Dove Stone.[55]
• Estimated to have released 17,798t CO216 – 26,281tCO2 from soil carbon losses and another 19,800t CO2 from near-natural bogs, resulting in total emissions of 37,598t - 46,081t CO2.[56]
The North-West is projected to experience warmer, wetter winters and hotter, drier summers. Analysis from UK-CRI and UKCP18 projects that the risk of wildfire in the Winter Hill and Saddleworth areas could increase from less than ~4.5 days/year in the 2020s, to ~6.5days/year by the 2050s, and >10days/year by 2080s.[57] |
| Boxing Day Floods, 2015. | Flooding (primarily river flooding, with | Primarily Northern parts of GM | 2,255 properties affected by internal flooding, with 1, 649 properties flooded in 3 principal locations; Salford (750), Radcliffe/Redvales (670), and Littleborough/Rochdale (229).[58] |

[52] Moorland fires and fire service funding – Briefing for MPs, from GMFRS and GMCA
[53] Particulate matter with a diameter less than 2.5 μm
[54] A M Graham et al (2020) Impact on air quality and health due to the Saddleworth Moor fire in northern England; Environ. Res. Lett. 15 074018, link
[55] RSPB (2018) The Saddleworth fire and the importance of restoring our peatland habitats in tackling climate change - Blog, link.
[56] UK Parliament Committees (2019) Written evidence submitted by the Game & Wildlife Conservation Trust (GWCT) (PLD0024) link
[57] Using the Wildfire: FFMC 99th percentile metric (Days with Fine Fuel Moisture Code component of the Met Office Fire Severity Index above the 99th percentile over the period 1981-2010, calculated by season).
[58] GMCA (2016) Flood Investigation Report Greater Manchester, 26 December 2015 link

Weather Event	Hazard	Areas Affected	Impacts
Page 228	some surface water flooding)		The Environment Agency estimated an average financial residential insurance claim of approximately £50,000; for GM this equates to a total value of **more than £112m**.[59] This does not include homes that were uninsured or underinsured.

31,200 properties were without power, with 143 properties without power for 2 days. Seven electricity sub-stations were damaged.

Damage to infrastructure totalled £11.5m.

Infrastructure impacts included:

- Several bridges were damaged or destroyed.
- Railway assets were damaged across the region
- Road closures and diversions put in place
- Environment Agency assets damaged
- Bury wastewater treatment works was flooded and a number of the treatment processes were affected
- Flood water in Rochdale caused power failure to multiple Water Treatment Works

Environmental impacts included:

- Water quality likely to have been affected due to a combination of combined sewer overflow discharges, inundation of waste water treatment works and waste materials and fine sediments and other contaminants being washed into watercourses.

- **The winter storms seen in the UK in 2015 were made at least 40% more likely because of climate change.**[60,61] |

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[59] Environment Agency (2018) Estimating the economic costs of the 2015 to 2016 winter floods link
[60] Met Office – Effects of Climate Change, link
[61] Friederike E L Otto et al 2018 Environ. Res. Lett. 13 024006, link

Weather Event	Hazard	Areas Affected	Impacts
Storm Ciara, 8th February 2020	Storms	Greater Manchester-wide	• Electricity North West reported 2,000 homes in the region were without power overnight due to a fallen tree. • Fallen trees affected Metrolink lines with no services able to operate between Rochdale and Shaw and Crompton, and Bury and Whitefield, as well as St Werburghs Road and East Didsbury in either direction. • Northern Trains cancelled more than 140 trains across the north of England • The Environment Agency issues 30 flood warnings across Greater Manchester.[62]
Storm Dennis, 15th February 2020	Storms	Greater Manchester-wide	• Storm Dennis destroyed a bridge crossing the River Irwell in Salford • Roads in Stockport were closed due to flooding • Rochdale Road was closed after a building was deemed unsafe.[63]
Storm Christoph, January 2021	Storms and flooding	Greater Manchester-wide, in particular south Manchester	Manchester: • The River Mersey reached unprecedented levels which resulted in the evacuation of 3,000 properties across Didsbury and Northenden. • A Major Incident was declared, there was a significant risk of flooding for Didsbury and Northenden areas of Manchester, and the evacuation of 3000 properties took place, including 3 settings housing vulnerable residents. • The flood waters came within millimetres of breaching the flood basin. • Over 240 city council staff along with partners and volunteers were involved in the response over the 4 days.[64]
June 2016 heavy rainfall	Flash / surface water flooding	Greater Manchester-wide	Stockport:

[62] BBC News (2020) Storm Ciara: Greater Manchester travel chaos and power cuts link
[63] Manchester Evening News (2020) Storm Dennis takes out River Irwell bridge in Salford as heavy rain and strong winds hit the region, link
[64] Manchester City Council Report for Information (2021) Approach to Flood Prevention and Management, link

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Weather Event	Hazard	Areas Affected	Impacts
			• Received equal to or above 200% of the long-term average June rainfall in June 2016. 295 properties reported flooding across the month, with many properties flooding on more than one occasion. • Flooding also caused disruption to road users as highways were closed, along with disruption to the rail services as the Stockport to Disley line was also closed for two weeks following a landslip at Middlewood Station. • Stockport Council also estimated over £950,000 worth of flood damages, investigation and repair work to highway, parks, greenspaces and public rights of way as a result. [65] Oldham: • Internal property flooding affected 57 properties, of which 5 were businesses and 52 were residential properties. [66]

[65] Preliminary flood risk assessment: Stockport Metropolitan Borough Council (2017), link
[66] 8th and 10th June 2016 Flood Investigation Report, Oldham council (2017), link

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Appendix C: Greater Manchester Climate Projections

Table 8. Climate Projections Summary for Greater Manchester.

	Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
Climate Averages	*Mean annual temperature*	*Approx. 9°C*	Increase by 0.9°C	Increase by 1.2°C	Increase by 2.4°C	Increase by 1.4°C	Increase by 1.8°C	Increase by 3.5°C
	Mean annual rainfall	*Between 800mm and 1200mm, for southern and northern GM respectively*	Increase by 1.7%	Increase by 1.4%	Increase by 1.5%	Increase by 1.6%	Increase by 1.4%	Increase by 1.8%
Hot Weather	*Average Maximum*	*Between 19 and 20°C (Northern*	Increase by 1.2°C	Increase by 1.6°C	Increase by 3.5°C	Increase by 1.8°C	Increase by 2.4°C	Increase by 4.9°C

	Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
	Summer Temperatures	*and Southern GM, respectively)*						
	Number of Hot days/year (temp >25°C)	*Between 4 and 10 events/year (Northern and Southern GM, respectively)*	Between 7 and 14 events/year (Northern and Southern GM, respectively)	Between 8 and 19 events/year (Northern and Southern GM, respectively)	Between 18 and 40 events/year (Northern and Southern GM, respectively)	Between 9 and 18 events/year (Northern and Southern GM, respectively)	Between 12 and 28 events/year (Northern and Southern GM, respectively)	Between 28 and 59 events/year (Northern and Southern GM, respectively)
	Number of Met Office Heatwaves / year	*Approx. 1 heatwave per year on average*	Between 1.3 and 1.8 heatwave events per year	Between 1.6 and 2 heatwave events per year	Between 3.5 and 4.3 heatwave events per year	Between 1.7 and 2.5 heatwave events per year	Between 2.2 and 3.2 heatwave events per year	Between 4.1 and 4.8 heatwave events per year

Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
		(Northern and Southern GM, respectively)					
Number of Tropical Nights/year (nights>20°C)	*Zero*	0.1/year	0.2/year (or 1 in 5 years)	2.6/year	0.3/year (or 1 in ~3.5 years)	0.75/year	9 / year
Cooling Degree Days (CDDs: a day-by-day sum of number of degrees by which the mean	*16 CDDs*	27 CDDs	33 CDDs	73 CDDs	36 CDDs	47 CDDs	123 CDDs

	Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
	temperature is above 22°C)							
Cold Weather	*Minimum Winter Temperature Change*	*Between 0.8 °C and 1°C (for Northern and Southern GM, respectively)*	Increase by 0.8°C	Increase by 1.1°C	Increase by 2°C	Increase by 1.2°C	Increase by 1.6°C	Increase by 2.9°C

	Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
Page 235	*Number of Frost Days/year (annual number of days where the minimum daily temperature is below 0°C)*	*Between 44 and 51 days/year (Southern and Northern GM, respectively)*	Between 28 and 48 days/year (Southern and Northern GM, respectively)	Between 27 and 45 days/year (Southern and Northern GM, respectively)	Between 18 and 31 days/year (Southern and Northern GM, respectively)	Between 25 and 41 days/year (Southern and Northern GM, respectively)	Between 25 and 37 days/year (Southern and Northern GM, respectively)	Between 13 and 23 days/year (Southern and Northern GM, respectively)
	Heating Degree Days (a day-by-day sum of number of degrees by which the mean	*2247 HDDs*	1996 HDDs	1937 HDDs	1661 HDDs	1884 HDDs	1789 HDDs	1441 HDDs

Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
temperature is less than 15.5°C).							
Rainfall *Summer Rainfall*	*Between average of 211 mm and 249 mm rain for summer months (for Northern and Southern GM, respectively)*	Decrease by 7%	Decrease by 10%	Decrease by 22%	Decrease by 11%	Decrease by 16%	Decrease by 30%

Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
Autumn Rainfall	*Between average of 258mm and 326mm rain for autumn months (for Northern and Southern GM, respectively)*	Increase by 7%	Increase by 8%	Increase by between 11% and 13% (for Eastern and Western GM, respectively)	Increase by 8%	Increase by between 9% and 10% (for Eastern and Western GM, respectively)	Increase by between 14% and 16% (for Eastern and Western GM, respectively)
Winter Rainfall	*Between average of 223 mm and 317 mm rain for winter months (for*	Increase by between 2% and 4% (for Southern and	Increase by 4% and 6% (for Southern and Northern	Increase by 10% and 12% (for Southern and Northern	Increase by 4% and 6% (for Southern and Northern	Increase by 6% and 9% (for Southern and Northern	Increase by 14% and 18% (for Southern and Northern

	Indicator	Baseline 1981-2010	GM Projected Change: 2040s, medium-high emissions	GM Projected Change: 2050s, medium-high emissions	GM Projected Change: 2080s, medium-high emissions	GM Projected Change: 2040s, high emissions	GM Projected Change: 2050s, high emissions	GM Projected Change: 2080s, high emissions
		Southern and Northern GM, respectively)	Northern GM, respectively)	GM, respectively)	GM, respectively)	GM, respectively)	GM, respectively)	GM, respectively)
Drought	*Soil Moisture Deficit (Average annual maximum cumulative difference between rainfall and potential evaporation in soil).*	*123mm*	151mm	164mm	235mm	170mm	193mm	290mm

Appendix D: Information on climate projections

What is the UKCP18 data that we use to identify climate projections?

UK Climate Projections[67] is a climate analysis tool that forms part of the Met Office Hadley Centre Climate Programme.

It is a series of datasets that demonstrate how the climate may change in the future, based on scientific modelling.

Data is available at the 25km, 12km, or 2.2km scale depending on the variable.

UKCP18 shows climate change projections up until the year 2100.

The data is updated regularly, '18' is just the year of its original release.

The data is available as lower, median and upper values – taken from the ensemble of climate models that make up the UKCP18 projections. We have used the median values in this assessment.

The data is available for different Time Periods, and different greenhouse gas Emissions Scenarios (low, medium, medium-high and very high).

What are Emissions Scenarios?

Emissions Scenarios = 'Representative Concentration Pathways' (RCPs).[68]

Different RCPs assume different emissions of greenhouse gases to the end of the 21st Century. They include a wide range of assumptions regarding population growth, economic development, technological innovation and attitudes to social and environmental sustainability.

We have used RCP6.0 (medium-high) and RCP8.5 (very high) scenarios.

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[67] Met Office: UK Climate Projections (UKCP) link
[68] Met Office (2018) UKCP18 Guidance: Representative Concentration Pathways link

Table 2A. RCPs and the associated estimated change in global temperatures.

RCP	Carbon emissions scenario	Change in temperature (°C) by 2081-2100
RCP2.6	Low	1.6 (0.9 – 2.3)
RCP4.5	Medium	2.4 (1.7 – 3.2)
RCP6.0	Medium-high	2.8 (2.0 – 3.7)
RCP8.5	High	4.3 (3.2 – 5.4)

Why have we used these Emissions Scenarios?

Estimates based on the assumption of current national climate policies suggest a median warming level in the region of 2.7°C by 2100, compared to pre-industrial levels (see Figure 2A below). [69]

This reduces to 2.5°C with targets in Nationally Determined Contributions (NDCs), and 2.1°C when binding long-term or net-zero targets are included.

The medium-high emissions scenario RCP6.0 most closely aligns to this global warming level (as shown in Table 2A above).

RCP8.5 is a High emissions scenario. It assumes a significant increase in greenhouse gas emissions. RCP8.5 is particularly useful for allowing for risk analysis in the absence of further decarbonisation, and demonstrating possible impacts from runaway climate change / carbon feedback loops. For projects that have a very high sensitivity to potential climate impacts, e.g. flooding or extreme heat, RCP8.5 is a

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[69] Climate Action Tracker (2023) Temperatures, link

useful emissions scenario to use to ensure projects are 'climate-proof.' The Climate Change Committee also advises organisations to:

"Adapt to 2°C, assess for 4°C." [70]

RCP8.5 is projected to give a change in temperature by 2081-2100 of 4.3°C (range of 3.2°C – 5.4°C). Therefore, RCP8.5 most closely aligns to a 4°C warming by 2100, again justifying the inclusion of RCP8.5 as an emissions scenario.
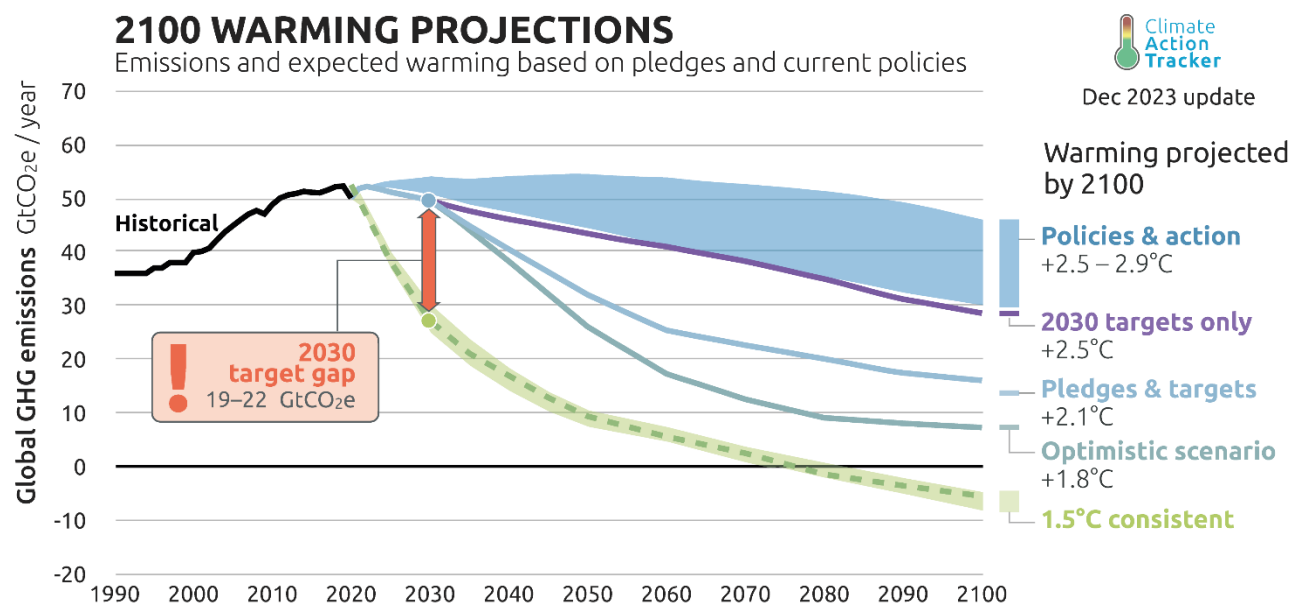

Figure 2A. Climate Action Tracker (2023) Global Temperatures.

What Time Horizons have we chosen to map?

UKCP18 data can also be accessed for various time horizons. These cover 30-year spans, and are classed as follows:

- 2010 – 2039 = 2020s

- 2020 – 2049 = 2030s

- **2030 – 2059 = 2040s**

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[70] Climate Change Committee (2021) Independent Assessment of UK Climate Risk, Advice to Government For The UK's Third Climate Change Risk Assessment (CCRA3) link

- **2040 – 2069 = 2050s**

- 2050 – 2079 = 2060s

- 2060 – 2089 = 2070s

- **2070 – 2099 = 2080s**

It is good practice to select mid-century time horizons to align with medium (2040s) and long-term (2050s) regional plans, alongside an end of century time horizon (2080s) which helps show the full extent of projected climate change associated with each emissions scenario.

What are Global Warming Levels?

Climate projections models like UKCP18 can also model different increases in global temperatures (called Global Warming Levels, or GWLs), rather than different increases in greenhouse gas emissions (as is done for the RCP scenarios).

The GWLs used in modelling are usually an increase in global temperatures of 1.5°C, 2°C, 2.5°C, 3°C and 4°C by the end of the 21st century, compared to pre-industrial levels.

The benefits of this approach is that the model does not have to assume or estimate the greenhouse gas emissions increase and the expected time period by which this will occur. However, for local authorities and other organisations wanting to understand and plan for the different climate hazards that may occur by different time periods, this is less helpful.

For this reason we have primarily accessed the UKCP18 data using the RCP greenhouse gas emissions scenario approach, where we can estimate what climate impacts we will experiencing by what time frame.

However, UKCP18 data relating to Drought Severity is most accessible using Global Warming Levels only, and so for this hazard the spatial data is only available for different GWLs.

Estimating Future Surface Water Flood Risk

A GMCA-commissioned project modelled present-day surface water flood risk at a granular level. Using data on: past incidents of surface water flooding; Risk of Surface Water Flooding with a 1% annual probability of occurring; other modelled data from the regional water company, and property data, a heat map showing present-day surface water risk was produced (areas in red or amber are modelled as being a potential surface water risk hotspot area).

Projecting future surface water flooding risk is difficult as it depends on a combination of these factors. Intense rainfall is a key driver of surface water flooding. Therefore, to get an understanding of future surface water flooding risk in Greater Manchester, we also need to understand how rainfall intensity is projected to change over the 21st century.

Environment Agency climate change allowances (CCA) are predictions of anticipated change for peak river flow and peak rainfall intensity in the future, under different climate change scenarios (peak river flow: central, higher and upper; peak rainfall intensity: central and upper). Peak rainfall intensity for relevant Management Catchment Areas (MCA) under different climate change scenarios and by the 2050s are shown in table below.

Scenario	Irwell MCA	Upper Mersey MCA	Lower Mersey MCA	Douglas MCA
Central, 3.3% Annual Exceedance Rainfall Event	+25%	+20%	+20%	+25%
Upper End, 3.3% Annual Exceedance Rainfall Event	+35%	+35%	+35%	+35%
Central, 1% Annual Exceedance Rainfall Event	+25%	+25%	+25%	+25%
Upper End, 1% Annual Exceedance Rainfall Event	+40%	+40%	+40%	+40%

This increase in peak rainfall intensity will bring significant associated pluvial (surface water) flooding risks, in particular in existing surface water hotspot areas.

GREATER MANCHESTER

DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

Green Summit 2024
Green City Region Partnership
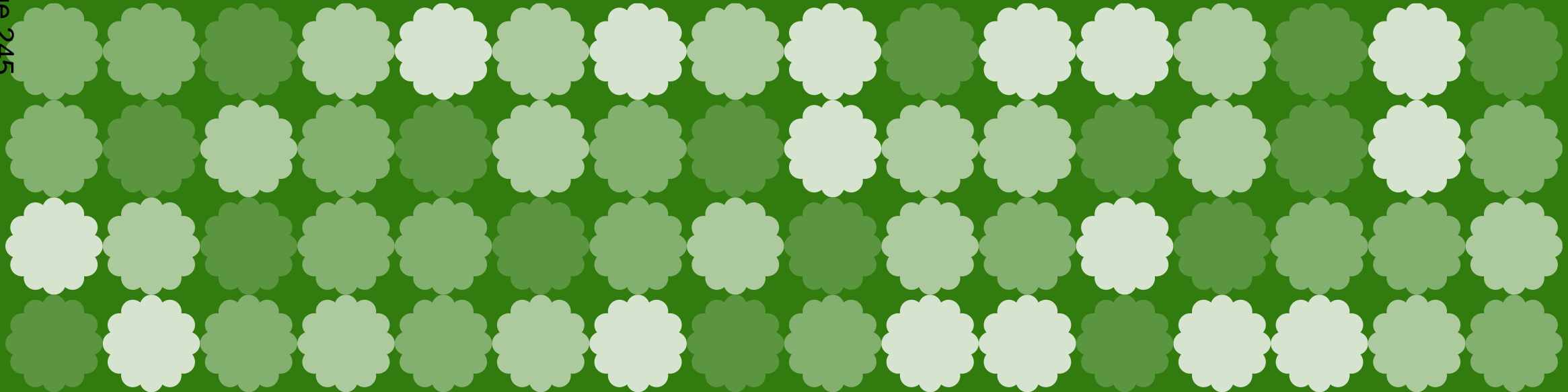
The Green Summit programme (in brief)

- Registration from 8:45am, event close by 16:30pm followed by drinks reception @ 16:30 to 18:30pm

- Day commences with main plenary in Lyric Auditorium hosted by the Mayor

- Main plenary sessions and activity in the Lyric to be livestreamed, Slido for online engagement throughout the day to ensure audience feels included and part of ongoing plans

- To summarise/showcase achievements of the current 5 year Environment Plan and to launch the new 5 year Environment Plan

- The main areas of focus:
    - Sustainable Green Growth
    - Young People and Communities: Sustainability, Innovation & Skills
    - Connecting with Nature

- All workshops and seminars to be hosted throughout the venue focused on 5YEP priorities, celebrate success and focus on forward action

- Media announcements throughout the day, via social channels and sessions

Progress – SEPTEMBER 2024

AIM: *To bring to life the many actions we can all make to reduce our climate impact and increase the quality of our biodiversity in the region. sharing the aims, challenges, opportunities and solutions contained within the next reiteration of the Five Year Environment Plan. Through networking opportunities, we aim to provide vital advice and contacts from the summit to enable an acceleration of action.*

DATE: Monday 9th December, The Lowry, Salford Quays. Whole venue booked for all day

- Sponsors: Opportunity pack circulated, sponsors being confirmed.

- Target Audience: General Admission *(Last year, 52% corporate audience)*

- Working with Communications and Engagement Team to promote registration, sponsors and related messaging on positive sustainable behaviour change messages

- Young people and schools to be included and to play a key role across all seminars, plenaries and workshops

GMGreenCity #GMGreenSummit2024

Recommendations

- To note the presentation

GREATER MANCHESTER

DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

Green Spaces Fund

Evaluation Report

September 2024

Table of Contents

Introduction

What is this report?

This is an overview of the outputs and delivery of the Greater Manchester Green Spaces Fund as of September 2024, at the end of the conclusion of Round 2 of projects supported by the Fund. The Green Spaces Fund was launched in summer 2022 following a commitment in the Mayor's manifesto to:

> "Create a new Green Spaces Fund to give small grants to communities to clean up and improve pocket parks and local green spaces or create new ones where they are needed."

The Greater Manchester Combined Authority invested £2.6m into the Fund, which includes funding for the delivery of projects, management and administration of the Fund by the Greater Manchester Environment Fund and support for communities provided by a team of Green Spaces Fund Advisors. This investment has covered four rounds of funding since 2022, with successful applicants at various stages in the delivery of their projects. At the time of publication, a 5th round has been open for applications, with successful projects due to be awarded shortly.
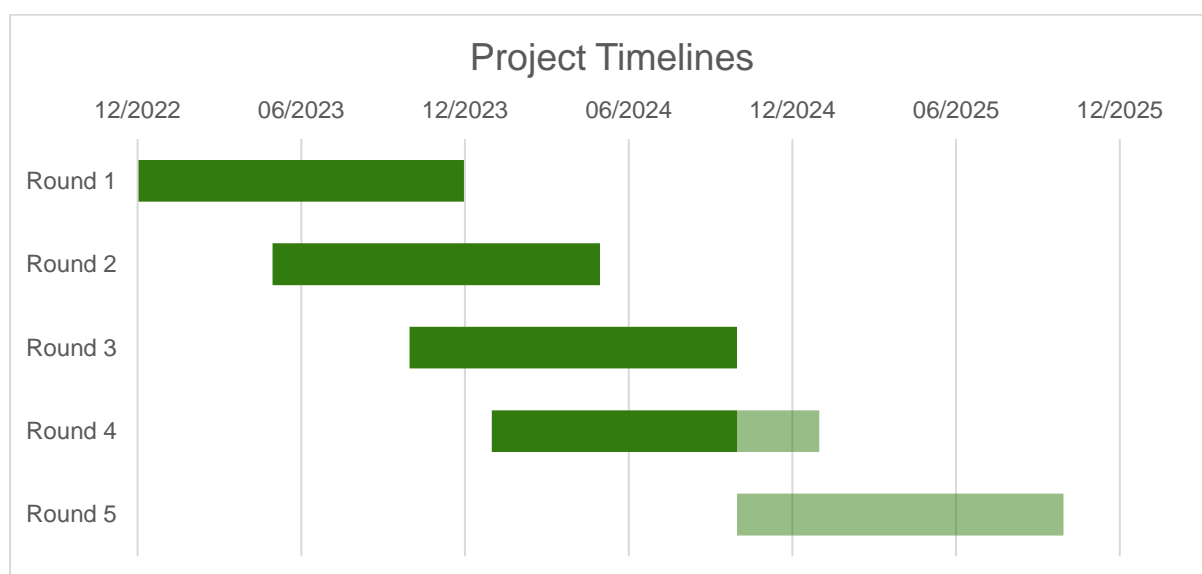

Figure 1. Project timelines for all 5 Rounds of the Green Spaces Fund

How is this report compiled?

This report has been informed by the end of project details submitted by the successful applicants of Round 1 and Round 2 of the Fund - most of whom have completed their projects and also project proposals from the successful applicants from Rounds 3 to 4 (who are still delivering their projects). It is also informed by an assessment of the management of the Fund and of the impact of the Green Spaces Fund Advisors.

Who has complied this report?

The Greater Manchester Combined Authority and the Greater Manchester Environment Fund, in collaboration with the partner organisations hosting Green Spaces Fund Advisors.

How will this report be used?

This report is designed to provide information about delivery of the Green Spaces Fund projects to date.

Station South, Levenshulme. Copyright: Station South.

Overview of the Green Spaces Fund

Types of projects supported

The Green Spaces Fund was established to support community-led projects that increase the amount and quality of accessible, nature-rich green space across Greater Manchester, particularly in the areas where people need it most.

Community groups across Greater Manchester have been able to apply to the Fund to create or enhance green space in their area. The type of projects supported vary and include new pocket parks, improving unloved or neglected spaces and creating community food growing areas. Projects also vary in scale – two sizes of grants have been available depending on the size of the project proposed, with small grants from £2,000 up to £15,000 and large grants from £15,001 to £40,000.

Funding and support provided

The total amount of funding from the GMCA directly awarded to 86 projects is £1.9 million. This has been split across 4 rounds, with £400,000 for Round 1, £800,000 for Round 2, £400,000 for Round 3 and £300,000 for Round 4. Additional funding of £700,000 was deployed across these rounds to provide direct support to community groups to develop their applications and deliver their projects, as well as enabling management of the Fund.

The Greater Manchester Environment Fund

The Greater Manchester Environment Fund was created in partnership with The Wildlife Trust for Lancashire, Manchester and North Merseyside, and the Greater Manchester Combined Authority to bring together communities and funding bodies keen to channel their resources into addressing environmental problems. It manages and administers the Fund, as it also does for the Recycle for Greater Manchester Community Fund.

The Green Spaces Fund Advisors

A partnership of 5 organisations, led by Groundwork Greater Manchester, was created to support and enhance the delivery of the Fund, with each represented by a Green Spaces Fund Advisor. The Advisors work in partnership and empower community groups to take positive and meaningful action for nature, ensuring activity reflects the needs of the wider community and is inclusive. They directly engage and support community groups where the Fund is needed the most, from project conception through to application and project delivery guidance and support.

Aims of the Fund

The Fund was established with 3 main aims to deliver its vision. Applicants to the fund have needed to address and demonstrate how they meet these to be awarded funding.

Aim 1 – Benefitting communities with a lack of quality greenspace

- Reach communities where there is poor access to quality green spaces.
- Tackle inequalities including health and wellbeing.
- Enable people to have contact with nature.

Aim 2 – Tackling our climate and biodiversity emergency

- Improve Greater Manchester's green and blue spaces.
- Tackle climate and biodiversity emergencies.
- Have a priority fit with Greater Manchester's priorities for nature recovery and wider environmental ambitions.

Aim 3 – Encourage and Empower communities to take positive action for nature

- Opportunities for training & skills through volunteering.
- Empower community groups to take actions in their local area.

What have projects delivered to date?

Round 1 and 2 Projects

Category	Round 1	Round 2
Number of applications submitted	70	76
Number of groups supported to apply by Green Space Fund Advisers	31	60
Total funding sought by applicants	£1,200,000	£1,054,400
Total funding allocated	£400,000	£800,000
Number of successful applicants	21	31
Number of projects completed	19	21
Number of projects with extensions ongoing	2	10
Proposed additional donations and grants secured	£260,265	£259,048

Delivery by completed Round 1 and 2 projects to date

What the 19 completed Round 1 and 23 completed Round 2 projects have delivered compared to what they proposed in their applications is set out below:

Green space created:	
Proposed	26,396m^2
Delivered	28,243m^2

Green space improved:	
Proposed	294,277m^2
Delivered	374,114m^2

Tress planted:	
Proposed	1,748
Delivered	4,095

People trained or volunteer:	
Proposed	5,593
Delivered	7,784

It is possible to monetise some of these benefits. The completed projects in Round 1 and Round 2 have also provided wider benefits to their communities. For example, the trees planted provide £49,500 worth of carbon sequestration and £237,500 worth of air quality benefits. The local communities will also gain other wider benefits such as recreation, amenity, and physical and mental health but these are more difficult to explicitly monetise for the Green Spaces Fund interventions.

Delivery by Round 3 to 5 projects

As community groups funded in Rounds 3 to 5 (and those 10 projects from Round 1 and 2 granted short extensions) complete their projects, the assessment above will be repeated to set out what those projects have delivered in the communities in which they are located.

How have projects delivered against the aims of the Fund?

Overview

As well as understanding what has been delivered by projects supported by the Fund, how these have been supported in achieving the aims of the fund is also an important assessment.

Aim 1: Benefitting communities with a lack of quality greenspace

Overview

In achieving this aim, the Fund seeks to:

- Tackle inequalities including health and wellbeing.
- Reach communities where there is poor access to quality green spaces.

In addition, a spread of projects across Greater Manchester's Local Authorities has been sought, including through the work of the Green Spaces Fund Advisors.

Its impact in these areas can be looked at by assessing the location of each project against the following:

- The Index of Multiple Deprivation, which is a measure of relative deprivation and inequalities at a small local area level based on economic, social and environmental factors. Areas are ranked from 1 to 10, with areas in 1 being in the 10% most deprived, 2 in the 10-20% most deprived, and so on.
- The Accessible Natural Green Space Standard, which is a measure of the current level of access to green space in an area, and green cover in the local area.
- The spread of projects across the 10 Local Authorities within Greater Manchester.

Tackling inequalities

Across the 4 rounds, the successful projects are located in communities in the top 60% of deprived areas nationally (IMD 1-6). Nearly half (49%) of the projects benefit those in the top 10% most deprived areas (IMD 1) and 86% benefit those in the top 30% (IMD 1-3).
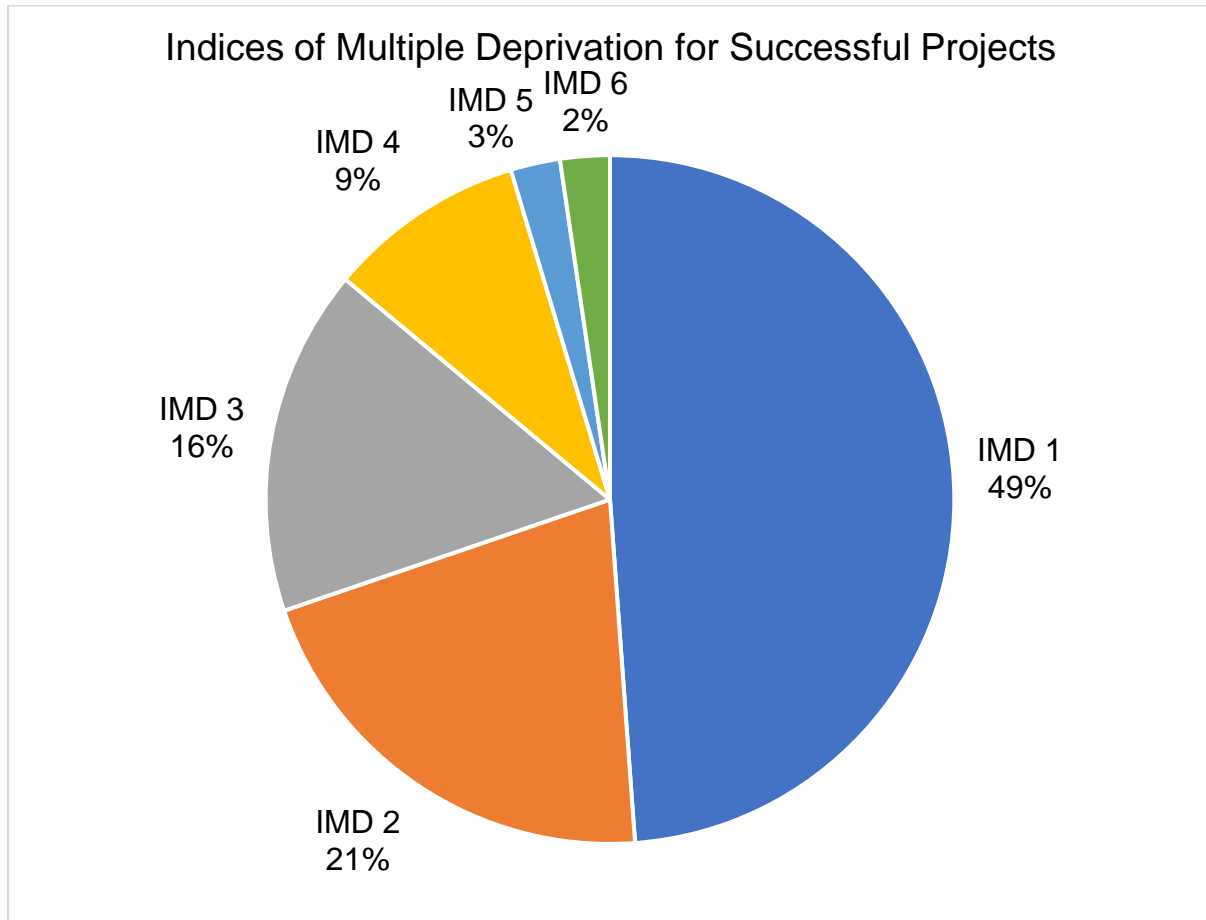

Figure 2. Indices of Multiple Deprivation for successful projects across all 4 rounds of the Green Spaces Fund

Access to quality green space

The lower the Accessible Natural Green Space Standard score, the closer the project is to an existing natural green space. Nearly half (49)% of projects benefit those areas with the least access to existing green space (score of 4 and 5).
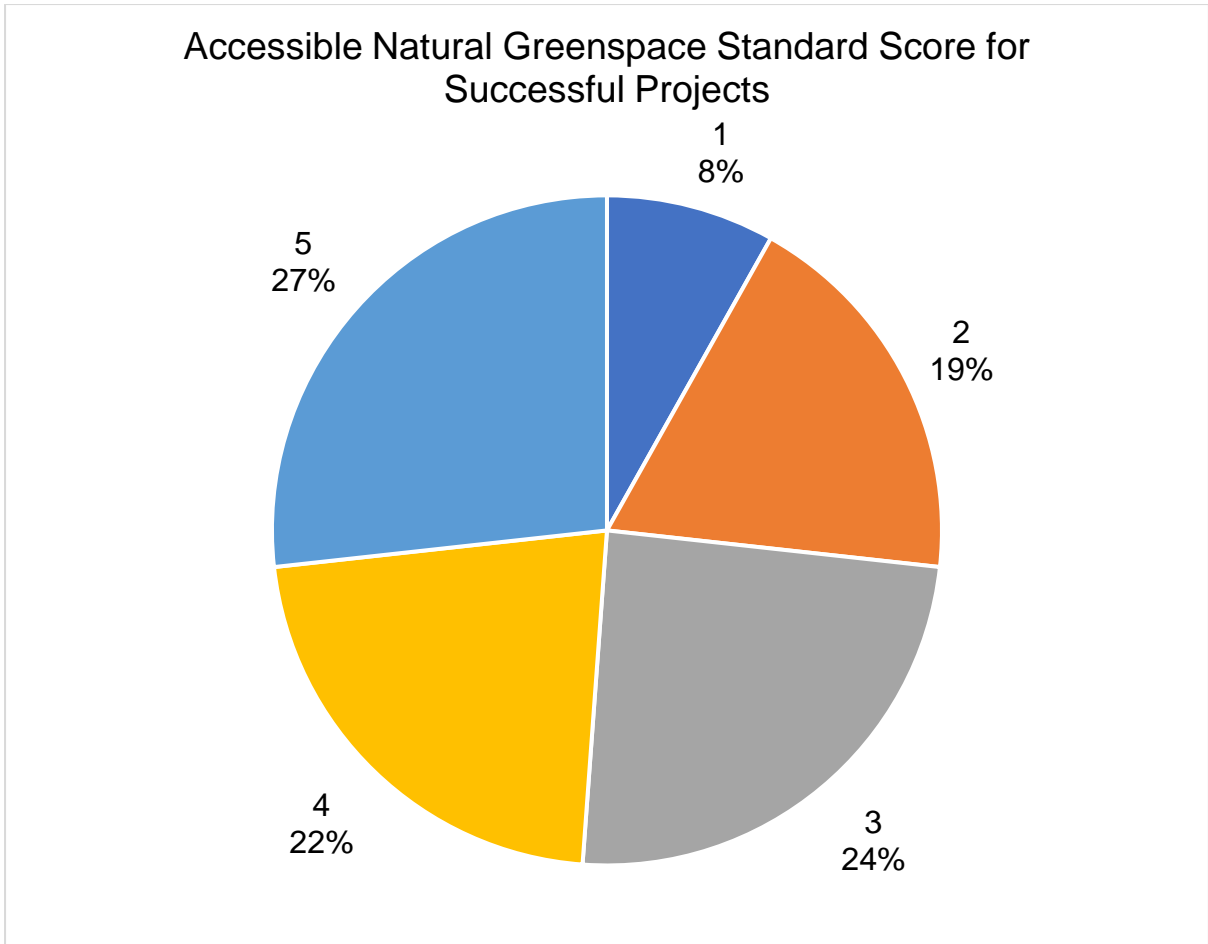
Accessible Natural Greenspace Standard Score for Successful Projects

- 1 — 8%
- 2 — 19%
- 3 — 24%
- 4 — 22%
- 5 — 27%

Figure 3. Accessible Natural Greenspace Standard score for successful projects across all 4 rounds of the Green Spaces Fund

Spread of projects across Greater Manchester

Of the 86 successful projects, an average of 2.75 have been awarded per 100,000 people across Greater Manchester, with the spread relatively equal across the 10 Local Authorities. This is set out below along with the total number of applications (257 in total) per Local Authority.
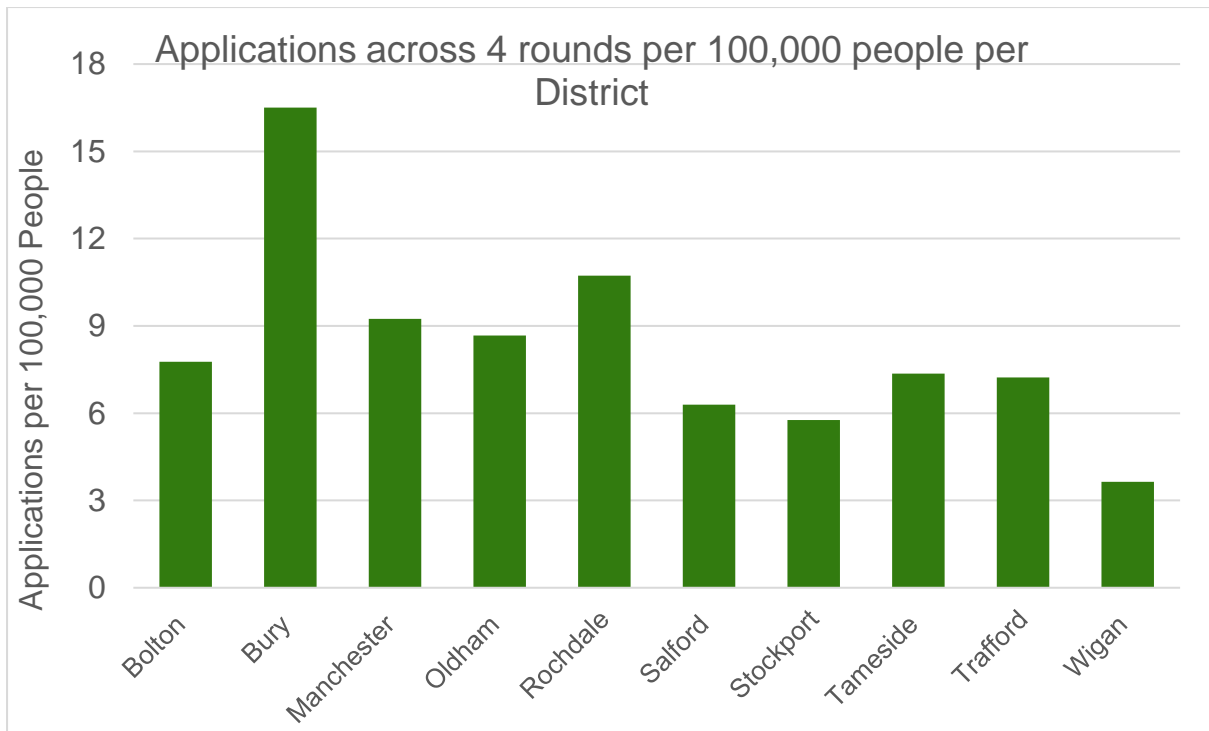
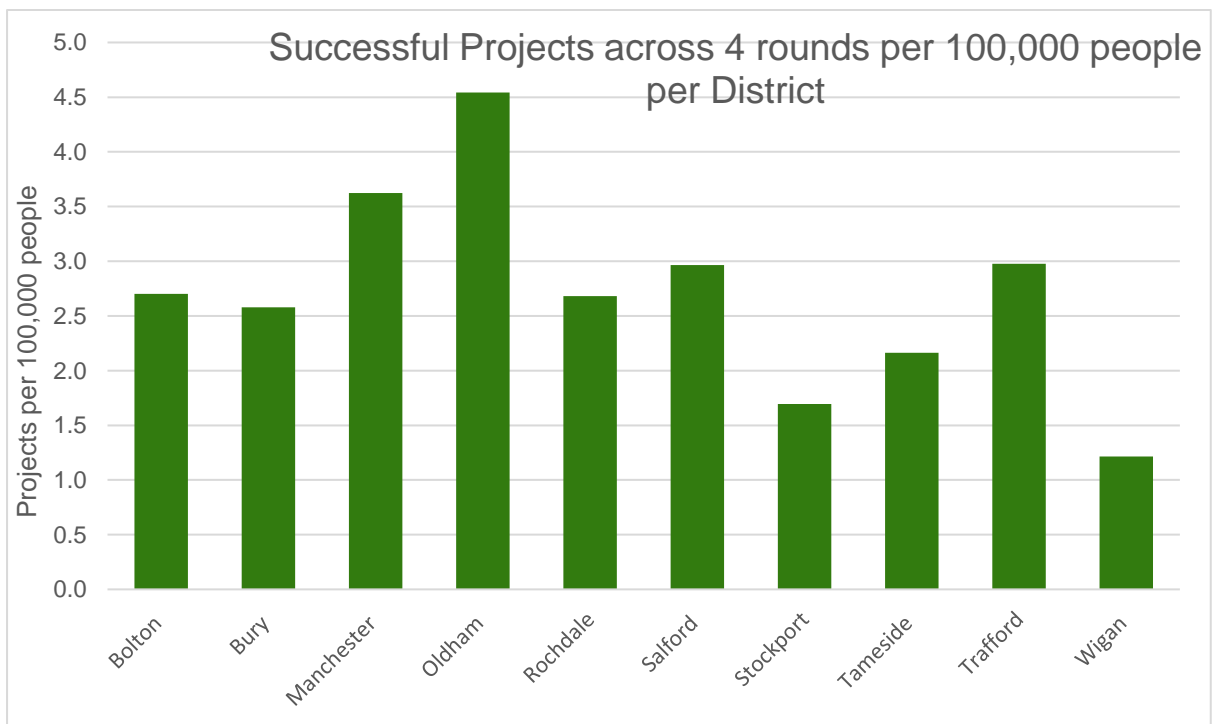*Figure 4. Applications to the Green Spaces Fund across the Districts of Greater Manchester, per 100,000 people*

Figure 5. Successful projects in the Green Spaces Fund across the Districts of Greater Manchester, per 100,000 people

Aim 2: Tackling our climate and biodiversity emergency

Overview

In achieving this aim, the Fund seeks to:

- Improve Greater Manchester's green and blue spaces.
- Tackle the climate and biodiversity emergencies.
- Have a priority fit with priorities for nature recovery and wider environmental ambitions.

Improving green and blue spaces and tackling the climate and biodiversity emergencies

The improvement of green and blue spaces and how the projects contribute to the climate and biodiversity emergencies can be assessed through the impact the projects have had on local green spaces and the greening of those that has taken place. This is set out for the 16 projects delivered to date and the ongoing 70 projects in the table below.

Category	Delivered to date: (R1 – R2)	Proposed: (R1 -R4)
Green space created (m^2)	28,243	9,302
Green space improved (m^2)	374,114	184,897
Trees planted	4,095	5,855
Plants planted	17,920	36,892
New features	635	1372

Groups worked with their local community to identify and focus on areas which needed the development and maintenance of green space, for it to be enjoyed and accessed with ease. Project types ranged from the creation of wildflower meadows and mini orchards to connecting green spaces between the city centre and neighbouring urban communities. For many projects, the funding provided the opportunity to invest some much-needed time and finance into a neglected area which had been forgotten but held much promise for growth and engagement.

Priorities for nature recovery and wider environmental ambitions

As a Greater Manchester Local Nature Recovery Strategy is published in 2025, an assessment will be made in future of the fit of the projects between the ambitions and priorities set out in that strategy.

Aim 3 – Encourage and empower communities to take positive action for nature

Overview

In achieving this aim, the Fund seeks to:

- Support opportunities for training and skills through volunteering.
- Empower community groups to take action in their local area.

Training and skills

The provision of training and skills can be assessed through the reach the projects and their activities have had in their local communities. This is set out for the 16 projects delivered to date and the ongoing 70 projects in the table below.

Category	Delivered to date: (R1 - R2)	Proposed: (R1 – R4)
Engagement sessions	2,833	2,903
People engaged	108,048	244,570
People volunteering and trained	4,736	4,823

Empowering communities

The focus of the Green Spaces Fund Advisors has been to work with community groups to engage locally and develop project proposals. This is covered in a subsequent section below.

Across the 4 rounds, the winning groups are working towards securing nearly £1,189,707 in cash match funding and £266,963 in support in kind match funding. demonstrating their ability to bring in other sources of funding to support their projects.

How has the Fund been delivered?

Application process

The Green Spaces Fund accepts applications from registered charities, community benefit societies, schools and resident association organisations based in Greater Manchester. Awareness of the Fund been raised through the work of the Green Spaces Fund Advisors who have been building relationships with groups through networking events and site visits. This has led to their support from project conception to creation of the project plan and during project delivery post award of the funding. Awareness has also been raised through promotional work done by the Greater Manchester Environment Fund.

Each application window is open for around 6 weeks and involves the submission of a project proposal, with accompanying information that includes landowner permission for the project activity on site for the 12-month delivery period and for three years post-delivery, planning permission (if relevant) and a budget and activity plan.

Lessons learned:

- The introduction of a dedicated online application portal from Round 3 helped to streamline the submission of applications and bid outcomes.
- Some applicants reported the process as being too academic. If the fund continues in the future, learning will be gathered to evaluate if the application form needs to be re-designed to better appeal to target groups and to overcome barriers they may face.
- A diversity monitoring form will also be introduced to measure who is interacting with the fund to help to inform it's reach
- Some groups reported issues obtaining the correct permission from landowners. The advisors were able to assist in making the necessary connections to get the relevant permissions where possible.

Assessment process

The Fund operates a layered and robust assessment process to ensure the awarded projects are in locations of need and where there is a lack of access to green space. A series of eligibility and due diligence checks are carried out to ensure that the projects submitted meet the criteria of the Fund.

Eligible applications received then go through three assessing stages.

- Project locations are recorded in relation to their Index of Multiple Deprivation and Accessible Natural Green Space Standard.
- The application forms are read and scored by a panel of expert assessors from the public, private and charitable sectors.
- The Green Space Advisors score the submissions on how community driven the project is.

The scores are combined to create an overall score which is submitted to the decision panel for selection. Once selected, a paper of the proposed winners is then presented to the Greater Manchester Environment Fund board for sign off to progress to the grant award.

Lessons learned:

- The assessment process is resource intensive and has relied on volunteers from private, public and charitable sector organisations to come together to be part of the panel of expert assessors.
- Should the fund continue in the future, learning from the assessment process will be gathered to evaluate if the process can be further streamlined whilst balancing this with taking a robust approach.

Project Award

The winning applicants are issued with an agreement letter and contract which lays out the payment schedule of their grant and associated reporting process. They have two weeks to review, sign and return the agreement.

Additional due diligence checks on banking information is carried out before initial payments are issued. The payment plan consists of:

- 50% of the grant issued on receipt of signed agreement.
- 40% of the grant issued 6 months into the project once a claim report and project update has been submitted.
- 10% of the grant is issued in arrears on completion of the project and the final claim form and project update has been submitted.

Lessons learned:

- Many target groups are newly formed and may not be fully established and constituted, meaning they nominate and rely on an accountable body to manage their grant.
- Similarly, some groups may not have managed project budgets before and may not have reserves to manage the cashflow associated with the payment.

Project delivery

Winning groups have 12 months, from the point of receiving the first payment, to deliver their projects. The Advisors are on hand to assist with any problems arising. Projects go through peaks and troughs of activity which is mainly impacted by the seasons, e.g. tree planting season takes place between November and March.

Lessons learned

- Over the course of delivery, delays do occur from various issues such as poor weather. In some cases, an extension to the project delivery has been approved for groups to complete their proposed works.
- Groups require significant amounts of support from the Green Spaces Fund Advisors to deliver their projects, from selecting the right plants or trees, to sourcing them from suppliers, to delivering the works, ongoing maintenance and promoting and supporting volunteering.

Projects also run workshops and volunteer sessions to engage with their local community and deliver training which contributes to the legacy of the Fund. Reallocation of Funds from project areas to other eligible items can happen during the project and groups are requested to issue any changes in writing for approval.

Reporting

Awardees are asked to report on their project twice over the course of the 12-months. Five months into delivery, a halfway reporting claim form is issued to groups to complete and return. The claim form covers the following areas:

- What has been achieved in this claim period?
- Tell us about your outcomes – i.e., The difference the project has made for participants and the local community.
- How does this compare with the agreed proposed programme of work?

Eleven months into the project delivery groups are issued with a final reporting form which covers the same topics and also asks:

- What was the biggest challenge in delivering this project?

At both the halfway and final reporting stages, groups also provide updates against the proposed activities and budget plan, as submitted on the point of application.

These forms record progress and challenges as well as capturing project impact and can help to inform on any considered changes for the Fund delivery and inform reporting.

Lessons learned

- The reporting process has proven to be difficult for some groups and work is underway to streamline this as best as possible while ensuring information is gathered to demonstrate the impact of the fund and ensure

How have community groups been supported?

The role of the Green Spaces Fund Advisors

The Green Spaces Fund Advisors have been building relationships with community groups across Greater Manchester. Each District has a dedicated Green Spaces Fund Advisor that has identified areas for engagement, and they have supported groups who are interested in the Fund about how a project can be delivered. This role encompasses:

- Community outreach work to promote the Fund and generate project ideas, particularly targeting areas where the Fund would have the greatest impact.
- Supporting applicants to apply, carrying our regular check-ins and meetings, and helping groups with their application.
- Supporting successful groups in project delivery, helping them sustainably deliver their projects particularly with volunteer days and in choosing and sourcing capital items.
- Supporting groups beyond the end of their project, advising, and helping them access new funding, sourcing volunteers and running their group/wider network.

Impact of the Green Spaces Fund Advisors

In addition to their work and contribution to Round 1 as mentioned earlier, they have increased their reach and project support as the Fund has progressed.

When working with groups, the Green Spaces Fund Advisor team use a categorising method to identify those who may need the most assistance. Reasons for this can include levels of experience with funding applications, computer literacy and knowledge of project planning.

- Bronze – these are the groups that need the least amount of assistance.

- Silver – these groups have some previous experience, but still require dedicated support.
- Gold – these groups require the most amount of support and help throughout the application and delivery process.

The Green Spaces Fund Advisors target working with gold level groups as they most meet the criteria of the Fund, being grassroots groups in areas where the Fund can have the greatest impact. Without support, many of these groups would not be in a position to apply nor sustainably deliver their projects.

Across all 4 rounds 44 grass roots gold level groups have submitted an application thanks to the support and guidance of the Green Spaces Fund Advisors.

As of January 2024, the Green Spaces Fund Advisors have connected and had contact with over 1,200 groups, indicating the demand for the Fund. This represents a cumulative engagement effort over the course of the Fund and includes any group they have had a connection with, regardless of their application status.

Information around engagement with groups, those supported to application and 'Meet the Funder' sessions for each of the 4 rounds is set out below.

Round 1

Engaged   285

Supported to apply 31

Sessions   12

Round 2

Engaged   213

Supported to apply 67

Sessions   14

Round 3

Engaged   104

Supported to apply 57

Sessions   7

Round 4

Engaged   188

Supported to apply 44

Sessions   8

As the Green Spaces Fund Advisor team was set up and became established, it has worked with an increasing number of groups. From Round 2 onwards, over 85% of applicants were supported by a Green Spaces Fund Advisor.
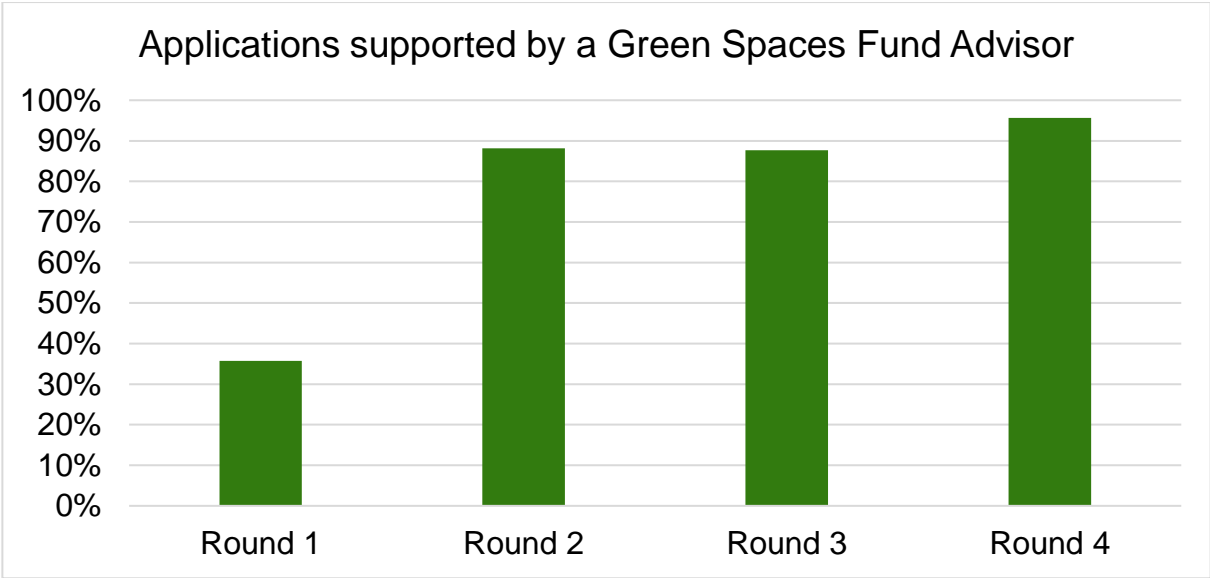

Applications supported by a Green Spaces Fund Advisor

Figure 6. Percentage of applications across all four rounds supported by a Green Spaces Fund Advisor

More widely, the partnership of the 5 organisations has had a broader impact. The partnership is unique in that it brings a range of environmental organisations together and has strengthened their partnership working and collaboration. The model also enables expertise to be drawn in for the projects from each organisation, for example, the Royal Horticultural Society has provided horticulture training days for groups from Bolton and Manchester is leading the way in terms of applications to their Nature Parks Grants for Schools.

Lessons learned

- There is a strong appetite amongst local community groups, particularly target groups for the fund, to be supported to engage their wider communities to develop and deliver the type of projects supported by the Fund.

- Working with community groups in this way takes time in order to be sustainable and empowering and supporting them to build capacity does not happen overnight.

- Some of the areas of greatest need remain unreached and further work is needed to work with groups in these communities.

- There is significant interest from local businesses in supporting the Fund and projects, with the potential to tap into them for funding in the future.

- Further work is required to understand the different barriers different communities and individuals may face in accessing support and in applying to the Fund.

- The legacy of the projects funded, and the community groups themselves is important, given some groups are concerned about the long-term sustainability of their project and the ongoing support they will need to maintain what they have delivered through the Fund.

Next steps

Delivery is ongoing for the extended Round 1 and Round 2, projects. Round 3 and Round 4 projects are due to be complete by the beginning of 2025. Round 5 projects are due to start in October 2024. These groups are continuing to receive support from the Greater Manchester Environment Fund and Green Spaces Fund Advisors to help them deliver their projects and report on the impact they have had in their local communities, including:

- Providing support in delivering their projects.
- Bringing in other Green Spaces Fund Advisors and colleagues within their organisations, for example Sow the City supporting with food growing, Royal Horticulture Society supporting with horticulture, and City of Trees supporting with tree planting.
- Creating and supporting a network of successful groups
- Sharing resources and supporting groups to access other funding.

A further report, following the format of this report, will be published once additional data is available from Round 3, 4 and 5 projects.

Case study: The GROWE Project by Northern Lily

Awarded £15,000 in Round 2

There's a magical acre of land beside the Rochdale Canal in Failsworth where you can find beautiful meandering gardens, a thriving orchard, a handful of goats and a lot of smiling faces. It's called the GROWE Project, run by Northern Lily Community Interest Company, and it's one of the incredible Green Spaces Fund projects that are bringing more accessible, nature-rich green space to Greater Manchester.

Volunteers tending to the gardens at Northern Lily. Image credit: Annabelle Brittle

The zen-like vibe of the GROWE Project really must be experienced first-hand so until you can pay them a visit, enjoy this in-depth Q&A with Victoria Holden, Director of Northern Lily.

1. **What's the backstory of your project?**

Northern Lily CIC took on a derelict site in Oldham in 2022 and, in partnership, created the GROWE Project. The site had lain empty for several years and required an incredible amount of work to make it safe and accessible.

The orchard needed restorative pruning across its 166 trees, and the area was boggy and unusable for six months of the year. Many of the trees were afflicted by disease and needed replacement. The site consisted of overgrown fruit trees and grass which didn't entice people into the space. While you could walk through it, there was nothing compelling enough to encourage people to stay.

We wanted to change that, because we could see the site had a lot of potential and just needed some TLC.

2. **What did you hope to achieve with your project? To what extent have you been able to accomplish your goals?**

Our vision was to create a versatile space that people could use for a wide range of purposes. We aimed to restore the orchard, ensuring it remained fruitful for years to come. Additionally, we sought to enhance natural features, providing a range of habitats for birds, bats, amphibians, and hedgehogs. Within the orchard, we envisioned rest and relaxation spaces, as well as shelter to allow people to use the area even during heavy rain (and it does rain a lot!).

We've made substantial improvements to the site, including shelters, seating, and natural features such as ponds, woodchip pathways and a wildflower meadow. These enhancements create a functional space that is open to the public and free to use for various community activities that connect people with nature.

3. **Do you have any good statistics you can share with us?**

30 new trees and over 1000 plants have been planted across the site, alongside 30 new features like bat and bird boxes, bug hotels, ponds, a wildflower meadow, a hügelkultur seating area and a forest school shelter.

So far, we've hosted 35 events at the project, showing people of all ages how to grow, harvest and preserve food, make compost, learn sustainable gardening techniques, prune and take care of the orchard, graft new fruit trees, enjoy cooking and eating together, and discover nature.

We've also hosted 10 employer volunteer days with Dentsu UK, First Choice Homes Oldham, Connelly's, and Bupa over the last 12 months, with over 250 volunteers giving their time and skills to help improve the space.

Over 1000 people have been involved across all the activities on site over the last 12 months.

Before & After – Bare grass in the orchard transformed into a wildlife pond. Image credits: Victoria Holden and Annabelle Brittle

4. What has been the biggest impact that your project has had?

The project has been impactful in many ways, which is amazing to witness. For example, the orchard's productivity has significantly improved through restorative pruning and replacing trees in partnership with The Orchard Project. This has restored the orchard to its original purpose: providing food for the local community.

Speaking of which, it's had a massive impact in terms of community engagement. The project attracts a diverse range of people and local groups. People of all ages, abilities, cultures and walks of life access the space from across Greater Manchester. Our site hosts numerous weekly activities, such as gardening, training workshops, community events, holiday activities, forest school sessions, bike riding, and goat therapy. The feedback from site users has been overwhelmingly positive.

We've noticed a particular impact on children and young people. When they visit, they're often reluctant to put down their devices at first. However, after a short time, they become fully engaged and love playing in nature. They explore the site, build dens, discover bugs and worms, and generally behave like happy kids. Many don't want to go home and exhibit a remarkable transformation from overstimulated to calm in a matter of hours.

5. How has the funding from the Green Spaces Fund aided your project? Would you recommend it to others?

The Green Spaces Fund has been incredible, not only helping us to restore the community orchard, add natural features and create habitats for wildlife, but also providing networking opportunities, great events and the expert advice of Nina, our Green Spaces advisor.

This has led to collaborative work with other Green Spaces groups and connected like-minded people who want aid nature conservation and community development in urban areas of Greater Manchester.

6. What advice would you give to a group in Greater Manchester who wanted to launch their own Green Spaces Fund project?

Go for it! The Green Spaces Fund has helped us achieve our goals and connected us to groups across Greater Manchester. Make the most of the Green Spaces advisor for your area (ours was the amazing Nina Agnew) from the application stage and throughout your project - their support and guidance is invaluable!

Testimonials

Several groups have provided their feedback and captured responses from people who have engaged with and been involved in their projects. The positive impact of this fund is undeniable and it's so encouraging to hear from those who have benefitted first hand from the Fund.

Little Green Social Spaces delivered by My Coldhurst

Awarded £15,000 in Round 2

Copyright: My Coldhurst

"The difference to the community has been remarkable. Residents have taken ownership of where they live and really improved it for current and future generations."

Peace Garden delivered by Supporting Sisters

Awarded £25,440 in Round 2

Copyright: Supporting Sisters

"Our project has facilitated the achievement of every goal we have intended and aimed to achieve. Through hard work, dedication and the efforts of volunteers, members of our community and the GMP, we were able to transform a previously neglected and abandoned plot of land into a thriving garden area welcoming all individuals of the community.".

Green Hub delivered by Station South

Awarded £28,456 in Round 2

Copyright: Station South

"The entire site is now buzzing with wildlife as the diverse wildlife friendly planting, introduction of a range of habitats and nature focussed management are having a real impact."

The Secret Garden Allotment delivered by Back O The Moss Community Centre

Awarded £11,749 in Round 2

Copyright: Back O Moss Community Centre

"It has brought neighbours together that had never previously met, old and young working together, a place where children who don't have a garden, now have a place to explore and learn about nature and growing food.''

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