



Towards a Green Infrastructure Framework for Greater Manchester: Full Report

ECOLOGY

STEWARDSHIP

ENVIRONMENTAL PLANNING

LANDSCAPE & URBAN DESIGN

ENVIRONMENTAL STRATEGIES

A Report by:



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1 INTRODUCTION

- 1.1 Greater Manchester is committed to growth – and has a vision of a vibrant modern economy, with communities enjoying a high quality of life; underpinned by a healthy and attractive natural environment. Its aspirations for growth are shared by Government; and in July 2008 Greater Manchester was declared as a New Growth Point.¹
- 1.2 The City-Region was at the forefront of the Industrial Revolution, but the negative environmental and social legacies of unsustainable growth through the 19th and 20th centuries has left many communities deprived of high quality open space and has fragmented urban river ecosystems. This in turn leaves many neighbourhoods vulnerable to flooding. The City-Region knows that, unless the natural environment is protected and allowed to function effectively, growth risks being unsustainable, and short-lived. Areas which have undergone decline in environmental and social quality are now the focus of aspirational growth and redevelopment. The challenge is threefold:
- a. to reverse the legacy of past decline;
 - b. to create a setting for growth;
 - c. to make the City Region's natural environment resilient to meet the demands of population growth and climate change.
- 1.3 A healthy natural environment is a pre-requisite of growth – the social and economic benefits that high environmental quality brings are well-documented. A strategy for growth requires a positive plan for green infrastructure. The use of the term “infrastructure” underlines that this is a function-oriented approach to planning.
- 1.4 The City-Region's outdoor environments provide the places where “growth-support functions” can occur, including:
- a. managing surface waters and reducing flood risk;
 - b. adapting urban environments for climate change resilience;
 - c. inspiring inward investment and retention of high-value workers and entrepreneurs
 - d. enabling healthy activity, recreation and social cohesion;
 - e. regenerating areas experiencing (actual or incipient) deprivation;
 - f. sustaining jobs in the natural economy;
 - g. maintaining and enhancing distinctive biodiversity, landscape and heritage;
 - h. enabling sport and cultural excellence.
- 1.5 Many of these functions overlap; and many places can or should deliver several of these functions – a green infrastructure approach will ensure the City-Region's outdoor environment is multi-functional, accepting there are some sensitive ecosystems which might be damaged by inappropriate public access.

¹ Communities and Local Government (2008): “Second Round Growth Points – Partnership for Growth” proposes 67,500 new homes between 2008 and 2017.

Aim and Objectives

- 1.6 TEP was commissioned by AGMA and Natural England to advise how green infrastructure (GI) might be embedded into the City-Region's spatial planning policy and practice; in order to enable and sustain growth. In simple terms, this report aims to provide AGMA with a "route-map" for a Greater Manchester approach to GI planning.
- 1.7 The commission had several objectives:
- a. To define GI in language relevant to the City-Region (see Chapter 3);
 - b. To describe the City-Region's existing GI (see Chapter 7);
 - c. To identify priority areas for of GI in the City Region(see Chapters 8 & 9);
 - d. To advise how GI principles and practice can be incorporated into the above documents, specifically advising on how GI policy can be included in emerging Local Development Frameworks (see Chapter 10);
 - e. To highlight specific plans, strategies and programmes which need to incorporate GI principles and practice (see Chapter 11);
 - f. To assess case studies of how GI is planned and delivered in other mature urban areas (see Chapter 12);
 - g. To recommend next steps in the development of a City-Region -wide approach to GI (see Chapter 13).
- 1.8 Prior to commissioning TEP, AGMA and the Red Rose Forest had identified a provisional set of City-wide priorities for GI and had assembled GIS datasets illustrating GI resources. The commission was guided by a project Steering Group and a wider group of consultees consisting of GM-wide bodies and Forward Planners in constituent Local Authorities.
- 1.9 During the commission, the Government confirmed New Growth Point status and affirmed the importance of a green infrastructure approach (see box).

Box 1.1: Extract from CLG letter dated 27 July 2008 setting out the conditions attached to the Government's offer of New Growth Point Status.

"Every Growth Point must prepare and implement a Green Infrastructure Strategy to protect and enhance existing key environmental assets and to provide new green spaces designed to deliver a wide range of environmental and social benefits.

Ensure the delivery of the Greater Manchester Green Infrastructure Strategy and relevant aspects of the Red Rose Forest and Pennine Edge Forest plans"

- 1.10 A summary report is available.

2 WHY IS A GREEN INFRASTRUCTURE APPROACH ESSENTIAL?

2.1 A positive approach to green infrastructure in the City Region is essential if growth is to be sustained. There are six primary reasons;

- a) It is an **imperative** of national, regional and city-regional policy regarding sustainable development;
- b) It brings **economic and health** benefits;
- c) It contributes to **climate change** mitigation and adaptation;
- d) It can offset the negative environmental and social effects of development and **reverse the legacy of poor environmental quality** left from the 19th and 20th centuries;
- e) It meets the City's twin aspirations of **quality of life and quality of place**; and,
- f) It is consistent with the City-Region's intended "**brand**" as an ambitious, green and vibrant place;

2.2 The following narrative focuses on reasons a), b) and c); since d), e) and f) are broadly understood and accepted.

The top-down imperative

National Policy

2.3 The goal of UK planning policy is sustainable development (SD). Planning Policy Statement 1, the central statement of Government intent, makes it clear that use and development of land must consider long-term sustainability and equity in access to opportunity and resources.

2.4 The other Planning Policy Statements are satellites of PPS1, elaborating for particular aspects of land use, how SD is to be secured in the formulation of plans, strategies and policies; and delivered through decisions made about development.

2.5 The Sustainable Communities Plan is another defining Government document, advocating that all communities have a right to live in good quality environments.

2.6 Government is also committed to sustainable management of public and private land; achieved through legislative or planning controls and through directing of public funds to secure integrated land management for public benefit. A green infrastructure approach is the outworking of sustainable development policy; in terms of the way that the outdoor environment is planned, managed and developed.

2.7 **Networks of open land (whether private or publicly-owned) will provide for biodiversity, distinctiveness, flood management, public access, healthy lifestyles** and other growth priorities such as those listed at paragraph 1.4. Evidence from the Liverpool and Manchester City Regions shows that areas with good GI create attractive and vibrant settings for investment, employment and increase land values². Green infrastructure is needed to sustain local quality of life, offsetting

² District Valuer (2005) – work carried out on economic improvements associated with reclamation of Bold Colliery in south St Helens

negative environmental effects of development and capitalising on the positive environmental spin-offs from development.

Regional Policy

- 2.8 Regional Spatial Strategy (March 2008 final draft) confirms that environmental quality is an underpinning spatial principle for growth – policy DP7 specifically promotes GI and greener towns and cities, as one of several requirements for environmental enhancement and protection.
- 2.9 **Policy EM3 requires a green infrastructure approach to be adopted in all land use, development, community, economic and regeneration strategies.** Policy EM3 notes the socio-economic imperative for quality of life benefits of GI is especially important in areas of regeneration and social deprivation. This is of direct relevance to the City Region which has several areas where poor health and limited mobility is restricting people from gaining employment.
- 2.10 Manchester City-Regional Policy in RSS also requires a GI approach. Policy MCR1 prioritises environmental improvements to ensure sustainable development, particularly of the Regional Centre and Inner Areas (see box).

<p>Regional Spatial Strategy Policy MCR1- supporting text</p> <p><i>The promotion of regional park and community forest resources in the context of an overall objective of “green infrastructure” provision, will help to improve the image of all parts of the City Region, maximise accessibility to facilities, greenspace and biodiversity, reduce social exclusion, promote good health, provide a high quality environment, help to attract investment in leisure, tourism and high quality employment, and support the provision of successful and sustainable neighbourhoods.</i></p>

- 2.11 RSS also states (in supporting text to policies EM1 and 3) that an integrated approach to biodiversity, landscape and heritage is essential, rather than through approaching them as separate policy areas. RSS notes that green infrastructure is a multi-purpose approach to deliver environmental and socio-economic benefits.
- 2.12 GI is not only a top-down imperative; it is also a desired outcome of many place-shaping plans and strategies – for example the Sub-Regional Action Plan³ has a priority action of “Transforming Places”, which promotes regional parks, green infrastructure and the public realm.
- 2.13 Furthermore there are Regional and Greater Manchester plans and strategies which target individual GI functions – such as the climate change action plan⁴, the biodiversity action plan⁵.
- 2.14 Consultation at a workshop held with Forward Planners in March 2008 indicated that all authorities intended to include positive policy for GI in their emerging Core Strategies, in order to promote quality of place and quality of life, through integrated environmental activity.

³ MIDAS (2007) – Manchester City Region: Sub-Regional Action Plan 2008-2011 (final Draft Sept 2007)

⁴ NWDA (2007) – Rising to the Challenge – A climate Change Action Plan for England’s Northwest 2007-2009

⁵ GM Biodiversity Project (undated) – Greater Manchester Biodiversity Action Plan

Economic Benefit

2.15 **Economic and health benefits** flow from environmental quality. Research by Ecotec for NWDA (see box) shows there are eleven classes of economic benefit. This includes direct benefits such as job creation in environmental and visitor economies. Indirect yet quantifiable benefits such as land value uplift and high quality place branding are relevant. There is emerging recognition of how GI reduces the economically significant risks and costs of climate change and poor workforce health.

Extract from **"The Economic Benefits of Green Infrastructure: A review of the evidence base for the economic value of investing in Green Infrastructure"** (EcoTec, 2008, for NWDA)

Four types of economic benefit flow from green infrastructure investments:

- Direct economic outputs.
- Indirect economic outputs.
- Cost reductions to the public and private sectors.
- The management of risk.

The eleven key economic benefits of green infrastructure are:

- Climate Change adaptation and mitigation.
- Flood alleviation and Water management.
- Quality of Place.
- Health and Well-being.
- Land and Property values.
- Economic growth and Investment.
- Labour productivity.
- Tourism.
- Recreation and Leisure.
- Land and Biodiversity.
- Products from the land.

2.16 The Ecotec report strongly recommends that, based on this evidence, economic development

agencies in the North West should grasp the opportunities presented by the Green Infrastructure agenda for the following two key reasons:

- o **First**, to secure maximum economic benefits by planning, managing and enhancing the region's Green Infrastructure, to enhance quality of place, create the best setting for home-grown and inward investment, and to develop the North West as a green and healthy region, attractive to tourists, entrepreneurs, investors and the skilled workforce necessary in today's knowledge economy.
- o **Second**, to address the global issue of climate change, using Green Infrastructure to provide a range of adaptation services to enable our urban and rural areas to remain resilient, habitable and economically viable as weather patterns change and to provide for greater carbon capture and storage, along with raw materials for renewable energy.

Climate Change Mitigation and Adaptation

2.17 GI has a role in both mitigation and adaptation. Its mitigation role arises from its contribution to making city-living more desirable, retaining families and prosperous individuals in and near economic centres. Attractive and multi-functional civic places can reduce the desire of these groups to migrate to outer suburbs and rural areas, where there is greater reliance on cars.

- 2.18 There is a striking parallel between Greater Manchester's growth plan and that of New York. Both are world cities which are seeking to increase their population at the same time as improving quality of environment and quality of life – see box.



In 2006, the Mayor challenged New Yorkers to generate 10 ideas for the sustainable future of the city. The result is a sweeping plan to enhance the urban environment. Focusing on issues of land, air, water, energy and transportation, the plan has 10 initiatives several of which relate to green infrastructure functions. The plan explicitly seeks to build homes, create clean and safe greenspaces and waterways to help attract 1 million more people into the city. This strategy will result in a net reduction of 30% in citywide carbon emissions, by enabling more sustainable lifestyles.

Many of the New York proposals are directly transferable to GM:

- a) **Revitalising the water fronts** – GM equivalents include the canal network and the River Valleys.
- b) Creating (and completing) **Destination Parks** – GM equivalents include the proposals for Irwell City Park, the NEWLANDS restoration of LIVIA; not forgetting the need for continued development of existing destination parks such as Heaton Park, Hollingworth Lake.
- c) Re-imagining the **Public Realm** – GM equivalents include town and city centre improvements to create legible and people-orientated places.
- d) Filling every available space with **street trees** – GM equivalents include the Green Streets programme.
- e) Ensuring all New Yorkers live within **10 minutes walk of a community play space**.
- f) **Extending the opening hours and security** of existing or potential community spaces (eg a Schoolyard to Playground programme).

The Plan is available at www.planNYC.com

- 2.19 Climate mitigation also involves storage of carbon and nitrogen in soils and in timber; healthy urban soils and increased woodland cover being important outcomes of a GI approach. The Red Rose Forest has increased woodland cover by 1,200 hectares since 1991. The value of moorland and mossland soils as carbon sinks is being recognised.
- 2.20 GI also helps adapt urban environments to the negative effects of climate change; through allowing improved water management, reducing pressure on existing urban drainage infrastructure, creating shade and cooler places; and creating ecological corridors. Case Studies from the Irwell and Roch (see Chapter 12) show how multifunctional public open space can provide flood storage capacity which protects downstream urban property from damage; resulting in increased business confidence in flood-prone areas.

- 2.21 UK Policy on Planning and Climate Change⁶ promotes the **role of GI in ensuring development is “climate-proofed”**. (see Box)

Planning & Climate Change – paragraph 24

In deciding which areas and sites are suitable, and for what type and intensity of development, planning authorities should take into account: ...

- *the effect of development on biodiversity and its capacity to adapt to likely changes in the climate;*
- *the contribution to be made from existing and new opportunities for open space and green infrastructure to urban cooling, sustainable drainage systems, and conserving and enhancing biodiversity...*

Summary

- 2.22 It is an imperative for all stakeholders in the City Region’s growth to consider, plan and deliver green infrastructure. Why? Because, without this infrastructure, growth will be shortlived, may be of poor design quality, and will not be socially or environmentally sustainable. Even more importantly, a green infrastructure approach will make the City more attractive, more vibrant, more prosperous and less vulnerable to negative effects of growth and climate change.
- 2.23 The imperative applies to the public and voluntary sector which seeks to create and manage conditions for growth through policy on health, skills and the environment. It equally applies to the private and economic sector whose concern is sustainable regeneration and development.

⁶ Supplement to PPS1, published by Communities and Local Government in December 2007.

3 THE VOCABULARY OF GREEN INFRASTRUCTURE

Definition of Green Infrastructure

- 3.1 Since GI is a relatively new term, it is helpful to define it. RSS has a regional definition of GI at Policy EM3. TEP is asked to recommend to AGMA a GI definition and 'mission statement' focussed on the City-Region – see box .

What is Green Infrastructure?

Green infrastructure is part of Greater Manchester's life support system. It is a planned and managed network of natural environmental components and green spaces that intersperse and connect our city centres, our towns and our rural fringe. **In simple terms, it is our natural outdoor environment.**

In Greater Manchester, green infrastructure consists of:

- o **open spaces** (parks, woodlands, informal open spaces, nature reserves, lakes, accessible countryside, the natural elements of historic sites, built conservation areas and civic spaces)
- o **linkages** (river corridors and canals, pathways, cycle routes and greenways).
- o **networks of "urban green"** (the collective resource of private gardens, pocket parks, street trees, verges and green roofs)

Why do we need Green Infrastructure?

Green infrastructure creates a setting for continued growth of Greater Manchester as one of Europe's premier city-regions, at the forefront of the knowledge economy with outstanding commercial, cultural and creative industries; making it an area known for its quality of life. A green infrastructure approach is a holistic view of the outdoor environment which meets the social, economic and environmental needs of communities by providing multiple benefits such as a distinctive image, flood control, air quality, biodiversity, recreation, health, education, community safety, social enterprises, food production, land value, climate change adaptation. **In short, a green infrastructure approach creates a resilient environment to sustain a high quality of life.**

Where do we need Green Infrastructure?

In Greater Manchester, our priorities for **safeguarding** existing green infrastructure are:

- o in areas of high environmental quality;
- o where there are deficiencies of high-quality greenspace, considering the specific needs of surrounding communities; and
- o in centres of economic strength and approaches to these centres.

Our priorities for **enhancing and creating** green infrastructure are:

- o in areas of urban growth and regeneration;
- o in areas of social and economic need;
- o in areas where there are deficiencies of high-quality greenspace; and
- o in areas of low or degraded environmental quality, particularly where the environment is important for urban centres to be resilient to climate change effects such as flooding and heat.

How will we deliver Green Infrastructure?

Delivery of green infrastructure will be achieved through:

- o The planning system, to ensure new development leads to enhancement of green infrastructure;
- o Environmental initiatives such as the Red Rose and Pennine Edge Forests, the Regional Parks, the NEWLANDS programme and local authorities' open space teams
- o Environmental activity by providers and managers of other civic infrastructure such as roads, rivers, canals, flood defences, educational and health facilities
- o greenspace and countryside management,
- o personal actions by individuals, community groups and corporate bodies.
- o Community Plans and Local Area Agreements

Partnerships between government, private and voluntary sectors are essential to maximise delivery.

3.2 Green infrastructure is visualised in five parallel ways:

Green Infrastructure Resource

3.3 The **Resource** is the collective area of all landscapes, green and open spaces, natural elements, waterways and civic places; and the corridors between such places.



Green Infrastructure Assets

3.4 **Assets** are areas which, by virtue of their location, their use or their management, serve one or more functions of social, economic or environmental public benefit. Assets can be defined sites, or equally can be landscapes or other broader environmental features.

3.5 Chapter 7 illustrates how GI resources and assets in Greater Manchester might be identified and mapped.

Green Infrastructure Functions

3.6 **Functions** are roles that land can play if managed in an appropriate way. Numerous environmental or socio-economic functions are possible (e.g. biodiversity, local distinctiveness, public health, sport and recreation, flood management, climate change adaptation and many others), and green infrastructure can be 'multifunctional' where different functions or activities occur on the same piece of land.

3.7 Generally multi-functionality is desirable as integration and interaction suggests an efficient and sustainable use of land, especially where pressures on land are acute. This is particularly true in Greater Manchester. However, some assets have single functions of over-riding importance which might be compromised by multi-functional use and a GI strategy must allow such assets to be managed for their single purpose, intrinsic value – often in the face of unintended or inappropriate multi functional use.

3.8 Chapter 8 illustrates how it might be possible to map spatial priority areas, for relevant functions, at a City-Regional geography. Chapter 8 also suggests how criteria might be developed to identify, for each function, spatial priorities at a City-Regional level and at local levels.

Public Benefit

3.9 Green infrastructure is set firmly in a context of **public benefit**. Public benefit is defined in relation to social, economic and environmental goals appropriately acting in combination (i.e. sustainability goals), and it has a spatial dimension, responding to the needs and aspirations specific to an area.

- 3.10 Green infrastructure benefits are not always related to site size: small sites or green routes which serve a large population or a regenerating economic centre can be as valuable for City-Regional growth as the major protected landscapes on the city's fringe.
- 3.11 Public Benefit is often visible (e.g. the recreational benefits of a park). Sometimes the benefit is just as real but not evident e.g. water storage functions of greenspace which prevents downstream flood damage to property. (See Box)

The River Irwell catchment drains much of East Lancashire and North Manchester, its rivers flowing through Rochdale, Salford and Manchester City Centres. 2 million people live in the Irwell catchment, with 18,500 houses in its 1:100 year floodzone. The major urban centres affected, Rochdale and Salford, are both Housing Market Renewal (HMR) Areas, experiencing high levels of multiple deprivation, with poor community health prevalent.

In January 2008, there was intense rainfall, with Rochdale recording 32mm rain in 2 hours. Two areas of green infrastructure played a part in avoiding major flood damage to property.

The Littleton Road playing fields in Salford were bunded by Environment Agency to act as an emergency flood attenuation basin to handle 1:75 year events. Normally they host 19 football pitches and the headquarters of Manchester's Football Association. As the floodwaters rose, the Environment Agency diverted water from the River Irwell into the bunded basin for the first time. Although several pitches were rendered unplayable for months as a result of the flooding, hundreds of downstream properties were saved from flooding. It will also have built confidence in investors and local residents that, although the HMR area is largely within floodzone, "green" flood defences can work. A further flood basin at Castle Irwell is planned to support the HMR.

In Rochdale, Forestry Commission, Rochdale Council and Groundwork Trust are working together on the Belfield project. This 28 hectare, £1.7m community woodland scheme creates a clean and green river corridor from the Belfield housing estate downstream to Rochdale town centre. The Belfield project creates new woodland, greenways and wetlands to help transform the ethnically diverse but deprived area. The new greenspaces helped attenuate and store floodwaters in the January 2008 floods, meaning that the water levels in the main river as it passed through Rochdale town centre stayed 50mm below the top of the flood

Green Infrastructure Levels

- 3.12 Green infrastructure is realised at different geographies, or levels:
- a. neighbourhood
 - b. town/city
 - c. city-region
 - d. strategic
- 3.13 The graphic on the page at the end of this chapter illustrates how green infrastructure operates at different levels; and what kind of assets are valuable in different situations.

Green Infrastructure: from Neighbourhood to Town & City through to City-Regional and Strategic Scales

Neighbourhood Scale

A network of local green spaces addresses many user needs especially in light of urban densification, demographic changes, social inclusion; and helps to move towards a low carbon economy



Street Trees / Home Zones

Roof Gardens & Green Roofs

Pocket Parks

Gardens

Urban Plazas

Village Greens

Local Rights of Way

Dedicated Gardens / Cemeteries

Institutional Open Spaces

Ponds & Small Woodlands

Play Areas

Local Nature Reserves

Town / City Scale

District scale green infrastructure contributes to an area's distinctiveness and biodiversity, allowing a wide range of user groups to share the same space.



City Parks

Urban Canals & Waterways

Green Networks

Multi-user routes

Urban Commons

Forest Parks

Country Parks / Estates

Continuous waterfront

Municipal / Cathedral Plazas

Lakes

Major recreational spaces

Landmarks & Vistas & Gateways

City Regional Scale

Including major sites and landscape tracts, as well as smaller interconnected neighbourhood and district assets, this scale of green infrastructure provision can deliver multiple ecosystem services and public benefits, such as biodiversity, landscape enhancement, recreation, health and climate change adaptation



Regional Parks

Rivers & floodplains

Shoreline & Waterfront

Strategic & Long-distance Trails

Major (>100ha?) woodlands

Community Forests

Open Access Sites

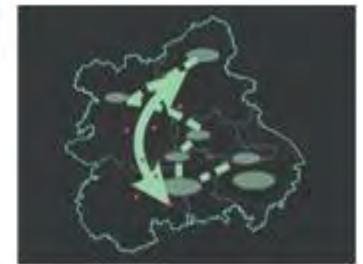
Landmarks & Vistas

Reservoirs

Environmental Management Initiatives

Strategic Corridors & Gateways

Strategic Scale



Regional Environmental Frameworks for Biodiversity, Landscape, Heritage

Strategic River Catchment Plans

National Trails & Destinations

Strategic Infrastructure corridors

Behavioural & Societal Change

4 GREEN INFRASTRUCTURE OBJECTIVES FOR THE CITY REGION

- 4.1 A City-Regional vision for GI should be linked to the over-arching City-Regional vision⁷:

By the year 2025, we envisage the Manchester City Region will be:

- o One of Europe's premier city-regions, at the forefront of the knowledge economy with outstanding commercial, cultural and creative industries;*
- o World class, successfully competing internationally for investment, jobs and visitors;*
- o An area where all people have the opportunity to participate in, and benefit from, the investment and development of their city-region;*
- o An area known for, and distinguished by, the quality of life enjoyed by its residents; and*
- o An area with GVA levels to match those of London and the South East.*

- 4.2 AGMA had identified a number of GI functions of priority to the City Region. TEP was asked to review these, taking account of:

- o stakeholder views
- o national and regional GI policy
- o city regional strategies for growth.

- 4.3 TEP's recommendations for the **GI functions most important to the sustainable growth of the City Region** are set out in the box below.

- 4.4 These functions should be adopted as the objectives for the City Region's GI approach. The terms "function" and "objective" are, in this context, interchangeable.

- 4.5 A GI Framework will describe how the many bodies responsible for GI delivery (e.g. Local Authorities, environmental initiatives, infrastructure providers, developers) can formulate their own objectives and delivery plans which support the City Region's vision and GI objectives.

⁷ From "Manchester City Region: A sub-regional action plan (final draft, 2007)" (MIDAS, 2007)

Green Infrastructure (GI) underpins the growth, transformation and management of the Greater Manchester. GI will make places where people want to stay. In planning and managing GI, our aims are to:

- *ensure our residents enjoy outstanding quality of life;*
- *care for our environment so it protects and sustains property and enterprise;*
- *create a setting for prosperous growth.*

Our objectives are to shape the diverse outdoor environments of the City-Region so they fulfil the following "Growth-support" functions,

- 1 **Flood risk management and climate change adaptation** - Greenspaces being used to manage storm flows and free up water storage capacity in existing infrastructure to reduce risk of damage to urban property, particularly in the City centre and vulnerable urban regeneration areas. Vegetation which cools and shades urban environments. Carbon being stored in soils and woodland. Integrity of wildlife corridors and distinctive landscapes adjusting to a warmer climate.
- 2 **An ecological framework** - Greenspaces sustaining Greater Manchester's biodiversity; forming habitat networks and 'stepping stones' valued by people.
- 3 **A sustainable movement network** - Multi-user routes for recreation and commuting. People-centred routes in and around regenerating inner urban areas to enable doorstep access to the natural outdoor environment. Routes from urban areas to our Pennine, Peak, Cheshire and Lancashire countryside.
- 4 **A sense of place** - Distinctive and vibrant civic spaces, landscapes and townscapes. Encouraging use and appreciation of the City's natural and built heritage of rivers, canals, woodlands, moorland fringes, mills, parks and modern architecture.
- 5 **River and Canal Corridor Management** - Accessible waterways with improving water quality, supporting regeneration and providing opportunity for leisure, economic activity and biodiversity.
- 6 **Positive image and a setting for growth** - well-designed and managed public realm, speaking of the City Region's brand as a green and world-class city region.
- 7 **Supporting urban regeneration** - Accessible, clean, safe and high-quality green spaces that provide economic and community benefits to all sectors of our growing, diversifying and ageing population; particularly important in areas of deprivation and transformation.
- 8 **Community, health and enjoyment** - Greenspaces which are specifically managed to sustain communities through healthy, active lifestyles, social networking, cultural and community events.

These functions are of City-Regional priority, but the only way they will be safeguarded and enhanced is through numerous actions by many different agencies, mostly organised and delivered at a local level.

"Our green infrastructure will be sustained and strengthened by a few big actions and a thousand and one small changes"

Adapted from "The Green City" Low, 2005

5 GROWTH IN GREATER MANCHESTER: THREATS AND CHALLENGES

5.1 Greater Manchester is in a period of great social, economic and demographic transition. It anticipates a period of sustained population growth and economic regeneration. The New Growth Point status brings a challenge of achieving growth and environmental sustainability. The City will need to adapt to some externalities over which it has limited control e.g. climate and demographic changes.

5.2 These changes and challenges need to be considered in terms of how they affect the City-Region's GI resource. GI has a role in helping the City-Region to meet challenges and adjust to change.

5.3 The five areas of greatest change or challenge affecting GI Planning are:

- | | |
|----------------------------------|--|
| Growth | - population, prosperity and economic regeneration |
| The existing urban fabric | - The pattern of road, rail, canals and river valleys constrains the ways that GI can be planned, implemented and managed. |
| Demographic changes | - issues of health, ageing, ethnic and cultural diversity all affect the way GI is laid out and managed to meet the needs of all. Areas of New Growth Point transformation are usually experiencing existing high levels of multiple deprivation. |
| Climate change | - there is an economic and social need to future-proof our urban areas against the effects of extremes of heat, rainfall and occasional drought; as well as the need to support low-carbon urban lifestyles and encourage in-migration through making a liveable city. |
| Image and brand | - the City-Region's own aspiration to be a vibrant and green centre for high-value business demands an environment of high quality. |

5.4 These changes pose threats and challenges to GI and simultaneously offer opportunities for planning GI. A threat/opportunity analysis is set out below. Some issues are both challenges and opportunities; and some issues relate to more than one change.

5.5 The tables make reference to maps showing the geography and existing GI of the City Region, and to case studies. The maps and case studies are discussed in more detail in subsequent chapters. Maps are included as an Annex to the report.

GROWTH: THREATS AND CHALLENGES	OPPORTUNITIES
<ul style="list-style-type: none"> ☔ New City-Regional Governance arrangements may focus on growth without full consideration of infrastructure and environmental quality. ☔ GI is not “owned” by the City Regional Commissions (i.e. it cuts across Economy, Environment, Health and Planning & Housing) ☔ Few statutory performance indicators for multi-area agreements relate to GI – hence GI is low priority for funding and activity. ☔ Adverse impacts on recovering ecosystems, such as the river valleys, moorlands and mosslands. ☔ Flood Risk Assessments may lead to a hardening of defences in urban river valleys. ☔ Challenge of creating liveable family environments in and around city and town centres, particularly East Manchester and central Salford ☔ Insufficient evidence as to what is an adequate quantity and quality open space to meet the needs of a growing population. ☔ Existing poor quality environments and transport corridors lower land values and thus reduce scope for investment in the GI which could enhance them. ☔ Densification leads to loss of ‘micro’ green features (trees, pocket parks, mature gardens) with a resultant adverse impact on liveability, soil permeability and biodiversity. 	<ul style="list-style-type: none"> ○ New Growth Point requires a GI Strategy and delivery plan. This brings the opportunity to advocate the role of GI. ○ Redevelopment can generate contributions for greenspace. ○ Opportunity to ‘retrofit’ GI into deficient urban areas undergoing major re-development. ○ GI can extend the life of hard infrastructure such as buildings, drainage systems – particularly important in lower Irwell, Medlock and Roch rivers where significant areas of urban property is within floodzone. (see Strategic Flood Risk Assessment map) ○ Opportunity to promote GI as part of the City-Region’s brand, especially at gateways. ○ Increased population gives a larger pool of people who may be interested in conserving and managing greenspaces ○ Increased political and administrative co-operation can be harnessed e.g through Multi-Area Agreements and the Commissions for Environment, Planning & Housing. ○ Existing and emerging plans, strategies and guidelines can be influenced to promote GI into development proposals. ○ Regional Park (and Irwell City Park) are promoted in RSS as one means of delivering GI. <p>The City Region’s geography of river valleys penetrating the urban fabric is consistent with a GI approach.</p>

DEMOGRAPHIC CHANGE: THREATS AND CHALLENGES	OPPORTUNITIES
<ul style="list-style-type: none"> ☔ Increasing transience means lowered sense of belonging – and hence lowered contributing to the fabric of an area through volunteering and community activity. ☔ Greenspace can improve mobility, cardiac and mental health, but many deprived areas are deficient in quality and accessibility of greenspace. ☔ An increasingly ageing population needs to have greater provision of doorstep greenspaces. (see Demographic Map – population >65) ☔ Retention (and attraction) of young working people and families to the city and town centres requires safe and attractive spaces with a diversity of cultural and sporting facilities – not immediately achievable in dense urban areas. (see Demographic Maps. ☔ GI Planning tends to be focussed on the needs of the mobile middle-class – other cultural groups may have different expectations and requirements. ☔ Need for improvements in the evidence base across the City-Region as to openspace requirements for growth – e.g. there is a variety of approaches to open space audit across local authorities. 	<ul style="list-style-type: none"> ○ Increasing numbers of active >50s gives an increased pool of people willing to volunteer/join in conservation activity in greenspace – need for existing initiatives such as Groundwork / BTCV / Community Forests to step up activity. ○ Opportunity to advocate and deliver targeted improvements in greenspace and access to target obesity and poor mental health. ○ Formation of City Regional Commission on Health offers an opportunity to improve evidence base for health-oriented GI activity; and may offer new avenues for project-development. ○ Opportunity to promote the vital role of greenspaces in meeting the lifestyle needs of families and young people so as to retain them in and around city and town centres. ○ Opportunity to promote GI as a venue for cultural and sporting events; and as a place for increased networking and community cohesion.

URBAN FABRIC: THREATS AND CHALLENGES	OPPORTUNITIES
<ul style="list-style-type: none"> ☔ Difficulty of creating new large greenspaces in dense urban areas (see Urban Morphology Types Map). ☔ Lack of orientation of buildings to overlook greenspaces and waterways discourages access and use due to a lack of natural surveillance. ☔ Existing patterns of community use of greenspaces (where negative) may take many years to change. ☔ Major infrastructure barriers (roads, railways, pipelines, powerlines) present obstructions to continuous networks of accessible open spaces. ☔ Particular difficulty where GI resources cross administrative boundaries in co-ordinating action and investment. ☔ Flood Zone includes many built up areas – land values mean that creation of strategically important greenspaces for flood management in urban floodzones may be costly (see Strategic Flood Risk Assessment Map). 	<ul style="list-style-type: none"> ○ Heritage of Buildings and Waterways and Parks, provides a unique ‘canvas’ for an Urban Park approach to GI (see Black Country and Irwell City Park case studies) (see Greenspaces and Conservation Areas Map; and Landscapes of Distinctiveness Map) ○ Opportunity for temporary greening of gap sites. ○ Opportunities for land swaps to create new strategic spaces (accepting that under-used spaces may be relinquished) ○ Opportunity for creation of strategically important greenspaces to improve flood management in and upstream of urban floodzones (see Strategic Flood Risk Assessment Map and Flood Management Function map)

CLIMATE CHANGE: THREATS AND CHALLENGES	OPPORTUNITIES
<ul style="list-style-type: none"> <li data-bbox="241 288 1106 424">☔ Strong focus by City Region on climate change mitigation through reduction in carbon emissions may mean that the GI functions of climate adaptation are given less priority; whereas the challenge of keeping the city liveable is vital. <li data-bbox="241 464 1106 528">☔ Densification may lead to increased floodrisk and heat island effects, especially in high-density areas). <li data-bbox="241 568 1106 671">☔ Densification may lead to loss of “urban green” and subsequent flood and heat problems in the densifying areas and downstream (see Urban Green Map) <li data-bbox="241 711 1106 879">☔ At a regional scale, the City Region is important for south-to-north and lowland-to-upland migration of biodiversity, particularly along river corridors, but without creation and management of habitat networks, this migration could be obstructed. <li data-bbox="241 919 1106 1086">☔ Land management practices in upper catchments and rural fringes can greatly affect resilience of the city’s urban environment to flood risk (e.g. overgrazing and fire on Pennine fringes can cause soil erosion and increased flooding in town and city centres. <li data-bbox="241 1126 1106 1230">☔ Warmer, wetter weather places budgetary burdens on recreational open space managers to maintain drainage and cut grass more frequently. <li data-bbox="241 1270 1106 1334">☔ Better weather will increase use of outdoor environments, hence greater management pressures. 	<ul style="list-style-type: none"> <li data-bbox="1137 288 2045 424">○ Recognition of role of GI in climate change adaptation in PPS1 gives Local Planning Authorities a means of requiring creation of new GI as well as protection and enhancement of existing GI thro’ development control. <li data-bbox="1137 464 2045 528">○ Better weather may lead to increased use of the outdoor environment and hence a greater pool of community volunteers <li data-bbox="1137 568 2045 632">○ Carbon-trading and offsetting may lead to greater resources for GI implementation, especially for woodlands and green roofs. <li data-bbox="1137 671 2045 807">○ Recognition of the role of soils as carbon sinks may lead to improved management of moorlands and mosslands; and also provide a greater incentive for carbon storage through restoration of thin soils on DUN land.

IMAGE & BRAND: THREATS AND CHALLENGES	OPPORTUNITIES
<ul style="list-style-type: none"> <li data-bbox="241 284 1055 352">☔ Poor environmental and design quality of many existing town centres, road corridors and gateways <li data-bbox="241 389 1025 458">☔ Existing urban fabric means wholesale re-imaging through demolition and re-construction is often not feasible <li data-bbox="241 494 1032 592">☔ Use of private-sector regeneration partnerships means that advance environmental improvement works are difficult to achieve 	<ul style="list-style-type: none"> <li data-bbox="1137 284 1980 352">○ Many examples of how environmental improvements along key corridors have led to image transformation <li data-bbox="1137 389 2033 458">○ Private sector involvement in regeneration allows additional funding to be levered in <li data-bbox="1137 494 1973 592">○ Increased aspirations for high-quality of design, backed up by design and sustainability coding, gives opportunities to secure environmental improvements through the development process

How does a Greater Manchester approach to GI respond to the changes and challenges?

- 5.6 At times of change, there is often an appreciation of the value of the outdoor environment. **The New Growth Point, and associated changes and challenges, requires a GI approach to be embraced as a central plank of sustainable growth and regeneration.**
- 5.7 Reflecting on the tables above; are the City Region's planners able to draw up a GI approach which will respond to the threats to quality of life and environment? And are the City Region's environmental managers ready to seize the opportunities through developing new GI programmes which will enhance quality of life and environmental resilience?
- 5.8 A GI approach must consider
- **Political issues** – to ensure the profile of GI as life-support is recognised
 - **Administrative** – to ensure a framework for GI is drawn up and implemented
 - **Communication** – to encourage a shared understanding of GI priorities, assets, functions across all players in the City-Region's growth
 - **Resourcing** – to ensure adequate funds and human resources are directed to areas and issues of priority
 - **Community** – to increase the involvement of people with management and ownership of GI assets important to them
 - **Alignment with other City Strategies** to ensure GI continues to be recognised as core to growth
- 5.9 There is a parallel with East London and the Black Country (see Case Studies in Chapter 12). These are both older urban areas undergoing social and economic change. Both have a strong vision, shared across administrative boundaries, of building economic growth and social cohesion on a foundation of environmental quality.
- 5.10 The East London Green Grid is a top-down cross-boundary concept wherein networks of existing (and planned) open spaces are seen as multi-functional places, delivering a similar set of functions as those prioritised by AGMA. Mayoral guidance is that the Green Grid must be implemented and delivered alongside economic and social projects.
- 5.11 The Black Country Urban Park is a slightly more bottom-up approach, wherein the area is perceived as a continuous network of canals, open spaces and heritage assets. It spans administrative boundaries and is one element of the Black Country Strategy (an over-arching growth strategy).
- 5.12 The next chapter examines how AGMA might structure a City-Regional approach to GI.

6 THE RIGHT GREEN INFRASTRUCTURE APPROACH FOR THE CITY-REGION?

6.1 TEP is asked to advise on different options for AGMA in formalising and documenting a City Regional GI approach. There are 5 options; in increasing level of 'weight';

- o **Laissez-faire** – leaving all GI planning and delivery to Local Authorities and existing/emerging GI deliverers
- o **Advocacy-only** – a document promoting the benefits of GI but with no spatial targeting
- o **Framework** – a document identifying priority areas for investment and enabling joint programmes
- o **Strategy** – a framework but with a focussed series of individually-owned actions, shared across several GI funding and delivery agencies
- o **Plan** – an approach controlled and monitored centrally with a pot of funds against which local bids could be made.

6.2 Table 6.1 shows what would be included in each approach.

Laissez-Faire

6.3 AGMA could opt not to document or formalise a City Regional approach. Existing and emerging initiatives and policies would still deliver GI. As a baseline, the Community Forests, Regional Parks, NEWLANDS and other local programmes will probably continue. Also, most local authorities have indicated that they intend to incorporate GI policies in LDFs.

6.4 RSS requires city regions to produce environmental frameworks (policy EM1) and requires many strategies and plans to incorporate a GI approach (policy EM3). It could be argued that there is policy imperative for many public bodies to consider and implement many GI functions in the course of their normal operations; and thus the lack of a central City Regional GI document would not prevent GI activity taking place.

6.5 However opportunities would be missed to:

- o add value and momentum to existing environmental quality initiatives;
- o generate new initiatives;
- o disseminate best practice quickly across the City Region;
- o work effectively across administrative boundaries (N.B. many of the GI priority areas cross boundaries and it is partly because of boundaries that these areas are of lower environmental quality and hence remain as priorities).
- o embed environmental quality into regeneration and development programmes.

Advocacy-Only

6.6 A short guide could be produced which would provide:

- o Plain-English advocacy of GI benefits;
- o Introduction to GI and why it is critical to City Regional growth;
- o A Vision for GI for the City Region;

- o Case Studies;
 - o Model Policies for use by LPAs;
 - o Model Targets for use in LAAs.
- 6.7 TEP feels that there is little benefit from producing a Guide. There is existing guidance available from a variety of sources and both RSS in isolation and the NW GI Guide define GI and introduce its strategic objectives and benefits. As a Guide would not be a document ‘owned’ by anybody, it would have only a short-term value.
- 6.8 Nevertheless, some of the components of the Guide are needed and would bring benefits but these could only be realised within the context of a longer-term and targeted document such as a Framework, Strategy or Plan.

Framework

- 6.9 A Framework would give strategic objectives and a spatial direction for GI in the City Region, as well as providing definitions, justifications, evidence, vision, priorities, advocacy and case studies.
- 6.10 It would illustrate at a City Regional scale which are the priority areas and functions. It would provide criteria for LPAs to identify and protect GI at local and City Regional levels. It would enable existing delivery bodies to align their activity with City-Regional priorities. It would give these bodies additional justification when seeking funding for their activity. It would assist LPAs in negotiating GI arising from development activity.
- 6.11 A Framework would have sufficient depth and locally-specific evidence to enable planning authorities and delivery bodies to identify how they may develop their own programmes and policies to deliver the Framework’s objectives.
- 6.12 One benefit of a Framework is that it is relatively achievable in a short time period and could be the first step in a collaborative approach to delivering GI across the City Region. For example, there is an East Midlands Green Infrastructure Network (EMGIN) consisting of representatives of numerous sectors which have an interest in planning, delivering, managing, enjoying and developing GI. Members of the EMGIN individually ‘own’ local or sub-regional GI action plans and work within a shared understanding of the importance of GI in the Region. There are various generic and regional documents available which advocate GI.
- 6.13 This emphasises a key point – **that people and processes are as important as any set of documents in the delivery of GI**. A well-structured framework provides an “umbrella” for a range of groups to work in a managed partnership towards shared objectives.
- 6.14 A framework also allows a degree of monitoring of progress against the strategic objectives.
- 6.15 A framework would also provide a focus for the City Regional Commissions because it would paint the ‘big picture’ of the City Regional priorities and would also show how the numerous existing and emerging GI delivery bodies can focus their activity on city-regional as well as local priorities.

Strategy

- 6.16 A Strategy is a more detailed representation of a Framework, specifically identifying the actions needed to achieve the objectives, identifying bodies who will take local responsibility for those actions and setting timeframes for delivery.
- 6.17 The benefits of a strategy are that it will be actively owned and promoted by a core group. Other groups around the core will own and promote particular parts of the overall strategy.
- 6.18 The level of detail in a strategy would allow for planning agreements, funds and policies to cross administrative boundaries on the basis of evidence. GI initiatives could generate new programmes based on the evidence and priorities in a strategy.
- 6.19 A strategy will require a Core document and a satellite of supporting documents. Given the geographical complexity of the City Region, and based on experience elsewhere it would take 12-18 months to produce the Core Document in a collaborative manner that built partnerships and established a GI Network.
- 6.20 The East London Green Guide is a good example of a strategy. It contains detailed maps showing assets, deficiencies, opportunities and priority intervention areas, a set of strategic objectives based on the GI functions important in East London, guidance on how these objectives might be met in various arenas (e.g. LDFs, River Restoration Strategies, Masterplans, Area Action Plans etc) and advocacy documents to help increase awareness.
- 6.21 A Strategy for GI in a City Region as complex as GM does require a long-term central champion, along with dedication of officer time in various delivery and planning bodies. Fortunately there is an adequate number of existing GI initiatives who could provide the central championing role.

Plan

- 6.22 A Plan is a more detailed and prescriptive approach, most appropriate for individual delivery bodies in guiding their work. It contains all the strategic information and also sets out deliverable and measurable actions to achieve strategic objectives. A Plan implies that several of the resources needed to achieve the objective are in the direct control of the Plan's owner.
- 6.23 GI is a multi-functional concept, delivered by a range of agencies, some as a core task and some as a by-product of their core task. This makes it an inappropriate topic for a single central plan. It is unlikely there will be political will to establish a core GI delivery unit in the City Region – and indeed a very centralised approach may be counter-productive as it may stifle local distinctiveness and not respond quickly to community-led `bottom-up` initiatives.
- 6.24 Existing GI initiatives must of course have their own action and business plans and many other bodies such as LPAs, NGOs, Government bodies, Neighbourhood Renewal programmes, Urban Regeneration Companies etc should have some GI actions in their corporate plans. These individual plans should relate back to the City Regional Framework or Strategy.

Recommendation

TEP recommends that AGMA promotes a framework for GI as an early action to influence spatial and infrastructure planning across the whole city region. This should be formalised into a city regional strategy with delivery arrangements once the overall extent and timescale of growth is clear – say by mid 2009.

- 6.25 The GI Framework needs to fit into a family tree of City Regional environmental infrastructure approaches such as the Climate Change Action Plan, the Strategic Flood Risk Assessment, the Ecological Framework and needs to relate directly to the (eventual) Sub-Regional Action Plan in respect of growth and transformed environments.
- 6.26 TEP believes that a Laissez-faire approach would result in numerous missed opportunities to create a sustainable city and this would be a tragedy at a time when the City Region is undergoing a very rapid transformation which will shape the quality of life and quality of place for decades. This is a once-in-a-half-century period of opportunity for spatial planning.
- 6.27 TEP believes that an advocacy-only approach would not be an investment which would yield long term return – the only tangible benefit bring an advocacy document which would have a shelf-life of 3 years at most.
- 6.28 TEP believes that a detailed and prescriptive GI Plan would be unlikely to find much support and would only be relevant if GI were to be co-ordinated from a centralised core – inappropriate in a geographically, politically and culturally diverse region such as Greater Manchester.
- 6.29 If a Framework is adopted, the elements which should be included are set out in Table 6.1. The proposed content of a Framework approach for GI is discussed in detail in Chapter 13 (Next Steps).
- 6.30 The Next Steps chapter also makes other recommendations for taking forward a GI approach, such as the establishment of a GI Champion and a GI Network.
- 6.31 The following chapters describe how a City-Regional Framework might identify and plan for GI assets and functions.

Table 6.1: Options for Documenting a GI Approach for the City Region; and Components of a GI approach

Nature of Doc. Component	Laissez-faire	Guide	Framework	Strategy	Plan
Vision for GI in CR		Y	Y	Y	Y
GI Definition	Y*	Y	Y	Y	Y
Objectives for CR		Y	Y	Y	Y
Policy support for existing Initiatives	Y#	Y#	Y	Y	Y
LDF Policies	Y#	Y#	Y	Y	Y
Case Studies		Y	Y	Y	Y
GI Network (stakeholders)			Y	Y	Y
Primer (for advocacy)		Y	Y	Y	Y
Criteria for identifying city-regional and local investment priorities			Y	Y	Y
Asset Maps			Y	Y	Y
Functional Maps			Y	Y	Y
Key Diagrams showing CR priority investment areas			Y	Y	Y
Model Policies and targets for LDF / LAA			Y	Y	Y
Widely-shared endorsement of GI approach			Y	Y	Y
Use in Supplementary Planning Guidance			?	Y	Y
Targets in City-Regional Governance (MAA)			?	?	Y
Co-ordinator / Champion			Y	Y	Y
Action Plan				Y	Y
New GI Programme Development				Y	Y
Business Plan					Y
Monitoring & Evaluation			?	Y	Y

* Definitions already available in RSS and NW GI Guide

Policy support already present in RSS and SRAP. LDF policies on GI are likely to be adopted in any case

7 PLANNING FOR GREEN INFRASTRUCTURE ASSETS

Overview

- 7.1 Planning for GI is a two-pronged approach;
- **Planning for Assets**
 - **Planning for Functions**
- 7.2 Traditional UK land-use planning has developed an effective suite of policies and techniques which safeguard and enhance land as an asset. Open land allocations in development plans are usually based on particular functions that land serves.
- 7.3 At a broader scale, character-based assessments and area-based programmes inform policy, site allocations and planning decisions.
- 7.4 Policies, by and large, protect the open land (and the function for which it is designated) from adverse effects of development. In some cases, development control policies and procedures can be used to direct investment towards the open land in order to improve its functionality.
- 7.5 Asset-orientated policy and planning procedure will remain an essential tool in GI planning. It is effective in protecting open land for the sake of a designated function.
- 7.6 However, an asset-oriented approach is less effective at protecting tracts of land, particularly across administrative boundaries. It is also less effective at enhancing GI functions especially where these are not immediately connected to the land in question. For example, an effective urban flood and climate adaptation plan would involve several interventions in a catchment, such as the use of greenspaces as floodbasins, sustainable drainage techniques in urban areas, river restoration, green roofs etc. This kind of pro-active planning cannot be achieved solely through asset-oriented policy.
- 7.7 The challenge for the spatial planning system is to become a more pro-active tool in sustainable development. In respect of GI, new techniques must be developed to “**plan for the asset and the function**”.
- 7.8 Challenges in spatial planning are to:
- **identify and allocate land** which is (or could be) performing critical GI functions;
 - direct more **resources from development gain** into management of existing GI;
 - **increase the multi-functionality of open land**, especially where the land is critical GI.
 - **enhance GI functions across tracts of land**, whether urban, open or rural;

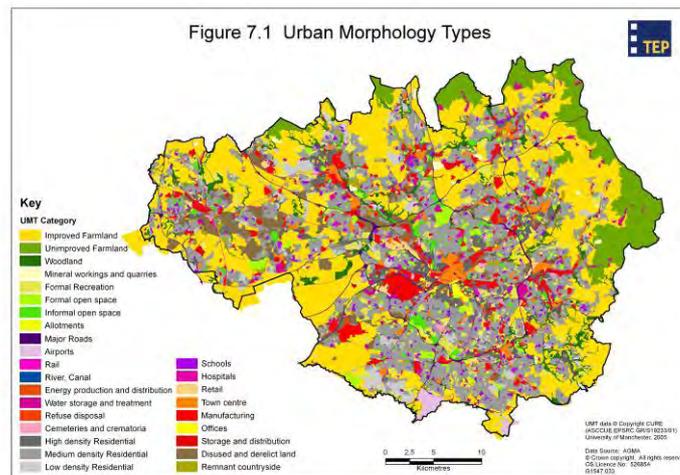
This chapter refers to several maps. Thumbnail images are included in the text, but larger maps are included in an Annex to the report

- **set empirical and qualitative standards** for GI in terms of its functions
- **create new GI where it is needed to address deficiencies** in quantity, quality, accessibility and/or functionality.

Land Use Patterns

7.9 CURE (Centre for Urban Research in Ecology) have mapped the City Region into Urban Morphology Types (UMTs)⁸. The typology broadly follows the National Land Use Database (NLUD) classification. Mapping was carried out by aerial photographic analysis with compilation in MAPInfo GIS.

7.10 The UMTs across the City Region are illustrated at Figure 7.1. This is a very useful baseline, allowing the spatial priorities for many GI functions to be identified.

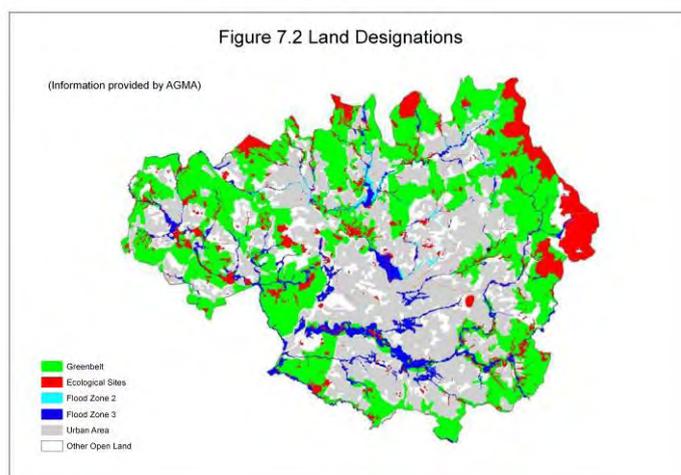


The Green Infrastructure Resource

7.11 The broad classification of planning allocations and flood zones in the City Region is shown at Figure 7.2:

- Built-up land
- Green belt
- Other open land
- Designated Ecological Sites
- Flood Zones (The higher risk Zones 2 and 3 are shown)

⁸ Centre for Urban Research in Ecology 2005 Urban Morphology Types were produced for the ASCCUE Project in the University of Manchester

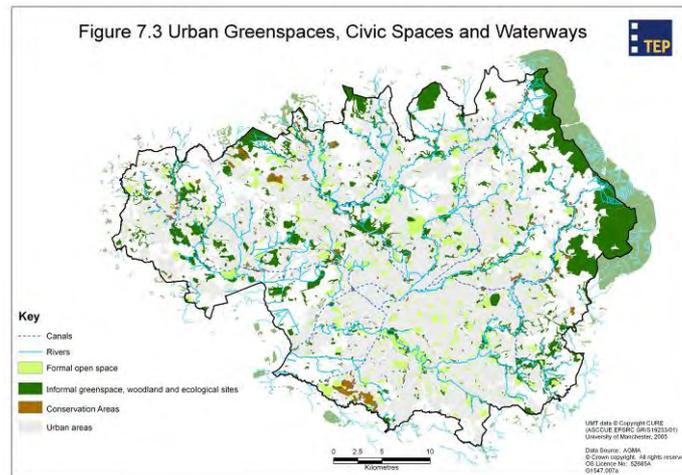


- 7.12 GI functions will be delivered in all the above categories of land. Even urban areas provide recreational and image-enhancement functions, particularly vital for the type of growth envisaged in the New Growth Point.
- 7.13 Green Belt, Ecological sites and Flood zones will generally undergo little built development in forthcoming decades; so these places are the ‘skeleton’ of a GI framework. In the City Region, they form a series of ‘green fingers’ (rather than a “belt”). This is especially useful for city planning since it is a good spatial disposition for allowing contact between humans and the environment.
- 7.14 Other open land includes parks, recreational areas, incidental greenspaces, closed/active mineral and waste sites and farmland. Given their proximity to urban areas, such spaces are also a critical part of the GI resource.
- 7.15 The built-up area contains gardens and pocket parks, which provide outdoor environments that fulfil GI functions. As the older urban areas are re-developed, opportunities will arise to create new GI resources e.g. greenspaces, green roofs, street trees, green public realm, new multi-user routes. However such spaces are under real threat from infill and densification. GMEU has highlighted that private gardens in certain areas are significant for biodiversity and climatic moderation.
- 7.16 A GI framework will need to address all these land uses in combination. At a City Regional scale, there needs to be criteria for identifying which parts of the resource are assets of City Regional significance – and equally which areas of deficiency are of City Regional significance. Such criteria need to be based on the functions the land could fulfil, rather than on simplistic criteria of site size or single-functional value.
- 7.17 For example a large Grade A site of Biological Importance remote from people and not in an economic gateway or a flood zone may in fact be less significant as green infrastructure than a smaller Grade C SBI in a flood zone which is managed as a Local Nature Reserve near an area of high deprivation.
- 7.18 Case studies from Salford (Irwell Playing Fields) and Rochdale (River Roch/Belfield corridor) illustrate how function-oriented analysis can identify assets of city regional and/or local significance. (See Box in Chapter 3)

The river valleys and waterway corridors form much of the GI framework. However they are most eroded and under threat in urban edges; yet provide the greatest opportunity for multi-functional green infrastructure to sustain the New Growth Point.

Green Infrastructure Assets

- 7.19 TEP examined the maps provided by AGMA in light of the strategic objectives for GI. This led to classification of GI assets into five categories; which overlap geographically:
- a) Urban, civic and greenspaces, and waterways;
 - b) Wildlife corridors, 'stepping stones' and greenways;
 - c) Sustainable Movement Network (green routes for commuting and leisure);
 - d) Landscapes of highly distinctive character;
 - e) Tracts of "urban green" i.e. built up areas characterised by high proportions of greenspace, gardens, tree canopy.
- 7.20 These assets are discussed and mapped below. A full picture of the asset base can only be gained by considering all the maps in combination.
- 7.21 A narrative describes the criteria that have been used for identifying why the assets have been identified; whether the assets are of City-Regional or local level (or both); the limitations of the maps; and recommendations for further work needed to define GI assets in a City-Regional Framework.
- 7.22 During the course of the study, it became evident to TEP that, while there is much data concerning land use, access and environmental character; there is no central or consistent bank of digital landuse / landcover mapping across the 10 GM authorities and the relevant statutory environmental bodies. This causes much duplication and wasting of effort in assembly of a consistent GI asset map.
- 7.23 The reason for this is because the responsibilities for delivery of green infrastructure functions are dispersed across numerous bodies; and for various functions, there is no City Regional champion. This has implications, not only for GI planning, but also for preparation of the environmental frameworks required by RSS Policy EM1.
- ### **Urban Greenspaces, Civic Spaces and Waterways**
- 7.24 Figure 7.3 shows parks, urban greenspaces, woodlands, Sites of Biological Importance, Conservation Areas and main waterways. Figure 7.4 shows which of these are confirmed to be publicly accessible.



7.25 There are limitations of these maps, so **further research and consultation will be needed to refine both maps**. Nevertheless, they illustrate the broad distribution of spaces which are already serving one or more GI functions.

7.26 It is not possible to show which of these spaces are of City-Regional significance – indeed it may be counterproductive to do so; as it might be a long and negative debate.

Most important is to identify the areas of the City Region which are of greatest priority for functioning of green infrastructure and ensure that the existing assets in those areas are safeguarded and enhanced. Where there is a deficiency or fragmentation of assets and networks, efforts should be made to create new GI assets/networks.

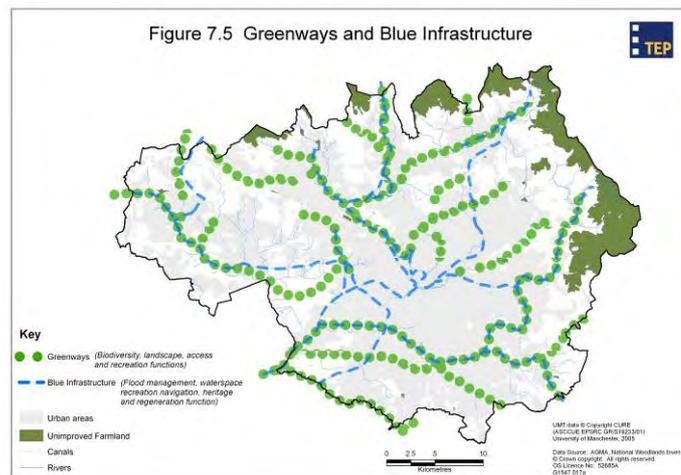
To illustrate this point, the **Irwell Valley is critical green infrastructure**, serving numerous economic, regeneration, flood management, biodiversity and landscape functions. It contains a number of assets, which collectively are of City-Regional value if managed appropriately.

East Manchester is also an area of high priority for GI, but has few assets, so the priority for GI planning must be to enhance functionality of existing assets and create new green and civic spaces.

- 7.27 The maps in this report do not show the quality of the places and do not show, except by inference, areas of deficiency in provision of greenspaces relative to human needs and relative to environmental priorities for continuous green networks.
- 7.28 **Further work is needed to identify deficiencies of City Regional and local significance.** This is discussed in the next chapter.

Wildlife Corridors, Greenways and Blue Infrastructure

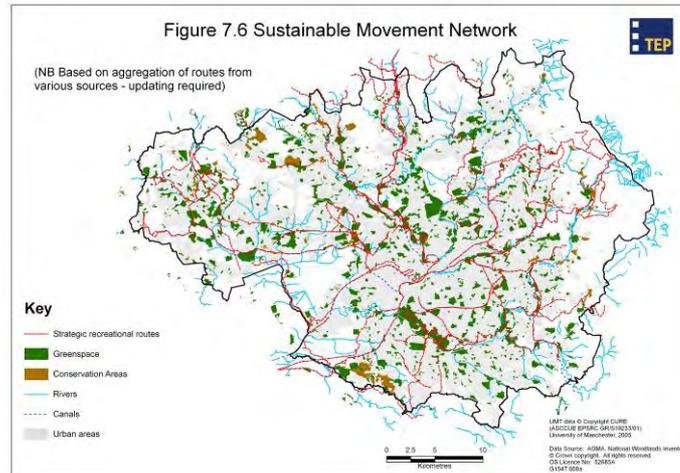
- 7.29 GMEU and the University of Salford are collaborating on the production of an Ecological Framework for the City Region which will identify biodiversity networks, corridors and “stepping-stones”. Some are appropriate for sensitive public access.



- 7.30 Figure 7.5 has been produced by TEP as a preliminary illustration of the distribution of wildlife corridors, greenways and blue infrastructure; **However the Ecological Framework will provide a systematic evidence base which should be incorporated into the GI Framework.** Work is expected to be complete in 2009.

Sustainable Movement Network

- 7.31 Figure 7.6 shows one possible Sustainable Movement Network showing multi-user non-motorised routes. This is based on an aggregation carried out by AGMA of various adopted and/or published plans and strategies; typically developed in the years just before and after the millennium. The emphasis is on middle-distance and inter-settlement paths, cycleways and bridleways.



- 7.32 Further work is needed to update and confirm the status of the routes proposed. It would also be useful to map gateway and internodal sites; using work carried out by the Red Rose and Pennine Edge Forests⁹. Further work is also needed to identify residential areas which are deficient in access to the network. This is discussed at Chapter 9.
- 7.33 As discussed in Chapter 5, the demographic and health challenges facing the City Region mean that more “close-to-home” and “people-centred” routes are needed to improve health prospects and encourage family-living in urban areas. (See Box)

Case Studies

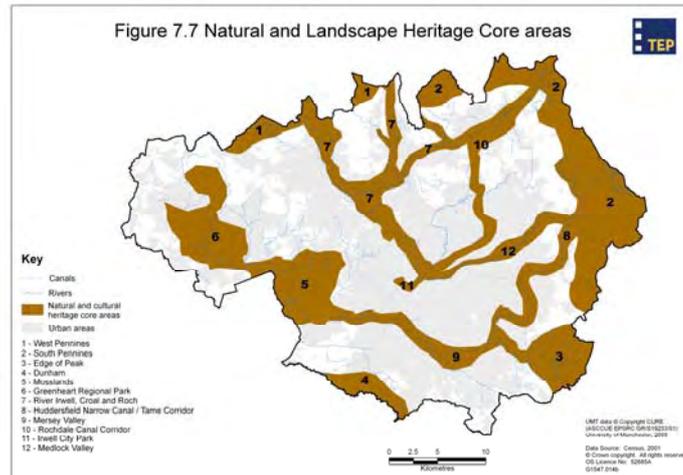
The Partnership for Urban South Hampshire (PUSH) is implementing a New Growth Point and has been preparing a Strategic Access Network (SAN) as part of its GI plan. During the preparation of the SAN, the practitioners recognised that the initial focus on middle-distance and inter-town routes was not relevant to many inner-urban communities, particularly those of poor health. As a result, they modified their route selection criteria and now propose a number of “population-centred” routes, usually short and circular in nature. Cost-benefit analysis showed that the number of people to benefit would be far greater for a similar investment in route development.

The Natural Signposting programme of the Pennine Edge Forest is similar – it promotes short routes in and around regeneration priority areas in Rochdale and Oldham, aiming to encourage exploration of the countryside in and around towns and get people quickly into the Rochdale canal corridor and river valley network. For example the South Rochdale Forese Trail likds deprived areas of Balderstone, Kirkholt and Castleton with the Rochdale Canal, Tandle Hill Country Park and accessible countryside on the Penine fringe

⁹ TEP (2003) Community Forest Gateway Study, for Pennine Edge and Red Rose Forests

Landscapes of Highly Distinctive Character

- 7.34 Figure 7.7 shows broad tracts of land which have a distinctive character; derived from their heritage, their topography, their biodiversity; or combinations of these. The boundaries are approximate but have been derived from locally adopted strategy boundaries (e.g. for the regional parks and the mossland strategy) and from UMTs e.g. the unimproved farmland which defines the South Pennines and Edge of Peak core areas.



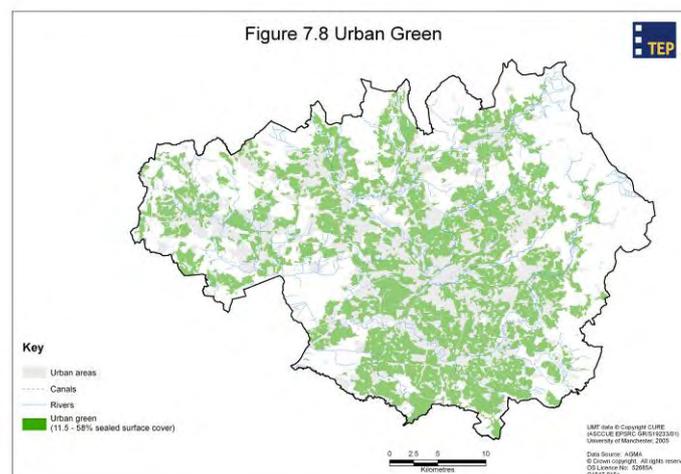
- 7.35 The landscapes are:

1. West Pennines – much is Open Access land / Special Area of Conservation (SAC) and subject to longstanding environmental management initiatives
2. South Pennines – some in National Park, much is Open Access land / SAC
3. Edge of Peak – some in National park, much is Open Access land
4. Dunham – National Trust estate / Conservation area / Heritage site
5. The Mosslands – subject to the cross-boundary Mosslands Strategy; some is SAC
6. Greenheart Regional Park – incorporating the Wigan coalfields and the Leeds-Liverpool canal
7. Croal-Irwell Regional Park and the River Roch – incorporating three key river valleys and the Manchester, Bury & Bolton Canal line; also the focus of much brownfield regeneration activity
8. Huddersfield Narrow canal / River Tame corridor – key river valley and Heritage canal
9. Mersey Valley – major greenbelt corridor incorporating two water parks
10. Rochdale and Ashton Canals – major regeneration programme centred on the historic canal routes with links to the City Centre and the Pennines
11. Irwell City Park – an emerging Urban Park focussed on the River Irwell, the Bridgewater Canal and the Manchester Ship Canal; with associated built heritage and modern architecture and regeneration. Adjoining the Croal-Irwell Regional Park.
12. River Medlock Valley – running through the East Manchester growth point, linking the City Centre with Oldham

- 7.36 The identification of these as of city-regional significance should be verified through consultation. In particular there may be additional townscapes where the quality of the public realm is dependent on natural elements.
- 7.37 **Although two are proposed as Areas of Search for Regional Parks, in practice, all these areas have a concentration of recreational hubs and gateways and could act as Regional Parks individually or in combination.**
- 7.38 There will of course be many locally distinctive landscapes and townscapes. RSS policy EM1 proposes the preparation of sub-regional environmental frameworks which would allow an agreed definition of areas of highly distinctive character.

Urban Green

- 7.39 Figure 7.8 shows the UMTs which are built-up but remain relatively permeable; i.e. those which are <58% sealed surface. This category includes low and medium density residential areas, corporate and school grounds, burial grounds. In general these areas support much of the urban forest resource, because space for vegetation is limited in higher-density urban areas.



- 7.40 These areas of urban green are particularly important for climate change adaptation. They tend to be less reflective of solar radiation than high-density development and have greater tree canopy cover – hence are more useful for cooling and shading. Because they have relatively unsealed surfaces they have greater capacity for allowing infiltration of rain water; and hence can buffer the effects of storms on urban drainage infrastructure.
- 7.41 This latter function depends partly on the porosity of the underlying soils with the sandy or loamy soils of south Manchester more porous than the clay soils of north and north-west Manchester.

- 7.42 **Expert review is needed to define thresholds of concern regarding the extent of sealed surfaces in different UMTs and soil types**, before the concept of urban green can be adopted in Local Development Frameworks. This expertise is available through the ASCCUE project at Manchester University or through the NW Green Infrastructure Forum¹⁰.
- 7.43 Urban green is also important in creating a setting for growth, since mature, attractive environments tend to sustain higher land values. It also has biodiversity benefits; especially where it can form local wildlife corridors linked to the strategic corridors associated with the river valleys.
- 7.44 The value of this GI asset lies in its functionality as a collective, aggregated resource. In a City Regional Framework, urban green will be of particular value where it is close to, or supports other assets such as distinctive landscapes, wildlife corridors and the sustainable management network.

Valuing the GI Assets

- 7.45 The table below illustrates how the various GI assets contribute, if well managed, to delivery of the functions of GI.
- 7.46 **Table 7.1: Contribution of GI Assets to delivery of functions - ✓ indicates that the asset has a role to play in sustaining the function**

Function \ Asset	Greenspaces, Civic Spaces and Waterways	Wildlife Corridors	Sustainable Movement Network	Landscapes of High Distinctiveness	Urban Green
Flood Management & Climate	✓	✓			✓
Ecological Framework	✓	✓		✓	✓
Sustainable Movement	✓		✓		
Sense of Place	✓	✓	✓	✓	✓
River & Canal Corridor Management	✓	✓	✓	✓	
Image and Growth	✓		✓	✓	✓
Urban Regeneration	✓		✓	✓	✓
Health and Enjoyment	✓	✓	✓		✓

- 7.47 A City-Regional Framework can show the assets using maps similar to those prepared in this report, leaving Local Authorities to create more detailed plans of assets for use in Allocations DPDs or in a free-standing GI SPD or as locally-endorsed strategy.

Identifying deficiencies of GI Assets

- 7.48 An important aspect of a GI Plan is to identify areas where there is a deficiency of GI assets.
- 7.49 Deficiencies can be quantitative and/or qualitative. Deficiencies must be identified by reference to GI functions (see Table 7.1 above). Absence of green infrastructure does not become a deficiency unless there is a significant need for it.

¹⁰ Contact Mersey Forest www.merseyforest.org.uk

- 7.50 For example, greenspaces have a flood management and climate adaptation function. This function is a City-Regional priority in the valleys such as the River Roch where good flood management is essential to protect property in Rochdale and Bury Town Centres. “Flood-friendly” greenspace and permeable urban greenery in the floodzones and urban catchments upstream of the town centres of great benefit. The emerging Strategic Flood Risk Assessment may identify deficiencies in the way flood zones along the Roch and Irwell are managed – and whether these are significant causes of downstream flooding in Bury, Salford and Manchester City Centres.
- 7.51 Apart from ANGST¹¹, there are no empirical or absolute standards available to map GI deficiency, although in some cases ranking techniques can be used to identify relative deficiency. Some authorities have defined their own variations or extensions of the ANGST standards e.g. St Helens have a Green Infrastructure policy CGL1A in their emerging Core Strategy which sets walking-time standards to a range of open space types. New York’s plaNYC defines a simple headline that all New Yorkers shall live within 10 minutes walk of a community play space.
- 7.52 A discussion on how standards might be set (and deficiencies identified) is in the next chapter “Planning for Green Infrastructure Functions”.
- Recommendations for completing a City-Regional green infrastructure asset map**
- 7.53 In order to finalise maps showing the GI asset base at City-Regional level, which will act as broad evidence, and will be robust enough for local interpretation and adoption, various gaps in evidence and presentation need to be addressed:
- 7.54 A typology and digital inventory of greenspace and public realm assets, consistent across administrative boundaries. This would probably be best compiled using PPG17 typology with cross-boundary agreement on additional or more detailed typology than prescribed by PPG17. Although this sounds a daunting exercise, in practice, much information is already available but requires co-ordination of maps onto a shared digital base. It would also assist the City Region in addressing RSS Policy EM1 (requiring preparation of environmental frameworks) and in developing new programmes to enhance environmental quality. It could assist with strategic Flood Risk Assessment by identifying greenspaces which could be used for flood management. It could also assist Local Authorities in negotiating s106 and community infrastructure tariffs.
- 7.55 TEP consider the existing information regarding assets is good enough to inform a first iteration of a City-Regional Framework, but an improved inventory will bring significant benefits to GI delivery as noted above.
- 7.56 Completion of the Ecological Framework (ongoing work by GMEU and University of Salford)
- 7.57 Review of the Sustainable Movement Network (SMN), including mapping of existing, allocated, proposed and aspirational routes and gateway/internodal sites
- 7.58 Updating of the SMN to take account of emerging priorities for population-centred and health-oriented green routes for leisure and commuting

¹¹ Access to Natural Green Space Targets – promoted by Natural England and defined in the companion guide to PPG17

- 7.59 Review of the “Landscapes of High Distinctiveness” map, through consultation, expert review and comparison with emerging character and townscape studies.
- 7.60 Expert review of the “Urban Green” asset, through comparison with soil and hydrology data, to determine which areas are of greatest importance in urban water management and climate-proofing
- 7.61 Comparison of the GI asset maps with social, health and demographic datasets to identify how assets close to priority neighbourhoods and economic centres can contribute to socio-economic goals;
- 7.62 Setting of standards for GI, based on functions, in order to prioritise policy and action to tackle asset deficiencies and conserve key areas.
- 7.63 Gap analysis of the Asset Map, to identify deficiencies in provision or accessibility of assets (see narrative in next chapter re deficiencies)
- 7.64 Establishment of a central GI champion to hold and disseminate data about the outdoor environment to the numerous agencies who have a role in GI delivery. This “observatory” role would also assist the City Region in addressing RSS Policy EM1 (requiring preparation of environmental frameworks) and in developing new programmes to enhance environmental quality. It could also assist Local Authorities in negotiating s106 and community infrastructure tariffs. Chapter 13 discusses championing and suggests that this should be led by the emerging City Regional Commission for Planning and Housing.

8 PLANNING FOR GREEN INFRASTRUCTURE FUNCTIONS

- 8.1 This chapter shows where green infrastructure functions are most important and sets out how these functions might be enhanced. The functions of City-Regional importance are listed at Chapter 4.

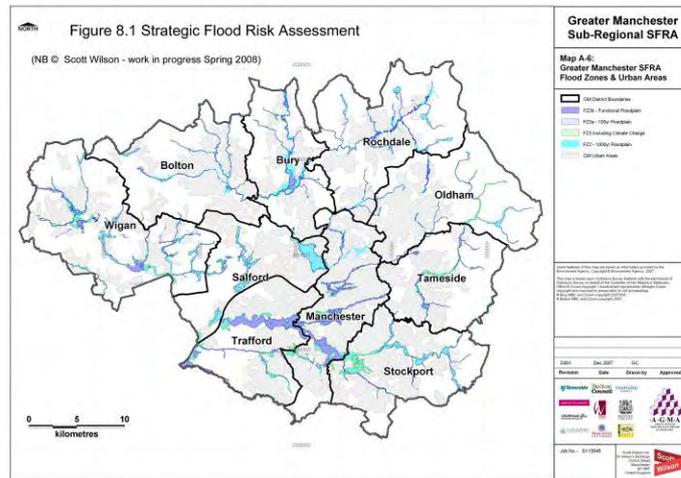
Flood Management Function

Objective

- 8.2 The flood management objective for green infrastructure is *'Greenspaces being used to manage rainfall and intercept stormflows to reduce risk of damage to urban property, particularly in the City centre and vulnerable urban regeneration areas such as Salford, East Manchester and central Rochdale. Additional benefits occur when these flood friendly greenspaces also provide places for wildlife, landscape and recreation'*.
- 8.3 Case studies from the River Roch and the Littleton Road playing fields in Salford (see Chapter 3) show how greenspace management upstream of town centres can brake storm flows, provide storage capacity, protect urban property and deliver landscape benefits.

Evidence

- 8.4 AGMA has commissioned a strategic flood risk assessment (Scott Wilson,2008). This shows projected flood zones allowing for climate change effects. Many urban areas and some proposed regeneration zones are in floodzones 2 and 3.
- 8.5 Figure 8.1 shows the strategic flood risk assessment. Additional evidence needed to plan for the flood management function of GI includes:
- a. catchment and sub-catchment boundaries (not available due to licensing restrictions);
 - b. analysis of soils in relation to their porosity;
 - c. intelligence on urban surface water sewerage infrastructure to identify which areas are in need of major refurbishment or are at capacity.
- 8.6 The UMT Dataset identifies how urbanised different areas are – this provides a proxy for how sealed the urban surfaces are; town centres, high-density residential and industrial areas being most sealed. These highly sealed areas are most vulnerable to flash flooding, thereby placing most pressure on underground surface water sewerage infrastructure.



Priorities

8.7 The city regional priorities for GI in relation to flood management are:

- Improving flood storage of existing greenspaces upstream of urban centres and urban regeneration areas;
- Protecting and improving the porosity and sponginess of soils and landscapes upstream of urban centres and regeneration zones (i.e. protecting soil conservation areas);
- Slowing the rate of urban run-off where existing surface water sewerage infrastructure is at capacity or in need of major investment;
- Making improvements to storage and porosity in a way that brings wildlife, landscape and recreational benefits

Criteria

8.8 TEP is asked to advise on criteria for selecting areas of city regional priority where GI is needed for its flood management function. TEP's advice (which will need cross-checking with SFRA conclusions) is:

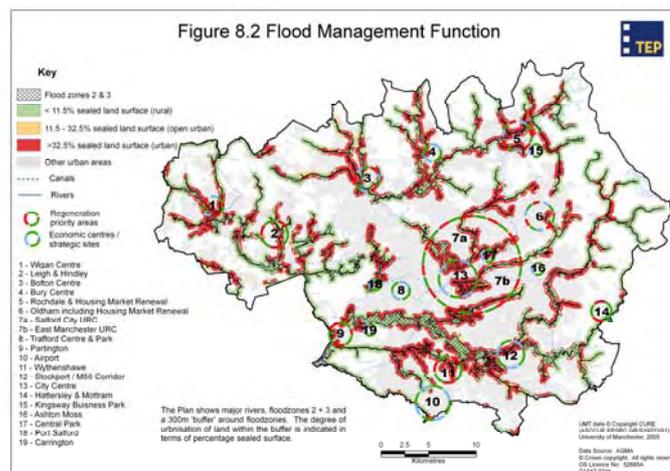
- Open land in and adjacent to Flood Zones 2 and 3 (including allowance for climate change adaptation) in and upstream of key economic centres – GI policy would be to examine ways of improving flood storage capacity;
- Managed greenspaces, farmland and urban green in soil conservation areas upstream of key economic centres – GI policy would be to improve infiltration, resist surface sealing and encourage tree-planting or other soil-friendly land-management;
- High density urban areas and proposed urban regeneration zones within catchments where surface water infrastructure is under pressure due to need for refurbishment or lack of capacity – GI policy here is to reduce surface sealing, implement green roofs and examine whether open spaces could be used as flood storage;
- In floodzones which are also key wildlife corridors or highly distinctive or very urban landscapes – GI policy would be to ensure that flood-defence measures incorporated habitat and access creation.

Spatial Representation

8.9 Figure 8.2 shows the flood zones and a 300m buffer around each flood zone. Within this buffered area, UMT data on the sealing of surfaces is shown. This plan identifies:

- Highly sealed urban areas in or near the flood zone – these areas are clearly at greatest risk of flood damage;
- Greenspaces in floodzones upstream of the major urban centres – these areas have greatest capacity for storing flood water and breaking storm flows.

8.10 Figure 8.2 also shows the location of key economic centres and urban regeneration priority areas.



8.11 Further work is needed to produce a detailed map of city regional priority areas of GI for flood management - in particular, information on catchment boundaries, topography, soil conservation areas and surface water sewerage infrastructure is needed.

LDF Response

8.12 As Core Strategies and Preferred Options are developed it will become evident that development in and near flood zone is necessary. This may put further pressure on the natural resilience of floodplains but may also present opportunities for creative multi-purpose GI solutions e.g. The Littleton Road flood basin playing fields discussed in Chapter 12. LDF policy can be formulated to promote the use of green infrastructure for flood management. LDF policy could:

- Identify flood zones and soil conservation areas where existing open land should be 1) protected for its storage function; 2) enhanced to add flood storage capacity;
- Identify built-up flood zones where new development or refurbishment should demonstrate a net improvement to flood storage capacity, requiring developers to consider use of green infrastructure to provide capacity;
- Promote the multi-functionality of any works undertaken for flood defence or storage purposes so as to stimulate landscape, wildlife and recreational benefits;

- d. Require flood risk and drainage assessments to consider green infrastructure approaches as well as traditional engineering approaches to water management.

Climate Adaptation and Mitigation Function

Objective

- 8.13 The objective for GI as climate change response is *'Vegetation cooling and shading urban environments. Carbon being stored in soils and woodland. Integrity of wildlife corridors and distinctive landscapes adjusting to a warmer climate'*.

Evidence

- 8.14 The UMT Dataset has been used by CURE to identify which areas of the City Region are potentially most vulnerable to heat island and warming effects. Areas of existing vulnerability are:
- a. High density residential areas, particularly communities where there is limited mobility due to age, illness or poverty;
 - b. Distinctive landscapes where there is an increased risk of fire, species extinction or soil erosion.

- 8.15 Areas of potential vulnerability are:

- a. Areas subject to residential densification or recycling of industrial land for residential use; where there is existing or potential deficiency of doorstep greenspaces and tree canopy

Priorities

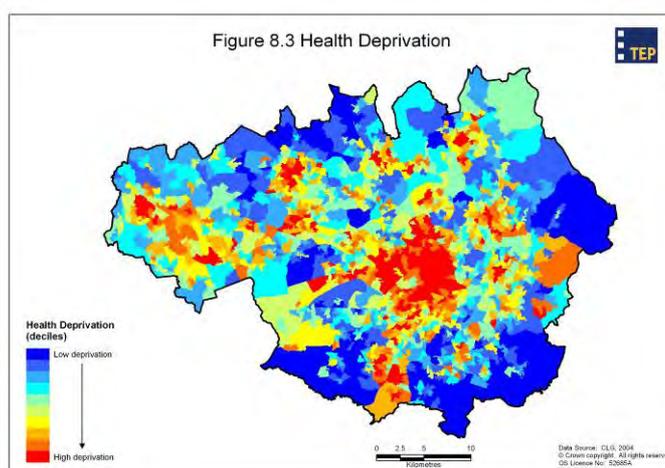
- 8.16 The priorities for the city regional GI framework are:
- a. To sustain and increase canopy cover and urban greenery in town centres, high density residential areas and in areas subject to urban regeneration and densification;
 - b. Ensure doorstep access to significant greenspaces and waterways and ensure such places are well managed;
 - c. Create and maintain corridors and/or 'stepping-stones' of greenspaces, especially south to north and lowland to upland;
 - d. Promote good land and soil management in landscapes of distinctiveness, particularly where these are important for carbon storage e.g. the Mosslands and the Pennine fringes;
 - e. Increase woodland cover, particularly on derelict and brownfield land where soils have little value for food growing and usually have little existing carbon storage.
 - f. Protect most efficient and irreplaceable soil-based carbon sinks e.g. deep peat soils.

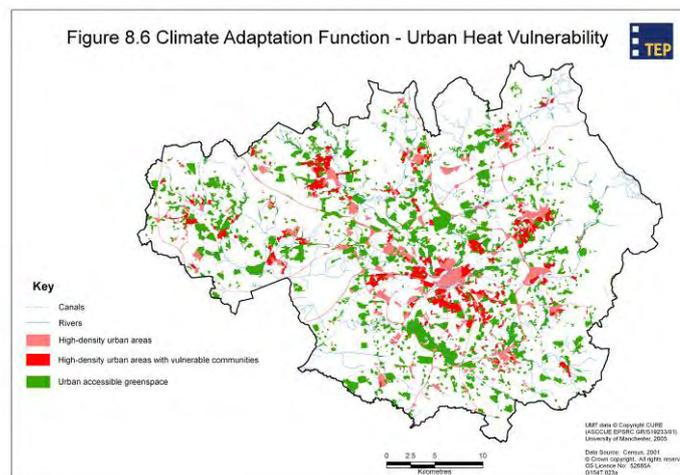
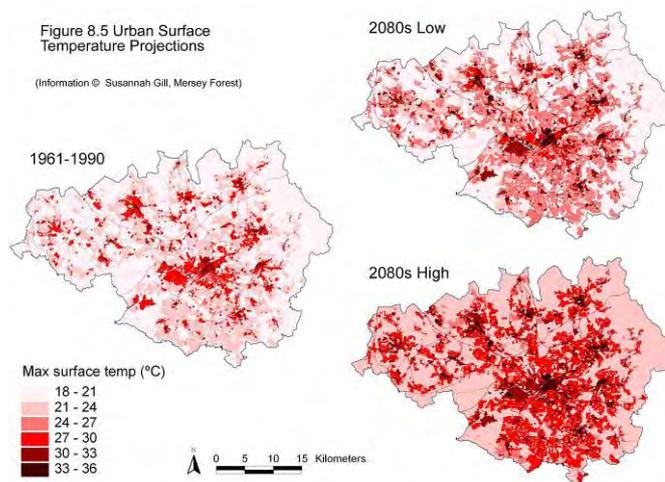
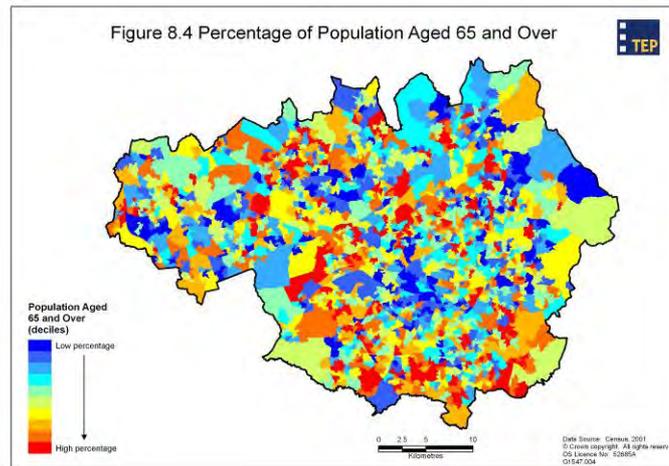
Criteria

- 8.17 TEP is asked to advise on criteria for selecting areas of city regional priority in relation to climate change adaptation:
- Ensuring good canopy cover and access to significant greenspaces in high density residential areas, areas of poor health, areas where there is a relatively high proportion of older people and other urban regeneration zones;
 - Protecting continuity of wildlife corridors along the rivers and waterway network and through the main areas of urban green shown in the ecological framework;
 - Management of the Mosslands, Pennine and Peak fringes to promote carbon-storage in soils;
 - In the major areas of brownfield land (Green Heart Regional Park, Irwell Valley, Roch, Medlock, Tame, Mersey Valleys and in East Manchester) to improve carbon storage through woodland planting and healthy soils.
 - Through use of green roofs and tree planting urban areas to promote carbon-storage as well as shade.

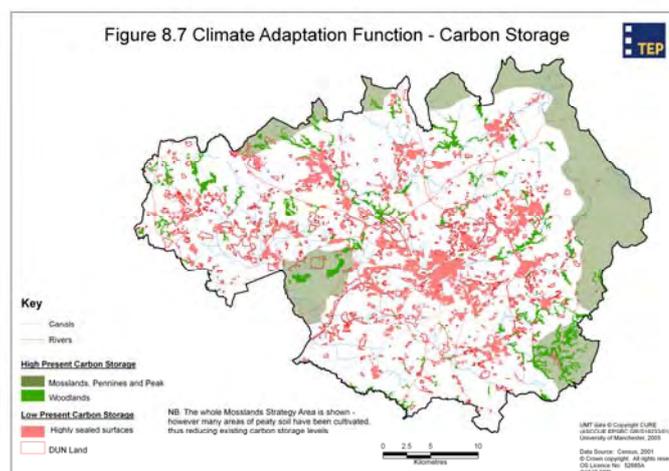
Spatial Representation

- 8.18 This is one of several functions where a streamlined and consistent typology map of landuse and landcover across the City Region would make it easier to identify priority areas for GI intervention. Nevertheless priority areas can be inferred from existing datasets.
- 8.19 Figures 8.3 and 8.4 show areas of poor community health and areas with relatively aged populations. Figure 7.1 shows the urban morphology types of high density also showing the location of urban greenspaces. Figure 8.5 shows areas most vulnerable to surface temperature rises. It would be possible to use this data to identify communities most vulnerable to future heat stress. One possible representation of vulnerability is shown at Figure 8.6 but ongoing work by CURE may improve the evidence base.





8.20 Another aspect of climate change is the need to promote carbon storage; both by protecting carbon sinks and by promoting healthy soil development on degraded/derelict land. Figure 8.7 shows where GI for carbon storage would be most effective.



LDF Response

- 8.21 A framework can map these priority areas. LDF policy would be to:
- Identify urban heat risk areas where development control policy should retain and/or replace existing canopy and greenery and also secure a net increase in green surface;
 - Apply ANGST type standards to ensure all new development provides doorstep access to strategic greenspaces and waterways and also secures contributions towards retro-fitting such accessibility into existing deficient urban areas. The use of ANGST standards such as two hectares greenspaces within 300m or ten minutes walk would be appropriate;
 - Identifying the city regional Ecological Framework and landscapes of distinctiveness in order to apply development control policy to avoid damage and improve the integrity of such areas.
 - Identify carbon sinks and promote soil conservation. Identify carbon-poor soils such as DUN land and highly sealed surfaces and promote soil restoration.

Ecological Framework

Objective

- 8.22 The objective for green infrastructure is '*Individual greenspaces sustaining local biodiversity; connected to each other to form habitat networks and "stepping-stones" valued by people*'.

Evidence

- 8.23 AGMA have commissioned Greater Manchester Ecology Unit and Salford University to produce an Ecological Framework for the City Region.

Priorities

- 8.24 The Ecological Framework has the following priorities:
- Conservation of core biodiversity areas;
 - Conservation/enhancement/creation of key wildlife corridors;
 - Maintenance of corridors and patches of urban green where the biodiversity associated with gardens and urban greenspaces is important;

- d. Restoration of eco-systems in presently fragmented landscapes.
- e. Creation of new biodiversity resources.

8.25 In addition the green infrastructure priorities associated with ecology are to ensure that the social and health benefits of contact with nature are realised. A further GI priority is to:

- a. Ensure that minimum standards of access to natural greenspace are available, including standards relating to nature within walking distance, within 2km and within 10km of people's houses.

Criteria

8.26 TEP is asked to advise on the criteria for selecting areas of city regional priority in relation to ecological aspects of GI:

- a. Protection of continuity of wildlife corridors, especially along rivers, waterways and through areas of urban green;
- b. Management of the core areas of biodiversity importance e.g. the Mosslands, the Pennine and Peak fringes and the river valleys;
- c. Ensuring minimum standards of access to natural greenspace and waterways in areas of urban regeneration and multiple deprivation;
- d. Creation of biodiversity priority habitats alongside the sustainable movement network and in parks in order to facilitate contact with nature and deliver multi-functional corridors.

Spatial Representation

8.27 Figure 7.4 shows the distribution of accessible greenspaces and waterways in relation to urban areas.

8.28 However present information on the naturalness of greenspaces is inadequate so **further work is needed to map actual deficiency in human access to natural areas.**

LDF Response

8.29 The Ecological Framework (when complete) will map biodiversity priority areas. LDF policy could be to:

- a. Identify core biodiversity areas and key corridors and promote conservation, restoration and enhancement of these areas;
- b. Maintain development control policies of restraint on development affecting designated sites and core areas;
- c. Adopt a policy promoting positive design for biodiversity in all areas. specific zones where particular emphasis is needed should be highlighted. For example, LDF might highlight areas of urban green where tree protection and re-planting is a priority;
- d. Apply ANGST type standards to ensure all new development provides doorstep access to natural greenspaces and, where necessary, secures contributions towards retro-fitting doorstep access in areas of deficiency or where access to greenspace is obstructed.

Sustainable Movement function

Objective

- 8.30 The objective for green infrastructure is *“Multi-user routes for recreation and commuting. People-centred routes in and around regenerating inner urban areas to enable doorstep access to the outdoor environment. Routes from urban areas to our Pennine, Peak, Cheshire and Lancashire countryside.”*

Evidence

- 8.31 Figure 7.6 shows the sustainable movement network (SMN) as is presently understood. As described in Chapter 7 this is a composite of multi-user routes pulled together by Red Rose and Pennine Edge Forests. It has limitations and requires a fundamental review in order to test it against modern agendas regarding healthy living and regeneration priorities. This is to ensure that it reflects the need for close to home trails and walks for people to use as well as longer distance, touristic routes.
- 8.32 Additional upgrading through stakeholder consultation is also recommended. Local Transport Plans, Rights of Way Improvement Plans and the delivery plans of organisations such as Sustrans all require review and consultation to prepare a revised plan for a sustainable network to meet the needs of an increasing city regional population.
- 8.33 Despite the difficulties in assembling a robust evidence base, nevertheless it is still possible to identify priorities for the sustainable movement function of green infrastructure.

Priorities

- 8.34 The priorities for the city regional GI framework are:
- a) to ensure that all regeneration priority areas and areas of lower than average health are served by an easily accessible movement network;
 - b) ensure doorstep access to green spaces and other places where the movement network can itself be accessed;
 - c) ensure that key green infrastructure assets are served by the SMN. This includes the strategic and regional parks;
 - d) ensure that the key economic centres are served by the SMN.

Criteria

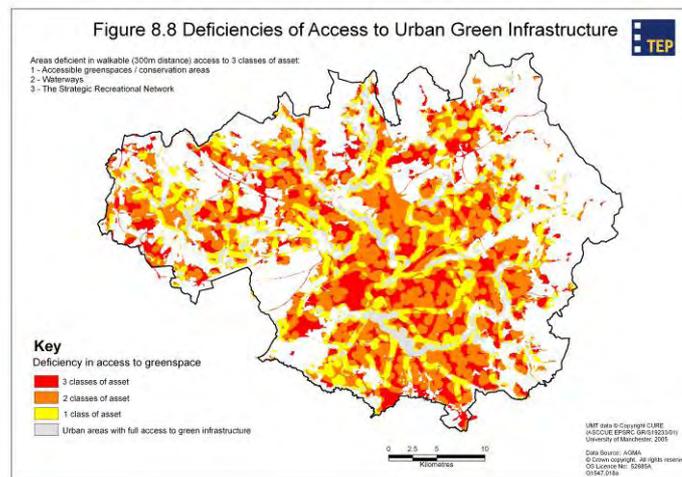
- 8.35 TEP is asked to advise on criteria for selecting areas of city regional priority in relation to the sustainable movement network;
- a) where there is a deficiency of access to greenspace within 300 metres of people’s homes, especially in areas of poor community health and in regeneration priority areas;
 - b) to serve the city regional green infrastructure assets such as the regional parks, strategic parks and core areas of natural and cultural heritage;

- c) along wildlife corridors and greenways (accepting that sensitive design will be needed in places to minimise conflict).
- d) in and through the key economic centres .

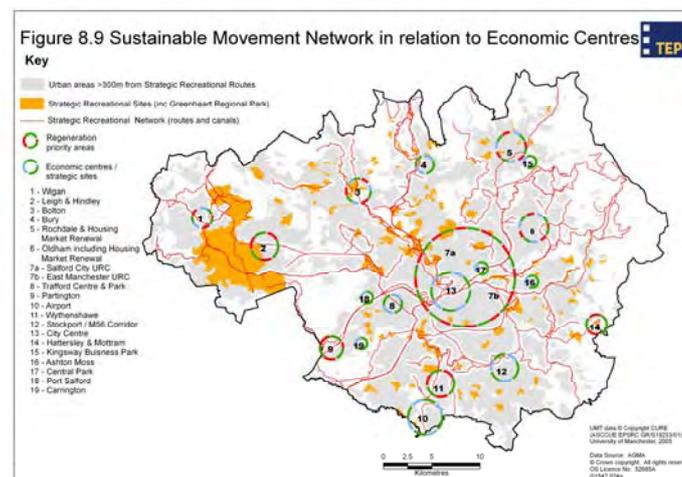
Spatial Representation

8.36 Figures 8.3 and 8.4 show the areas where there is relatively poor community health or relatively high numbers of elderly people.

8.37 Figure 8.8 (provisionally) identifies where there is relative deficiency in doorstep (300 metres) access to greenspace or waterways or the existing sustainable movement network. Areas of multiple deficiency particularly combined with poor health are priorities for investigation as to whether a SMN is appropriate to address such deficiency.



8.38 The SMN must run through and serve the key recreation sites. It is equally important that the SMN provides access from people’s houses to the core areas of asset and also to economic centres. Figure 8.9 shows how the SMN relates to urban areas and the regeneration and economic centres. A coordinated approach to the SMN across the city region will require stakeholder involvement.



LDF Response

- 8.39 LDF policy could be to:
- a) identify the sustainable movement network at city regional and local levels in plans and promote the creation, upgrading and improvement of access to the SMN.
 - b) apply ANGST type standards to all development to ensure that there is doorstep access to the sustainable network and, where necessary, secures contributions towards retrofitting doorstep access in areas of deficiency of access to the SMN and greenspaces in general
- 8.40 It is appreciated that LDFs cannot presently relate policy to a centrally agreed SMN. Nevertheless, in its absence, LDFs can still promote multi-user access to their own adopted networks of greenways and existing rights of way. However, the development of a city regional spatial framework for the SMN is a priority.

Place-Making Function

Objective

- 8.41 The objective for green infrastructure is *“Distinctive and vibrant civic spaces, landscapes and townscapes. Encouraging use and appreciation of the City’s natural and built heritage of rivers, canals, woodlands, moorland fringes, mills, parks and modern architecture”*.

Evidence

- 8.42 The former Countryside Agency published joint Character Area Assessments of the landscape character of the city region. This divides it into a number of large character areas such as the Urban Mersey Basin, Pennine Fringes etc. The character assessment describes the features of local distinctiveness and quality for each of the distinct areas.
- 8.43 RSS policy EM1 identifies the importance of regional and city regional distinctiveness but does not have a spatial representation of character. Instead the city region is asked to develop its own landscape and heritage framework.
- 8.44 Some local authorities in the city region have carried out landscape and/or townscape assessments but there is no consistent and contemporary description of landscape and townscape character across the city region.
- 8.45 Mapping associated with this report has taken an asset orientated approach showing urban greenspaces, waterways, conservation areas and, at a broader scale, core areas of natural and landscape heritage.

Priorities

- 8.46 The priorities for the place-making function and green infrastructure in the city region are:
- a) to safeguard and encourage sensitive enjoyment of core areas of natural and landscape heritage;

- b) to encourage access to greenspaces, conservation areas and multi-user routes which are within these core area or lead towards or lead towards these core areas from residential neighbourhoods.
- c) to ensure a distinctive quality of place in major economic centres and transport corridors;
- d) to ensure high quality of design particularly of public realm in regeneration priority areas.

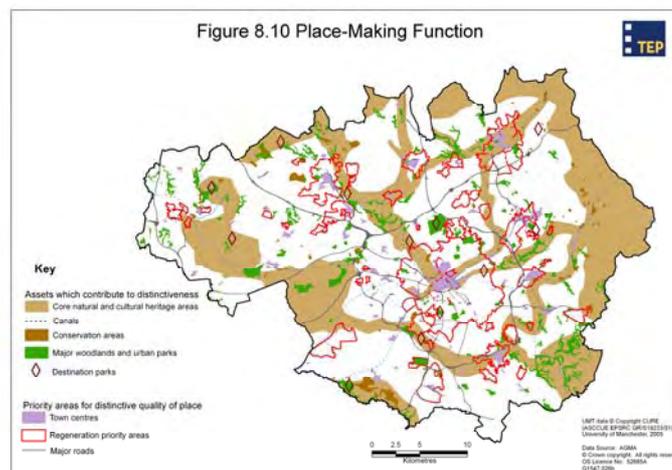
Criteria

8.47 TEP is asked to advise on criteria for selecting areas of city regional priority in relation to the place making function:

- a) ensuring a high quality of environmental design and management of the public realm and parks in existing economic centres and along the major transport corridors;
- b) ensuring urban regeneration priority areas safeguard features of distinctiveness and create high quality accessible open spaces, particularly in housing market renewal areas and other areas of landscape transformation;
- c) areas highlighted in the sub-regional action plan as important places for green infrastructure e.g. the regional parks, the Irwell City Park and public realm of town centres and the city centre;
- d) in other areas where there is a concentration of derelict land, particularly alongside transport corridors.

Spatial Representation

8.48 Green infrastructure’s place making function is illustrated at Figure 8.10. This shows areas where there is already an existing high quality distinctive landscape which should be safeguarded. The figure also shows areas such as the economic centres and the regeneration priority areas and transport corridors where the place making function is of the highest priority.



8.49 The development of a city regional landscape and heritage environmental framework (as promoted in RSS Policy EM1) should highlight areas where multi-functional greenspaces are most important to conserve and/or create landscape distinctiveness.

LDF Response

8.50 Most LDFs are developing policy on local distinctiveness, relating this particularly to quality of new build, using townscape and landscape character assessment to inform development control procedures.

8.51 LDF policy on green infrastructure should emphasise the contribution that open spaces can make to local distinctiveness.

8.52 With this in mind LDFs could:

- a) promote high quality of environmental design in all developments, by reference to external design guides or their own SPD;
- b) encourage local stewardship of greenspaces;
- c) identify, either spatially or thematically, features of local distinctiveness associated with the area's green infrastructure;
- d) safeguard and enhance these features through development control.

River and Canal Corridor Management

Objective

8.53 The objective for green infrastructure is *"Accessible waterways with improving water quality, supporting regeneration and providing opportunity for leisure, economic activity and biodiversity"*

Evidence

8.54 The River Valleys and the Waterways have long been subject to environmental strategy. In the 1970s the Croal-Irwell Plan, for example, was a cross-boundary approach to environmental regeneration. The Mersey Basin Campaign has led an era of transformation of the city-regions waterfront and water quality. All UDPs have positive policy encouraging sensitive waterfront development, promoting access and encouraging interventions that improve water quality. There are various waterways and river valley strategies associated with most of the waterways; although some are rather historic.

8.55 Environment Agency and AGMA are responding to issues of ongoing flood management and water quality improvement through a Strategic Flood Management Assessment and through River Basin/Catchment Management Plans.

8.56 There is a wealth of detailed evidence of current and historical riparian land use, flood zones and water quality data held by the Environment Agency. Licencing restrictions mean that it is not easy to translate this evidence into publicly-available maps.

Priorities

8.57 The city regional priorities for GI in relation to river and canal corridor management are:

- a) to enable multi-user access alongside all waterways (rivers and canals);
- b) to ensure open land alongside waterways is managed in a way that encourages biodiversity, improves flood storage and improves water quality, so that all rivers reach Environment Agency objectives for biological and chemical quality.

Criteria

8.58 TEP is asked to advise on criteria for selecting areas of city-regional priority where GI will improve river and canal corridor management:

- a) multi-user access alongside all waterways (rivers and canals) in regeneration priority areas and in the core natural and cultural heritage areas;
- b) waterside wildlife corridors and greenways of city-regional importance;
- c) promotion of riparian GI as a cost-effective means of helping improve water quality, particularly in the Irwell catchment which serves the City Centre, several town centres and is also most affected by the historic legacy of industrialisation.

Spatial Representation

8.59 Figure 8.2 (Flood Management Function) shows the river corridors and how they relate to regeneration and economic priority areas – it is evident that the quality of waterways has a direct effect on the quality of public realm and liveability of many priority areas.

8.60 **It would be useful to incorporate data on water quality, and in particular, maps showing where water quality targets might be most feasibly delivered by management of GI alongside the waterways – however, this analysis is not available.** Environment Agency commissioned a GIS study of the Irwell in Greater Manchester which mapped historic land uses and compared this with water quality to identify feasibility and priority of land-use interventions to improve water quality (Peter Brett Associates, 2006).

LDF Response

8.61 LDF policy can be formulated to promote good management of riparian open spaces. Existing UDPs already have strong policy regarding waterfront development, promoting waterside access and high-quality design.

8.62 Many of the waterways have landscape masterplans (or elements of them), albeit that some are now historic. LDFs could promote updating of landscape and river restoration/management strategies for the main waterway networks. Subsequent development control policy could promote activity to deliver the waterways strategies

- 8.63 ANGST-type standards could be applied to ensure all new development provides doorstep access to waterways (where appropriate) and also secures contributions towards retrofitting such accessibility into deficient urban areas.

Positive image and a setting for growth

Objective

- 8.64 The objective for green infrastructure is *“well-designed and managed public realm, speaking of the City Region’s brand as a green and world-class city region”*

Evidence

- 8.65 The Sub-Regional Action Plan stresses the need for transforming image and notes priorities such as the Regional Centre, town centres, economic gateways, regional parks and regeneration priority areas.
- 8.66 The Regional Economic and Spatial Strategies also identify various strategic sites where major commercial and technological development is to be concentrated e.g. Oxford Road, Kingsway Business Park, Ashton Moss.
- 8.67 The transport corridors and gateways are also critical to perception of the City region as a vibrant economic centre.

Priorities

- 8.68 The priorities for the city-regional GI framework, with respect to image, are:
- a) City and town centres;
 - b) Strategic Economic Sites;
 - c) Major transport corridors and gateways.

Criteria

- 8.69 TEP is asked to advise on criteria for selecting areas of city-regional priority for GI in relation to image. The criteria closely mirror the priorities set out in the SRAP and the RES/RSS:
- Ensuring a high quality of public realm in:
 - a) the Regional Centre;
 - b) key urban centres;
 - c) Housing Market renewal areas;
 - d) Urban Regeneration Company areas;
 - e) Strategic Economic Sites
 - Ensuring that land visible from the main transport corridors and gateways is well-managed and includes elements of local distinctiveness. This is particularly relevant where the transport corridors pass through core areas of natural and cultural heritage which should be conserved and interpreted. It is also relevant where the transport corridors pass through regeneration priority areas and areas where there is a concentration of derelict, underused and neglected land

Supporting urban regeneration

Objective

- 8.72 The objective for green infrastructure is *“Accessible, clean, safe and high-quality green spaces that provide economic and community benefits to all sectors of our growing, diversifying and ageing population; particularly important in areas of deprivation and transformation”*

Evidence

- 8.73 Figures 7.3 and 7.4 show areas of relatively poor health and areas where there are relatively high numbers of elderly people. One caveat is that some of the underlying data is now over 6 years old and the city region is rapidly repopulating.
- 8.74 There are many area based regeneration initiatives which have targeted areas of deprivation and poor economic performance. These include urban regeneration companies in East Manchester and Salford, Housing Market renewal areas in East Manchester, Salford, Rochdale and Oldham, SRB areas and, more recently, areas in the lowest 3% of Quality of Life (from the Index of Multiple Deprivation).
- 8.75 Figure 7.4 shows the distribution of accessible urban green infrastructure assets - these are relatively less present in the regeneration priority areas.
- 8.76 Nevertheless, the regeneration priority areas do contain a number of features which have particular cultural and townscape value; for example the Rochdale Canal, the Irwell, the Ashton canal corridor and the Huddersfield narrow canal corridor.
- 8.77 The use of ANGST standards to map deficiencies and access to urban green infrastructure has not been tackled on a city regional basis. There have been a number of PPG17 audits at local authority level but these do not always include for access to green infrastructure assets in their entirety. In addition there does not appear to have been any future-proofing of PPG17 work to take account of areas of transformation.
- 8.78 There is therefore a need for spatial representation of areas of transformation, repopulation and their requirements for access to green infrastructure. Nevertheless the quality of evidence is powerful in relation to the spatial priorities for green infrastructure to support regeneration.

Priorities

- 8.79 The city regional priorities for green infrastructure in relation to urban regeneration are:
- a) ensuring areas of community need in regeneration priority areas are not deficient in access to greenspaces, waterways and the sustainable movement network. The regeneration priority areas are covered by the range of existing designations such as URC, HMR, SRB Legacy and 3% IMD;
 - b) addressing deficiencies in access to green infrastructures through creation of multi-functional spaces, especially for outdoor sport and activity;

- c) protecting and building distinctiveness of townscape character especially through positive management of rivers and canals and civic spaces;
- d) ensuring climatic and flood proofing of the urban regeneration areas – many are in or near flood zones.

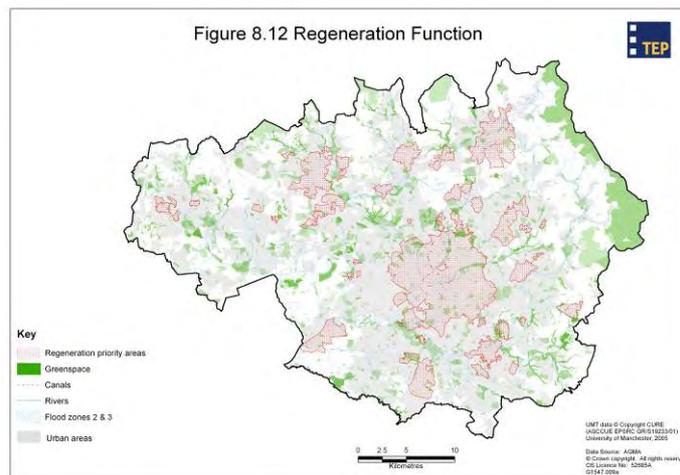
Criteria

8.80 TEP is asked to advise on criteria for selecting areas of city regional priority where GI is needed for urban regeneration:

- a) areas of major regeneration and transformation and growth;
- b) areas in the worst 3% IMD nationally and/or the worst 10% within the sub-region;
- c) areas where there are deficiencies in access to greenspace and waterways and strategic recreational routes;
- d) management and enhancement of the assets of strategic importance e.g. the regional parks, the main river and canal corridors and other strategic parks and recreation sites.

Spatial Representation

8.81 Figure 8.12 shows the regeneration priority areas with a backdrop of greenspaces and waterways. It is apparent that the main regeneration priority areas are relatively deficient in green infrastructure. Figure 8.8 shows deficiencies of access to urban green infrastructure, illustrating that some of the regeneration priority areas are deficient in several classes of access e.g. urban green spaces, waterways and the strategic recreational network. It also demonstrates that some regeneration priority areas are close to a number of green infrastructure assets e.g. the Salford URC is relatively close to the GI assets of the Lower Irwell Valley.



8.82 The maps demonstrate the deficiencies and opportunities for green infrastructure improvement in regeneration priority areas. However there is a need for a city regional approach to setting green infrastructure standards and identifying deficiencies, because of the need to improve green infrastructure in regeneration priority areas.

8.83 In the absence of robust standards for accessibility, quality, quantity and functionality of green infrastructure in regeneration priority areas and areas of growth, it will be difficult for planners to uplift quality of GI in such areas.

LDF Response

8.84 Local authorities, working in collaboration, should identify functional deficiencies to a variety of types of green infrastructures in and around regeneration priority areas. This can use PPG17 techniques and ANGST standards.

8.85 This could lead to green infrastructure masterplans for such regeneration priority areas which could be endorsed through the LDF process.

8.86 Appropriate responses within LDF policy would be:

- a) Apply ANGST type standards to ensure all new development provides doorstep access to strategic greenspaces and waterways and also secures contributions towards retro-fitting such accessibility into existing deficient urban areas. The use of ANGST standards such as two hectares greenspaces within 300m or ten minutes walk would be appropriate;
- b) promote multi-functionality of open spaces in regeneration priority areas, in particular identifying the particular needs and opportunities specific to neighbourhoods undergoing transformation;
- c) promote retention and creation of public realm of distinctiveness, focussing particularly on waterways, canals and existing parks;
- d) promote a masterplan approach to GI on both a neighbourhood and a regeneration priority area basis;
- e) apply BREEAM standards for new development with particular reference to biodiversity and land use criteria and apply CABE and other design quality coding.

8.87 A good example of guidance that can be given for developers is the Manchester Guide to Development which requires enhancement of design and access statements in the form of a supplementary environmental standards statement which encourages developers to consider aspects of green infrastructure.

Community, health and enjoyment

Objective

8.88 The objective for green infrastructure is *"Greenspaces which are specifically managed to provide opportunity for healthy, active lifestyles, social networking, cultural and community events"*.

Evidence

8.89 Figures 7.3 and 7.4 show levels of community health and some demographic patterns. The pattern of UMTs across the city region (Figure 7.1) shows the main areas of residential use. Overall this pattern will largely stay the same but there will be areas of transformation in and around the city and town centres where

other uses such as manufacturing, offices and storage will tend to become more mixed with increasing residential use.

- 8.90 There is no city regional assessment of deficiencies and satisfaction with quantity and quality of open spaces. Various local authorities have carried out PPG17 audits and used citizen's panels to measure quality of life. These measures include for satisfaction with neighbourhood parks and open spaces. Several local authorities in the city region promote Green Flag parks as a way of stimulating community involvement.
- 8.91 There are many examples of good practice in community involvement in open space management and there are local audits which identify priorities for increasing community use of green space. This is not pulled together into a city regional analysis.

Priorities

- 8.92 The priorities for the city regional GI framework in relation to community, health and enjoyment of open spaces are:
- a) areas of lower than average health;
 - b) areas where there are relatively high proportions of elderly people;
 - c) housing market renewal and urban regeneration company areas;
 - d) residential areas, particularly near town centres where there are likely to be deficiencies in access to green space because of historic patterns of high density development and industrial/commercial uses;
 - e) areas of derelict, underused and neglected land;
 - f) other areas where there is deficiency of accessibility to urban green infrastructure.

Criteria

- 8.93 TEP is asked to advise on criteria for selecting areas of city regional priority in relation to community, health and enjoyment;
- a) areas of major transformation and regeneration;
 - b) areas where there is deficiency in access to urban green infrastructure;
 - c) areas where PPG17 audits and citizens panels indicate dissatisfaction with quality of life based on open spaces.
- 8.94 Some of these aspects can only be tackled through local knowledge. Nevertheless, it is possible to identify the major areas of transformation and regeneration priority.

Spatial Representation

- 8.95 Figure 8.12 (Regeneration Function) shows the primary areas of need. Figure 8.8 shows the areas where there is a apparent deficiency of access to green

infrastructure. Figure 8.10 (Place Making Function) and Figure 8.11 (Image Function) also show the priority areas in and around town centres where it is most important for a high quality of green infrastructure to support a good quality of life as the city region grows.

LDF Response

- 8.96 This aspect of green infrastructure is one which requires good local intelligence about standards and community involvement in open space management. Many local authorities are collecting evidence from PPG17 audits as to priority areas or improvements green infrastructure. A crucial part of the LDF evidence base will be up-to-date information on quantity, quality, accessibility and functionality of each local authorities existing green infrastructure. This can be achieved by an extension to PPG17 work, particularly examining multi-functionality of existing green infrastructure assets in relation to the local community needs.
- 8.97 In LDF's policy could be to;
- a) promote ANGST type standards (modified to suit local needs) to ensure multi-functionality and accessibility of open spaces;
 - b) promote the work of community forests and neighbourhood management groups in the planning, design and management of green spaces;
 - c) ensure that, in areas of relatively low community health and/or elderly demographics, doorstep greenspace is managed well to ensure community safety.

9 A SPATIAL FRAMEWORK FOR GREEN INFRASTRUCTURE

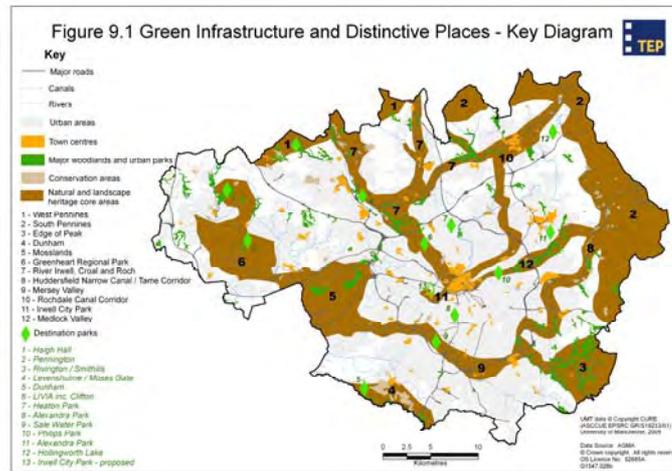
- 9.1 This chapter brings together all the current evidence about GI assets and functions. It illustrates a possible spatial framework for green infrastructure planning in the form of key diagrams. Once validated through further study and consultation, the diagrams presented below could be adopted by the City Region Commission as the basis for a Greater Manchester Strategy.
- 9.2 In Chapter 7, the GI assets of the City Region were described and illustrated. These fall into 5 classes of asset:
- Urban greenspaces, civic spaces and waterways
 - Wildlife Corridors, Stepping-Stones and Greenways
 - Sustainable movement network
 - Landscapes of distinctiveness
 - Urban Green
- 9.3 In Chapter 8, the priority areas for the functioning of green infrastructure were identified. These relate to the 8 functions (objectives) of GI for the City Region:
- Flood Management
 - Climate Change Adaptation
 - Ecological Framework
 - Sustainable Movement
 - Sense of Place
 - Image and Design quality
 - Urban Regeneration
 - Community, health and enjoyment.
- 9.4 Of course many of the priority areas overlap – the river valleys provide (or could provide) multiple functions.
- 9.5 The abundance of mapped information on assets and functions can be synthesised into a series of Key Diagrams illustrating City-Regional priorities for GI. These key diagrams must be seen as the tip of an iceberg – they summarise a bulk of information.
- 9.6 The following diagrams illustrate the spatial priorities for GI planning in the city region.
- 9.7 Four Key Diagrams illustrate where GI delivers (or could deliver) the growth-support functions of city regional priority;
- Distinctive Places
 - Urban Renaissance
 - Sustainable Movement
 - Climate Change

Overview of methods used for identifying spatial priorities for strategic GI in Greater Manchester.

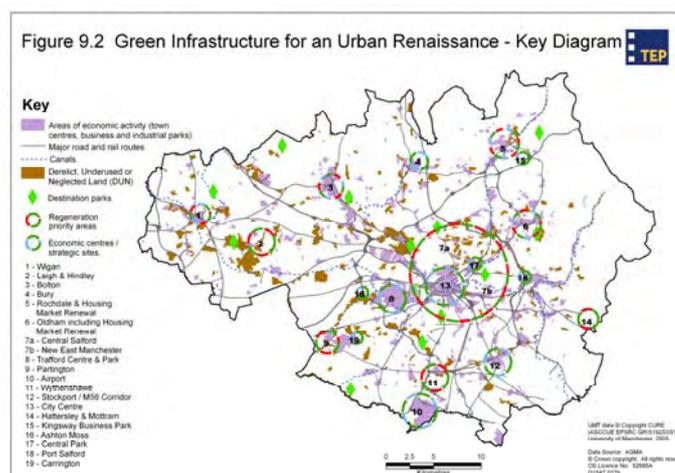
Spatial priorities must be derived from best available evidence about environmental conditions and socio-economic priorities. Spatial analytical techniques were used, using datasets assembled by Red Rose Forest and AGMA:

- Mapping of patterns of settlement and open spaces (using urban morphology types provided by CURE).
- Mapping and characterisation of GI assets (green spaces, rivers, canals, Conservation Areas, sites of biodiversity value, landscapes of natural and cultural distinctiveness, wildlife corridors and greenways).
- Mapping of social and demographic patterns (deprivation, economic activity, demographic trends).
- Consideration of where the GI functions are most needed for growth of the city region.

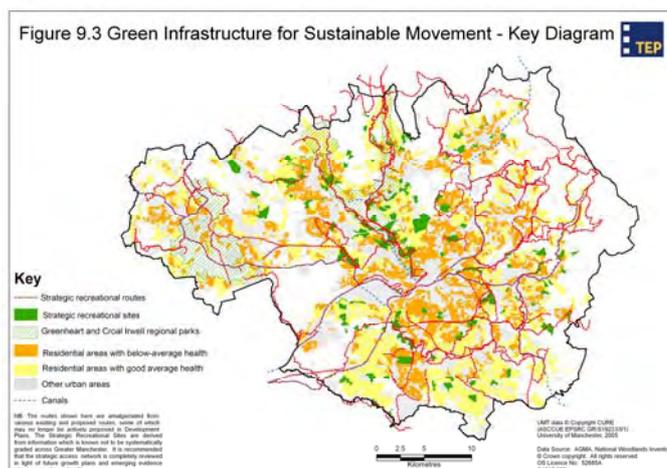
- 9.8 The Ecological Framework, when complete, should become a Key Diagram within the green infrastructure spatial framework.
- 9.9 A summary diagram highlights the City-regional priority areas for GI investment. TEP recommends this as a draft for the GI spatial framework.



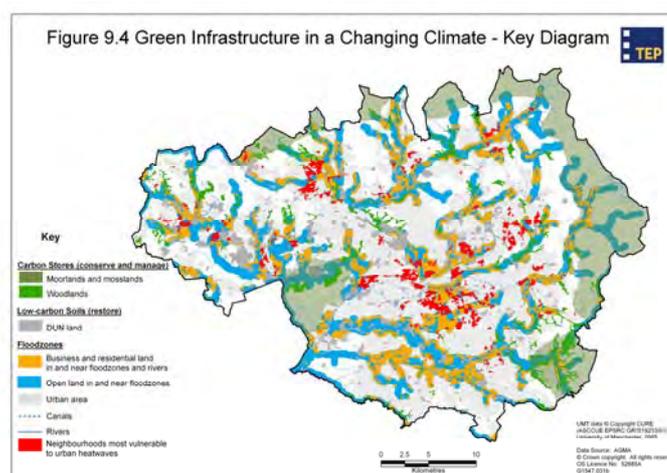
- 9.10 This map illustrates places which have greatest quality, character and/or visibility. Here GI is critical to conserving or creating a distinctive sense of place; which in turn will add to the attraction of the City Region. The Core Areas (such as the Pennine and Peak fringes, the major canal and river corridors, the Mosslands), already have great distinctiveness which needs to be safeguarded and promoted. GI investment is needed in town and city centres and major transport corridors to raise quality of public realm. The Regional parks and destination parks are important for the visitor economy, and merit safeguarding, enhancing and networking.



- 9.11 This map shows areas of greatest transformation and/or need. Regeneration priority areas have social and health needs which could, in part, be addressed through improved green infrastructure. Economic centres and strategic sites merit top-quality public realm. Destination parks feature as economic drivers. DUN land is shown as a continuing priority for greening, due to its ongoing blight on local community cohesion, health and economic prospects, and often its visibility.



9.12 This map shows that neighbourhoods with below-average health (shown in amber) tend to be poorly provided in terms of recreational sites and routes. There is a need to review the overall provision of multi-user routes so as to provide not only middle-distance routes (such as those shown), but also close-to-home and circular routes in areas of need.



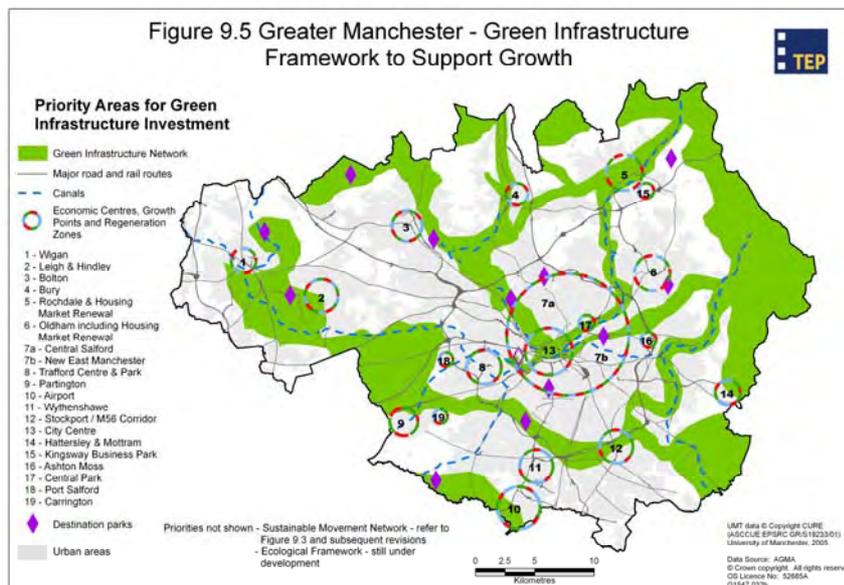
9.13 The major carbon stores of peaty soils and woodlands (shown in shades of green) merit conservation management. DUN land (grey) has low present carbon but could be reclaimed to lock-up carbon in healthy soils and woodland planting. The map shows (in red) communities most vulnerable to heat stress (by virtue of high-density housing and below-average health). Blue floodzones and adjoining land are open space which could reduce downstream risk through attenuation. Amber shows developed areas where GI could slow storm run-off. TEP recognises that there may be more accurate datasets which could pinpoint best stress vulnerability.

9.14 Finally, the Ecological Framework (GMEU/Univ. of Salford, in progress) should be incorporated as a Key Diagram when complete. It will show core biodiversity areas, corridors and zones of priority for habitat creation.

City Regional Priorities for Green Infrastructure

- 9.15 Based on research to date, the spatial priorities for green infrastructure at a City-Regional scale are shown in Figure 9.5. It must be read in conjunction with the more detailed key diagram maps presented above.
- 9.16 Some areas are critical GI to sustain city growth. The appropriate policy and strategy response will be different for each area.
- 9.17 The plan shows the following:
- A Green Infrastructure Network consisting of river valleys, canal corridors, uplands, mosslands, city spaces and major countryside resources. The network provides a grid which collectively can deliver many of the growth-support functions needed for Greater Manchester such as flood-management, recreation, sport, biodiversity and community activity.
 - Major Road and Rail Corridors which are important in defining the image of the City Region. GI can improve image and also play a role in mitigating adverse environmental quality.
 - Canals offer opportunities for access and environmental improvements to sustain growth.
 - Economic Centres, Growth Points and Regeneration Zones are central to the growth and regeneration strategies of the City Region. Many will experience major physical and population transformation. The GI priority is two-fold;
 - firstly to ensure access to, and management of the GI Network that sustains the area;
 - secondly to ensure that new developments attain high environmental design quality in respect of new and existing open spaces, SUDS etc.
 - Destination Parks – the major multi-functional parks.
- 9.18 Because of prematurity, it is not possible to accurately represent the following GI priorities:
- The Sustainable Movement Network – a network of multi-user routes including ‘people-centred’ and ‘close to home’ circular routes which can facilitate a goal of ensuring all people can quickly reach the GI Network/Destination Parks/Economic Centres. Further research is needed to verify the existing status of the SMN and identify priorities for new routes.
 - The Ecological Framework currently being developed by GMEU and University of Salford.
- 9.19 Although these are not shown, TEP is confident that they will be compatible with the priorities shown on the plan.

- 9.20 Some GI requires safeguarding and enhanced management e.g. the carbon-rich, distinctive and biodiverse uplands. Some GI requires enhancement and restoration e.g. the regional parks. In some cases, existing GI assets need to be made more accessible to a wider range of people e.g. sustainable movement networks, regional and destination parks. In some cases, GI needs to be created e.g. NEWLANDS restoration of community woodland on derelict land in the regional parks and river valleys.
- 9.21 This GI priority map (overleaf) responds well to the City Regional guidance in RSS, which recommends a focus on GI in and around the Regional Centre and other town centres, and in areas of major regeneration, brownfield sites, transport corridors and the Regional Parks. (Policies EM3, EM4 and MCR1). It also responds to the New Growth Point proposal confirmed by Government in July 2008 by promoting GI in and around the areas where growth and transformation will occur.
- 9.22 A GI framework needs to recognise that not all priorities can be represented on a set of Key Diagrams. For example there may be compact pockets of significant deprivation or areas of environmental interest that merit investment to meet City Regional goals. Such GI priorities can be identified using criteria of strategic importance. For example Bury MBC's Core Strategy (Preferred Options) identifies GI as being strategic if it meets the following criteria;
- more than local importance;
 - contributes to multiple environmental objectives;
 - is linked to urban area growth/regeneration points
 - has cross-boundary significance (eg is part of a wider network)
 - supports city-regional or regional growth priorities



10 GREEN INFRASTRUCTURE IN LOCAL DEVELOPMENT FRAMEWORK

- 10.1 If a GI Strategy is to be relevant to development and growth, it must be embedded in Local Development Frameworks (LDFs). Chapter 8 has listed a number of ways that LDFs could identify and prioritise GI. Key diagrams illustrating spatial priorities for GI are shown at Chapter 9.
- 10.2 TEP were asked to address two primary questions in relation to the LDF procedure:
- How may Core Strategy formulate appropriate policies to promote Green Infrastructure?
 - How can more detailed policy be formulated? (e.g. as thematic policies addressing functions or a more coherent suite with explicit linkages? As a further DPD on green infrastructure? Through proposals in Action Plans?)
- 10.3 In considering the questions above, case studies on emerging policy and development plan documents have been reviewed. A summary of these are included with hyperlink references below. A commentary on the relevance of these case studies to Manchester City Region is given.

East London Green Grid

- 10.4 Reference has been made to this Green Infrastructure strategy elsewhere in this report (Chapter 12). The Green Grid forms a GI strategy for several East London Boroughs which addresses health, flood management, cultural and townscape distinctiveness, biodiversity, deficiencies in access to greenspace and creating a setting for regeneration. There is a good evidence base in the form of maps and guidance on the GI assets and deficiencies in several 'sub-areas'.
- 10.5 The office of the Mayor of London has issued Supplementary Planning Guidance advising London Boroughs of the components of the strategy that should be included in their Local Development Frameworks although there is no prescriptive guidance on which layers of LDF should have GI policy.
- 10.6 The Green Grid supports an East London sub-regional development framework (SRDF). This SRDF instructs LDFs to implement the Green Grid. This imperative issued from the Mayoral office is, at present, unique to the context of London.
- Commentary for Manchester City Region (MCR)*
- 10.7 East London is an older urban area undergoing regeneration with similar issues of social deprivation to those facing parts of MCR. The Green Grid presents a level of sub-regional mapping which is useful in demonstrating that much GI and opportunity can relate to physical geography. This is similar in MCR where the river corridors, for example, are important GI assets that cut across the political boundaries of planning authorities and the need to map and plan for opportunities needs to take account of cross-boundary assets.

- 10.8 The Mayoral imperative to formulate GI policy is not applicable in MCR. This level of 'top-down' guidance within an established framework for planning at the city region scale gives a context within which the sub-regional development framework and particularly SPG which promotes the Green Grid can be defined.

10.9

References and Links

East London Green Grid Primer

<http://www.london.gov.uk/mayor/auu/docs/elgg-primer.pdf>

East London Sub-Regional Development Framework (see s.4 in particular – page 69)

<http://www.london.gov.uk/mayor/planning/srdf/docs/east-srdf.pdf>

East London Green Grid Supplementary Planning Guidance

<http://www.london.gov.uk/mayor/strategies/sds/docs/spg-east-lon-green-grid-08.pdf>

Barking and Dagenham Borough

- 10.10 The east London Borough of Barking and Dagenham has a Preferred Options Core Strategy which does not explicitly mention green infrastructure, or even the East London Green Grid!
- 10.11 Nonetheless its Core Strategy has a set of policies which cover all the GI functions that are required by the East London Green Grid SPG, including those of a regenerative and economic nature. Its Key Diagram is supported by maps showing a hierarchy of open space (assets that can be protected and enhanced) and open space deficiencies (where opportunities for GI should be sought and secured).

Commentary for MCR

- 10.12 This example shows it is possible to prepare Core Strategy without an explicit GI policy and still formulate policy in relation to relevant social, economic and environmental priorities that GI can help to address. However, it seems unusual not to refer to the Green Grid and the omission could miss an opportunity for strengthening the basis for inclusion when testing 'soundness' (see below). Whilst the key points of the Green Grid appear to be addressed in the CS, making these explicitly linked to the sub-regional framework would reinforce the linkage.
- 10.13 The timetables for preparing and implementing the revised planning system are much greater than was originally envisaged when the measures were published by central government. Aside from the general delay in implementing policy, this has also meant that there are omissions which appear from time to time between different levels of policy.
- 10.14 Establishing a common overall framework and some common vocabulary for GI within the MCR would assist in demonstrating an integrated and consistent approach across districts.

References and Links

The Barking and Dagenham Core Strategy

<http://www.barking-dagenham.gov.uk/8-leisure-envir/planning/local-dev-framework/pdf/core-strategy/core-strategy-full-report.pdf>

(Appendices with maps download separately)

Thurrock (Essex, in Thames Gateway)

- 10.15 Thurrock Council's Green Grid Strategy is incorporated into the LDF. It is the local expression of a sub-regional Green Grid, but also benefits from a borough-level green infrastructure study. The Thurrock Green Grid incorporates sites and approaches synthesised from the Borough Green Infrastructure Framework, the Biodiversity Strategy and the Open Space Study.
- 10.16 The Green Grid is prominent in Core Strategy, with its own Spatial Policy (CSSP5: Sustainable Green Grid), reference in several of the 36 Thematic Policies (CSTPs), and also in generic Development Control Policies.
- 10.17 Green Grid priorities are mapped in Core Strategy (partly on Key Diagram and in more detail on other maps). Supplementary Planning Documents relating to design, biodiversity, landscape and townscape character, and Green Grid implementation will be developed (many as an evolution of existing documents).
- 10.18 The Core Strategy is a very long and detailed document which makes a point of showing how it aligns with Sustainable Community Strategy; and is 'justified and effective' (in accordance with the nine tests of soundness from PPS12).

Commentary for MCR

- 10.19 Thurrock is within the Thames Gateway and whilst this is a unique situation with a Development Corporation undertaking regeneration work, it is an old urban area undergoing regeneration facing similar social deprivation issues to parts of MCR.
- 10.20 The Council develops the sub-regional mapping into more detailed local mapping. A useful Thurrock Green Grid priorities map in Core strategy shows a hierarchy of GI sites and corridors, which can be cross-referred to the Key Diagram and to other maps such as the Areas of Development and Change map.
- 10.21 The Council is developing existing documents, plans and studies, such as open space, biodiversity and landscape to inform and evolve into GI documentation rather than 'starting again' or having these stand alone with an unclear relationship to GI.

References and Links

Thurrock Preferred Option Core Strategy and Control of Development DPD (Nov 07) – see page 5 for contents list of policies. CSSP5 Sustainable Green Grid is on page 104. Maps are at the end.
http://www.thurrock.gov.uk/planning/strategic/pdf/ldf_preferred_cs_200711.pdf

Gravesham (Kent, Thames Gateway)

- 10.22 Gravesham Borough is at the 'Issues and Options' stage in its LDF preparation at the time this report is being written. It has produced a useful topic paper outlining 3 options for promoting GI:
- a) Retract from present level of activity (not seen as correct approach as not consistent with public opinion or the SCS)

- b) Maintain existing levels of activity and policy (not seen as meeting economic growth and urban regeneration imperatives associated with existing social problems and the Thames Gateway objectives)
- c) Becoming a Green Infrastructure Champion (the preferred approach)

10.23 The Gravesham GI topic paper outlines the Borough's intention with regard to GI within its LDF. It suggests committing to describing spatial priorities for GI and implementing policy to commit the Borough (in conjunction with partners) to a GI strategy which incorporates sub-regional priorities (from the Kent Green Grid) and takes account of local priorities. Mapping will be prepared illustrating priorities and policy formulated to safeguard existing assets and promote enhancement and securing new GI assets. Implementation is envisaged through developer contributions; considering multi-functionality of infrastructure provision; and development control policies are proposed regarding levels of contributions and open space standards in development.

Commentary for MCR

10.24 Although the Gravesham example is largely regarding commitment to GI, the topic paper is a useful consideration of options and justification for focus on GI. It has relevance when considering tests of soundness (see below).

References and Links

http://www.gravesham.gov.uk/media/pdf/r/m/9_Green.pdf

Black Country

10.25 The Black Country study (2005) identified the importance of environmental regeneration in 're-imagining' the Black Country as an enterprising and fascinating place. One recommendation was that the Black Country should be seen as an Urban Park. An excellent website and interactive map illustrates the components of the Urban Park, many of which would be relevant to MCR because of the similar strong economic and image focus (e.g. rivers and canals, key parks, town centres, road and rail corridors). The constituent authorities (Walsall, Wolverhampton, Sandwell and Dudley) work together as the Black Country Consortium. Their Black Country Study was endorsed by Government in January 2008 in the West Midlands RSS. The Consortium will now formulate joint Core Strategy.

Commentary for MCR

10.26 The Strong economic focus and strong brand of the area as an Urban Park with an attractive and useful website and map to highlight priorities. The Urban Park concept is a simple and very effective illustration of GI for this regenerating urban area. This approach should enable ready transfer of GI into LDFs and encourage community engagement and involvement. The 'consortium approach' to environmental and economic regeneration gives a sub-regional focus that allows local distinction but also recognises the 'cross-boundary' nature of many GI assets.

References and Links

Black Country Consortium homepage
<http://www.blackcountryconsortium.co.uk/homep.asp?PageRef=1>
Black Country Urban Park homepage (for interactive map)
<http://blackcountryup.co.uk/homep.asp?PageRef=1>

North Northamptonshire (part of a Growth Area, incorporating 4 Boroughs)

- 10.27 A Joint Planning Unit for Northamptonshire has produced a Joint Core Spatial Strategy (JCSS). This is an attractive document presently at EiP in early 2008. It contains a series of maps to support the Key Diagram, which highlights sub-regional green infrastructure. The JCSS paints a portrait of the area, in which green infrastructure is a prerequisite of sustainable growth.
- 10.28 The overall Strategy is comprised of 18 policies grouped into 5 overarching themes:
- a strong network of settlements;
 - a well-connected area;
 - a green framework;
 - delivering infrastructure; and
 - building sustainable communities
- 10.29 Policies 5 and 6 promote a Green Framework, aiming to safeguard GI assets (sites and corridors), create new assets and secure high-quality land management in strategic gaps between settlements. River Nene Regional Park is one of the main GI assets. Green infrastructure is also promoted in other policies e.g. 'General Sustainable Development Principles' (Policy 14). The JCSS is supported by 2 joint SPDs each referring explicitly to GI: one concerning developer contributions; and one promoting sustainable design.

Commentary for MCR

- 10.30 The joint strategy approach to growth is useful in establishing the concept of GI as including local assets and opportunities whilst also acknowledging the important 'cross-boundary' nature of many GI assets. The Green Infrastructure study referred to in the JCSS is a very full document and gives a lot of guidance as to environmental character and green infrastructure across the County. The specific policy wording is reasonably helpful, although its focus is on the 'traditional' areas of green infrastructure (biodiversity, heritage, landscape, access), with less on the regeneration and economic aspects emphasised elsewhere in this report. However GI features in several other thematic policy areas within the Community Strategy.

References and Links

North Northamptonshire Core Spatial Strategy (p34 Green Infrastructure policy; p61 Key Diagram; p64 Policy 14).
<http://www.nnjpu.org.uk/docs/Submission%20Core%20Spatial%20Strategy%2012th%20February%202007.pdf>

Bristol City Council

- 10.31 The City published its preferred option Core Strategy in January 2008, with a view to adoption in 2009. Green infrastructure is listed as a means to achieving its Vision and Strategic Objectives in regard to health, biodiversity and quality of place.
- 10.32 The CS does not produce a set of overarching policies. Its policies are divided into 2 sections; spatial strategy and general development principles. A CS policy (BCS22) on 'Open Space, Green Infrastructure and Nature Conservation' is proposed as a General Development Principle, but details are deferred to future iterations of Core strategy and/or to detailed DPDs to be produced, pending further research at sub-regional and local level on GI requirements and standards. The proposed policy will embed the City's adopted Parks and Greenspace Strategy.
- 10.33 Other CS policies address with other objectives related to green infrastructure (such as flood management and health) although GI is seen primarily as an environmental and access issue, with little reference to economics.
- 10.34 There is little evidence presented in CS as to spatial priorities for GI. The Key Diagram does not feature any GI assets or proposals. A research project identifying GI assets and priorities at a sub-regional level is expected in spring 2008. This might help illustrate GI better in future iterations of CS.
- 10.35 Part of Bristol's wider urban area is in South Gloucester. South Gloucester Council is only just commencing its CS, and at present there is no cross-boundary analysis of GI needs and provision although parts of the urban areas are contiguous.

Commentary for MCR

- 10.36 The positioning of GI in Bristol's Vision and Strategic Objectives is strong. However thereafter GI is largely confined to its 'traditional' policy areas associated with biodiversity and open space. The lack of information about location of key GI assets also has the (presumably unintended) effect of relegating GI to a second-tier priority within CS.
- 10.37 As with MCR, there are urban areas with similar issues of deprivation and with cross-boundary GI assets and opportunities immediately adjacent the district boundary. Different programmes for LDF preparation mean that opportunities for synthesis and joint working towards GI goals have not yet been able to be exploited.

References and Links

Bristol Development Framework Core Strategy
http://www.bristol.gov.uk/ccm/cms-service/stream/asset/?asset_id=22422007&
Bristol Spatial Atlas
<http://www.bristol.gov.uk/ccm/content/Environment-Planning/Planning/planning-policy-documents/new-policy-docs/spatial-atlas.en>

Manchester City Council

10.38 Manchester City Council has issued a 'Guide to Development' as SPD. This sets out how development is required to be sustainable and contribute to environmental and community enhancement. It requires developers to submit an Environmental Standards Statement (ESS) alongside their Design & Access Statements. The scope of the ESS includes requirements to address biodiversity and waterways (both safeguarding and enhancing). The Guide also sets standards in respect of public realm, urban design, accessibility. The Guide is responsive to different townscape character areas.

Commentary for MCR

10.39 Whilst the Guide does not explicitly promote green infrastructure, its effect is to raise design standards and encourage provision and management of high quality networks of green spaces. It could act as a delivery tool for implementation of a City (or City-region) green infrastructure strategy.

References and Links

Manchester Guide to Development
<http://www.manchester.gov.uk/downloads/AdoptedGuideWithBackPage.pdf>

Overall Review of Case Studies

10.40 The case studies presented above (and those drawn upon elsewhere in this report) give information relevant to considering how:

- Core Strategy Vision can include direct reference to healthy and fully functioning Green Infrastructure
- The role of Green Infrastructure in addressing multiple strategic objectives can be explicitly stated
- Existing GI assets can be noted and the need for healthy GI cited as an issue in the Portrait of the Area and Key Issues

10.41 Three broad policy approaches have been identified from the case studies:

- a. GI is not explicitly cited in overarching policy, nor does it have its own policy. Nevertheless its functions are addressed across many thematic policies and in SPD (as in Barking and Dagenham (and to some degree through the Manchester SPD)).
- b. GI is included in overarching 'sustainable development principles' policy and has a specific policy in the environmental suite (as in Bristol and Bedford) although the linkages between functions are not reinforced more explicitly.
- c. GI is included in overarching spatial policy and overarching 'sustainable development principles' policy; and also appears in many thematic policies and SPD (as in Thurrock and North Northants).

10.42 Approach c. appears to offer the greatest prospects for securing maximum benefit from opportunities. GI may be addressed and delivered through other

approaches although there are risks it becomes relegated and functions may be addressed as individual themes rather than maximising potential.

- 10.43 The strongest plans and policy sets have a clear relationship between policy in Core Strategy and elsewhere in the LDF. This is important in emphasising the importance and the multi-functionality of Green Infrastructure. A key aim is to ensure that GI opportunities are maximised and securing simple but effective linkage between policies is optimal.
- 10.44 The functions of GI can be encapsulated in a range of policies which are not linked. For example policies on promoting biodiversity; protecting landscape; and providing recreation would be likely to feature within any draft LDF. These can assist in protecting existing and providing new GI assets and maintaining functions. However an optimal approach would seek to bind and interlink policy to maximise multifunctional opportunity.

Soundness

- 10.45 The issue of 'soundness' of plans has been taxing with a number of early LDFs having difficulty in demonstrating that they were 'sound' at EiP stage. Inclusion of Green Infrastructure as a key component may give rise to concerns in the absence of definitive central government guidance on its role.
- 10.46 PPS12 defines soundness (see Box 10.1 below).
- 10.47 Firstly the LDF must have been subject to the appropriate procedures and due process and have been subject to sustainability appraisal. (It is likely that a plan incorporating the key elements of GI will score strongly in sustainability appraisal in any event.)
- 10.48 As outlined elsewhere in this report, there is sufficient national policy weight behind a Green Infrastructure approach, especially in the case of growth points. As described earlier, North West Regional Spatial Strategy advocates GI and a GI approach would be anticipated to be consistent with sustainable communities strategies for areas. PPS12 (at paragraph 4.8) specifically requires GI to be considered in Core Strategy.

Box 10.1: Tests for LDFs (Revised PPS12 2008)

Legal requirements¹

4.50 Under the Planning and Compulsory Purchase Act 2004 S 20(5)(a) an Inspector is charged with firstly checking that the plan has complied with legislation. This includes in particular checking that the plan:

- Has been prepared in accordance with the Local Development Scheme; and has been prepared in compliance with the Statement of Community Involvement and with the Local Development regulations;
- has been subject to sustainability appraisal;
- has regard to national policy;
- conforms generally to the Regional Spatial Strategy; and
- has regard to any sustainable community strategy for its area (ie county and district).

"Soundness"²

4.51 In addition the Section 20(5)(b) of the Act requires the Inspector to determine whether the plan is "sound".

4.52 To be "sound" a core strategy should be JUSTIFIED, EFFECTIVE and consistent with NATIONAL

POLICY. The concepts of justification and effectiveness are set out at paragraphs 4.36 to 4.47.

...

Justification of Core Strategies

- 4.36 Core strategies must be justifiable: they must be
- founded on a robust and credible evidence base
 - the most appropriate strategy when considered against the reasonable alternatives

...

Effectiveness

- 4.44 Core strategies must be effective: this means they must be:
- deliverable
 - flexible
 - able to be monitored

¹ These replace the former Tests i-iii, iv(part) & v.

²This replaces the former Tests iv(part) & vi-ix.

- 10.49** A robust and credible evidence base is required for the core strategy approach. This may appear daunting at first for the case of a GI approach as few specific GI studies have been completed for districts. However, as was reviewed in the case studies, there is generally a large body of evidence available on the primary benefits of GI which have been collected by Councils, record centres, community forests, specific interest agencies and others. Building upon the existing evidence base for areas such as biodiversity importance and deficiency; open space provision and omission; landscape and townscape character can readily provide sufficient robust and credible evidence for a GI approach.
- 10.50** A GI approach seeks to deliver against the majority of themes of the Core Strategy, including environment, climate change mitigation and economy. It is generally a very appropriate strategy as considered against reasonable alternatives. As demonstrated in the Gravesham case study reviewed, it is difficult to identify a reasonable alternative to a GI approach to address the central themes facing most authorities.
- 10.51** Deliverability of GI is a test identified in PPS12. Successful delivery of GI is addressed elsewhere in this report (in Next Steps chapter 13). However GI is a deliverable similar to other infrastructure and community provision and once assets for protection and enhancement are identified, together with areas of need and opportunity, delivery mechanisms are available.
- 10.52** The flexibility of a GI approach is a key strength. Multi-functional space and land cover is inherently flexible and offers good opportunity to maximise delivery and also to respond to changing circumstances and requirements.
- 10.53** The ability to monitor, as the third element of the test of effectiveness, is related to the earlier test of robust and credible evidence base. There is a good inventory of GI assets from a range of sources within MCR which can be used to monitor the critical functions of GI. Some specific recommendations for how a GI co-ordinator can enable and monitor GI delivery are set out in Chapter 13. The evidence base used to justify a GI approach and to monitor and respond within such an approach uses the same information that would inform any other approach and there is no reason to question its robustness or validity due to its application.

10.54 There are discrepancies between the way in which some data are presently collated between agencies, authorities and for different topics. This is relevant when considering cross-boundary approaches and can lead to lack of overall consistency. However for the most part the GI functions and nature of cross-boundary assets such as river corridors and other watercourses are (or could be) appropriately identified, particularly at a cross-boundary scale.

Conclusions

10.55 Green Infrastructure can be embedded within LDFs and address the tests of 'soundness' as advocated in PPS12. Approaches have been developed which emphasise the multi-functionality of GI as '*more than the sum of its parts*'. The evidence base for a GI approach within LDFs is typically that which exists and would inform any other approach.

10.56 Within the Manchester City Region the existing and emerging partnership arrangements, including AGMA and the proposed Commissions, lend strength to the requirement to address cross-boundary GI assets and opportunities. The use of common approaches and vocabulary can assist communication of GI aspirations and ultimate delivery.

10.57 Measures to developing appropriate approaches further are considered in Chapter 13.0 Next Steps. This includes the need to enable Local Authorities to promote GI through LDFs; and also to promote targets for GI outcomes in Local (and Multi) Area Agreements.

City Regional Recommendations

10.58 TEP has some recommendations for City Regional work to promote GI in Local Development Frameworks.

a) The evidence in the datasets held by AGMA, CURE, the community forest and Local Authorities can be used to **identify the spatial priorities for GI in the City Region** using maps such as those shown in Chapter 9 of this report. AGMA should encourage consultation and expert review of the priority maps to provide the evidence as to where and how City Regional GI must be delivered in LDFs.

b) Local Authorities will wish to define **additional areas of GI priority based on local criteria** and AGMA can provide guidance on this. For example Bury MBC have defined Borough-level Strategic GI (in their Preferred Options LDF) as follows;

- more than local importance;
- contributes to multiple environmental objectives;
- is linked to urban area growth/regeneration points
- has cross-boundary significance (eg is part of a wider network)
- supports city-regional or regional growth priorities

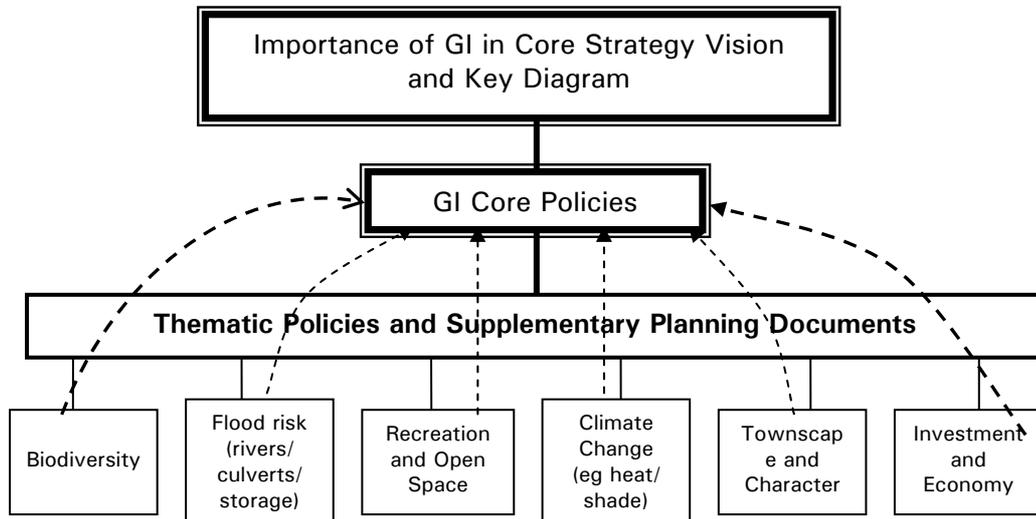
- c) All the City-Regional GI will involve cross-boundary action and delivery. **Delivery of GI is largely through local action** (which is most effectively organised locally) **along with a smaller number of flagship schemes** (which are most effectively organised centrally). **This delivery model is already used in the City Region; as follows:**
- community forests co-ordinate local actions and secure larger-scale funds for local actions;
 - National bodies such as Forestry Commissions and Environment Agency implement major schemes, often with local partners;
 - Local Authorities, Groundwork Trusts etc implement local schemes, often with significant community involvement;
 - Private sector and landowners implement schemes on their own land, or fund others' schemes through contributions.
- d) New Growth Point status requires City Regional Strategy and this, in turn, means **each LDF must incorporate GI policy.**

Local-Level Recommendations

10.59 Given the requirement for GI enshrined in Greater Manchester's New Growth Point Status, TEP has the following recommendations for how Local Authorities may incorporate GI into LDFs:

- a) LDFs must specifically **address green infrastructure in their spatial and delivery plans** (PPS12 paragraph 4.8).
- b) The **Core Strategy's Vision and Objectives** should note how GI is a means of achieving environmental transformation, quality of life, quality of place, climate resilience and economic growth – in short, the "growth support function" of GI should be promoted.
- c) GI assets and priority areas should be highlighted in **spatial portraits or descriptions** – the GM-wide framework can be highlighted as evidence.
- d) Core Strategy should promote GI in both **spatial policy and "sustainable development principles"** policy.
- e) **Thematic policies relating to the individual functions of GI** (such as biodiversity, flood risk, climate adaption, heritage) **should promote a multi-functional GI approach**, referring back to the core GI policies.
- f) **Supplementary Planning Documents** (such as the Manchester Guide to Development and Development Contributions SPD's) should provide more detail on how new developments should enhance GI assets and functions in and around the area of development. These SPDs should provide more evidence on particular deficiencies or priorities and may signpost planners onto even more detailed evidence such as PPG17 audits and biodiversity audits.

- g) This approach can result in a “virtuous circle” as illustrated in the graphic which follows. Specific GI policy can sit in the ‘over-arching’ section of CS; beneath which thematic policies follow and can refer back. This assists particularly in the emphasis of the multi-functionality of GI and maximising each opportunity. An action or opportunity relating to, say mitigating flood risk, can be ‘cross-checked’ for maximising other GI function opportunities, such as recreation and biodiversity.



- h) LDF must be subject to sustainability appraisals (SA). **The delivery of GI is critical to satisfactory SA** – once again the spatial priorities identified in Chapter 9, together with the evidence base, can demonstrate how and why GI will make growth sustainable.
- i) This chapter provides several examples of **policy wording and approaches** which may assist LDF managers.

11 INCORPORATING GREEN INFRASTRUCTURE INTO RELEVANT CITY-REGIONAL PLANS, STRATEGIES AND PROGRAMMES

11.1 This chapter analyses existing regional and city-regional policies and strategies which underpin and guide sustainable growth of the City Region. Analysis is undertaken against the GI objectives (set out in Chapter 4) to identify existing policy support for GI; and what more is required.

11.2 This chapter provides guidance on how GI delivery may be embedded within existing and emerging policy and strategy documents.

11.3 Review of Existing Policy & Strategy

11.4 Table 11.1 below shows the findings of the analysis of the key growth and sustainable development policies for the City Region against the GI priorities.

Table 11.1: Analysis of regional and sub-regional growth and sustainable development policy and strategy

Function	Flood risk management and climate change adaptation	An ecological Framework	A sustainable movement network	A sense of place	River and Canal corridor management	Positive image and setting for growth	Supporting urban regeneration	Community health and enjoyment
Policy								
Regional Spatial Strategy	✓	✓	✓	✓	✓	✓	✓	✓
Regional Economic Strategy	✓		✓	✓		✓	✓	✓
Making it Happen the Northern Way		✓	✓			✓	✓	
Rising to the Challenge: A Climate Change Action Plan for England's North West	✓	✓			✓			
North West Regional Forestry Framework	✓	✓	✓	✓	✓	✓	✓	✓
City Region Development Programme				✓			✓	
Greater Manchester Strategy (AGMA)		✓	✓	✓	✓	✓	✓	
Manchester City Region Sub-Regional Action Plan			✓	✓		✓	✓	✓

11.5 The Regional Spatial Strategy, Regional Economic Strategy, Climate Change Action Plan and the Manchester City Region Sub-Regional Action Plan all make direct reference to the benefits of adopting a GI approach. Other documents not mentioning GI explicitly did make wider reference to green space and the natural environment in its wider context.

11.6 Several documents make reference to GI benefits in relation to their specific thematic sector, however no reference was made to the wider benefits it can provide e.g. the Manchester City Region Sub-Regional Action Plan makes reference to GI in the context of image "...GI has an important role in the making of place, to enhance profile and attractiveness of urban centres for business and residents. It can enhance the attractiveness of employment sites to prospective

investors and people with higher-level skills seeking certain quality of life standards.”

- 11.7 It makes limited reference to GI in regard to other benefits it may provide such as flood risk management and so protection of business infrastructure. By not making these wider connections to other benefits it is possible that the multi-functional value of the concept may be lost. There is also a danger that delivery may be curtailed.
- 11.8 The functional priorities which are most strongly represented within policies and strategies relate to ‘supporting urban regeneration’, ‘a sense of place’, ‘positive image and setting for growth’ and ‘a sustainable movement network’ – the prominence of these functions reflects the nature and emphasis of the documents reviewed, many of which are economic driven hence the focus on image and regeneration.
- 11.9 ‘River and Canal corridor management’, ‘community health and enjoyment’ and ‘flood risk management and climate change adaptation’ were the most under represented. It is likely given the increasing incidents of flooding witnessed during 2007/2008 policy will now begin to respond to this, therefore, inclusion of flood, climate change and river catchment management within emerging policies is likely to be greater. This is also likely to be the case in regard to community health as the effects of child and adult obesity on the health service begins to be fully felt.
- 11.10 Policy and strategy is often slow to respond to changing circumstances due to the fixed nature of many of the documents. During formal revisions and redrafting, there is opportunity to revisit policy to ensure that GI opportunities are not missed.

Policies, Strategies and Initiatives to influence

- 11.11 The City Region has many existing plans, strategies and initiatives which can contribute to the delivery of multi-functional GI (e.g. RSS, Community Forests and Regional Parks).
- 11.12 There are many other plans, strategies and initiatives (both existing and emerging) which would benefit from advocating or delivering a GI approach. The benefits to such plans may include:
 - o Offsetting the negative environmental impacts of activities, helping to gain necessary consents and approvals e.g. infrastructure delivery plans;
 - o Opportunities for GI to add value to implementation activities, improving quality of place e.g. Housing Market Renewal, Area Masterplans and Sustainable Community Strategies; and
 - o Promoting a more integrated approach ensuring that plans, strategies and initiatives addressing particular thematic sectors (e.g. housing/economy) consider the multiple benefits of taking a GI approach, thus, representing sound use of resources.
- 11.13 Diagram 11.1 identifies policies, strategies and initiatives (presented as group a – d) which could promote and deliver GI. Some of these already make reference to GI or be undertaking GI activities.

Diagram 11.1: Policies, strategies and initiatives which should include GI and/or be encouraged to align with the sub-regional GI approach

<p>A</p> <p><u>Growth & Sustainability</u></p> <ul style="list-style-type: none"> ○ Regional Spatial Strategy ○ Regional Economic Strategy ○ The Northern Way ○ Rising to the Challenge: A Climate Change Action Plan for England's Northwest ○ City Regional Development Programme ○ Manchester Sub-Regional Action Plan ○ Greater Manchester Strategy (AGMA) ○ Growth Delivery Plan ○ City-Regional Commissions 	<p>B</p> <p><u>Local Authorities</u></p> <ul style="list-style-type: none"> ○ Local Area Agreements ○ Sustainable Communities Strategy ○ Local Development Framework ○ Green Space Strategies drawn up in line with PPG17 ○ Multi Area Agreements ○ Regeneration/Neighbourhood Renewal Strategies
<p>C</p> <p><u>Thematic Policy/Strategy (City regional or local)</u></p> <ul style="list-style-type: none"> ○ North West on the Move: The North West Plan for Sport and Physical Activity ○ A Strategy for Tourism in England's Northwest ○ A Tourism Strategy for Greater Manchester 2008 – 2013 ○ Greater Manchester Destination Management Plan ○ North West Regional Cultural Strategy ○ The Greater Manchester Cycling Strategy ○ An Integrated Transport Strategy for Greater Manchester ○ English Heritage in the North West 2006 – 2008 ○ Strategic Flood Risk Assessment ○ Catchment Flood Management Plan ○ Air Quality Strategies 	<p>D</p> <p><u>GI Delivery Bodies</u></p> <ul style="list-style-type: none"> ○ BTCV ○ Groundwork ○ Red Rose & Pennine Edge Forests ○ Regional Parks ○ Wildlife Trust ○ Local Authorities Primary Capital Programmes ○ Local wildlife/conservation groups ○ Pennine Prospects <p><u>Civic Infrastructure Delivery Bodies</u></p> <ul style="list-style-type: none"> ○ Environment Agency ○ Highways Agency ○ British Waterways ○ Building schools for the Future

Embedding GI within existing and emerging policy, strategy and initiatives

11.14 Methods of embedding GI within plans, strategies and initiatives are through:

- a. Influencing;
- b. Advocacy and awareness raising;
- c. Consistency in GI outcomes in target setting; and
- d. Partnership development.

Influencing

11.15 Influencing the (re)writing of policy and strategy will be important in ensuring that emerging documents take GI into consideration. For those documents whose timescales for renewal are some way off then the possibility of an addendum document should be considered.

11.16 In addition to influencing policy it will be important to influence funders (and in particular funding criteria) to ensure that there are sufficient “hooks” to deliver GI on the ground. There are many delivery bodies such as the Regional Parks and Community Forests who are already successfully delivering GI. However, there will be a role to play in ensuring that their activities are aligned with City-regional priorities and that activities are targeted at areas of priority and greatest need.

11.17 Influencing policy and (re) writing existing policy and business plans will require a good overarching awareness of the breadth of documents that may include GI and timescales for renewal. This will need central coordination to ensure that contact is made with document ‘owners’ at the appropriate time. The influencing of relevant policies needs to be carefully timed to ensure that this is undertaken when it will be most effective. Very early involvement may mean that resources are unnecessarily wasted in initial discussion, whereas involvement in the latter stages of policy development may mean that GI is an afterthought and so may become compromised and ineffective.

11.18 The coordination of document review could be a role of a GI Coordinator, using a GI Network of interested parties to promote GI policy in local plans.

11.19 Chapter 13 describes how such a co-ordinator might function.

Advocacy and awareness raising

11.20 **The development of a ‘Primer’ document similar to that produced for the East London Green Grid¹² would be of benefit in raising awareness of GI.** The document would be a means of conveying the message and purpose of the Manchester City Region GI approach to interested parties and stakeholders allowing for wider ownership. Ideally the language within this document would be such that it could be clearly understood by those from social, economic and environmental sectors in addition to the general public.

11.21 The use of **case studies** to illustrate the benefits of taking a GI approach will raise awareness with stakeholders. These should be selected to include GI interventions which have positively contributed to different thematic areas e.g. flood risk, housing and biodiversity (e.g. those cited in Chapter 3). This will allow varying stakeholders to see how their organisational activities relate to the GI concept.

¹² East London Green Grid Primer, Greater London Authority, November 2006

GI targets

- 11.22 Currently there are no national performance indicators or targets for GI. Experience shows that “what gets measured, gets done”. If GI is to be delivered, **Local and Multi-Area Agreements (LAA and MAA)** need to incorporate targets relevant to City Regional priorities.
- 11.23 **AGMA could develop ‘Model’ targets for GI.** Some are already being used (e.g. Access to Natural Greenspace targets and Green Flag Parks) but there is scope for broadening the targets to encompass other GI functions such as sustainable movement, quality of place, flood management functions of greenspace, climate change response.
- 11.24 The way in which these targets are monitored and recorded should also be consistent across the City Region to enable easier comparison of information across the area. Compatibility of this information would also mean that if information was then to be collated centrally to identify achievements and changes across the City Region then this exercise would be less time consuming.

Partnership development

- 11.25 There are many existing initiatives which deliver GI. Working with these organisations alone to ensure that their approach is consistent with city-regional priorities will take a significant amount of time without even beginning to address the influencing work required with those organisations who do not currently take account of GI. A **partnership approach** (through a GI Championing Body) is **essential to ensuring that GI is embedded within policy, strategy and initiatives** – one person or organisation cannot achieve this on their own.
- 11.26 A **network** could bring organisations together to support each other in GI activities e.g. connecting hard infrastructure deliverers with GI deliverers to enable the hard deliverers to meet their environmental obligations.

How to Embed GI within differing organisations

- 11.27 Diagram 11.2 identifies methods for influencing and encouraging groups (A) to (D) to embed GI within policies, strategies and interventions building on the methods identified above.

Diagram 11.2: How to Embed GI

<p>A</p> <p><u>Growth & Sustainability</u></p> <ul style="list-style-type: none"> o Influencing re (writing) of documents via GI Coordinator and GI Championing Body o GI Coordinator and Championing Body to promote addendum to documents where appropriate o GI Network to be assisted in drawing up local revisions (through case studies and model policies). 	<p>B</p> <p><u>Local Authorities</u></p> <ul style="list-style-type: none"> o Advocating inclusion of GI within core strategies taking lead from regional and sub-regional growth and sustainability documentation o Including 'model' GI targets within monitoring for LAA and MAA as delivery strategy for Sustainable Communities Strategy o Ensuring that PPG17 takes account of the multi-functionality of GI assets
<p>C</p> <p><u>Thematic Policy/Strategy (City regional or local)</u></p> <ul style="list-style-type: none"> o Influencing re (writing) of documents via GI Coordinator and GI Championing Body o Utilise the skills of the Ambassadors within each of the sectors to help embed GI within thematic policies o Include 'model' targets where appropriate 	<p>D</p> <p><u>GI Delivery Bodies</u></p> <ul style="list-style-type: none"> o Work with delivery bodies to promote the alignment of their activity with sub regional priorities <p><u>Infrastructural Delivery Bodies</u></p> <ul style="list-style-type: none"> o Advocate inclusion of GI within their organisational policies/strategies to function as a hook for GI deliverers

12 CASE STUDIES

12.1 This section looks at best practice.

New York

12.2 PlaNYC is an ambitious 30 year growth strategy, seeking to attract 900,000 new residents. It is branded as a carbon-reduction strategy because of the reduced per-capita emission levels of urban New Yorkers. The Plan proposes a number of GI activities to create a liveable and attractive city, including re-imagining the public realm to make it more human, extensive street-tree planting, ensuring all New Yorkers live within 10 minutes walk of a play/greenspace, completing several “destination parks” and cleaning waterways.

<http://www.nyc.gov/html/planyc2030/html/plan/plan.shtml>

In 2006, the Mayor challenged New Yorkers to generate 10 ideas for the sustainable future of the city. The result is a sweeping plan to enhance the urban environment. Focusing on issues of land, air, water, energy and transportation, the plan has 10 initiatives several of which relate to green infrastructure functions. The plan explicitly seeks to build homes, create clean and safe greenspaces and waterways to help attract 1 million more people into the city. This strategy will result in a net reduction of 30% in citywide carbon emissions, by enabling more sustainable lifestyles.

12.3 The New York Plan was derived from extensive public consultation and uses a series of highly visual topic papers covering issues such as energy, transportation and open spaces. The GI proposals form part of a suite of measures which broadly coincide with the priorities of the GM Commissions such as transport, climate change, housing. A Mayoral imperative has undoubtedly helped the NY plan to develop so thoroughly, but it is clear that there are action plans for project delivery across many neighbourhoods. There is a clear evidence base showing areas of “deficit” or “priority” for GI eg areas where there is shortfall of access to neighbourhood greenspace; or areas where public parks are inadequate.



UK Wide Case Studies

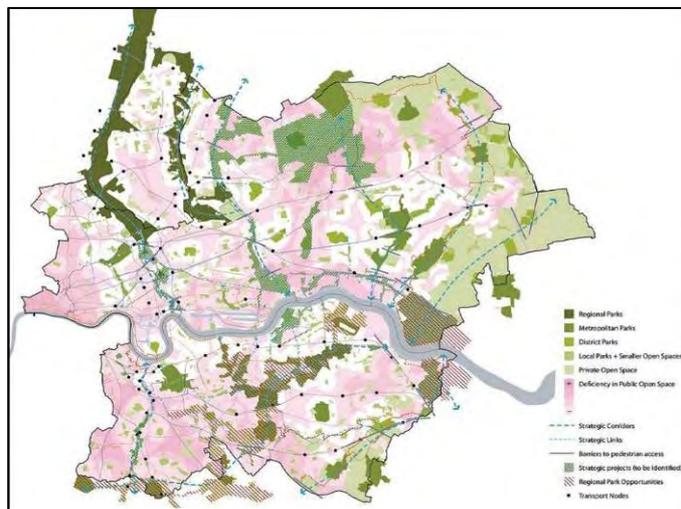
East London Green Grid

12.4 The East London Green Grid covers eleven London boroughs and is partly included within two Growth Points. The vision for the East London Green Grid is:

A living network of parks, green spaces, river and other corridors connecting urban areas to the river Thames, the green belt and beyond. The Green Grid will:

- Deliver new and enhance existing public open spaces that promote vibrant, sustainable landscapes for East London communities;
- Provide strategic public access along the river tributaries and green areas;
- Provide a diversity of leisure, recreational uses and landscape for people to escape, relax, learn, play and enjoy and promote healthy living, clean air and energy production;
- Manage water collection, cleansing and flood risk with multi-functional spaces; and
- Provide beautiful, diverse and managed green infrastructure to the highest standards for people and wildlife.

12.5 The Green Grid supports the East London Sub Regional Development Framework¹³ which instructs that LDFs should implement the Green Grid. The East London Green Grid concept represents the sub regional framework for open space enhancement, identifying where stakeholders will be able to shape their policies and actions to deliver projects which build the strategic network delivering social, economic and environmental regeneration.



12.6 The East London Green Grid is supported by a suite of documents including The East London Green Grid Framework¹⁴ which provides the evidence base for the development of the sub regional GI network using GIS based mapping addressing health, flood management, culture and townscape distinctiveness, biodiversity, deficiencies in access to greenspace and creating a setting for regeneration. The document also provides a more detailed focus on 10 sub areas and general principles and guidance which should be integrated into plans, proposals and strategies across the sub-region.

12.7 The Green Grid will primarily be delivered through the planning system and further guidance on how this may be achieved is provided within the East London Green Grid Framework Supplementary Planning Guidance¹⁵ published in February 2008. This document acknowledges the vital contribution that the open space network makes to the sustainable development and the achievement of economic, social and environmental benefits providing information to the boroughs and other

¹³ The London Plan: Sub-Regional Development Framework East London, Mayor of London, May 2006

¹⁴ East London Green Grid Framework Report, Report of Consultants Studies, August 2005

¹⁵ East London Green Grid Framework: London Plan (Consolidated with Alterations since 2004) Supplementary Planning Guidance, Mayor of London, February 2008

stakeholders on how they should shape their policies and actions to deliver these benefits and the network by:

- o Providing guidance on the implementation of policies in the London Plan to boroughs, partners and developers;
- o Setting out a vision and spatial framework;
- o Promoting cross boundary partnership working across 6 area groups within the sub-region;
- o Providing advice on delivery;
- o Identifying the range of functions and benefits;
- o Identifying the deficiencies in the provision of public open space and in access to nature; and
- o Identifying strategic open space opportunities.

12.8 A 'Primer' document¹⁶ described as 'small book containing facts about a subject' was produced. The primer supports the SPG with the aim of communicating to a wider audience the basic concepts and wider value of multi-functional strategic open space.

12.9 There are many parallels between East London and the Manchester City Region as both are older urban areas undergoing regeneration, both have been heavily industrialised with industry and factories focussed around the principal waterways (the River Thames and the Manchester Ship Canal). Decline of these manufacturing industries resulted in the abandonment and dereliction of many of these industrial landscapes giving the perception of a deprived and poor area. The regeneration of these areas means that there is an imperative to plan new parks and open spaces and improve existing resources to enhance the quality of life for residents.

12.10 There are a number of learning points which can be taken from the East London Green Grid approach:

- o the suite of documents produced promotes strategic coordination of activity with the sub region ensuring that policies and actions of organisations contribute to the delivery of the wider GI network;
- o the strong 'Primer' document clearly communicates the message and values of the GI concept to a wide audience;
- o There is a good evidence base through GIS mapping of open spaces typologies and deficiencies ;
- o There is a Mayoral imperative to formulate GI policy, although this is not directly applicable to the Manchester City Region, a GI Coordinator and the GI Championing Body could have a strong role in advocating a GI approach.

Black Country Urban Park

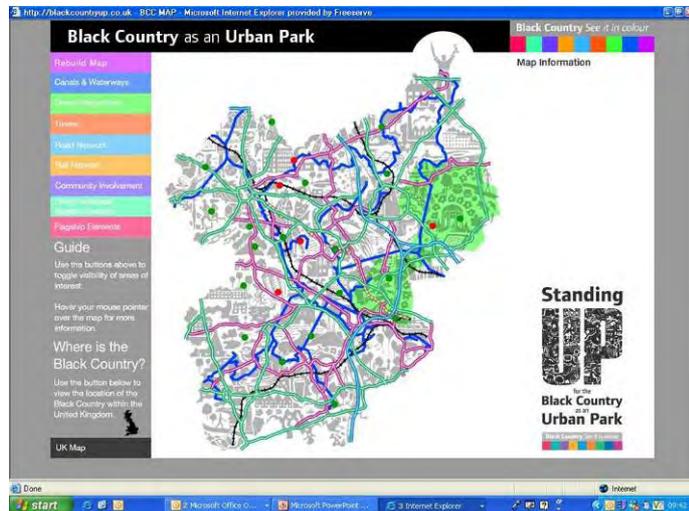
12.11 The Black Country recognises that radical environmental transformation is needed to generate economic growth and attract people to choose to live, work and invest in the Black Country. This will be realised through the concept of the Black Country as an Urban Park which will look to deliver a high quality environment by:

- o Restoring the qualities that once made the Black Country great;

¹⁶ The East London Green Grid Primer, Greater London Authority, November 2006

- o Creating a powerful, unique, visual code to bind the Black Country together, while emphasising local distinctiveness;
- o Connecting the hidden gems within the Black Country – such as the unique topography and hidden away open spaces; and
- o Defining the culture and ethnicity of the urban centres.

12.12 The evidence base to support this is provided through the Black Country Study, which was endorsed by Government in January 2008 in the West Midlands RSS. The study functions as the principle urban renaissance strategy for the Black Country outlining priorities for regeneration of its physical, environmental, social and economic fabric. The environment element of this study covers a wide range of issues including air quality, historic environment, biodiversity, energy, canals, contaminated land, waste and recycling, water, open space and urban design.



12.13 The Black Country urban park will be delivered as a key driver of the Spatial Framework for the Black Country and will comprise of the following interactive layers: topography, beacons, corridors and communities with a Landscape Masterplan (now referred to as Environmental Infrastructure Guidance (EIG)) forming the framework for the provision of a high quality environment.

12.14 Similar to the Manchester City Region, the Black Country has an extensive industrial heritage, which has a negative impact on the perception of the area (20% of the derelict land within the West Midlands is within the Black Country). This has parallels with the Manchester City Region. Transformation of the environment is seen as fundamental to delivering change and attracting knowledge-economy workers to live and invest in the Black Country evidenced in the economic centres and housing work undertaken so far.

12.15 The recognition of the environment to attract and retain inward investment means that the Urban Park concept has a strong focus on image and branding to support economic growth. Such an approach would also be relevant to the Manchester City Region and would also help achieve objectives of the Manchester City Region Sub Regional Action Plan.

12.16 The Urban Park concept is hosted on a website which includes an interactive map to illustrate the different components of the Urban Park and priorities within it. Similar to the approach taken with the 'Primer' document in East London this allows for wider dissemination of the concept and conveyance of the key messages and principles to a wide audience. The simple and effective illustration of the concept also means that information can be easily transferred into LDFs. Hosting

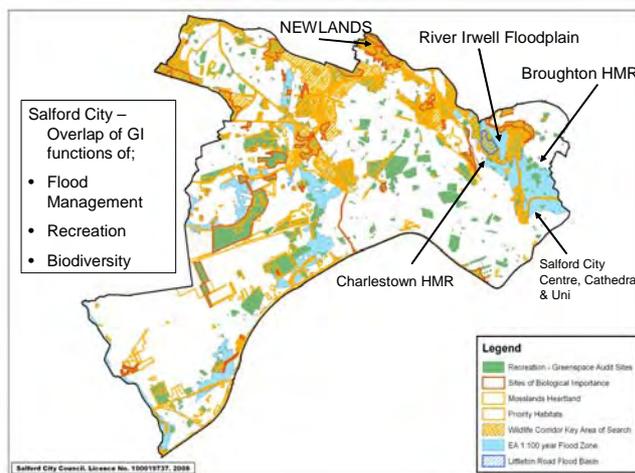
an interactive website also means that as information changes the website can be updated to reflect changes ensuring information remains current.

- 12.17 Within the Black Country there is a formalised partnership between the constituent authorities (Walsall, Wolverhampton, Sandwell and Dudley) who work together as the Black Country Consortium to drive the agenda forward. Such a formalised governance relationship could be established within the Manchester City Region possibly building on those relationships established through AGMA and the emerging Commissions. In addition to the supporting the Black Country Study the Consortium are now looking to formulate a joint Core Strategy to take account of the cross boundary and strategic nature of many of the issues affecting the sub-region.

Manchester City Region Case Studies

Littleton Road Flood Basin

- 12.18 Salford City Council was the first authority within the North West to undertake a Strategic Flood Risk Assessment to identify those parts of the City that may be at risk from flooding. Central Government guidance (PPS25) requires the implementation of flood management measures to secure a 1 in 100 year level of flood protection for new areas of housing development.



- 12.19 The assessment considered the Lower Irwell valley where there are a number of existing properties within the flood plain coupled within major proposals for regeneration. A flood alleviation basin had already been built at Littleton Road to provide offline storage to provide a 1 in 75 year level of protection for local residents. This flood storage basin is also used as a recreational playing field securing multi-functionality and efficient use of land.
- 12.20 In the wider context the Irwell Valley represents a significant strategic resource for both wildlife and recreation, providing opportunities for formal and informal recreation and opportunities for species migration and interaction.
- 12.21 Areas along the Irwell Valley corridor within both Salford and Bury have been funded through the Newlands Project for the social, economic and environmental benefits GI interventions will provide to the regeneration of the area. The Newlands Programme is funded by the North West Development Agency and managed by the Forestry Commission to reclaim large areas of derelict, underused and neglected land across the North West to create thriving and durable community woodlands which will support the regeneration of the surrounding areas by providing new recreational areas, benefits to businesses and opportunities for healthy living.

- 12.22 Along the course of the river there are a number of sites which have been previously used for industrial purposes or landfill. Most have been restored already. These sites present an opportunity for further green infrastructure development; thus improving the image of the area attracting business to invest and residents to live and providing new recreational opportunities and thus health benefits for local communities.

Belfield Urban Forest Corridor

- 12.23 Belfield Urban Forest Corridor is part of the Newlands scheme. The site occupies an area of approximately 38 hectares and is situated east of Rochdale Town Centre and Housing Market Renewal Area, with the communities of Wardleworth, Hamer, Clover Hall, Newbold, Mayfield, Bellshill and Belfield all in easy reach.
- 12.24 The regeneration of the site will deliver many benefits to communities and land in East Central Rochdale. The site is located within EA Flood Zones 2 and 3. As a significant green space resource within an area predominantly surrounded by hard end uses, the site will provide a valuable flood mitigation function, increasing water storage capacity in the area.
- 12.25 The site is also a valuable green 'hub' in the urban landscape, acting as a stepping stone for both people and wildlife into the wider countryside through opportunities for sustainable recreational access to 'countryside on the doorstep' and increased species migration and interaction. Two National Cycle Routes run through the site. Further improvements to the quality of the green space within the site will contribute to the attractiveness of the area and will encourage people to increasingly use this section of the route. Improving the quality of this tourism resource may also encourage people to stop for refreshment, contributing to the local economy.
- 12.26 The location of the Kingsway Business Park to the south of the site means that Belfield will provide a green corridor for commuting. Belfield could be used as a unique selling point to investors looking to locate at the Business Park.
- 12.27 Both the site and its surrounding area are located within a Housing Market Renewal Area (HMR). Improvements to the site will improve the quality of the local landscape, providing an attractive place to live which may have a positive benefit on local house prices. In addition, involving local communities in the design and implementation of improvements at the site will also provide opportunities to develop community cohesion within the area and reconnect these communities to their local landscape by providing them with a sense of place. Health benefits may also derive from increased awareness and use of the site.

Rhodes Farm

- 12.28 Rhodes farm is a former sewage works and grade A SBI (County or Regional Value) located within the Irwell Valley north of the Newlands site LIVIA off the M60. The regeneration of this site linked to the reclamation of LIVIA will have a dramatic impact on the perception of the area which forms a key gateway into the Manchester City Region. The image of cohesive managed parkland will deliver social and economic benefits to the area making it a place where people will want to live, work, visit and invest.

12.29 Environmental improvements at the site will contribute to investments already made by NWDA, English Partnerships and the Northern Way Investment Corridor. Further benefits will be secured for the surrounding priority regeneration areas which have benefited from Neighbourhood Renewal and Objective 2 funding. The site will improve the image of the local area and that of the wider City Region, provide opportunities for recreational activity, improved health benefits, and wildlife resource.

12.30 Opportunities are also being investigated into the possibilities of the site providing offline storage contributing to the flood risk management of the local and area and also downstream – such action demonstrates the multi-function value of GI resources.



12.31 The adjacent picture shows the local context at Rhodes Farm, it is shown on several of the asset maps in this report as one of the Case Study areas.

Irwell City Park

12.32 The Irwell City Park is a cross boundary collaboration between Manchester City Council, Salford City Council, Trafford Metropolitan Borough Council and Central Salford Urban Regeneration Company to transform 8km of riverside into accessible, attractive and vibrant waterfront. The City Park's vision is expressed in the box below. It is shown on several of the asset maps in this report as one of the Case Study areas.

Imagine a place at the heart of the city, yet offering a retreat from the rollercoaster of modern urban life. A place with its own very special character, energy and style just a few minutes walk from the City's amenities. A place that links old with new, museum with cathedral, one city with another and two communities as one. A place to live, to work, to visit, to stay or simply to sit and dream.

12.33 The River Irwell was once one of the most important commercial and recreational routes within the Northwest. Following the decline of the manufacturing industries, the face of the river changed becoming degraded and unwelcoming. The strategic importance of the River as a valuable asset and catalyst for regeneration has again become apparent in recent years with the promotion of the City Park as a means of unlocking the potential of this major waterway.



- 12.34 Connecting people to a high quality public realm which is safe, well-lit and welcoming will put the River back at the heart of the community and create places where people want to live, work and visit. Providing opportunities for active and passive recreation the Park will look to sensitively connect the region's natural assets along the course of the river whilst offering access to all the amenities of city life.
- 12.35 The Irwell City Planning Guidance (Approved in March 2008) has been prepared to support the delivery of the Irwell City Park. The guidance clearly establishes an intention to establish the Irwell City Park as a unique waterfront location within the regional centre. The guidance was prepared jointly by the authorities of Manchester, Salford and Trafford and will be used as a material consideration in the determining of applications for planning permission and other matters in the area. The guidance also establishes a set of principles for stakeholders in the development process e.g. developers or residents to ensure that new public realm and infrastructure within the City Park is of exceptional design quality and that it is integrated with the surrounding area with linkages made to other regeneration initiatives where possible.

Wigan Greenheart Regional Park

- 12.36 The Greenheart concept was initially developed in 1996 building on successful reclamation programmes addressing the industrial legacy of Wigan's mining past. The Greenheart aims to transform 20 square kilometers of Wigan's former coalfield area 'to put the heart back into Wigan's countryside' via a Regional Park of significance for sport, leisure, nature and people which will be accessible to over 300,000 residents. The evolving concept of the Greenheart is to "...create a national demonstration project of how a former coal mining area can become a haven for wildlife, a leisure and recreation resource for local people and a sustainable economic springboard into the 21st century."

- 12.37 The post-industrial landscapes left over from mining have left their mark giving the perception of an area suffering from deprivation however, contrary to this, these landscapes function as both a important community resources and valuable natural habitat including assets such as the nationally important wetlands of the Wigan Flashes, Hey Brook Corridor and Pennington Flash.
- 12.38 The Greenheart proposal involves utilising natural and built heritage sites to create a sustainable Regional Park. The Park will be utilised by a wide range of visitors, encouraging regional and national tourism into the area through offering quality sports, leisure and nature activities within and around the Greenheart boundary.
- 12.39 The proposed Greenheart Regional Park fits well into a wide range of local and national strategies as a result of it combining regeneration, environmental, economic, cultural and community priorities in a sustainable countryside setting. The Park is located within one of NWDA's priority areas for regeneration with much of the areas adjacent to urban priority neighbourhoods e.g. Neighbourhood Renewal areas. The Park area also coincides with the Coalfields and Assisted areas status. The Greenheart will look to bring together these schemes to ensure that interventions within the area are coordinated and targeted to those areas of greatest need. To enable this further work has recently been commissioned to review the activity of the Regional Park to date and to develop the role of the Regional Park via the provision of detailed strategic guidance and action planning for the Park.

Trafford's Green and Open Spaces: An Assessment of Need

- 12.40 The Trafford Green and Open Spaces research project was initiated in January 2004 to comply with the provisions of Planning Policy Guidance Note PPG17. Using robust and tested techniques the project sought to identify, consult users and assess the amount and quality of publicly accessible green space available across the borough.
- 12.41 Information was collected by Ward in regard to the quantity and quality of green space to provide a detailed overview of the adequacy of green space provision. The work is used by a number of Services within the Council to enable informed decisions on future opportunities for improving existing greenspaces and identifying provision of new. The information is also used to inform and progress green space policy within Trafford.
- 12.42 As part of the assessment extensive community consultation was undertaken with community groups, residents, children and young people to identify the perception of green spaces by local communities and the level to which they were valued. In addition to community consultation the assessment also considered the social needs of the local communities based on the level of deprivation, density of the population and the population composition e.g. % under 16 and % over 16. This was coupled with a qualitative and quantitative assessment of current provision to identify the degree of deficiency within each Ward – this will be used to inform planning applications and policy documents.

What can be learnt from existing approaches in Greater Manchester?

- 12.43 Case studies within Greater Manchester demonstrate that there is much GI activity already being undertaken. Many authorities are beginning to think about environmental interventions more holistically considering the wider socio-economic benefits that can be delivered - the case of Littleton Road Playing Fields and the Belfield Urban Forest are good examples. **The case studies demonstrate the need for continuing investment in the GI assets that have already been created**, in order to expand the number of functions these existing assets can deliver.
- 12.44 **A City-Regional framework will encourage wider recognition of how individual GI interventions can 'add up' to deliver GI in areas of greatest priority**, such as those mapped in Chapter 9.
- 12.45 A number of the initiatives are subject to cross boundary working which is positive. New Growth Point status requires strong partnership working resulting in the development of mutually beneficial relationships will mean that local authorities can support one another to provide skills and resources that may not be available within both organisations – the GI network may be a forum for achieving this.

13 NEXT STEPS IN A CITY-REGIONAL APPROACH TO GREEN INFRASTRUCTURE

New Growth Point (NGP), status was confirmed by Government in July 2008. NGP requires a Green Infrastructure Strategy to be drawn up and delivered.

This chapter sets out the next steps for AGMA towards a GI strategy for of the City Region.

The breadth of national, regional and city regional policy promoting green infrastructure gives AGMA a solid mandate for a city regional GI framework. This is further backed up by solid evidence of the importance of GI for growth of the City Region.

The challenge is to translate these high level imperatives into action on the ground, especially in areas where GI benefits are most needed. The next step is to ensure that the need for a GI approach continues to be advocated loudly and clearly as the City Region draws up its growth delivery plans. The rest of this chapter sets out TEP's recommendations for achieving this.

TEP has ten recommendations for AGMA to implement, as follows:

Core Recommendation:

1. A framework document for green infrastructure in the City Region.

Early-action Recommendations:

2. Identifying an operational champion to enable action across the City Region.
3. Promoting GI policy in Local Development Frameworks (LDF).
4. Securing a mandate for green infrastructure in other community, physical and regeneration strategies.
5. Ensuring targets for GI are adopted in city regional agreements and delivery plans.

Other Recommendations:

6. A primer document explaining GI and creating enthusiasm.
7. Audit of existing delivery bodies to improve effectiveness.
8. Establishing a network of interested parties.
9. Identifying a patron to advocate GI in higher spheres of influence.
10. Production of a consistent digital landuse and landcover typology for the City Region

Core Recommendation 1: A Framework Document for the City Region

TEP recommends that a GI Framework is drawn up to guide and stimulate a GI approach for the City Region. The Framework will set out the City-Regional objectives for GI. It will identify spatial and thematic priorities for GI activity – in other words, the places and projects where GI is most needed to support the sustainable growth of the City Region.

The Framework will:

- encourage existing GI initiatives to identify which City-Regional objectives they can meet;
- encourage existing GI initiatives to consider a full range of GI functions during project design and implementation;
- encourage the development of new GI initiatives and programmes to meet City-Regional objectives in places where they are not currently being met

The Framework will not in itself be an Action Plan, but it should provide enough detail to allow a City-Regional GI champion to facilitate existing and emerging delivery bodies in their activities.

A Framework could be drawn up in a relatively short space of time, perhaps 6-8 months. It would require some primary research to fill gaps in the spatial evidence base, as described in Chapters 7 and 8. However, the amount of available evidence and the relatively non-controversial nature of the evidence, means that work on the Framework could commence immediately.

The Framework could relatively easily be turned into a strategy document if there is a desire at City-Regional Governance level to drive environmental improvements from the top-down. This is the East London model, where the Mayoral support for the Green Grid has led to its adoption in a range of area-based strategies, initiatives and policies.

TEP recommends that the Framework is set out broadly as shown in the following boxes:

PART 1: BACKGROUND

Definition of GI

This section will introduce terminology and a Greater Manchester-specific definition of GI. (see Chapter 7 of this report)

The economic, social and environmental imperatives for GI

This section will describe the reasons why a GI approach is needed as the City Region accelerates its transformation into a 21st-century world class city. (see Chapter 7 of this report)

The need for Greater Manchester City Regional GI Framework

This section will explain why a “do-nothing” or laissez-faire approach to GI planning will result in missed opportunities; hence the need for a City-Regional Framework. This section will also stress that a City-Regional Framework cannot substitute for local strategies and action plans. The message that the City Regions GI will be built through “a thousand small changes and a few major actions” will be reinforced (see Chapter 4 of this report)

The Place of the GI Framework in the ‘family tree’ of sustainable development strategies for the City Region

This section will explain how the Framework is meant to link to City-Regional strategies and action plans, and how it is meant to inform Local Development Frameworks and stimulate local and thematic actions. (see Chapters 10 and 11 of this report)

PART 2: VISION AND OBJECTIVES

Vision for GI in the City Region

This section will outline a vision for the green infrastructure of the City Region. This vision is supportive of the City-Region’s overall transformational vision (see Chapter X of this report)

Strategic Objectives for GI

This section will highlight the eight strategic objectives for the GI Framework (set out in chapter 4 of this report). The terms “objective” and “function” are interchangeable.

PART 3: THE CITY-REGION'S GREEN INFRASTRUCTURE RESOURCE

Geography of the City Region

This section will summarise the physical, landscape, ecological, social and economic conditions of the City Region, emphasising the variety and distinctiveness of the area's outdoor environment and the value it has for Greater Manchester's communities, economy and biodiversity.

Challenges and Changes affecting the City-Region's green infrastructure

This section will explain the challenges, threats and changes which will affect existing GI, and will affect the way we plan for its continued benefit. Chapter 5 of this report has summarised the principal challenges, threats and opportunities that are anticipated.

Existing Green Infrastructure Activity

This section will outline the range of existing GI initiatives, programmes and actions that are taking place across the City Region. Maps will illustrate the scope of key initiatives such as the Community Forests, Regional Parks, NEWLANDS, cross-border initiatives.

PART 4: PLANNING FOR THE CITY-REGION'S GREEN INFRASTRUCTURE ASSETS

This section will describe the City-Region's GI assets. Chapter 7 of this report identifies five classes of asset (greenspaces and waterways, green corridors, distinctive landscapes, a sustainable movement network and "urban green").

This section will also explain how some assets are of City-Regional importance, by virtue of the wide and/or strategic benefits they bring. Other assets are of more local importance. The section will suggest criteria by which City-Regional and local assets can be identified.

Maps of existing assets will be produced, and a gap analysis will show areas of deficiency. Criteria will be proposed to identify where a deficiency of GI assets is of City-Regional significance; and where it is of local significance.

PART 5: PLANNING FOR GREEN INFRASTRUCTURE FUNCTIONS

For each of the eight City-Regional objectives (functions), maps will be produced to show where the function:

- is present
- is absent
- is deficient (absent but needed or present in parts and needed)

In some cases, mapping alone is not sufficient to identify priorities for action. Sometimes this is because the mapped evidence is inadequate to make a full analysis. Sometimes this is because the function does not lend itself to mapping.

This section will make recommendations for safeguarding and enhancing each of the GI functions individually and in combination.

Chapter 8 of this report has made a first draft of this functional analysis (at least for some functions), and has described what further evidence and mapping is needed to fully identify priority areas.

PART 6: SPATIAL FRAMEWORK

This section will draw together evidence from Parts 4 and 5 to present an overall spatial framework for GI activity in the City Region. The framework will describe and illustrate priority areas for multi-functional GI planning.

Key Diagrams will illustrate priority areas; allowing the range of programmes and initiatives necessary to implement City-Regional GI to be identified.

Chapter 9 of this report illustrates a first draft of a spatial framework and set of Key Diagrams, but further consultation and mapping will be needed to refine this.

PART 7: IMPLEMENTATION

Implementation in Spatial Plans

This section will describe how spatial plans, particularly Local Development Frameworks and supporting documents, can be used to manage development and guide GI activity to areas of City-Regional (and local) importance. Development Management policies and procedures will be discussed (see Chapter 10 of this report)

Implementation in Other City-Regional Strategies and Action Plans

This section will highlight which other documents could or should promote and deliver GI and will make recommendations for how GI activity can be encouraged. (see Chapter 11 of this report)

Reinforcing existing initiatives

This section will audit existing delivery capacity in terms of the City-Regional objectives and will identify where new delivery capacity may be needed. (see Appendix X of this report)

Partnerships and Championing

This section will propose how the Framework might become widely "owned" by partner organisations across the City Region. It will also propose how the Framework might be championed. (This is discussed later in this chapter).

Recommendation 2: Operational Champion Enabling and Encouraging Action across the City Region

The GI framework must be owned widely across the City Region; in the sense that all local authorities, delivery bodies and the City Region Commissions actively work towards its objectives.

For this to happen in practice, there must be a central body which acts in a championing role:

- i. Advocating and disseminating the benefits of GI.
- ii. Assisting delivery bodies to access central funding streams.
- iii. Assisting delivery bodies to draw up their own business plans.
- iv. Carrying out an overview of activity to ensure that city regional objectives are met.
- v. Stimulating new activity where there are gaps.
- vi. Managing the GI network.
- vii. Organising best practice events.

In Greater Manchester it seems appropriate that this championing role is taken on by one of the proposed Commissions. The Planning and Housing Commission or perhaps the

Environment Commission would seem to be the most appropriate. If an Infrastructure Commission is established, it may be appropriate for this body to champion GI. Until such time as these commissions are formally empowered, this may be a role for AGMA or a Planning Officers Group.

Other Growth Areas and Growth Points are creating a post of GI Coordinator. The GI Coordinator would be a brand new position and would need a supporting budget for publicity and consultancy expenses. The Coordinator could be appointed at an early stage to draw up the framework, or could be appointed once the framework was adopted. The former option is marginally preferable as it allows the Coordinator to develop relationships and influence other city regional growth plans.

Although the Coordinating role is a new position requiring funding, there may be some scope for reducing cost through using seconded staff from existing agencies and through financial contributions from organisations whose sustainable development remit involves GI (e.g. Environment Agency, Natural England, Forestry Commission, English Partnerships (soon to become Homes and Communities Agency), NWDA).

Recommendation 3: Promote GI policy in Local Development Frameworks

Creation, enhancement and management of GI must be an outcome of Local Development Frameworks. Development proposals must be assessed against GI policy in order to ensure minimum standards are met and beyond this an overall enhancement of GI occurs.

Chapter 10 describes how local authorities might draw up and implement GI policy in LDF's. TEP recognises that this will be an iterative process and it may take up to two years before a fully integrated system of planning for GI is working. The components of this iterative process are as follows:

- i. AGMA to agree city regional objectives for GI.
- ii. Each Local Authority to agree local objectives for GI and draw up Core Strategy policies.
- iii. AGMA (or Commission for Planning & Housing) to prepare a city regional GI framework.
- iv. Each Local Authority to adopt the city regional framework as SPD.
- v. Each Local Authority to draw up SPD for delivery of GI.
- vi. Each Local Authority to apply LDF policies in relation to city regional and local priorities during the process of development management.

AGMA's role would be to promote the city regional aspects of the above process and enable consistent adoption of best practice in local priority setting and policy development. This could be carried out by the GI Coordinator.

Recommendation 4: Ensure a Mandate for GI in Relevant Strategies and Action Plans

GI is created and managed by a multitude of organisations, not all of whom have GI as a core remit. The organisations fall broadly into the following four classes:

1. Organisations with a statutory remit to deliver GI.
2. Organisations who volunteer to deliver GI.
3. Organisations with other core remits but who are under obligations to consider GI.
4. Organisations which have other core remits which would benefit from GI provision.

Organisations in Classes 1 and 2 will in most cases welcome the guidance provided by a city regional framework and will wish to align themselves with the city regional champion.

Organisations in Classes 3 and 4 are often very willing to promote GI but often lack the capacity to fund and/or implement GI themselves.

Chapter 11 identifies how such organisations might incorporate a GI approach into their strategies and action plans.

AGMA's role would be to promote city regional GI priorities in relevant strategies and plans and promote networking between organisations so that those who wish to deliver GI as a co-product alongside their core remit, are put in touch with delivery bodies who can help them secure funding. AGMA's role would also be to advise local authorities how they can include GI targets in their 'stretch' targets for Local Area Agreement.

Recommendation 5: Ensure targets for GI are Adopted by the City Region in Multi Area Agreements

At the time of writing this report (Summer 2008) there are few targets or performance indicators which explicitly require GI to be enhanced. Nevertheless Government guidance regarding national performance indicators for use in Local Area Agreements (LAA) and Multi Area Agreements (MAA) provide liveability and environmental quality targets (see box).

NPI 175:	Access to Services by public transport, walking or cycling
NPI 188:	Planning to adapt to climate change
NPI 189:	Flood risk management
NPI 197:	Improved local biodiversity
NPI 199:	Children and Young People's satisfaction with Parks and Play Areas

The sub-regional action plan does include some targets under Priority Area 9 – Transforming the Environment, where the need for a green infrastructure approach is highlighted with a particular reference to regional parks, community forests and regeneration areas.

TEP recommends that if a GI framework is prepared, it must lead to adoption of MAA stretch targets related to GI, otherwise there is a danger that GI will not be embedded into local authority strategies.

Recommendation 6: A Primer Document

Since GI is a high level concept which uses technical terminology, there is a danger that it will not be widely understood or welcomed. A primer document can increase take up and enthusiasm. Such a document:

- i. Explains GI in plain English.
- ii. Creates an appreciation of the value of the outdoor environment for the City Region's growth.
- iii. Draws in support from a number of sectors, not just environmental bodies.
- iv. Builds the brand of the city region being a vibrant, attractive, low carbon, growing place.
- v. Signposts readers towards more detailed sources of information in the main framework

The East London Green Grid primer (see case studies) uses essays, photographs, art and maps to communicate a vision for regeneration of East London's open spaces to serve the needs of a changing and growing society.

A primer for the Manchester City Region would have similar objectives and might use similar communication media. It should be produced in tandem with the framework document.

Recommendation 7 Audit of Delivery Bodies

There are numerous local, cross-boundary and thematic initiatives delivering GI in the City Region.

Some initiatives manage GI assets for a range of functions, e.g. local authority parks services, British Waterways canal management, Rights of Way Improvement Plans.

Some initiatives deliver GI functions across a range of assets, e.g. Natural England's environmental stewardship grants, the Forestry Commission's Newlands programme, the emerging Regional Parks.

Many initiatives are longstanding, while others are emerging. An audit of existing delivery activity and capacity will assess:

- i. Which of the city regional GI objectives are not being adequately delivered by existing initiatives.
- ii. Whether there is unnecessary or inefficient overlap of delivery by several initiatives.
- iii. Whether there is a need for cross-boundary coordination of local activity to meet city regional objectives.

TEP has carried out a preliminary in-house analysis of delivery activity (see Table 13.1). This has not yet been subject to peer review, but it suggests that some adjustments to delivery capacity are needed to meet city regional objectives.

Table 13.1: Preliminary Audit of Current Delivery Arrangements in terms of the City-Regional priorities for green infrastructure

Function	Framework & Champion		Are there funding streams for GI delivery?	Dedicated Strategy & Action Plan for GI?	Is there incidental delivery of the function during the course of other greenspace projects?	Success Stories
	City-Regional	Local				
Flood Management & Climate Adaptation	Emerging SFRA led by AGMA & EA	EA Catchment Plans LA Climate Change Strategies	No dedicated £ Incidental £ for GI from flood defence works.	No	Flood & Climate is not usually a routine consideration	Irwell playing Fields, River Roch NEWLANDS work, BREEAM
Ecological Framework	GMBAP and emerging spatial framework led by AGMA/GMEU	Some Las have BAPs	No dedicated £ Some Govt land management £ £ from DC	Some aspects addressed in LA BAPS and community forest plans	Biodiversity is usually considered at design stages	NEWLANDS
Sustainable Movement Network	Some historic studies by Red Rose	ROWIPs Most UDPs have Strategic Routes	Some Sustrans and LTP £ Incidental £ from other GI projects £ from DC	No strategy. Some routes identified in community forest business plans	Access is usually considered at design stages	Pennine Bridleway, Greenheart Cycleway
Sense of Place	No	Some landscape character work, Cons. Area Plans	No dedicated £ HLF £ £ from DC	No	Sometimes	Rochdale Canal, Ashton Canal, Salford Quays
River & Canal Corridor Management	Some historic Mersey Basin Campaign priorities	Some river valley & waterways plans	No dedicated £ Incidental £ from flood defence and canal works £ from DC	Some aspects addressed in MBC documents & Community Forest Plans	Waterway corridor improvement is usually considered at design stages	Mersey Basin Campaign, MCC Waterways, Salford Quays Irwell City Park Planning Guidance

Function	Framework & Champion		Are there funding streams for GI delivery?	Dedicated Strategy & Action Plan for GI?	Is there incidental delivery of the function during the course of other greenspace projects?	Success Stories
	City-Regional	Local				
Positive Image and Setting for Growth	MIDAS & NWDA focus on Strategic Sites, key economic centres, URCS & Regional Parks	Borough Masterplans, Town Centre Action Plans	Public realm funds from HMR / NWDA / EP for specific projects LA capital funds £ from DC	RSS & Sub-Regional Action Plan identifies priority GI projects and intervention areas. Some aspects covered in community forest and URC business plans	Sometimes	NEWLANDS (Moston Vale), Green Streets, Coalfield Regen in Greenheart RP, Edinburgh Way, Rochdale
Greenspaces supporting Urban Regeneration	Ditto	ditto	No dedicated £ NEWLANDS & NWDA funds for specific projects Lottery programmes £ from DC	RSS and SRAP identifies priority areas. Some aspects covered in community forest plans	Regeneration issues are usually considered in public sector projects, but not always in terms of all the benefits that GI can bring	Green Tips regeneration NEWLANDS
Community, Health and Enjoyment	Some strategic direction from Community Forest plans	LA greenspace strategies	LA capital & revenue funds Lottery programmes £ from DC	Some aspects in Community Forest Plans & LA Greenspace Plans	Community and health issues are usually considered in public sector projects	Green Flag Parks Healthy Walks

Recommendation 8: Establishing a Network of Interested Parties

The City Region's GI will be implemented and managed by many small groups and a few major bodies. There is great value in networking individuals, corporate bodies, community groups and beneficiaries of GI so as to share best practice and stimulate new activity.

The East Midlands Green Infrastructure Network (EMGIN) is managed by the River Nene Regional Park, using funding from the Regional Assembly and government growth area monies. EMGIN consists of:

- Government agencies
- Local authority greenspace and public realm managers
- Local authority planners
- NGO's concerned with land and water management
- Voluntary bodies operating in the environmental community or heritage sectors
- Parish and town councils, and neighbourhood management groups
- Consultants
- Landowners
- Academia

EMGIN organises various workshops of interest to particular groups, on a geographic or thematic basis. It publishes a virtual newsletter and organises an annual conference/workshop. It also acts as a portal for members to access strategies, maps, guidance notes and other GI and related documents.

TEP recommends that a city regional network is established in order to step up awareness of GI and to encourage wider participation in delivery and management.

This will require a long term (five year minimum) commitment from the City Region. The creation of a GI network can build on existing local and thematic networks.; e.g. the Red Rose Forest network, Local Authority networks of park users, city-regional networks of professionals in planning, environment and housing.

Recommendation 9: Patronage

It would be highly desirable for the GI approach to be advocated broadly across a range of sectors and in different spheres of influence. There are many sectors which touch on GI, e.g. sports, economic growth, tourism, culture, play, health and community cohesion. However because GI has an environmental pedigree its relevance to broader economic and social priorities is not always obvious.

GI needs patronage in political and corporate spheres of influence to create an appropriately high profile.

The East London Green Grid benefits from having strong Mayoral patronage, since the Grid is recognised as being essential to making the area liveable and attractive. In the East Midlands, the GI approach has been championed by the Regional Assembly and the National Trust.

In the absence of a Mayor or a City Regional Assembly for Greater Manchester, it is not immediately obvious how such patronage might emerge. Part of the development of the framework would be to identify suitable patron bodies.

AGMA should examine the new Public Sector Performance Network which encourages delivery of sustainable communities; including Green Infrastructures.

Recommendation 10: Production of a consistent digital landuse and landcover typology for the City Region

The identification of priority areas for delivery of GI functions has been hampered by a lack of consistency in the availability and consistency of landcover and landuse mapping. Although the UMT dataset and other greenspace types have been available in digital form, there would be benefits of having a consistent typology, using PPG17 types, across the City Region.

Much data already exists, and it is appreciated that it would be onerous to re-digitise the whole City Region from aerial photography. However, TEP recommends that a consistent and detailed typology map is constructed, at least in the GI priority areas.

This will have benefits in other areas of environmental planning, such as PPG17 audits, Biodiversity Action Plans and in the production of environmental frameworks promoted in RSS Policy EM1.

A Summary Report is also available from TEP – e-mail: tep@tep.uk.com

MAPS

G1547.033	Figure 7.1	Urban Morphology Types
G1547.035	Figure 7.2	Land Designations
G1547.007a	Figure 7.3	Urban Greenspaces, Civic Spaces and Waterways
G1547.034	Figure 7.4	Accessible Urban Greenspaces, Civic Spaces and Waterways
G1547.017b	Figure 7.5	Greenways and Blue Infrastructure
G1547.008a	Figure 7.6	Sustainable Movement Network
G1547.014b	Figure 7.7	Natural and Landscape Heritage Core Areas
G1547.015a	Figure 7.8	Urban Green
G1547.002	Figure 8.1	Strategic Flood Risk Assessment
G1547.021b	Figure 8.2	Flood Management Function
G1547.002	Figure 8.3	Health Deprivation
G1547.004	Figure 8.4	Percentage of Population Aged 65 and Over
G1547.001	Figure 8.5	Surface Temperatures
G1547.023a	Figure 8.6	Climate Adaptation Function – Urban Heat Vulnerability
G1547.022b	Figure 8.7	Climate Adaptation Function – Carbon Storage
G1547.018a	Figure 8.8	Deficiencies of Accessible Urban Green Infrastructure
G1547.024a	Figure 8.9	Sustainable Movement Network in relation to Economic Centres
G1547.026b	Figure 8.10	Place-Making Function
G1547.025a	Figure 8.11	Image-Making Function
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G1547.028b	Figure 9.1	GI and Distinctive Places – Key Diagram
G1547.027b	Figure 9.2	GI for an Urban Renaissance – Key Diagram
G1547.030a	Figure 9.3	GI for Sustainable Movement – Key Diagram
G1547.031b	Figure 9.4	GI in a Changing Climate – Key Diagram
GI 547.032b	Figure 9.5	Greater Manchester Green Infrastructure Framework to Support Growth

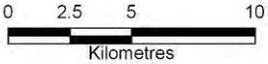
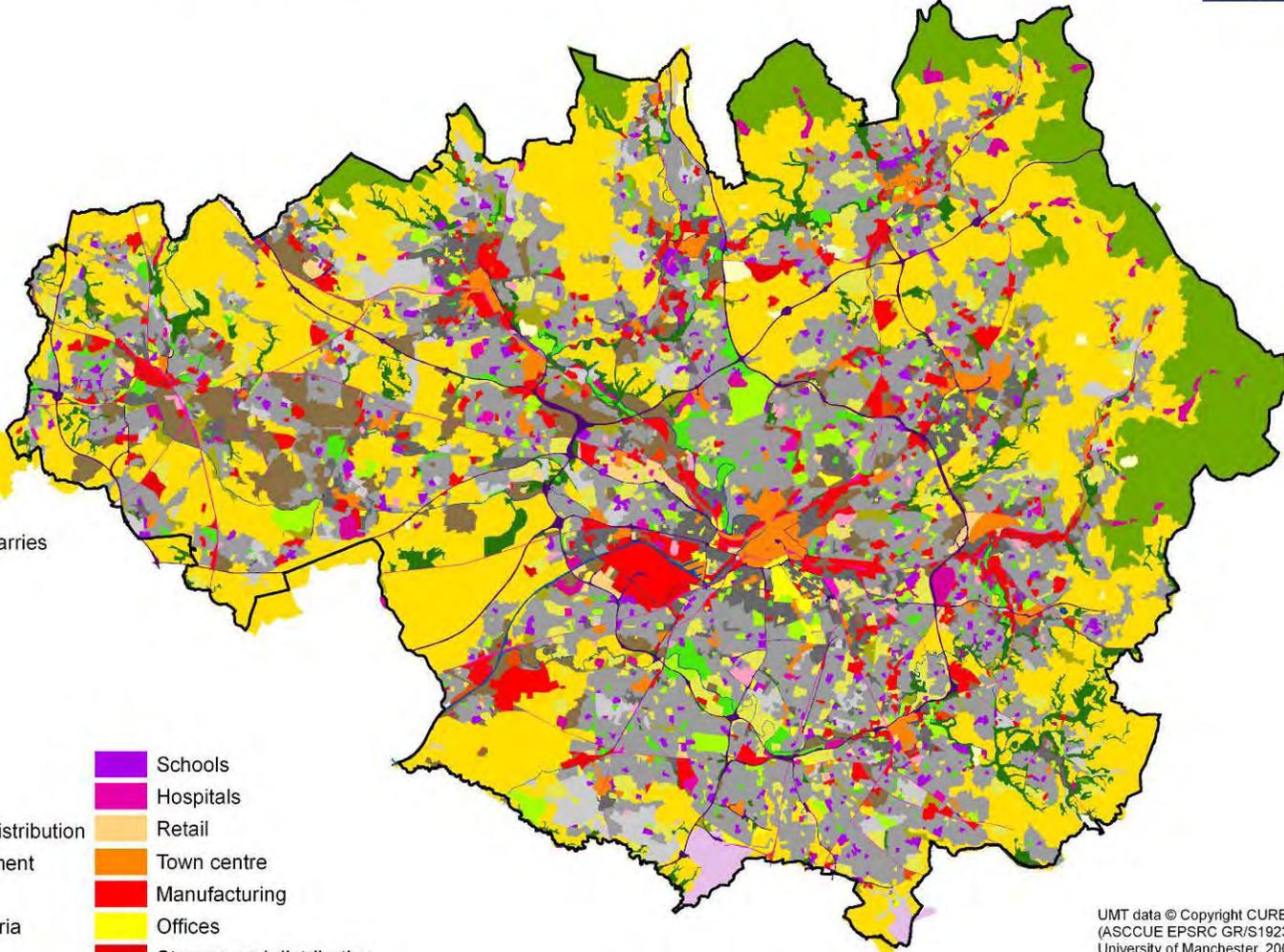
Figure 7.1 Urban Morphology Types



Key

UMT Category

- | | | | |
|--|------------------------------------|--|---------------------------|
| | Improved Farmland | | Schools |
| | Unimproved Farmland | | Hospitals |
| | Woodland | | Retail |
| | Mineral workings and quarries | | Town centre |
| | Formal Recreation | | Manufacturing |
| | Formal open space | | Offices |
| | Informal open space | | Storage and distribution |
| | Allotments | | Disused and derelict land |
| | Major Roads | | Remnant countryside |
| | Airports | | |
| | Rail | | |
| | River, Canal | | |
| | Energy production and distribution | | |
| | Water storage and treatment | | |
| | Refuse disposal | | |
| | Cemeteries and crematoria | | |
| | High density Residential | | |
| | Medium density Residential | | |
| | Low density Residential | | |



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Figure 7.2 Land Designations

(Information provided by AGMA)

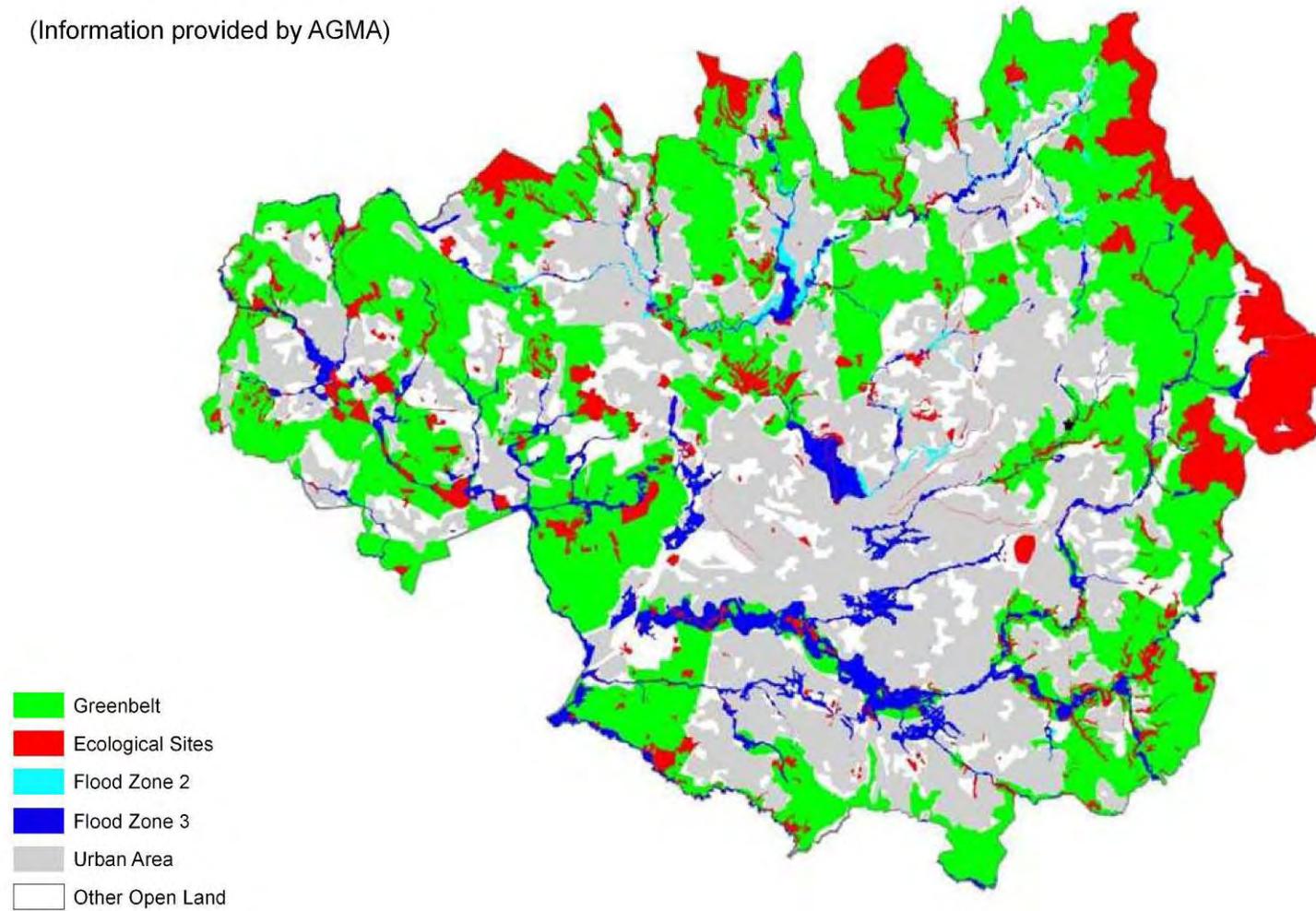


Figure 7.3 Urban Greenspaces, Civic Spaces and Waterways

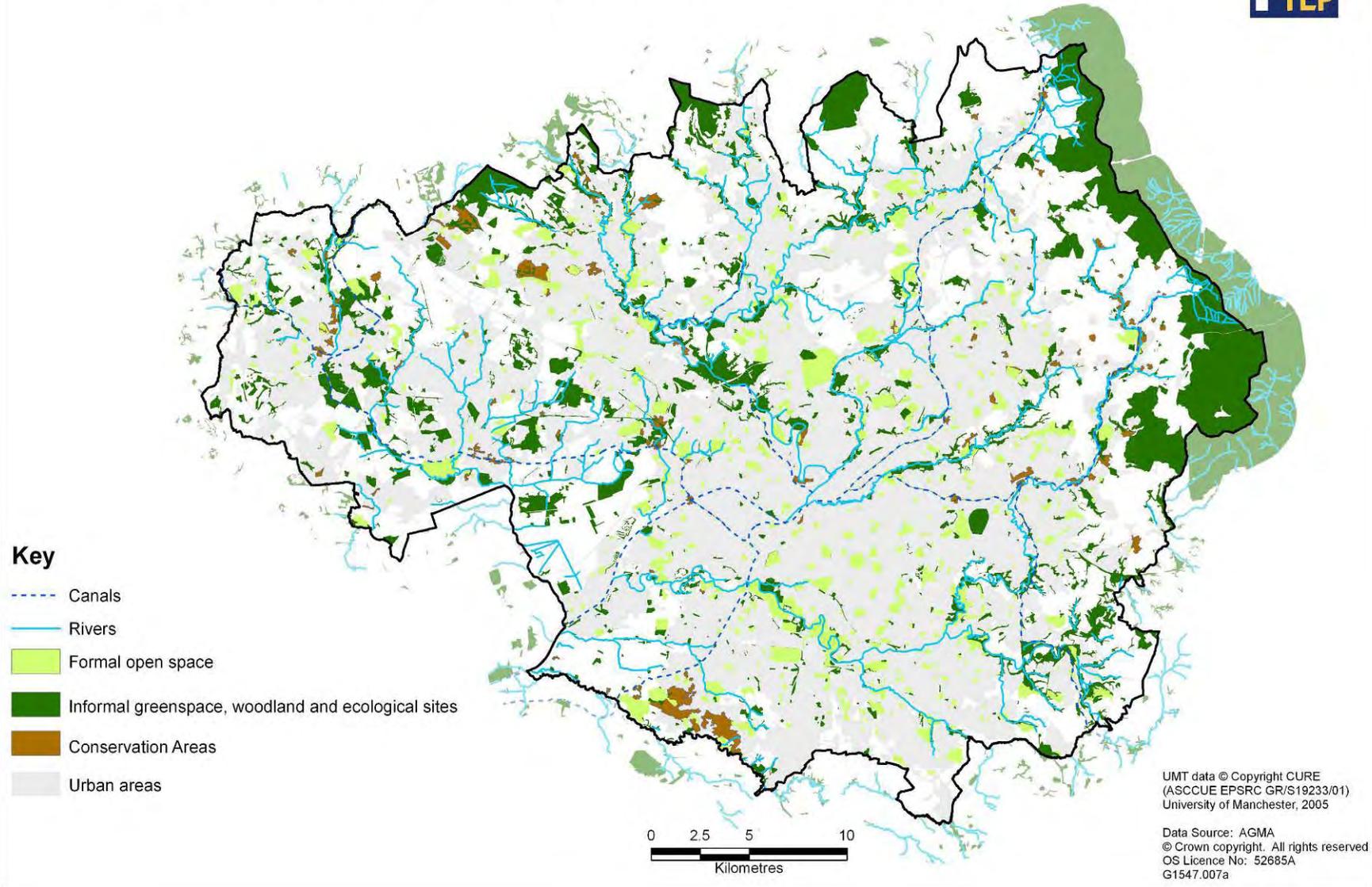


Figure 7.4 Accessible Urban Greenspaces, Civic Spaces and Waterways



(NB Not confirmed or exhaustive)

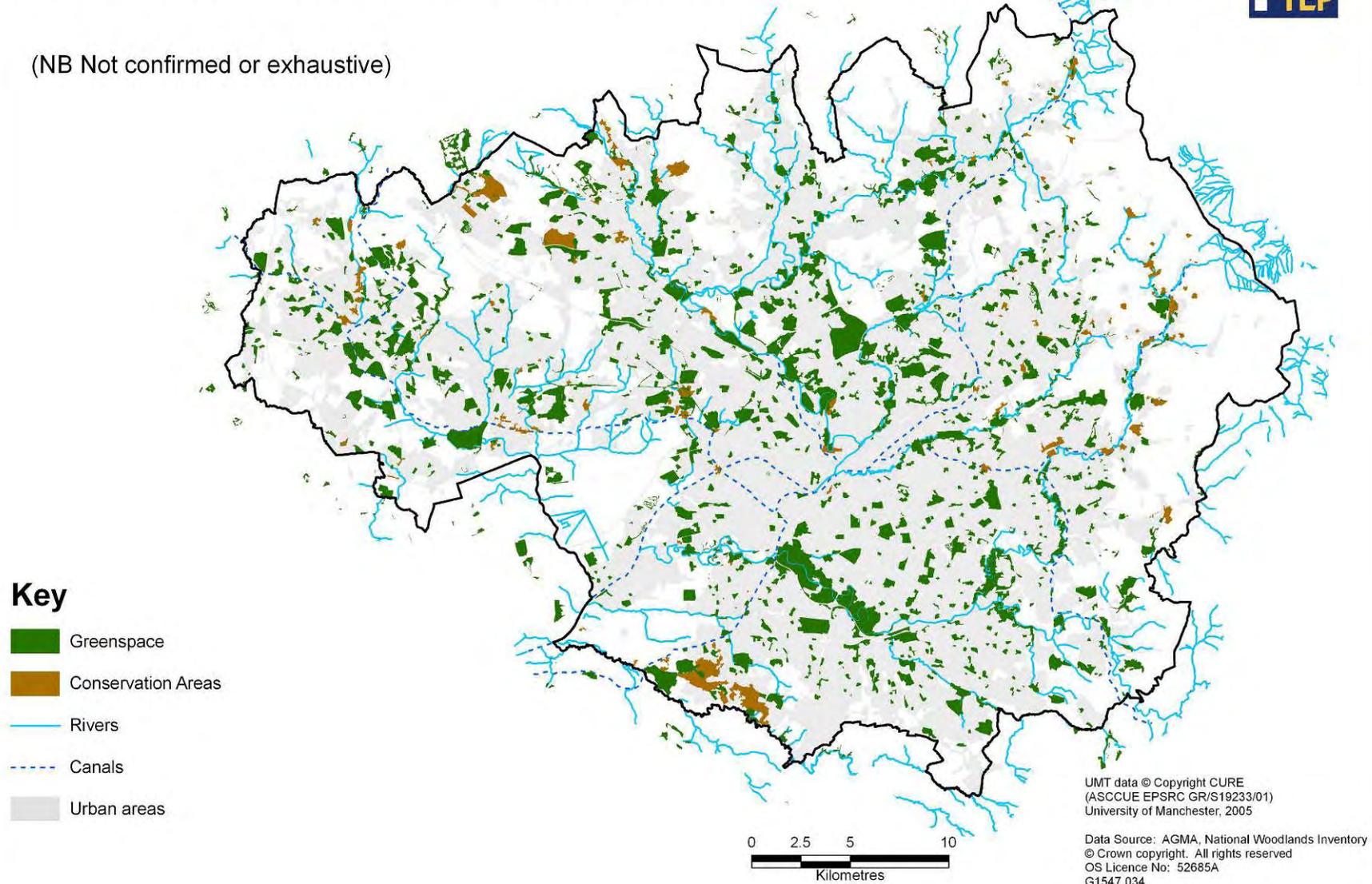


Figure 7.5 Greenways and Blue Infrastructure



NB This plan is for illustrative purposes only - the Ecological Framework being prepared by GMEU and the University of Salford (for AGMA) will generate maps showing biodiversity assets and deficiencies.

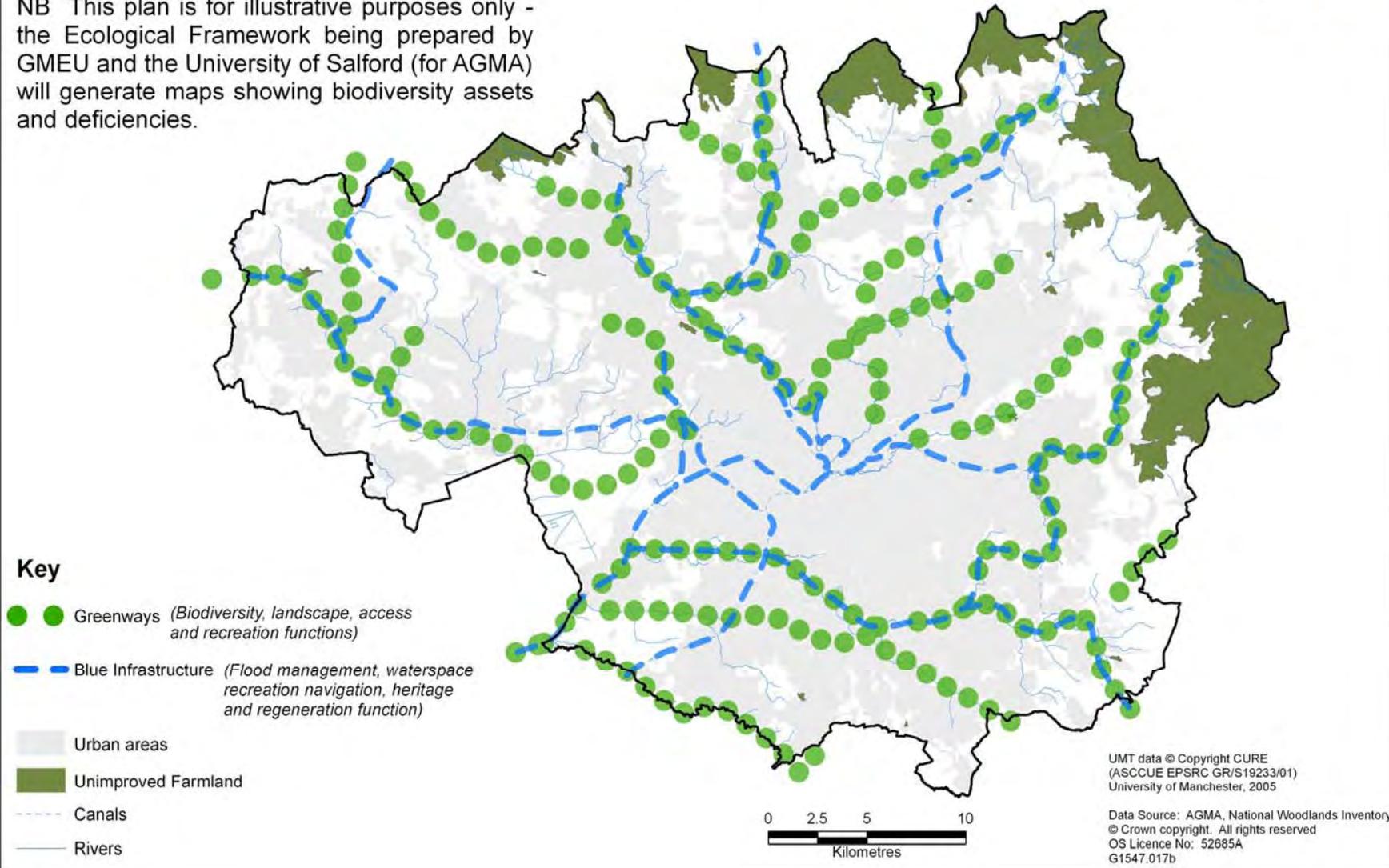


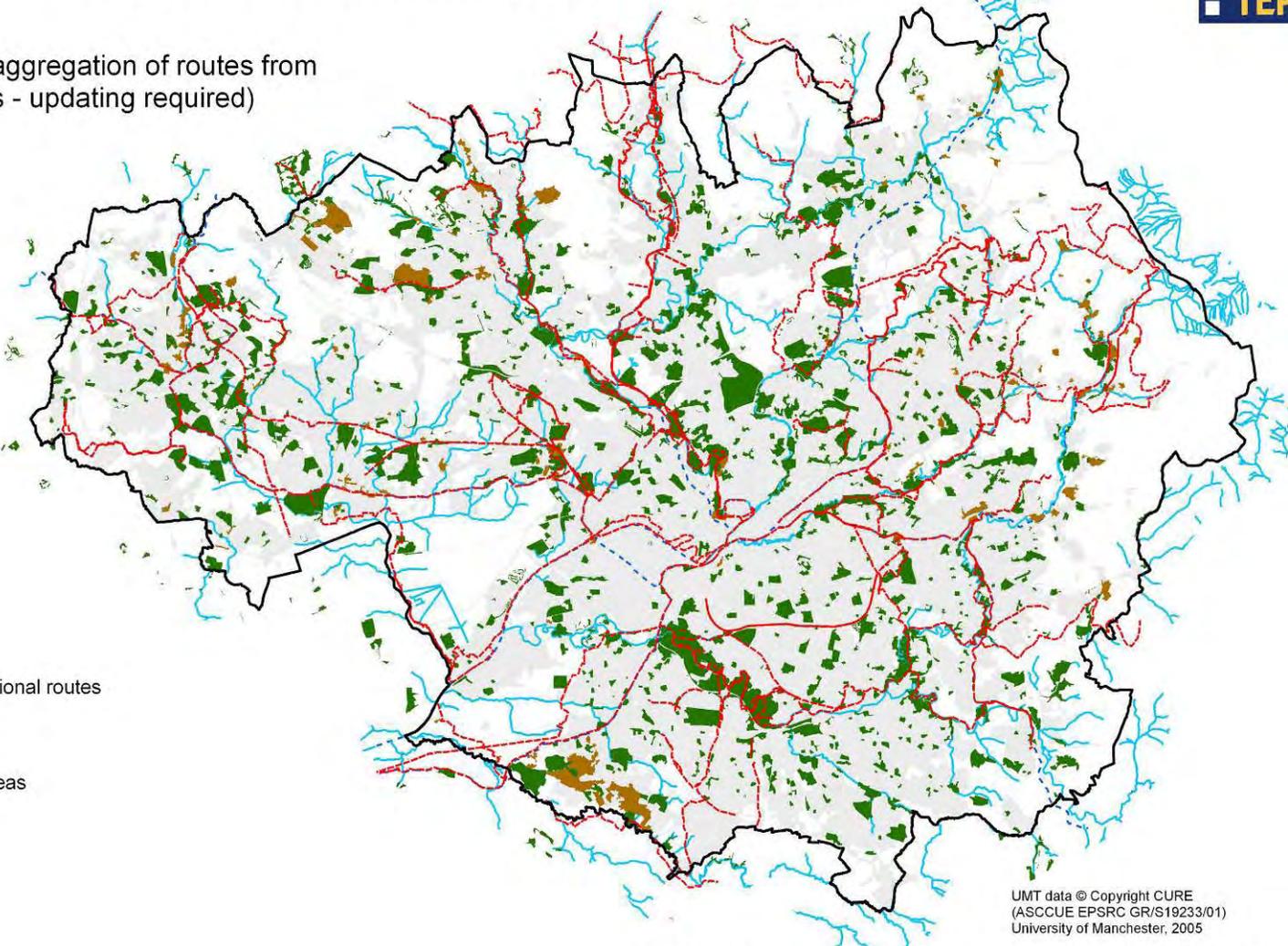
Figure 7.6 Sustainable Movement Network



(NB Based on aggregation of routes from various sources - updating required)

Key

- Strategic recreational routes
- Greenspace
- Conservation Areas
- Rivers
- - - Canals
- Urban areas



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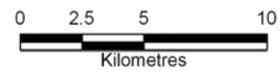
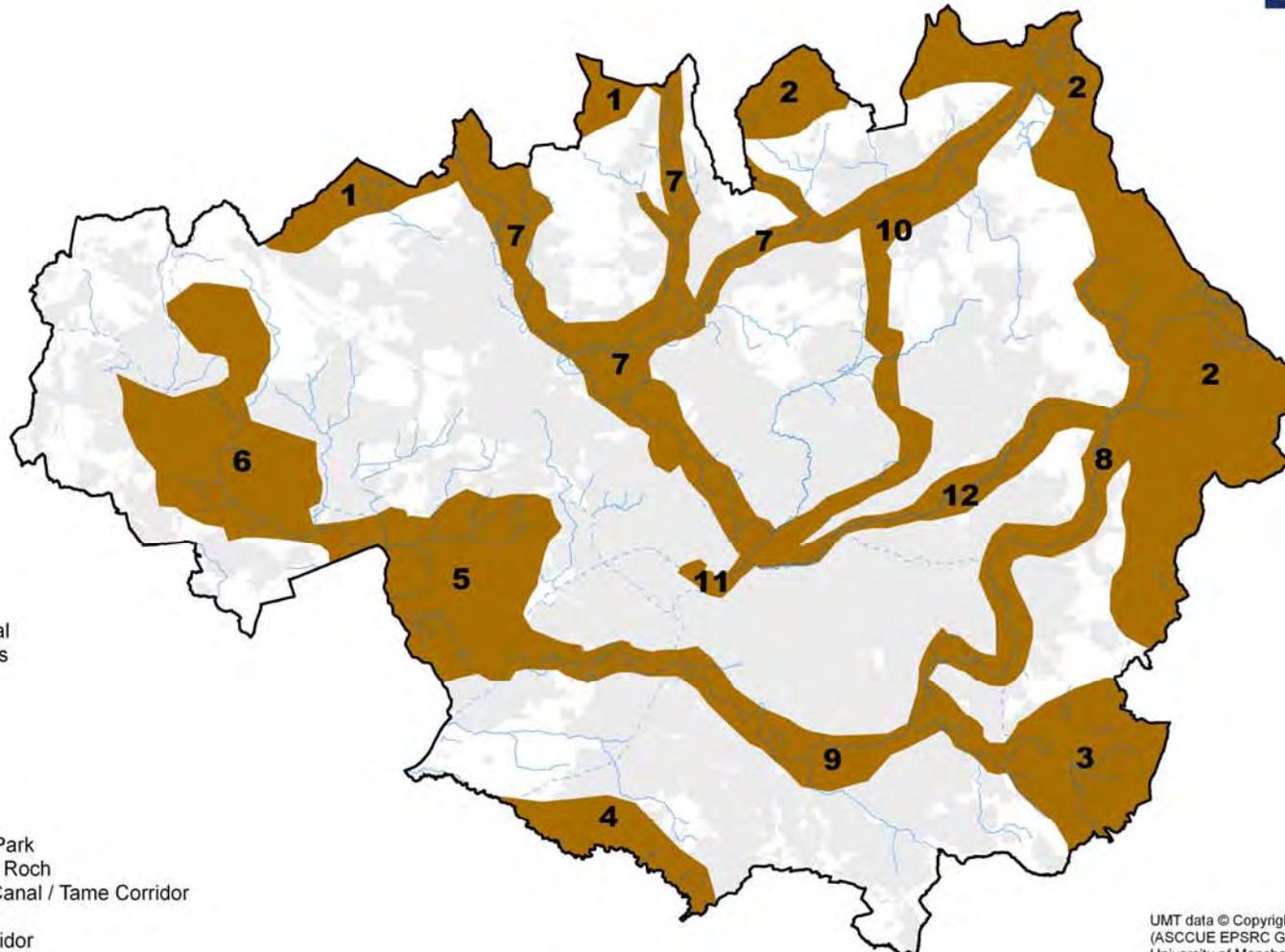
Figure 7.7 Natural and Landscape Heritage Core areas



Key

- Canals
- Rivers
- Natural and cultural heritage core areas
- Urban areas

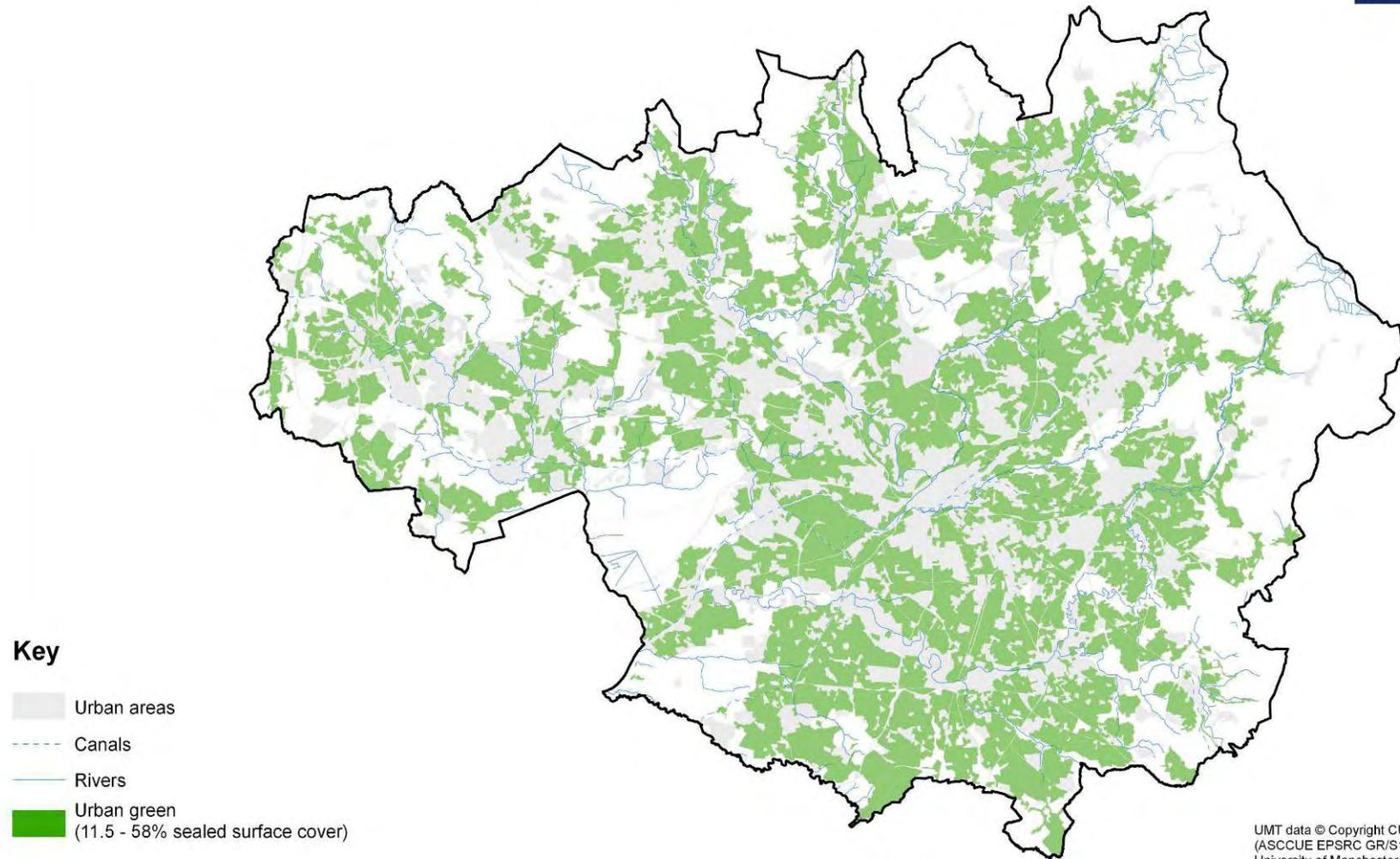
- 1 - West Pennines
- 2 - South Pennines
- 3 - Edge of Peak
- 4 - Dunham
- 5 - Mosslands
- 6 - Greenheart Regional Park
- 7 - River Irwell, Croal and Roch
- 8 - Huddersfield Narrow Canal / Tame Corridor
- 9 - Mersey Valley
- 10 - Rochdale Canal Corridor
- 11 - Irwell City Park
- 12 - Medlock Valley



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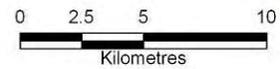
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Figure 7.8 Urban Green



Key

- Urban areas
- Canals
- Rivers
- Urban green (11.5 - 58% sealed surface cover)



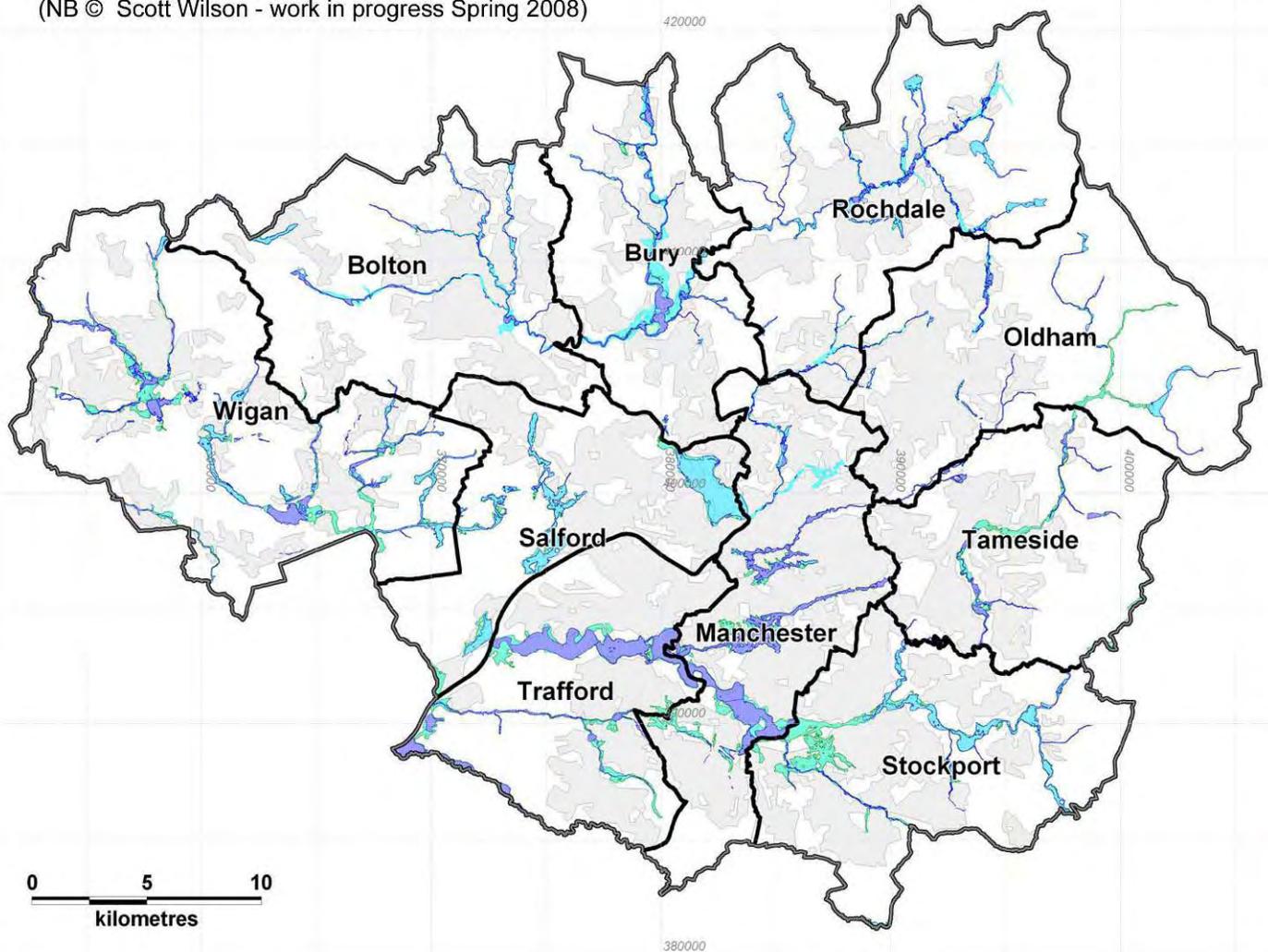
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Figure 8.1 Strategic Flood Risk Assessment

(NB © Scott Wilson - work in progress Spring 2008)



Greater Manchester Sub-Regional SFRA

Map A-6: Greater Manchester SFRA Flood Zones & Urban Areas

- GM District Boundaries
- FZ3b - Functional Floodplain
- FZ3a - 100yr Floodplain
- FZ3 including Climate Change
- FZ2 - 1000yr Floodplain
- GM Urban Areas

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Figure 8.2 Flood Management Function

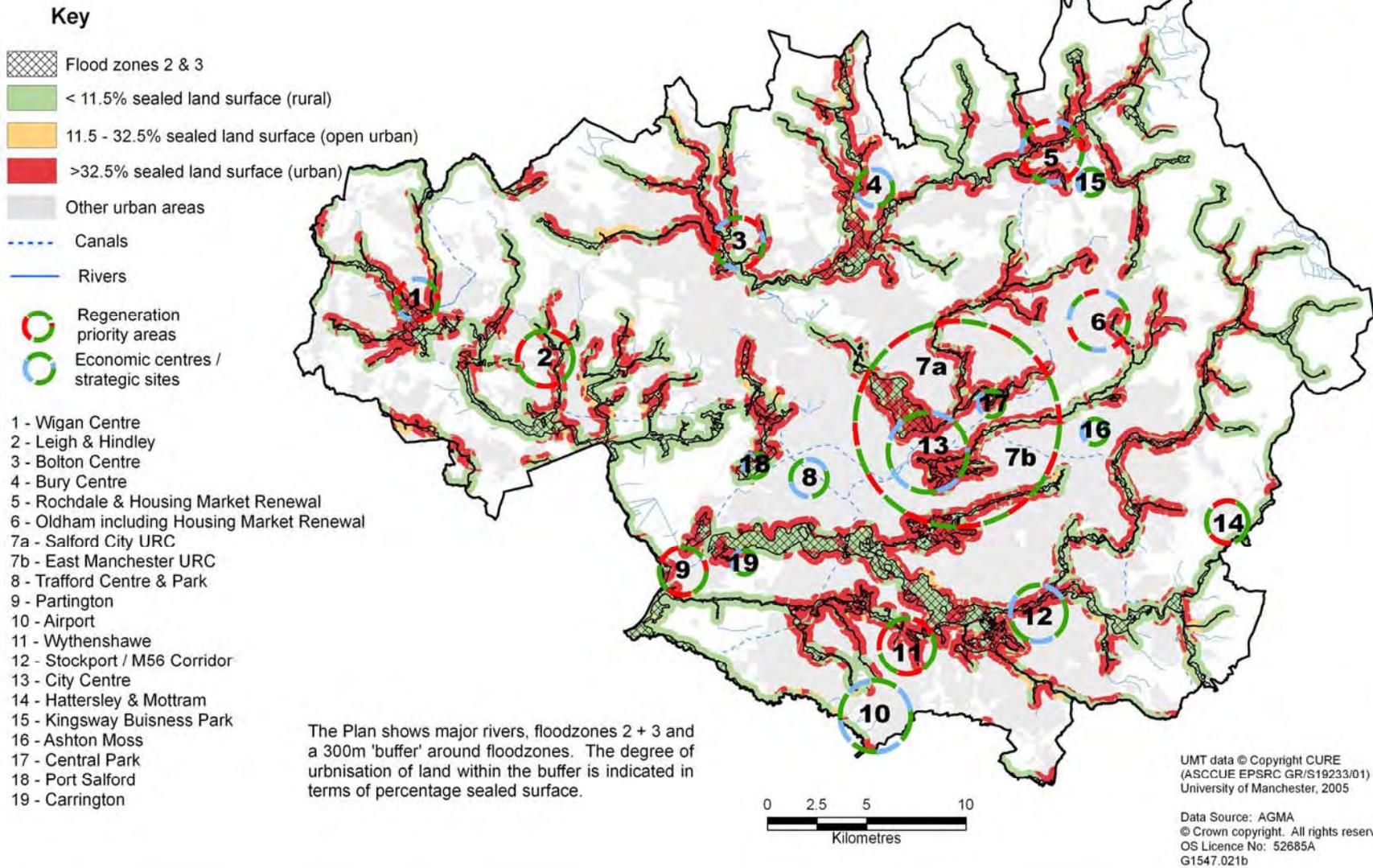


Figure 8.3 Health Deprivation

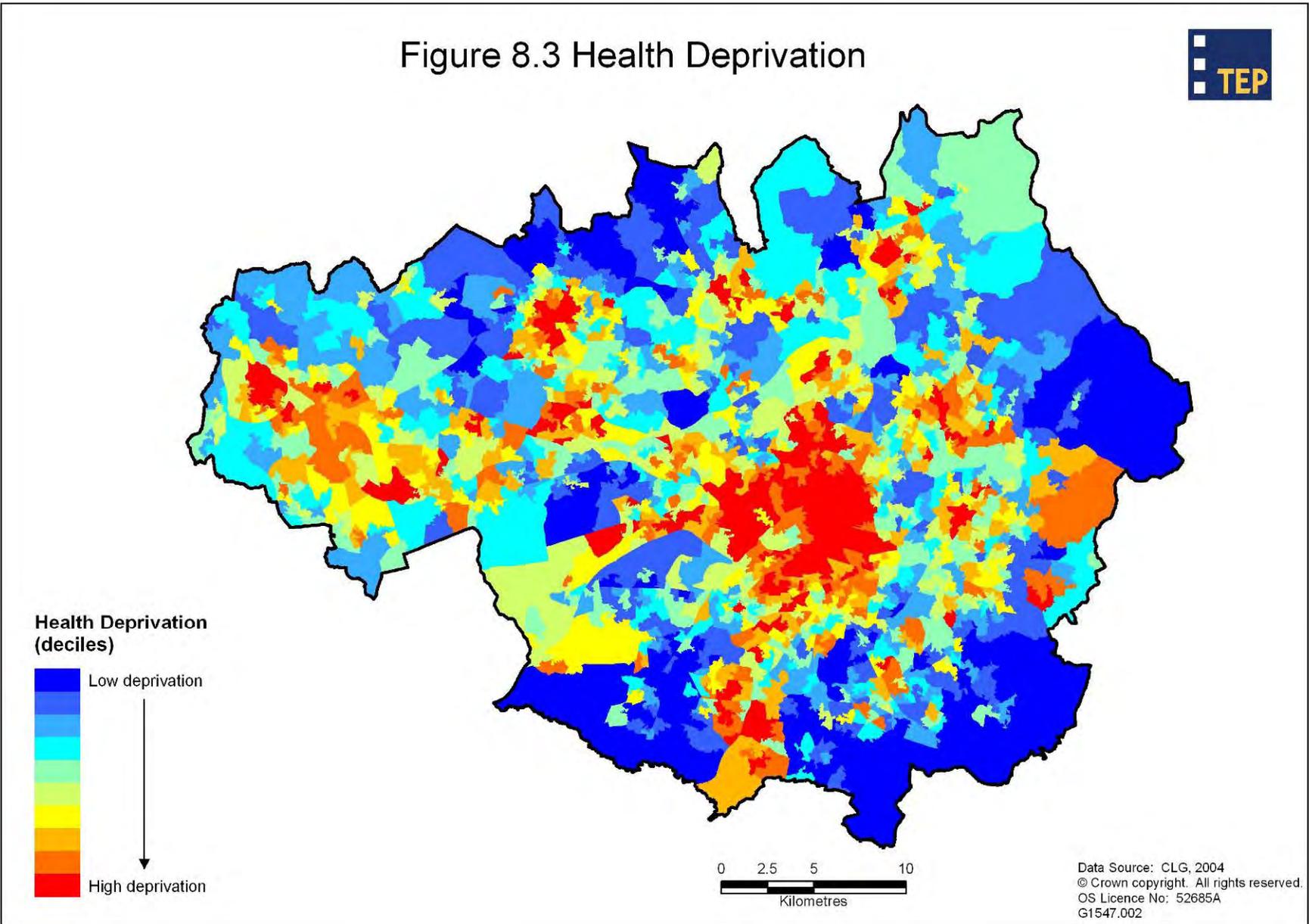
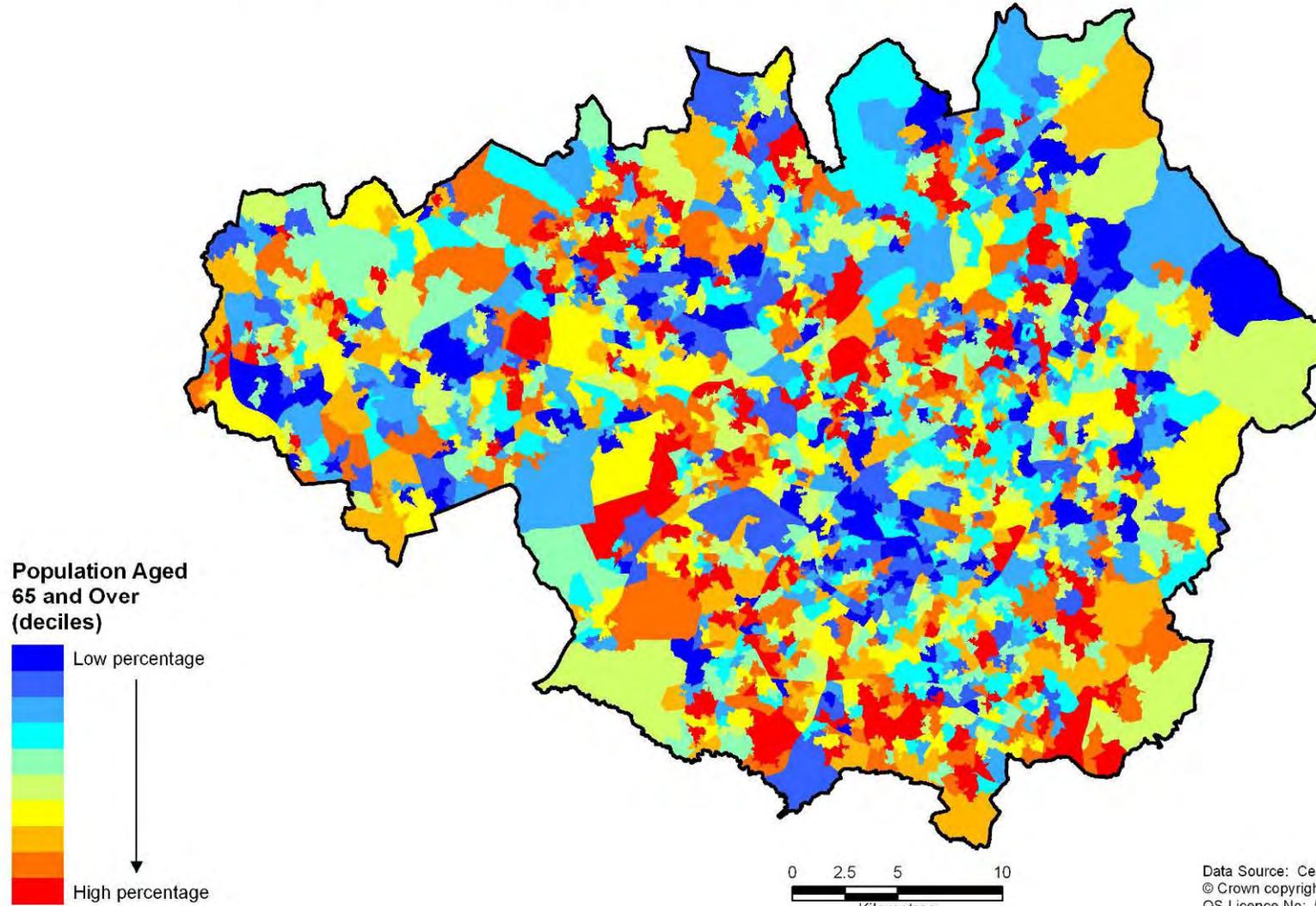


Figure 8.4 Percentage of Population Aged 65 and Over



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Figure 8.5 Urban Surface Temperature Projections

(Information © Susannah Gill, Mersey Forest)

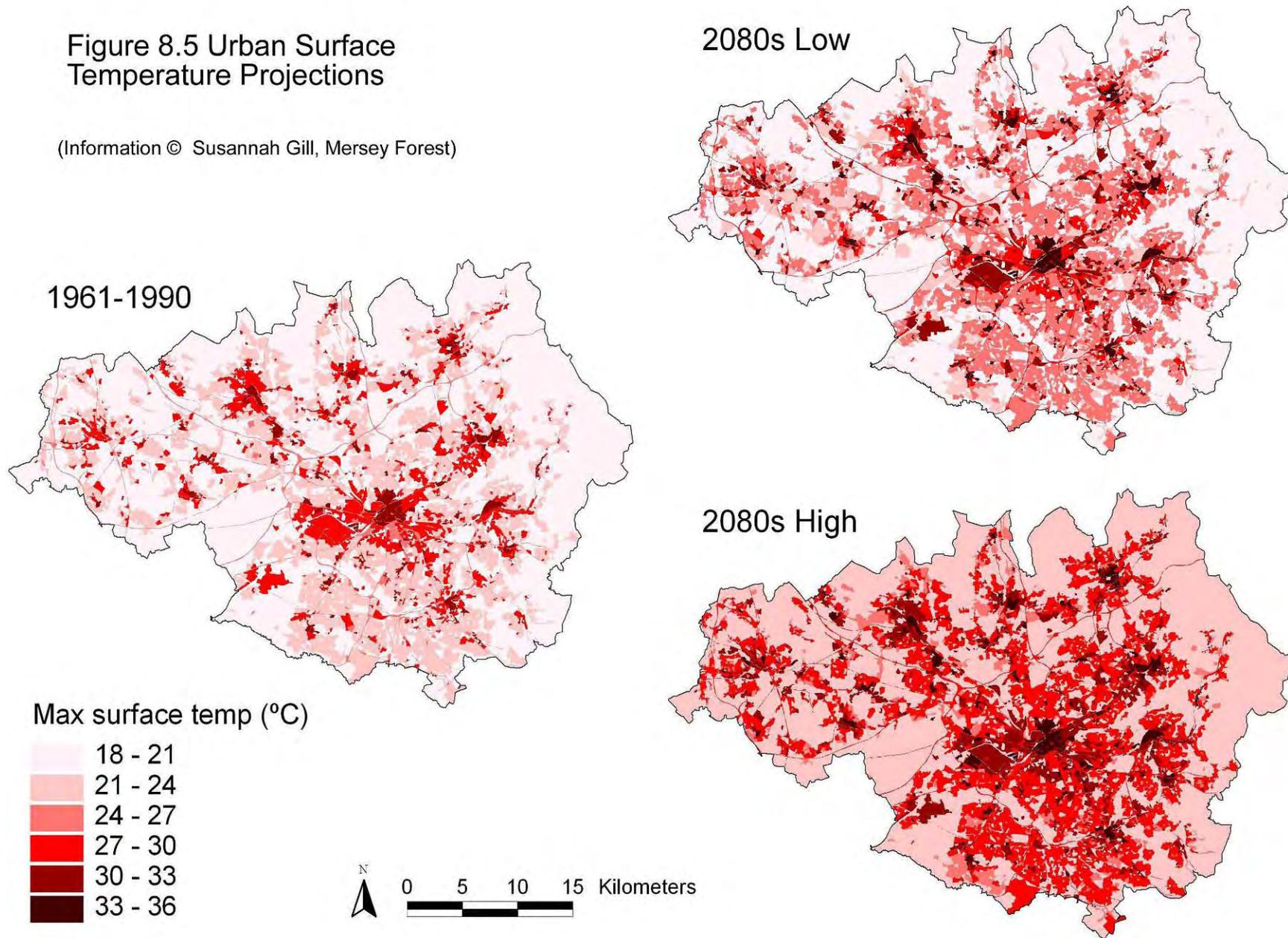


Figure 8.6 Climate Adaptation Function - Urban Heat Vulnerability

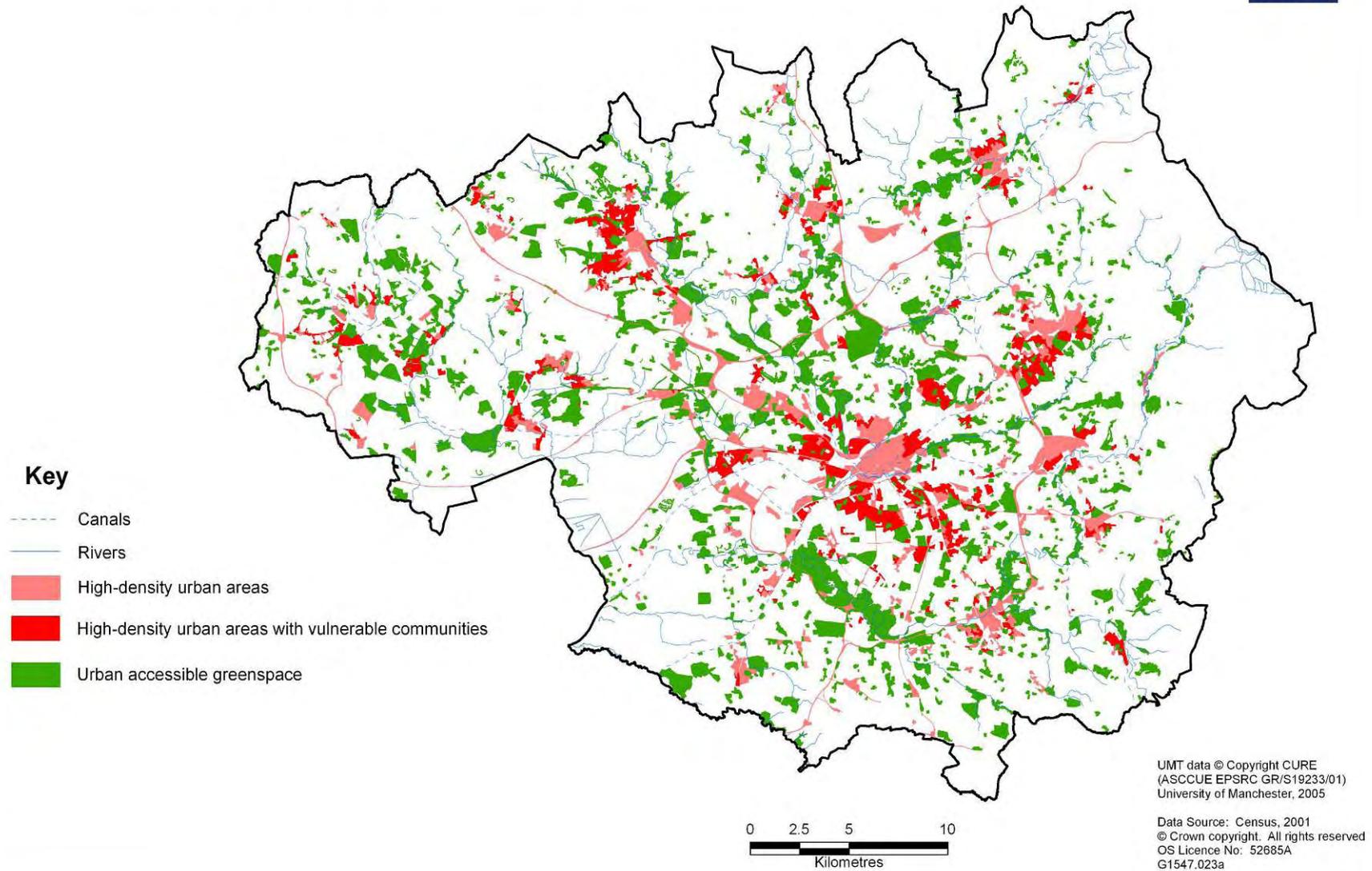
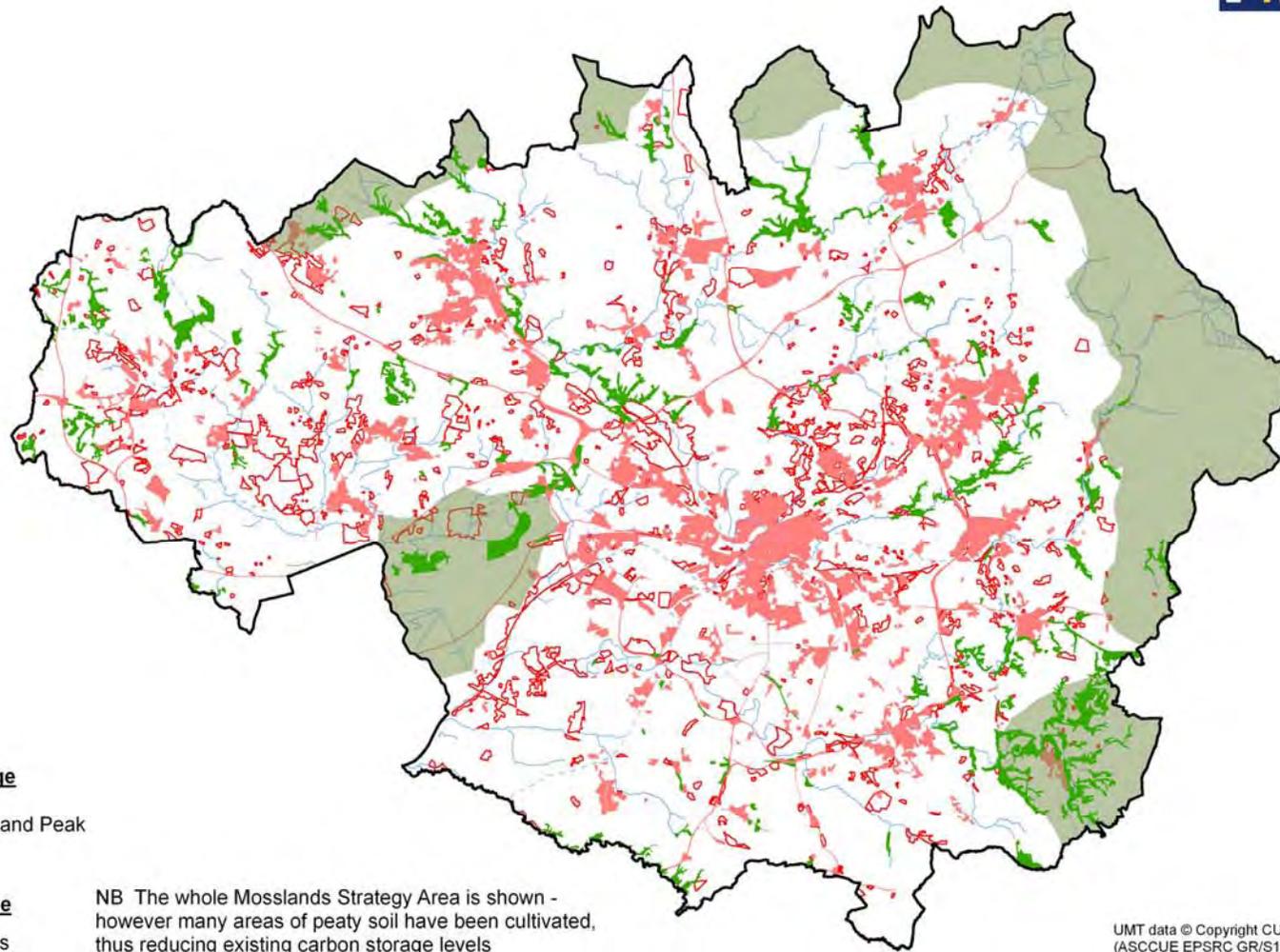


Figure 8.7 Climate Adaptation Function - Carbon Storage



Key

- Canals
- Rivers

High Present Carbon Storage

- Mosslands, Pennines and Peak
- Woodlands

Low Present Carbon Storage

- Highly sealed surfaces
- DUN Land

NB The whole Mosslands Strategy Area is shown - however many areas of peaty soil have been cultivated, thus reducing existing carbon storage levels



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Figure 8.8 Deficiencies of Access to Urban Green Infrastructure



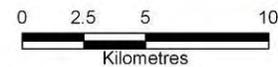
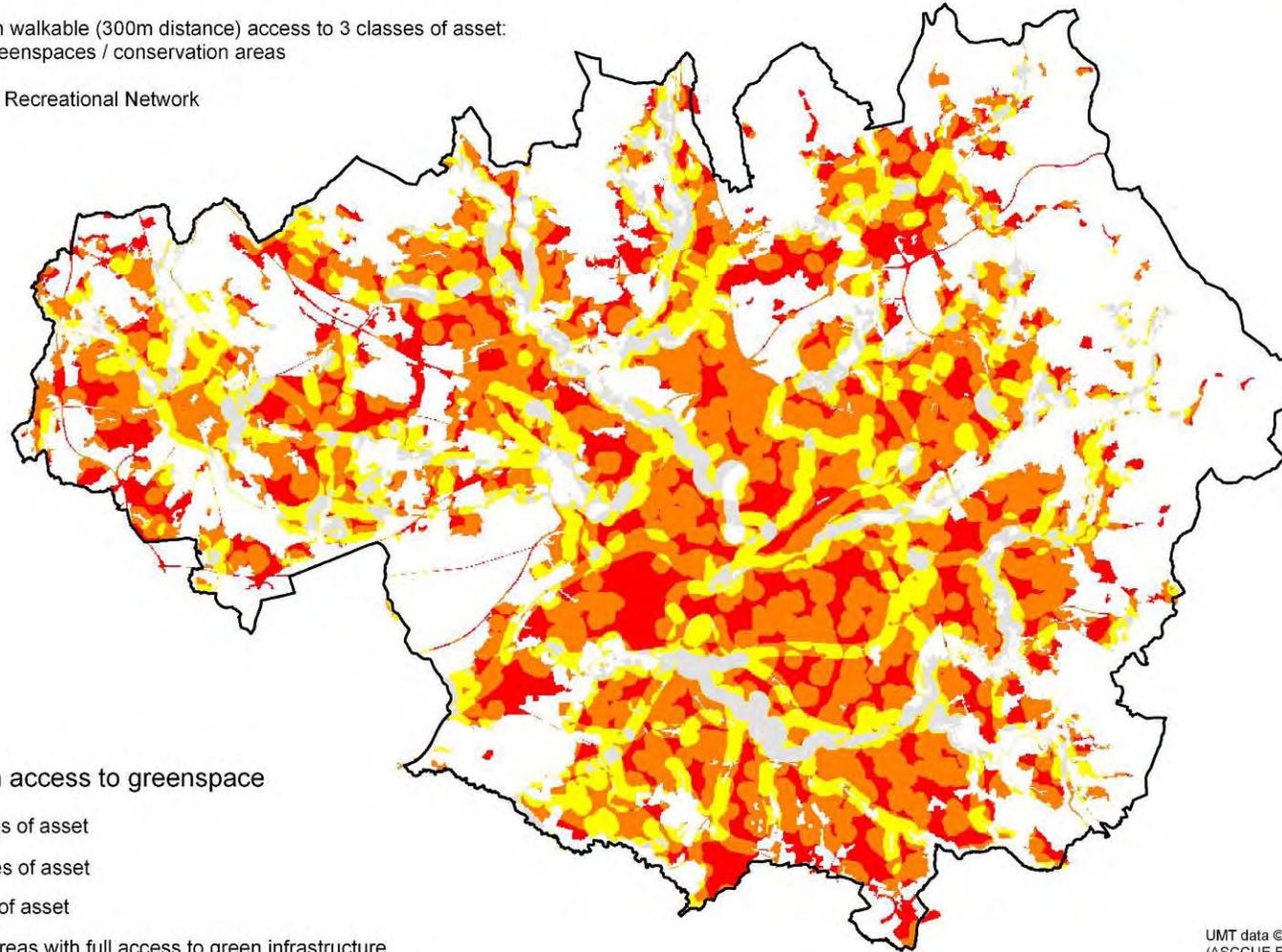
Areas deficient in walkable (300m distance) access to 3 classes of asset:

- 1 - Accessible greenspaces / conservation areas
- 2 - Waterways
- 3 - The Strategic Recreational Network

Key

Deficiency in access to greenspace

- 3 classes of asset
- 2 classes of asset
- 1 class of asset
- Urban areas with full access to green infrastructure



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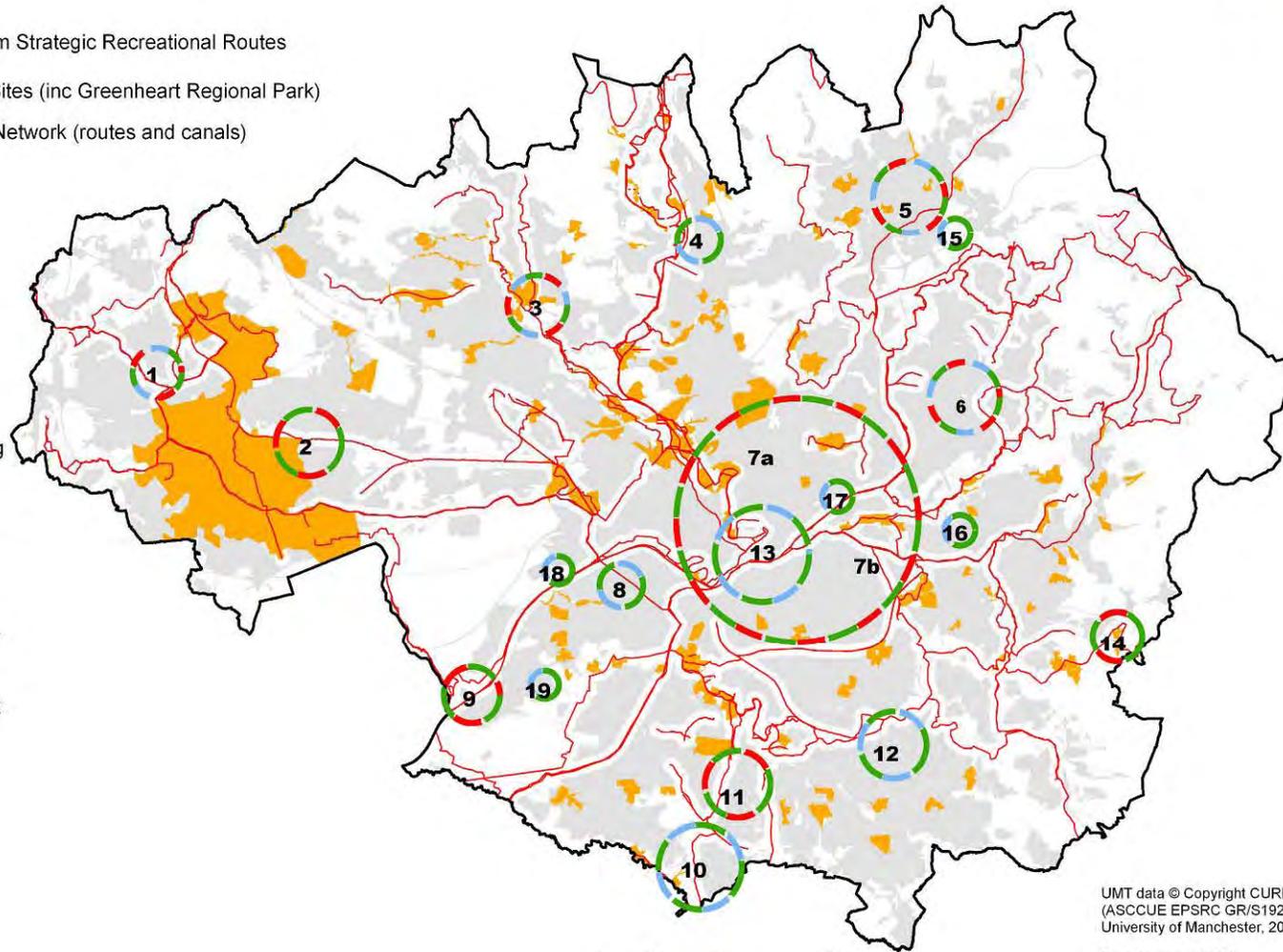
Figure 8.9 Sustainable Movement Network in relation to Economic Centres



Key

- Urban areas >300m from Strategic Recreational Routes
- Strategic Recreational Sites (inc Greenheart Regional Park)
- Strategic Recreational Network (routes and canals)
- Regeneration priority areas
- Economic centres / strategic sites

- 1 - Wigan
- 2 - Leigh & Hindley
- 3 - Bolton
- 4 - Bury
- 5 - Rochdale & Housing Market Renewal
- 6 - Oldham including Housing Market Renewal
- 7a - Salford City URC
- 7b - East Manchester URC
- 8 - Trafford Centre & Park
- 9 - Partington
- 10 - Airport
- 11 - Wythenshawe
- 12 - Stockport / M56 Corridor
- 13 - City Centre
- 14 - Hattersley & Mottram
- 15 - Kingsway Buisness Park
- 16 - Ashton Moss
- 17 - Central Park
- 18 - Port Salford
- 19 - Carrington



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Figure 8.10 Place-Making Function

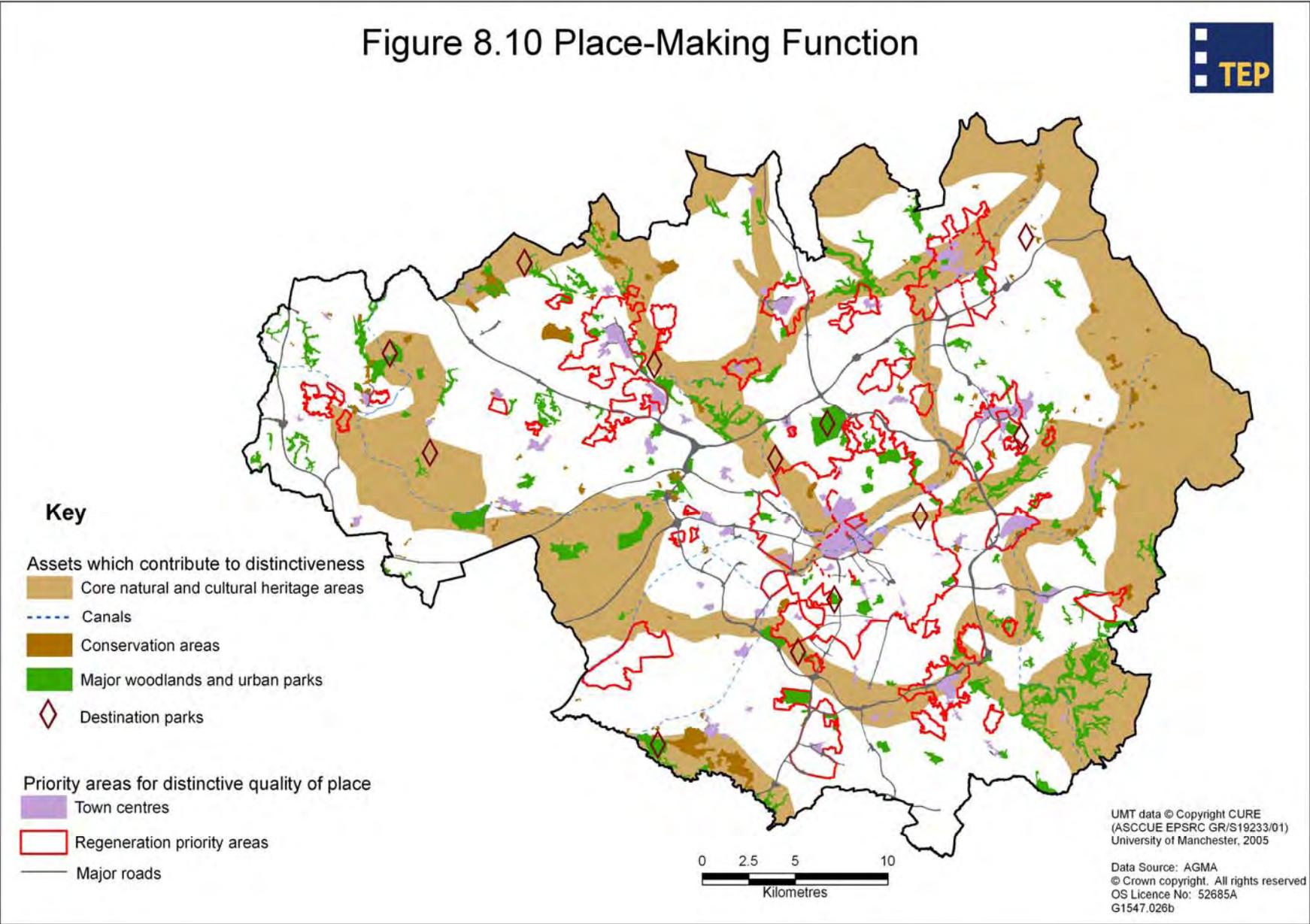


Figure 8.11 Image-making Function

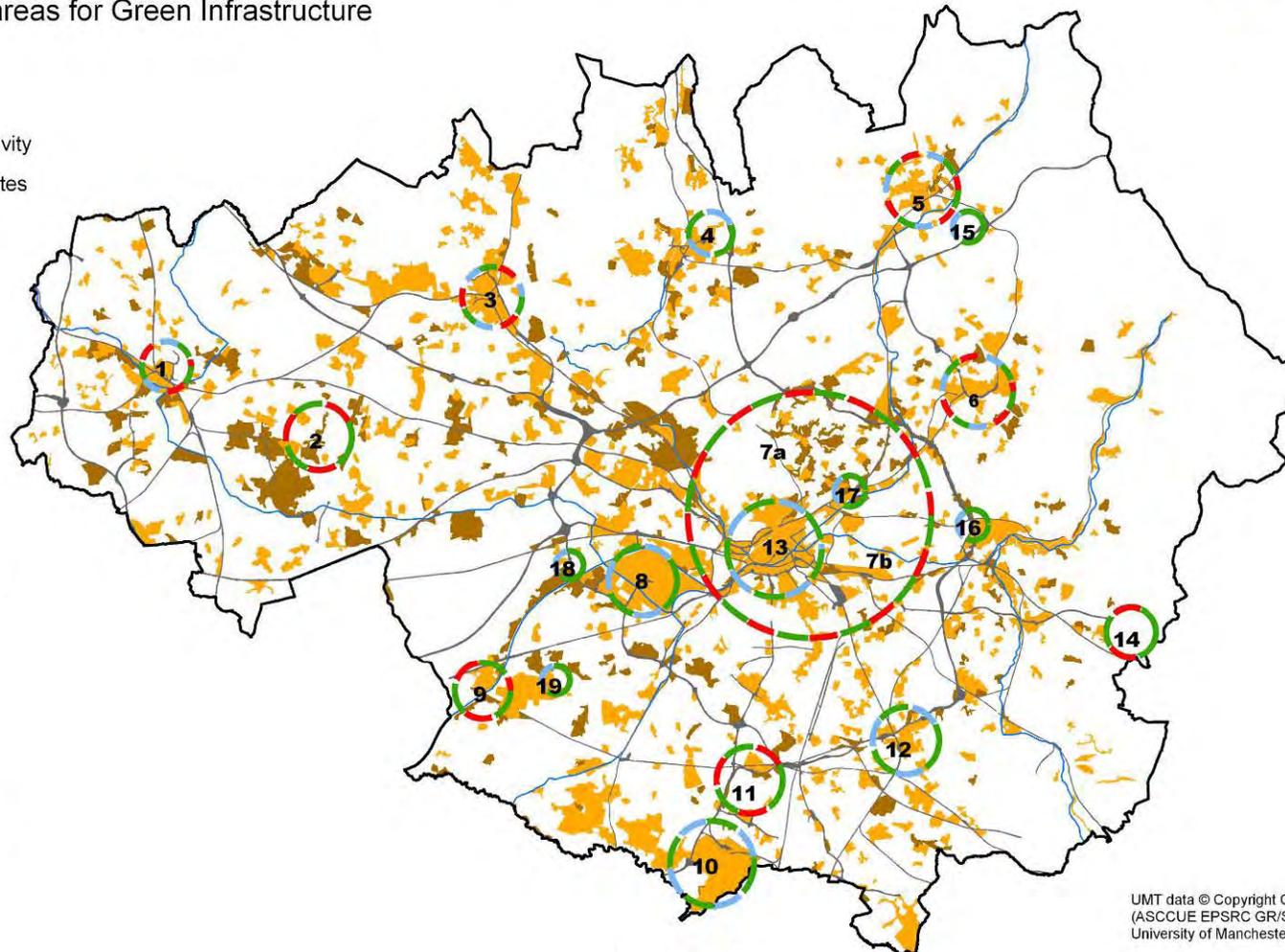


Showing priority areas for Green Infrastructure

Key

- Areas of economic activity
- Major road and rail routes
- Canals
- DUN land

- Regeneration priority areas
 - Economic centres / strategic sites
- 1 - Wigan
 - 2 - Leigh & Hindley
 - 3 - Bolton
 - 4 - Bury
 - 5 - Rochdale & Housing Market Renewal
 - 6 - Oldham including Housing Market Renewal
 - 7a - Central Salford
 - 7b - New East Manchester
 - 8 - Trafford Centre & Park
 - 9 - Partington
 - 10 - Airport
 - 11 - Wythenshawe
 - 12 - Stockport / M56 Corridor
 - 13 - City Centre
 - 14 - Hattersley & Mottram
 - 15 - Kingsway Business Park
 - 16 - Ashton Moss
 - 17 - Central Park
 - 18 - Port Salford
 - 19 - Carrington



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Figure 8.12 Regeneration Function

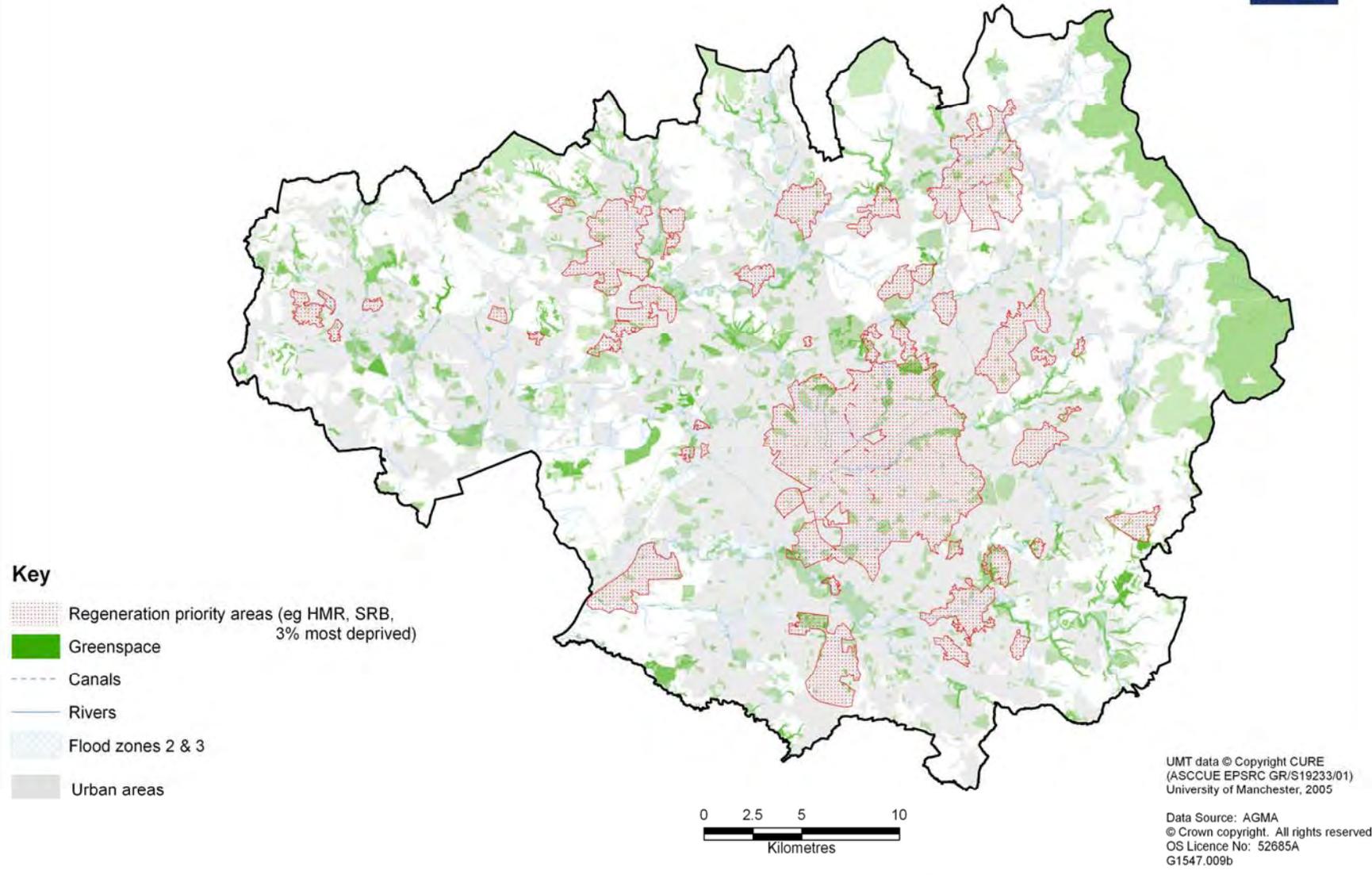


Figure 9.1 Green Infrastructure and Distinctive Places - Key Diagram



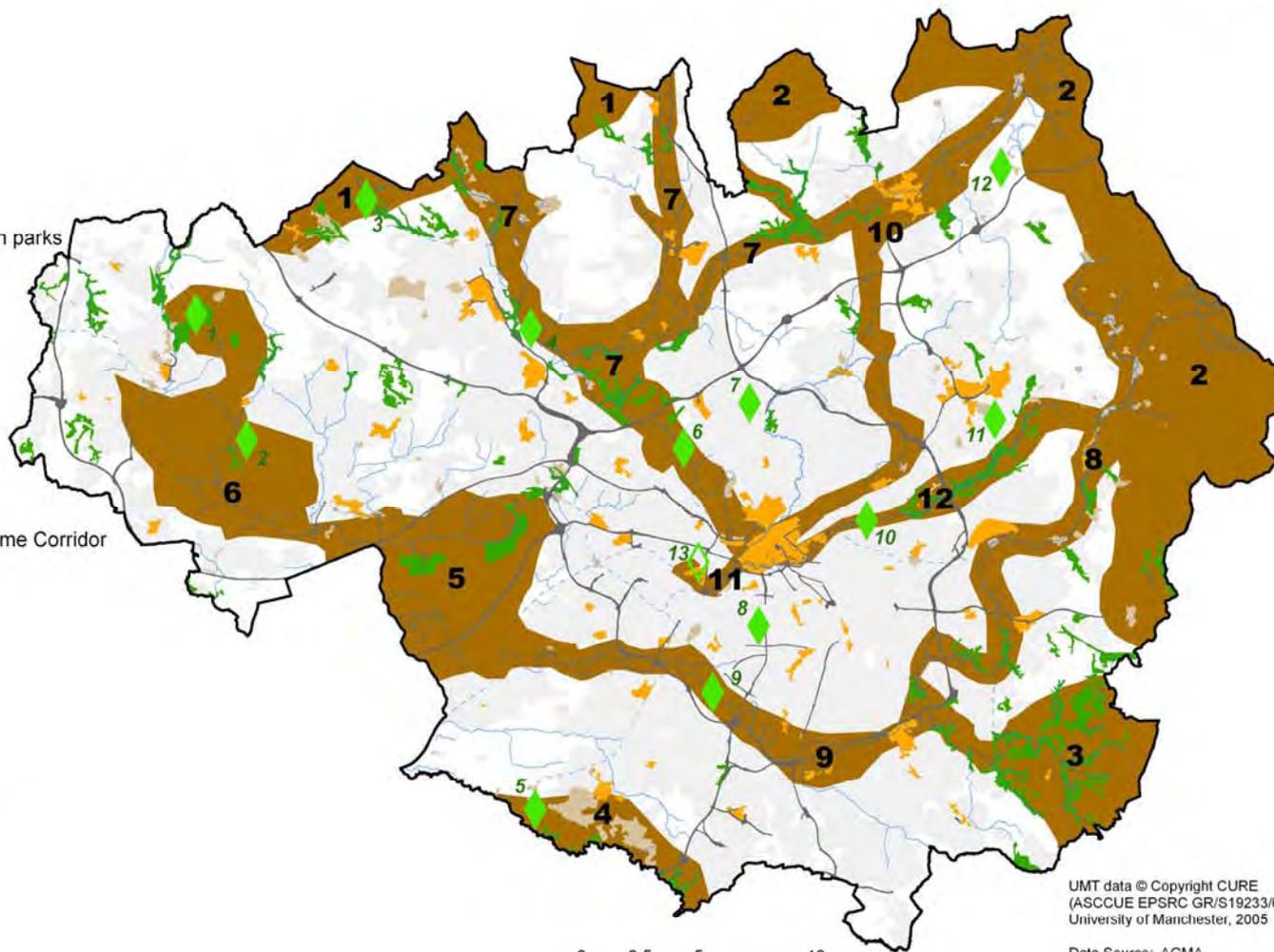
Key

- Major roads
- - - Canals
- Rivers
- Urban areas
- Town centres
- Major woodlands and urban parks
- Conservation areas
- Natural and landscape heritage core areas

- 1 - West Pennines
- 2 - South Pennines
- 3 - Edge of Peak
- 4 - Dunham
- 5 - Mosslands
- 6 - Greenheart Regional Park
- 7 - River Irwell, Croal and Roch
- 8 - Huddersfield Narrow Canal / Tame Corridor
- 9 - Mersey Valley
- 10 - Rochdale Canal Corridor
- 11 - Irwell City Park
- 12 - Medlock Valley

◆ Destination parks

- 1 - Haigh Hall
- 2 - Pennington
- 3 - Rivington / Smithills
- 4 - Levenshulme / Moses Gate
- 5 - Dunham
- 6 - LIVIA inc. Clifton
- 7 - Heaton Park
- 8 - Alexandra Park
- 9 - Sale Water Park
- 10 - Philips Park
- 11 - Alexandra Park
- 12 - Hollingworth Lake
- 13 - Irwell City Park - proposed



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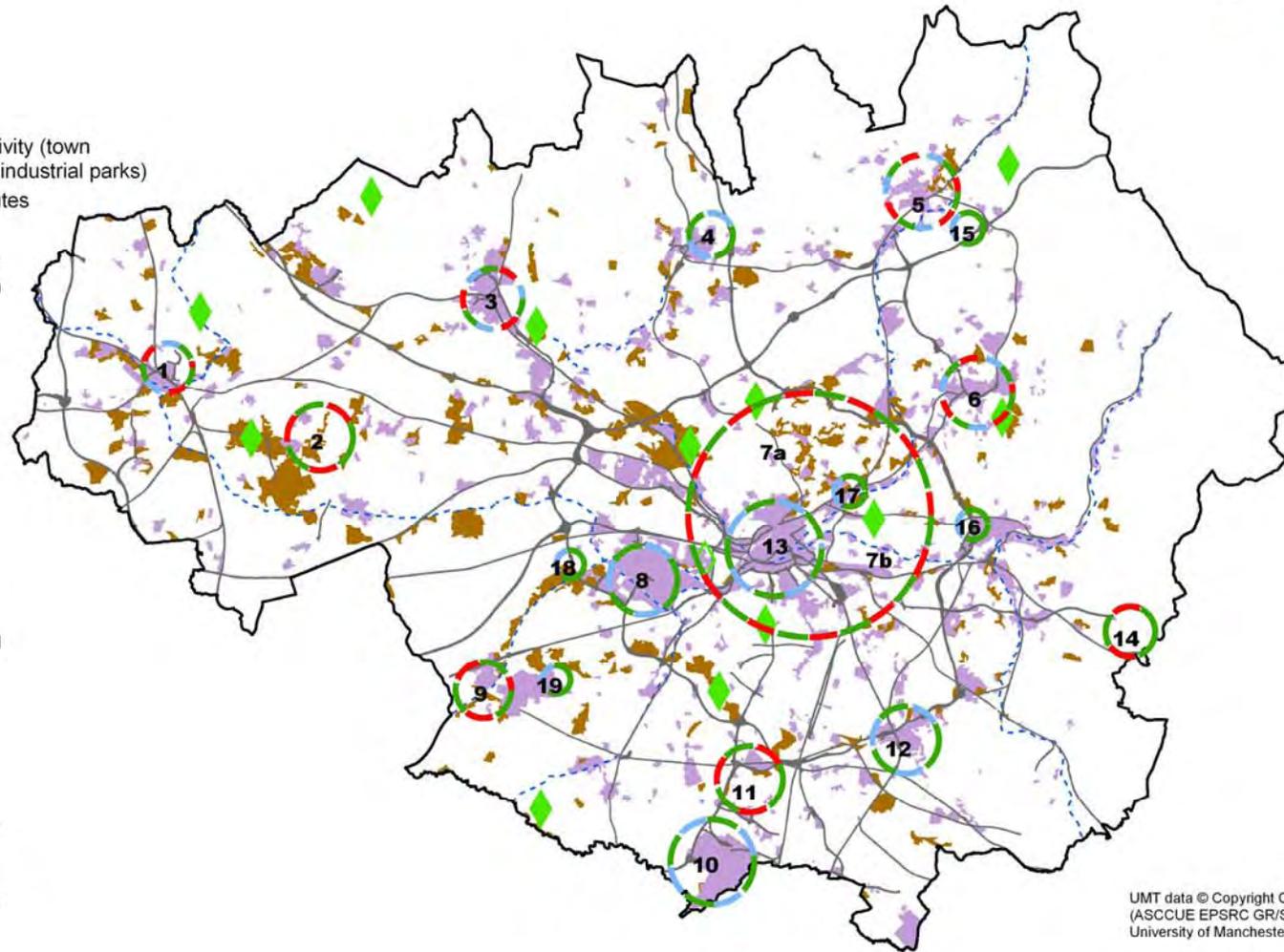
Figure 9.2 Green Infrastructure for an Urban Renaissance - Key Diagram



Key

- Areas of economic activity (town centres, business and industrial parks)
- Major road and rail routes
- Canals
- Derelict, Underused or Neglected Land (DUN)
- Destination parks
- Regeneration priority areas
- Economic centres / strategic sites

- 1 - Wigan
- 2 - Leigh & Hindley
- 3 - Bolton
- 4 - Bury
- 5 - Rochdale & Housing Market Renewal
- 6 - Oldham including Housing Market Renewal
- 7a - Central Salford
- 7b - New East Manchester
- 8 - Trafford Centre & Park
- 9 - Partington
- 10 - Airport
- 11 - Wythenshawe
- 12 - Stockport / M56 Corridor
- 13 - City Centre
- 14 - Hattersley & Mottram
- 15 - Kingsway Business Park
- 16 - Ashton Moss
- 17 - Central Park
- 18 - Port Salford
- 19 - Carrington



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Figure 9.3 Green Infrastructure for Sustainable Movement - Key Diagram

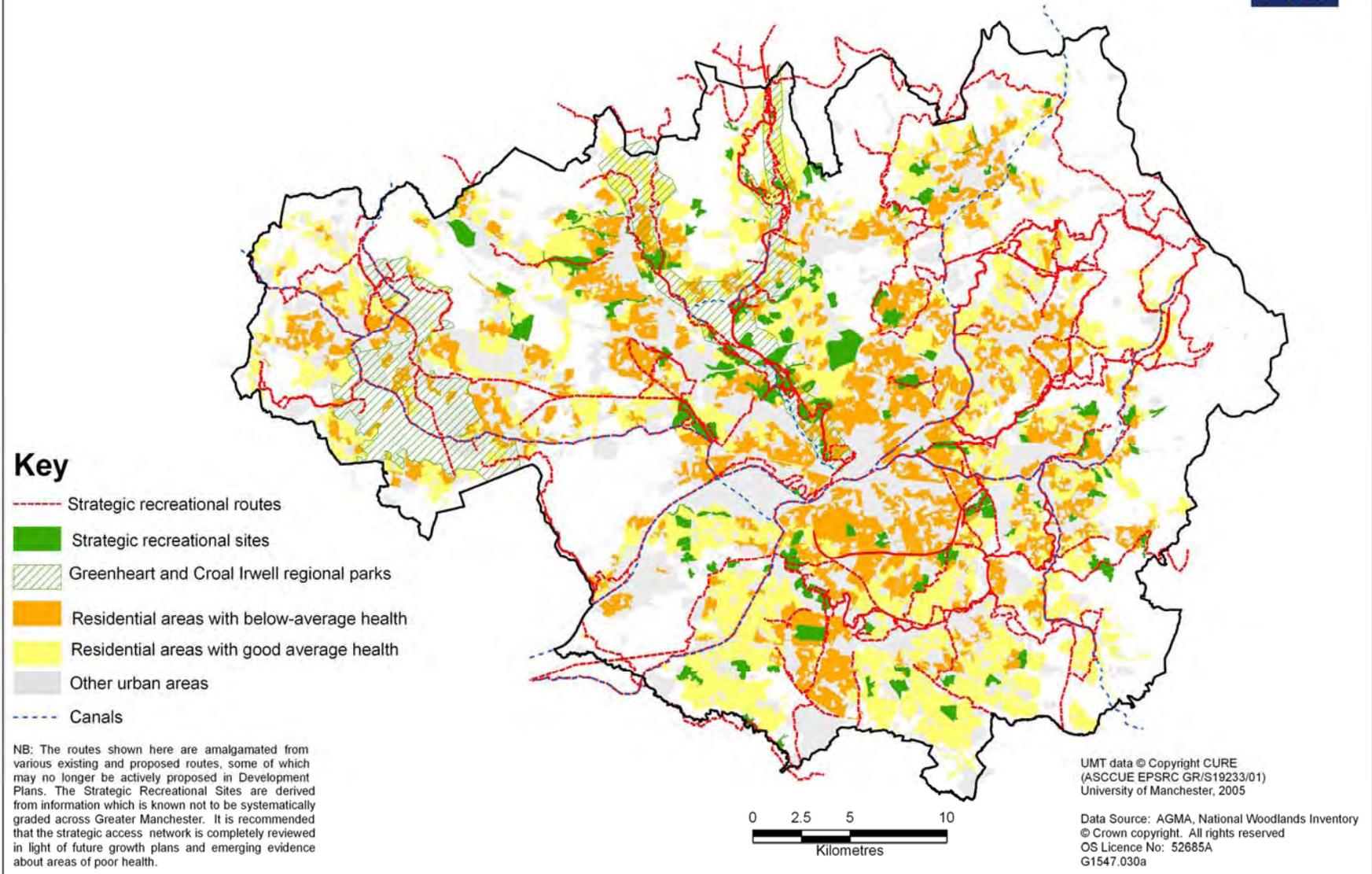


Figure 9.4 Green Infrastructure in a Changing Climate - Key Diagram

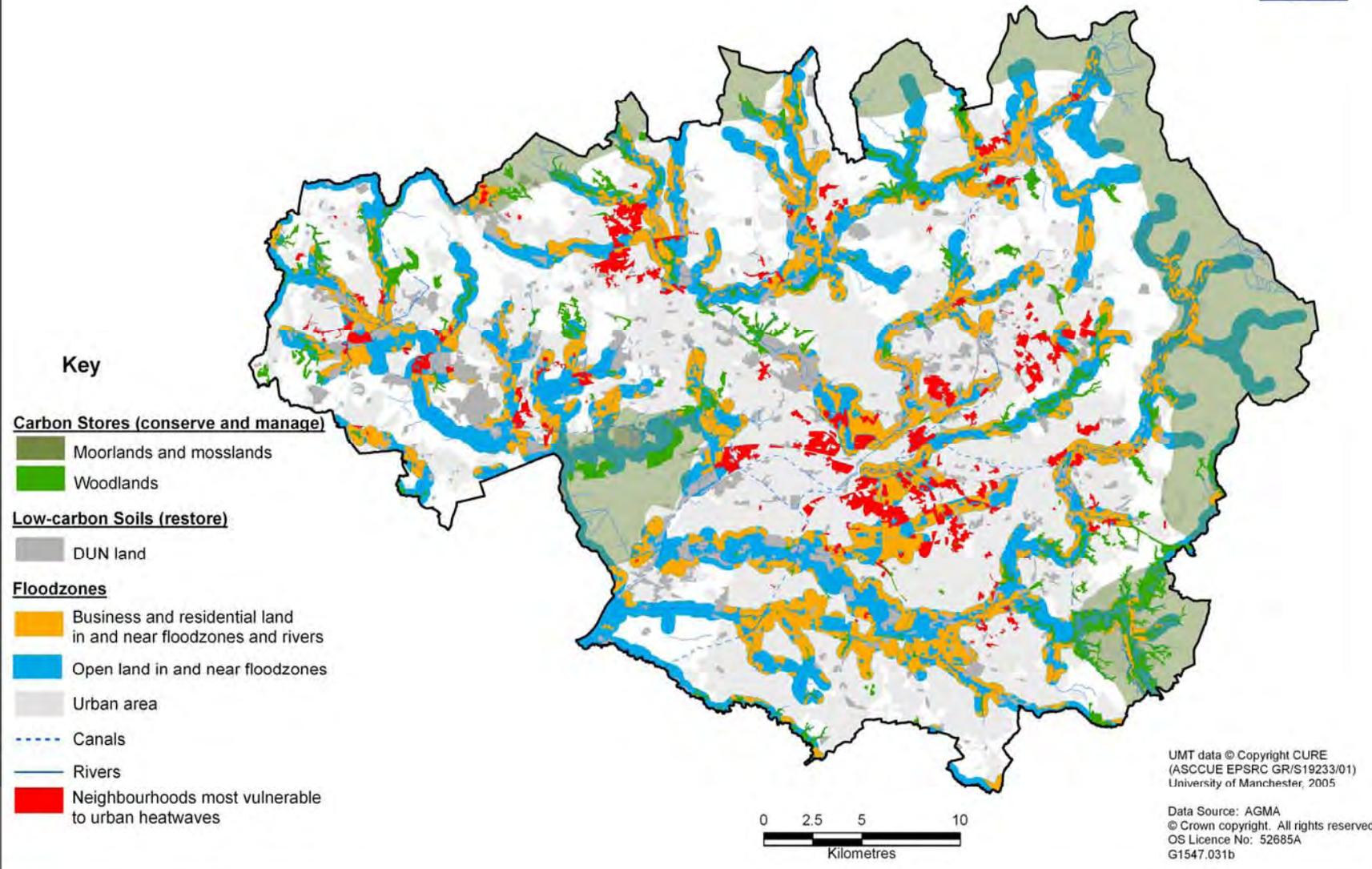


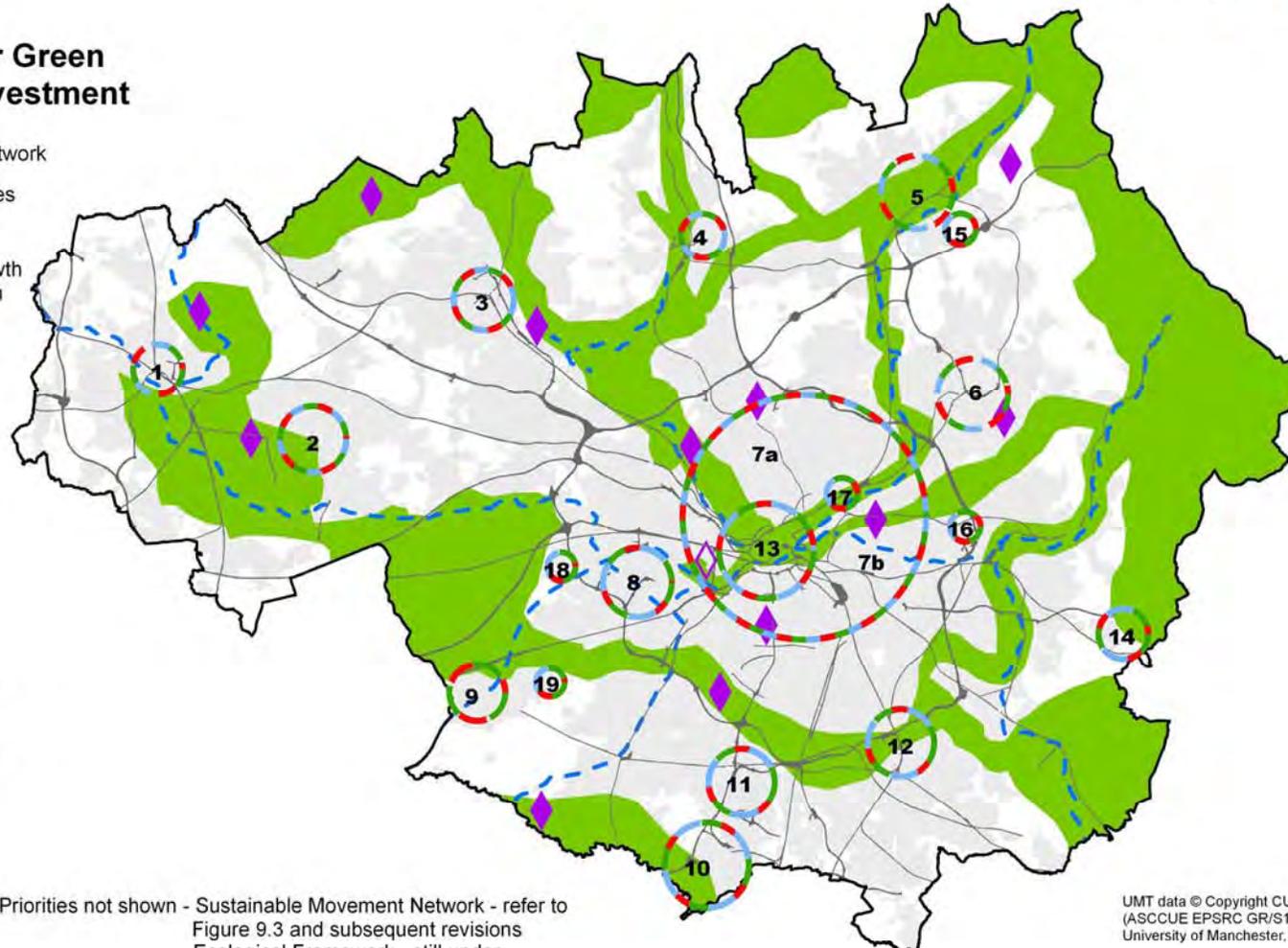
Figure 9.5 Greater Manchester - Green Infrastructure Framework to Support Growth



Priority Areas for Green Infrastructure Investment

- Green Infrastructure Network
- Major road and rail routes
- Canals
- Economic Centres, Growth Points and Regeneration Zones
- 1 - Wigan
- 2 - Leigh & Hindley
- 3 - Bolton
- 4 - Bury
- 5 - Rochdale & Housing Market Renewal
- 6 - Oldham including Housing Market Renewal
- 7a - Central Salford
- 7b - New East Manchester
- 8 - Trafford Centre & Park
- 9 - Partington
- 10 - Airport
- 11 - Wythenshawe
- 12 - Stockport / M56 Corridor
- 13 - City Centre
- 14 - Hattersley & Mottram
- 15 - Kingsway Business Park
- 16 - Ashton Moss
- 17 - Central Park
- 18 - Port Salford
- 19 - Carrington
- Destination parks
- Urban areas

Priorities not shown - Sustainable Movement Network - refer to Figure 9.3 and subsequent revisions
 - Ecological Framework - still under development



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