



# Towards a Green Infrastructure Framework for Greater Manchester

September  
2008

Summary  
Report



# GREEN INFRASTRUCTURE FEASIBILITY STUDY FOR GREATER MANCHESTER – SUMMARY REPORT

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## 1 Introduction

1.1 In July 2008, Government confirmed Greater Manchester (GM) would be a New Growth Point (NGP), anticipating 67,500 new homes in the period to 2017. One condition of NGP status is the delivery of Green Infrastructure (GI).

1.2 This report summarises research carried out by TEP for the Association of Greater Manchester Authorities (AGMA) and Natural England, on the feasibility of a GI framework for GM. The study addressed the following issues:-

- a. What does the term 'green infrastructure' mean for the city region?
- b. Does Greater Manchester need to actively plan for GI?
- c. Which GI functions does Greater Manchester need to support its growth?
- d. Does GM need a cross boundary, multi-agency approach to GI?
- e. Where are the priority areas for creation, conservation and enhancement of GI?
- f. Are there case studies of GI being implemented in mature urban areas?
- g. How can Local Development Frameworks and Core Strategies promote GI?

1.3 The study sets out a 'route map' for AGMA to develop a city regional GI framework. The study also advises on how a framework document might be structured and how delivery of GI might be enhanced.

## 2 A definition of green infrastructure

2.1 A general definition of GI is available in Regional Spatial Strategy<sup>1</sup>. In the context of Greater Manchester, TEP advise that GI can be defined as follows:

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

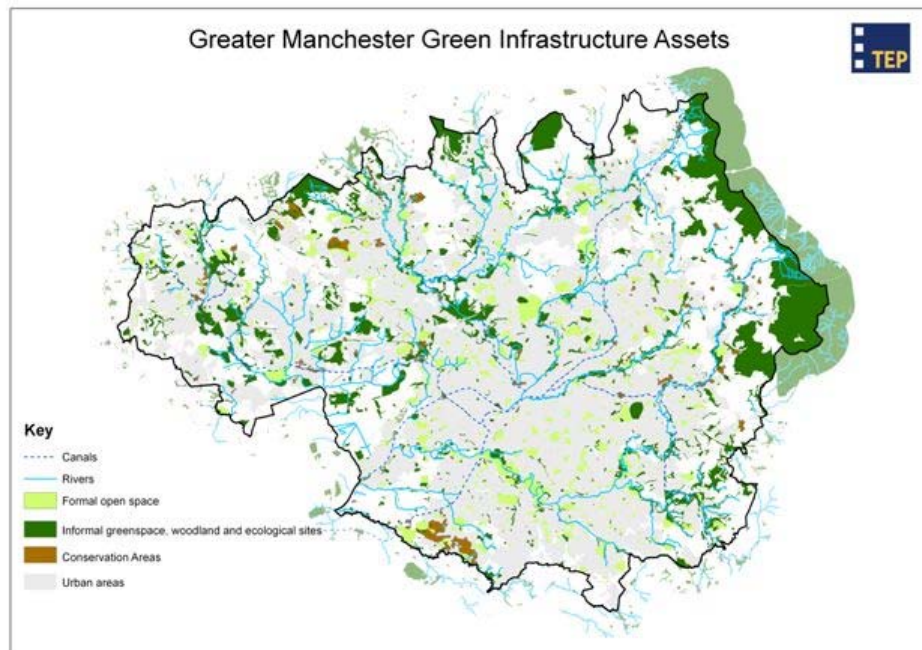
In Greater Manchester, green infrastructure consists of:

- o **open spaces** (parks, woodlands, informal open spaces, nature reserves, lakes, historic sites and natural elements of built conservation areas, civic spaces and plazas, and accessible countryside) (the map below illustrates the present extent of such 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)

2.2 GI is delivered at various geographical scales; from neighbourhood and site specific projects up to cross-boundary environmental programmes such as the Red Rose and Pennine Edge community forests. The graphic at Annexe 1 illustrates the diversity of projects at different scales which combine to form green infrastructure.

2.3 The map illustrates the pattern of existing green infrastructure assets from local to strategic in scale; including parks, managed open spaces, woodlands, rivers, canals, Conservation Areas and ecological sites. The moorland fringes and river valleys support networks of informal and ecological

greenspace. In the inner urban areas, the rivers, canals, multi-user routes, formal parks and pocket spaces for play, amenity and recreation are the principal GI assets. The map also suggests that much urban fringe countryside (i.e. the white areas) is neither particularly accessible nor of significant biodiversity value. The GM Ecological Framework<sup>2</sup> also notes the importance of the collective private garden resource in sustaining urban biodiversity.



### 3 Does Greater Manchester need to actively plan for GI?

3.1 The study identified many reasons why GI is critical to sustain growth. It merits forward planning and investment as much as other socio-economic

priorities such as health, transport, education, economic development and highway/telecomm/drainage infrastructure.

3.2 **Economic 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.

**3.3** Ecotec strongly recommends that development agencies should grasp the opportunities presented by the GI agenda for two key reasons:

- o **First**, to secure maximum economic benefits by planning, managing and enhancing the region's GI, 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 economy.
- o **Second**, to address the global issue of climate change, using GI 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.

**3.4** GI is central to **climate change action**. There are carbon storage benefits from brownfield soil restoration, from management of peaty soils in the Pennine fringe and the mosslands and from new woodland planting.

**3.5** Urban living is conducive to low carbon lifestyles and GI is crucial to making our city liveable and attractive (see New York case study). GI is also a climate adaptation strategy through improving shade, reducing heat island effects and improving flood storage capacity.

**3.6** GI is an imperative of **national, regional and local plans**. Safeguarding and improving environmental quality, for its intrinsic value and its public benefits, is a recurring theme in planning policy statements, regional spatial strategy, the

sub-regional action plan and the New Growth Point declaration of July 2008.

**3.7** Programmes such as Newlands<sup>3</sup>, the community forests and regional parks demonstrate how **GI reverses the legacy of environmental damage** caused by unsustainable growth patterns in the 19<sup>th</sup> and 20<sup>th</sup> centuries.

**3.8** GI helps deliver Greater Manchester's intended **brand** as a **green, vibrant and ambitious city** noted for the quality of life, quality of environment and quality of place. Such a brand is critical if GM is to sustain its competitiveness against other European city regions.

#### **4 Which functions of green infrastructure are most needed?**

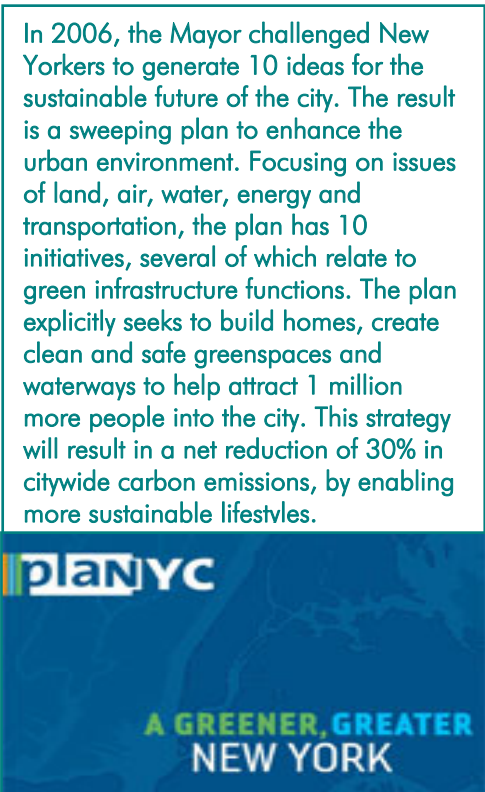
**4.1** The city region's vision is that by the year 2025, Greater Manchester will be:

- 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** GI underpins the growth, transformation and management of the Greater Manchester expressed in the Vision. GI will help:

- o ensure residents enjoy outstanding quality of life;
- o care for the environment so it protects and sustains people, property and enterprise;
- o create a setting for, and conditions to sustain, prosperous growth.

*"A world class city; known for quality of place, quality of environment and quality of life"*



4.3 TEP advises that the objectives for GI in the City-Region are to fulfil eight “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 wildlife “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, mosslands, 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

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

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

5 **Does Greater Manchester need a cross boundary, multi-agency approach to GI?**

5.1 A base level of GI activity already takes place (e.g. community forests, Groundwork Trusts, Newlands, local authorities’ open-space programmes). National and regional policy (PPS12 and RSS Policy EM3) already requires each local authority to plan for GI. Local authorities appear willing to include

GI policy in Core Strategy (evidenced during an LDF Managers workshop in March 2008).

**5.2** TEP considered whether an additional over-arching City-Regional approach to GI planning would be necessary and/or beneficial.

**5.3** A city regional GI approach offers opportunity to build capacity for city growth and stimulate the required environmental improvements through:

- Identifying hotspots of particular social or environmental need.
- Promoting cross boundary programmes to sustain and build environmental resilience e.g. catchment wide flood management, river valley greenways, derelict land regeneration, carbon-storage.
- Strengthening the natural economy through investment in major programmes such as regional parks, canal and waterfront regeneration, visitor management in the Pennine and Peak fringes, destination parks, and environmental management across the ten local authorities.
- Improving liveability to encourage more people and businesses to settle in and near town and city centres

**5.4** The study also identified an apparent shortfall in funding and delivery capacity in relation to all of eight “growth-support” functions of GI. These shortfalls could to some degree be resolved by increased co-operative working and resource-sharing, as is already evidenced by the successful community forests.

**5.5** The City Regional Commissions which plan and oversee growth, housing, transport, social and economic infrastructure are obliged (under RSS Policy EM 3 and the NGP) to plan for GI. This will be a particular responsibility for the Planning and Housing and Environment Commissions.

**5.6** Recognising the need for, and benefits of, a City-Regional approach to GI, the study examined five options for such an approach:

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

**5.7** The study concluded that a light-touch approach is needed to avoid duplication with, and frustration of, existing activity. There would, in any case, be little appetite for a centrally-controlled plan, given the political and cultural diversity of approaches to spatial planning across the 10 local authorities. After all, GI activity largely consists of the collective power of numerous local actions meeting local needs on specific sites.

**5.8** However, extremely “light-touch” (laissez-faire and advocacy-only) approaches will not enable the step change in planning or delivery capacity needed to meet the challenges of fitting GI into a growing and regenerating mature urban area.

**5.9** **TEP recommends that AGMA promotes a city regional framework for GI as an early action to influence spatial and infrastructure planning in the city region as a whole.** This should be formalised into a city regional strategy once the overall extent and timescale of growth is clear – say by mid 2009. This option (of formal strategy development) should be kept under review.

## 6 Where are the priority areas for GI conservation, enhancement and creation?

6.1 GI can help accelerate progress towards the City Region's 2025 vision by focussing local activity. The concept is of a myriad of locally rooted initiatives combining to form green infrastructure of strategic importance in line with the city's vision. **A spatial framework will highlight city regional priorities amongst a range of local possibilities. The spatial framework will transcend district boundaries.**

6.2 Since GI is multi-functional, different areas will be valuable for differing groups of functions e.g. urban river valleys are vital for flood-management, waterway, biodiversity, access, place-making and regeneration functions; while the regional parks are important for biodiversity, access and natural economy functions.

6.3 The method for mapping spatial priorities is summarised in the box. Budgetary restrictions mean that TEP's findings can only be regarded as a first step which should be refined through more detailed mapping and stakeholder review.

6.4 The following diagrams illustrate the spatial priorities for GI planning in the city region.

6.5 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

6.6 The Ecological Framework (when complete in 2009) will also become a Key Diagram.

6.7 A summary diagram highlights the City-regional priority areas for GI investment. TEP recommends this as a first draft of a Spatial Framework for GI planning in Greater Manchester.

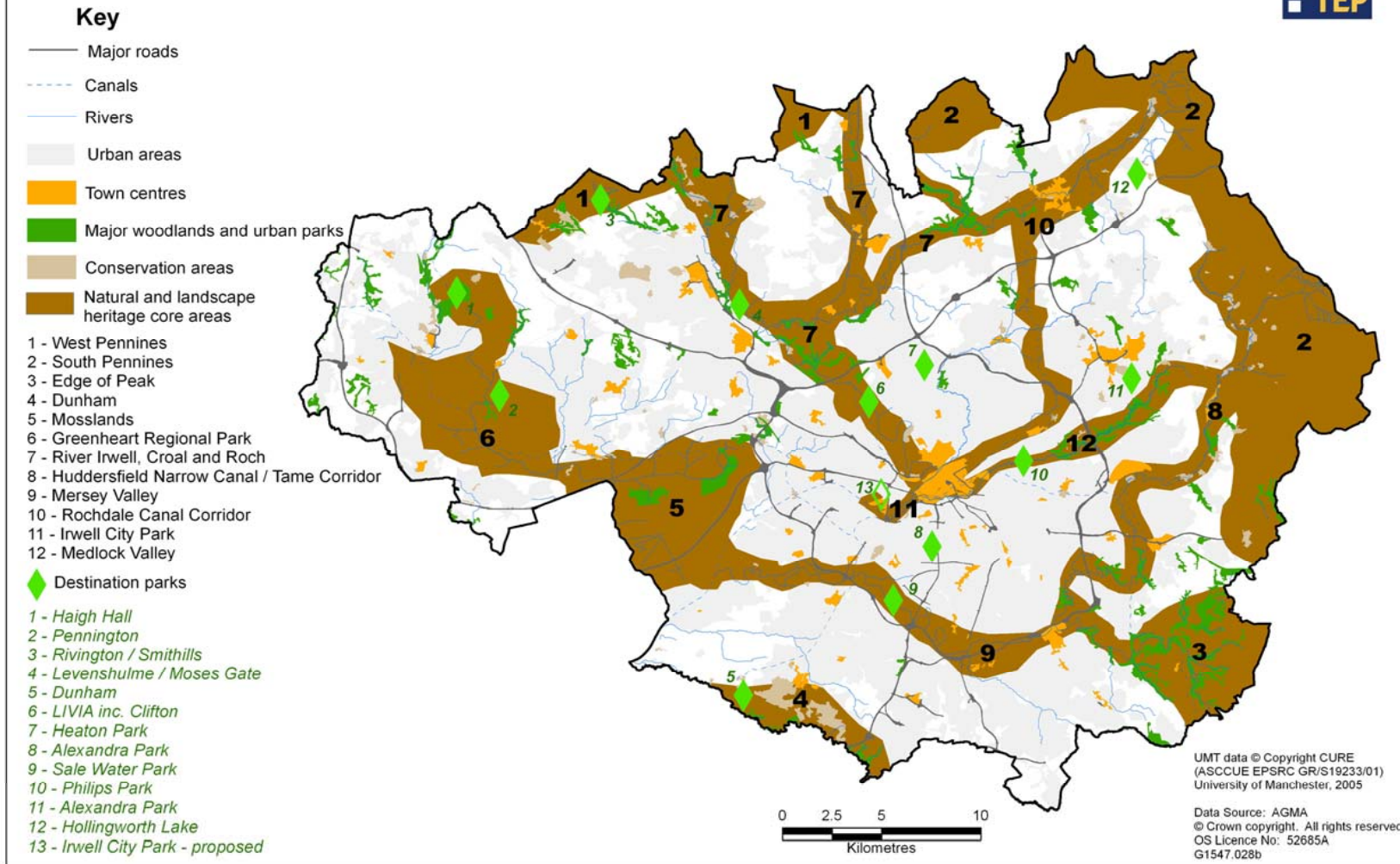
### Overview of methods used for identifying spatial priorities for strategic GI in Greater Manchester.

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:

- a) Mapping of patterns of settlement and open spaces (using urban morphology types provided by CURE).
- b) 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).
- c) Mapping of social and demographic patterns (deprivation, economic activity, demographic trends).
- d) Consideration of where the GI functions are most needed for growth of the city region.

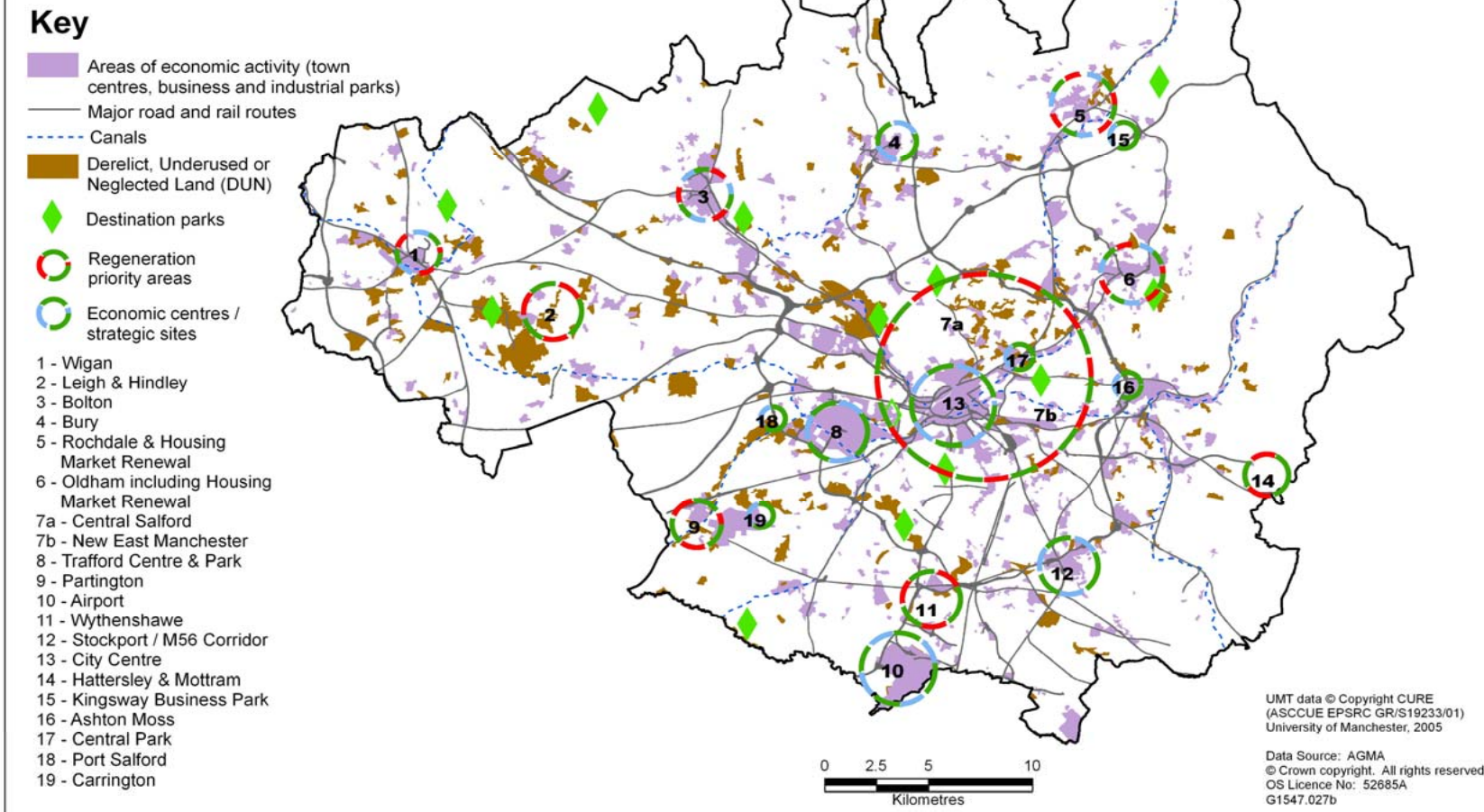


Figure 9.1 Green Infrastructure and Distinctive Places - Key Diagram



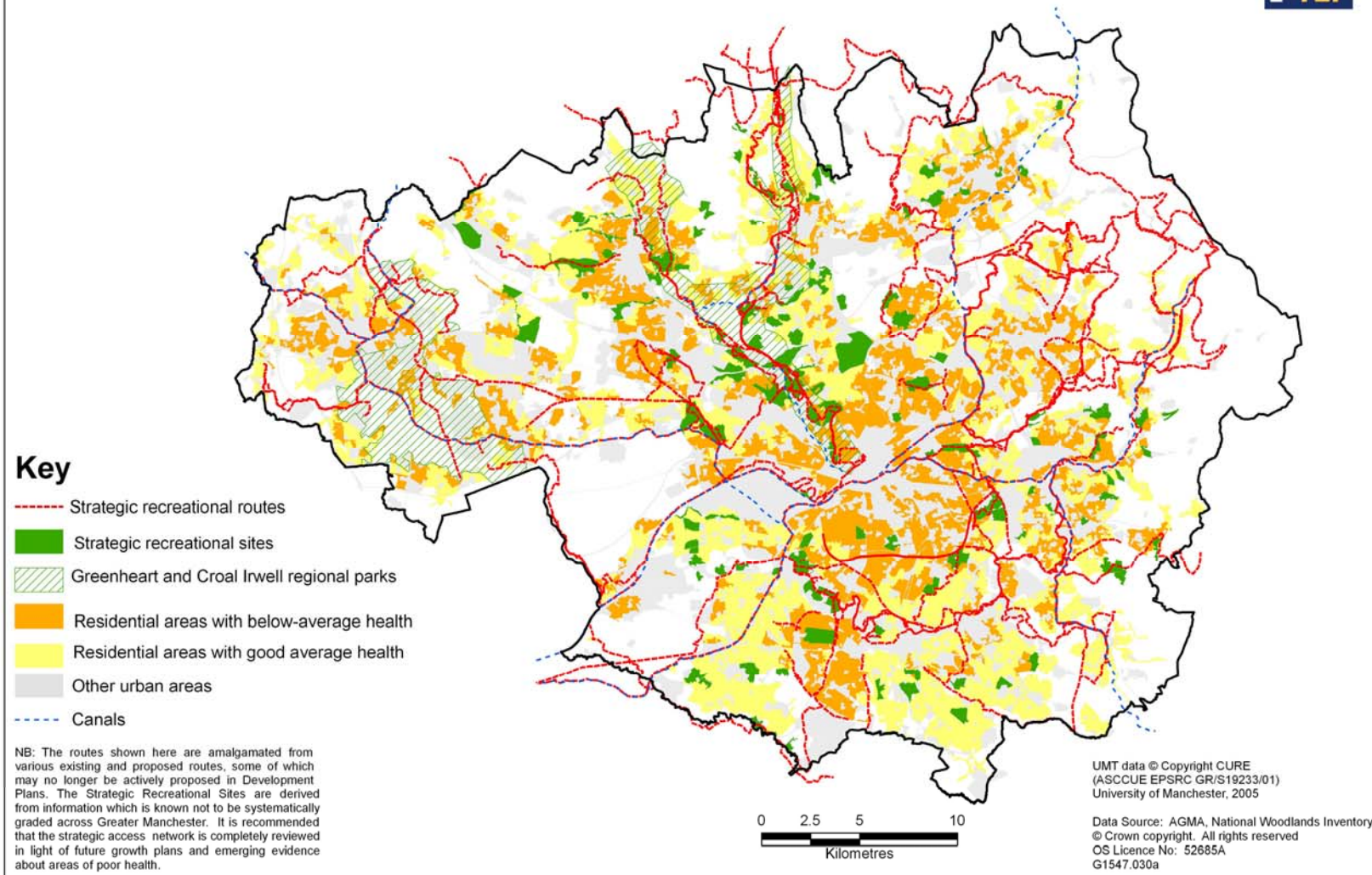
6.8 This map illustrates core areas which have greatest quality, character and/or visibility. Here GI is critical to conserving or creating a distinctive sense of place; which in turn will add to the attraction of the City Region. The Core Areas (such as the Pennine and Peak fringes, the major canals and river valleys, the Mosslands), already have many GI assets and great distinctiveness which needs to be safeguarded and promoted. GI investment is also particularly needed in town and city centres and major transport corridors to raise quality of public realm and mitigate for adverse environmental quality. The Core Areas and destination parks are mostly accessible to the public and are important for the visitor economy.

Figure 9.2 Green Infrastructure for an Urban Renaissance - Key Diagram



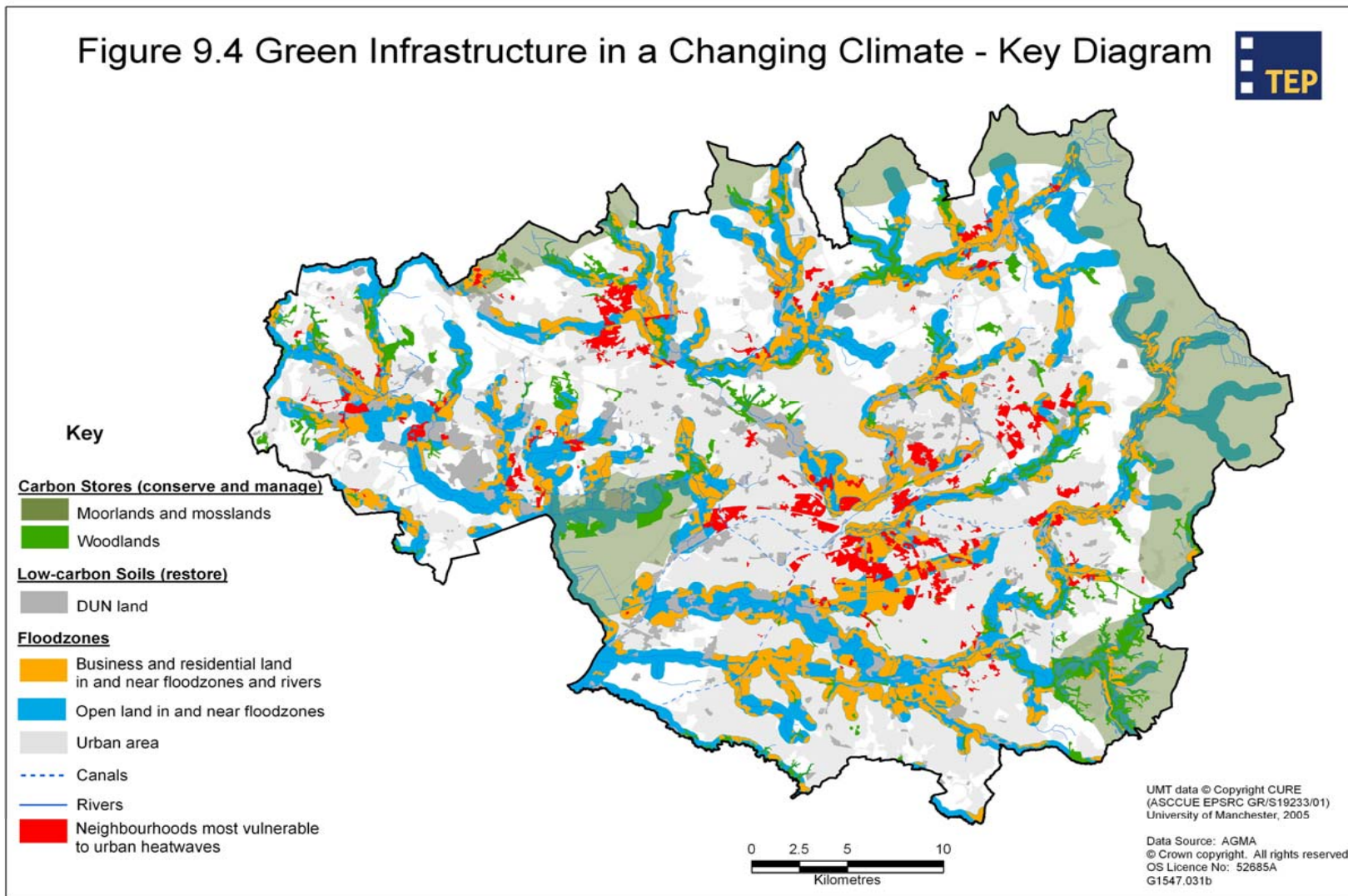
6.9 This map shows areas of greatest need and areas which are likely to undergo significant transformation in the next two decades. Regeneration priority areas have social and health needs which could, in part, be addressed through improved green infrastructure. The map also shows economic centres and strategic sites which 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.

Figure 9.3 Green Infrastructure for Sustainable Movement - Key Diagram



6.10 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. There is also a need to appraise quality and quantity of recreational space in light of the impending growth.

Figure 9.4 Green Infrastructure in a Changing Climate - Key Diagram



6.11 The major carbon stores of peaty soils and woodlands merit conservation management. Broad areas of these are shown in shades of green; although in practice areas of improved mossland have lost much of their stored carbon due to past agricultural activity. DUN land (grey) has low present carbon but could be reclaimed to lock-up carbon in deeper soils and woodland planting where appropriate. 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.

## City Regional Priorities for Green Infrastructure

**6.12** Based on research to date, the spatial priorities for green infrastructure at a City-Regional scale are shown in the diagram overleaf. It should be read in conjunction with the more detailed key diagram maps presented earlier. It must be subject to expert review and consultation, together with some additional evidence-collation before it can be used in a formal framework.

**6.13** Some areas are critical GI to sustain city growth. The appropriate policy and strategy response will be different for each area. The plan shows the following:

- A **Green Infrastructure Network** consisting of river valleys, canal corridors, uplands, mosslands, civic spaces and major countryside resources. The network (or grid) 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** (where not already included in the GI Network) 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 nearby or “upstream” GI Network;
  - 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.

**6.14** Because of prematurity, it is not possible to accurately represent the following GI priorities:

- The Sustainable Movement Network (SMN) – 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. Although this is not shown, TEP is confident that it will be compatible with the priorities shown on the plan.

**6.15** 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, GI needs 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.

**6.16** This GI priority map 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)

**6.17** 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

# Figure 9.5 Greater Manchester - Green Infrastructure Framework to Support Growth



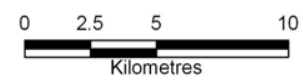
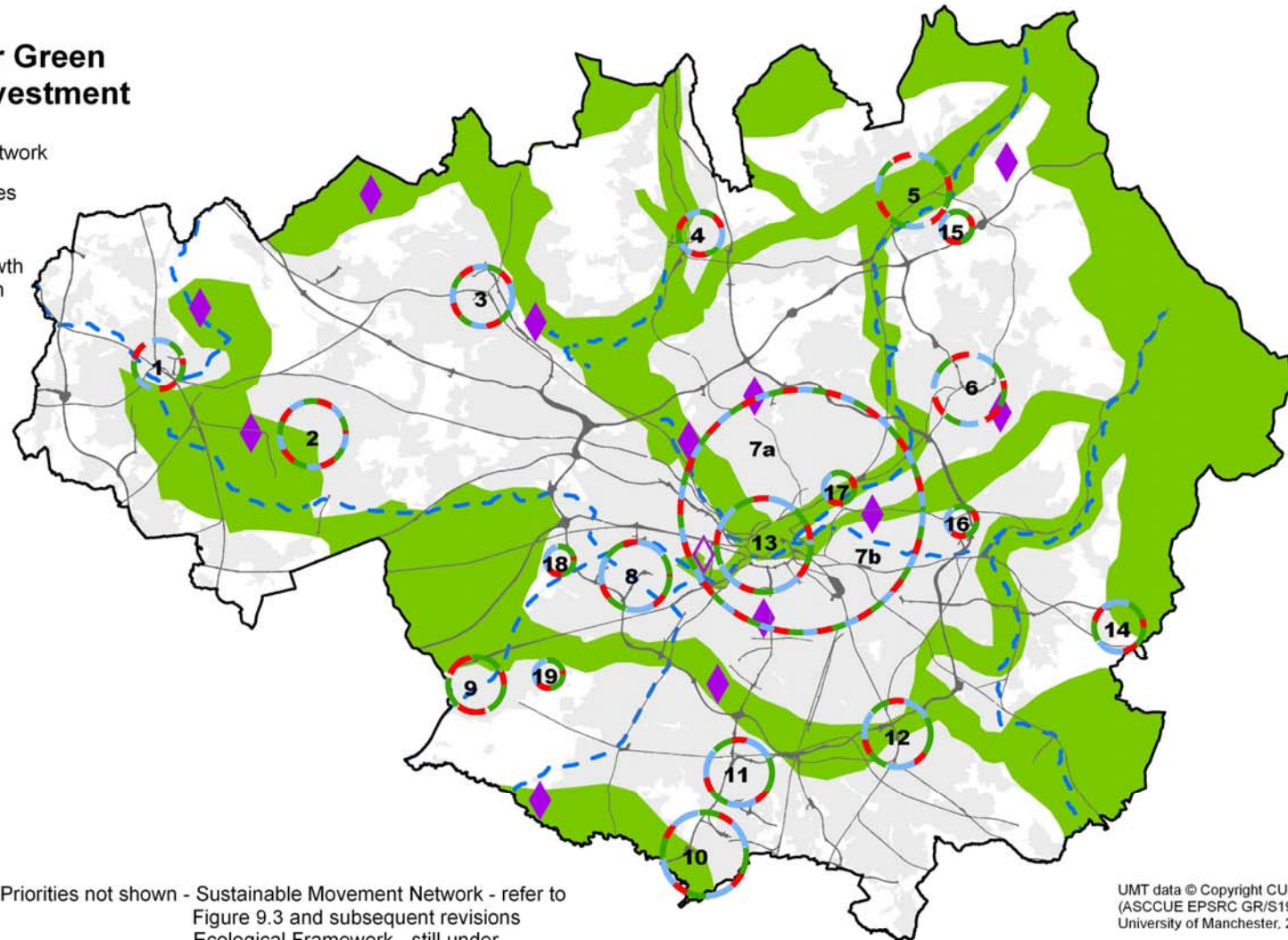
## Priority Areas for Green Infrastructure Investment

- 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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