Green Infrastructure Framework

Final Report

March 2011

Report prepared by AGMA for the Planning and Housing Commission

Contents

1.0 Introduction

1.1 A significant amount of work has been done in Greater Manchester to both promote Green Infrastructure (GI) investment and to provide an evidence base to inform that investment. This report aims to summarise the GI priorities (assets, needs and opportunities) at a strategic level with a focus on spatial and investment priorities. At a sub-regional level it is intended that this Framework is used as one of a series of key documents informing the preferred policy approach to delivering the Greater Manchester Strategy (GMS). The report provides a clear set of priority GI themes; the Framework offers a spatial representation of these themes to be reflected at the sub-regional level through the Greater Manchester Spatial Framework (GMSF).

1.2 The existing sub-regional policy framework (including the GMS and draft GMSF) sets out a framework for sustainable economic growth by providing a coherent set of priorities for delivery and investment. The value of a sub-regional approach is that it informs how we can use scarce funding resources to prioritise those interventions that demonstrably benefit GM as a whole. The newly formed Local Enterprise Partnership (LEP) and the Combined Authority (CA) will be responsible for strategic direction at the sub-regional level post April 2011. It is recognised however that each of the 10 Local Authorities in GM are responsible for delivering sustainable growth throughout GM and for driving forward local priorities. To reflect the need for local delivery of GI an Action Plan will follow this Framework document. The Action Plan that will follow will build on the existing evidence base and the many established successful environmental initiatives in Greater Manchester to focus on delivery.

1.3 This GI Framework reviews the evidence base produced to date regarding GI priorities at a GM level. Green infrastructure is realised at many different levels; project, neighbourhood, town/city, city-region and strategic. A significant amount of detailed analysis of GM requirements, from the neighbourhood level up to the strategic level, has been undertaken to date including that produced by TEP and 4NW. The original impetus for building the evidence base relating to GI was the Regional Spatial Strategy (RSS) GI Policy EM3 and a desire to work out how this might be applied in Greater Manchester. The purpose of the work done to date has been to evidence, explain and position the role of green infrastructure in delivering the aspirations of the City Region.

1.4 This GI Framework draws extensively on the final stage of the work undertaken by TEP that considered the strategic level GI priorities in GM; one of the key outputs of this work was the report 'Next Steps Towards a Green Infrastructure Framework' (2010). The work undertaken by TEP was funded by AGMA and Natural England and was steered by a group involving AGMA, Natural England, Red Rose Forest and the GM Ecology Unit (GMGI steering group). The group reported to the GM Planning Officers Group and the Planning and Housing Commission. For continuity the development of this GI Framework document has been steered by the same GMGI steering group with input from officers of the GM Local Authorities, Natural England and Red Rose Forest.

Defining Green Infrastructure and the Greater Manchester Challenge

1.5 Green Infrastructure is a 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 outdoor natural environment. In Greater Manchester, green infrastructure consists of:

- **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)
- **linkages** (river corridors and canals, pathways, cycle routes and greenways)
- **networks of "urban green"** (the collective resource of private gardens, pocket parks, street trees, verges and green roofs)

1.6 Greater Manchester 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 had a negative impact on GI, many GM communities are deprived of high quality open spaces and linkages, such as urban river ecosystems, have been fragmented. This in turn leaves many neighbourhoods subject to visual decline (as urban land use patterns have changed) and vulnerable to heat pollution and flooding. Unless the natural environment is protected and allowed to function effectively, growth, risks being unsustainable and short-lived. Many areas which have undergone decline in environmental and social quality are now the focus of aspirational growth and redevelopment.

1.7 Within this context the challenge for Green Infrastructure is therefore to:

- contribute to reversing the legacy of past decline and to creating a setting for growth;
- ensure that GM's natural environment is resilient to meet the demands of economic and population growth;
- use existing and future GI assets in mitigation / adaptation and management of climatic risks, in particular flood risk mitigation;
- sub-regional priorities should respond to and inform local responses within GM communities, delivery of GI should be a mix of top down and bottom up activity.

1.8 First generation GI strategies were primarily concerned with biodiversity, greenspace and access. Second generation GI strategies included a greater emphasis on socio-economic goals and sustainable communities. Third-generation strategies will integrate the concept of ecosystem services and will consider the role of GI in sustaining a low-carbon society which lives within environmental limits. Greater Manchester is working towards a 'third generation' GI strategy; where the city region grows sustainably and manages the ecosystems on which it depends. Sustainable growth will see a city region with an increasing and prospering population in combination with an urban area noted for quality of life and quality of place.

2.0 Vision

2.1 Greater Manchester is a city region committed to growth. It aims to be a modern low carbon economy, noted for quality of life and place. The Greater Manchester Strategy (GMS) vision is that 'By 2020, the Manchester city region will have pioneered a new model for sustainable economic growth based around a more connected, talented and greener city region where the prosperity secured is enjoyed by the many and not the few'[1].

The GMS principles:

- We will secure our place as one of Europe's premier city regions, synonymous with creativity, culture, sport and the commercial exploitation of a world class knowledge base;
- We will compete on the international stage for talent, investment, trade and ideas;
- We will be seen and experienced as a city region where all people are valued and have the opportunity to contribute and succeed in life;
- We will be known for our good quality of life, our low carbon economy and our commitment to sustainable development;
- We will create a city region where every neighbourhood and every borough can contribute to our shared sustainable future;
- We will continue to grow into a fairer healthier, safer and more inclusive place to live, known for excellent, efficient, value for money services and transport choices;
- We will deliver focused and collegiate leadership based around collaboration, partnerships and a true understanding that together, we are strong.

2.2 Greater Manchester is committed to growth – and has a vision of a vibrant modern economy, with communities enjoying a high quality of life. A healthy natural environment is a pre-requisite of growth; the social benefits (improved health and well-being) and economic benefits that high environmental quality brings are well-documented. Although there is no statutory duty explicitly referring to green infrastructure it is evident that planning for GI helps Government, its agencies, Local Government and other statutorily-constituted public authorities meet their obligations in respect of sustainability.

A strategy for growth therefore requires a positive plan for green infrastructure.

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[1] AGMA (August 2009) .*Prosperity for All: The Greater Manchester Strategy. http://neweconomymanchester.com/stories/842-greater_manchester_strategy*

3.0 Why we are investing in Green Infrastructure

3.1 It is imperative that all stakeholders involved in the City Region's growth consider, plan and deliver green infrastructure as without it, growth will be short-lived, 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.

3.2 A positive approach to green infrastructure in the city region is essential if growth is to be sustained. There are six primary reasons:

1. It is an imperative of national and city-regional policy regarding sustainable development;
2. It brings economic and health benefits;
3. It contributes to climate change mitigation and adaptation;
4. 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;
5. It meets the City's twin aspirations of quality of life and quality of place; and,
6. It is consistent with the City-Region's intended "brand" as an ambitious, green and vibrant place.

GMS Priorities and GI

3.3 Greater Manchester is the UK's second city in economic terms. However, despite its strengths the Manchester Independent Economic Review (MIER) concluded that Greater Manchester punches below its weight, with lower economic output than expected for a dynamic modern city of its size. A quarter of GM's output gap is due to low levels of economic activity, with high rates of worklessness constraining outputs and reinforcing concentrations of deprivation. The remaining three quarters is caused by low economic productivity, the result of a weak skills base, together with relatively low levels of enterprise in comparison with peer cities.

3.4 The twin challenges for GM are therefore to boost business productivity and at the same time ensure that all parts of Greater Manchester and its people contribute to and benefit from economic growth. The GMS responds to the challenges posed in the MIER and sets out 11 strategic priorities; of these 11 a high quality environment contributes to 6:

- securing better life chances for all, including those living in the most deprived areas;
- up-skilling our residents;
- attracting and retaining talented people;
- enhancing the city's residential offer;
- securing a rapid transition to a low carbon economy;
- creating quality places which support economic growth.

Economic Benefits

3.5 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 values. Green infrastructure is needed to sustain local quality of life, offsetting negative environmental effects of development and capitalising on the positive environmental spin-offs from development.

3.6 Conversely, a poor quality environment will be a drag on progress towards these same priorities. For example, in the face of a changing climate, a poorly-managed natural environment lacks resilience to flooding and is prone to overheating. This has a direct impact on property values and investor confidence.

3.7 The four main economic benefits derived from GI investments are listed below along with 11 possible economic returns on investment; as indentified by Ecotec[2]:

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[2] *The Economic Benefits of Green Infrastructure: the public and business case for investing and a review of the underpinning evidence'(EcoTec, 2008, for NWDA)*

Four types of economic benefit:

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

Eleven economic returns of GI investments:

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

Figure 1: Economic Returns of GI Investment

3.8 Of particular relevance to Greater Manchester's economy are the following four areas where GI can contribute to delivery of sustainable growth and to economic development of the sub-region:

Enabling good-quality housing and economic growth

3.9 Case studies from New East Manchester, the Irwell River Park and the Oxford Road Corridor show that the quality of public realm and the natural environment catalyses economic success and social regeneration. In order to attract families and retain graduates, good-quality housing is needed, with access to safe and clean green spaces. Similarly, high-quality public realm is vital to attract high-calibre innovators and businesses. Delivery of new homes will place pressure on water resources and can increase the risk of flooding (in particular surface water flooding); GI can contribute to flood risk mitigation and can improve the lifespan and resilience of flood defences for example by attenuating storm flows. GI has a vital role to play in the mitigation / management of climatic risks and going forward these risks need to be considered in the context of continued high population growth forecasts.

Improving health and wellbeing

3.10 An ever-increasing body of research shows the positive association between accessibility of green spaces and good physical and mental health. Low productivity is currently contributing to the underperformance of GM in economic terms; low productivity is directly related to high levels of poor health amongst residents. Although life expectancy is improving, the areas of greatest worklessness suffer from above-average rates of obesity, cardio-vascular illness and mental stress. As part of a holistic approach to healthcare, providing an attractive visual environment and opportunities to exercise in the outdoor environment are low-cost means of improving workforce health. In GM many of the main outdoor destinations such as the principal river valleys are close to centres of population and therefore close to the more economically and health deprived communities in GM. Investment in GI, and stimulating community enjoyment of it, will therefore yield health benefits and contribute to counteracting low productivity levels.

Improving Greater Manchester's image as a place to visit and relocate to

3.11 The visitor economy is important for jobs, and the city has a strong brand built around urban culture. Its GI is already important in this e.g. Heaton Park, Salford Quays and the canal network. The Pennine mills and moors, upland reservoirs, country parks and estates such as Dunham Massey/Styal and the Peak District National Park and surrounding countryside provide a strong rural aspect to the visitor economy . However there is considerable scope to expand the visibility and range of outdoor destinations in particular around the extensive river valley network. In parallel, the image of the city-region as an exciting place to relocate to is negatively affected by blight along transport corridors and poor quality of public realm in many economic centres. Greater Manchester has a significant university presence, so has an opportunity to attract talent and to retain high numbers of graduates looking to settle and work in the area long-term. Quality of GI is a strong driver for retention of families within the city-region.

Contributing to a low-carbon economy

3.12 Greater Manchester will attract businesses working in environmental technologies, low-carbon construction and lean manufacturing – image and public realm are drivers for these businesses. In addition, the city-region has an opportunity to develop as an exemplar of low-carbon urban planning and a well-adapted sub-region; for example by maximising opportunities for walking, and cycling and supporting long-term behavioural change, and through the use of vegetation to cool buildings and provide a setting for green commuting.

4.0 Summary of the Evidence Base

4.0.1 The 2008 TEP report entitled 'Greater Manchester – Green Infrastructure Framework to Support Growth' identified spatial priorities for GI and produced a series of key diagrams illustrating those priorities. During 2009/2010, TEP reviewed and updated the evidence base underpinning the 2008 GI document. The evidence included a summary of GI assets, GI needs and GI opportunities at a sub-regional scale.

4.1 GI Assets

4.1.1 The 2008 TEP work mapped GI assets[3] as four geographic clusters at a local level. This mapping included detailed spatial information that can be used to inform local priorities relating to GI for example for use in allocations DPDs, free-standing GI SPDs or as a locally endorsed strategy. The four clusters were:
1. Wigan;
2. Rochdale / Bury / Bolton;
3. Oldham / Tameside / Stockport; and
4. Manchester / Salford / Trafford.

4.1.2 At a sub-regional level, the information, as part of the 2009/2010 GI update, was aggregated to allow a map at GM scale to be produced; replicated on page 11 of this summary report and titled Map 1: Greater Manchester Green Infrastructure Assets.

4.1.3 The assets mapped included the following categories of asset; all have significance at the sub regional scale and their protection and enhancement is a GI priority. In addition to the list below however other spatial and functional relationships of importance at a sub-regional scale were mapped, for example the Roch Irwell River Valley Corridor.

a) Urban, civic and green spaces, 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.

4.1.4 The map shows clear concentrations of green infrastructure assets particularly focused on river corridors and to the eastern boundary of the conurbation. The map also shows clear spatial patterns regarding areas lacking GI assets; for example at the core of the conurbation and the south of the conurbation.

4.1.5 More detail is included in the full TEP report, so is not replicated here. However, it should be emphasised that the maps do not indicate the quality of green assets. Within these mapped concentrations of GI assets quality will vary significantly based on use, management, connectivity and continuity, these issues will need to be addressed by PPG17[4] surveys or local plans and strategies and can be picked up in the GI Action Plan to follow this Framework; the Action Plan will identify the deliverables and actions required to protect and enhance such assets.

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[3] Assets mapped included: Rivers and canals, Reservoirs, Ancient woodlands and other woodlands, Most natural areas and buffer zones (from GM Ecological Framework), Areas where gardens are the predominant biodiversity resource, Sites of Biological Importance, SSSIs, Special Protection Areas, Special Areas for Conservation, Local Nature Reserves, Conservation Areas, UKBAP priority habitats, Wildlife Corridors, Public open spaces, Open Access Areas, Undeveloped land in flood zones 2 and 3.

[4] (2002) Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation (CLG)

4.2 GI Needs

4.2.1 TEP also mapped five classes of social need and environmental stress, considering factors where GI could make a difference. As with the assets maps the "Needs" maps were prepared for clusters of local authorities. They covered the following elements, which partly overlap:

- Most deprived neighbourhoods (using the worst 30% Super Output Areas; based on Index of Multiple Deprivation 2007);
- Neighbourhoods suffering health deprivation (using IMD 2007 and other health indicators);
- Areas in the 30% worst quality band for Natural Environment (using the Natural Environment Index, 2007);
- Areas in Flood Zone 2 and 3 (allowing for climate change adjustment);
- Areas most likely to suffer from urban heat stress (using the 30% most affected neighbourhoods identified by Gill et. al);
- Areas of Derelict, Underused and Neglected Land (using the DUN Land survey, 2001).

4.2.2 For use at a local level, there are some limitations to the data; datasets were mapped at a reasonably fine-grained scale but do contain some inconsistencies when viewed at a local scale, due to boundary issues and age of data. When overlaid at a city-regional scale however, they give a good spatial indication of the extent to which different neighbourhoods are experiencing deprivation and future vulnerability to environmental stresses. Map 2: GI Needs, shows intensity of need at a city-regional scale, where the darker the colour, the greater the number of stress-points. The maps clearly illustrate pockets of concentrated need, including at the conurbation core and in many of the district centres.

4.3 GI Opportunities

4.3.1 GI opportunities are those areas that have policy or market priority for Economic Growth and Transformation – and thus require parallel investment in GI to sustain or catalyse growth. The GMS defines the extent and ambition of Greater Manchester's aspirations for sustainable growth, and the GMSF, currently under development, sets out the spatial focus of this investment. Most of this investment is being made in areas which:

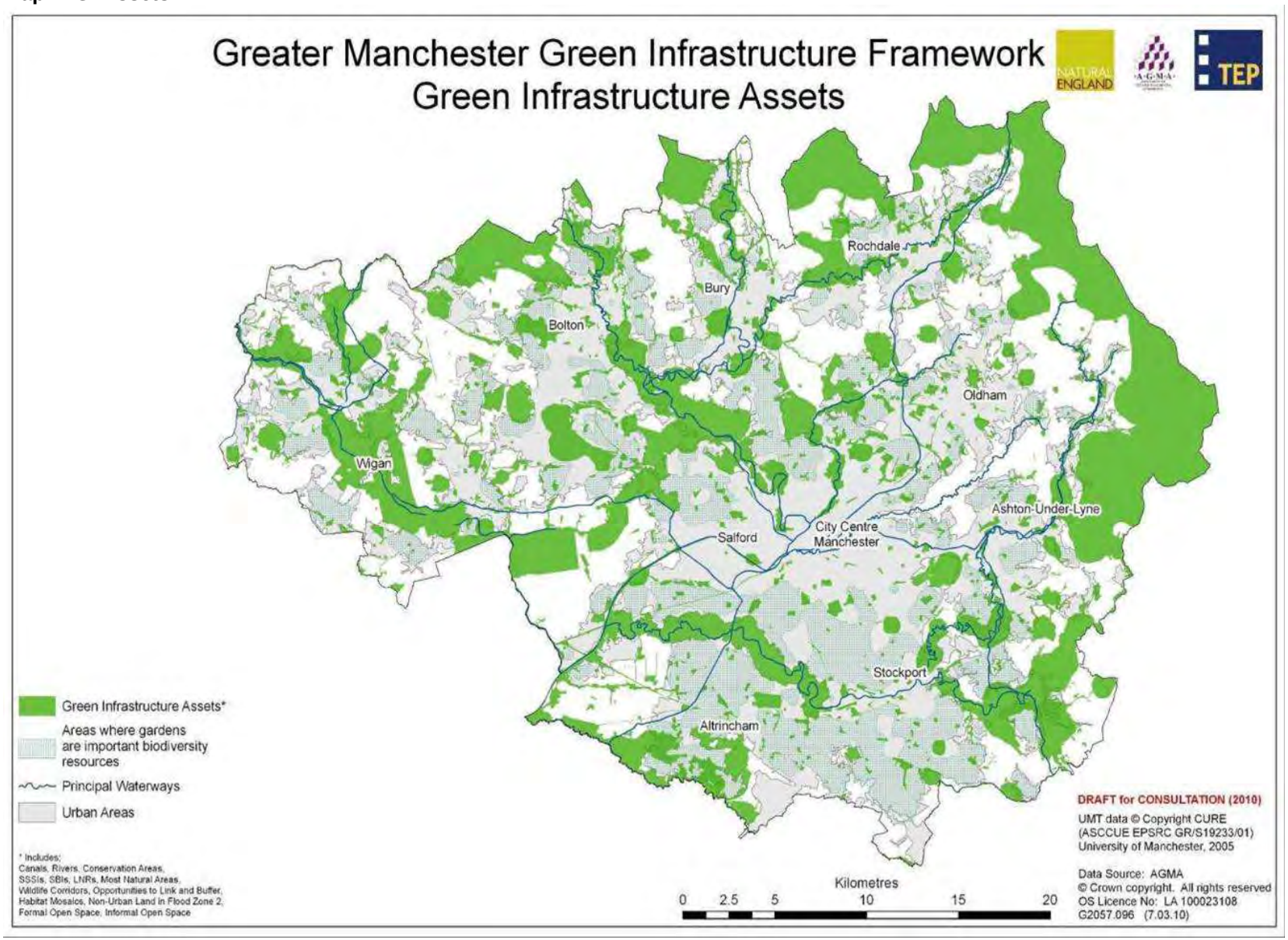
- have important green infrastructure assets (rivers, parks, city-centre public realm); or
- are vulnerable to future environmental stresses (flooding, urban heat); or
- will support a growing and/or ageing population which requires access to high-quality open space "on the doorstep"; or
- already suffer health deprivation; or
- are essential drivers for the economy by virtue of their location and accessibility.

For example:

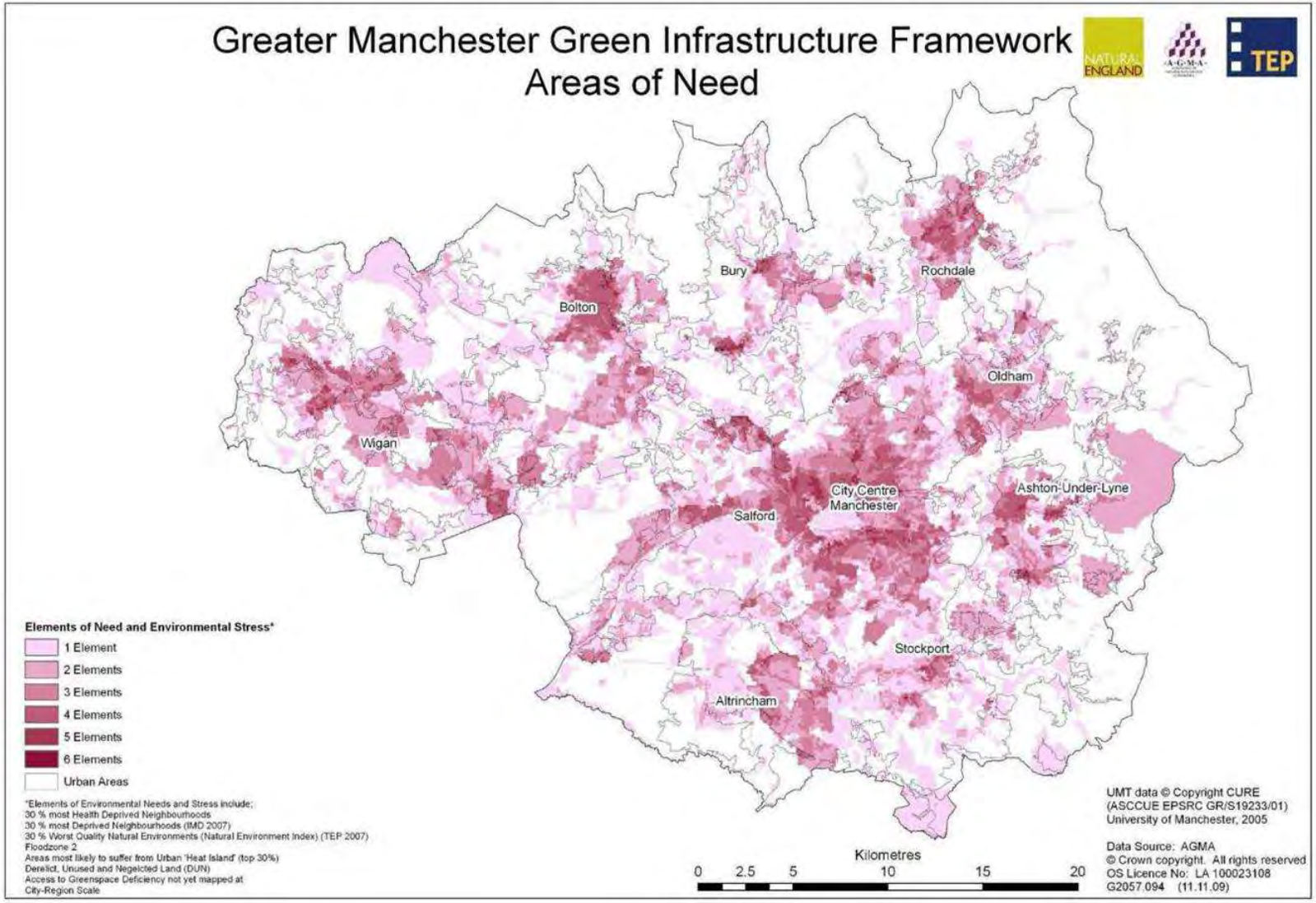
- In the Oxford Road corridor, the major landowners (Universities, City Teaching Hospital, City Council and private developers) expect to make £2.5bn investment in new facilities over the next 15 years.
- In the Roch Valley, investment by the public and private sector in town centre regeneration, housing market renewal, transport improvements in Rochdale and Heywood is expected to involve over £1bn investment.
- The Irwell River Park, including MediaCityUK, is expected to involve over £2bn private-sector investment in new commerce, retail, cultural and residential development when complete.

4.3.2 Map 3: GI opportunities, summarises the areas of economic growth and transformation in GM, these represent areas where investment provides an opportunity to protect, enhance or develop GI assets. The conurbation core and town centres are identified as opportunity areas.

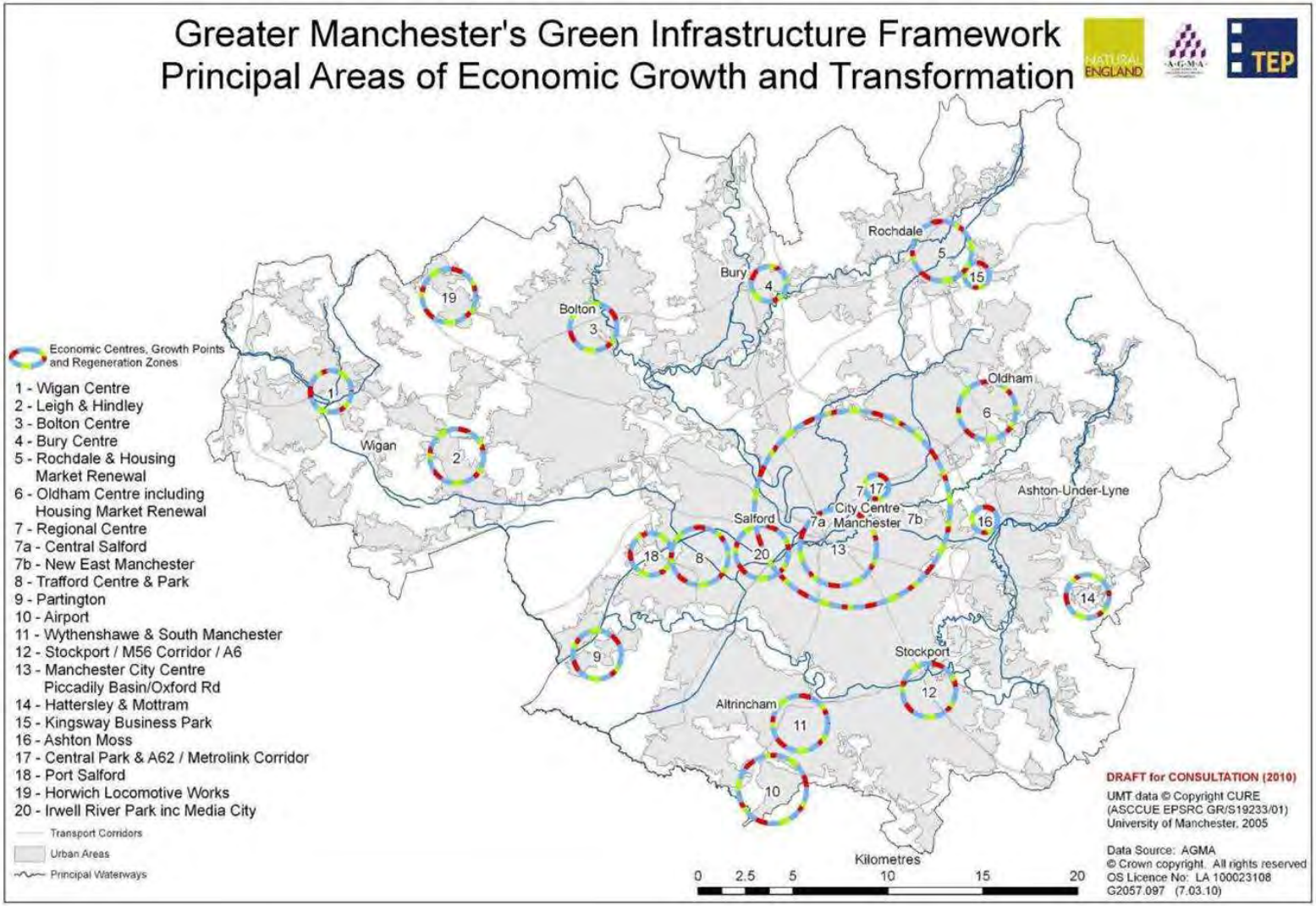
Map 1: GI Assets



Map 2: GI Needs



Map 3: GI Opportunities



5.0 GI Priorities for GM (as identified by TEP)

5.0.1 Having reviewed the evidence base in the previous Section (4) this Section (5) presents the recommendations made by TEP in their recent work. It briefly summarises the key recommendations relating to functions of GI to be promoted in supporting growth (both population and economic growth), it sets out the recommended objectives for GI in the sub-region and lists the investment priorities that TEP have identified. The following Section (6) will contextualise the recommendations for GI with regard to both the current planning and investment context within GM; Section 6 will rationalise the recommended GI investment priorities for the sub-region.

5.1 GI Growth Support Functions

5.1.1 The following eight GI growth support functions are identified in the 2010 TEP report 'Next Steps Towards a Green Infrastructure Framework' however these have been amended to reflect both the recommendations by TEP (also included in the 2010 report) and those of the GMGI steering group.

1. Facilitating a low-carbon society in a changing climate
Management and adaptation at the "macro scale" including catchment management practices to improve flood resilience and adjusting to a warmer climate through protection and enhancement of natural features within the urban area. The cumulative impact of management and adaptation on a local level for example the promotion of local food production on GM's agricultural land and urban farms / allotments will contribute to building a low-carbon future.

2. An ecological framework
An ecological framework linking habitat networks and `stepping stones' will ensure protection and development of essential, sustainable green infrastructure. A strong, well-managed ecological framework will protect and enhance biodiversity and provide access to the natural environment; an environment that is valued, fostering a sense of pride in the residents of Greater Manchester and ensuring an attractive environment for investment.

3. An active travel 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 and positive image and setting for growth
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 will help to build a positive image and a setting for growth. A well-designed and well managed public realm is essential in fostering civic pride and the development of the city region's brand as a green, world-class city region.

5 River, canal corridor and flood risk management
Accessible waterways with improving water quality, supporting regeneration and providing opportunity for leisure, economic activity and biodiversity. Management of surface water flow paths and maintenance of fine grained urban GI to attenuate flows.

6 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; these are particularly important in areas of deprivation and transformation. Dealing with pollution and low environmental quality of land, water and air are key priorities.

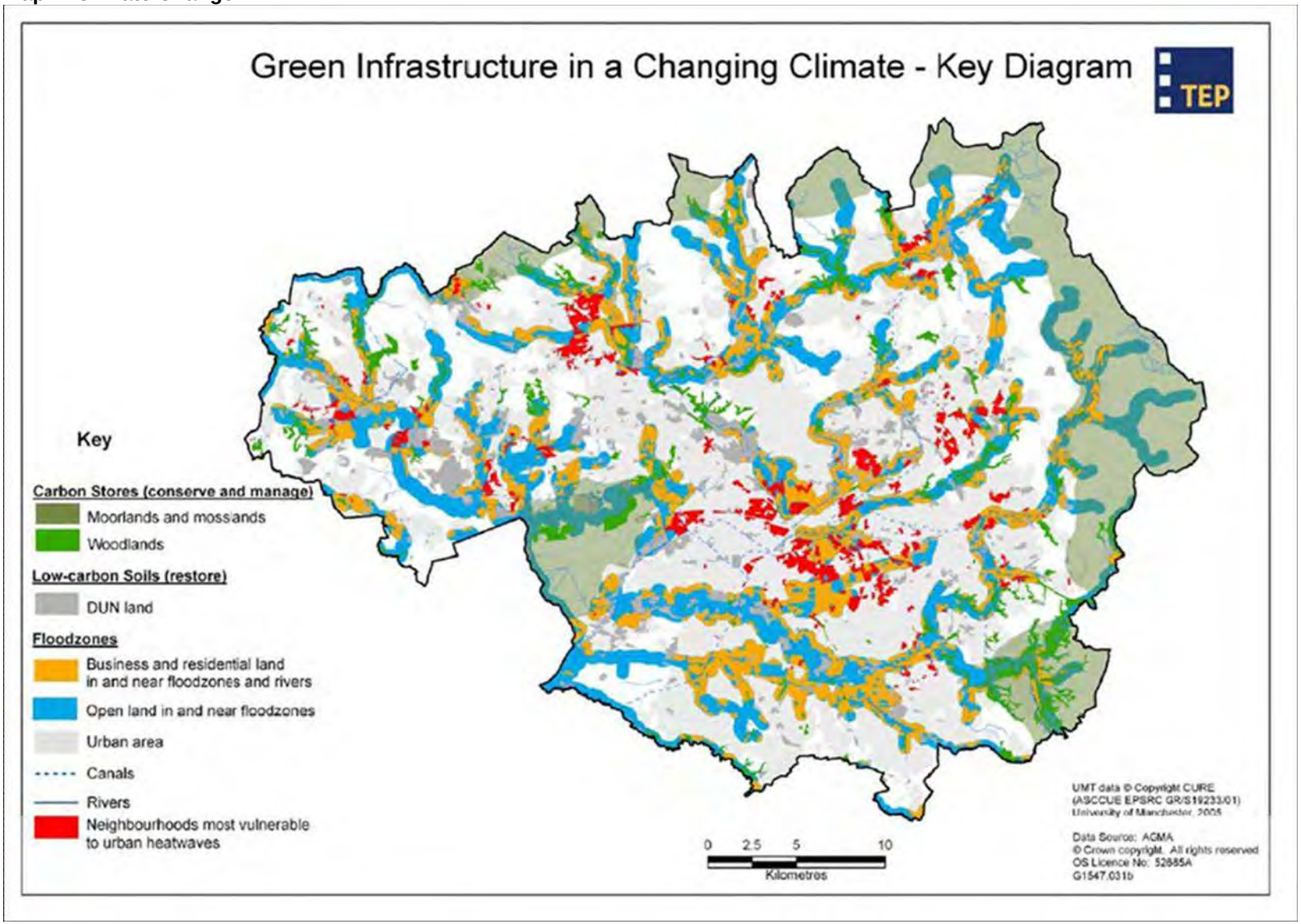
7 Community health and enjoyment
By dealing with pollution and low environmental quality of land, water and air, positive changes can be made to community health. Provision of new and maintenance and improvement of existing greenspaces which are specifically managed to sustain communities through healthy, active lifestyles, social networking, cultural and community events will have positive impacts on physical and mental health.

8 Employment and skills development
Employment and skills development through green infrastructure growth sectors including green technology, outdoor visitor and sport sectors. Promotion of community stewardship of open spaces as part of the wider localism agenda and up-skilling and capacity building in communities through education.

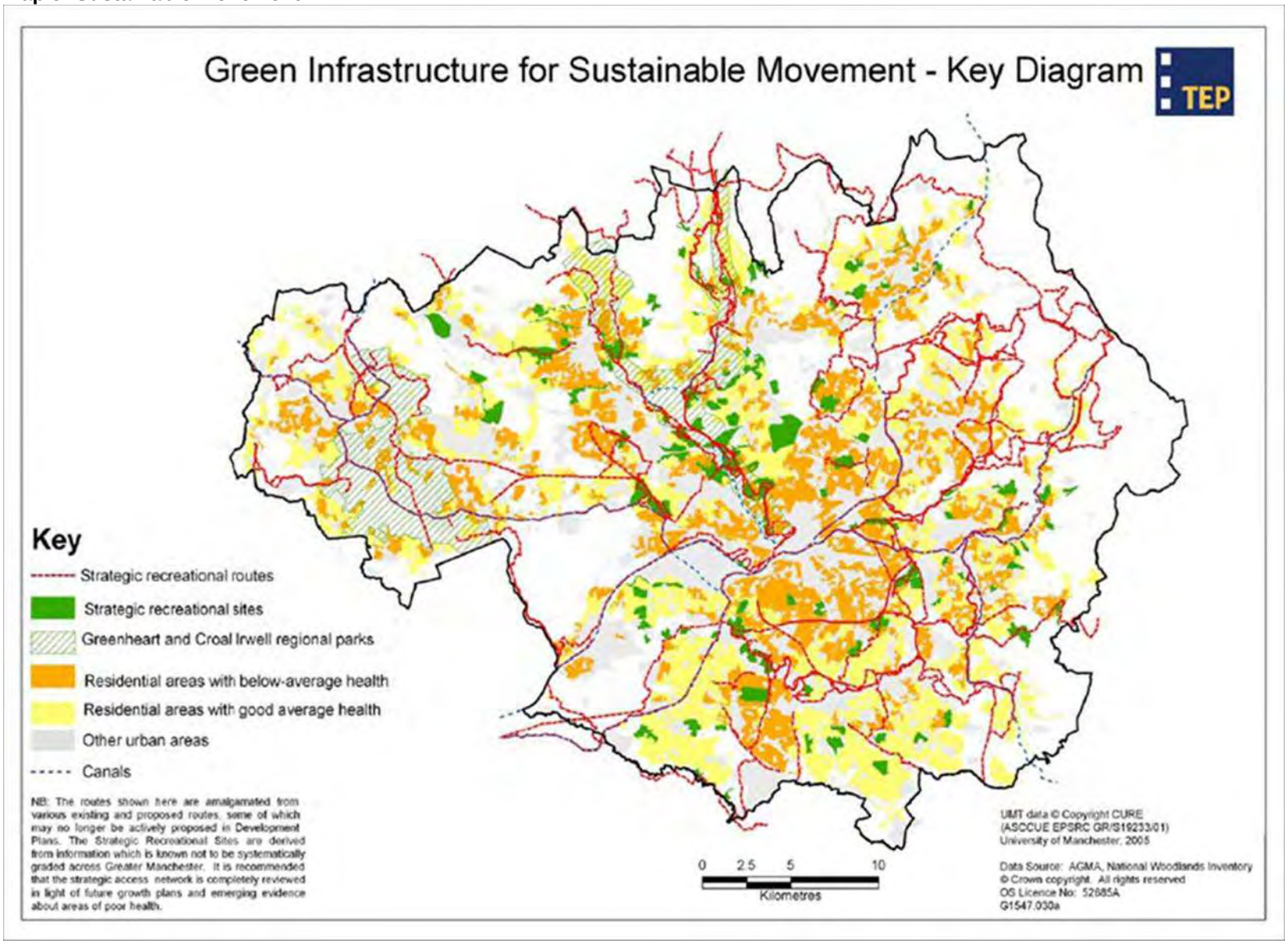
A number of the above growth support functions are spatial and have therefore been mapped; the following four key thematic maps were prepared by TEP to illustrate the spatial opportunities for GI growth support:

- **Climate Change**
- **Sustainable Movement**
- **Distinctive Places**
- **Urban Renaissance**

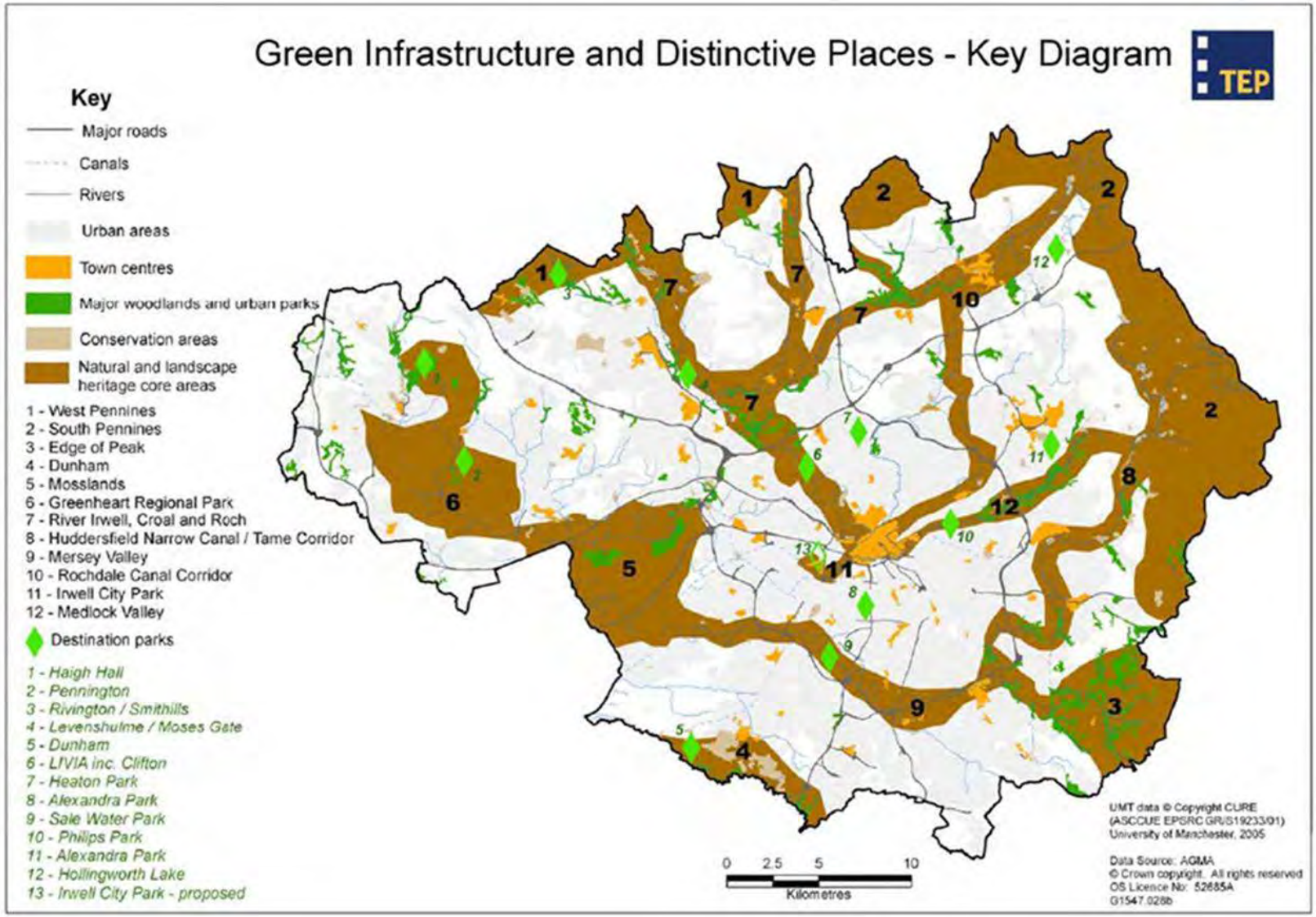
Map 4: Climate Change



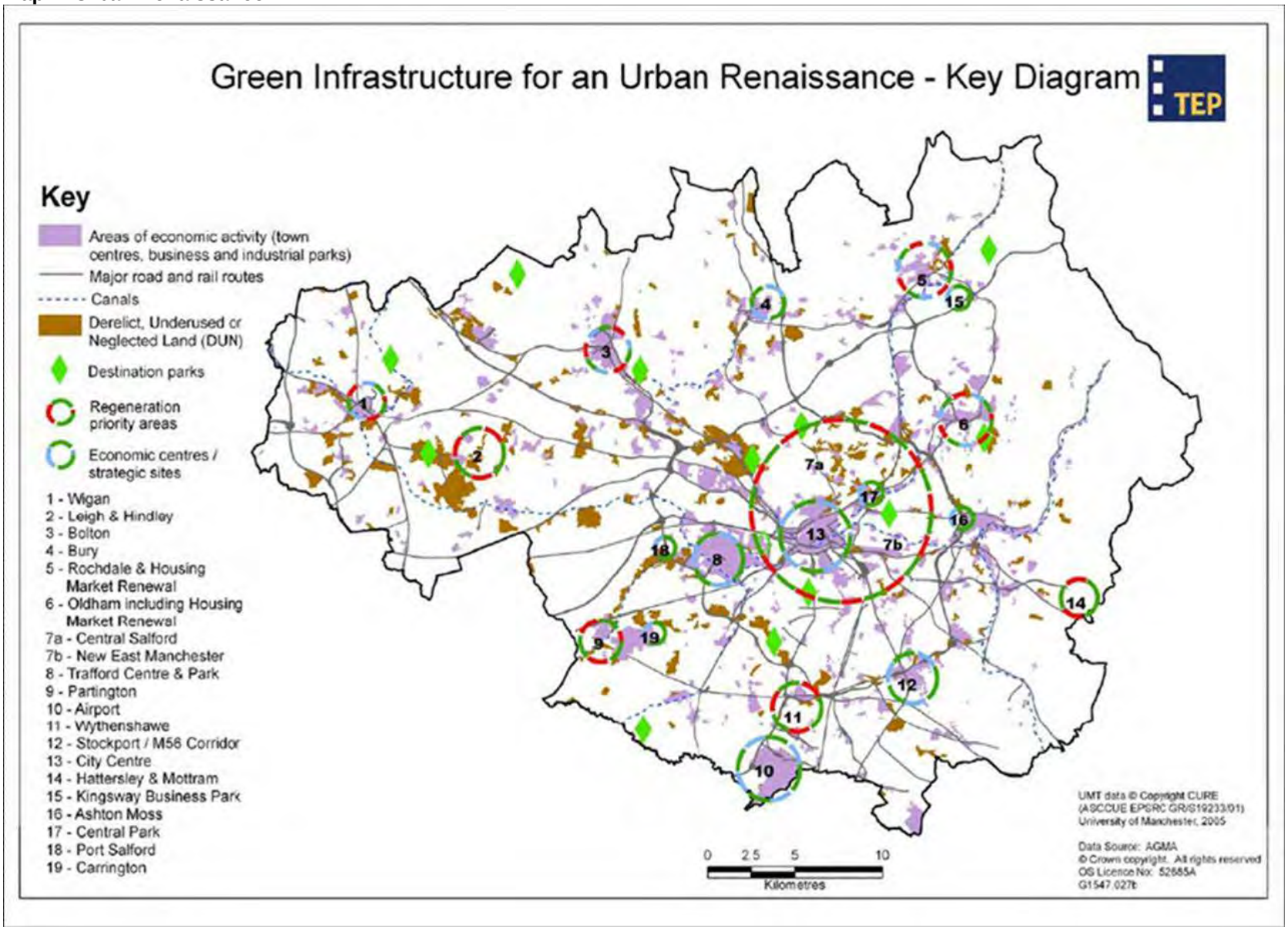
Map 5: Sustainable Movement



Map 6: Distinctive Places



Map 7: Urban Renaissance



5.2 GI Objectives

5.2.1 Using the evidence base (including assets, needs and opportunities within GM) and the GI functions as outlined above, a series of strategic objectives relating to GI have been suggested by TEP. These objectives are set out below:

- To shape the natural environment of Greater Manchester to fulfil growth support functions and, in doing so, to enhance its ecosystems and establish it as a sustainable world city.
- To promote multi-functional use of land, except where restricted use is necessary to protect ecosystem services or irreplaceable qualities of the land.
- To promote partnerships across social, economic and environmental sectors in the use of land. These partnerships should be established at governance and delivery levels.
- To promote integration of GI into the strategies and work programmes of all organisations working in the growth, sustainability and well being sectors.
- To promote individual and community involvement in multi-functional land management.
- To promote and disseminate research into GI costs, levies, standards and benefits.

5.3 Recommended GI Investment Priorities

5.3.1 The GI objectives were used by TEP to identify a series of seven investment priorities. 1 to 5 are spatial priorities and 6 and 7 are non-spatial priorities. The priorities are listed below; as identified in the report ''Next Steps Towards a Green Infrastructure Framework'' (TEP, 2010):

1. The strategic green infrastructure network: these multifunctional areas of open land and water are the city's green lungs, providing health, access, amenity, biodiversity and tourism. In terms of the economy, these areas sustain jobs in the visitor and natural economies.

2. Economic centres and growth points: this includes city and town centres, housing growth points, major investment sites and key transport corridors and gateways. Characterised by a highly urbanised environment, the quality of public realm is vital to economic success and image.

3. Regeneration priority areas: this includes housing market renewal areas, areas of multiple deprivation, major brownfield regeneration sites, DUN land, blighted transport corridors, often characterised by pollution and low environmental quality. GI can help remediate brownfield and create a better setting for new development, building investor confidence.

4. Destination parks, landmarks and trails: Major parks, as well as landmarks and vistas in urban and rural areas, are important GI destinations, as well as being valuable in creating a sense of place, civic pride, stimulating healthy lifestyles and sustaining jobs in the tourism, leisure and recreation industries.

5. An active travel network: footpaths, cycleways, canal towpaths and bridleways which link GI assets to each other and to residential and employment areas provide a means of encouraging sustainable transport, healthier lifestyles, greener commuting and general enjoyment of open spaces.

6. Greening the urban environment: A strategy for ''fine-grained'' GI, this includes maintenance of the existing fine-grained green infrastructure and measures to ensure new development maximises opportunities such as the use of vegetation, urban tree-planting or food-growing programmes to reduce the urban heat island effect, to enhance local environmental quality and to contribute to a more beautiful, walkable and healthier environment. Greening the urban environment is particularly relevant in the economic growth centres and regeneration priority areas.

7. Community activism: Sustaining the existing groups engaged in neighbourhood management, providing them with resources, access to information, networking and best-practice. Encouraging broader involvement in the outdoor environment through Friends of Parks groups, corporate responsibility programmes and making GI assets available to health and social care programmes (using ''Total Place'' model where public services are joined up in a neighbourhood). This is particularly relevant for communities in and near the main GI assets and also important in regeneration priority areas.

GI Investment - Spatial Priorities Map

5.3.2 The following map from the TEP 2010 report shows the recommended spatial priorities (as listed above) for green infrastructure at a city-regional scale. It must be read in conjunction with the more detailed thematic maps presented in Section 4. The map includes 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.

- Urban Green is also a spatial priority but due to the small scale of many urban green assets these are not easily illustrated on the GM scale map. This network includes the finer grain green infrastructure within the urban area; the text on the map refers to the value of urban green including its essential contribution to promotion of a positive image and adaptation to climate change. District and area based GI plans and strategies are important to ensure an appropriate scale for planning and delivering urban green networks and assets in more detail.

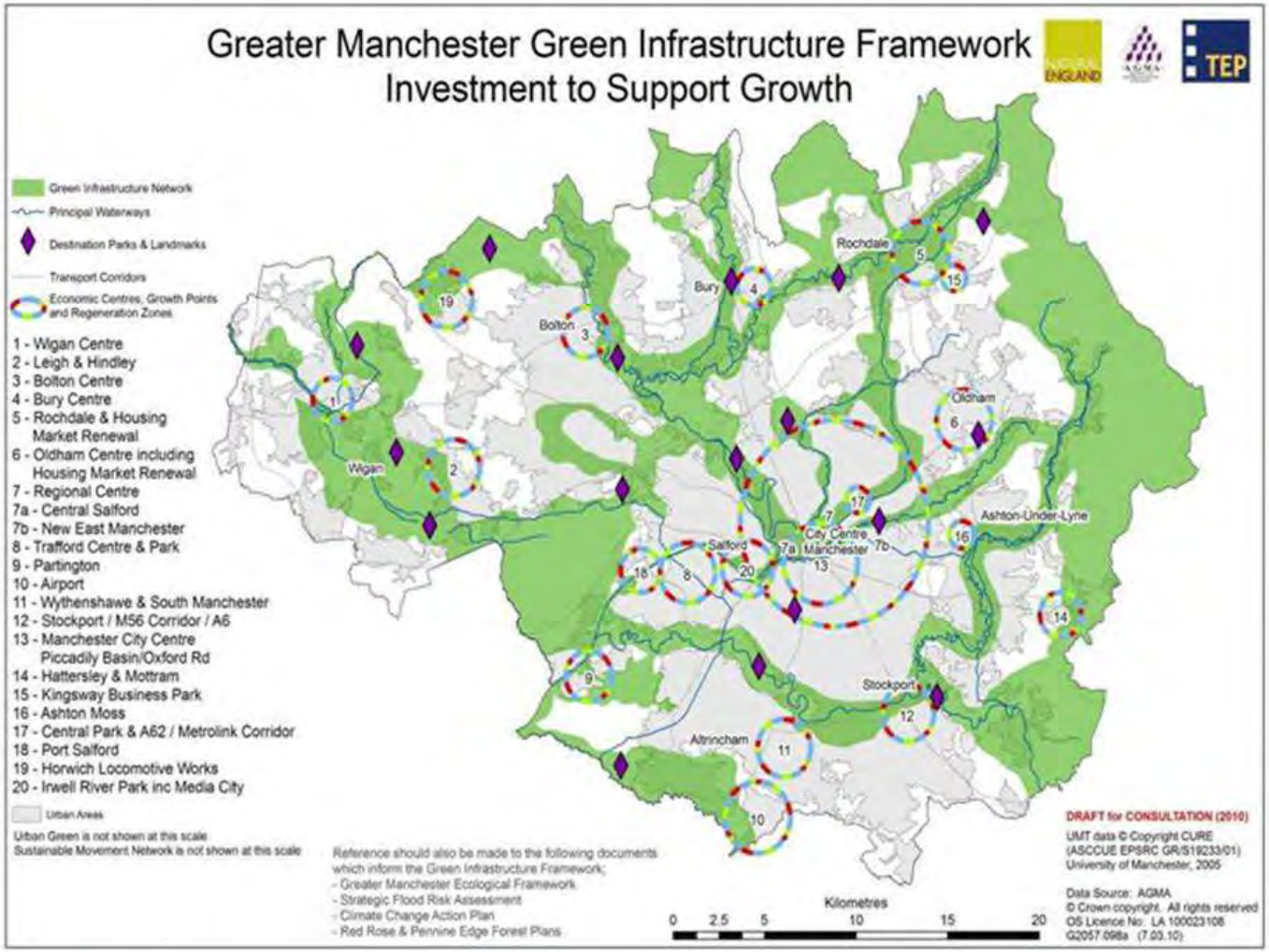
- Major road and rail corridors which are important in defining the image of the city region. GI can improve image and also play a role in mitigating adverse environmental quality.

- 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.

Map 7: Spatial Priorities



6.0 GI priorities and wider GM investment (AGMA)

6.1 Planning for GI

6.1.1 As set out in the TEP report planning for Green Infrastructure is a two-pronged approach;

- Planning for assets; and
- Planning for functions[5].

6.1.2 The UK planning system does provide for the protection and enhancement of GI as both assets and functions; policy approaches have changed in recent years to reflect the increasingly recognised importance of planning for GI functions.

6.1.3 With reference to planning for GI as assets traditional UK land-use planning has developed an effective suite of policies and techniques which safeguard and enhance land as an asset. These policies and techniques do make reference to the functions of land; open land allocations in development plans are usually based on particular functions that land serves. However the purpose of such policies, by and large, is to protect the open land asset (and the main function for which it is designated) from adverse effects of development. At a broader scale, character-based assessments and area-based programmes inform policy, site allocations and planning decisions relating to GI assets. An 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.

6.1.4 This asset orientated approach, in some cases, does allow for development management policies and procedures to direct investment towards land in order to improve its functionality however in general an asset-oriented approach is less effective at protecting tracts of land, particularly across administrative boundaries and does not always recognise incidental functions of that land; it is less effective at enhancing GI functions especially where these are not immediately connected to the land in question. By contrast, a function orientated approach reflects the fact that a single tract of land may have multiple functions dependent on the type and location of the GI asset and therefore protection and enhancement of multi-functionality, across boundaries is an essential approach to planning for GI. For example, an effective urban flood and climate adaptation plan would involve several interventions in a single catchment, such as the use of greenspaces as flood basins, sustainable drainage techniques in urban areas, river restoration and installation of green roofs.

6.1.5 The challenge for the spatial planning system is therefore to continue to develop techniques and policies that plan for both the asset and the function; to become a more pro-active tool in sustainable development. There is an opportunity at the sub-regional scale to inform and contribute to this approach; an integrated approach where GI asset plans are informed by both local and sub-regional functions would ensure that the multi-functionality of GI assets are enhanced and protected. This approach would be a combination of bottom up and top down policy making as GI priorities are formed through local and neighbourhood plans and evolving sub-regional, strategic and cross-boundary strategies. Planning for both the asset and the function should therefore inform the sub-regional approach to planning for GI, and this GI Framework aims to maximise this opportunity by clearly demonstrating how green infrastructure can support AGMA's sustainable growth ambitions, as set out in the GMS.

6.1.6 The challenges for spatial planning identified by TEP (2010) include:

- identify and allocate land which is / could be performing critical GI functions;
- direct more resources from development gain into management of existing GI;

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[5] For definitions refer to Glossary in TEP (2010) Greater Manchester's Green Infrastructure: Next Steps towards a Green Infrastructure Framework.

- increase the multi-functionality of open land;
- enhance GI functions across tracts of land, whether urban, open or rural;
- 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.

6.2 Wider GM Investment Priorities

6.2.1 Whether planning for the asset, the function or both, GI is relevant in all urban, suburban and rural parts of Greater Manchester. Investment can include protection, safeguarding or management of existing assets and functions or creation of new assets or functions. As described above there are opportunities to deliver GI aspirations / objectives through the development process and Section 3 of this report identifies clear economic advantages to be gained from investment in green infrastructure. In the current economic climate and with the challenges faced in relation to public sector funding availability, it is more important than ever that the benefits of investment in green infrastructure are clearly articulated within the context of the role of GI in supporting sustainable economic growth. This section considers in more detail the existing investment priorities in GM (beyond GI) and how these link to TEP's recommended GI investment priorities set out in Section 5.

Spatial investment priorities / AGMA's growth ambitions

6.2.2 Greater Manchester is already a major centre for employment, culture, retail and leisure. It provides over 1.25 million jobs, and this is predicted to reach almost 1.4 million by 2030. Forecasts from the Greater Manchester Forecasting Model indicate GM may be protected from some of the worst effects of the recession given its reliance on private sector growth, although recovery is expected to be uneven across GM with those areas more reliant on the public sector or with a greater proportion of declining sectors (e.g. manufacturing) taking longer to return to pre-recession employment levels. Notwithstanding the normal caveats around economic forecasts, GMFM identifies the potential for significant growth, stronger over the next 10 years with almost 130,000 jobs by 2020 with further increases, albeit at a slower rate up to 2030. 68% of forecast growth is concentrated in Manchester, Salford and Trafford. This reinforces the continuing importance of the Regional Centre to the future success of GM.

6.2.3 Another key element of AGMA's ambition for growth is the importance of revitalising the Greater Manchester town centres, aligning the town centre offer with the demography and geography of their catchments which in turn define their market potential. For some it will be commercial, for others, retail, or leisure and for others education and for some a mix of all of these. This will build on a change of approach across local authorities towards their town centres where changes in land use allocations are being used in a creative way to bring employment back into the town centres.

6.2.4 As shown by Map 2: GI Needs, the Regional Centre and town centres exhibit some of the greatest levels of need in terms of GI provision, emphasising the importance of considering the role of GI in promoting the successful growth and regeneration of these areas.

Thematic Investment Priorities

<u>Housing</u>

6.2.5 A year ago, AGMA and the Homes and Communities Agency agreed the country's first Local Investment Plan (LIP1), covering the period to March 2011 and outlining some £375 million of investment in Greater Manchester, supporting the HCA's move to a place based mode of investment.

6.2.6 A second Local Investment Plan has recently been published (March 2011), this second plan is different in nature to the first, responding to a very different and still changing policy and fiscal environment, both nationally and locally. While we have headline figures of funds available for housing delivery on a national level and some details of the approach that the HCA will be taking, it is not yet known what proportion of these funds will be available to Greater Manchester from April 2011. The second Local Investment Plan therefore focuses on outlining the challenges and opportunities for investment in Greater Manchester, providing a guide to the work AGMA is doing to generate new and additional sources of investment, and setting out our intended approach to agreeing priorities for investment once the scope and nature of the resources available become clearer.

6.2.7 The approach to investment is fundamentally driven by the local plans and priorities of the ten AGMA districts and their partners and stakeholders. The Local Investment Plan is intended to add value to, and help to deliver, strategies and interventions built at a district and neighbourhood scale and with the needs and views of those communities. It is not intended as a substitute for that local level action and leadership, but as a means of providing levers and resources to drive effective local delivery.

6.2.8 GI has a role in creating places where people wish to live; several initiatives in Rochdale, Ancoats and the Irwell River Park have announced their intentions to deliver GI projects alongside housing renewal. The approach set out in LIP2 clearly demonstrates the need for GI planning to be integrated into the broader planning process at a local level.

Transport

6.2.9 The third Local Transport Plan for Greater Manchester is currently out for consultation, and sets out the following core objectives, across the themes of economic growth, environmental sustainability, health and well being, and value for money:

- to ensure that the transport network supports the Greater Manchester economy to improve the life chances of residents and the success of business;
- to ensure that carbon emissions from transport are reduced in line with UK Government targets, to minimise the impact of climate change;
- to minimise the adverse impact of transport on public health and on community safety;
- to ensure that the design and maintenance of the transport network and provision of services supports sustainable neighbourhoods and public spaces; and
- to maximise value for money in the provision and maintenance of transport infrastructure and services.

6.2.10 The draft plan outlines proposed improvements to the bus, Metrolink and rail services in Greater Manchester, and effective management of GM's highways. It also promotes sustainable, healthy and safe modes of travel, increased levels of walking and cycling.

6.2.11 Effective investment in green infrastructure can support the achievement of the objectives set out in LTP3, particular those in relation to climate change, public health and sustainable neighbourhoods and public spaces.

Planning for Flood Risk

6.2.12 The Flood Risk Regulations 2009 and the Floods and Water Management Act 2010 require Local Authorities to take a pro-active role to flood defence planning and encourage the use of GI approaches and enable them to require developers to use Sustainable Drainage Systems. The impacts of climate change will increase the challenge. Highly protective European and UK legislation also sets requirements for water quality and management improvements.

6.2.13 With regard to flood risk and water management the current priorities in Greater Manchester include the development of a GM Surface Water Management Plan (SWMP) the plan will contribute to a comprehensive approach to flood and risk management that is effective and efficient at mitigating and responding to floods. Preliminary data collection and review is underway for the SWMP, and a draft Preliminary Flood Risk Assessment report is expected in March 2011 based on the first iteration of the Strategic Flood Map for GM. Phase one of SWMP & Preliminary Flood Risk Assessments are planned to be finalised by June 2011 and the recommendations and research will feed into the GI Action Plan.

6.2.14 In addition to the SWMP a study into GM Flood Risk Capacity was finalised in January 2011 and is now being translated into an implementation plan for incremental delivery during 2011 and 2012 through AGMA and the 10 Lead Local Flood Authorities of Greater Manchester working with key external stakeholders.

6.2.15 A GM wide Flood Risk Officers Group has been convened to coordinate all the work strands relating to flood risk and water management and a Flood Risk and Management Strategy, identifying investment requirements, is proposed and should be in place by November 2011; it is essential that GI investment is aligned with these plans to manage floods and water quality; it is critical to economic growth to ensure continued water quality and supply and to reduce the risk of flooding to households and businesses.

Environmental Infrastructure

6.2.16 Over the last year the Environment Agency has led a project[6] to assess future environmental infrastructure needs arising through housing growth across Greater Manchester. This work contributes to the EA's goal of ensuring that new and existing developments have a reduced environmental impact and well planned environmental infrastructure. The study focuses on the additional investment necessary to support forecast housing growth. It draws out the strategic implications for the way that new housing is planned and delivered. It covers five areas, all of which provide essential services and help to protect quality of life:

- flood-risk management;
- green infrastructure;
- household waste;
- water resources;
- water quality and sewage treatment infrastructure.

6.2.17 The report highlights that millions of pounds a year are currently spent on environmental infrastructure to support existing communities across Greater Manchester and the Environment Agency is keen to assess and understand GI needs as part of an integrated understanding of environmental infrastructure to ensure that investement (including in GI) supports growth, particularly with regard to housing delivery. The Environment Agency is working with AGMA to develop a strategic approach to GI planning and delivery in respect of the water environment and the requirements of the Water Framework Directive and flood risk management priorities.

Climate Change

6.2.18 Work towards a Greater Manchester Climate Change Strategy was launched by AGMA in September 2010. An integrated Climate Change Strategy will provide a framework for improving the co-ordination, performance and efficiency of climate change programmes both across relevant themes of work and between GM districts The strategy will address key themes including buildings, energy, transport and consumption as well as communications, culture change and carbon metrics and

[6] Environment Agency (2010): *Greater Manchester's Environmental Infrastructure Needs*: A Strategic Study is online at: http://publications.environment-agency.gov.uk/pdf/GEHO0610BSMK-e-e.pdf

monitoring. The Climate Change Strategy will make reference to green infrastructure and will be a further key document in the sub-regional policy framework. A single climate change strategy for GM will have the capacity to simplify communications on climate change however will recognise that the transition to a low carbon economy and a green sustainable city will only be achieved, over time, through contributions from all district authorities, residents, organisations; the Strategy can provide a coherent framework for recognising the critical contribution that each action can make to the achievement of the GM vision of a world class low carbon sub-region and for capturing interdependencies and economies of scale.

The Governance and Policy Context

6.2.19 The GMS and the evidence base which underpinned it demonstrated that the scale of the opportunity for economic growth in Greater Manchester is of national significance. Yet there are significant challenges in realising this potential. The evidence base concluded that the sub region currently punches below its weight due to low productivity. The GMS therefore puts significant emphasis on driving innovation, skills, competitiveness and the increase in productivity that they can bring to ensure that all residents and GM's broader economic hinterland benefit from, and contribute to growth by tackling worklessness and ending its low skills equilibrium and public service dependency.

6.2.20 A series of structural and operational innovations are underway to help tackle these challenges. These include the establishment of the Greater Manchester Combined Authority and the Local Enterprise Partnership (LEP). Greater Manchester, like the rest of the country, is facing severe resource constraints, but is taking an innovative approach to maximising the resources available, and the impact that investment of those resources has against key objectives. The approach under development includes:

- The establishment of a GM Community Budget, focusing upon reform and the development of new approaches to evaluating the cost and benefits of different interventions, designing new services around children and families to drive down demand and increase productivity;
- Bids to the Regional Growth Fund, under workstreams such as Low Carbon, Housing, Physical Development, Business, Transport, Broadband, Skills & Social Enterprise, Funding Integration. Successful bids will need to demonstrate that they deliver increased economic growth and private sector jobs and support those areas overly reliant on public sector employment;
- The development of Evergreen, a new investment model for property, business, low carbon and housing, which seeks to match inherently viable schemes with available market funding. The returns on these initial investments will then be recycled into new regeneration schemes with the aim of optimising economic and regeneration benefits, complementing and enhancing the availability of existing private funding wherever possible.
- Tax Increment Financing, which allows Local Authorities to borrow against predicted growth in their locally raised business rates and use that borrowing to fund key infrastructure and other capital projects, which will support locally driven economic development and growth. AGMA is applying a GM focus to the targeting of both supply and demand constraints on private sector growth.

6.2.21 What is clear from the developments outlined above is that the investment decisions taken by AGMA will increasingly be informed by consideration of the likely impact that such investment will have in economic, social and environmental terms. If investment in green infrastructure is to be secured, investment proposals will need to clearly demonstrate the economic, social and environmental benefits that will be achieved and may need to be promoted as part of wider strategic investment proposals.

6.3 Prioritisation of GI themes

Investment priorities at the sub-regional level

6.3.1 The work that has been undertaken by TEP is summarised in sections 4 and 5 of this report. TEP identified eight GI growth support functions, the spatial elements of which are illustrated as four key thematic maps:

- Distinctive Places;
- Sustainable Movement;
- Climate Change;
- Urban Renaissance.

6.3.2 To deliver the above, TEP suggested seven investment priorities:

1. The strategic green infrastructure network;
2. Economic centres and growth points;
3. Regeneration priority areas;
4. Destination parks, landmarks and trails;
5. An active travel network;
6. Greening the urban environment;
7. Community activism.

6.3.3 There is clear correlation between these seven GI investment priorities and the wider investment priorities as set out in the GMS in relation to transport, housing, economic growth and regeneration, which again highlights the role that green infrastructure can play in supporting the delivery of AGMA objectives.

6.3.4 Of these investment priorities however, it is suggested that the following four are key **sub-regional investment opportunities** in terms of safeguarding, enhancement or creation of new assets / functions, taking account of the sub-regional governance and policy context as set out in section 6.2.

1. The strategic green infrastructure network
This investment opportunity responds directly to the GMS priorities 'securing better life chances for all' and 'creating quality places which support economic growth'. The strategic green infrastructure network requires investment in safeguarding, enhancement and in the creation of new assets to improve the existing network of open land and water in GM. The returns on such investment will be in health, access, amenity, biodiversity and tourism. In terms of the economy, such investment will sustain jobs in the visitor and natural economies.

2. Economic centres and growth points
This investment opportunity responds directly to the GMS priorities 'securing better life chances for all', 'attracting and retaining talented people', 'enhancing the city's residential offer' and 'creating quality places which support economic growth'. Enhancement and creation of new GI assets in town centres, housing growth points, major investment sites and key transport corridors and gateways is a key sub-regional investment opportunity; the quality of public realm is vital to economic success, health and well-being and image.

3. Regeneration priority areas
This investment priority responds directly to the GMS priorities 'securing better life chances for all' and 'enhancing the city's residential offer'. Continued enhancement and creation of new GI assets in housing regeneration areas, areas of multiple deprivation, major brownfield regeneration sites, DUN land and blighted transport corridors will create a an improved environment for GM residents and a better setting

for new development; building investor confidence. Again such investment is vital to future economic success, health and well-being and image.

4. An active travel network

This investment priority responds directly to the GMS priorities 'securing better life chances for all', 'attracting and retaining talented people', and 'securing a rapid transition to a low carbon economy'. Investment to protect, enhance and create new GI assets as part of an active GM travel network are required; footpaths, cycle ways, canal towpaths and bridleways which link GI assets to each other and to residential and employment areas provide a means of encouraging sustainable transport, healthier lifestyles, greener commuting and general enjoyment of open spaces.

6.3.5 The four selected priorities are those which are of most relevance to the current sub-regional spatial planning agenda and are thematic priorities that link to the GMS strategic priorities. The other three investment priorities (as recommended by TEP) are considered to be of significance at the local level and are delivery components of the four thematic priorities. For example, destination parks and landmarks will be a local priority for delivery of the strategic green infrastructure, urban greening, at a local level will contribute to delivery of all 4 of the GI investment priorities above and community activism at a neighbourhood scale will be essential in driving delivery. As such all seven priorities will be addressed through the GI Action Plan to follow this GI Framework but in a period of severe resource constraint, when demonstrating the likely economic, social and environmental impact of schemes will be essential to securing investment at the sub-regional level, it is felt that the above four priority areas for investment offer the greatest opportunity to demonstrate the role and benefits of investment in green infrastructure at a GM scale.

6.3.6 The map below provides a spatial representation of the GI investment opportunities to support growth in GM.[7]

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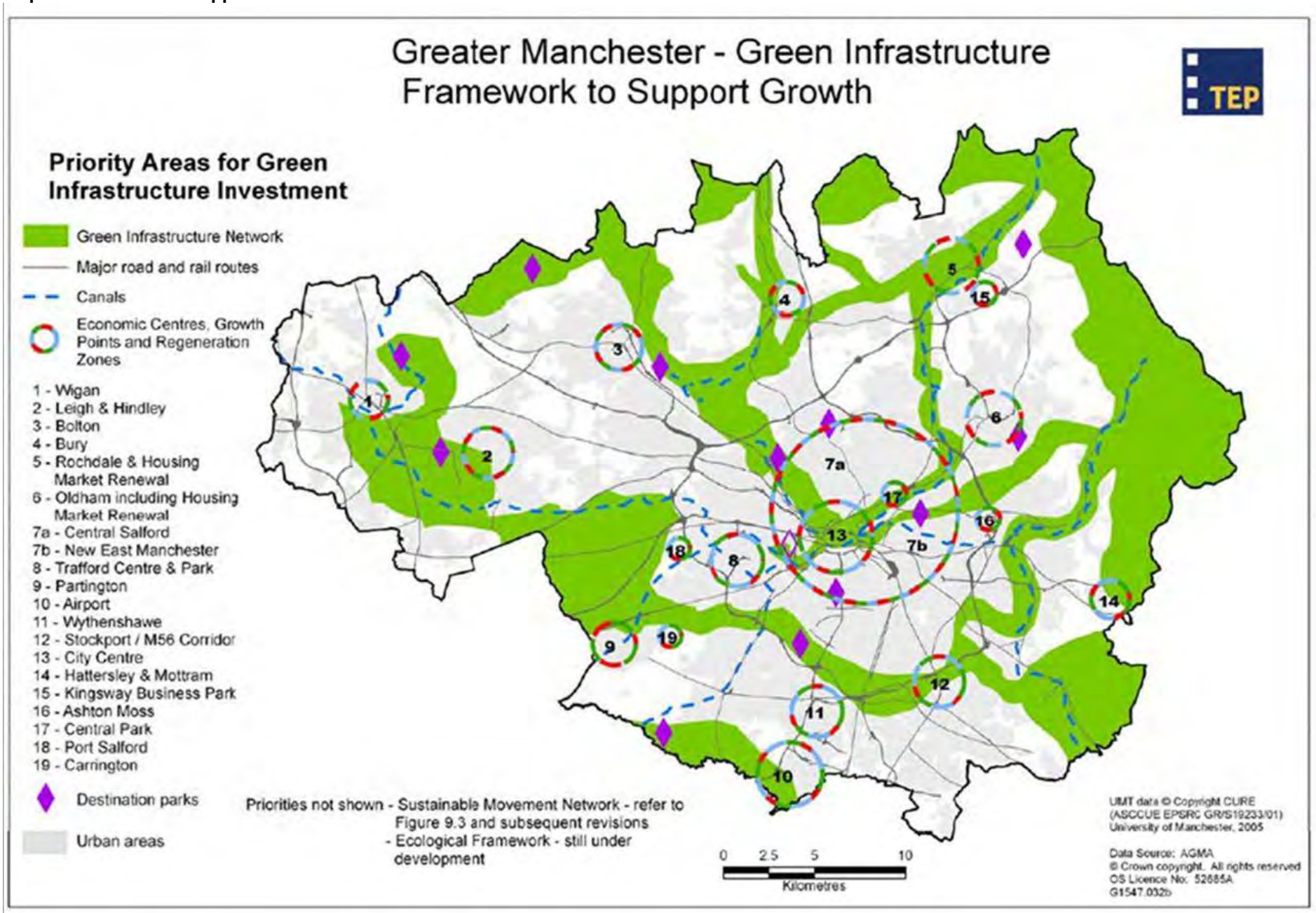
[7] As with all maps included in this Framework the map indicating Priority Areas for Investment is an illustration only. Produced by TEP (2008) at the time of completion it was an accurate reflection of growth points / regeneration zones.

Map 7: GI Investment Opportunities



7.0 Way Forward

7.1 As outlined in the introduction, this GI Framework summarises known GI priorities (assets, needs and opportunities) at a strategic level and aims to rationalise priorities for green infrastructure investment in Greater Manchester. This Framework document reviews the existing evidence base to suggest four priority areas for investment, that offer the greatest opportunity to demonstrate the role and benefits of investment in green infrastructure at a GM scale. The report provides a clear set of priority GI themes and offers a spatial representation of these themes. At a sub-regional level it is intended that this Framework is used as one of a series of key documents informing the preferred policy approach to delivering the Greater Manchester Strategy (GMS).

7.2 This Framework document provides a positive review of GI opportunities and highlights the significant direct and indirect economic and environmental benefits of GI investment. A key aim of this Framework is to ensure that GI priorities can be incorporated into the emerging GMSF and be considered a priority for investment at the sub-regional scale. As AGMA is moving to a single, coherent investment strategy for GM, (which will focus spatial investment on those schemes that are most likely to increase economic and social benefits and allow maximum return on investments) inclusion of GI priorities in the GMSF will enable GI investment to be promoted as part of wider strategic investment proposals. It is in this context the GI Framework has been written; it recognises that a strategy for growth in the sub-region requires a positive plan for green infrastructure. The recommendations in this Framework should be read in conjunction with the evidence base from which it draws including the recently completed series of reports by TEP[8].

7.3 This report will be followed by a GI Action Plan and GI Prospectus. The GI Action Plan will build on the existing evidence base and the many established successful environmental initiatives in Greater Manchester to focus on delivery. The Action Plan will identify actions for each of the 4 overarching spatial priority themes as set out in this Framework. These priority themes have a sub-regional focus but actions will be identified at both the sub-regional and local scale (many of the GI priorities will require delivery at the local and neighbourhood scale) the plan will also set out delivery mechanisms for these actions. The evidence base summarised briefly in section 4 of this report looks at assets, needs and opportunities at the sub-regional level however much of the mapping work undertaken by TEP was done at a local level (including cross-boundary mapping). As an example Figure 2 is a map of the opportunities identified in Bolton, Bury and Rochdale illustrating detailed areas of transformation and economic activity. It is this, more detailed, evidence base that will inform the action planning and delivery planning.

7.4 Through the Action Plan a cross boundary and coordinated approach is required to ensure that GI deficiencies are reduced and that wider investment opportunities both contribute to and benefit from GI improvements. This approach would be a combination of bottom up and top down policy making as GI priorities are formed through local and neighbourhood plans and evolving sub-regional, strategic priorities and cross-boundary strategies. Planning for both the asset and the function should therefore inform the GI Action Plan approach. As a third generation GI strategy document the Action Plan will aim to secure delivery of GI development, protection and management to help Greater Manchester work towards its goal of becoming a low-carbon society[9].

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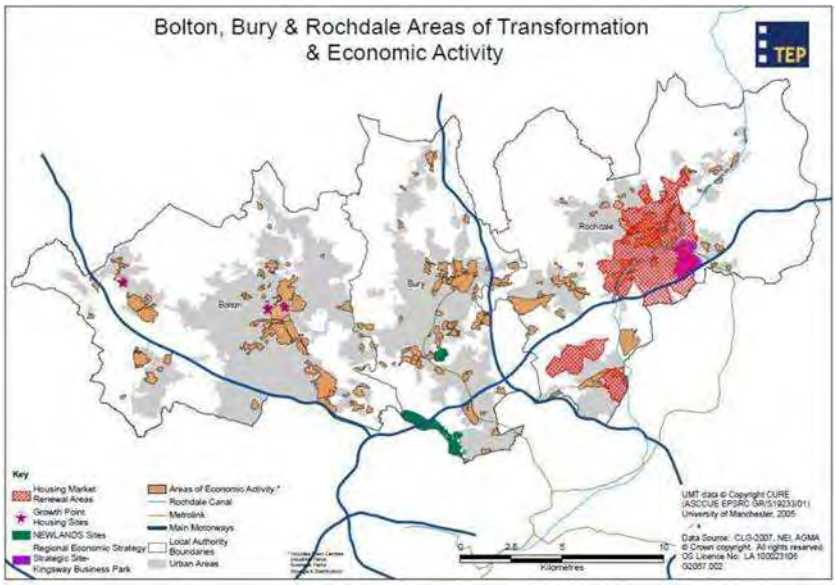
[8] TEP (2008) Towards a Green Infrastructure Framework for Greater Manchester: Full Report
TEP (2010) Greater Manchester's Green Infrastructure: Next Steps towards a Green Infrastructure Framework

[9] First generation GI strategies were primarily concerned with biodiversity, greenspace and access. Second generation GI strategies included a greater emphasis on socio-economic goals and sustainable communities. Third-generation strategies will integrate the concept of ecosystem services and will consider the role of GI in sustaining a low-carbon society which lives within environmental limits.

Figure 2: Local Scale Mapping



7.5 Delivery of the GI Action Plan will be through a combination of the following:

- The planning system, to ensure development provides new and enhances existing green infrastructure where it is needed;
- Strategic environmental initiatives such as the Red Rose and Pennine Edge Forests;
- Greenspace and countryside management by local authorities' open space teams;
- Environmental activity by providers and managers of other civic infrastructure such as roads, rivers, canals, flood defences, educational and health facilities;
- Actions by community groups and corporate bodies and personal actions by individuals;
- Community and neighbourhood planning.

7.6 The GI Prospectus will be based on the findings of work commissioned by the GMGI project to date and will reflect the vision as set out in the GMS. It will offer a robust and visual representation of GI themes, objectives and priorities for GI delivery which can be used to promote and advocate GI objectives and investment opportunities for the city region through AGMA and key stakeholders. The prospectus will highlight the important relationship between sub-regional actions and those undertaken at a more local level within and between districts, landscapes or development areas. It is intended that this GI Framework and the GI Prospectus will only require updating when a full review of GI priorities is considered necessary, the GI Action Plan is intended to be a 'living document'; it will evolve as the evidence base expands and as additional opportunities and risks are identified.