



BURY'S GREEN INFRASTRUCTURE

Advice on Strategy and Implementation

Prepared by
TEP

for

Bury Council

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1 INTRODUCTION

- 1.1 TEP was commissioned by Bury Council (in conjunction with Natural England) in July 2009 to provide advice on the implementation of the Council's emerging green infrastructure (GI) policy.

Aims

- 1.2 The commission had 4 aims:
- To verify the evidence base for a GI Key Diagram and Policy Direction in Core Strategy;
 - To identify areas in the Borough that are expected to undergo transformation as a result of development or regeneration;
 - To propose an updated GI Key Diagram for inclusion in Core Strategy;
 - In the context of development and regeneration, to identify potential conflicts development synergies and opportunities for GI to contribute to sustainable development.

Background

- 1.3 Bury Council's Core Strategy (Preferred Option, May 2008) includes a policy direction on Green Infrastructure (SD15). It reads as follows:

The Council is intending to develop a policy that seeks to positively enhance and develop an identifiable network of Green Infrastructure. The policy will also manage development in locations that would result in the loss of, or fragmentation of the Borough's Green Infrastructure network as described in the Spatial Portrait (i.e. River Valleys, Manchester, Bolton and Bury Canal, West Pennine Moors, strategic recreation sites and routes). Subject to other policy directions, development would only be considered acceptable where mitigation measures would ensure that there was no net loss and / or the development would provide a positive contribution to the strategic function of the network.

- 1.4 The policy is supported by a Key Diagram illustrating the Borough's GI.
- 1.5 In September 2008, AGMA published a draft framework for GI across the Manchester City Region, which prioritises GI investment in Bury's town centre, in Radcliffe, in the river valleys, uplands and major parks. AGMA's framework stressed the importance of GI linkages between Bury and Rochdale, Salford and Bolton. The AGMA definition of GI for the City Region is articulated below:

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:

- 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 GI planning is necessary at a range of scales; from a city-regional framework, through to masterplanning of specific neighbourhoods undergoing transformation, down to micro-scale improvements in developments (e.g. SUDS, biodiverse planting, access to foot/.cycleways).
- 1.7 Similarly GI management is necessary at a range of scales, from the strategic (management of catchments, agricultural landscapes, community forests and brownfield regeneration schemes), to Borough-level management of open and civic spaces; down to micro-scale in the form of community stewardship of parks and people taking individual environmental actions (such as food-growing, managing roof water run-off, neighbourhood greening, wildlife-friendly gardening etc).
- 1.8 During 2008 and 2009, several studies reported on environmental and regeneration assets, trends and vulnerabilities in the borough and across the City Region. These include:
- a. Strategic Flood Risk Assessment (SFRA)
 - b. Surface Water Management and Catchment Planning
 - c. Greater Manchester Ecological Framework,
 - d. Manchester's Climate Change Action Plan
 - e. Evidence on increasing heat in urban areas
 - f. Bury's PPG17 Study and emerging greenspace strategy
 - g. Bury's Strategic Housing Land Availability Assessment (SHLAA)
 - h. Bury's Employment Land Review (ELR)
 - i. Greater Manchester's decentralised energy study
- 1.9 These studies have expanded the evidence base about green infrastructure, environmental risks to the urban area arising from climate change, and potential risks to the environment arising from development. In response, Bury Council required a review of GI priorities and an exploration of how a GI plan can contribute to sustainable growth in the Borough.

Methods

- 1.10 TEP undertook the following tasks:
- Mapping of GI Assets in the Borough
 - Updating the GI evidence base using data from the SFRA, the Ecological Framework, Greater Manchester's priority habitats, the Council's PPG17 study, urban heat island areas, and green space strategy.
 - Identification of regeneration and economic development areas through study of the emerging Local Development Framework, potential housing and employment land sites.
 - Identifying areas of "need" where GI functions are critical to Bury's sustainable development (e.g. flood management, biodiversity, image, regeneration of inner areas, ensuring quality of place, infrastructure to deliver the Core Strategy).
 - Updating of Bury's GI Framework in the form of GI Key Diagrams
 - Identifying how GI could be used as a means of supporting/delivering growth (e.g. through added value to new development or as a driver for regeneration of disadvantaged communities).

2 CITY REGIONAL GREEN INFRASTRUCTURE FRAMEWORK AND BURY'S ROLE

- 2.1 The Association of Greater Manchester Authorities (AGMA), with Natural England, has been developing a GI plan for Greater Manchester since 2008. In accordance with the NW Regional Plan (policy EM3). As a New Growth Point, the city-region is required to produce a GI strategy. AGMA also feels that a City-regional approach to GI planning is vital to ensure that opportunities for supporting city-regional growth are not missed – this could occur if individual local authorities draw up GI strategies without reference to cross-boundary and city-wide priorities.
- 2.2 To date, AGMA has drawn up a provisional GI framework, but further work is needed to secure its full adoption and endorsement across the City-regional Commissions.
- 2.3 TEP produced "Towards a green infrastructure framework for Greater Manchester" in September 2008. AGMA's Planning Officers' Group reviewed the emerging framework and recommended that it merited further development. Since then AGMA has commissioned TEP to review emerging evidence, refresh the key diagram and recommend next steps to formalisation of the GI framework as a city-regional plan.

The City-Regional Framework

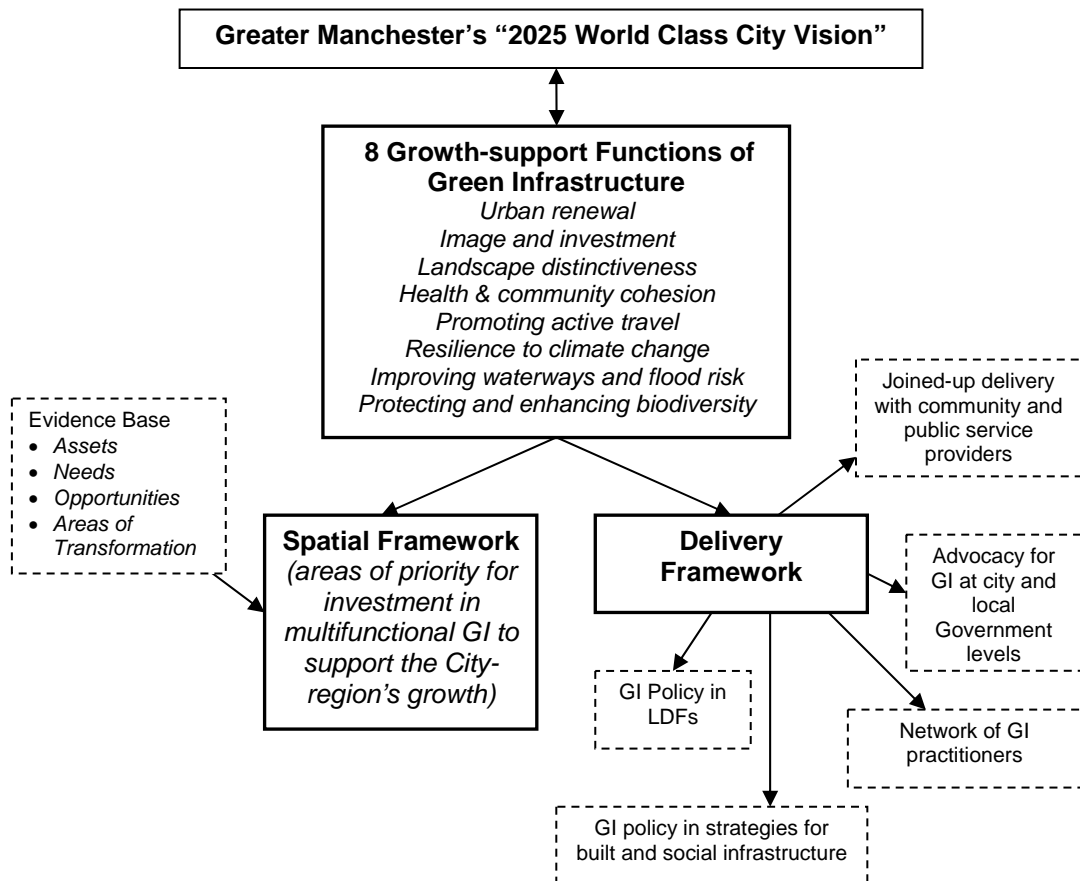
- 2.4 The emerging GI framework will consist of the following components (see graphic overleaf):
- 2.5 **A Goal:** that GI will help Greater Manchester achieve its 2025 vision of being a world-class city.
- 2.6 **Objectives:** a list of the 8 GI functions that will support growth of the city region.
- 2.7 **An evidence base:** about existing GI assets, areas of need, areas of opportunity and areas which are likely to undergo transformation as the city grows and regenerates.
- 2.8 **A Spatial Framework:** showing the priority areas for GI investment, including;
- a **green infrastructure network** of multifunctional spaces, waterbodies and corridors for active travel (walking, cycling, riding, canals). The network runs through urban and rural areas. It is aspirational in that it includes sections where GI assets are presently fragmented and require restoration and interlinking in order to create a robust infrastructure
 - **regeneration and economic priority areas** where GI is needed to underpin and stimulate the restructuring and growth of the City-region
 - **destination parks,**
 - **urban greenery** (a collective term for the fine-grained pattern of urban trees, gardens, wildlife corridors, pocket-parks, swales and porous hard-surfaced areas which are a vital component of a liveable climate-proofed city)

2.9 The spatial framework plan (November 2009 iteration) for the City Region is shown below. It will be reviewed when the Greater Manchester Spatial Strategy is produced in 2010.

2.10 **A Delivery Framework:** including;

- Advocacy for GI at City-regional and Local Government levels,
- GI policies in Local Development Frameworks,
- GI projects included in a wide range of strategies for built and social infrastructure,
- A network of GI practitioners, including the community forests, local authority planners and land managers, water managers, community groups, landowners and private sector property and construction professionals.
- A strategy for joining-up with community groups and providers of other public services to widen the uses and benefits of open space. This includes measures such as joining-up service delivery and promoting individuals' behavioural change.

Components of the Greater Manchester Green Infrastructure Framework





Green Infrastructure Network

Rivers, valleys, floodplains, parks, woods, multi-user trails, heritage features, major countryside areas, uplands and biodiversity sites and corridors

The GI network is multifunctional and is critical to sustain growth and climate resilience. It buffers against floods and is a carbon sink. It provides recreation, tourism, landscape and biodiversity functions. It is found in urban and countryside areas. A healthy GI network is essential to maintain water, air and land quality throughout the city.

Parts of the network, such as some urban rivers, have low assets and action is needed to repair (in)lets and restore environmental quality. Other areas are of high value and functionality, and merit conservation management.

Economic Centres and Growth Points

City and town centres, housing sites, strategic employment sites and transport corridors. In the forthcoming decades, multi-billion pound investments will be made in new and refurbished property.

GI is essential for resilience, higher property values, sustainable travel and image as a world-class city. Good GI broadens the economic offer and sustains creative and knowledge industries. GI upstream has been proved in Greater Manchester to reduce risk of flood damage to residential and business property.

Priority areas are centres and growth points which are deficient in green and civic space and perform poorly in terms of water and air quality management.

Regeneration Priority Areas

Brownfield sites, housing renewal areas and deprived areas. Often vulnerable to flooding, suffering visual blight or air pollution. Poor quality public space depresses inward investment. Programmes such as Green Streets, New Deal and Home Zones have increased community spirit, raised property values and increased positive perceptions.

More family housing and home care for elderly will require neighbourhood open space design and management to maximise community safety and social interaction.

Priorities for investment include uplifting major parks and civic spaces, improving transport corridors, dealing with brownfield land, and implementation of neighbourhood-scale street-greening, allotment and schoolground projects

Community Activism

Community pride & stewardship of green infrastructure is a high priority in a GI strategy for an urban area.

This includes individual environmental actions at home and work, which can be stimulated through raising awareness using education and informal means. Community volunteers are responsible for managing growing food in, and campaigning for local spaces.

At a more formal level, environmentalists can work alongside health, education and social services to join up services using GI as an arena to sustain stronger communities. This is termed "co-provision".

Localism can stimulate democratic involvement and contribute to "liveability" in large urban areas.

Sustainable Movement Network

An important aspect of GI is a strategy to increase walking and cycling, for leisure and commuting. Provision of safe and attractive routes, in green space where possible, will encourage a shift away from the private car. This will also increase the opportunities for sport and healthy activity.

Priorities include: high quality public realm in walking and cycling corridors; safe bus stops and walking routes from them; safe routes to community facilities, legible urban centres and longer routes to the river valleys, uplands and the Greenhairs Regional Park.

Greater Manchester does not presently have a strategic plan for sustainable movement, which more opportunities to improve the network could be used as the city grows.

Destination Parks, Landmarks & Trails

Major green spaces and visitor facilities such as Green Flag Parks, large country parks, sites of heritage interest, Sculpture Trails, sporting areas, canals and panoramic viewpoints. These vary in character across the city ranging from inner urban destinations such as Hollingworth Lake and Peel Tower. Most are within the GI Network.

The GI priority is to further enhance community stewardship, encourage uptake of healthy activity, promote jobs relying on the quality of these sites, and maintain them areas as "jewels in the crown".

Trails which connect the destinations to the urban areas will form part of the sustainable movement network.

Urban Green

Fine-grained Green infrastructure: street trees, gardens, corporate grounds, pocket parks, allotments, green roofs and walls, along with porous surfaces and sustainable drainage systems (SUDS).

The priority is to retain or create high levels of canopy cover and urban vegetation to promote a positive image, sustain biodiversity, promote mental health and adapt to climate change. SUDS and vegetation are important in surface water management.

The need for urban green is greatest in areas of family housing, health deprivations, inner and city centres, and where it can contribute to improving the management of surface water by reducing the pressure on existing sewerage infrastructure

Bury's contribution to city-regional green infrastructure

2.11 The City-Region framework identifies that GI in Bury is critical to the growth and regeneration of Greater Manchester for the following reasons:

- Greater Manchester is designated by Government as a Low Carbon Economic Area. In support of this, GI can make urban areas more liveable, reducing car and food miles, enabling sustainable travel, and attracting innovators, scientists and technologists. Bury and Radcliffe are very well-connected by public transport and road to the city centres of Manchester and Salford (the "Regional Centre"). This makes Bury an attractive and affordable destination for high-calibre jobs, entrepreneurs and employees who depend on access to the Regional Centre.
- Bury thus has a role in attracting inward migration to the city region, but there is a need to change the perception and image of northern Manchester. GI can contribute to this image change. Bury town is a key centre, making a vital contribution to city growth. The quality of green infrastructure in and around the town is important in creating an attractive and resilient environment for business investment.
- Radcliffe experiences health and economic deprivation, yet is capable of regeneration and significant housing growth. High quality well-managed GI, particularly in the town and the Irwell valley, increases the capacity of Radcliffe to regenerate
- The Rivers Roch and Irwell run through Bury into Salford and central Manchester. Flood risk arising from the Irwell is a negative factor affecting property values, investor confidence and regeneration activity in poor areas such as central Salford. Manchester's Climate Change Action Plan recognises this risk. Good management of the river, floodplain and catchment in Bury can reduce this risk and improve regeneration prospects and land values.
- The Irwell valley is also recognised as critical GI for the image of the city region – this includes the NWDA-supported Irwell River Park in the city centre and the upstream Irwell valley which is a "green lung" for the city. The river corridors (Roch and Irwell) are vital for Bury's image, climatic adaptation, leisure and health, biodiversity and landscape distinctiveness.
- Bury's countryside (the Irwell and Roch Valleys and the Pennine moors) is a green lung and essential to many tourism, leisure and pub/catering businesses. Its landscape provides an attractive setting for the East Lancashire Heritage Railway, an important sub-regional tourism asset.
- In summary, investment in Bury's green infrastructure brings proven economic benefits, including making property more resilient to climate change, healthier workforces, cohesive communities and new jobs in the "natural economy". These benefits extend to the sub-region with

reduced downstream flood risk, sub-regional recreation routes and the retention and enhancement of strategic wildlife corridors.

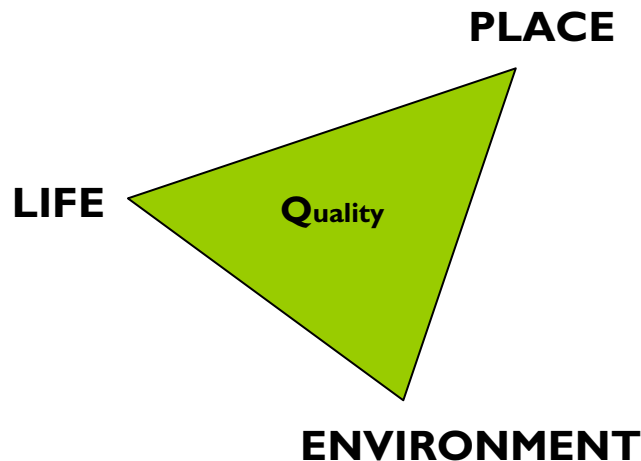
- 2.12 The framework also identifies that planning and management of Bury's GI requires a collaborative approach, particularly with Councils in Rochdale, Salford and Bolton and Lancashire.

Bury's Vision

- 2.13 Bury's green infrastructure can help the Borough achieve several of its ambitions, expressed in its Sustainable Community Strategy 2008-2018, to be:

- a. The place to live in Greater Manchester
- b. The healthiest Borough in the Northwest
- c. A popular visitor destination
- d. A place where each township thrives

- 2.13 Green infrastructure in Bury is all about quality - quality of life, place and environment.



- 2.14 Bury's goals are compatible with those of the City Region. In terms of Bury's Core Strategy, the key functions for GI are:

- GI supporting urban renewal and creating a positive image of the Borough as a place to settle, raise a family and stay – in short "liveability"
- GI helping the Borough's towns and urban areas adapt to inevitable climate change which could affect property value and health – in short "resilience"
- GI providing open spaces, access and recreation with high levels of biodiversity – contributing to healthy lifestyles

- The quality of Bury's countryside, parks and greenspaces contributing to its attractiveness as a visitor destination and associated jobs
- GI contributing to a distinctive landscape, with each township actively involved in stewardship of its environment

2.15 The following chapter provides a brief overview of Bury's green infrastructure in terms of these functions. Chapter 4 brings the evidence together and proposes a spatial framework for GI which could be incorporated into Core Strategy and used as the basis for GI policy.

3 REVIEW OF THE EVIDENCE BASE FOR GI IN BURY

3.1 Green infrastructure sustains the socio-economic and environmental prosperity of Bury and Greater Manchester. To understand where green infrastructure protection and enhancement is optimal, it is necessary to examine the socio-economic and environmental status of Bury and its communities.

3.2 This chapter examines various aspects of the Borough's character and needs. It highlights where GI is able to make a positive contribution to regeneration and economic development, health, active lifestyles, biodiversity and landscape quality. It suggests where GI can help the Borough's communities adapt to climate change and flood management in particular.

3.3 The following sources provide evidence in relation to GI in Bury:

- Regeneration Initiatives, Economic Development Sites, Strategic Housing Land Availability Assessment sites, Employment Land Review sites (all from Bury Core Strategy (Preferred Option May 2008) and associated evidence bases;
- Conservation Areas (from Bury Council);
- Indices of Multiple Deprivation¹;
- Natural Environment Index²;
- Green and Open Space Assessment³ ;
- Strategic Flood Risk Assessment⁴;
- Urban 'Heat Island' effect⁵;
- Phase 1 Habitat Survey of Bury⁶;
- Designated wildlife sites (SSSI, LNR, SBI);
- Greater Manchester Biodiversity Action Plan;
- Greater Manchester Ecological Framework⁷
- Greater Manchester Green Roof Guidance⁸.
- Bury Landscape Assessment
- Consultation with Bury Council Officers (Strategic Planning, Greenspace and Biodiversity officers)

3.4 This overview is necessarily brief and cannot provide detailed analysis in respect of every GI function in Bury. Detailed evidence is available in the

¹ Indices of Multiple Deprivation, (2007), CLG

² Identifying the Spatial Relationships between Socio-Economic Deprivation and Environmental Quality, (2007), TEP for Natural Economy Northwest

³ Open space, sport and recreation: an assessment of needs and opportunities, (2009), Bury Metropolitan Borough Council

⁴ Bury, Rochdale and Oldham Strategic Flood Risk Assessment, (2009), JBA Consulting for Rochdale Metropolitan Borough Council

⁵ Climate Change and Urban Greenspace, (2006), Gill, S.E. - Unpublished PhD research thesis for Manchester University

⁶ Phase 1 Habitat Survey, (2001), TEP for Bury MBC

⁷ An ecological framework for Greater Manchester (2009), Greater Manchester Ecology Unit and University of Salford for AGMA

⁸ Greater Manchester Green Roof Programme: Feasibility Study (2009), Drivers Jonas for the Commission for the New Economy

documents cited above and in many other documents which will inform Core Strategy topic-specific policies. ***A GI framework does not over-ride detailed strategies for biodiversity, flood management etc; rather it seeks to integrate them into a multi-functional approach to land and community planning.***

Regeneration and Economic Development

- 3.5 Green infrastructure is vital for regeneration, particularly in the Northwest with its history of industrial development and development patterns, which have often left a legacy of limited accessibility to quality green spaces. The process of sustainable regeneration and development requires provision and enhancement of urban, peri-urban and rural networks of green and open spaces. Within the Borough there are four major regeneration initiatives and several key centres where the quality of GI is vital for inward investment and attraction of families and 'knowledge – sector' workers. (Figure 3.1).
- 3.6 The Borough also has three Priority Areas for Housing Growth and several other secondary areas identified in the Core Strategy. An increased amount of housing requires a number of infrastructural improvements, roads, schools and other services. Green infrastructure improvements will be vital in supporting the communities expanding into these growth areas.
- 3.7 In addition, the Strategic Housing Land Availability Assessment (SHLAA) and Employment Land Review (ELR) have identified a number of sites, some outside the main regeneration areas, which could deliver green infrastructure as part of their redevelopment.
- 3.8 Green infrastructure supports the economic growth of the sub-region. Figure 3.2 shows the relationship of Bury to surrounding housing and regeneration programmes. Regeneration in Greater Manchester is driving forward a series of projects which are contributing to the green infrastructure resource. The Forestry Commission and NWDA Newlands project is already delivering direct economic and community benefits from restoration of brownfield land into accessible woodland and green space, particularly in the south of the Borough in the Lower Irwell Improvement Area (LIVIA) and at Hurst Farm. In Heywood in the neighbouring borough of Rochdale the Sustainable Urban Neighbourhood (SUN) Project will provide significant improvements to the green infrastructure network of green and open spaces. GI projects in the floodplains and surface water pathways of the Irwell and Roch valleys will also reduce the risk of flooding for downstream communities such as those in Bury, Radcliffe and Salford.
- 3.9 As part of sustainable development green infrastructure can be provided in many forms, as replacement for the loss of environmental function on developed land, as active travel networks such as cycle paths and footpaths or to reduce the impact of development on flood risk and/or the risk of flooding to new development and adaptation to climate change. Green and open accessible space helps to create a sense of place and is

instrumental in providing quality of life. Providing attractive neighbourhoods and usable spaces is a factor in attracting people to the Borough. With these people come skills and investment, which are key elements of growth and regeneration.

Image and Quality of Place

- 3.10 The legacy of some industrial activity and previous development has left the Borough with areas of degraded landscape, in both urban and rural areas. Fragmented habitats, abandoned and despoiled land and industrial dereliction all contribute to a poor visual and natural environment. Figure 3.3 shows areas of poor landscape in the Borough, some of which could be prioritised for renewal and restoration. There are concentrations of poor quality landscapes (30% worst in the Northwest)⁹ in the Borough; Radcliffe has a large area that could be considered as poor landscape quality, as have parts of Whitefield and Prestwich and north of Bury town centre. Several of these poorer-quality landscapes are found along the sustainable transport corridors (identified in Bury's Core Strategy as important to urban renewal and housing growth). Renewal of landscape quality is an important part of the aspiration for these corridors to be used more for active commuting.
- 3.11 In contrast to the poor and degraded landscapes, the Borough also has areas amongst the 30% best in the Northwest. These assets create a positive image and add to the quality of place (Figure 3.4).
- 3.12 The area west of Ramsbottom and Tottington has large areas of open landscape with a high visual and natural value. Ramsbottom is also home to several Conservation Areas. In fact most of the land surrounding the northern half of the Borough is of a high quality.
- 3.13 The River Irwell corridor is a strategic asset to the Borough and provides a quality landscape scale connecting feature, both for communities and wildlife. Parts of the Roch river corridor are an important asset for the Borough and are a vital part of the sub-region's green infrastructure network, connecting Bury and Bolton with the northern edge of the Manchester and Salford conurbations. Rochdale. The NEWLANDS accessible woodland initiative and is continuing to expand and improve the environment of the lower Irwell valley.
- 3.14 The Irwell valley is a good example of a very mixed landscape. Inherently of high quality, it has been degraded by past industrialisation. However, where it has been subject to environmental regeneration, it has recovered to become an asset amongst the Northwest's best.
- 3.15 The Borough also has many areas of natural and built heritage, including ancient or long-established woodlands, Conservation Areas, reservoirs

⁹ Identifying the Spatial Relationships between Socio-Economic Deprivation and Environmental Quality, (2007), TEP for Natural Economy Northwest. This is a high-level regional study, using statistics from various dates. While the results remain valid, a degree of caution is needed in relation to specific sites – for example the LIVIA site is shown as being of poor environmental quality by virtue of the presence of derelict land and poor air and water quality, but is now under regeneration to community woodland.

and lodges, the Bury Canal, the East Lancashire Railway, Holcombe Moor and Peel Tower for example. These areas also important as multifunctional assets, with roles in flood management, biodiversity, tourism and promotion of healthy lifestyles. Most of the main heritage features are shown on Figure 3.4.

Deprivation and Health

- 3.16 Bury contains pockets of deprivation (30% most deprived neighbourhoods in Greater Manchester), (Figure 3.5). The main concentrations are located to the east of Bury town centre, Radcliffe, Kirklees, Redvales, and the central part of Whitefield. There is a spatial correlation between areas of multiple deprivation and the distribution of Bury MBC green and open spaces, with those areas displaying high levels of deprivation not containing many open spaces.
- 3.17 Health deprivation (Figure 3.6) is also prevalent in Bury centre, Radcliffe and central Whitefield. Again there is a spatial correlation between green and open space provision and neighbourhoods with poor health.
- 3.18 Bury's aspiration is to be the healthiest borough in the Northwest. In order to address health deficiencies, one strategy is to promote active lifestyles. Research shows that, in most urban areas, there is a link between the quantity and quality of greenspace and the levels of healthy activity. There is a link between activity levels and the need for healthcare.
- 3.19 Promotion and management of neighbourhood GI in the less healthy areas of the Borough is a relatively low-cost way of improving health and can be joined-up with other uses of greenspace by the community e.g. allotments, sports, angling.

Flooding and Climate Change

- 3.20 Figure 3.7 illustrates the level of fluvial flood risk in the Borough. Both flood zone 2 and flood zone 3 are shown as well as the major river courses. There are significant flood risk areas along the Irwell Valley, particularly at the confluence of the Irwell and the Kirklees Brook valley. From this point southwards along the Irwell there is a high relatively high level of flood risk, which is further heightened at and below the Irwell/Roch confluence. A large proportion of the land in Radcliffe is at risk from flooding.
- 3.21 These flood zones are based on the current predictions for high rainfall events and may increase in frequency as our climate changes and heavier rainfall becomes more likely. The influence of upstream management of the land will be important in reducing flood risk in the Borough. Good soil and moorland management and woodland planting in the Pennine fringes may be important in reducing this flood risk.
- 3.22 Creation of natural flood storage pools and planting of new floodplain floodplains can also help to slow or attenuate the rate and extent of

flooding after a severe storm. This can bring major benefits in the form of property value increases. A good example is on the River Irwell, where the Pennington Playing Fields are also used as flood storage in the event of heavy rain. This has improved the flood risk in downstream residential areas. Environment Agency believe this prevented 6,000 homes from flooding in 2007.

- 3.23 Parts of the Borough outside floodzones 2 and 3 are also susceptible to surface flooding, caused by excessive rainfall and the limited capacity of the existing sewerage infrastructure. This infrastructure will be placed under increased demands from incremental development, coupled with heavy rainfall, a situation likely to worsen as climate changes. High levels of sealed surface coupled with steeper topography lead to surface water flooding problems and in these areas it will necessary to improve the rainfall interception and storage capability of the area.
- 3.24 With a changing climate comes the probability of increased summer temperatures, which in heavily built-up areas will increase the 'heat island' effect. Poorly vegetated areas and lack of shade can make urban environments unpleasant in high temperatures. Combined with airborne pollutants this can affect the health of the Borough's communities. Figure 3.9 illustrates those areas most likely to be affected by increased summer temperatures. This shows that the vulnerable communities of the Borough will be most at risk from the negative effects of climate change.
- 3.25 The Irwell Restoration Trust has drawn up a programme of riparian enhancement works which will benefit biodiversity, fisheries, recreation and heritage as well as enabling natural flood management e.g. removal of redundant river structures such as weirs .

Open Space – Provision, Accessibility and Quality

- 3.26 Figure 3.10 shows the distribution of the different green and open spaces owned by the Borough Council, with information on the accessibility of these spaces¹⁰. The areas of natural and semi-natural green space (shown as green space of a natural essence) are mostly located along the river valleys, notably the Roch, lower Irwell, Hollins Brook, Holcombe Brook and the Kirklees Valley. The upper reaches of the Irwell (above the confluence with the Roch at Springwater Park) have relatively little accessible Council-owned space other than Burrs Country Park, Nuttall Park and some land at Summerseat, although the Irwell paths and other privately-owned open space do go some way to providing public access to the river (Figure 3.11).
- 3.27 There is a large amount of natural and semi-natural green space along the Irwell south of Radcliffe.

¹⁰ The map is based on Bury's greenspace audit which classifies some areas (typically golf courses) as "inaccessible" because they are not freely accessible to all members of the public. The audit only covers Council-owned greenspace.

- 3.28 The Bury Open Space, Sport and Recreation Assessment identified several areas deficient in natural and semi-natural green space in terms of hectares per 1000 population. Three areas stand out as being poorly provided for; Ramsbottom and Tottington, Bury West and Bury East¹¹. However Ramsbottom and Tottington do benefit from presence of Holcombe Moor (open access land) and Bury West benefits from a network of paths. However, Bury East is the most deficient area of the Borough.
- 3.29 Bury's footpath network is extensive and access to the surrounding countryside is well provided for on the western side of the urban areas. The M66 corridor east of Bury somewhat curtails access, although there are crossing places along its length, importantly to the land at Pilsworth Quarry and Roch Valley. The Irwell Sculpture Trail runs the length of the Borough and for about half of its length it is accessible by bicycle, providing sustainable transport options to the Irwell River Park, Manchester, Salford and Lower Irwell Valley Improvement Area (LIVIA NEWLANDS).
- 3.30 The Irwell Sculpture trail is a corridor along which visitor interest can be improved. There are a number of key open space destinations in and near Bury, most of which are located on or close to the river and cycle access networks. Figure 3.11 shows a number of parks which are local (or in some-cases, sub-regional) destinations for outdoor recreation, sport and leisure.
- 3.31 The West Pennine Moors occupy the north of the Borough. The Moors have a large amount of open access land to the east of which the Rossendale Trail passes. Improved connections between Bury East and the Roch, Ashworth and Cheesden Valleys could increase the number of healthy outdoor activity options available to the communities of Bury Centre and indeed those of Heywood and Rochdale.
- 3.32 All Bury's natural and semi-natural green spaces were identified as being either average or poor quality (figure 3.12) in terms of their recreational provision with the Borough average being rated as poor. However despite this, many are regarded as being in positive management for biodiversity.
- 3.33 Corridors of open space between the key centres and the countryside, such as the Kirklees Brook and the Prestwich Clough, are also important because of their recreational value, and their role in climatic adaptation (e.g. providing cooling corridors).
- 3.34 Sports provision within the Borough is well distributed, although several of the larger spaces are in fact golf courses with limited access, particularly in the Whitefield area. Amenity space is again well distributed, though some areas have considerable more than others,

¹¹ It should be noted that although these areas are identified as being deficient in terms of access to natural and semi-natural green space, they are considered to have good access to areas of countryside that are not classified within this typology but which still offer opportunities for informal countryside recreation – most notably Holcombe Hill and the West Pennine Moors

Radcliffe for instance has 0.79ha per thousand population whereas Bury west has less than 0.14ha per thousand.

- 3.35 Allotment provision in the Borough is uneven as well with Prestwich having just under 8 plots per thousand population, compared with Ramsbottom and Tottington, Bury West and Bury East each having around 3 per thousand population and Radcliffe and Whitefield each with less than 1 plot per thousand population.
- 3.36 The physical layout of Bury's urban area is such that the open countryside is never far away and the river valleys are ideal conduits for access to the open spaces, the exceptions being at Bury East and Whitefield, where accessible open space is lower than average and where high levels of deprivation occur.
- 3.37 The Borough has 11 parks that are of 'Green Flag' status. Heaton Park just over the Borough boundary in Manchester is one of Greater Manchester's flagship parks. (Figure 3.12). Heaton Park serves Prestwich and much of north Manchester. The 'Green Flag' parks are evenly distributed around the Borough with all of the main settlements served by a quality park, although they vary in size with the 2 largest located to the north of Bury town centre at Clarence Park and Burrs Country Park. Figure 3.12 shows the Open Spaces score as defined in the Open Space, Sport and Recreation Assessment. Open spaces below the minimum quality standard ("good") are found particularly in Tottington, Whitefield and Radcliffe.
- 3.38 The Borough has 4 Local Nature Reserves, but has ambitions to meet the Government guidance of 1 hectare of LNR per 1000 population.

Biodiversity and Urban Greenery

- 3.39 Bury's contribution to sub-regional biodiversity is considerable, with the uplands and rivers providing important landscape-scale features for wildlife; as well as contact between people and nature.
- 3.40 The Greater Manchester Ecological Framework identifies nine areas within the Borough as Biodiversity Opportunity Areas (BOA). This is derived from consultation between GMEU and the Borough's greenspace team. The BOAs include woodland, grassland and pond networks. The value of the rivers as a natural conduit is supported by the Biodiversity Improvement Area located in the Roch, Cheesden and Ashworth valleys, where management for wildlife along the Bury section of the Roch will complement work undertaken in those valleys.
- 3.41 The Elton, Coggra and Harper Folds BOAs could provide a large natural space asset for the town of Radcliffe and Bury West, whilst the Lower Irwell Valley and Unsworth Moss BIAs could allow the communities of Whitefield access to a natural landscape.

- 3.42 Bury has several key corridors for wildlife which include Woodhill Brook/Kirklees Valley, the upper Irwell and the Elton Vale, Hollins Brook, Brightly Brook, Whittle Brook and Holcombe Brook. The countryside around Unsworth and Ainsworth has pond clusters important for amphibians.
- 3.43 The value of Bury's biodiversity is illustrated by figure 3.14. The Borough's major biodiversity resources (Pennine moorland, River Irwell and tributary valleys, and the associated wildlife corridors) are major elements of the Greater Manchester Green Infrastructure network and are also identified for expansion in the GM Ecology Framework. Work in these areas to improve biodiversity value and access for communities will make a large contribution towards the city region's green infrastructure network.
- 3.44 The GM Ecological Framework also identifies areas in which private gardens are important for biodiversity. Gardens have a role in providing feeding and movement corridors for wildlife, as well as providing breeding sites for fauna. The importance of gardens, as well as street trees, in providing climatic adaptation against the heat-island effect and attenuating surface water flows is being increasingly recognised.
- 3.45 The GM Green Infrastructure framework identifies that "urban green" (gardens, street trees, pocket parks, swales and porous hard surfaces) is critical to the environmental functioning of the City, particularly in the context of a changing climate. It is also vital for liveability, health and image.

Community Involvement

- 3.46 Bury has many examples of community involvement in the planning and management of green infrastructure. The Borough's numerous Semi-Natural Greenspace enjoy active participation from "Friends" groups. The FC's NEULANDS programme has involved the community, as have several projects carried out by the Borough's Parks and Countryside Team on Green Flag sites, and the BTCV.
- 3.47 Some GI assets have been created solely as a result of local community action e.g. Summerseat Nature Reserve at Ramsbottom.
- 3.48 Bury Council has organised delivery of many of its services in terms of areas and townships, in order to provide good connections between Council officers and residents.
- 3.49 Community stewardship of GI assets, and community environmental activism is important, for three reasons
- It results in a feeling of ownership, reducing anti-social behaviour and encouraging more active use of the outdoors environment

- With the projected aging demographic of the Borough¹², community involvement in greenspaces can be important to maintain health and wellbeing and social contacts into old age
- With increasing pressures on public finances, there will be a need to join-up service delivery and reduce costs – by working with 3rd-sector organisations, and by multi-tasking the way land is used.

Bury's Landscape

- 3.50 Bury's landscape is rich in cultural and natural heritage. Its structure and appearance are the result of natural forces and the hand of man from early woodland clearances for settlement through to the industrial revolution. The industrial past of Bury has left the Borough with a legacy which defines much of the urban area and surrounding rural landscape.
- 3.51 Of the twenty three national landscape character areas in the Northwest, Bury contains three; South Pennines, Manchester Pennine Fringe and the Manchester Conurbation. The distinctiveness of these character areas is reflected in the variety of species that inhabit these landscapes. Whilst these national classifications are useful in defining the general landscape types there is a need to drill down and explain the landscape in more detail. The Landscape Character Assessment (LCA) has achieved this and attributed thirteen separate and more locally appropriate landscape types to Bury. (Figure 3.15)
- 3.52 This variety in the Borough's landscapes and landscape elements is a vital part of the green infrastructure resource. They provide interest and a visual record of the past. The LCA in defining these locally distinct landscape types will help to guide development and green infrastructure interventions helping to retain the culturally important landscapes that define the Borough

Illustrations

- 3.53 The following plans illustrate the evidence base for GI investment in Bury.
- Figure 3.1 Regeneration and Economic Development (Bury)
 - Figure 3.2 Regeneration and Economic Development (Bury and neighbouring authorities)
 - Figure 3.3 Image and Quality of Place – Renew and Restore
 - Figure 3.4 Image and Quality of Place – Protect and Enhance
 - Figure 3.5 Deprivation (Indices of Multiple Deprivation)
 - Figure 3.6 Health Deprivation
 - Figure 3.7 Flood Risk (Fluvial)
 - Figure 3.8 Flood Risk (Susceptibility to Surface Water Flooding)
 - Figure 3.9 Urban 'Heat Island' Effect
 - Figure 3.10 Open Space Typologies
 - Figure 3.11 Access to Green Space

¹² Bury's Local Area Agreement suggests the proportion of elderly will rise from 15% (2008) to 20% by 2035

- Figure 3.12 Quality of Green and Open Spaces
- Figure 3.13 Biodiversity (Bury)
- Figure 3.14 Biodiversity (Bury and Neighbouring Authorities)
- Figure 3.15 Landscape Character

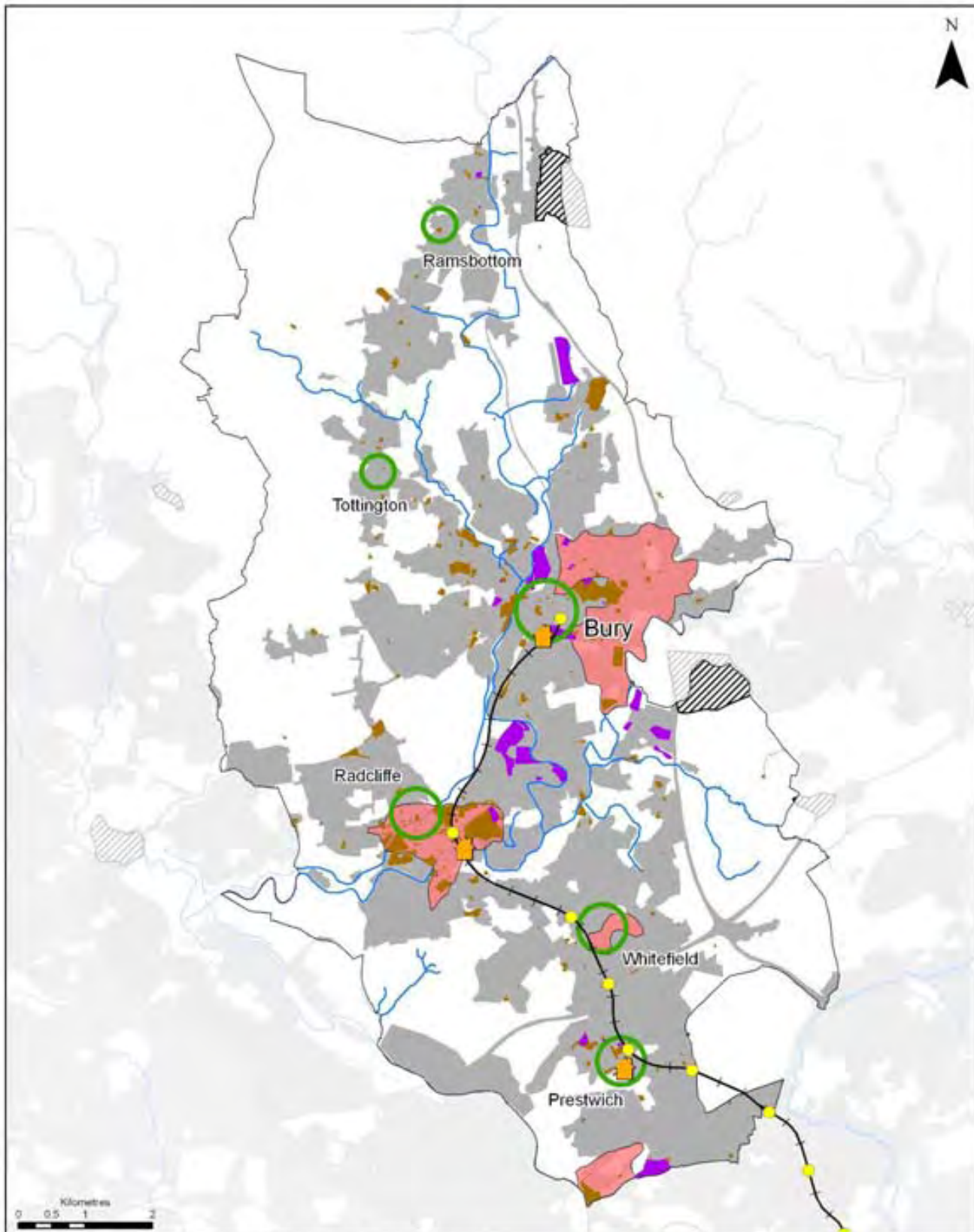
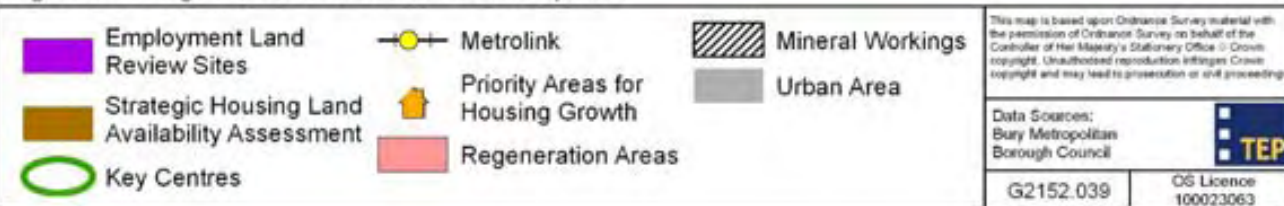


Figure 3.1 - Regeneration and Economic Development



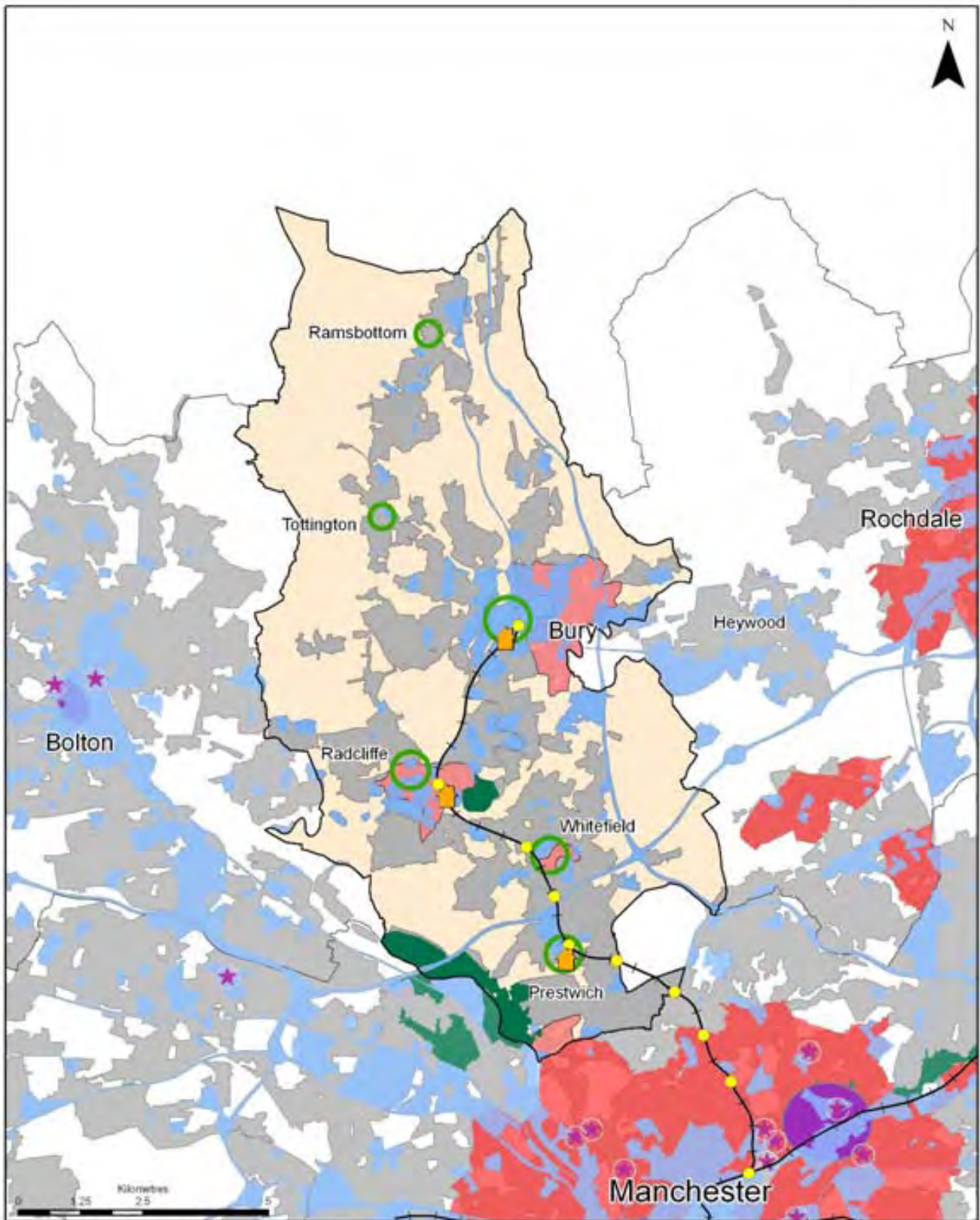
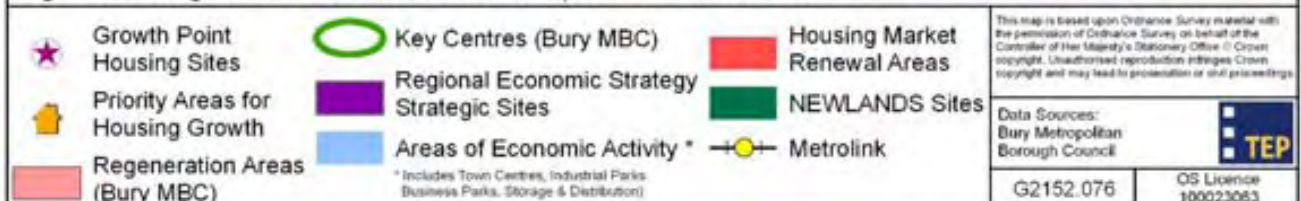


Figure 3.2 - Regeneration and Economic Development Northern Sub-Area



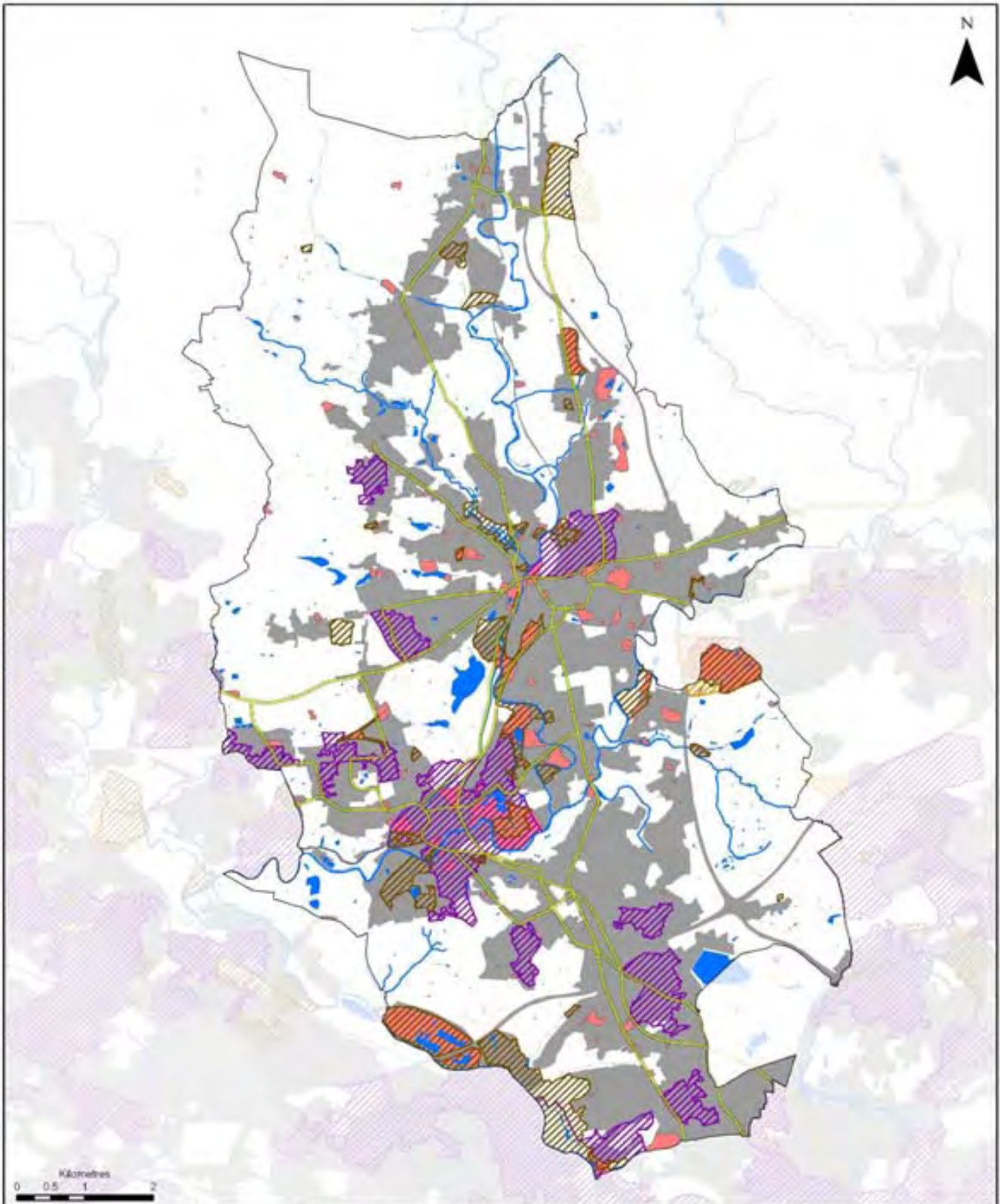







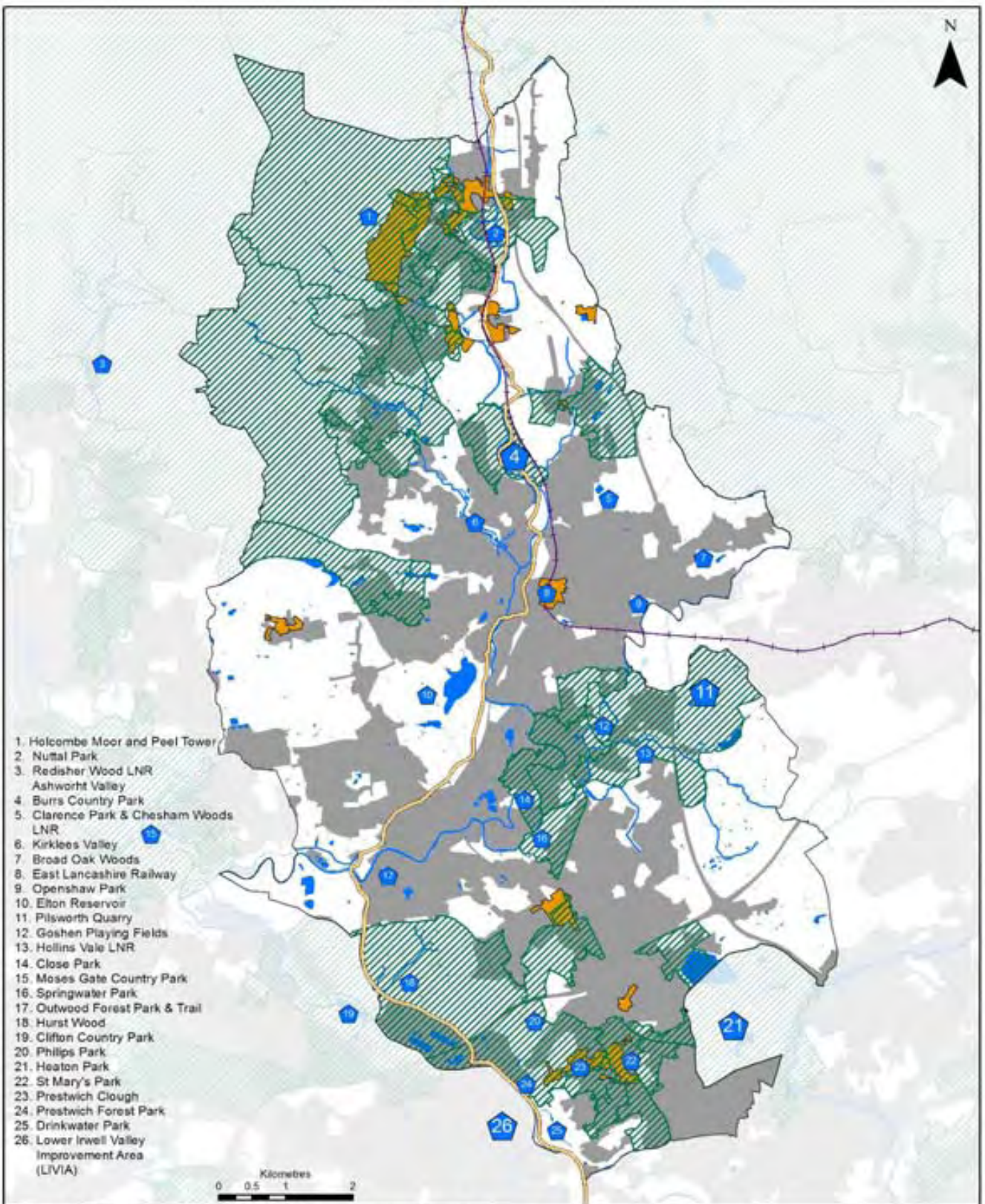


Figure 3.3 - Image and Quality of Place - Renew and Restore

<ul style="list-style-type: none">  30% Worst Quality Environment*  NLUD  Derelict, Underused and Neglected (DUN) Land 	<ul style="list-style-type: none">  Sustainable Transport Corridors  Waterbodies  Urban Area 	<p>* Adapted from Natural Environment Index (NEI) using Naturalness, Habitat, Landscape and Resource Quality as measures of Environmental Quality. Those areas shown are within the worst 30%.</p>	<p>This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.</p> <p>Data Sources: Bury Metropolitan Borough Council</p> <p></p> <p>G2152.082 CG Licence 100023063</p>
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1. Holcombe Moor and Peel Tower
2. Nuttal Park
3. Redisher Wood LNR
Ashworth Valley
4. Burrs Country Park
5. Clarence Park & Chesham Woods
LNR
6. Kirklees Valley
7. Broad Oak Woods
8. East Lancashire Railway
9. Openshaw Park
10. Elton Reservoir
11. Pilsworth Quarry
12. Goshen Playing Fields
13. Hollins Vale LNR
14. Close Park
15. Moses Gate Country Park
16. Springwater Park
17. Outwood Forest Park & Trail
18. Hurst Wood
19. Clifton Country Park
20. Philips Park
21. Heaton Park
22. St Mary's Park
23. Prestwich Clough
24. Prestwich Forest Park
25. Drinkwater Park
26. Lower Inwell Valley
Improvement Area (LIVIA)

Figure 3.4 - Image and Quality of Place - Protect and Enhance

	30% Best Natural Environment*		Inwell Sculpture Trail
	Conservation Areas		Waterbodies
	Destinations		Urban Area
	East Lancashire Railway		

* Adapted from Natural Environment Index (NEI) using Naturalness, Habitat, Landscape and Resource Quality as measures of Environmental Quality. Those areas shown are within the best 30%

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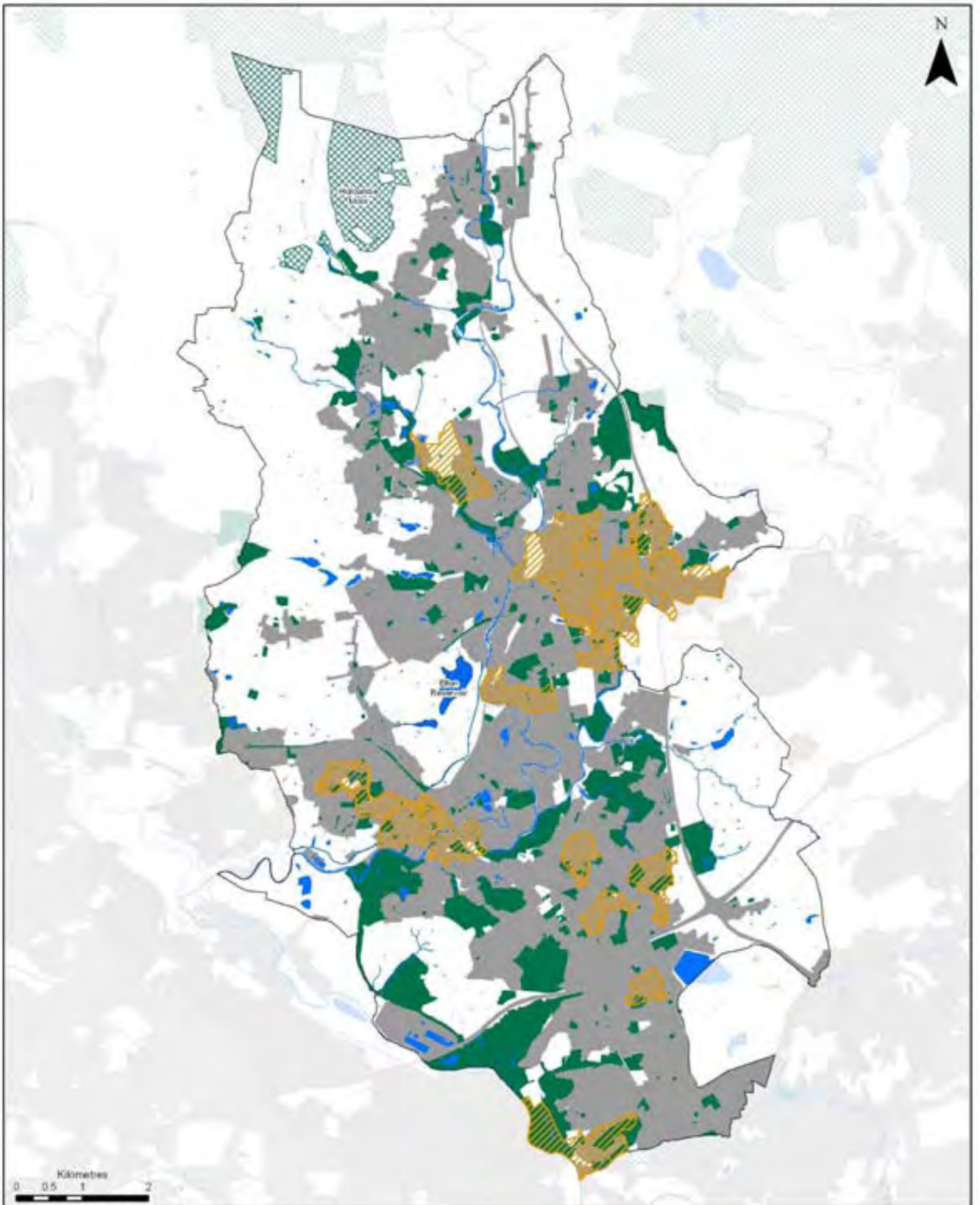
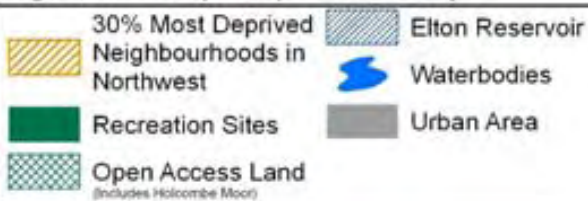


Figure 3.5 - Multiple Deprivation in Bury



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Data Sources:
Bury Metropolitan Borough Council, IMD 2007, CLG



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*Open space, sport and recreation: an assessment of needs and opportunities study Bury MBC does not include cemeteries Holcombe Moor and Elton Vale Reservoir have full recreation access

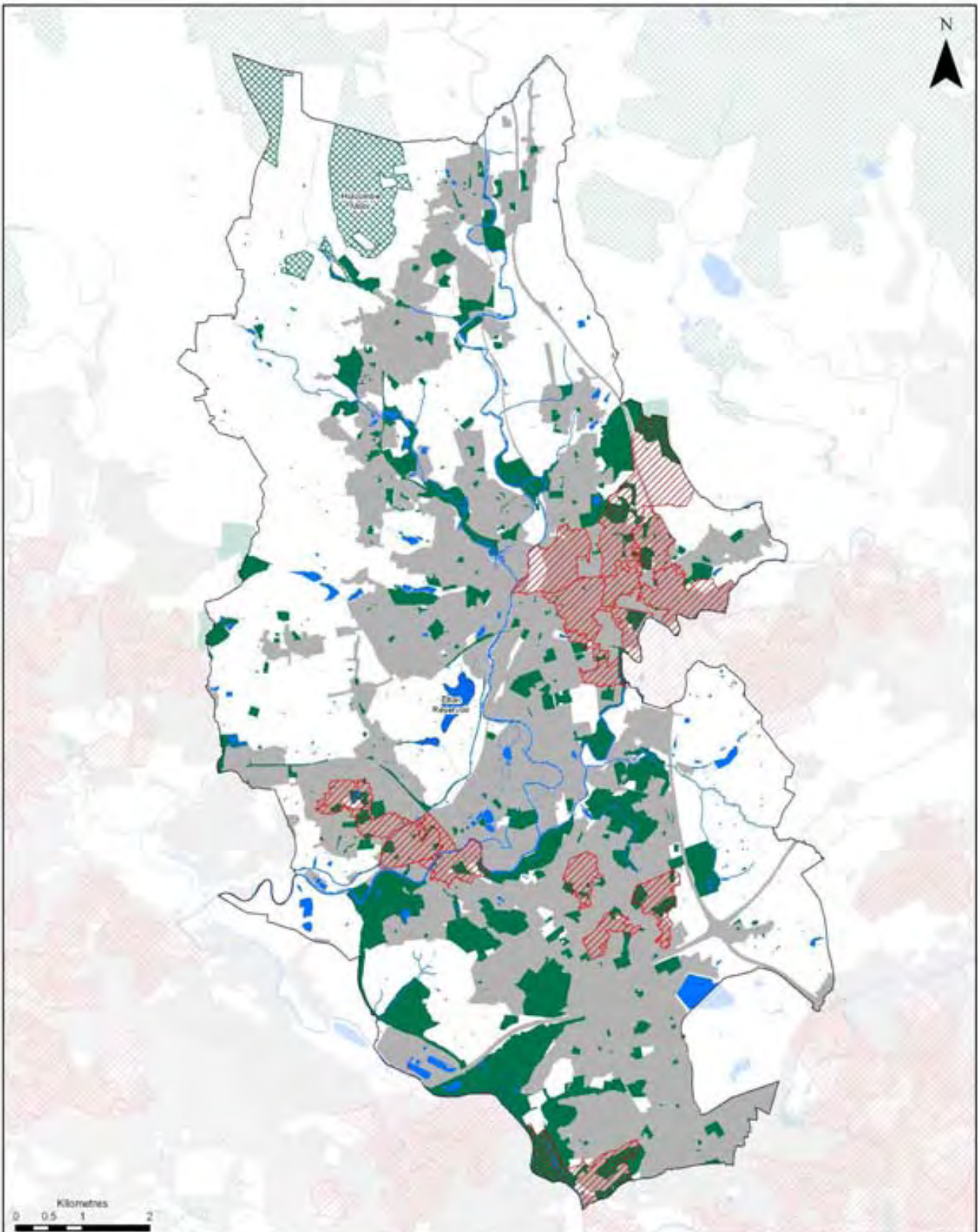


Figure 3.6 - Health Deprivation in Bury

30% Most Health Deprived Areas in Greater Manchester	Waterbodies	<small>This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.</small>		
Recreation Sites*	Elton Reservoir			
Open Access Land (includes Holcombe Moot)	Urban Area	<small>Data Sources: Bury Metropolitan Borough Council, IMD 2007, CLG</small>		
<small>*Open space, sport and recreation: an assessment of needs and opportunities study Bury MBC does not include cemeteries Holcombe Moor and Elton Vale Reservoir have full recreation access.</small>		<table border="1"> <tr> <td>G2152.044</td> <td>OS Licence 100023063</td> </tr> </table>	G2152.044	OS Licence 100023063
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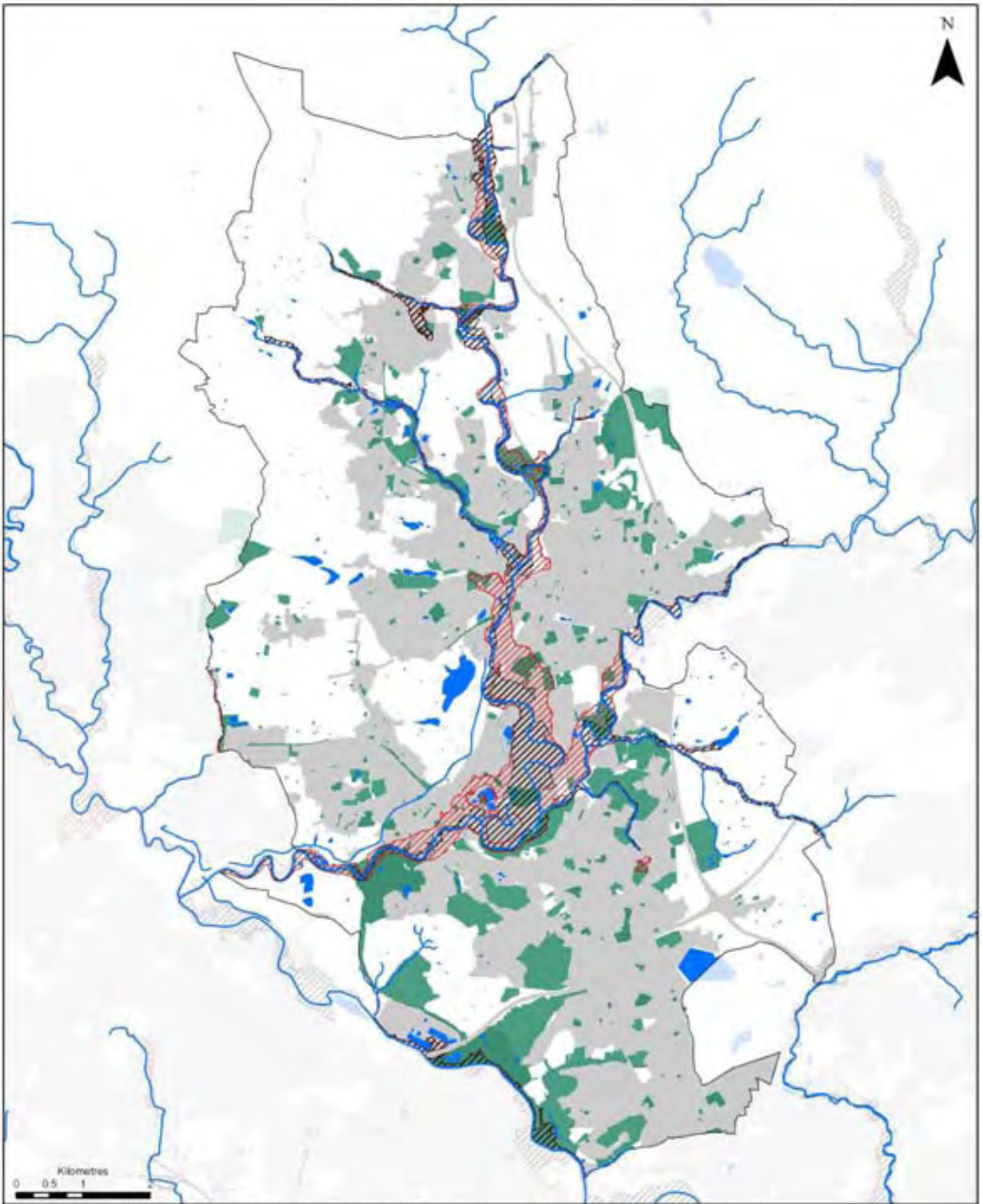








Figure 3.7 - Strategic Flood Risk Assessment - Fluvial Flood Risk in Bury

	Flood Zone 2		Recreation Sites*
	Flood Zone 3		Urban Area
	Waterbodies		

*Open space, sport and recreation: an assessment of needs and opportunities study Bury MBC does not include cemeteries. Holcombe Moor and Elton Vale Reservoir have full recreation access.

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Data Sources:
Bury Metropolitan Borough Council
Greater Manchester Flood Risk Assessment



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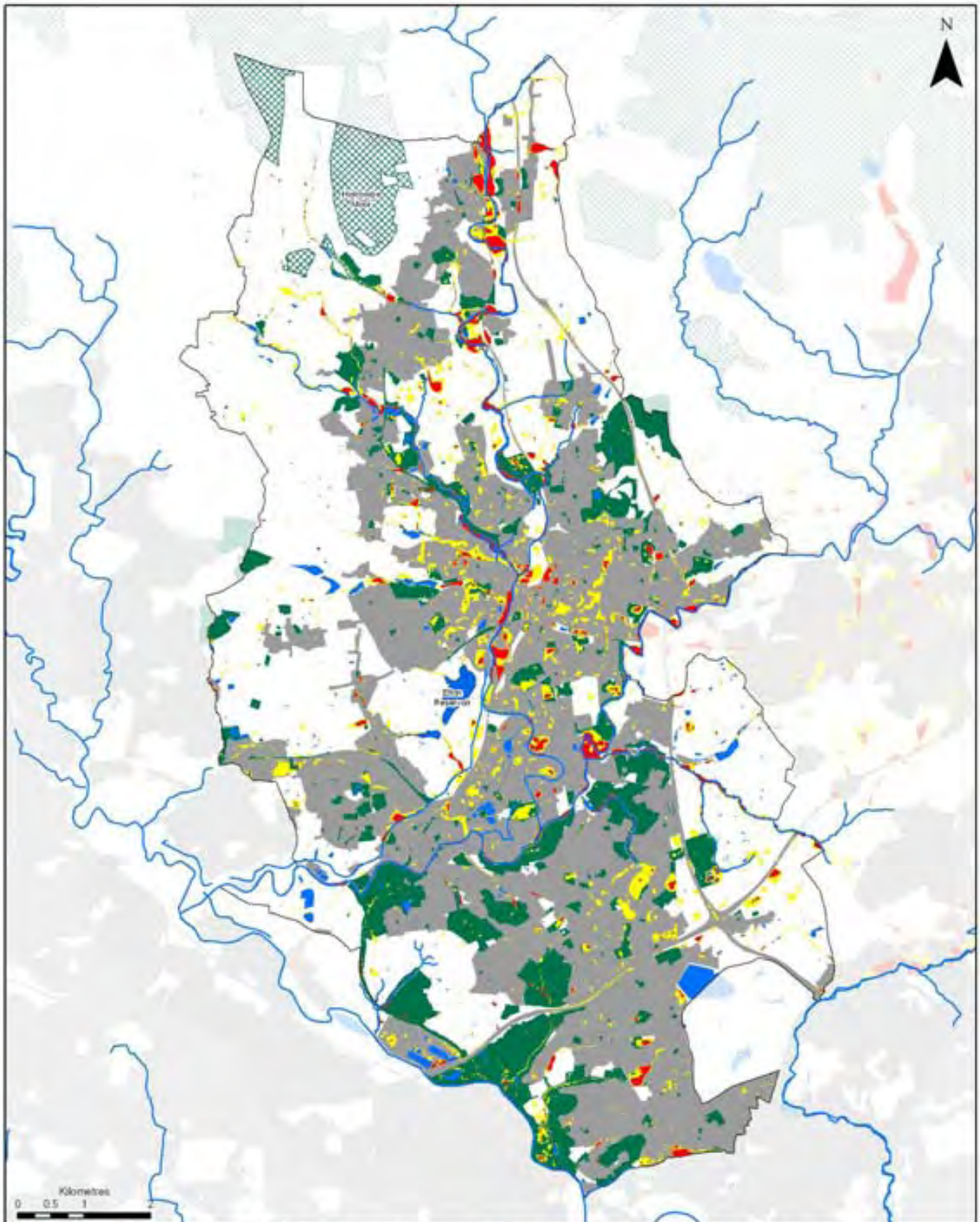


Figure 3.8 - Strategic Flood Risk Assessment - Susceptibility to Surface Water Flooding in Bury

High Susceptibility to Surface Water Flooding	Open Access Land
Medium Susceptibility to Surface Water Flooding	Recreation Sites*
Waterbodies	Urban Area
Elton Reservoir	

*Open space, sport and recreation: an assessment of needs and opportunities study Bury MBC does not include cemeteries. Holcombe Moor and Elton Vale Reservoir have full recreation access.

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Data Sources:
Bury Metropolitan Borough Council
Greater Manchester Strategic Flood Risk Assessment

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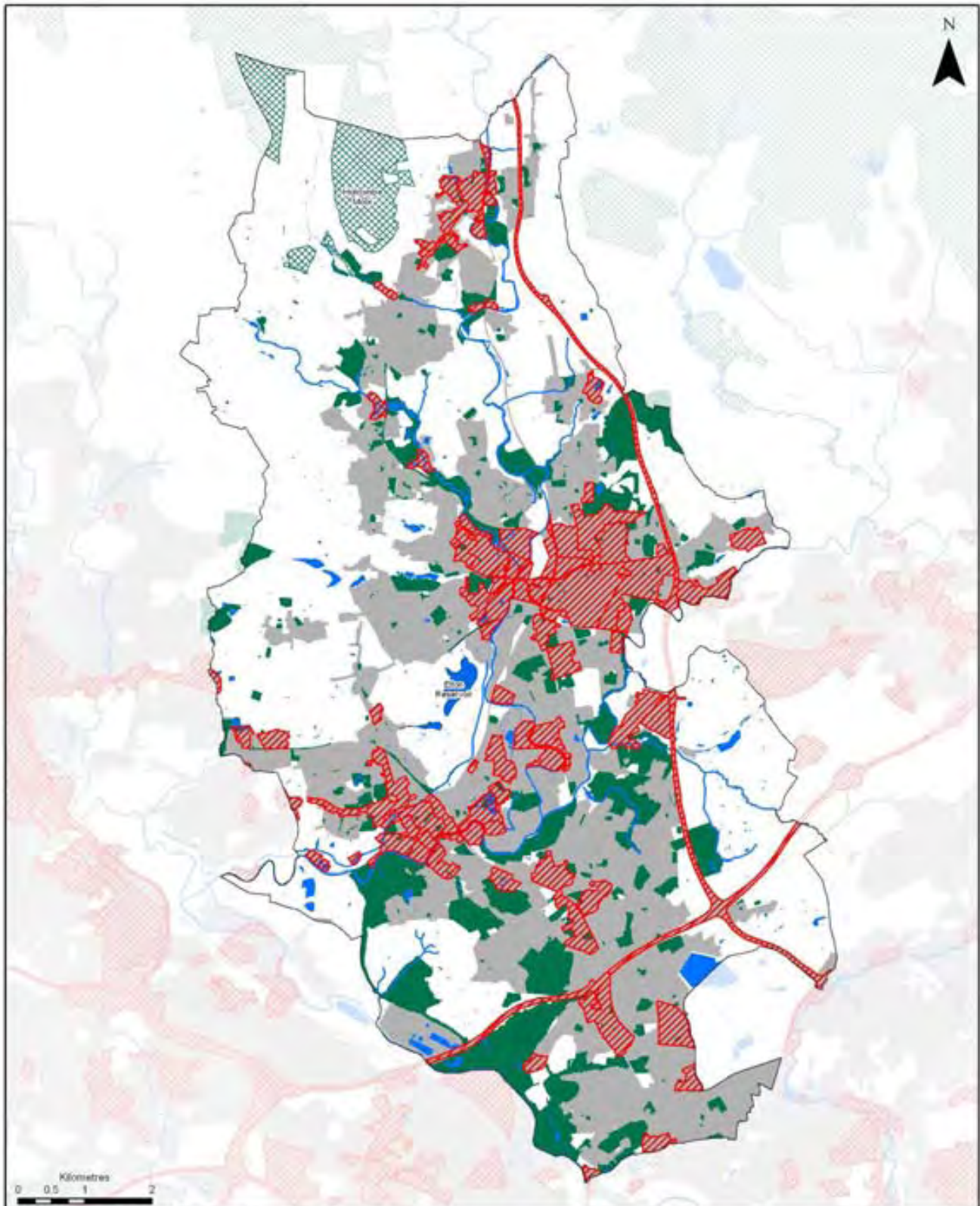


Figure 3.9 - Vulnerability to Heat Island Effect in Bury

Most Vulnerable to Heat Island Effect+	Recreation Sites*	<p>*Top Quartile of areas most vulnerable to the 'heat island' effect under high emissions scenario from: Gill, S.E. (2006) Climate Change and Urban Greenspace. Unpublished PhD thesis, University of Manchester Completed as Adaptation Strategies for Climate Change in the Urban Environment (ASCUE) project.</p>	<p>This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.</p>
Elton Reservoir	Urban Area		
Waterbodies	<p>*Open space, sport and recreation: an assessment of needs and opportunities study Bury MBC does not include cemeteries Holcombe Moor and Elton Vale Reservoir have full recreation access</p>		<p>G2152.042 OS Licence 100023063</p>

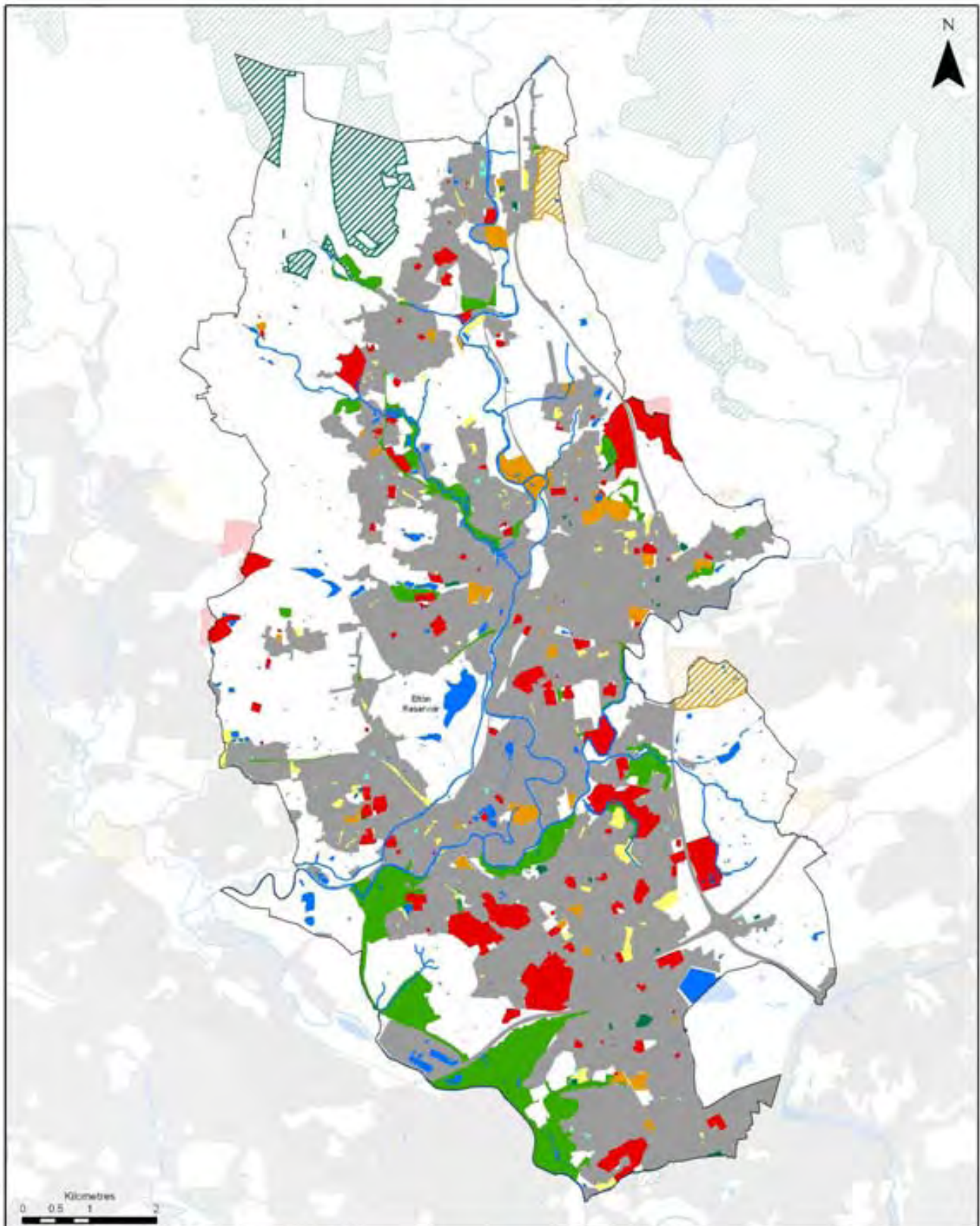
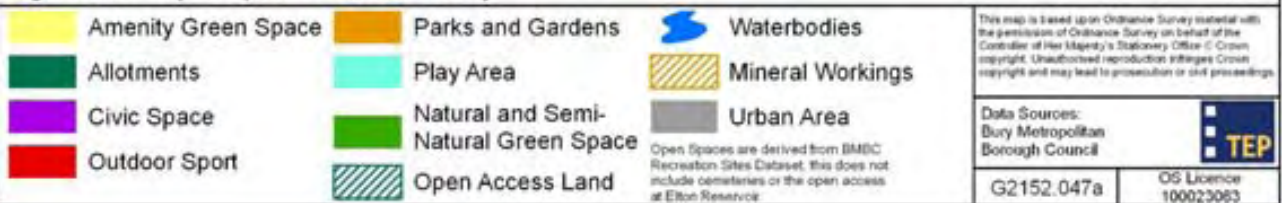


Figure 3.10 - Open Space Provision in Bury



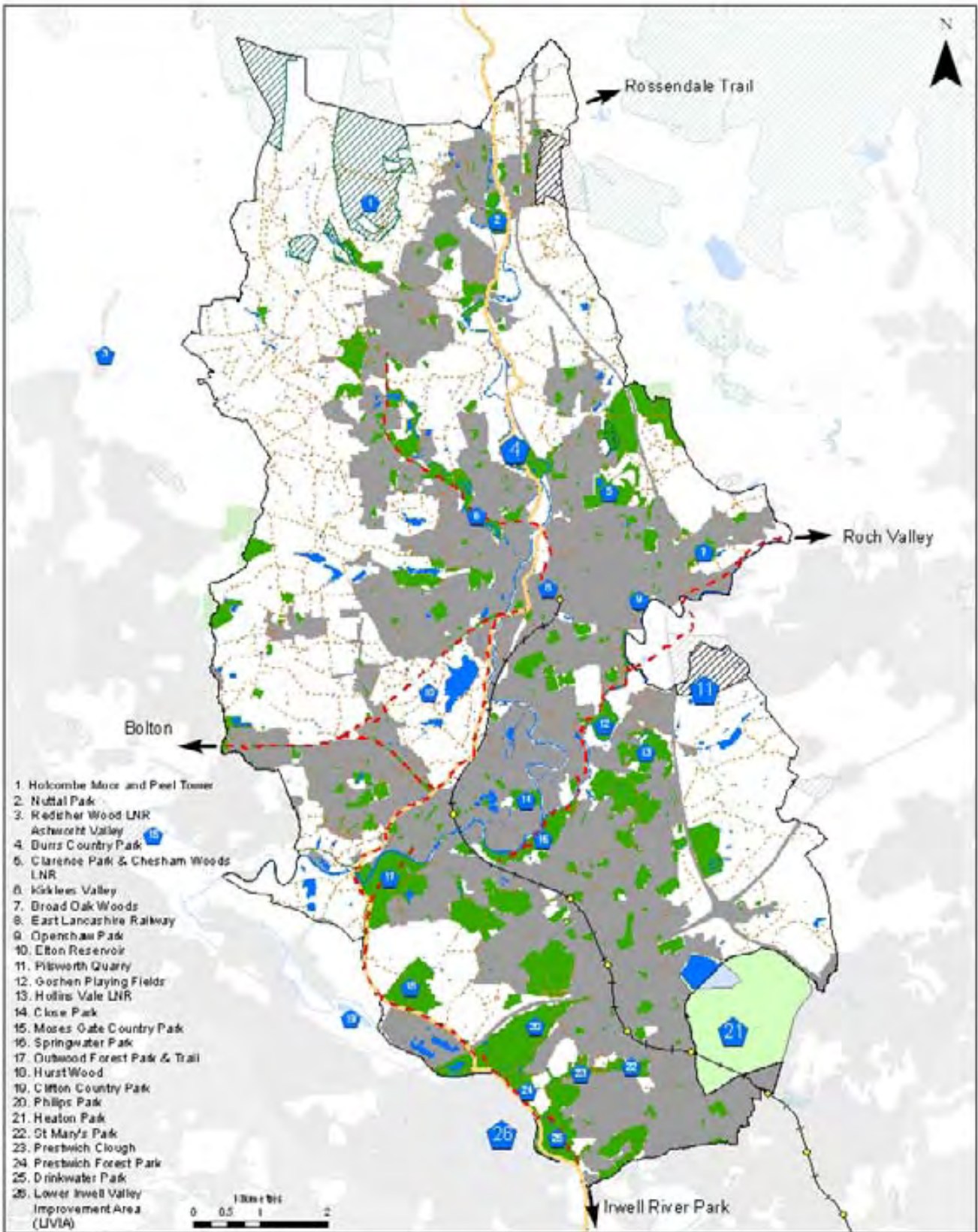


Figure 3.11 - Access to Green Space

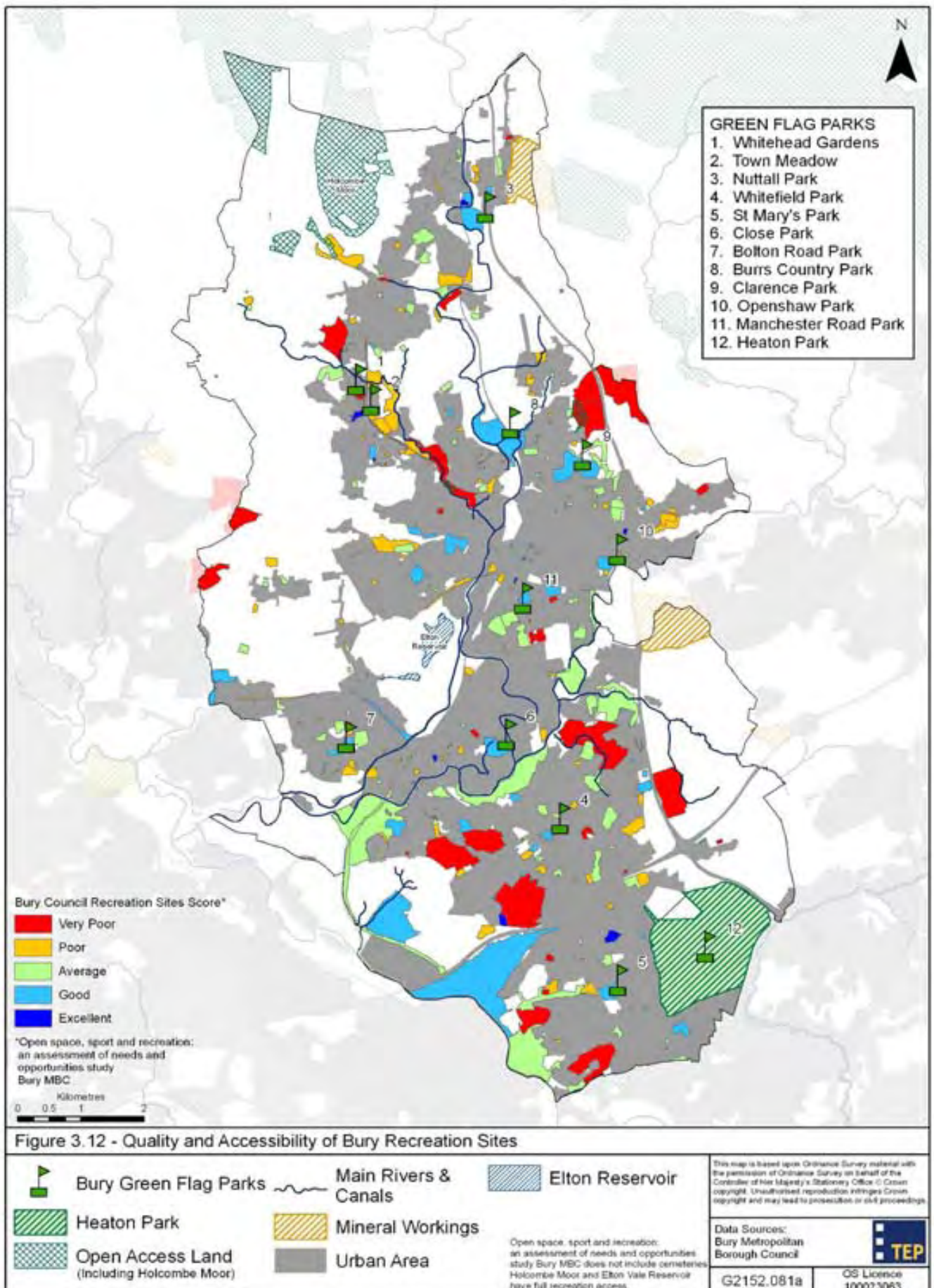
Multi-User Trails	Metrolink	Mineral Workings
Inwell Sculpture Trail	Open Access Land	Recreation Sites
Destinations	Waterbodies	Urban Area
Rights of Way Network	Heaton Park	

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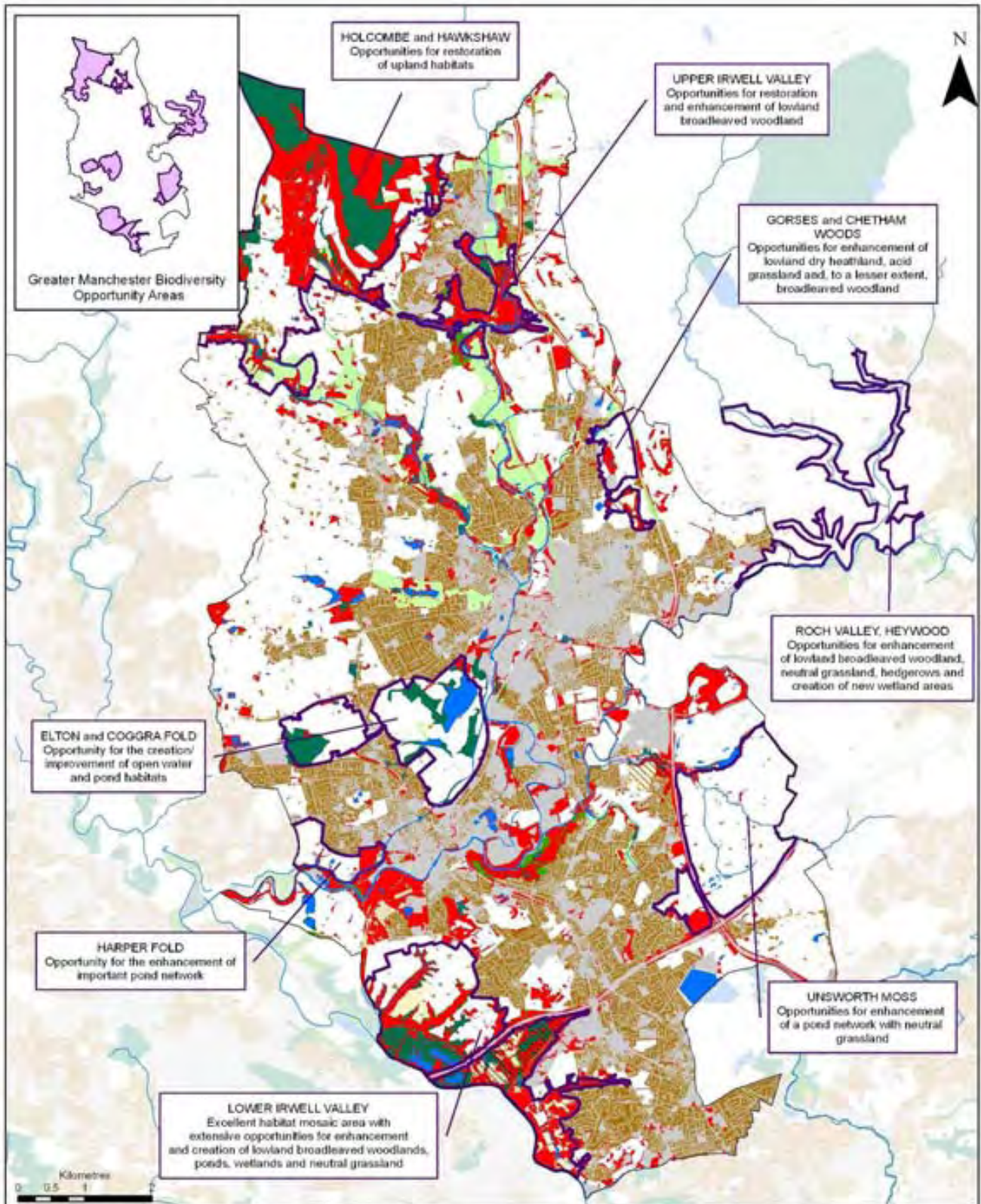
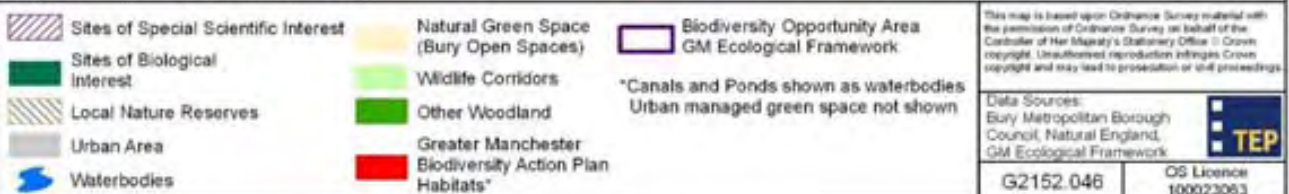


Figure 3.13 - Biodiversity in Bury



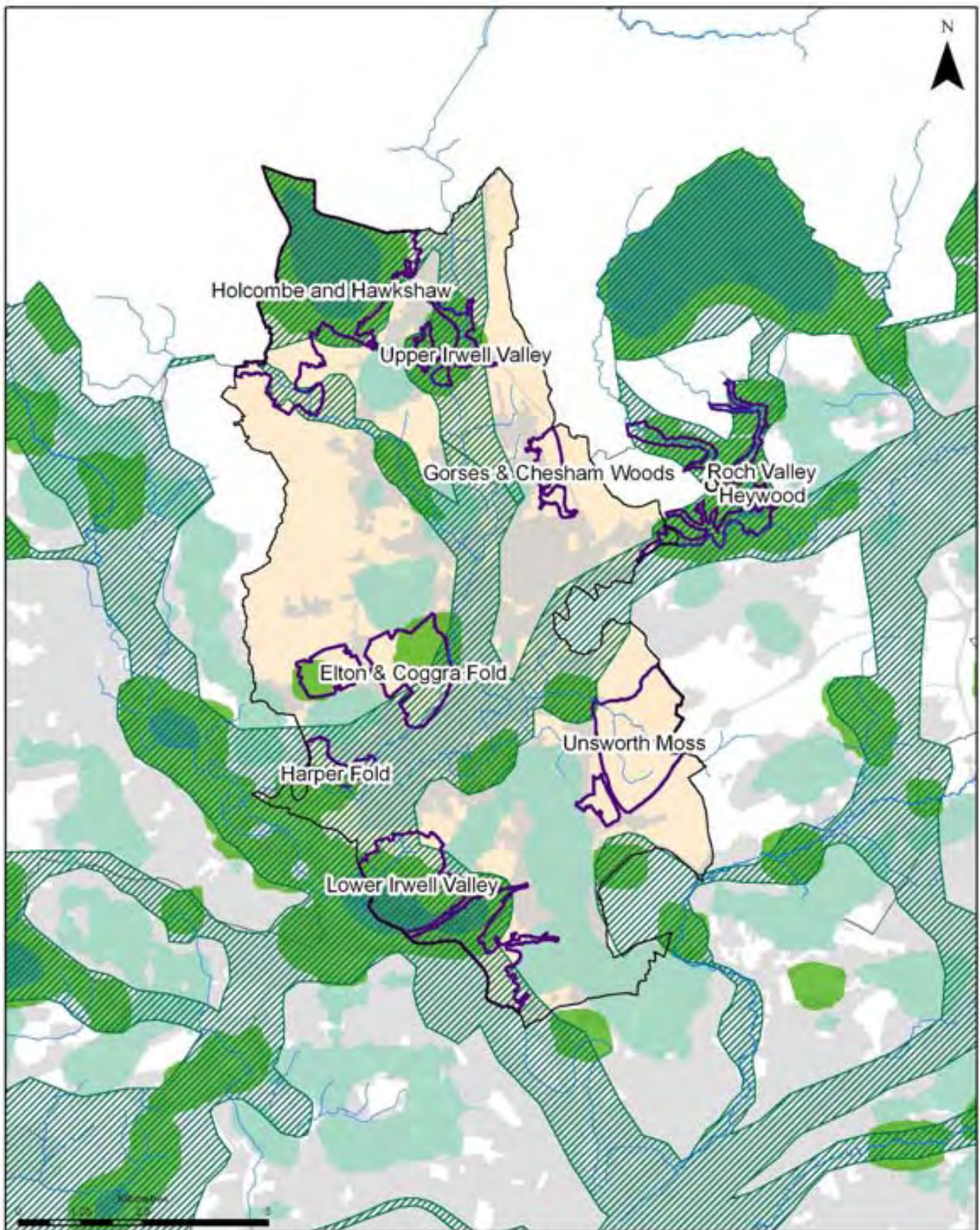
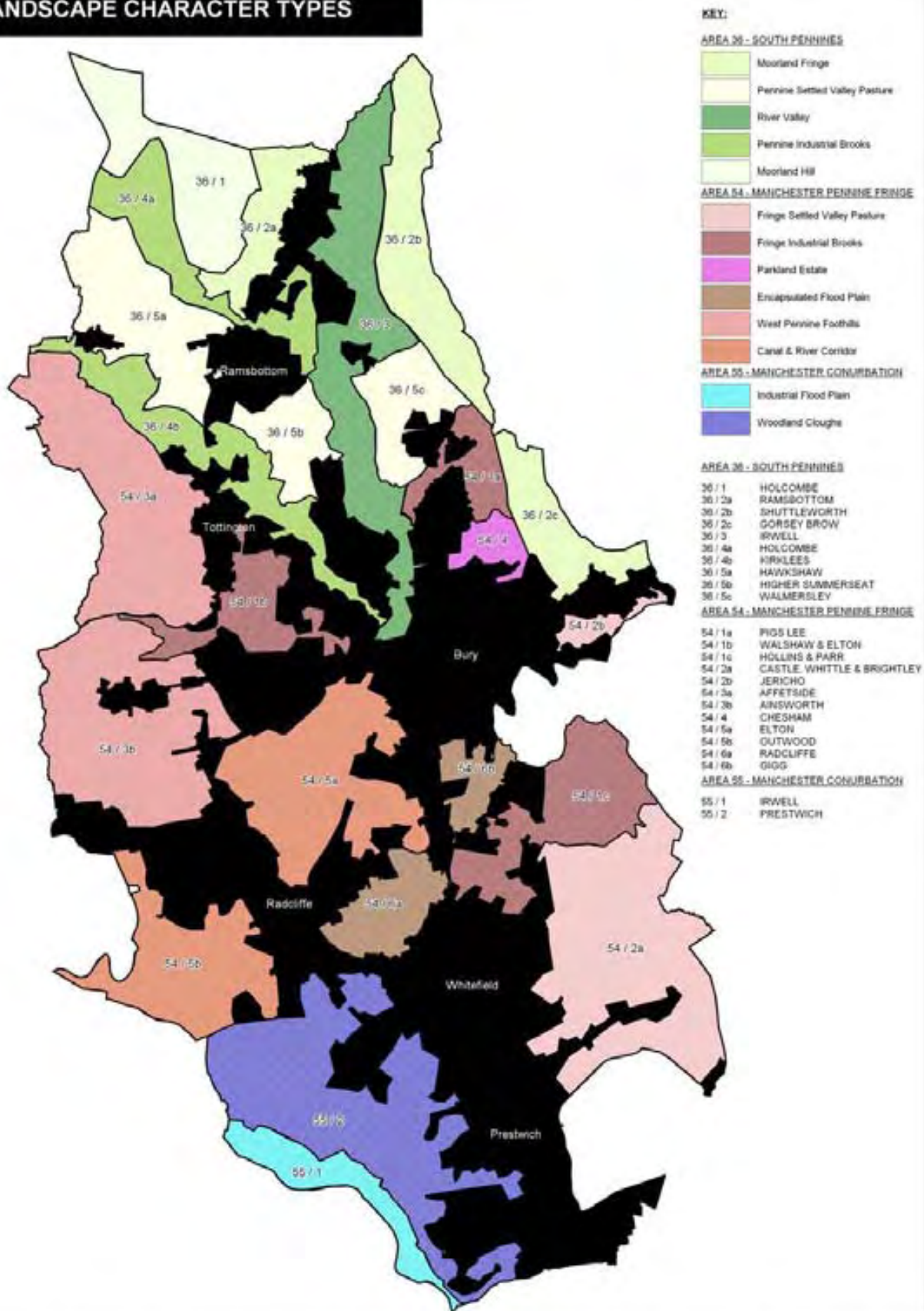


Figure 3.14 - Strategic Biodiversity Network Northern Sub-Area

Most Natural Areas Greater Manchester Ecological Framework	Biodiversity Opportunity Area GM Ecological Framework	<small>This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.</small> <small>Data Sources: Bury Metropolitan Borough Council GMEU, ACMA</small>
Link and Buffer Greater Manchester Ecological Framework	Areas where gardens are the predominant biodiversity resources	
Greater Manchester Green Infrastructure Framework	Urban Area	<small>G2152.080</small> <small>OS Licence 100023063</small>

BURY LANDSCAPE CHARACTER TYPES



Scale:
1 to 50 000

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4 BURY'S GREEN INFRASTRUCTURE FRAMEWORK

- 4.1 This chapter sets out a proposed GI framework for Bury. It integrates the evidence base discussed in chapter 3 and is specifically targeted at the ambitions described in Bury's Sustainable Community Strategy and LDF Core strategy to be "a great place to live, work, study and visit".
- 4.2 The Bury GI framework "zooms in" from the City-regional framework illustrated at Chapter 2. It is a more detailed iteration of the City-Regional priorities and it also adds priorities specific to Bury.
- 4.3 ***A GI framework does not over-ride detailed strategies for biodiversity, flood management etc; rather it seeks to integrate them into a multi-functional approach to land and community planning.***

A Spatial Plan for Green Infrastructure in Bury

- 4.4 Figure 4.1 shows the priorities for Bury's green infrastructure, in the form of a "key diagram". This has been derived from the sources of evidence summarised in Chapter 3 i.e. information about:
- environmental assets,
 - areas of transformation and economic growth
 - the needs of communities in the Borough.
- 4.5 The key diagram is consistent with and informs the Borough's Core Strategy, in that it prioritises areas where growth and regeneration will occur. It safeguards and enhances the Borough's green assets, because they are central to the quality of life of Bury's existing and future residents.
- 4.6 The key diagram also continues the objectives of earlier environmental initiatives such as the West Pennine Moors scheme and the Irwell Valley Plan, which aimed for long-term transformation of the Irwell to a healthy state (from its intensively industrialised and highly-polluted past).
- 4.7 The key diagram must be read alongside the other maps which build up the GI evidence base (Figures 3.1 to 3.15). These provide further detail on the location of assets, areas of need and areas of transformation.

Priorities for Bury's Green Infrastructure

- 4.8 The priorities for GI policy and investment in Bury are listed below, and illustrated at Figure 4.1.

Community Involvement

Bury has six distinctive townships, with high levels of community engagement where local residents are recognized as equal partners with the Council. It is vital to engage the energy of the community in management and planning of the Borough's GI, particularly at local level. This involves stimulating greater use of GI by a wide range of groups, particularly those concerned with healthy lifestyles and civic pride. Also important is encouraging individuals who wish to enhance their personal or neighbourhood green spaces.

The Green Infrastructure Network

The GI network includes river valleys, floodplains, parks, woods, the West Pennine moors, multi-user trails, heritage features and Sites of Biological Importance. The GI network is multifunctional. Good management of the GI network is critical to sustain biodiversity, growth and climatic resilience of the Borough and the City region. It passes through urban and countryside areas. Some areas of the network, such as urban sections of the Irwell and Roch rivers have few assets and action (such as the Irwell Restoration Scheme) is needed to repair linkages and restore environmental quality.

Key Centres and Regeneration Areas

Key centres are the economic anchors of the Borough. They are hubs in the sustainable transport network. Regeneration areas experience problems of low economic activity, poor health and environmental deficit. GI has a role to play in supporting healthy lifestyles, improving image and environmental quality and making housing stock more sustainable and attractive for family life. GI can improve flood management. GI can also improve the attractiveness of active travel to and from key centres.

Sustainable Transport Corridors

These corridors are identified in Core Strategy as the main opportunities to encourage people to reduce use of private cars. Urban areas alongside these corridors will be a focus for new residential and commercial development. GI can make these corridors attractive for walking and cycling. As the corridors are also the principal routes through the borough, they are also important for landscape distinctiveness and place-making

Destinations and Trails

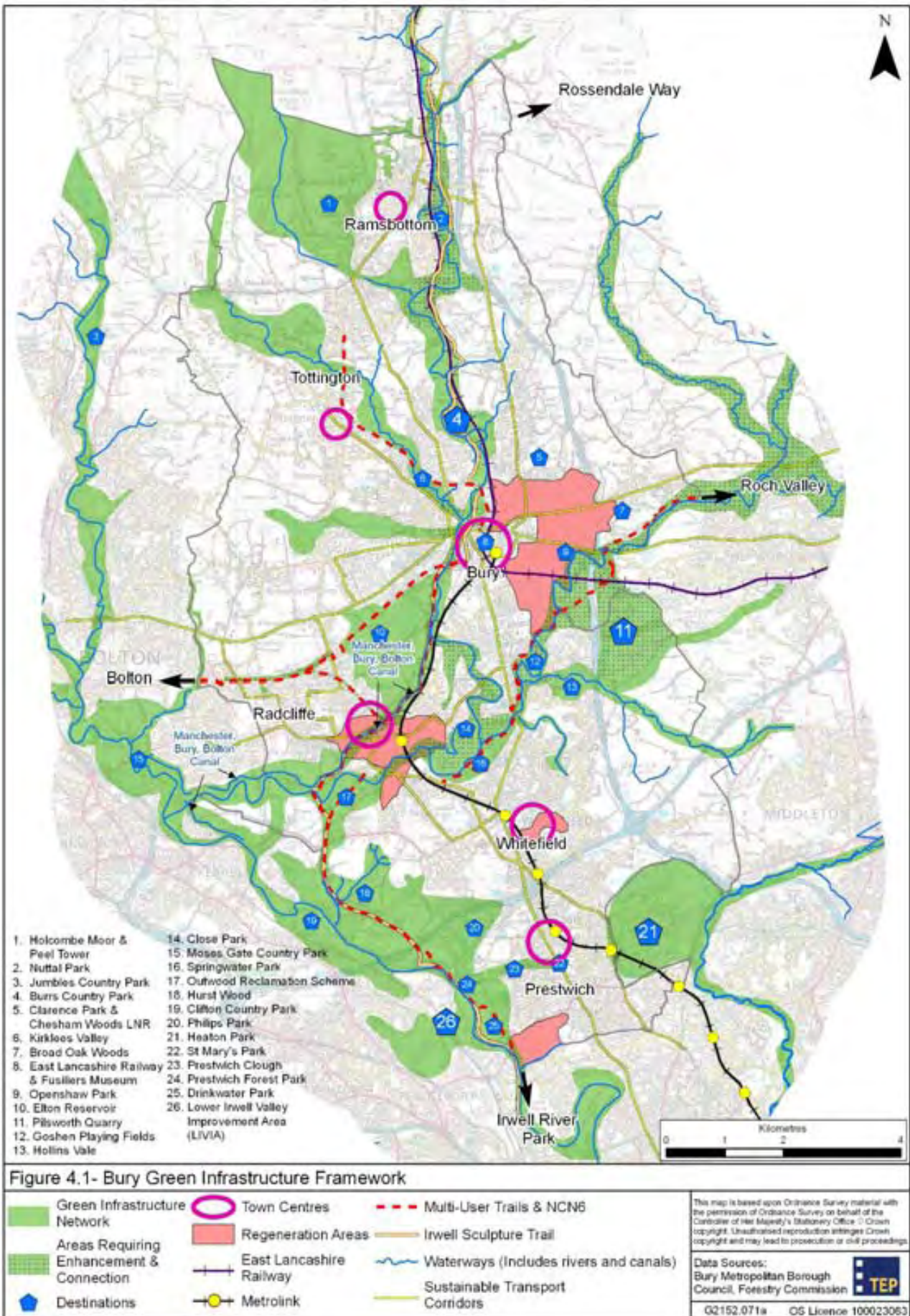
These are the Borough's major green spaces and visitor facilities. They include Green Flag Parks, major country parks, Holcombe Moor, sites of historic interest, the Irwell Sculpture Trail and the East Lancashire Railway. Also included are multi-user trails, important for leisure and recreation. The GI priority is to further enhance community stewardship and uptake of healthy activity, promote jobs relying on the quality of these sites, and maintain these areas as "jewels in Bury's crown"

Urban Green

Street trees, gardens, corporate grounds, pocket parks, allotments, green roofs and walls, along with porous surfaces and sustainable urban drainage systems (SUDS). This has been called "fine-grained GI". The GI priority is to retain or create high levels of canopy cover and urban vegetation to promote a positive image, sustain biodiversity, promote mental health and adapt to climate change. SUDS and vegetation are important in surface water management, something vital in the Irwell catchment.

Bury's Countryside

The countryside forms a green infrastructure resource, important for food and energy production, recreation, climatic adaptation, landscape distinctiveness and biodiversity. Even where farmland is outside the core GI network, it can provide growth-support functions in addition to its primary use – for example through additional tree-planting, increased access, educational visits or use for energy production.



Delivering Green Infrastructure

- 4.9 These priorities often overlap; for example the River Irwell flows through the key centres. Delivering these priorities will require a range of policies, programmes and action plans relating to areas and themes:

Policies: Development Management policies can protect assets and encourage conservation of broad areas such as the biodiversity enhancement areas

Programmes: This includes schemes such as the Irwell River Restoration, promoted by the Environment Agency, which is a long-term programme of engineering, habitat and recreational improvements which collectively will enhance the Irwell Valley.

Action Plans: Neighbourhood action plans for parks, streetscape, community engagement can all include measures to enhance particular sites and stimulate awareness of the importance of Bury's natural environment.

- 4.10 There are many ways of investing in new or better GI. In some areas, we can **influence the design of new development**, to ensure it is environmentally sustainable and well-connected to green spaces. GI policy can also address local deficiencies (in GI assets or functionality) by requiring development to create new assets and enhance the functionality of existing assets.
- 4.11 Sometimes the best way of sustaining green infrastructure is by **empowering civic societies and community groups** who care about their public realm. Bury already enjoys much GI activity and has a long history of environmental projects, delivered by the Council, its public and private-sector partners and by many voluntary and community groups.
- 4.12 Sometimes **major capital investment** is needed to create a new asset – for example the Forestry Commission's NEWLANDS programme is creating a safer, greener and resilient community woodland in the Lower Irwell Valley, significantly extending the existing Prestwich Forest Park for the benefit of communities overlooking the valley.
- 4.13 For some GI functions (notably flood risk management), it is necessary for Bury to actively promote and **contribute to cross-boundary strategic plans**, such as the River Irwell Catchment Flood Management Plan and the emerging Greater Manchester Strategic Flood Risk assessment and Surface Water Management Plans.
- 4.14 The Council, in its leadership role, and in accordance with statutory duties regarding health, wellbeing, flood management, biodiversity and climate change, could **audit its own land-holdings to assess whether a greater range of GI functions could be delivered**. For example, its parks

and greenspaces may provide a setting for new allotments, green gyms, catering franchises, renewable energy, surface water attenuation.

- 4.15 In some cases, there may be public benefit from releasing open space for development, if it has few GI functions, and if the revenue can be used to purchase or manage land for GI elsewhere.
- 4.16 Appendix One summarises some of the means of delivering GI in the priority areas listed above.
- 4.17 There is an over-arching need for **co-ordination and facilitation of the Borough's GI activity** to:
- Implement policy to secure and safeguard GI investment,
 - Identify opportunities to make the GI network more robust
 - Advise on best practice in design and management of new development.
 - Advocate for GI in various fora (political, technical, community)
 - Partnership working with agencies concerned with hard infrastructure and public health
 - Programme development and funding
 - Facilitation and empowerment of relevant community groups

5 TOWARDS GREEN INFRASTRUCTURE POLICY FOR BURY'S CORE STRATEGY

5.1 Bury's draft Core Strategy 2008 notes that recognition of land as green infrastructure can act as a restraint or limitation on certain forms of development, but that conflicts can often be resolved through careful design and detailing of development.

5.2 Natural England, in commenting on Bury's draft Core Strategy policy, stressed that GI should be seen as a positive contribution to sustainable growth.

5.3 This chapter contains suggestions on how to progress policy so it achieves an appropriate enhancement of GI without unnecessarily restraining development or regeneration.

Bury Core Strategy Policy Issues

5.4 Planning policy has long provided a good tool to managing potential conflicts between development and **GI assets**. Policy is also effective at ensuring developers provide mitigation and compensation if assets are damaged by development.

5.5 Policy needs to develop further in respect of protecting and mitigating for impacts of development on the **functions** of GI assets, or on **multifunctionality** of the GI network. For example a development may affect a greenspace which has a role in climatic buffering by virtue of its tree cover, its porous soil and its link to a river valley (cool air corridor). Policy can require replacement tree planting, and a sustainable drainage scheme, but these may not necessarily be in the most effective place to buffer against future climatic extremes affecting the area. Thus development may meet policy regarding protection of assets, but still result in an urban environment which is less functional.

5.6 Policy also needs to be developed in respect of enhancing GI functions, and promoting multifunctionality, not simply protecting existing levels of functionality.

5.7 GI policy direction also needs to be locally distinctive, responding to varying environmental and social conditions across the Borough.

5.8 In summary, it is recommended that Bury's Core Strategy policy incorporates the following general elements:

- a) Avoid negative impacts arising from development on land in the GI Network –where development is essential to meet broader sustainability objectives, losses of GI assets or functions should be compensated by creation or enhancement of GI elsewhere.

- b) Protect and enhance quality of access to, and stewardship of, the GI network in the context of projected demographic change in an area – in order to protect the network itself from over-use; and to ensure the network meets the needs of the local community.
- c) Ensure development contributes to strengthening the quality and functionality and connectivity of the GI network in areas where it is currently weak or deficient.
- d) Ensure GI assets and functions are considered fully during Area Masterplanning and formulation of development briefs. This is more difficult with infill or incremental development not covered by masterplans, so a minimum threshold of development size could be formulated, above which developers have to provide a GI assessment.
- e) Ensure that all development results in a net enhancement of “urban greenery”. BREEAM assessment techniques could be used as a tool to measure impacts and define appropriate standards of mitigation.
- f) Require consideration of “upstream” GI to protect existing and proposed built infrastructure in Key Centres and regeneration areas from environmental risks.
- g) In respect of flood management, and the “Making Space for Water” agenda promoted by Defra, one radical approach in the Irwell valley might be to define a “Bluebelt” within which there was a very robust policy restricting any built (re)development other than in very special circumstances, and providing full flood mitigation was provided. Such a policy could be worded to accord with PPS25. However TEP recognises that this matter would need to be explored in detail by hydrologists and planners, taking legal advice.
- h) Promote multifunctionality – through SPD advice perhaps by requiring that any actions taken to create or enhance an asset in relation to a specific GI function, should also demonstrate how other GI functions have been considered. For example, a developer may be required to implement a SUDS scheme to mitigate flood risk. In doing so, he protects one GI function. Such a policy would require him also to consider whether his SUDS scheme could enhance biodiversity, landscape, urban greenery etc
- i) Promote community involvement in GI planning and management and the Community Strategy.
- j) Refer to cross-boundary GI initiatives such as the Red Rose Forest, the emerging Regional Strategy proposals for GI, the Irwell Catchment Management Plan etc
- k) Define standards and performance indicators in order to plan and monitor investment in GI to sustain economic growth and regeneration. This will be a matter for Supplementary Planning

Documentation, as will detailed policy development, identification of areas of GI deficiency and allocation of sites for GI purposes.

- l) Ensure that policy enables developer contributions (s106 and/or Community Infrastructure Levy) towards GI priorities of Borough-wide importance – and ensure accountability of expenditure of such contributions
- 5.9 It is also recommended that Core Strategy sets out some locally specific policy direction. The proposed key diagram and associated text (Chapter 4 and Figure 4.1) summarises the priority areas for GI in Bury. However, it is rather detailed and, for Core strategy purposes, it might be useful to provide a simpler summation of broad GI policy for different parts of the Borough.
- 5.10 As a result, Figure 5.1 (GI Action Areas) has been produced to indicate the direction of GI policy in different areas.
- 5.11 For the Irwell Bank area, GI policy direction should be to create new assets, enhance, restore and connect existing assets and promote community usage of GI. A particular emphasis should be placed on actions to improve flood risk and provide opportunities for healthy outdoor activity. For Radcliffe, improved GI should be considered as an essential outcome of the strategic regeneration framework for the town. If detailed flood risk assessments identify that sites are unsuitable for built development, priority should be given to their positive use as GI.
- 5.12 In the Irwell Valley and the Roch Valley, GI policy direction should be to manage existing GI assets so they become more multi-functional, with particular emphasis on restoration of brownfield land, increasing flood storage, promoting linear access for active travel, promoting a range of outdoor leisure opportunities and enhancing biodiversity and heritage. The LIVIA and the Radcliffe Ee's,/Springwater Park /Close Park sites, for example, could become major greenspace visitor destinations, as well as meeting open space needs for their neighbouring communities.
- 5.13 In the Upper Irwell Valley, GI policy direction should be oriented to conservation of the existing high quality of the river valleys (landscape, heritage and biodiversity), and promoting their role in access to the wider countryside, especially the West Pennine Moors. Policy should promote facilities to enable increased access to the countryside, subject to typical controls on Greenbelt development.
- Using multi-functional GI analysis to resolve land-use decisions**
- 5.14 Situations will arise where a parcel of developable land could provide significant GI benefits. For example, there are various SHLAA/ELR sites in Radcliffe which are in flood zones 2 or 3, or are on surface-water flowpaths. Such sites could provide multi-functional GI to meet the needs of Radcliffe and the lower Irwell communities (e.g. flood attenuation, new habitats, recreational areas, paths, outdoor sporting and educational facilities, allotments).

- 5.15 In deciding how to allocate such sites, planners will consider the optimum outcome for the community as a whole, including immediate and distant neighbours; taking account of environmental sustainability of the wider area.
- 5.16 Evidence needs to be weighed in terms of the benefits arising from potential use of the site as GI, and whether there are alternative sites that could be used for development. A multi-functional analysis can be used across a township area, whereby all open parcels of potentially developable land can be assessed in terms of:
- their value as GI **assets** (e.g. are they SBI's, are they floodzones, do they support significant urban greenery); AND
 - their value in terms of the range of GI **functions** they could sustain (e.g. could they enhance healthy lifestyles in an area of poor health, could they stimulate local community cohesion by use for sport or allotments, do they meet a deficiency in terms of access to greenspace, could they improve image through greening of a brownfield site, etc)
- 5.17 Such a multi-functional analysis has been trialled for the Radcliffe area. It concludes that some potential regeneration/development sites could be significant GI assets.
- 5.18 In order to resolve situations where GI and development could be competing interests, planners have various options:
- Allocate the site for development and resolve environmental or societal impacts where possible through technological fixes on site. For any residual impacts, offsetting measures can be implemented off-site e.g. provision of GI assets elsewhere.
 - Allocate the site for a lower-intensity of development that incorporates significant GI. This means that GI functionality can be retained but it may result in a lower land valuation, and will require management to give long-term security for the GI functions.
 - Allocate the site as Green Infrastructure, with policy to create multifunctional GI on site. This may require allocation of other land to meet development requirements and a package of cross-funding to create the GI. The other land should not be of significant GI functionality.

Establishing a Vision for the totality of a place

- 5.19 While a multi-functional GI analysis can provide evidence to assist in decision-making, ultimately it is most important to determine landuse based on a vision, shared by the majority of the local community, of what the totality of the place should look like. This involves strategic masterplanning, whereby multi-functional GI is considered at both the visionary and the land allocation stages.

5.20 Once the overall vision for the area is established and basic rules established as to what community facilities (including GI) are necessary, then it will become easier to resolve decisions about allocation of individual sites

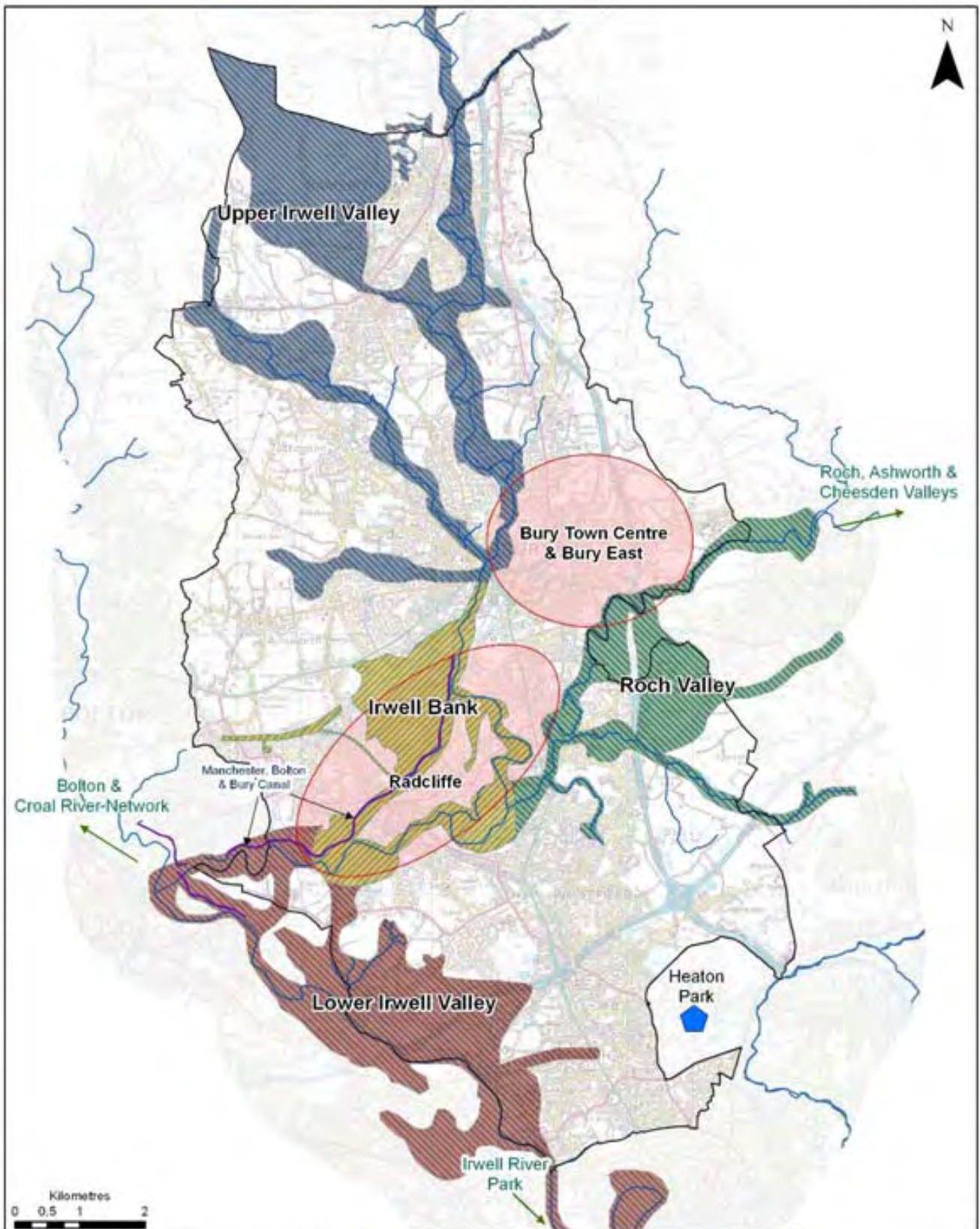
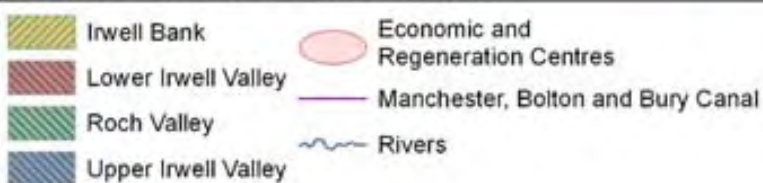


Figure 5.1 - Green Infrastructure Action Areas



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APPENDIX ONE

OBJECTIVES AND DELIVERY PROPOSALS FOR BURY'S GREEN INFRASTRUCTURE PRIORITY AREAS

Priority Area

Objectives

How can we deliver?

Green Infrastructure Network

The network is the core GI for the Borough. The Irwell, Croal and Roch valleys form part of a sub-regional GI network including Salford, Bolton, Rochdale & Lancashire. The network includes assets such as river valleys, floodplains, parks, woods, multi-user trails, heritage features and Sites of Biological Importance. The GI network is multifunctional and vital to sustain growth and resilience of the Borough. It passes through urban and rural areas.

Some areas of the network have few assets and action is needed to repair linkages and restore environmental quality. This includes urban river valleys, especially the Irwell Valley between Bury Centre and Radcliffe. Although there is limited scope to create new assets, opportunity should be taken to enhance physical, visual and biological connectivity in urban areas and "make space" for water to manage urban flood risk.

Some areas presently have limited functionality, but could provide greater community benefit in the future e.g. Pilsworth Quarries and Radcliffe Ee's which will be restored for greenspace.

Areas of the GI network which require enhancement or improved connectivity are shown on plan.

- Safeguard and enhance existing assets in the network
- Safeguard and enhance the growth-support functions that the network provides
- Ensure new development as a minimum maintains environmental quality and functionality of, and increases access to, the network
- Improve functionality of the network, specifically using the existing assets to increase the resilience of the Borough to the effects of climate change (for example using green spaces as "washlands" upstream of key centres
- Address sources of pollution or blight which degrade the quality or perception of assets in the network
- Create new or enhanced assets where there is an existing deficit of access, environmental quality or functionality
- Partnership working to deliver major projects within the Borough and across boundaries
- Core Strategy policy to safeguard and enhance assets and improve functionality of the network
- Core Strategy policy to improve pedestrian and cycling access to and within the network
- Green infrastructure framework adopted as Supplementary Planning Document or as Area Action Plan so the GI network can receive s106 funding arising from development elsewhere
- Ensure AAPs and Masterplans for key centres and regeneration areas provide enhancement of the GI network
- Work with Environment Agency & United Utilities to identify where the GI network can help manage surface water
- Support local stewardship of assets by community and "Friends" groups
- Work across boundaries to deliver key projects such as a Roch Valley Park
- Align the work of the Council's own GI delivery teams with the emerging GI strategy
- Work with partner organisations (such as the Community Forests) to deliver key projects and source funds.
- Community Strategy

Priority Area

Objectives

How can we deliver?

Regeneration Areas

These urbanised areas are targeted for growth and regeneration to address problems of low economic activity, poor health and environmental deficit. Some of these areas are vulnerable to flooding or future overheating as climate changes.

GI has a role to play in supporting healthy lifestyles, improving visual and environmental quality and making housing stock more sustainable and attractive for family life.

NB – the objectives set out in this table apply to all urban areas undergoing renewal, including development alongside the sustainable transport corridors and in areas of high deprivation

- In areas of new built development, ensure high standards of environmental sustainability, including provision for sustainable surface water management, biodiversity, climatic cooling, easy access to green space, high-quality public realm, green roofs and walls where appropriate.
- Ensure “clean, safe and green” access between residential areas, parks, community facilities and town centres
- Ensure all people live within 300m walk of a clean, safe and green space
- Protect and enhance biodiversity and landscape distinctiveness, including designated sites and other areas of local value, including mature trees, garden resources of ecological value, Conservation Areas
-
- Ensure development management policy and procedure relates to evidence bases such as GM Ecological Framework, Strategic Flood Risk Assessment, Climate Change Action Plan, Surface Water Management Plan and the Bury PPG17 audit
- Incorporate GI into masterplans for neighbourhoods
- Require high standards of public realm design in new development
- Seek high BREEAM standards in new development
- Support community groups engaged in neighbourhood management
- Consider a strategic approach to redevelopment in flood risk areas to identify if built development might be better sited elsewhere and the site allocated for high quality GI instead.
- Work with community forests or similar organisations to develop “Green Streets” type programme programmes
- Approach health and sport practitioners to develop programmes for outdoor activity using the GI network
- SPD

Priority Area

Objectives

How can we deliver?

Key Centres

These are economic drivers for the Borough and the City Region. Some are vulnerable to flooding or overheating as climate changes.

GI has a role in place-making – making the key centres attractive with a high standard of public realm.

The key centres are also hubs in the sustainable transport network, and GI has a role in ensuring that non-car means of arrival are easy and attractive.

- Ensure high standards of environmental sustainability, including provision for sustainable surface water management, climatic cooling, easy access to green space, high-quality public realm.
- Ensure “clean, safe and green” access routes into the Key Centres
- Protect, enhance, manage and interpret landscape distinctiveness and local heritage, including mature trees, Conservation Areas, public squares, biodiversity priorities
- Ensure development management policy and procedure relates to evidence bases such as GM Ecological Framework, Strategic Flood Risk Assessment, Climate Change Action Plan, Surface Water Management Plan and the Bury PPG17 audit
- Incorporate GI into masterplans for key centres
- Require high standards of public realm design and management, including working with Town Centre Managers
- Require high BREEAM & Code for Sustainable Homes standards in new development
- Work with community forests or similar organisations on “Green Streets” type programmes
- Incorporate GI approaches into surface water management arrangements for new development or streetscene works

Sustainable Transport Corridors

Advice on GI in Bury Core Strategy April 2010
Report 2152.009b

Priority Area

These corridors are identified in Core Strategy as the main opportunities to encourage people to reduce use of private cars. Urban areas alongside these corridors will be a focus for new residential and commercial development.

These corridors should also be attractive for walking and cycling. As the corridors are also the principal routes through the borough, they are also important for landscape distinctiveness and place-making

Objectives

- In areas of new built development, ensure high standards of environmental sustainability, including provision for sustainable surface water management, climatic cooling, easy access to green space, high-quality public realm.
- Ensure these corridors are "clean, safe and green", paying particular attention to planting of trees to improve air quality and reduce visual intrusion from traffic
- Where the corridors pass near key green spaces and destinations, examine opportunities for signage, car-parking and interpretation; using the green spaces as opportunities for cycling and walking
- Ensure high landscape quality (design and maintenance).
- Target gaps within existing networks such as Bradley Fold Cycle route

How can we deliver?

- Green infrastructure framework adopted as Supplementary Planning Document so corridor GI is valid for s106 funding
- Ensure AAPs and Masterplans for key centres and regeneration areas provide enhancement of corridors
- Work with GMPTE, Sustrans etc to create and improve multi-user routes
- Work with Council Highways and Drainage teams to deliver SUDS
- Site allocation within LDF
- Segregate routes

Destinations and Trails

Priority Area

These are the Borough's major green spaces and visitor facilities. They include Green Flag Parks, the major country parks, sites of historic interest and the Local Nature Reserves. Also included are the Irwell Sculpture Trail and the East Lancashire Railway, the West Pennine Moors and Elton Reservoir. They also include multi-user trails, important for leisure and recreation

The framework includes key green destinations which are used by the Borough's residents, such as Heaton Park, Moses Gate Country Park, the Lower Irwell Valley and the Roch Valley (towards Heywood)

Objectives

- Ensure "clean, safe and green" access between residential areas and these destinations
- Manage destinations in the Borough to Green Flag (or equivalent) standards
- Promote these destinations as tourism resources at a Greater Manchester level.
- Complete the implementation of the Council's LNR programme to meet standards of 1ha per 1,000 popn.
- Complete the network of multi-user trails as set out in UDP/LDF policy

How can we deliver?

- Green infrastructure framework adopted as Supplementary Planning Document so destinations are valid for s106 funding
- Ensure AAPs and Masterplans for nearby key centres and regeneration areas provide enhancement of destinations
- Approach tourism and economic development agencies to promote the destinations and facilitate new business development around the attractions
- Approach health and sport practitioners to increase outdoor recreation
- Support local stewardship by community groups
- Approach Rochdale and Salford Councils and the Forestry Commission to deliver key projects such as the Roch Valley Park and the Lower Irwell Valley Initiative.

Priority Area

Urban Greenery, Civic Spaces and Countryside

The Borough's rural and urban environment collectively forms a green infrastructure resource, important for food and (potentially) energy production, recreation, climatic adaptation, landscape distinctiveness and biodiversity. In some urban areas, the GM Ecological Framework has identified that gardens are critical to local biodiversity.

Even where these spaces are outside the core GI network and other priority urban areas, they may be of local value. They could provide growth-support functions in addition to their primary use – for example through additional tree-planting, increased access or use for energy production.

Objectives

- When considering development proposals affecting open spaces or infill of urban areas, take opportunity to safeguard assets and increase functionality of individual parcels of land.
- If development occurs, ensure no net loss of assets or connectivity of green infrastructure at a Borough-wide scale.

How can we deliver?

- Green infrastructure framework adopted as Supplementary Planning Document so values arising from development can be diverted (through s106 or similar) to GI.
- Core Strategy policy to protect urban greenery and require high standards of sustainability during development (e.g. application of particular BREEAM techniques and targets)
- Core Strategy policy to increase functionality of open spaces.
- Approach and work with health and sport practitioners to increase outdoor recreation
- Support local stewardship by community groups