

# **Pennines Green Infrastructure Action Plan**

**draft: March 2012**



## Contents:

Chapter	1	Why a Green Infrastructure Plan for Pennines?	1
Chapter	2	What is Green Infrastructure?	4
Chapter	3	Policy Context for Green Infrastructure in Pennines	9
Chapter	4	What do we want Green Infrastructure in Pennines to do?	11
Chapter	5	Green Infrastructure in Pennines by Area	18
Chapter	6	Green Infrastructure Objectives for Pennines	33
Chapter	7	Key Partnerships for Delivery	47
Appendix		Policy Context	49
		Glossary & Abbreviations	51
		Further References and links ( <i>Text to be finalised</i> )	

# Chapter 1: Why a Green Infrastructure Plan for Pennines?

## Introduction

Pennines Township has a strong sense of community and identity with distinct ambitions to create sustainable communities for its people, environment and economy in its settlements and countryside. The quality of the environment including its green spaces, watercourses and surrounding countryside is important in shaping how the Township is perceived and experienced by residents, visitors and investors. The environment is also part of the essential infrastructure for the Township, Borough and beyond including the core of Greater Manchester. This Action Plan sets out Pennines' particular green infrastructure assets and a series of key objectives and projects to ensure that their value to the Township is fully realised in supporting economic growth, community health and well being and a sustainable environment which can help Pennines address the impacts of climate change.

## What is green infrastructure?

The green spaces, open water, trees and gardens which surround, connect and form part of the built environment in Pennines provide a number of essential environmental services that support daily life, health, well-being and also supports the township's regeneration and economic growth aspirations. Together the green environments and services they provide are known as Pennines' 'green infrastructure' and will be explained in more detail in chapter 2, page 4.

## Opportunities for Pennines

The countryside in and around Pennines contains a wealth of wildlife and built heritage including the country park at Hollingworth Lake, the Green Flag award winning Hare Hill Park and Milnrow Memorial Park. The Township is surrounded to the north and east by the South Pennine Moors, which are readily accessible from many of the Township's urban areas and provides opportunities for a wide range of outdoor activities such as the Pennine Bridleway for walking and mountain biking. They also provide important assets to support biodiversity, access to the countryside, control of pollution and flood risk and people's movements around Pennines for work, school, access to shops and services and leisure. These places, along with some of the formal open spaces and parks are highly valued and provide a high quality environment for the community and are also very important for the Township's tourist economy. Pennines Township provides a gateway to the South Pennine Moors and gives a strong first impression of Rochdale Borough for the first time visitor. Many of the township's urban neighbourhoods, commercial interest and historic landscape is concentrated along the Roch valley, which is dominated by transport routes of the Rochdale Canal, National Cycle Route (NCR) 66, the Calder Vale railway line and the A58 particularly as the valley narrows towards Summit. There are challenges in some areas of the Township, particularly some urban neighbourhoods with predominately social housing such as Smallbridge Estate, in providing access to high quality greenspace and opportunities to improve the health and well-being of the community. Green infrastructure opportunities and challenges within Pennines are discussed further in chapter 4, page 11.

## Objectives of the Green Infrastructure Plan

The Pennines Green Infrastructure Action Plan will help ensure green infrastructure achieves its full potential to support Pennines' objectives for growth, regeneration and

well being in the community. It will help to deliver the Pennines Township Plan along with the plans and policies of Rochdale borough and Greater Manchester. This Plan sets out the key objectives for green infrastructure, outlined below:

- **Growing Pennines:** A high quality environment will support the Township's aspirations for economic growth, regeneration and health and well-being.
- **Active, Healthy Pennines:** By providing more opportunities for active and healthy lifestyles for the whole community.
- **Accessible Pennines:** Enhancing and increasing routes for walking and cycling to promote active transport, improve health and reduce pollution.
- **Living Pennines:** Enhancing wildlife habitats and biodiversity and improving access to the natural environment and wildlife for the community and visitors.
- **Resilient Pennines:** Ensuring that green infrastructure enables Pennines to tackle the effects of climate change and helps with significant concerns such as flood risk management.
- **Visit Pennines:** Ensuring that the Township's environment continues to create a positive impact to visitors and tourists by enhancing access routes and gateways to the countryside, parks and heritage features to enable Pennines to promote a stronger visitor package.
- **Distinctive Pennines:** By delivering all of the above themes Pennines and its community will continue to enjoy a high quality environment and a strong sense of place.

More detail of the green infrastructure objectives for Pennines can be found in chapter 6, page 33.

## The Strategic Projects

The Pennines Green Infrastructure Plan will be delivered through four long term strategic projects that will help to deliver high quality green infrastructure where it is needed most. These projects are set out in detail in chapter 6, from page 37, but are outlined below:

### 1. Pennines Greenways Network:

Coordinating and improving the active transport network within the Township to provide clear links and routes to key tourism, leisure and countryside destinations, which will promote a wider township tourism offer.

### 2. Growing Greener Neighbourhoods in Pennines:

Increasing the range of services, products and functions provided by green infrastructure in Pennines enabling it to better meet the needs of the community, particularly for flood risk management, adapting to climate change, increasing biodiversity, local food growing and improving health and well being.

### 3. Visit Pennines:

Widening the township's visitor offer by improving and enhancing gateways to key attractions and promoting alternative ways of arriving in and travelling within the Township, such as exploiting the Metrolink and NCR66.

### 4. Roch Valley River Park:

Creating a strategic environmental corridor through the core of Rochdale borough and providing essential green infrastructure to manage flood risk, conserve biodiversity, and create an accessible network of landscape and visitor destinations for local communities and visitors stretching from the South Pennine Moors in Pennines through central Rochdale and Heywood along the Roch Valley to the Irwell River Park in Salford.

These strategic projects will be delivered through a series of large and small actions throughout the life of the Action Plan to 2026. This will maximise the opportunities arising from the borough's Local Development Framework and a range of other plans, strategies and programmes. It will be reviewed on a three yearly basis to ensure that all plans, strategies and programmes important to Pennines' future prosperity, growth and well-being are captured and green infrastructure delivery opportunities maximised.

The Green Infrastructure Action Plan will provide a strong and wide ranging evidence base to help target opportunities for delivering improvements. This evidence will be updated as new studies and surveys e.g. for flood risk management and trees and woodlands are published. The Action Plan will support funding bids for external grants such as from the Forestry Commission and Environment Agency and help to inform new development and regeneration proposals so that green infrastructure requirements and opportunities can be built into the planning and delivery of schemes. The Action Plan will also provide a basis to identify opportunities for voluntary sector led projects and those proposed and driven by local communities which will include opportunities for training, education and building local capacity to improve and manage the environment.

### **Delivering the Plan**

The Plan will be supported by an annually updated work programme, a separate document to deliver the Pennines Green Infrastructure Plan which includes short, medium and long-term projects and details of how they will be delivered in conjunction with Township and Borough priorities. This structure will ensure that new opportunities, funding and delivery mechanisms for green infrastructure projects, which may arise at different times can be included to deliver the plan.

The Plan cannot be delivered overnight and to be successful it requires the support and ownership of all interests including the local authority, government agencies, volunteer and community groups, healthcare organisations, residents, school children, developers, businesses and landowners. A positive approach to increasing the benefits of green infrastructure to our communities involves looking at what we need green spaces to do both now and in the future. We need to ensure that through good management, design and location we have enough of the right types of green infrastructure in the right places and doing all the things we need it to do.

## Chapter 2: What is Green Infrastructure?

Green infrastructure is the 'natural' outdoor environment all around us and is part of the life support system of the community. It can include all green spaces and open water in and around our communities from private gardens and street trees, ponds and playing fields to the extensive river valleys and open countryside surrounding our towns. Natural England, the Government's advisor on the natural environment defines Green infrastructure as:

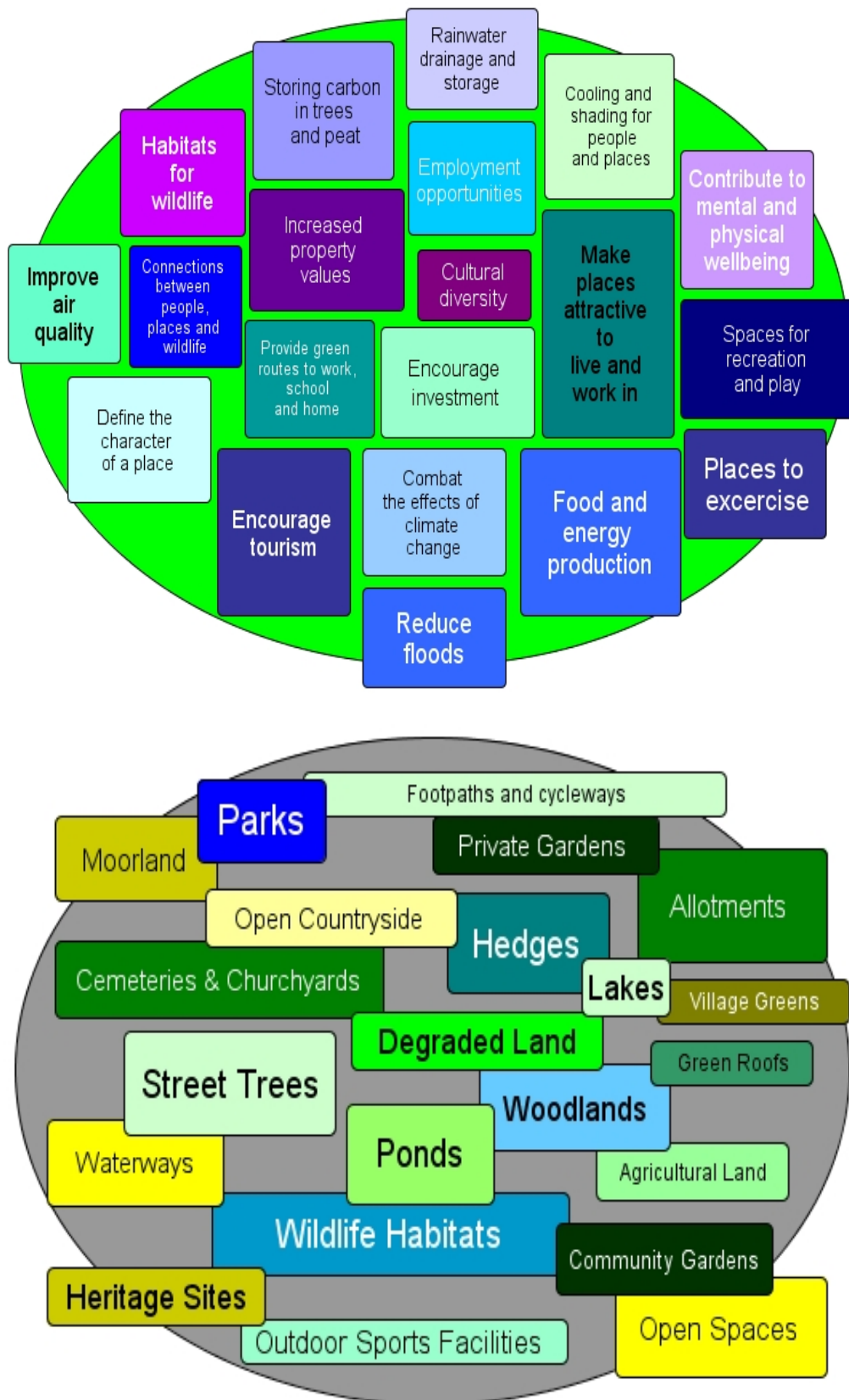
Green infrastructure is a strategically planned and delivered network of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits for local communities. Green infrastructure includes parks, open spaces, playing fields, woodlands, allotments and private gardens.

Green infrastructure functions include conserving and enhancing the natural environment, providing wildlife corridors, reducing noise and air pollution, helping communities adapt to climate change by managing water and carbon, providing green routes in and around communities, managing flood risk and providing space for play, quiet relaxation, sport and leisure. Many of the elements, which make up our green infrastructure and the function it provides are shown in figure 2.1, page 5.

***An example of a multi functional landscape at Watergrove Reservoir: Providing recreation, biodiversity, flood risk management, access to the wider countryside, a water supply reservoir and carbon storage in trees.***



**Figure 2.1 Functions and Components of Green Infrastructure**

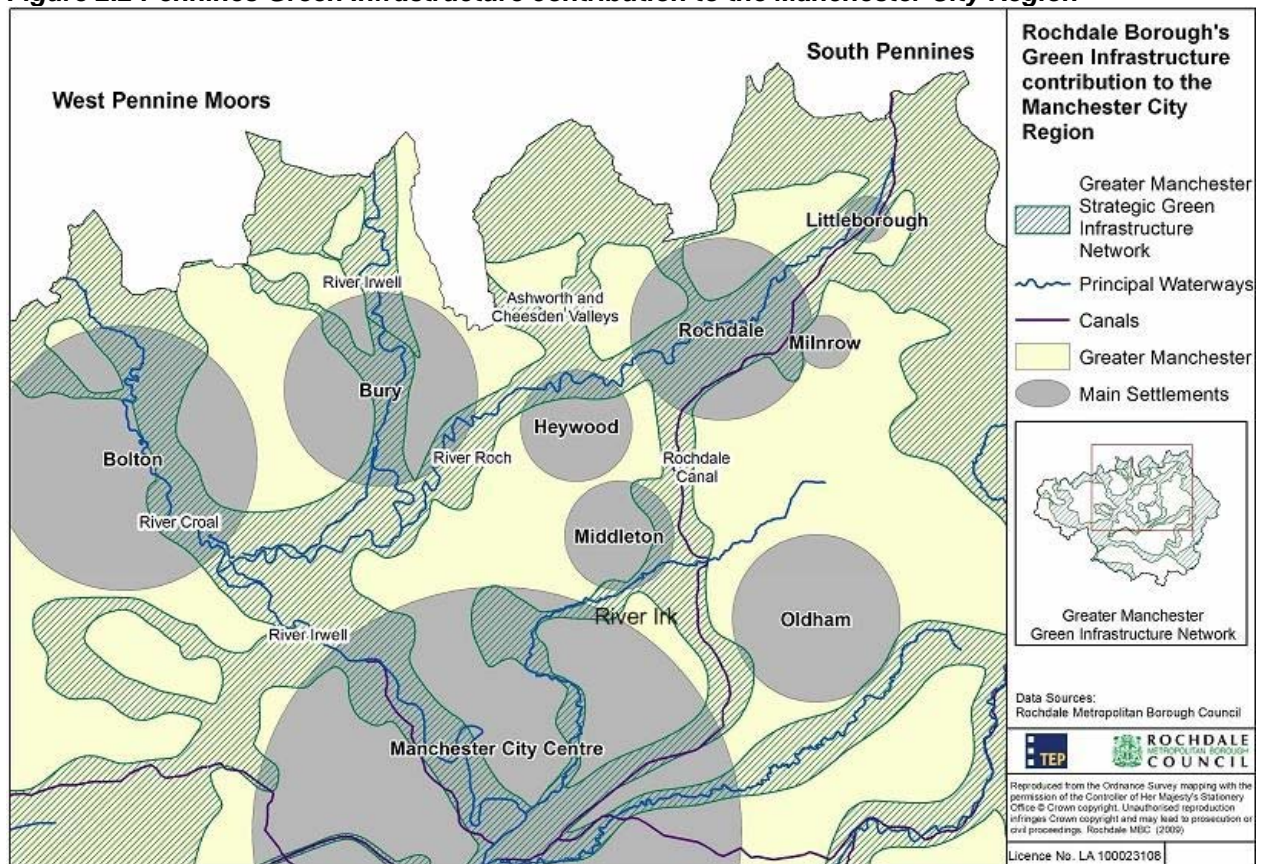


Green infrastructure is therefore not simply concerned with the amount of green spaces that we have but in its quality and ability to perform the environmental services they provide supporting everyday life, our economy and the future well-being of our communities. Access to high quality, well maintained urban green spaces promotes physical activity, positive mental wellbeing and healthy childhood development (CABE 2010)<sup>1</sup>.

Well located, designed and managed green space and water bodies can bring many benefits to a community and make places attractive to live in and to invest in. Low quality green spaces which are poorly located, badly managed with no clear functions for the community can discourage investment in an area and can attract problems such as anti social behaviour and fly tipping.

Each green space or water body however small can be multi functional, which means that it can perform a number of different roles. These different functions are performed by individual spaces but also as part a larger network of green infrastructure, which can extend well beyond the Pennines. For example the Rochdale Canal, which runs through the Township, is part of National Cycle Route (NCR) 66, in the strategic national cycle network across the country. It is also a popular walking route providing access into the South Pennine Moors from many urban neighbourhoods. It is recognised as a site of European importance for biodiversity and has been designated a Special Area of Conservation (SAC) because it contains important habitats for submerged and aquatic plants. It also acts as a wildlife corridor, allowing wildlife to move between habitat areas. The canal is also valued for its heritage and cultural importance by the communities along its route. Pennines' green infrastructure contribution to the wider borough and Greater Manchester is shown below in Figure 2.2.

**Figure 2.2 Pennines Green Infrastructure contribution to the Manchester City Region**





## **An introduction to Pennines**

Pennines Township, north east of the Borough covers approximately 40% of the total land area of Rochdale Borough and includes Littleborough and the settlements of Wardle, Milnrow, Newhey and Smithy Bridge, the inner urban areas of Smallbridge and Firgrove and a number of rural hamlets including Rakewood and Ogden. The Township is surrounded to the north and east by the South Pennine Moors, which strongly influences its culture, identity and economy. The moors are a major asset for both residents and visitors. As well as providing the attractive setting in which the towns and villages sit they are also a vital green infrastructure asset for the wider borough and at the Greater Manchester scale providing carbon and rainwater storage in peat and recreational access. The moors are a working landscape supporting farming, water supply and renewable energy amongst other activities. They are also important for biodiversity including part of the South Pennine Moors Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Special Area of Conservation (SAC) supporting habitats and moorland bird populations of European significance. There are also ten Sites of Biological Interest (SBIs) within the township. The Roch Valley runs through the heart of Pennines and provides key recreational, amenity and flood risk management functions. The Township is also rich in industrial heritage and rural attractions including Hollingworth Lake, Watergrove Reservoir and an abundance of walking routes including the Pennine Way and Pennine Bridleway, which support and provide further opportunities for the tourist economy.

Whist Pennines has substantial advantages because of its location, surrounded by attractive landscape and its abundance of rich industrial heritage there are, in green infrastructure terms, many challenges to be addressed including:

- Access to the countryside from parts of the urban area to the south west is limited, particularly from Smallbridge and Firgrove;
- Urban open spaces vary in quality and in some locations do not provide a distinctive, positive character or required public benefits for Pennines and its neighbourhoods;
- A lack of coordination of signage of routes and interpretation of the landscape within the wider countryside.
- Parts of Pennines are subject to fluvial and surface water flood risk;
- Parts of Pennines are poorly adapted to the effects of climate change
- There is a need to improve the physical environment of some of Pennines' more urban neighbourhoods;
- Tourism and visits to the Township are largely concentrated around the Littleborough and Hollingworth Lake area, which can become congested at peak times;
- Increasing access to the South Pennine Moors increases pressure on this fragile landscape.
- Key gateways into the Township require environmental enhancements and improvements.
- Ensuring that economic growth, new development and delivering good green infrastructure are mutually supportive activities and help to protect and enhance the Township's unique character and green infrastructure assets.

The Pennines Township Plan, the Local Development Framework and other plans and strategies prepared by the Council and other agencies have recognised these challenges but more needs to be done to ensure that Pennines gains lasting benefits from its green infrastructure. The Pennines Green Infrastructure Action Plan will help to address these challenges by delivering the four strategic projects Pennines' green infrastructure and how it relates to Pennines and its community can be clearly seen from the aerial view shown in figure 2.3, page 8.

**Figure 2.3 Pennines Green infrastructure from the air**



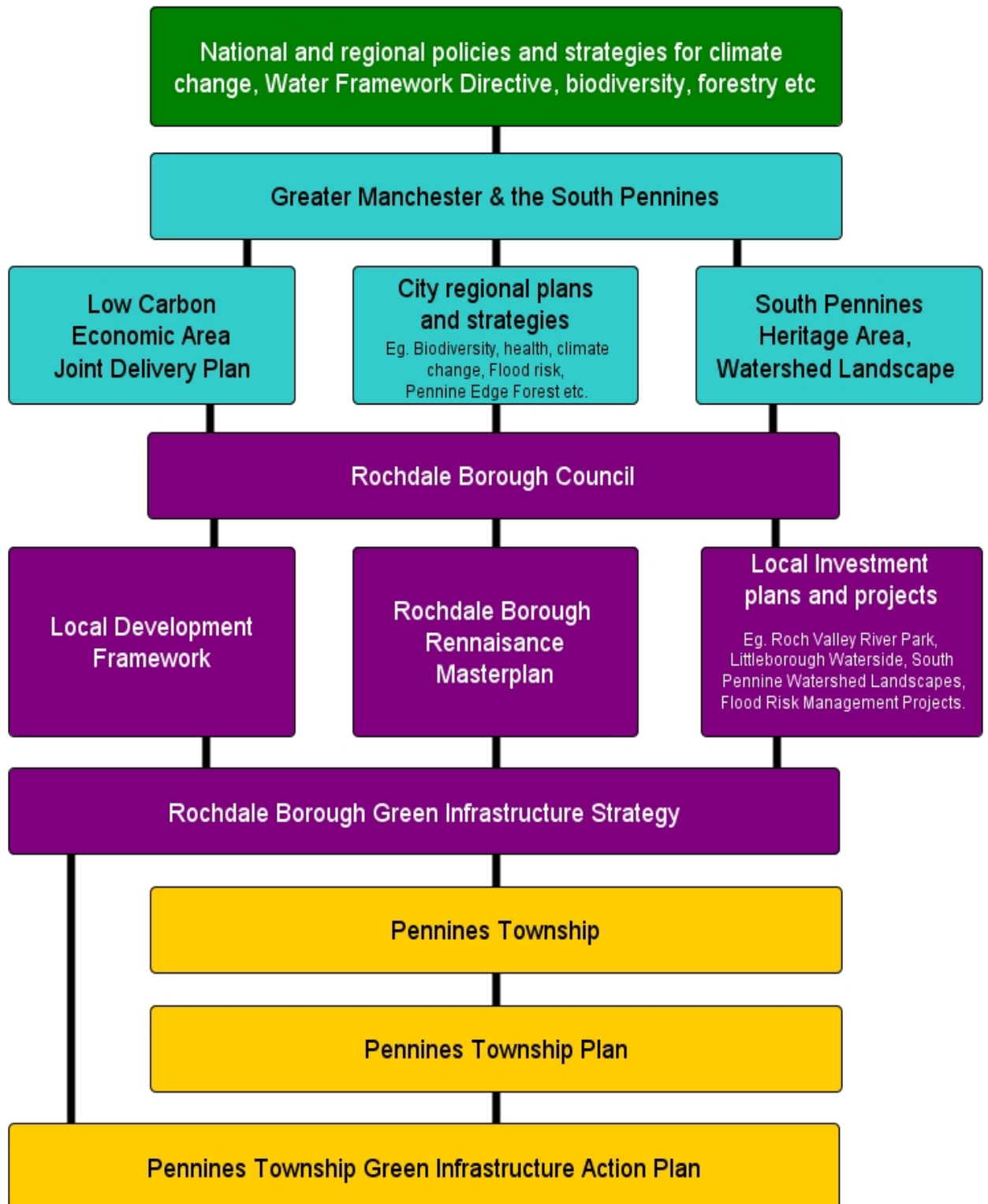
## Chapter 3: A Policy Context for Green Infrastructure in Pennines

Green Infrastructure is part of a complex policy mosaic and cuts across a range of objectives at all levels including the North West region and Greater Manchester down to plans for individual neighbourhoods. Through the life of this action plan, it is expected that policy guidance and drivers for green infrastructure plans will have grown and changed and will be much more explicit as new or revised plans, policies and programmes from Government and its agencies, local authorities and major delivery bodies such as health providers, emerge and recognise the importance of green infrastructure in their delivery.

A diagram highlighting the main components of a policy and strategy framework for delivering green infrastructure is shown in Figure 3.1 on page 10. Within this framework it is worth highlighting some key documents which provide strong policy support and guidance for green infrastructure and highlight the importance of green infrastructure to support economic growth, quality of life for communities and a high quality, resilient environment in Pennines, Rochdale borough and Greater Manchester. See appendix, page 50 for further discussion of policy context.

At a local level the Rochdale Borough Renaissance Masterplan recognises the value of the borough's green infrastructure to growth, regeneration and quality of life in Rochdale borough. The Local Development Framework will ensure green infrastructure supports local communities, housing and economic development by maximising the functions and services it provides. The Township Green Infrastructure Action Plans will be an important vehicle for targeting, supporting and enabling delivery of key green infrastructure actions at all scales to help deliver the borough's priorities for the physical environment and sustainable development.

Figure 3.1 Policy context



## **Chapter 4: What do we want Green Infrastructure in Pennines to do?**

Green infrastructure in Pennines must help deliver the Township's objectives for economic growth as well as providing an attractive and healthy environment for residents, workers and visitors both now and into the future. The Township's green infrastructure must also provide benefits for the wider borough and for Greater Manchester where possible. The functions we want green infrastructure in Pennines Township to perform are:

### **Provide a sense of place and positive identity and image for Pennines Township and the borough of Rochdale**

Green spaces, parks and gardens, the countryside, gateways and corridors all significantly influence perceptions about image and the quality of place and the quality of life it will provide and this can have a direct impact on tourism and the attraction of a place to live, work and invest in. The Township has a good range of attractive open spaces such as the country park at Hollingworth Lake and is surrounded by high quality open countryside, access land and peat upland moors. These places provide a high quality environment for the community and are also very important for the significant tourist economy. Pennines Township provides a gateway to the South Pennine Moors and gives a strong first impression of Rochdale Borough for the first time visitor. However, despite the attractive rural setting, which provides a strong sense of place there are places within the Township where the environment is poor through dereliction, neglect or lack of visual interest.

### **Provide access for all ages and abilities to good quality urban green space and the countryside around Pennines Township for recreation and tourism**

Good quality urban green spaces, parks, gardens, recreational facilities and countryside are major assets for promoting a town for tourism, recreation and leisure activities. The market for tourism is diverse, ranging from leisurely pursuits to more active recreation such as cycling, walking and climbing. These assets are also important to current residents and people who may be considering Pennines as a place to live. It is important to ensure that people of all ages and abilities can enjoy as wide a range of activities and experiences as possible whether they are visiting, living or working in the Township. The school grounds, parks, woodlands and countryside in and around Pennines also provide a diverse and stimulating 'outdoor classroom' resource where children of all ages can experience and learn about wildlife, local food and healthy eating, climate change and local heritage.

The countryside in and around Pennines contains a wealth of wildlife and built heritage with attractive moorland landscapes close to many neighbourhoods to the north and east of the Township. However access to the countryside from some neighbourhoods is poor and there are environmental problems such as fly tipping and dereliction, which need to be tackled at some existing and potential key gateways to the countryside.

There are opportunities to create a more extensive green routes network in Pennines Township which links tourist and recreation destinations such as Hollingworth Lake Country Park, town parks, the Rochdale Canal and the upland reservoir network through a series of urban and rural routes providing good quality access for walkers, cyclists and horse riders. Opportunities to use existing initiatives such as the Connect 2 cycle project, the South Pennines Watershed Landscape initiative and enabling development

opportunities through the Littleborough Waterside project will provide the basis for delivering the network.

### ***Hare Hill Park, Littleborough***



### **Encourage walking and cycling for everyday journeys, healthy lifestyles and well being**

Access to good quality green spaces close to where people live within urban areas and to the countryside is important to the ability of local people to lead a healthy and active life. Visiting these green spaces can give a range of benefits for mental health, tackling child and adult obesity and helping reduce the incidence of respiratory and cardiac problems. Making walking and cycling a more attractive alternative to using the car involves creating greener streets and an open space network with clearly identified routes for recreation, routes to school, shops and services and employment. These should provide a safe and welcoming environment where people feel confident. There are good walking routes within the countryside, such as the Pennine Way, the Mary Towneley Loop and Beal Valley Way but at present there are some barriers to movement and a lack of defined urban green routes in some neighbourhoods in the Township.

### **Help manage flood risk and improve water quality**

Flooding can cause significant harm to communities through damage to property, danger to the public and disruption to travel and the local economy. Flood risk in the Township can arise from watercourses and a range of other sources, sometimes in combination, including drainage from the surrounding South Pennine uplands, surface water run off and the local sewer system. As the climate changes there is a greater likelihood of more extreme rainfall events which may be more frequent and also more damaging.

An indication of the most significant areas of potential flood risk in Pennines are shown in figure 4.1, page14. The Strategic Flood Risk Assessment for Rochdale Borough (2009)

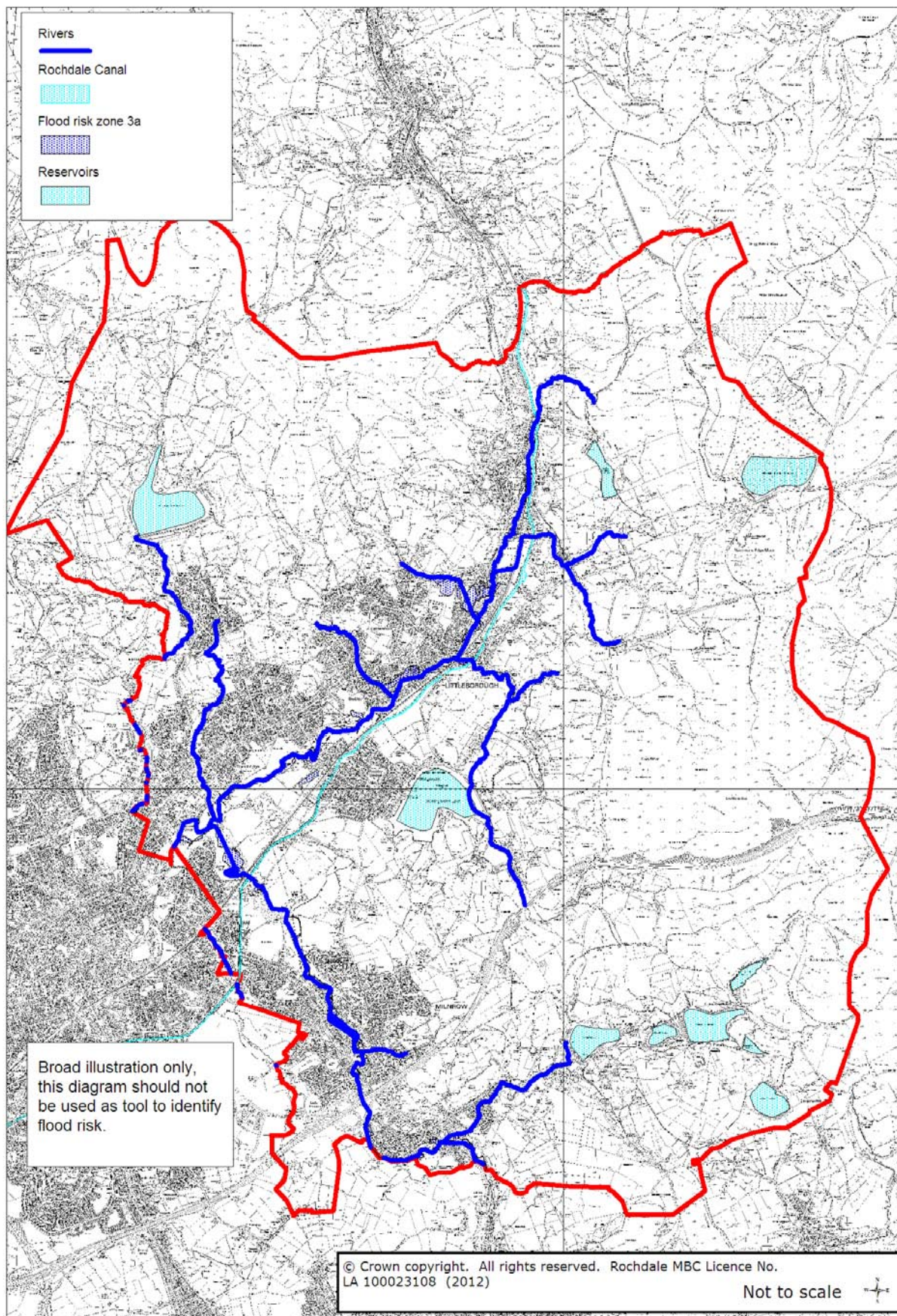
identified areas of fluvial risk based on the rivers network and also an indication of surface water flood risk. The River Roch and its tributaries such as Town House Brook pose significant flood risk to communities and the local economy in Pennines as well as opportunities to more effectively manage risk in the future both within the Township and downstream in central Rochdale. The Council is working with the Environment Agency to identify opportunities to deliver improved flood risk management using green infrastructure as part of potential flood storage solutions in the upper Roch valley north of Littleborough town centre. More effective flood storage would reduce the need for more substantial 'hard' flood defences in and around current and future areas of risk and provide local benefits for recreation and biodiversity in addition to providing flood water storage when needed. New development and regeneration projects within Pennines Township will also provide an opportunity to create and deliver green infrastructure to support flood risk management on site and downstream.

A Greater Manchester Surface Water Management Plan (SWMP) will be published in 2012 which will identify surface water flood risk in more detail and options as to how it will be addressed. There will be a focus on Littleborough in the SWMP as one of Greater Manchester's more significant 'hotspots' for surface water flood risk and more detailed investigation of its causes and opportunities for flood risk management schemes will be carried out. Green infrastructure will be an important component of how surface water flood risk is reduced and managed more effectively in the future and green assets from gardens to parks, playing fields and other open spaces and water bodies either adapted or created to assist sustainable urban drainage will form a part of a surface water management network, which the Council will work with the Environment Agency (EA) and United Utilities to develop as appropriate.

A local Flood Risk Management Strategy for Rochdale borough will be produced by 2013 setting out objectives and priorities for flood risk management and how it is proposed to deliver them including by the use, enhancement and creation of green infrastructure for this purpose. It will support actions, including opportunities for working with the EA, United Utilities and developers that could improve the ability to manage flood risk such as de-culverting water courses, improvements to the sewer network, creating or enhancing Sustainable Urban Drainage and appropriate land management.

The Water Framework Directive (WFD) requires all EU countries to manage and maintain water quality to a consistent standard which includes achieving a 'good' status for all water bodies by 2015. This requires actions to ensure improvements in water quality or to stop decline as necessary and includes the effect of pollution from discharges, groundwater and roads, maintaining and improving biodiversity and promoting recreation and enjoyment of the water environment in a sustainable way. The EA have produced River Basin Management Plans to help deliver WFD requirements. Green infrastructure is recognised as a major opportunity to help maintain and improve both the quality of water courses through intercepting pollutants and also to achieve sustainable management of the water environment including river valleys. The Green Infrastructure Action Plan will provide a basis for identifying partnership opportunities for delivering the River Basin Management Plan and a good quality water environment in Pennines Township.

**Figure 4.1 Principal watercourses and indicative areas of significant flood risk**



*(Add to text box: "Check with Rochdale MBC for the most current map.")*



## **Support biodiversity sites and networks**

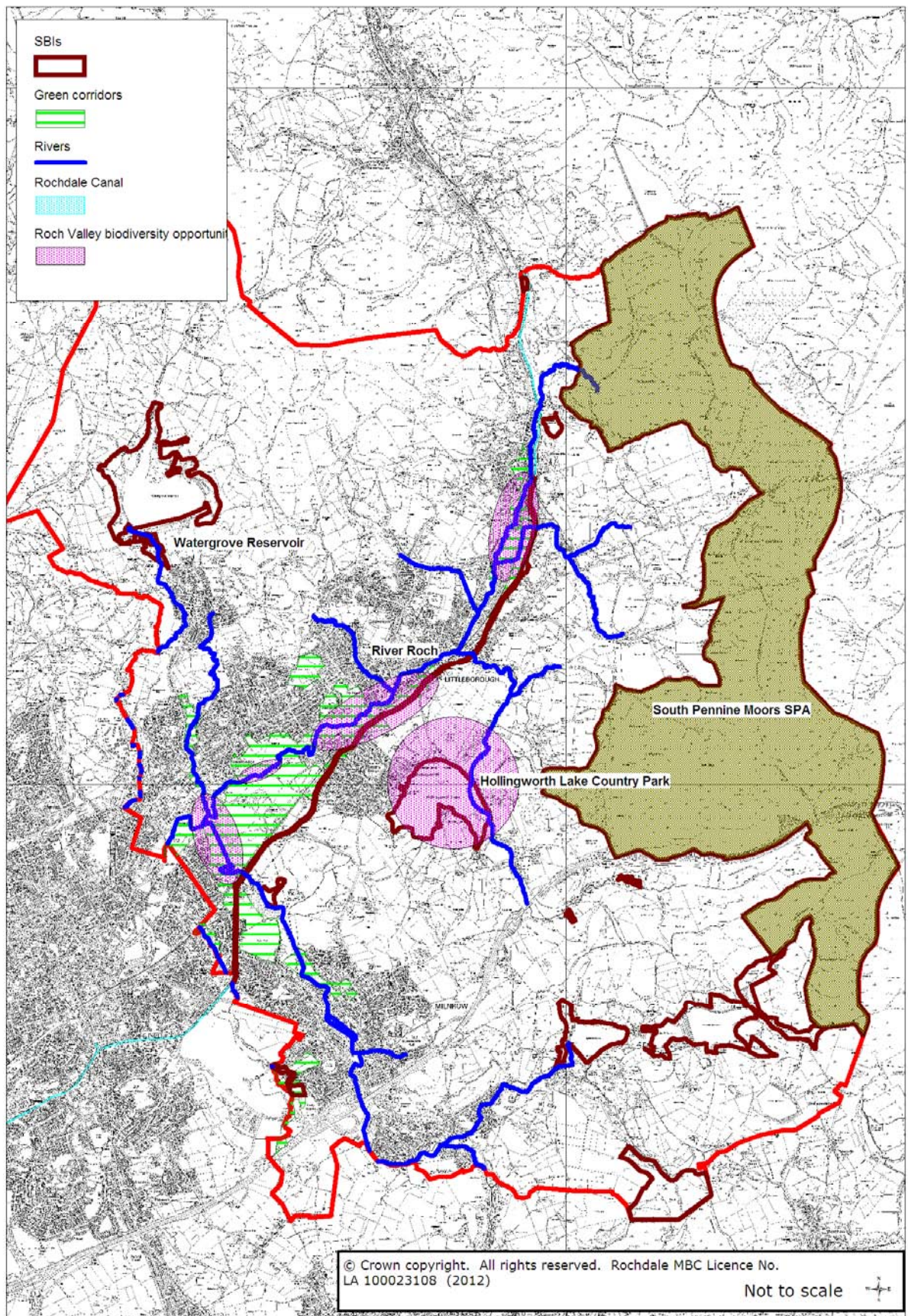
Pennines Township is important in terms of biodiversity. Hollingworth Lake Country Park lies at the heart of the Township and there also currently twelve areas designated as Sites of Biological Importance (SBIs) including Hollingworth Lake and Piethorne and Watergrove reservoirs. The Rochdale Canal is also a Site of Special Scientific Interest along its length and designated as a Special Area of Conservation up to Canal Street in Littleborough. Part of the South Pennine Moors Special Protection Area runs along the eastern site of the township and areas of Gorse Hill, Ealees and Buckley woodlands are designated ancient woodlands. All of these designations recognise their value to the biodiversity of Rochdale Borough and Greater Manchester and they form part of the Greater Manchester biodiversity network helping to deliver the Greater Manchester Biodiversity Action Plan (BAP) (2009) and the Rochdale BAP. They also provide a collection of assets providing local communities with access to high quality biodiversity for enjoyment and education.

The Roch Valley, running through the Township is biologically diverse, although habitats frequently occur in small patches and can be fragmented by built development. The Ecological Network for the Roch Valley (GMEU 2011) has identified 'Biodiversity Opportunity Areas' along the Roch Valley and includes proposals for habitat improvement and creation to develop a more integrated and linked network along the valley to be delivered or enabled as required through specific land management and habitat creation projects, flood risk management and new development or regeneration projects such as Littleborough Waterside which aims to deliver improved recreational and biodiversity within the Rochdale Canal corridor, Roch Valley and Hollingworth Lake South Pennines Gateway linked to a network of enabling development proposals.

Biodiversity within the township faces challenges from non-native invasive species, particularly along watercourses, which out-compete native species and reduce the habitat available to them and can cause considerable financial burdens on landowners. These species require careful monitoring and management where possible.

These areas can also be viewed as forming natural corridors that host a range of species and habitats and allow wildlife to move between sites. These areas are shown on figure 4.2, page 16. The more urban parts of the Township have a number of green spaces with existing biodiversity value including public open spaces, small urban woodlands and mature residential gardens but many have limited value due to a lack of features or management that would encourage biodiversity. Greener streets and urban areas that people want to use and live, work and visit are brought to life by wildlife interest through the seasons. Further opportunities to deliver the Rochdale and Greater Manchester BAP and to improve opportunities for access to and enjoyment of the natural environment will be included in the Green Infrastructure Action Plan.

Figure 4.2 Pennines' Biodiversity Network



## **Providing food and fuel for the community**

The farms located in the South Pennine fringes and river valleys of the Township carry out a range of livestock and crop growing activities as well as adding value to their farm business in some cases through meat and dairy products, direct sales and other activities based around tourism. The urban environment can also provide valuable growing space for fruit and vegetables as highlighted in such initiatives as Incredible Edible Todmorden. In addition to private gardens, there are opportunities for local food growing within schools, public open spaces and along streets, which can also enhance the unique character of a local environment as well as greening. This could be particularly important within the more urban neighbourhoods where there are higher proportions of mown 'green desert' and higher levels of deprivation. Growing a wide range of fruit, vegetables and herbs in these places can also provide opportunities for education, healthy eating and community enterprise as well as reducing 'food miles' and transport costs. It will also provide a chance for people to get to know each other and co-operate as a neighbourhood. There may also be potential for some of the woodlands, farmland and urban spaces within Pennines Township to provide biomass for woodfuel. An objective of the Green Infrastructure Plan will be to identify what potential exists for local food initiatives and woodfuel and biomass production and how they may be realised through local, Greater Manchester or South Pennine initiatives and markets.

## **Help Pennines Township adapt to climate change**

The changing climate will bring challenges to life in the township as extreme weather events such as heavy rainfall become more likely and temperatures increase, particularly within the more urban neighbourhoods, town centres and employment areas. Increasing the area of permeable surfaces, which allow rainfall to drain into the ground and increasing vegetation, such as green roofs and street trees help to delay runoff and absorb water from increased rainfall.

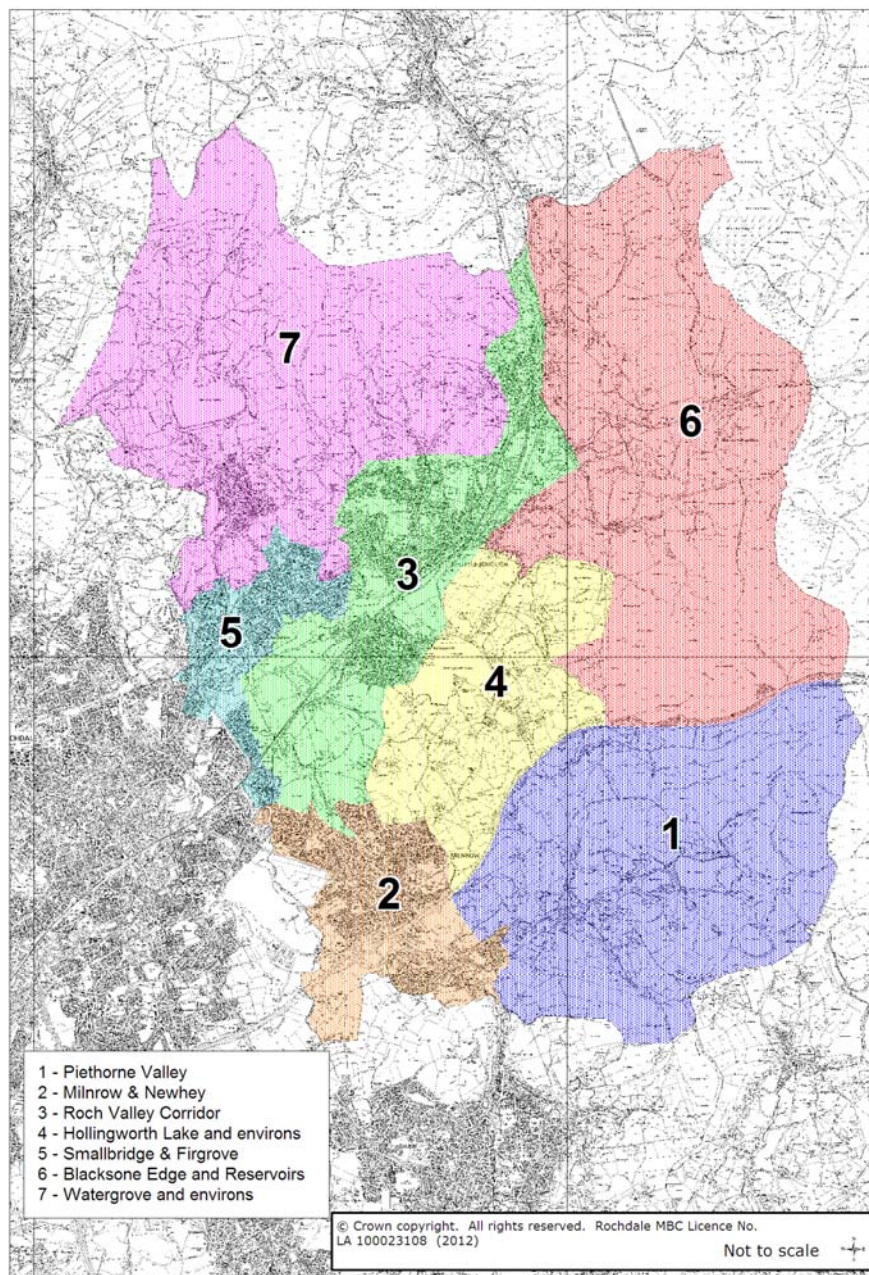
The urban heat island effect is caused by large areas of hard surfaces such as concrete or tarmac storing the sun's heat and releasing it overnight, increasing the temperature significantly higher than the surrounding countryside. This has been known for nearly two hundred years but it is now becoming more of an issue as urban centres grow and the climate changes. Increased planting, particularly of trees within built up areas reflect the heat of the sun and cool the air very effectively.

High quality, appropriate green infrastructure will improve the Pennines' ability to reduce the impact of these changes and improve the ability to conserve natural resources, reduce CO<sub>2</sub> emissions, reduce flood risk and provide cooling and shade. Pennines has a very important role for Rochdale Borough as a whole and beyond, particularly the role of peat moorlands in CO<sub>2</sub> capture and the Roch Valley for flood risk management. As the green infrastructure matures the effectiveness and benefits increase. This will make Pennines more resilient to future climate change and a safer, more comfortable environment to live in, work in and visit.

## Chapter 5: Green Infrastructure in Pennines by area

Pennines has a diverse character and each area or neighbourhood has its own specific challenges and opportunities for green infrastructure. These 'character areas' provide a focus for better understanding need and opportunity and developing effective local actions. Figure 5.1 below illustrates the character areas in Pennines. These character areas enable residents and service providers to understand and influence how actions in their area can contribute to local quality of life and also help to deliver bigger, more strategic actions such as improving the access within and around urban areas and out to the wider countryside. The seven character areas are described in more detail on pages 19 to 32.

**Figure 5.1: Pennines Character Areas**



## **Character Area 1: Piethorne Valley (Figure 5.2, page 20)**

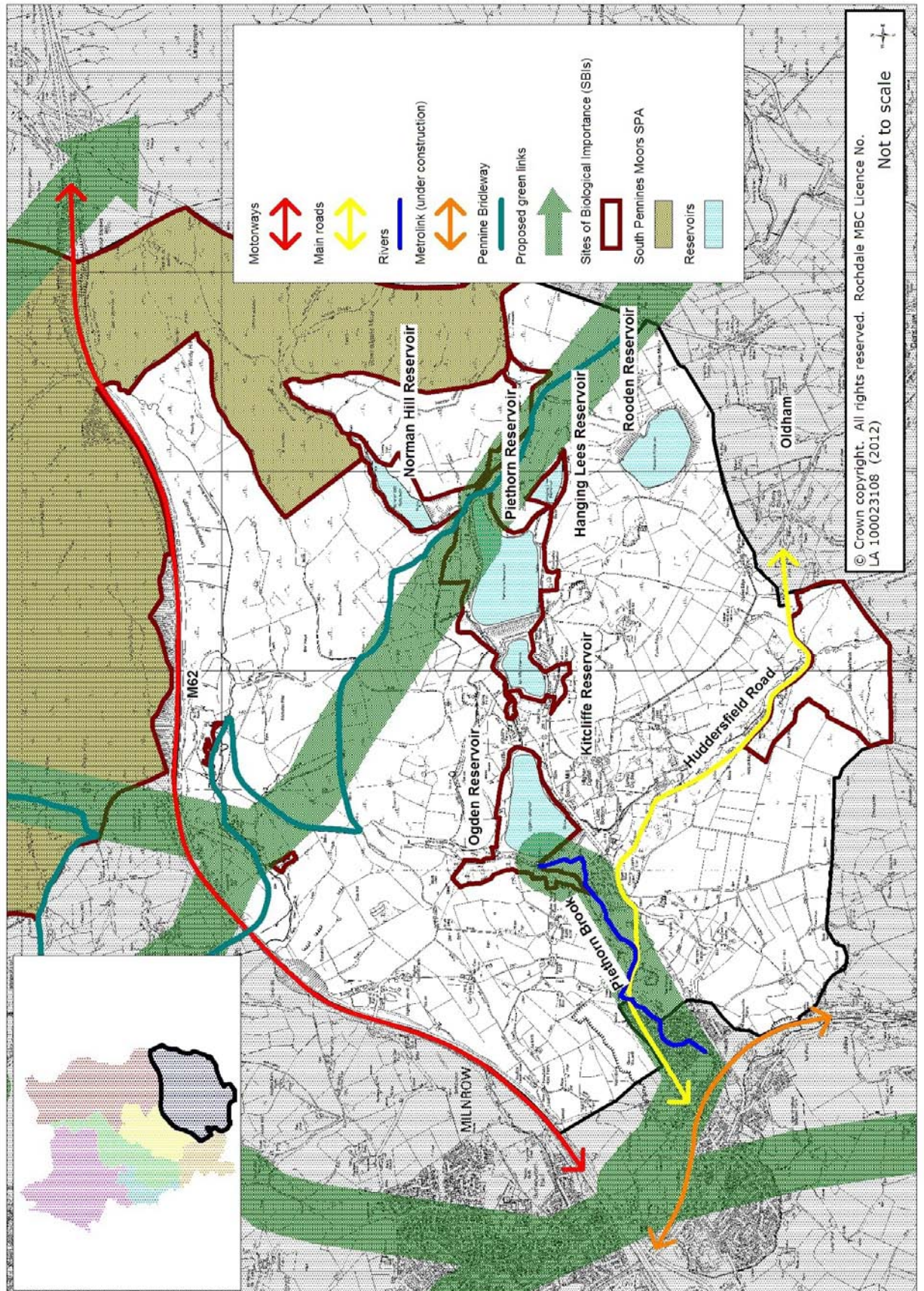
Largely rural, open moorland landscape, bounded to the north and west by the M62 and to the east and south by Oldham MBC. The landscape is dominated by the reservoir system managed by United Utilities (UU) including Ogden and Piethorne, reservoirs and includes significant accessible countryside. The area includes a number of woodlands, five areas of Special Biological Interest (SBIs) and the southern tip of the South Pennine Moors Special Protection Area (SPA) and Special Area of Conservation (SAC). The area is important for recreation such as walking, cycling and horse-riding with a good rights of way network including the Pennine Bridleway and other promoted trails and areas of designated open access and common land. However signposting and interpretation is limited, particularly for wider connections such as access across the M62 and the neighbouring Metrolink line when operational. Management of this watershed area could have implications for flood risk downstream.

### **Main Issues & Opportunities**

- Maximise the tourism potential of the watershed as a gateway to the South Pennines whilst protecting the fragile landscape.
- Ensuring that the biodiversity is protected and continues to carry out important recreation and biodiversity functions such as carbon capture within the peat moorland.
- Improve the signposting of destinations and interpretation of the landscape.
- Ensuring that partnership working, particularly with Pennine Prospects, Oldham MBC and UU maximise any opportunities for land management to support priority green infrastructure actions including flood risk management, biodiversity and climate change mitigation.
- Explore opportunities to improve woodland management by encouraging take-up of Forestry Commission (FC) grants and promoting Woodland Certification.

*(Photos: Ogden, Piethorne)*

Figure 5.2 Character Area 1: Piethorne Valley (Check spellings on Plan)



## **Character Area 2: Milnrow and Newhey (Figure 5.3, page 22)**

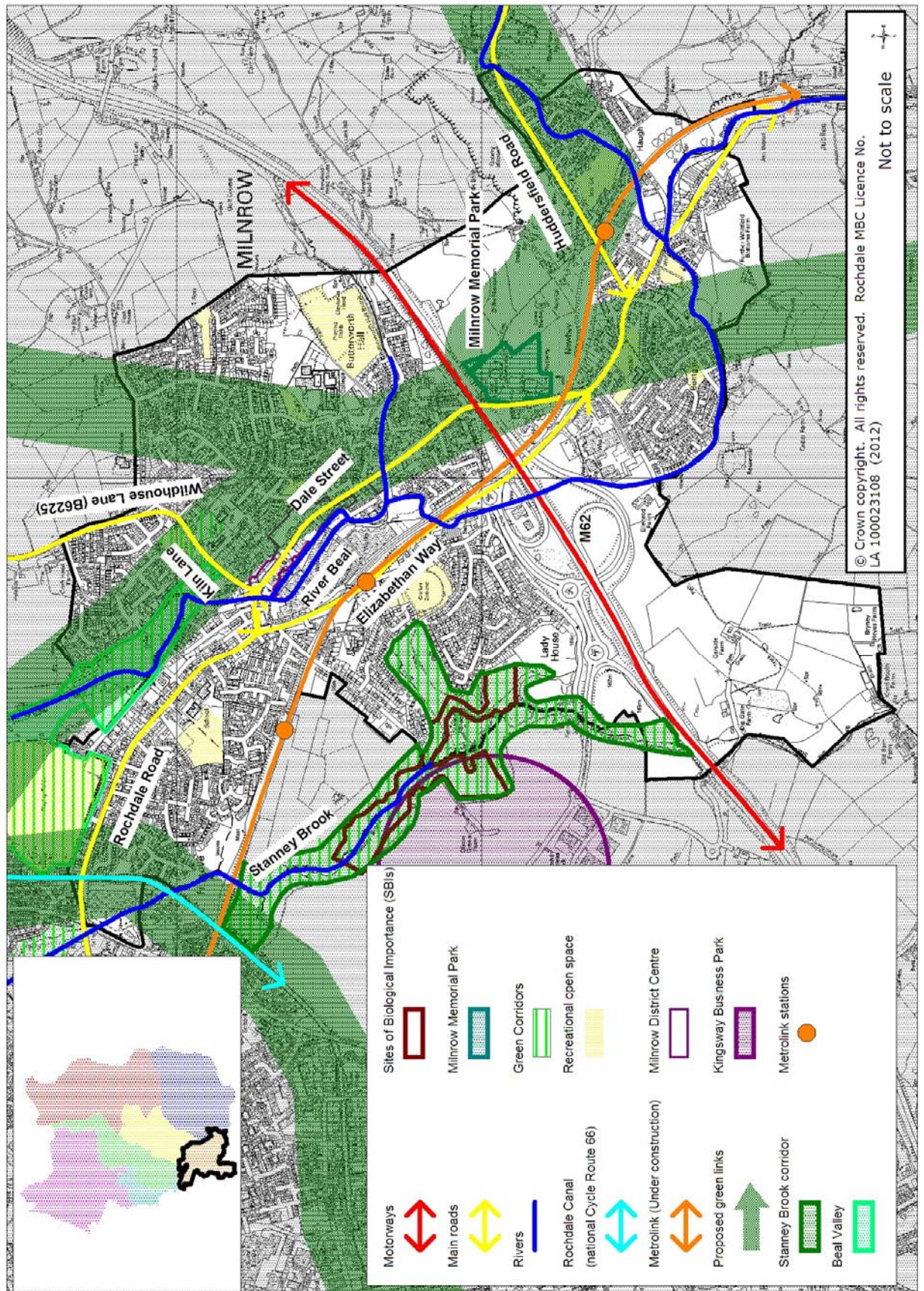
Largely urban area situated at junction 21, M62, which is strategically important as a gateway to Kingsway Business Park, the Township, the South Pennines and the wider borough. The two Metrolink stations at Milnrow and Newhey will allow access to the South Pennine Moors from Manchester city centre. There are a number of formal open spaces with limited green infrastructure functions, however the Green Flag awarded Memorial Park, Milnrow provides links to the wider countryside, particularly along the Beal Valley Way as well as biodiversity and recreational functions. There may be opportunities for biodiversity improvements along the Beal Valley. There is limited access to the neighbouring Stanney Brook corridor and Kingsway Business Park apart from via the Rochdale Canal and National Cycle Route (NCR) 66 (Connect 2). The River Beal presents significant fluvial flood risk at some locations.

### **Main Issues & Opportunities**

- Maximise the opportunity of using the area's public transport links as a gateway to the South Pennines by working with partners such as Metrolink, Northern Rail and Sustrans to promote exploring the Township by active transport.
- Improve the number of functions performed by existing green spaces, particularly maximising opportunities for flood risk management and biodiversity along the Beal and Stanney Brook valleys.
- Identify opportunities to create an extended and better connected biodiversity corridor and recreational route along the Beal Valley.
- Improve links between and within the urban area to the countryside, employment and local facilities, particularly via the Beal Valley and the Rochdale Canal, NCR 66.

*(Photos: Beal Valley Trail, Memorial Park)*

Figure 5.3 Character Area 2: Milnrow and Newhey





### **Character Area 3: Roch Valley Corridor (Figure 5.4, page 24)**

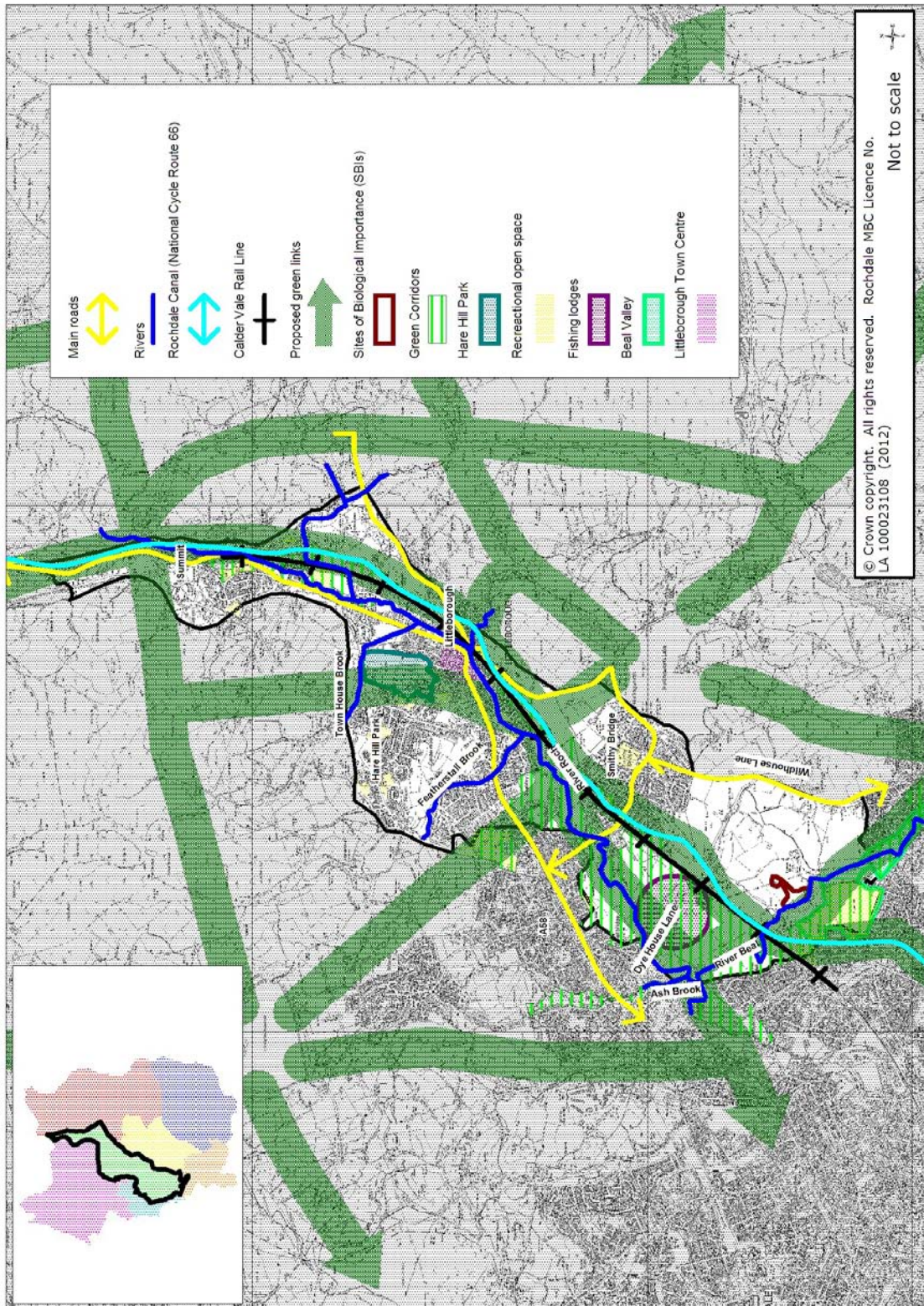
The mix of urban and rural uses within the historic landscape is dominated by the transport routes of the Rochdale Canal, Calder Vale Railway line, the A58 and the River Roch, particularly as the valley narrows towards Summit. It is an important investment area for the township and Rochdale borough linking to other commercial centres. Formal open spaces include the Green Flag awarded Hare Hill Park but also a number of mown 'green deserts', which are sites with limited green infrastructure functions. The area around Dye House Lane and the fishing lodges has potential for green infrastructure improvements and links. There are a number of small woodlands, two SBIs including the Rochdale Canal, which is also designated as a SAC. There is good access to the open countryside in the north and east however signposting is inconsistent. The river valleys provide an opportunity to improve green access routes in the south and also to connect to the South Pennine gateway at a number of key points such as Hollingworth Lake and Summit supported by Connect 2 and enabling developments within the Littleborough Waterside area. The Roch Valley will also support a significant biodiversity corridor and flood risk management resource. The river Roch presents some fluvial flood risk, particularly within Littleborough and downstream to central Rochdale with potential for enhanced flood storage within the river corridor north of Littleborough.

#### **Main Issues & Opportunities**

- Develop a comprehensive approach to maximising green infrastructure benefits through area regeneration and appropriate development opportunities.
- Develop the Roch Valley River Park linking to the rest of the Borough and beyond with coordinated signage, routes and interpretation of the landscape including built and natural heritage.
- Improve the number of functions performed by existing green spaces, particularly maximising opportunities for the management of flood risk, biodiversity and recreation.
- Ensure that the areas tourism potential is developed without compromising its existing facilities, infrastructure and management of the public realm.
- Explore opportunities for biodiversity improvements along the Roch Valley, particularly where it meets the River Beal and improve woodland management by encouraging take-up of FC grants and promoting Woodland Certification.
- Ensure that opportunities to support flood risk management through use, adaptation and creation of green infrastructure will support management of fluvial and other flood risks, such as from surface water through appropriate flood storage or sustainable urban drainage assets. Work with the Environment Agency, UU and other stakeholders such as developers to achieve this where required.

*(Photos: Fishing lakes, River Roch)*

Figure 5.4 Character Area 3: Roch Valley Corridor



## Character Area 4: Hollingworth Lake and Environs (Figure 5.5, page 26)

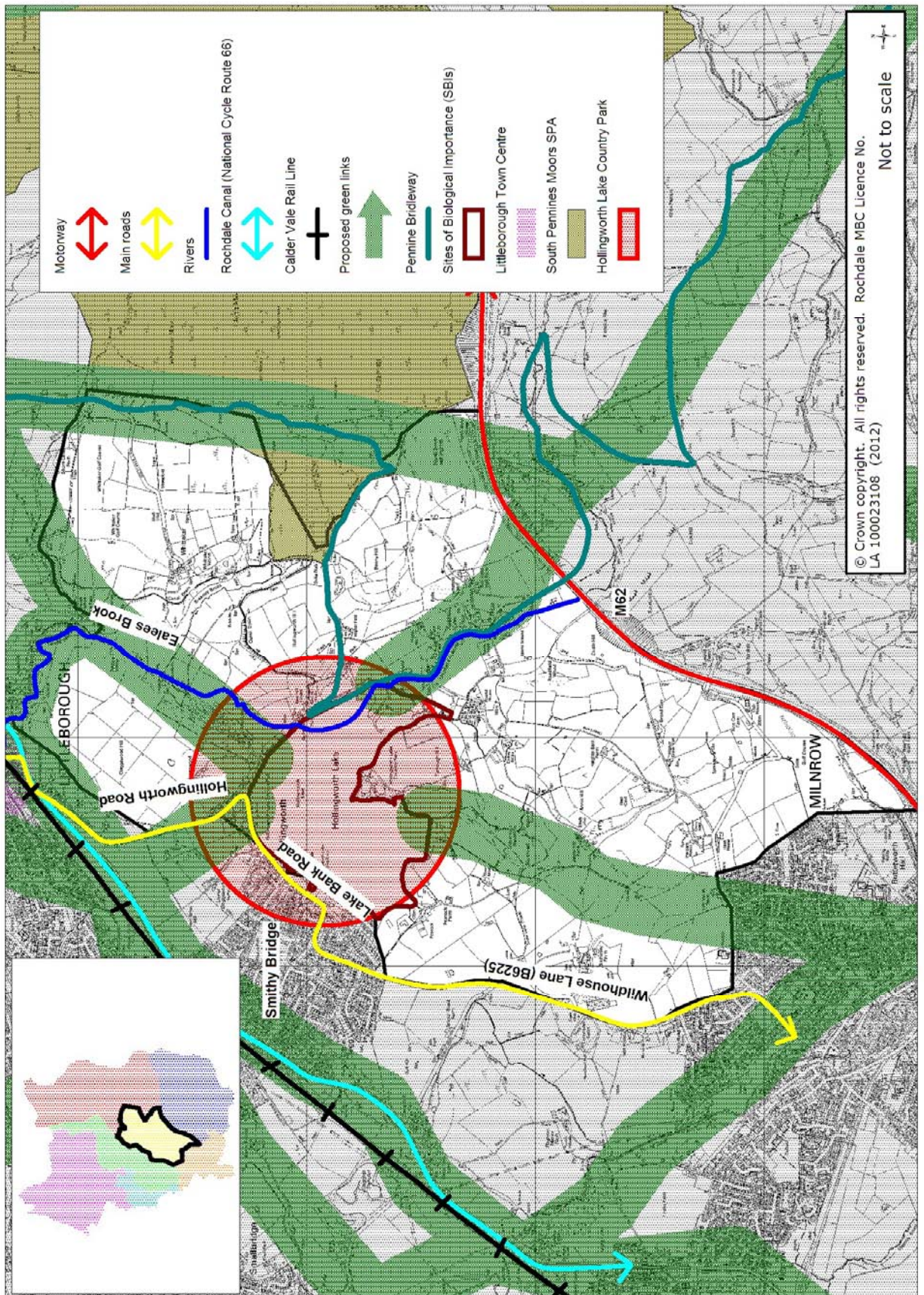
Largely rural, moorland fringe area with some isolated settlements and several commercial leisure uses surrounded by historic landscape features. This area is an important gateway to the South Pennines, the main attraction being Hollingworth Lake Country Park, a prime tourist destination for Rochdale Borough and beyond, with walking and water activities as its main focus. The Country Park is also the hub of the borough's South Pennine gateway. The area is bounded by the M62 on the southern edge and the village of Smithy Bridge lies to its west along Lake Bank Road where there are several businesses closely associated with Lake and its use for tourism and leisure. The area is important for biodiversity including Hollingworth Lake SBI, a number of significant woodlands and is partially covered by the South Pennine Moors SPA. The Rochdale Canal includes NCR 66, (Connect 2), and is an SAC for much of its length, which skirts the northern tip of the area. There is an extensive footpath network including the Pennine Bridleway and sections of several other promoted trails but signposting and co-ordination of routes for different users is inconsistent. There are large areas of designated open access land and urban common where people can walk freely.

### Main Issues & Opportunities

- Explore opportunities to embed green infrastructure investment and enhancement in enabling development opportunities focused on areas within the Littleborough Waterside regeneration corridor and the development of the strategic Roch Valley River Park.
- Improve active transport links into the area, particularly from Littleborough town centre, the Calderdale railway line and Metrolink stations to support use of the South Pennine gateway and strategic recreational areas such as Hollingworth Lake, Rochdale Canal, Piethorne Valley and the Roch Valley.
- Ensure that the area's tourism potential is developed sustainably to support green infrastructure investment and management of the natural landscape and public realm.
- Promote and support good biodiversity management to protect the fragile landscape of the area, including improving woodland management and coordinating routes, signposting of destinations and interpretation to reduce erosion.
- Explore opportunities to enhance Hollingworth Lake Country Park and associated links with existing and potential visitor locations in its environs including the development of the Roch Valley River Park proposal.

*(Photos: Lake, Whittaker Wood, Ealees?)*

Figure 5.5 Character Area 4: Hollingworth Lake and Environs



## **Character Area 5: Smallbridge and Firgrove (Figure 5.6, page 28)**

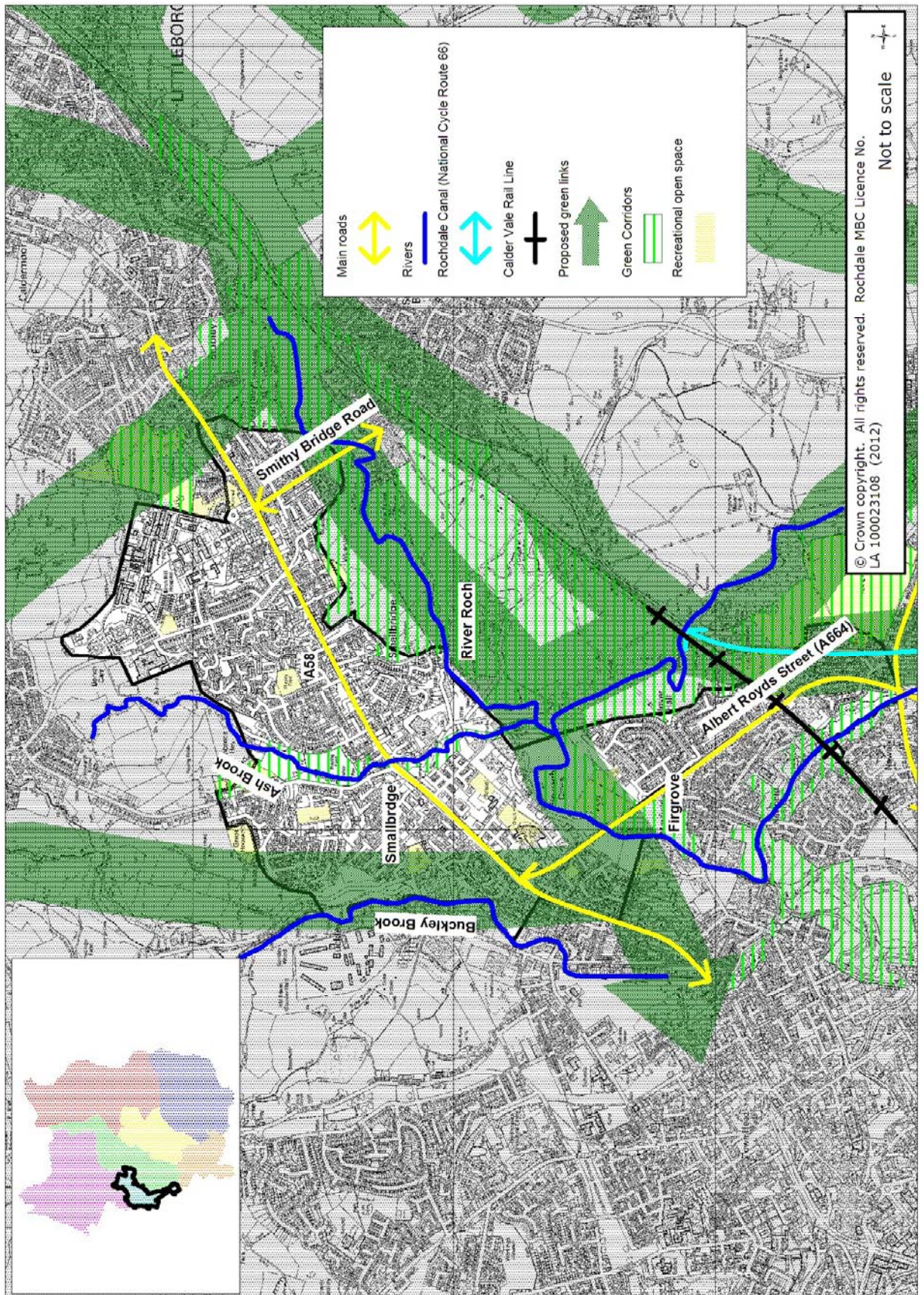
This urban area includes the main residential settlements of Smallbridge and Firgrove, and is dominated by the A58 and the A664, Albert Royds Street, which run through the centre of the character area. There are a number of amenity open spaces with a high proportion of mown 'green desert' often small, with limited green infrastructure functions, particularly on the Smallbridge Estate. The area lacks a formal open space such as a park. The FC's Belfield Community Woodland (Newlands) extends into the area providing opportunities for improved access to the Beal and Roch Valleys. The Rochdale Canal SAC runs across the southern end of the area but the rest of the area has poor biodiversity with few wooded areas or open habitats. Accessibility into the wider countryside and nearby open spaces is currently poor but the valleys of Ash Brook and Buckley Brook could potentially be new access routes to Watergrove Reservoir and the wider South Pennines or to the Roch Valley and the Connect 2 cycle route provides access to and along the Rochdale Canal. Fluvial flood risk is present around the Ash Brook and River Roch corridors.

### **Main Issues & Opportunities**

- Explore opportunities to design a formal open space to provide a focus for community activities.
- Improve the number of functions performed by existing green spaces, particularly maximising opportunities for the management of flood risk, biodiversity and recreation.
- Improve access to the South Pennines at Watergrove Reservoir.
- Create improved linkages between river valley open space networks for recreation including links to the Canal Corridor (Connect 2) and the Roch Valley River Park at Smallbridge and Belfield Community Woodland.
- Identify opportunities to create an extended and better connected biodiversity corridor along the Ash Brook, Buckley Brook and Roch Valleys.
- Improve active transport links between and within the urban area to the countryside, employment and local facilities, particularly via the valleys linking with the wider transport network such as the Rochdale Canal Corridor, NCR 66.

*(Photos: Smallbridge green desert, A58 verges, Clover Hall)*

Figure 5.6 Character Area 5: Smallbridge and Firgrove



## **Character Area 6: Blackstone Edge and Reservoirs (Figure 5.7, page 30)**

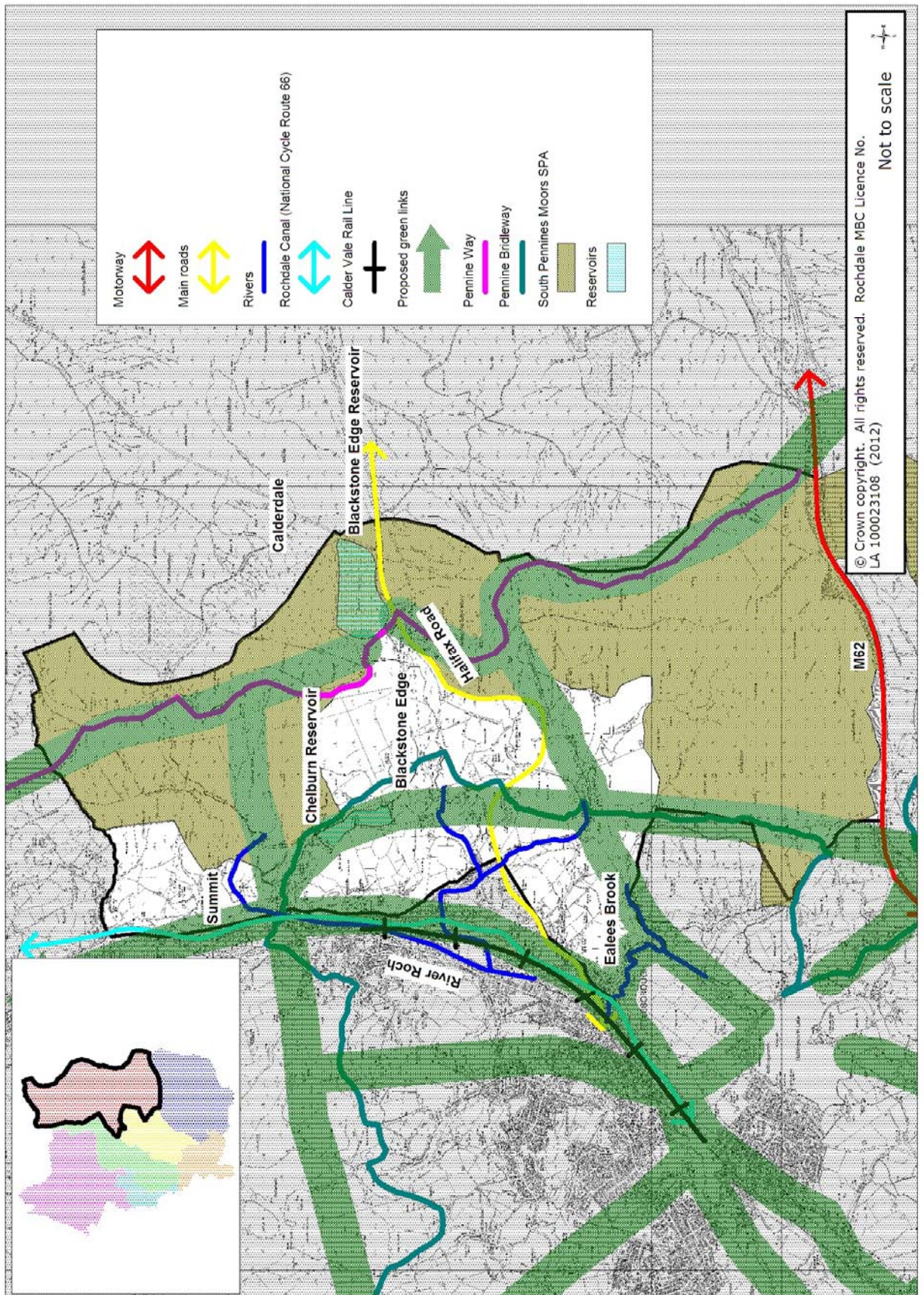
The area is a mix of rural, access land, peat upland and farm enclosures bounded on the southern edge by the M62 and to the north west by Littleborough and Summit, the north and eastern edges border with Calderdale. Chelburn Upper and Blackstone Edge Reservoirs lie to the north. The area forms a part of the South Pennines Watershed Landscape area as defined by Pennine Prospects. A large proportion of the area is within the South Pennines Moors SPA and SAC, which recognise the fragile nature of this landscape and its importance for biodiversity. The area is a popular destination for walkers, mountain bikers and climbers, particularly Blackstone Edge and the White House public house, a key starting point for the upland trails and short walks around the reservoirs and local landmarks and panoramic viewpoints. The area is bisected by the Pennine Way, Pennine Bridleway and South Pennine Reservoir Trail connected by an extensive right of way network and active transport routes with limited signposting. The area also includes extensive designated access land and urban common where people can walk freely.

### **Main Issues & Opportunities**

- Ensuring the fragile natural and cultural heritage of the landscape is protected and green infrastructure opportunities are maximised by partnership working with organisations such as UU and Pennine Prospects.
- Maximise the tourism potential of the area whilst protecting the fragile landscape.
- Ensuring that the biodiversity is protected and continues to carry out important recreation and biodiversity functions such as carbon capture within the peat.
- Improve key access points to routes, signposting of destinations and interpretation of the landscape through initiatives such as the Reservoir Trail project.
- Work in partnership with farmers, land managers, Calderdale MBC and Natural England to encourage better integrated management of land such as via the environmental stewardship scheme to support environmental and economic well-being of the upland landscape and reduce conflict between activities.

*(Photos: Blackstone Edge, Moorland environment, twite?)*

Figure 5.7 Character Area 6: Blackstone Edge and Reservoirs





## **Character Area 7: Watergrove and Environs (Figure 5.8, page 32)**

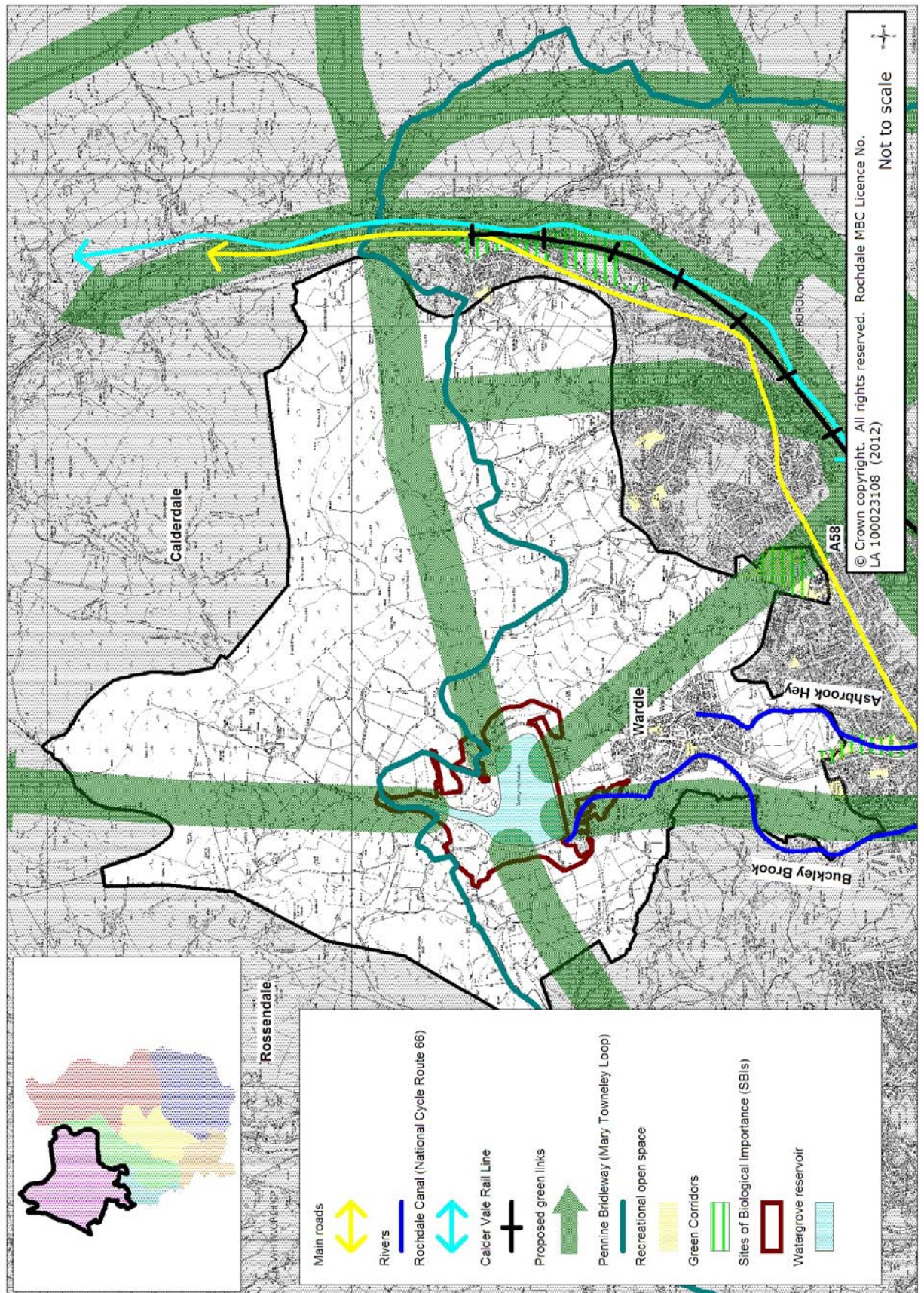
The area is a mix of rural, high moorland and upland farm enclosures bounded to the north by Rossendale BC and Calderdale MBC, and to the south by Wardle village and the urban neighbourhoods of the Roch Valley corridor. The village of Wardle is the main settlement of the area. Watergrove Reservoir, an important gateway to the South Pennines, is managed by UU. The catchment and surrounding moorland areas support a range of existing and emerging land uses within which green infrastructure needs to support sustainable use and management of the landscape including renewable energy at Crook Hill and Reaps Moss, mineral extraction and grazing in addition to water supply and treatment. The Watergrove catchment is UU most visited site in the North West, popular for water sports and outdoor activities it is also an SBI with on site interpretation for biodiversity and birds. The area is important for biodiversity with a number of woodlands following river tributaries to the south including an area of ancient woodland in Gorse Hill wood. The Pennine Bridleway (Mary Towneley Loop) bisects the area and generally it is well connected by the rights of way network, however there is limited access from the neighbouring urban areas to the south. The area includes links to extensive open access land and urban common where people can walk freely.

### **Main Issues and Opportunities**

- Ensuring the fragile landscape is protected and green infrastructure opportunities are maximised by partnership working with organisations such as UU and Pennine Prospects.
- Maximise the tourism potential of the area whilst protecting the fragile landscape. Explore opportunities for co-ordination of rights of way designations so that multi-user routes extend and link with key destinations and routes.
- Ensuring that biodiversity is protected and continues to carry out important functions such as carbon capture within the peat.
- Improve the signposting of destinations, interpretation of the landscape and key gateways from adjoining urban areas through initiatives such as Reservoir Trail, whilst also exploring opportunities to extend this initiative to Watergrove Reservoir.
- Explore the potential of Ashbrook Hey and Buckley Brook valleys as links from Watergrove Reservoir to neighbouring urban areas such as Smallbridge and through to the Roch Valley.
- Encourage improvements in upland land management, such as via the Environmental Stewardship Scheme by working in partnership with farmers, land managers and Natural England.

*(Photos: Watergrove, Wardle)*

Figure 5.8 Character Area 7: Watergrove and Environs



## Chapter 6: Green Infrastructure Objectives for Pennines

We can see from the policy framework outlined in this plan (Page 10) that delivering good green infrastructure in Pennines has to bring many benefits and contribute to positive change for local people and businesses and also for Rochdale Borough and Greater Manchester. What we want green infrastructure in Pennines to do cuts across many traditional areas of activity. The multi-functional nature of green infrastructure enables it to support daily life in Pennines by improving its attractiveness as a place to live, work and invest in and helping to ensure that it is resilient to flooding and the future impacts of climate change.

The priority objectives for green infrastructure, which this Action Plan will deliver seeks to ensure that we have the right green infrastructure in the right place and that it delivers the range of functions that Pennines requires. These objectives aim to ensure that land managers, developers and all relevant delivery partnerships and organisations invest in and deliver high quality green infrastructure so that it achieves its cross cutting public benefits. Well designed and well managed green spaces bring benefits for social cohesion, recreation and well being, increasing usage and discouraging anti-social activity.

### **Our green infrastructure objectives are:**

#### **Growing Pennines**

High quality green infrastructure will support economic growth, health and wellbeing and other township priorities, enabling Pennines to grow in a sustainable way.

#### **Active, Healthy Pennines**

More active lifestyles will help to deliver improvements to the health and wellbeing of the community in Pennines. We need to encourage physical activity in a safe and welcoming environment for all ages and abilities to promote healthy lifestyles. Encouraging local food growing will help to promote better eating habits, increase gardening skills and provide opportunities for community gardening, food sharing and trading projects. Locally grown food also reduces the need for long journeys and the reliance on fossil fuels.

#### **Accessible Pennines**

Encouraging walking and cycling for leisure and as a daily journey to school, work, shops and services will tackle health priorities as well as reducing pollution and greenhouse gas production. Greener streets, accessible urban green routes and better signage to important destinations in the Township and links to the surrounding countryside and other destinations will provide a better and more attractive environment for active travelling. Ideas such as Pennine Edge Forest's (PEF) Natural Signposting Initiative and Red Rose Forest's (RRF) Green Streets project, which use landscape features, trees and other planting as landmarks will enable people to find their way around and follow the greenways network.

#### **Living Pennines**

Improving access to the township's countryside, woodlands and open spaces for education and enjoyment will support learning, natural play and encourage better use and appreciation of urban green space and the countryside. Low diversity 'green deserts' of mown grass will be improved by introducing a more diverse flora and a more varied mowing pattern, which will provide a variety of interest and increase the functions they provide. Improving urban wildlife corridors will add interest and environmental quality to

our neighbourhoods and help to protect and enhance wildlife habitats and species, which are important for local and regional biodiversity. These areas also provide a window on local wildlife to be enjoyed by residents, school children, workers and visitors.

### ***Rochdale Canal and National Cycle Route, 66, Connect2***



### **Resilient Pennines**

Green infrastructure will help to manage and reduce flood risk from the Rivers Roch and Beal and their tributaries and also surface water to benefit communities and businesses within and downstream of the Township. Trees, woodland and other green assets in the Township will help it to adapt to the impacts of climate change and may provide opportunities for sustainable wood fuel or biomass in the future. Green Infrastructure will also help Pennines to meet the requirements of the European Water Framework Directive in ensuring that local watercourses and the water environment supports good water quality, biodiversity, public enjoyment and helps to reduce the impacts of pollution

### **Visit Pennines**

High quality public realm which compliments the surrounding South Pennine Moors will encourage a positive first impression and make a lasting impact on visitors to Pennines. Distinctive gateways and corridors, which enhance views of attractive countryside and the Township's architectural heritage, will project a positive image of the Township. Promoting other reservoirs and enhancing routes to them within the Township will reduce pressure on Hollingworth Lake, although this must be done sensitively to ensure that the quiet character and fragile landscapes of the South Pennines are not damaged. Prioritising routes for different types of use and co-ordinating signage will encourage visitors and the local community to explore the wider countryside and other attractions within the Township will help to reduce the pressure on Hollingworth Lake and diversify the tourism offer. Identifying opportunities to promote Pennines as the gateway to the South Pennine Moors will enable the Township to broaden the already strong visitor package.

### **Distinctive Pennines**

By delivering the above themes, Pennines has the opportunity to make its green infrastructure work harder to create a distinctive and sustainable settlement that will achieve the Township's vision for growth, health, well-being and the quality of life for its residents, workers and visitors. Pennines will become a stronger community with an enhanced sense of place and where the value of its green infrastructure is maximised.

#### ***Summit view from Tunnel End Wood***



## **Our Strategic Projects**

Green Infrastructure will be delivered through a range of actions both large and small over the period of this Action Plan to 2026. The Action Plan has a long term vision that accommodates proposals which will be delivered at a later date as opportunities emerge and also 'quick wins' where there is an opportunity to do something more immediately. The Action Plan is based on a series of long term strategic projects, so they will be delivered incrementally through the life of the Green Infrastructure Action Plan linked to development opportunities, area based regeneration and opportunities for external funding. Smaller scale activities may be centred on how the Council and others who manage public and private green spaces can contribute to Pennines' green infrastructure needs.

All of Pennines' neighbourhoods and villages have a part to play in delivering these projects. The annual work programme which supports the Pennines Green Infrastructure Plan provides an opportunity to check progress, update information about Pennines' environment and issues affecting it and to respond to new opportunities and challenges as they emerge. The four strategic delivery projects along with their key proposals are outlined below.

# 1. Pennines Greenways Network

A high quality access network is vital within the township to enable communities and visitors to access the surrounding South Pennine Moors. This strategic project provides an opportunity to enhance access routes throughout the Township and provide a co-ordinated network both for the community and for visitors.

The countryside surrounding Pennines Township has an extensive and well-used access network in place, particularly around Hollingworth Lake. However coordinating routes for different user groups by developing a signage strategy could reduce pressure on areas immediately around the lake and could promote routes to and around some of the Township's other reservoirs and attractions. This would also widen the Township's tourism offer. It is also important to provide active transport routes between communities, services, schools and recreational facilities. By enabling the urban neighbourhoods to function as green transport hubs connecting with other strategic green routes such as the National Cycle Route 66 and the Pennine Bridleway, which will help to reduce carbon emissions and promote healthy lifestyles.

It will enable the urban neighbourhoods to function as green transport hubs connecting with other strategic green routes such as the National Cycle Route 66 (Connect 2) and the Pennine Bridleway

The Pennines Greenways Network will significantly contribute to Pennines' visitor offer by linking the Township's rich architectural heritage with its attractive natural landscape, contributing to further economic growth and prosperity.

## This project will provide:

- A high quality network of active transport routes connecting the village centres and neighbourhoods with services, recreational facilities, schools and heritage attractions with the surrounding South Pennine Moors, the rest of the borough and beyond.
- Increased opportunities for physical activity by encouraging more active transport methods to improve the health and wellbeing of the community.
- A more diverse visitor offer by providing enhanced routes to other reservoirs and heritage attractions within the borough and co-ordinating distinctive leisure routes aimed at different users, which will help to reduce pressure on Hollingworth Lake.
- Increased opportunities to access facilities on foot or by cycling along traffic free greenways, including promotion of these routes, clear signposting, better management of routes and separation of users where needed and improved gateways to routes and open spaces.
- A framework for new development opportunities to ensure that appropriate green infrastructure and linkages are in place.

## Key proposals for delivering Pennines Greenways Network:

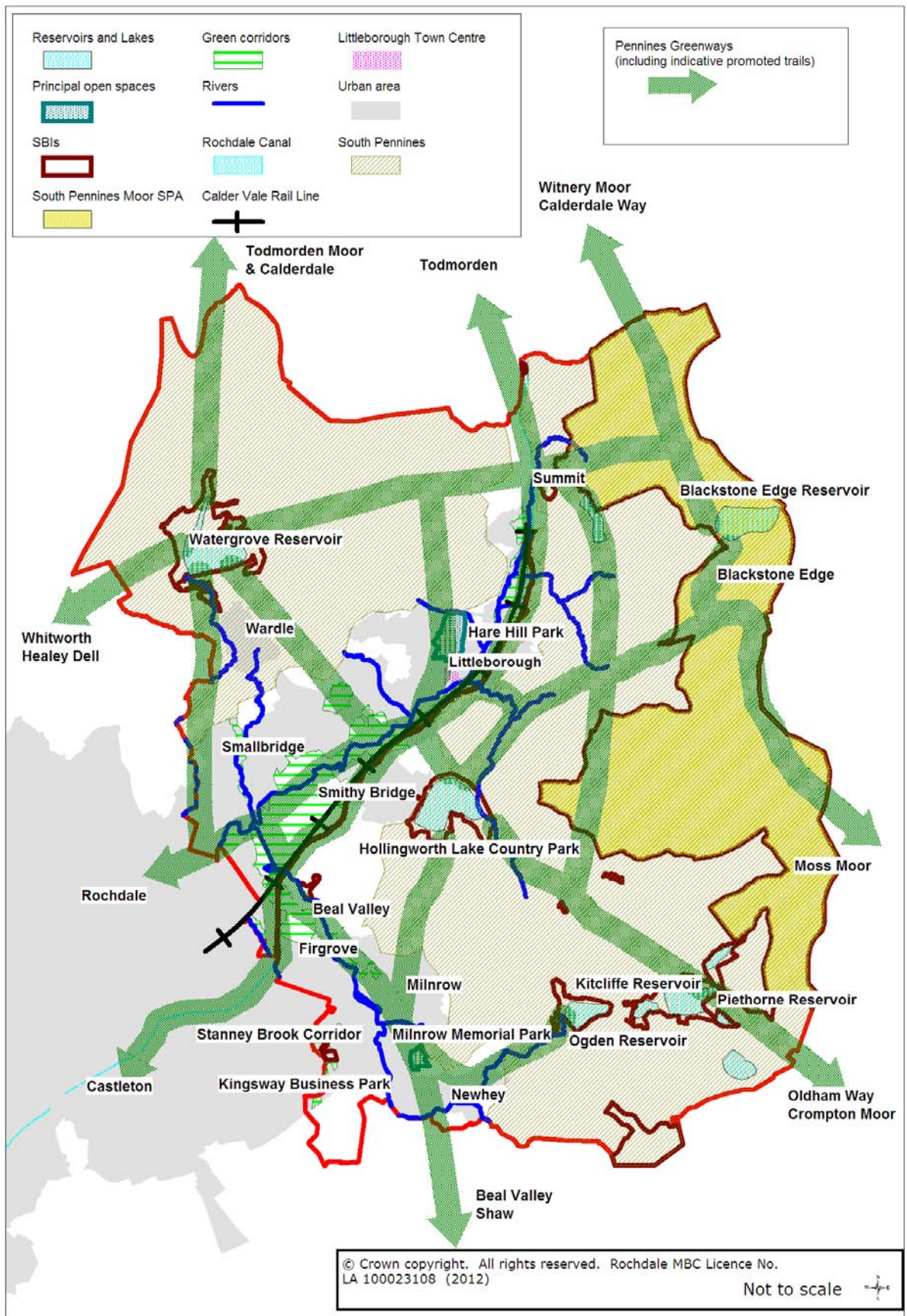
- 1.1 Piethorne Valley:** Maximise the tourism potential of the Valley as a gateway to the South Pennines whilst protecting the fragile landscape.
- 1.2 Heritage and leisure trails:** develop a series of trails including the Reservoir Trails initiative and themed routes to provide clear, attractive routes connecting the South Pennine Moors, reservoirs and outside the Borough including to Todmorden and Saddleworth with co-ordinated signage and interpretation of the South Pennine landscape.
- 1.3 Signposting routes:** increase and improve existing active transport links through and between neighbourhoods and the countryside using good practice established in the PEF Natural Signposting Initiative and RRF Green Streets project.

- 1.4 Gateway to the South Pennines:** Maximise the opportunity of the Metrolink Stations at Newhey and Milnrow for access to Hollingworth Lake, Piethorne and the South Pennine moors and also as a gateway to Rochdale Borough and Greater Manchester including Manchester city centre.
- 1.5 Improve the Greenways Network:** Improve active transport links between and within neighbourhoods and to the countryside, employment and local facilities by utilising the river valleys, Rochdale Canal Corridor, NCR 66 and identifying critical blockages and conflicts within the network and ensuring that rights of way designations are appropriate.
- 1.6 Accessible River Valleys:** utilising the Roch and Beal Valleys and the Rochdale Canal Corridor as a framework for an active transport network. This includes developing the strategic Roch Valley Park and incorporating enabling development opportunities such as Littleborough Waterside proposals.
- 1.7 Routes to Play:** Establish better routes to play, sports and recreation facilities to encourage active play and healthy lifestyles.
- 1.8 Priority commuter routes:** linking the Township's villages and neighbourhoods to the main active transport routes and services such as schools, railway and Metrolink stations and National Cycle Route 66.
- 1.9 Tourist Trails:** Distinctive leisure routes within the main Greenways Network, which are promoted and appropriately signposted to link the Township's other reservoirs and attractions with Railway and Metrolink Stations and Hollingworth Lake.

This Strategic project will use the good practice established in the PEF Natural Signposting initiative and RRF's Green Streets project. Delivering Pennines Greenways Network is a long term project involving a wide range of actions large and small. It will be delivered through contributions through new development opportunities, environmental regeneration programmes, highway management and rights of way improvements carried out by the Council and a number of smaller actions, which may be linked to greenspace management and volunteering activities, with the co-operation and involvement of delivery partners and environmental agencies. An illustration of the Greenways network is shown in figure 6.1, page 39.



Figure 6.1 Pennines' Greenways Network and countryside



## 2. Growing Greener Neighbourhoods in Pennines

This strategic project will improve the range of services, products and functions that are provided by the green infrastructure in the Township so that it is better able to meet the needs of the community. A network of new and existing multi functional green spaces will be managed for a variety of uses. The greener neighbourhood's network will include local food growing, outdoor classroom areas, natural play, quiet relaxation, flood risk management, accessible urban wildlife and biodiversity, employment opportunities and climate change adaptation. Public spaces, private gardens, allotments, parks, cemeteries and employment sites are all part of Pennines' greener neighbourhoods and all have a part to play in increasing functions and benefits to the Township's neighbourhoods and community. New developments and the Roch Valley River Park will enable improved connectivity between and within green networks and principal destinations for local people and visitors.

This network of green spaces will be linked by the Pennines Greenways Project and will form 'stepping stones' to the wider countryside using the principles of the PEF Natural Signposting approach (see above). Each neighbourhood or village will be able to define their distinctive character by such ideas as the different use of green space, verge planting and signature trees. The existing network of green spaces will be enhanced and new spaces created through development and regeneration projects according to the community's priorities.

This strategic project will also investigate ways of developing initiatives that could provide biomass such as wood waste and willow coppice and harvesting wood fuel for the community. Community woodland management schemes and planting sites for biomass could also provide a resource for education and training within the green economy as well as locally grown fuel.

### **This project will provide:**

- A network of high quality, multi-functional green spaces and green infrastructure assets, which help Pennines to create distinctive neighbourhoods, better adapt to the effects of climate change and provide flood risk management.
- Opportunities to develop local food and fuel growing initiatives which will promote healthy eating, gardening skills and reduce carbon emissions as well as developing a resource for education and training within the green economy.
- Increased opportunities for enjoyment of high quality open spaces, physical activity and access to the South Pennine Moors and natural play, which will encourage healthy lifestyles.
- Protection and enhancement of biodiversity as well as creating and protecting wildlife corridors helping to deliver Greater Manchester Biodiversity Action Plan (BAP) (2009) and the emerging Rochdale BAP priorities.
- Improved woodlands both public and privately owned, opportunities for woodland management training and also investigate ways of stimulating the green economy.
- Improve flood risk management by working with the Environment Agency (EA) to explore river corridor management opportunities including flood storage and improved green infrastructure based flood risk management such as sustainable urban drainage systems (SUDS).
- Guidance and evidence to support and inform development opportunities to ensure that appropriate green infrastructure is provided and linked to improved recreation and biodiversity values of such areas.

## Key Proposals for Growing Greener Neighbourhoods:

- 2.1 Enhancing the Natural Environment:** Biodiversity, woodland and landscape features will be protected and enhanced, particularly areas within and surrounding designated sites such as LNRs, SACs and SPAs to ensure that these areas continue to perform important functions such as carbon capture within the peat of the South Pennine Moors.
- 2.2 Connecting wildlife:** Explore new opportunities create an extended and better connected biodiversity corridor along the Ash Brook, Buckley Brook and the Roch and Beal Valleys as well as identifying areas suitable for new woodland planting; also develop initiatives to monitor and manage non-native invasive species.
- 2.3 Flood Risk Management Opportunities:** working with partners including the EA to identify opportunities for improving flood risk management along the river and stream valleys including flood storage and SUDs. Assess all greenspace to maximise their contribution to sustainable urban drainage and surface water flood risk management.
- 2.4 Adaptable Spaces:** Improve the number of functions performed by existing green spaces including cemeteries, particularly maximising opportunities for the management of flood risk, biodiversity and recreation. Explore opportunities to design new formal open space to provide a focus for community activities in neighbourhoods with limited or poor quality open space such as Smallbridge and Firgrove.
- 2.5 New Development Opportunities:** Develop a comprehensive approach to maximising green infrastructure benefits through new development proposals such as Littleborough Waterside masterplan.
- 2.6 Local Food Growing:** Identify opportunities to develop and support initiatives for local food growing and other produce within managed public spaces and facilities, involving the Council, schools, the community and businesses.
- 2.7 Improved tourism offer:** Ensure that the areas tourism potential is developed without compromising its existing green infrastructure and fragile landscapes.
- 2.8 Develop educational opportunities:** maximising the education and training available from green infrastructure improvements and accessing local wildlife. Initiatives such as the Forest Schools Programme and the PEF Schools Arboretum will help deliver this proposal.
- 2.9 Increase greening:** maximise opportunities for tree planting, green walls and roofs and SUDs to help conserve natural resources and help communities adapt to climate change, particularly within more urban areas to address the urban heat island effect.
- 2.10 Distinctive neighbourhoods:** Enhance the locally distinctive character of the neighbourhoods and villages by using signature trees, planting and enhancing local heritage and landscape features.
- 2.11 Woodland Enhancement:** Improving woodland management in partnership with farmers, landowners, Forestry Commission (FC), Forestry Stewardship Council and Natural England to encourage better management of land such as via the environmental stewardship scheme. Identify opportunities for wood fuel and biomass through woodland management and sites for planting short rotation coppice.

### 3. Visit Pennines

The Pennines Township is an important destination for tourists both from Rochdale Borough and from the wider north-west region. With its rich history and industrial heritage, lakes and parks the tourism offer in the Township is diverse, ranging from quiet enjoyment within attractive villages and spaces to the active end of the market of mountain biking, climbing and sailing. Tourism is a significant part of the Pennines Township economy but tends to be concentrated around Littleborough and Hollingworth Lake. The township is also an important gateway to the South Pennine Moors and the emerging Watershed Landscape being actively promoted through Pennine Prospects and partners, a popular destination for walkers, horse riders and mountain bikers.

Enhancing gateways to the township's key attractions such as Hollingworth Lake and the wider South Pennine gateway including Watergrove Reservoir at Wardle, Ellenroad Steam Museum in Newhey, Piethorne Reservoir at Higher Ogden and Blackstone Edge on the Roman Road is a priority within this strategic project and links with proposals within the Pennines Greenways Project (above). The Roch Valley River Park will also develop improved landscapes for recreational use and better connections between key destinations. Routes such as the Beal Valley Way, Reservoir Trail and other promoted routes including the Rochdale Way will also play a key part in linking attractions. By encouraging visitors to explore the wider township the economic benefits to the Township are distributed more widely and pressure is reduced on the main tourism draw of Hollingworth Lake, which can become congested during peak times.

Providing a high quality environment both in terms of the benefits and services the township's green infrastructure provides and in terms of visual attraction is vital for the Pennines' economy to encourage the visitor economy. However, it is important that increasing visitor numbers to other areas within the Township, such as the surrounding moors and woodlands, does not cause damage to the fragile landscapes. By encouraging visitors to arrive by active transport including the Metrolink, NCR66 (Connect 2) and railway, businesses and accommodation providers close to these routes will further benefit from increased business. There will also be an opportunity to promote and develop further markets for local food and drink along with local leisure and recreation products and services. Encouraging active transport to and within the township also reduces pollution, road congestion and promotes healthy lifestyles.

This strategic project provides an opportunity to widen the visitor offer and the resulting economic benefits throughout the township whilst ensuring that the environment and fragile landscapes are protected.

#### **This project will provide:**

- A higher profile of Pennines Township as an accessible gateway to the South Pennines, promoting a strong South Pennines identity and working in conjunction with the Borough Tourism and Visitor Strategy.
- An enhanced tourism offer by enhancing gateways and promoting routes to key attractions throughout the Township, which will widen the economic benefit to more areas within Pennines.
- Reduced pressure on the Hollingworth Lake area by encouraging more sustainable access and increasing the profile of other attractions and enhancing the visitor offer throughout the Township.
- A more sustainable visitor experience, which reduces pressure on the most fragile landscapes.
- Reduced road traffic pollution and congestion by promotion and enhancement of active transport routes and alternative ways of arriving into and exploring the Township, in conjunction with the Pennines Greenways Network Project.

- A more coherent system for interpreting and signposting the landscape and active transport routes, along with the development of an appropriate access management regime, which will help to protect more fragile environments by reducing path erosion and the development of shortcuts.

#### Key Proposals for Visit Pennines:

- 3.1 **Maximise the tourism potential:** work with partners such as Pennine Prospects and United Utilities (UU) to promote the area as a gateway to South Pennines whilst protecting and managing the fragile landscape.
- 3.2 **New tourism development opportunities:** ensuring that appropriate green infrastructure is provided through new development proposals.
- 3.3 **Promoting existing tourism assets:** Reduce the pressure on Hollingworth Lake by improved access management and routes and diversifying and enhancing the wider countryside offer including promoting other reservoirs and access routes such as the Rochdale Canal and the Beal Valley Way. Promote the Roch Valley River Park as a leisure destination.
- 3.4 **Reservoirs Trail:** establishment of a trail with support from Pennine Prospects and the Heritage Lottery Fund to promote the upland reservoir network and landscape as a tourism asset.
- 3.5 **Township Gateways project:** Environmental improvements to key gateways into Pennines to improve perceptions for visitors entering the Township such as recreational access hubs, railway stations and main road corridors.
- 3.6 **Promote active transport for visiting and exploring:** Working with partners such as Metrolink, Northern Rail and Sustrans to promote exploring the Township by active transport.
- 3.7 **Moorland routes:** Progress a series of appropriate clear marked routes through the moors to protect the fragile landscape from erosion by users. Routes such as the Pennine Bridleway (Mary Towneley Loop) could be enhanced by appropriate signage and other natural signposting methods to reduce footpath erosion from shortcuts and alternative path formation. Working with Pennine Prospects partners to promote integrated upland management with all land managers.
- 3.8 **Protecting landscapes:** Working with partners and landowners to develop initiatives to promote sustainable visitor attractions and experiences, which reduce pressure on the landscapes for example a centre for 'adrenaline' type sports which focus activities away from the most fragile areas.

## 4. Roch Valley River Park

This strategic project provides an opportunity to create a major landscape destination for recreation and tourism, stretching from the South Pennine Moors in Pennines through Rochdale Borough along the Roch Valley to Bury and beyond to the Irwell River Park in Salford. The River Park will provide a high quality landscape close to and accessible from local communities and a major destination for visitors to the borough's countryside. The River Park will also enable improved connections between all of Pennines Township and the wider borough's core natural and built heritage destinations acting as a 'green spine' joining the uplands of the South Pennines with the Regional core of Greater Manchester. There will also be significant improvements to the green infrastructure services and functions, which are provided by the Roch Valley, particularly in terms of flood risk management, biodiversity networks and links and climate change adaptation for Pennines. The Roch Valley is important in helping to protect, support and deliver substantial ongoing and future economic development, neighbourhood regeneration and housing growth in Pennines and the rest of Rochdale Borough and provides additional flood risk management and other environmental functions for Bury and Salford as a part of the City Region's strategic Green Infrastructure. This strategic project will closely link to the development of the Roch Valley River Park in other township Green Infrastructure Action Plans and the borough wide green infrastructure strategy.

The River Roch rises on Chelburn Moor, north of Summit and its route passes and links town centres, regeneration areas, tourist and cultural facilities as it flows through the Township, the rest of Rochdale borough including Rochdale town centre and beyond where it meets the River Irwell. The Roch Valley is one of the key river valleys forming a part of Greater Manchester's strategic flood risk management and its biodiversity network. It is important to ensure that investment along the valley is targeted and co-ordinated as effectively as possible. This will include ensuring that the investment programmes of the EA and UU as well as development proposals such as in the Littleborough Waterside corridor are informed by, help to deliver Pennines' Green Infrastructure Plan and its priorities. An illustration of the Roch Valley River Park is shown in figure 6.2, page 46.

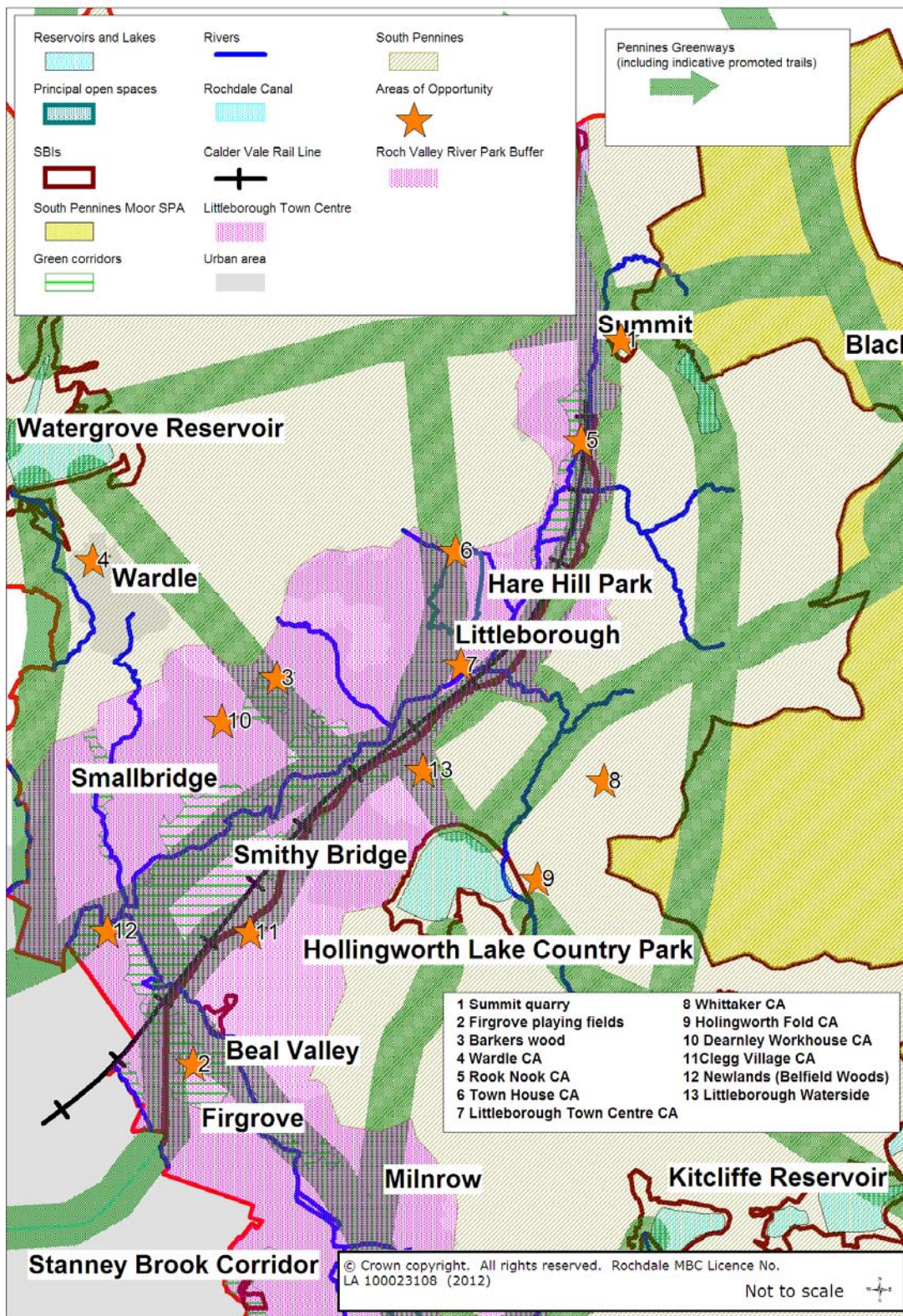
### **This project will provide:**

- A strategic green link route connecting neighbourhoods and communities within Pennines and the wider borough to high quality accessible countryside, including to the South Pennine Moors as well as links to other strategic green routes such as NCR66 (Connect 2) and destinations within and beyond the borough.
- A framework for improvements to green infrastructure as part of any development proposals to ensure that actions to support and deliver climate change adaptation, flood risk management, access and biodiversity are embedded in design and proposals as they come forward.
- Enhance the tourism offer and infrastructure attracting more visitors to the Pennines whilst managing the landscape and its use in a sustainable way.
- Improve flood risk management by working with the EA to explore river corridor management opportunities through SUDS and water storage.
- Improved planning and monitoring of biodiversity to ensure better networks and habitats for wildlife by developing a Roch Valley Biodiversity Action Plan and utilising the Rochdale Biodiversity Opportunities map.

## Key Proposals for Roch Valley River Park :

- 4.1 **Roch-Irwell Corridor:** Working with neighbouring townships and boroughs to deliver a strategic Roch-Irwell valley corridor providing significant landscape transformation and enhancement, particularly in areas of greatest need through initiatives and opportunities such as Nature Improvement Areas and Water Framework Directive programmes of the EA.
- 4.2 **New development opportunities:** ensuring that appropriate green infrastructure is provided through new proposals such as Littleborough Waterside.
- 4.3 **Roch Valley trail:** support to delivery of the trail and key linkages via Connect2, Reservoir Trails, the Beal Valley Way and the Pennine Edge Forest Trail creating and promoting links with local services, facilities and attractions within and beyond the borough.
- 4.4 **Flood risk management opportunities:** working with partners including the EA to identify opportunities for improving flood risk management in Littleborough Critical Drainage Area and the Roch Valley including flood storage and sustainable urban drainage. Assess all greenspace within and adjacent to the River Roch and its tributaries to maximise their contribution to managing fluvial and surface water flood risk.
- 4.5 **Roch Valley Biodiversity Plan:** Deliver an action plan for priority habitat improvements to increase and strengthen habitat corridors and networks in partnership with local communities and organisations such as the Greater Manchester Ecology Unit in line with the Rochdale Biodiversity Action Plan and the Rochdale Biodiversity Opportunities Map.
- 4.6 **Improving Valley Woodlands:** Identify opportunities for improved woodland management and planting with the FC and other partners such as Groundwork Trust, BTCV and the Woodland Trust through the Pennine Edge Forest.

Figure 6.2 Roch Valley River Park Project



(Amend map to show Piethorne Reservoir rather than Kitcliffe)



## Chapter 7: Key Partnerships for Delivery

Delivering the plan is not the responsibility of one single organisation or individual. For example over the life of the plan actions will be delivered by:

- Individuals in how they manage their private space, how they chose to be involved in improving and using their local environment;
- Developers and land managers by how they design and manage land and buildings based on green infrastructure need and opportunity;
- Local businesses and service providers also have a delivery role in how they promote and use Pennines' environment as an asset for health, well being and sustainable economic growth;
- Community organisations and the voluntary sector also have an important role in delivery of the plan.

Funding streams are likely to change frequently through the life of the action plan in terms of their scope, criteria and availability. Funding opportunities relating to specific actions will be included in the annual work programme, which can be more easily kept up to date.

Pennines Township will have a key role in ensuring appropriate political and community support for projects to be delivered so that funding opportunities can be pursued with confidence and opportunities for delivery are maintained and strengthened. This Green Infrastructure Action Plan will help to deliver key priorities in the Pennines Township Plan and its delivery structures for example those relating to health and well being, physical regeneration and quality of place.

In addition to the central role of Pennines Township, there are a number of established delivery partnerships and bodies which will be central to ensuring that funding opportunities for green infrastructure projects are maximised and that key projects are developed and delivered effectively and with maximum value for Pennines and, as appropriate, Rochdale borough and Greater Manchester. These include:

- Pennine Prospects
- Moored Development Trust
- Pennine Edge Forest
- Community Forests North West
- Voluntary sector organisations including Groundwork Trust, BTCV and Woodland Trust

It is important to ensure that Pennines' green infrastructure priorities gain strong support from key agencies and organisations who have a Greater Manchester or regional remit for supporting or investing in green infrastructure which, supports sustainable low carbon growth, urban renewal, environmental regeneration, nature conservation, health services, environmental services such as climate change adaptation, surface water or flood risk management. These currently include:

- Forestry Commission
- Natural England
- Environment Agency
- United Utilities
- British Waterways
- Sustrans

- Association of Greater Manchester Authorities
- Neighbouring districts

At a local scale it is important that green infrastructure is central to and embedded in the delivery of sustainable growth, regeneration and quality of life as set out in the Pennines Township Plan, Rochdale Borough Renaissance Masterplan, Pride of Place, Local Flood Risk Management Strategy and the Local Development Framework in order that funding and delivery opportunities can be maximised.

The borough Green Infrastructure Strategy (to be completed in 2012) will provide a framework for each of the four Township Green Infrastructure Action Plans and how they individually and collectively deliver green infrastructure priorities for Rochdale borough and the Manchester City Region. The voluntary sector, such as Groundwork Oldham & Rochdale, British Trust for Conservation Volunteers (BTCV) and community groups such as Friends of Parks have an important role to play in ensuring that local communities are given opportunities to help shape and improve their environment. The voluntary sector can also access unique funding opportunities and has particular expertise in working with volunteers and young people who are a major resource for delivering green infrastructure actions.

## **Making Progress**

The Pennines Green Infrastructure Action Plan will be delivered through a series of large and small actions through the life of the strategy to 2026. The accompanying annual work programme sets out details of actions that are proposed, who will deliver them and by when. It will also include details of outputs, outcomes and key milestones against which progress and performance can be measured and corrective action taken where needed. New evidence and information relevant to the Township's Green Infrastructure and issues affecting it will be used to review and inform projects and priorities where necessary.

'Quick win' projects will often result from small changes to how green space is managed or by identifying projects to be delivered within the next one to three years, which can be linked to a specific development, regeneration project or funding source. Medium term projects which will be delivered within timescales between three to five years will be developed in detail and their status or progress reviewed on an annual basis.

Projects which are proposed for more than five years into the future are currently aspirational but all are linked to potential enabling development, regeneration or opportunities which, although currently without a firm timescale, are likely to come forward through the life of the Action Plan. It is important to ensure these proposals are part of the long term vision and planning process so that they can be moved forward more quickly should circumstances allow. Ongoing consultation will also be carried out for key projects as they move forward to ensure they meet the needs of the community and provide opportunities to get involved in planning, delivering and managing projects wherever possible.

Progress in delivering the action plan will be reviewed annually with Pennines Township through the annually updated work programme and presented to key Township working groups dealing with physical change, health and the environment.

## Appendix: Policy Context

### **Pennines Township Plan (2012-15)**

Pennines Township Plan 2012-2015 tackles priorities based on the issues raised by local residents in each of the four Township wards; and consultation with residents; community groups and partner organisations.

- To support the creation of local jobs by developing tourism opportunities/business development;
- Improving our services for children and young people;
- To enhance the quality of life and community safety for local people by seeking improvements to the environment and
- Improving leisure and recreation opportunities and promoting healthy lifestyles.

### **Pride of Place: The Community Strategy for Rochdale Borough (2011-15)**

Pride of Place (PoP) brings together and drives the delivery of the social, economic and environmental priorities for the borough to create:

“a thriving place where people want to live, work, visit and do business – a place in which we can all take pride”

The PoP priorities include a cleaner, greener environment and a focus on well being, health and community safety for which a high quality and accessible environment is essential. There are objectives for good green infrastructure for recreation, tourism, biodiversity, managing flood risk, encouraging sustainable travel such as cycling and walking and climate change adaptation.

The borough’s Local Strategic Partnership (LSP) is led by the council and includes eleven of the major agencies and service deliverers in the borough who will oversee the implementation of the strategy. The LSP will be supported by a performance board, which will ensure we stay on track to achieve our objectives.

### **Prosperity for All: The Greater Manchester Strategy (2009)**

The Greater Manchester Strategy sets out the vision for the Manchester City Region to achieve sustainable economic growth for all ten Greater Manchester districts. It aims to secure the place of Manchester City Region as one of Europe’s premier city regions with a good quality of life, a thriving low carbon economy and a strong commitment to sustainable development. At the heart of this vision and the supporting objectives for its delivery is a commitment to achieving a greater sense of place with a strong and positive image. This focuses on improvements to the public realm, particularly through green infrastructure enhancements to create a high quality environment including better flood risk management and adaptation to climate change impacts.

### **Rochdale Local Development Framework** *(Text to be finalised)*

### **Rochdale Borough Renaissance Masterplan (2005)**

The Masterplan sets out a vision for the borough with the key priorities and projects that will help to deliver physical, economic and quality of life changes to transform the borough. The vision is that:

“Rochdale borough will offer an attractive location in a successful city region with a distinctive lifestyle and identity”

The role of the borough’s natural environmental assets is highlighted in helping to create a borough that can grow sustainably and create a strong sense of place. The borough will be physically attractive, distinctive and healthy with good accessible countryside, high quality public spaces and parks in and around our neighbourhoods and town centres, effective flood risk management and which is well placed to address the impacts of climate change.

### **Rochdale Borough Transport Strategy (2009)**

The Rochdale Borough Transport Strategy is a framework to guide the development of transport improvements across the borough for the period up to 2026. The strategy strongly supports increased provision of green transport networks and prioritises the travel needs of people with mobility impairments, pedestrians and cyclists and supports the borough’s environment, sustainability and health agendas.

### **Strategic Flood Risk Assessment for Rochdale Borough (2009)**

*(Text to be finalised)*

### **Greater Manchester Surface Water Management Plan (due to be published 2012)**

*(Text to be finalised)*

### **Towards a Green Infrastructure Framework for Greater Manchester (2010)?**

The Association of Greater Manchester Authorities (AGMA) has carried out work to identify a framework to support housing and economic growth taking on board the need to manage flood risk, create accessible recreational landscapes, adapt to climate change and conserve biodiversity. The Roch and Irwell river valleys are a significant part of this, helping to provide essential green infrastructure functions both locally and for the city region. This work will inform the Greater Manchester Spatial Framework, which is currently being produced by the AGMA to provide a land use planning basis for sustainable growth and regeneration of the city region.

## Glossary

**Active transport:** Modes of transport such as walking and cycling, which are based on physical activity rather than driving a car. Public transport is also described as active transport because it often involves walking or cycling to or between pickup points.

**Adaptation to climate change impacts:** Practical steps to protect towns and communities from the likely disruption and damage that will result from effects of climate change.

**Biodiversity:** The variety of all plant and animal life and the wider the range of animals, plants, fungi and micro-organisms in any given area, the higher the biodiversity. High biodiversity enables a population to be healthier and more resilient.

**Biomass:** Plant and animal waste materials used as a renewable fuel.

**Climate change:** Changes in long term weather patterns primarily associated with increases in carbon dioxide in the atmosphere.

**Connect2:** A project run by the sustainable transport charity Sustrans funded by the Big Lottery, which will connect isolated walking and cycling routes into the national network.

**Critical Drainage Area:** An area which has a significant degree of surface water flood risk.

**De-culverting water courses:** To open up rivers and streams that have previously been covered to flow underground through large pipes.

**Environmental services:** Benefits that society can gain from the wider environment (green infrastructure) such as protection from flood risk, land values and air quality.

**Flood Zones:** Areas zoned according to the probability of fluvial flood events occurring.  
Zone 1- Low probability, less than 1 in 1000 year fluvial flood event.  
Zone 2- Medium probability, between 1 in 100 year and 1 in 1000 year event  
Zone 3a- High probability, 1 in 100 year or greater.  
Zone 3b- Functional floodplain, land where water has to flow or be stored in times of flood.

**Low carbon economy:** An economy that produces a minimal amount of carbon dioxide into the atmosphere.

**Infrastructure:** Network of communications and utility services such as roads, drains, electricity, water, gas and telecommunication, required to enable the development of land.

**Local Development Framework:** A portfolio of local development documents which will provide the framework for delivering the spatial planning strategy for Rochdale up to 2026.

**Local Strategic Partnership:** A single, non-statutory, multi-agency body, which brings together different parts of the public, private, community and voluntary sectors within the local authority boundary.

**Manchester City Region:** A statutory partnership between the local authorities of Greater Manchester to support strategic planning, economic growth, environmental improvement and protection and investment in infrastructure and transport.

**National Cycle Network:** A comprehensive network of safe cycling routes running throughout the UK.

**Non-native invasive species:** Species that have been brought from their natural range into a new area where they outgrow and out-compete species natural to the new area.

**Pennine Edge Forest:** The woodland and environmental initiative for the east of Greater Manchester conurbation and includes the boroughs of Oldham, Rochdale, Stockport and Tameside.

**Public realm:** Outside space, that is accessible to the public such as streets, pavements, parks and squares.

**Quick wins:** Initiatives and projects that can be funded and implemented quickly, usually within one year.

**Red Rose Forest:** Community forest covering the Metropolitan Boroughs of Bolton, Bury, Trafford and Wigan and the Cities of Manchester and Salford.

**SBI, Sites of Biological Importance:** A non-statutory designation for a site. It is used to protect locally important and valued sites of high wildlife value.

**SAC, Special Areas of Conservation:** These are areas which have been given special protection under the European Union's Habitats Directive, classified for habitat types and species (excluding birds) most in need of conservation.

**SPA, Special Areas of Protection:** Strictly protected sites classified under the European Union's Habitats Directive for rare and vulnerable birds and regularly occurring migratory species.

**SSSI, Site of Special Scientific Interest:** A designation of legal protection for sites of particular wildlife or geological importance in England.

**Sustainable development:** Development that ensures that the use of resources and the environment today does not restrict their use by future generations.

**Urban green route:** An accessible walking or cycling route through an urban area, which may be fringed with trees and other vegetation.

**Urban heat island:** The increased temperature of urban environment compared to the surrounding rural area. This is largely due to increased hard surfaces, which absorb and trap heat and a reduced number of trees and green areas that cool air effectively.

**Wood Fuel:** Timber, woodchip or waste wood, which is used for burning as fuel.

**Voluntary sector:** Organisations, other than local authorities that carry out activities not for profit.

## Abbreviations

*(Text to be finalised)*

BAP	Biodiversity Action Plan
BTCV	British Trust for Conservation Volunteers
CABE	Commission for the Built Environment
EA	Environment Agency
FC	Forestry Commission
GMEU	Greater Manchester Ecology Unit
LNR	Local Nature Reserve
NCR	National Cycle Route
PEF	Pennine Edge Forest
RRF	Red Rose Forest
SAC	Special Area of Conservation
SBI	Site of Biological Interest
SFRA	Strategic Flood Risk Assessment
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage System
SWMP	Surface Water Management Plan
UU	United Utilities
WFD	Water Framework Directive

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