



# Pendle Green Infrastructure Strategy

Prepared by LUC  
July 2019



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July 2019

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# Part 1: Introduction and Context

# 1 Introduction

- 1.1 Green infrastructure (GI) is increasingly recognised as a cornerstone of sustainable development and communities. It is a 'must have', due to the many economic, social and environmental benefits it offers. It is essential to the quality of life of residents and business, contributing towards creating places where people want to live and work. Working on behalf of Pendle Borough Council and in consultation with key stakeholders, LUC was commissioned to prepare a GI strategy. This strategy complements the Open Space Audit Review prepared by Pendle Council in 2018.
- 1.2 The strategy identifies opportunities across the Borough to protect and enhance GI, helping guide the investment and delivery of GI and its associated benefits. This strategy also supports and informs the Local Plan Part 2, which will allocate sites for housing and employment uses, designate sites for environmental protection and contain policies to guide and manage development up to 2030.

## Guide to this Strategy

- 1.3 This strategy is structured as follows:
- **Part 1** includes the aims and objectives of the study, the Pendle Borough context and relevant planning policy. Fully integrating the strategy into the wider policy context is crucial if GI investment is to be successfully secured from public funds and leveraged in from the private sector.
  - **Part 2** presents the existing resource; existing initiatives; and key issues, priorities and opportunities for each of the following themes relating to GI in Pendle Borough:
    - Landscape and sense of place.
    - Cultural heritage.
    - Biodiversity and ecological networks.
    - Active travel, access and recreation.
    - Water resources.
    - Health and well-being.
  - **Part 3** summarises the key opportunities identified by the strategy and provides recommendations of how GI should be embedded within the Local Plan Part 2 and other strategies.

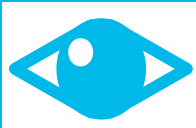
## Pendle's Vision for Green Infrastructure

- 1.4 GI can mean many things to many people and there are various definitions and approaches to GI that have been adopted throughout the country. To understand the nature and scope of GI in Pendle, an important first stage in the project was to clarify the role of GI and establish a vision of what it will deliver in the future. The following Vision for GI was developed by the GI Stakeholder Group<sup>1</sup>.

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<sup>1</sup> The Stakeholder Group was made up of representatives from a range of organisations including the Council, neighbouring authorities, statutory consultees, national and local interest groups and utility companies etc.





## Pendle's Vision for Green Infrastructure

Green Infrastructure in Pendle will:

***"Be a network of multi-functional green spaces, watercourses and connections across the Borough. These spaces will be protected and enhanced for the benefit of the community and natural environment. Provision of green infrastructure will help to deliver a broad range of ecosystem services, help to adapt to climate change and ensure that new development is sustainable."***<sup>2</sup>

- 1.5 This vision is supported by the aims and objectives of this strategy.

### Aims and objectives for this strategy

- 1.6 The main aim of the strategy is to:

**Support the protection, enhancement and provision of blue and green infrastructure in Pendle by highlighting locations which are most in need of investment, and to justify the need for investment.**

---

<sup>2</sup> Pendle Green Infrastructure Scoping Report (2017).

1.7 Leading on from this, the wider objectives of the strategy include:

- Creating attractive environments for people to live and work.
- Creating, maintaining and improving wildlife habitats and giving people access to nature.
- Promoting more active lifestyles thereby improving people's health and well-being.
- Providing a network of multi-functional spaces which allow for the movement of people and wildlife, including the establishment of an ecological network.
- Preserving landscape character.
- Providing places for outdoor recreation and play.
- Helping to mitigate the effects of climate change, making the area more resilient.

1.8 The Strategy seeks to achieve these aims and objectives by:

- Facilitating a co-ordinated and consistent approach to GI within the Borough.
- Supporting the Council and guiding external partners in the effective delivery of GI within Pendle.
- Promoting the contribution of GI within the Local Plan Part 2.
- Inspiring GI initiatives through the identification of opportunities for GI planning and delivery.
- Demonstrating that GI adds hugely to Pendle through the delivery of multiple benefits.

## What is green infrastructure?

1.9 National Planning Practice Guidance<sup>3</sup> defines GI as:

*"A network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities. Green infrastructure is not simply an alternative description for conventional open space. As a network it includes parks, open spaces, playing fields, woodlands, but also street trees, allotments and private gardens. It can also include streams, canals and other water bodies and features such as green roofs and walls."*

<sup>3</sup> DCLG 2016 Planning Practice Guidance for the Natural Environment – Green Infrastructure. Available at: <http://planningguidance.communities.gov.uk/blog/guidance/natural-environment/green-infrastructure/>



## Types of Green Infrastructure in Pendle

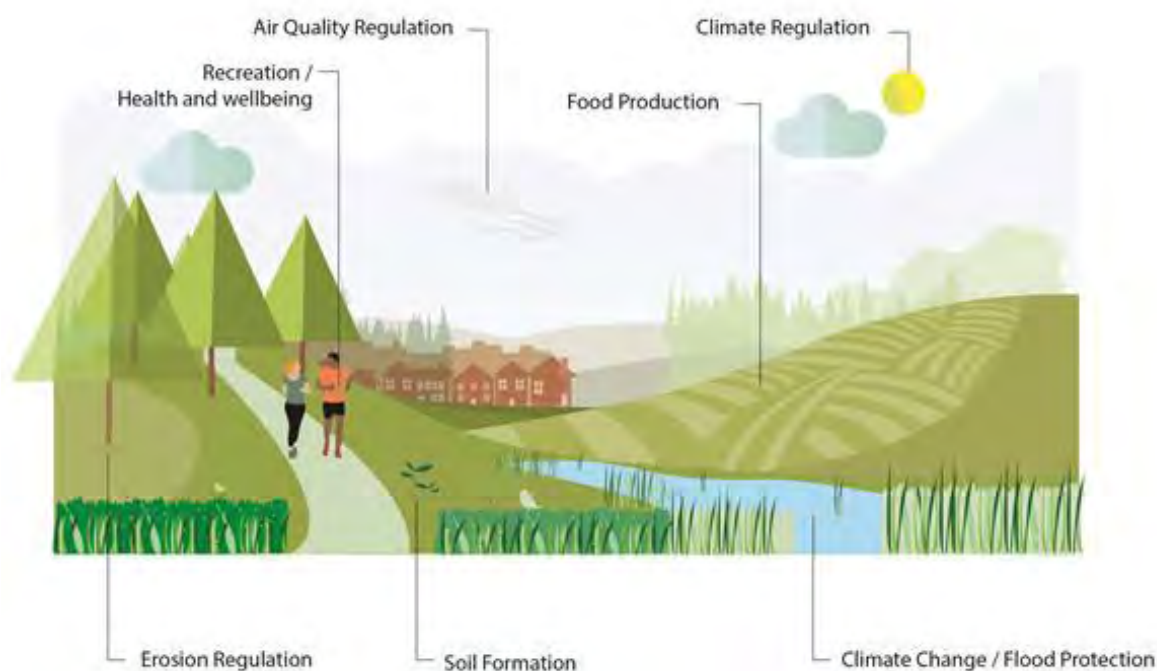
Types of green infrastructure present within Pendle include:

- Parks and gardens – urban parks, pocket parks, country parks and formal gardens.
- Amenity space – play areas, communal gardens, playing fields and civic spaces.
- Natural and semi-natural green space – woodland, moorland, wetlands, water bodies, nature reserves and other wildlife habitats.
- Green and blue corridors – rivers, roadside verges, canals, footpaths and cycleways.
- Other – churchyards, allotments, agricultural land.

### Why is Green Infrastructure important for Pendle?

- 1.10 GI is multifunctional as it delivers a range of benefits to people (both physical and mental well-being), biodiversity and landscape. GI can help to create high quality, attractive and functional places that will provide a setting for day- to-day living, enhance the character and diversity of the landscape and protect heritage assets that contribute to the area's unique sense of place and cultural identity. It can enrich the area's wildlife value by addressing the negative impact of habitat loss and fragmentation by promoting habitat enhancement and linkage. It can also play an important role in reducing local temperatures, climate change adaptation and mitigation, and alleviating flood risk and soil erosion. As well as offering environmental benefits, green infrastructure affords economic and social benefits through:
- supporting healthy lifestyles;
  - reducing healthcare costs by improving physical and mental well-being;
  - connecting people to places by linking residents and visitors to leisure and work destinations along a network of safe and clearly defined routes;
  - increasing the attractiveness of a local area; and,
  - promoting tourism and recreation.
- 1.11 The benefits of GI can be felt at a local, regional and national scale and some of the benefits identified above are shown in **Figure 1.1** below.

**Figure 1.1: Multifunctional benefits of Green Infrastructure**

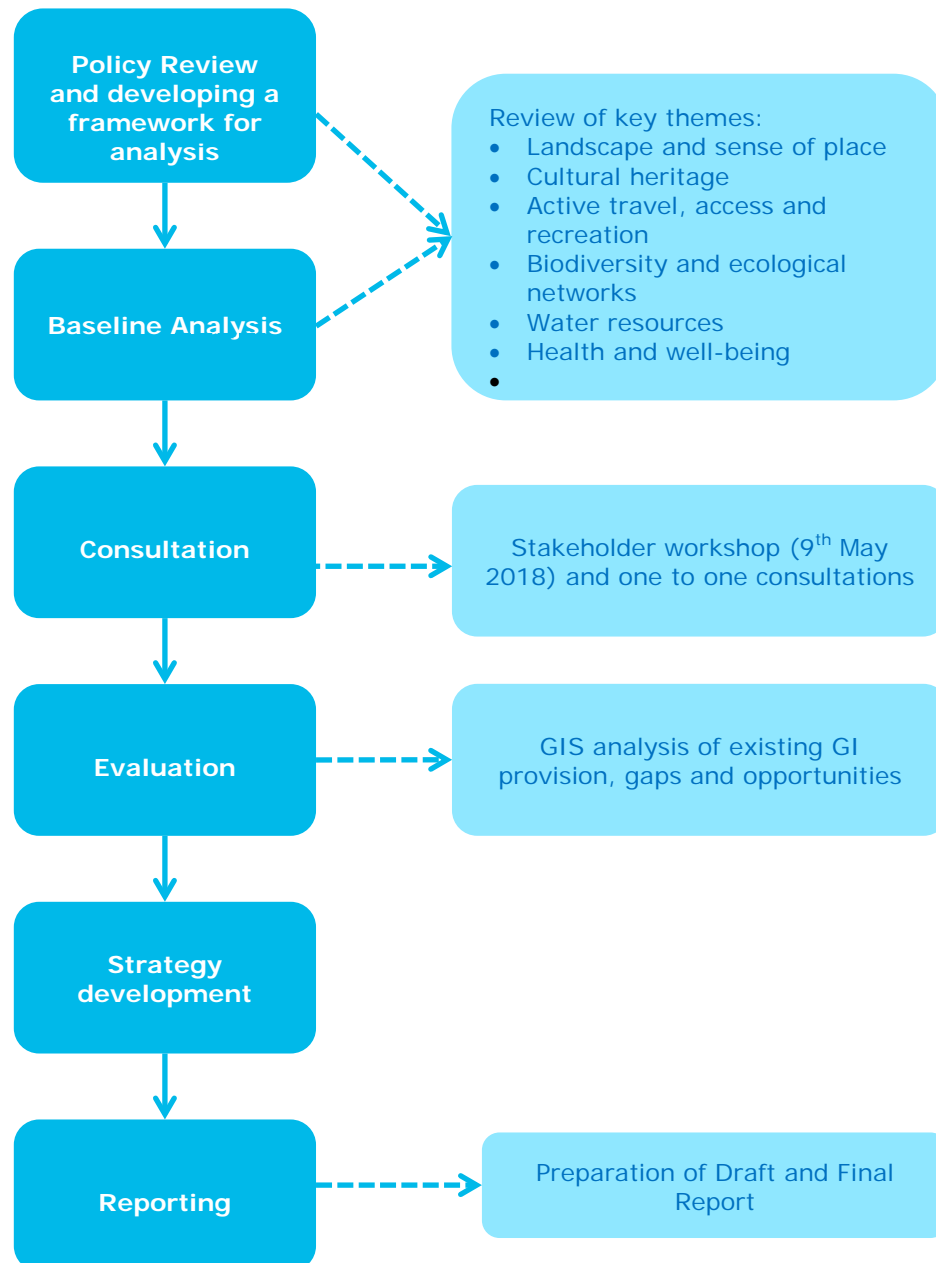


## How was the strategy prepared?

### Project Scope

- 1.12 In 2017, the Council prepared a Scoping Report which outlined the parameters for the preparation of a GI Strategy. As outlined above, in consultation with stakeholders, the Council set out the vision, aims and objectives for the strategy. This was followed by the preparation of a Methodology Report which provided guidance on the data and background information that would be collected and used in drafting the strategy. This document also included the methodology for undertaking the Open Space Audit (which was carried out separately by the Council).
- 1.13 The methodology used to prepare the Strategy is illustrated in [Figure 1.2](#) and briefly described in the following section.

Figure 1.2: Study Approach



#### Policy review and developing a framework for analysis

- 1.14 This GI Study is part of an ongoing commitment to GI development and delivery across the Borough that seeks to take a proactive approach to environmental planning. National, regional and local planning policies, as well as local evidence base and guidance documents, were reviewed to provide context for the GI Strategy and the implications for its preparation.
- 1.15 Existing GI initiatives within the Borough and neighbouring authorities were identified through desk-based research and consultation. This review informed all elements of the strategy, including the identification of six key themes for analysis (see **Part 2**), the needs assessment, opportunity identification, consultation and policy recommendations.



## Baseline analysis

- 1.16 In order to understand the current landcover/landuse in Pendle, Ordnance Survey Mastermap data was analysed and categorised into GI typologies. Information from the updated Open Space Audit was used to augment this. This understanding of the current extent of various GI typologies was used to assess where existing GI is able to perform a range of functions and deliver a range of associated benefits. The Green Infrastructure typologies in Pendle can be found in [Table 2.1](#).
- 1.17 Mapped data relating to each of the GI themes was used to provide a greater understanding of Pendle's existing GI assets. These have been presented in each of the relevant themes in **Part 2** of this report. In addition to examining the Borough's assets, a wide range of data was collated and mapped to support a detailed needs assessment. This baseline analysis was then used to identify potential GI opportunities and the areas of greatest need across the Borough (see below).

## Consultation

- 1.18 Consultation and engagement with key stakeholders and duty to cooperate partners was carried out through a combination of correspondence, a stakeholder workshop (held on the 9<sup>th</sup> May 2018) and telephone interviews with those unable to attend the workshop. A summary of the consultation findings is provided in **Appendix 2**. This consultation aimed to:
  - Undertake a sense check and provide feedback on the initial baseline findings.
  - Identify and map key issues (including gaps in provision) and any opportunities related to GI in main settlements, including green corridors.
  - Identify options for the delivery, management and maintenance of potential opportunities.

## Evaluation

- 1.19 The baseline analysis and consultation results were evaluated through GI functions and benefits review and opportunity and deficit assessment, to identify strategic GI opportunities across the Borough.
- 1.20 All of the above elements of work fed into preparation of this strategy.

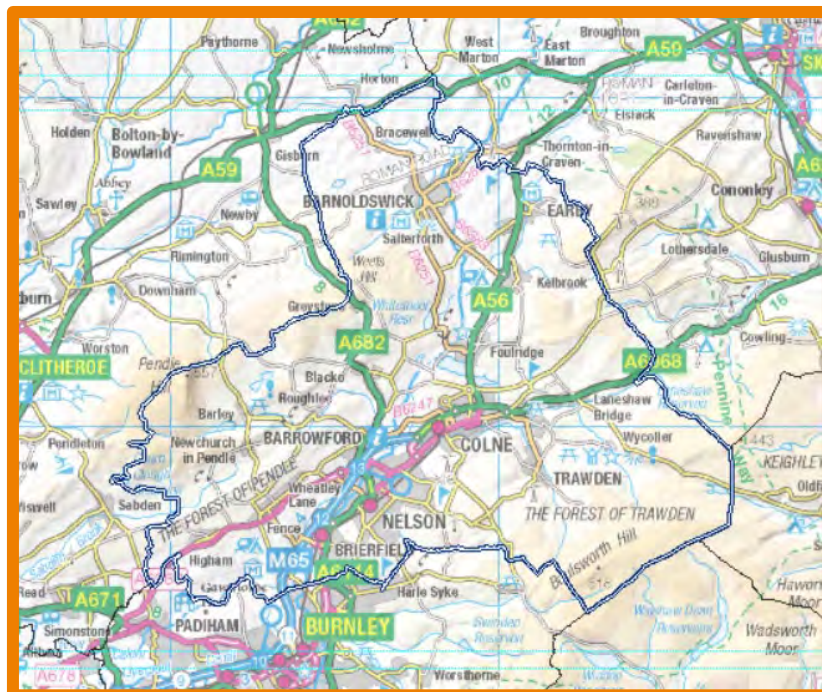
## 2 Context

### Introduction

- 2.1 This chapter provides the baseline context for Pendle, including the current and projected population, social and economic context of the Borough, and current provision of green infrastructure. The chapter also outlines the key national and local policies with regard to green infrastructure. This local context and policy review has informed the scope and content of this strategy.

### The Pendle Context

- 2.2 There are three defined spatial areas within the Borough:
- **The M65 Corridor** comprises of four settlements: Nelson, Colne, Brierfield and Barrowford;
  - The **West Craven Towns** of Barnoldswick and Earby; and
  - **Rural Pendle** encompasses 16 villages and hamlets, 13 of which have a defined settlement boundary.
- 2.3 As set out in the Adopted Local Plan Part 1 Core Strategy (2015), future development will be mainly focused along the M65 Corridor, however some development will be delivered in the West Craven Towns as part of the desire to diversity the Borough's economic base. Limited growth will occur in the defined settlements within Rural Pendle as the emphasis in this spatial area is to protect and enhance its environmental and cultural assets.



## Current and projected population

- 2.4 In 2017, the population of Pendle was approximately 90,700 and was almost evenly split between females (50.6%) and males (49.4%)<sup>4</sup>. Based on the observed levels of births, deaths and migration over the past five years, the Borough's population is set to rise to 91,000 in 2021 and sustain this level until 2024<sup>5</sup>. Using the same projection scenario, Pendle's population is forecast to start declining in the year 2025, and in 2041 the Borough's projected population is anticipated to be around 89,400.
- 2.5 During this same projection period, the number of households is set to rise from 38,159 in 2018 to 39,691 in 2041, representing an increase of 4.1%, which is below the English average of 15.6%<sup>6</sup>. The Borough's Housing Strategy for 2018 – 2023 states that 298 dwellings per annum are required over the lifetime of the Pendle Local Plan Part 1: Core Strategy up to 2030 (5,662 dwellings in total)<sup>7</sup>.
- 2.6 Around two-thirds of the Borough's population is concentrated in four adjoining settlements located in the south of Pendle along the M65 corridor; Nelson (the largest town in the Borough), Colne, Brierfield and Barrowford<sup>7</sup>. Barnoldswick and Earby are the largest towns in West Craven. A further 17,000 people live within the Borough's rural villages and hamlets.
- 2.7 In 2011 the Census revealed that Pendle had a population density of 5.3 persons per hectares, which is higher than both the Lancashire figure of 4.0 persons per hectare and the England and Wales average of 3.7 persons per hectare<sup>8</sup>. This density varies across the Borough, with the highest densities in the M65 corridor. The average density in the Borough's urban areas is 19.3 persons per hectare, which is far greater when compared to the average rural density of 1 person per hectare<sup>9</sup>.
- 2.8 In 2011, the mean age of the Pendle population was 38.9 years, which is a slightly younger average population than the Lancashire average of 40.5 years and England and Wales as a whole, where the average is 39.4 years. Census data also shows that 16.0% of the resident population in Pendle was of retirement age (65 and over) compared with 18.0% in Lancashire and 16.4% in England and Wales<sup>10</sup>. The Borough's population at retirement age is expected to increase to 22,600 by 2039, representing an increase of 43%<sup>11</sup>.

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<sup>4</sup> ONS (2018) Nomis Labour Market Profile – Pendle. Available at: <https://www.nomisweb.co.uk/reports/lmp/la/1946157096/report.aspx>.

<sup>5</sup> ONS (2017) Population estimates for UK, England and Wales, Scotland and Northern Ireland: mid-2017. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2017/previous/v1>.

<sup>6</sup> ONS (2018) Household projections for England. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/householdprojectionsforengland>.

<sup>7</sup> Pendle Borough Council (no date) Housing Strategy for Pendle 2018-2023. Available at: [https://www.pendle.gov.uk/download/meetings/id/22294/item\\_12\\_appendix\\_1](https://www.pendle.gov.uk/download/meetings/id/22294/item_12_appendix_1).

<sup>8</sup> ONS (2011) Table KS101UK Usual Resident Population, local authorities in the United Kingdom. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/2011censuskeystatisticsandquickstatisticsforlocalauthoritiesintheunitedkingdompart1>.

<sup>9</sup> ONS (2018) Nomis QS102EW - Population density. Available at: [https://www.nomisweb.co.uk/census/2011/QS102EW/view/1946157096?rows=cell&cols=rural\\_urban](https://www.nomisweb.co.uk/census/2011/QS102EW/view/1946157096?rows=cell&cols=rural_urban).

<sup>10</sup> ONS (2011) Table KS102UK Age Structure, local authorities in the United Kingdom. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/2011censuskeystatisticsandquickstatisticsforlocalauthoritiesintheunitedkingdompart1>.

<sup>11</sup> ONS (2016) Home People, population and community Population and migration Population projections Subnational Population Projections for Local Authorities in England: Table 2 (2014 based). Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections>.

## Social context

- 2.9 The English Indices of Deprivation 2015 is a measure of multiple deprivation in small areas or neighbourhoods, called Lower-layer Super Output Areas (LSOA). Seven domains of deprivation are measured: Income Deprivation; Employment Deprivation; Health Deprivation and Disability; Education, Skills and Training Deprivation; Crime; Barriers to Housing and Services; and Living Environment Deprivation. Each domain contains a number of indicators. The seven domains are combined to give a multiple deprivation score<sup>12</sup>. There are 57 LSOAs in Pendle and 32,844 LSOAs nationally<sup>13</sup>.
- 2.10 The most recent available data ranks Pendle as one of the more deprived areas in England, 62<sup>nd</sup> out of the 326 local authority areas (where 1 is most deprived and 326 is least deprived)<sup>14</sup>. However, there is disparity between the different parts of the Borough, with some LSOAs in the Borough falling within the 10% most deprived areas in England and some within the 20% least deprived areas<sup>13</sup>. The Borough has a higher proportion of children (under 16) living in poverty (22.5%) compared to that of England (20.1%)<sup>15</sup>.
- 2.11 The health of the population in Pendle is generally worse than the English average. The main health priorities for Pendle include encouraging healthy lifestyles, improving mental health and well-being, and improving health outcomes for children and young people (including reducing infant deaths). The latest statistics show that the percentage of physically active adults in the Borough is 48.2%, which is lower than the English average of 57.0%<sup>15</sup>.
- 2.12 Pendle has a slightly higher proportion of obese children (20.2%) compared to the rest of England (19.8%), and a large percentage of overweight adults (69.0% in Pendle compared to 64.8% in England). The rate of early deaths from heart disease and stroke is 96.7 per 100,000 persons, significantly higher than the national average of 74.6 per 100,000 persons. The rate of early deaths from cancer is 154.0 per 100,000 persons, lower than the national average of 138.8 per 100,000 persons<sup>15</sup>.
- 2.13 Life expectancy for both men and women in Pendle at 77.8 years for males and 81.5 years for females and are slightly lower than the comparable figures for England, which are 79.5 years for males and 83.1 years for females. However, there is significant disparity in life expectancy within the Borough, being 10.9 years lower for men and 7.2 years lower for women in the most deprived areas of Pendle compared to the least deprived areas<sup>15</sup>.

## Economic context

- 2.14 The most recent statistics show that between October 2016 and September 2017, 76.7% of Pendle's residents aged 16-64 were economically active; this is slightly above the North West average of 76.3%, but below the national average of 78.1%. Of this, 4.6% were unemployed, which is slightly below the North West average of 4.7%, but above the national average of 4.5%. The main employment sector in Pendle during that period was manufacturing (29.0%)<sup>4</sup>.
- 2.15 The number of people claiming Jobseeker's Allowance as a percentage of the working age resident population was 2.2% in Pendle as of February 2018, which is lower than the regional average (2.7%), but slightly higher than the national average (2.1%)<sup>4</sup>.
- 2.16 In 2017, the average gross weekly pay for residents of ages 16 and above in full time work in Pendle was £488.60. This figure is lower than both the regional average of £514.50 per week and the national average of £552.70 per week<sup>4</sup>.
- 2.17 Of the 2,850 enterprises within Pendle in 2017, 87.9% were considered as 'micro' size (0-9 employees), 9.6% were considered to be 'small' (10-49 employees), 1.9% were considered to be 'medium' (50-249 employees) and 0.4% were considered to be 'large' (250+ employees)<sup>4</sup>.

<sup>12</sup> DCLG (2015) English Indices of Deprivation 2015. Available at: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>.

<sup>13</sup> DCLG (2015) English Indices of Deprivation 2015 – File 1: index of multiple deprivation. Available at: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>.

<sup>14</sup> DCLG (2015) English Indices of Deprivation 2015 – File 10: local authority Borough summaries. Available at: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>.

<sup>15</sup> Public Health England (2017) Pendle Borough Health Profile 2017 (E07000122). Available at: <http://fingertipsreports.phe.org.uk/health-profiles/2017/e07000122.pdf>.

## Types of Green Infrastructure within Pendle

- 2.18 In order to gain a better understanding of the existing types of GI found in Pendle, each land parcel from Ordnance Survey Mastermap was categorised into one of the typologies set out in **Table 2.1**. This approach to mapping GI typologies aligns this study with work undertaken in other Boroughs in the North West, including neighbouring Burnley.
- 2.19 The current extent of GI in Pendle Borough is shown in **Figure 2.1**. The analysis extended up to 1km from the Borough boundary as there are clear linkages between the GI within Pendle and the neighbouring authorities. GI does not stop at local authority boundaries.
- 2.20 **Table 2.1** describes the different types of GI found within Pendle and the percentage of the total area of the Borough they make up.

**Table 2.1 Green Infrastructure typologies found in Pendle**

GI typology	Description	% of total area of Pendle Borough
<b>Agricultural land</b>	Land managed for agriculture, including grazing lands, crop production fields and hedgerows.	55.1%
<b>Allotment, community garden or urban farm</b>	Includes sites that provide opportunities for those who wish to grow their own produce as part of the promotion of sustainability, health and social inclusion.	0.2%
<b>Cemetery, churchyard or burial ground</b>	Sites which provide for quiet contemplation and the burial of the dead. These areas also provide links to wildlife conservation and biodiversity.	0.1%
<b>Civic spaces</b>	Includes sites that provide a setting for civic buildings, public demonstrations and community events.	<0.1%
<b>General amenity space</b>	Includes sites that provide opportunities for informal activities close to home or work or enhancement of the appearance of residential or other areas (visual amenity).	2.3%
<b>Grassland, heathland, moorland or scrubland</b>	Grassland that has not been agriculturally improved. Includes downlands, commons and meadows. Also includes heathland vegetation.  These are upland habitats which consist mostly of acid grasslands, marshy grasslands, and blanket bog.	20.6%
<b>Green corridor</b>	Includes sites that are used for walking, cycling or horse riding, whether for leisure purposes or travel, and opportunities for wildlife migration.	0.1%
<b>Orchard</b>	Areas identified as orchards in OS Mastermap data.	<0.1%
<b>Outdoor sports facility</b>	Includes sites that are used for the participation in outdoor sports, such as pitch sports, tennis, bowls, and athletics.	1.3%
<b>Park and garden</b>	This includes urban and country parks - accessible, high quality opportunities for informal recreation and community events.	0.2%
<b>Play areas</b>	Areas designated for play and social interaction involving children and young people. Includes equipped play areas, multi-use games areas (MUGA), skateboard areas and teenage shelters.	<0.1%

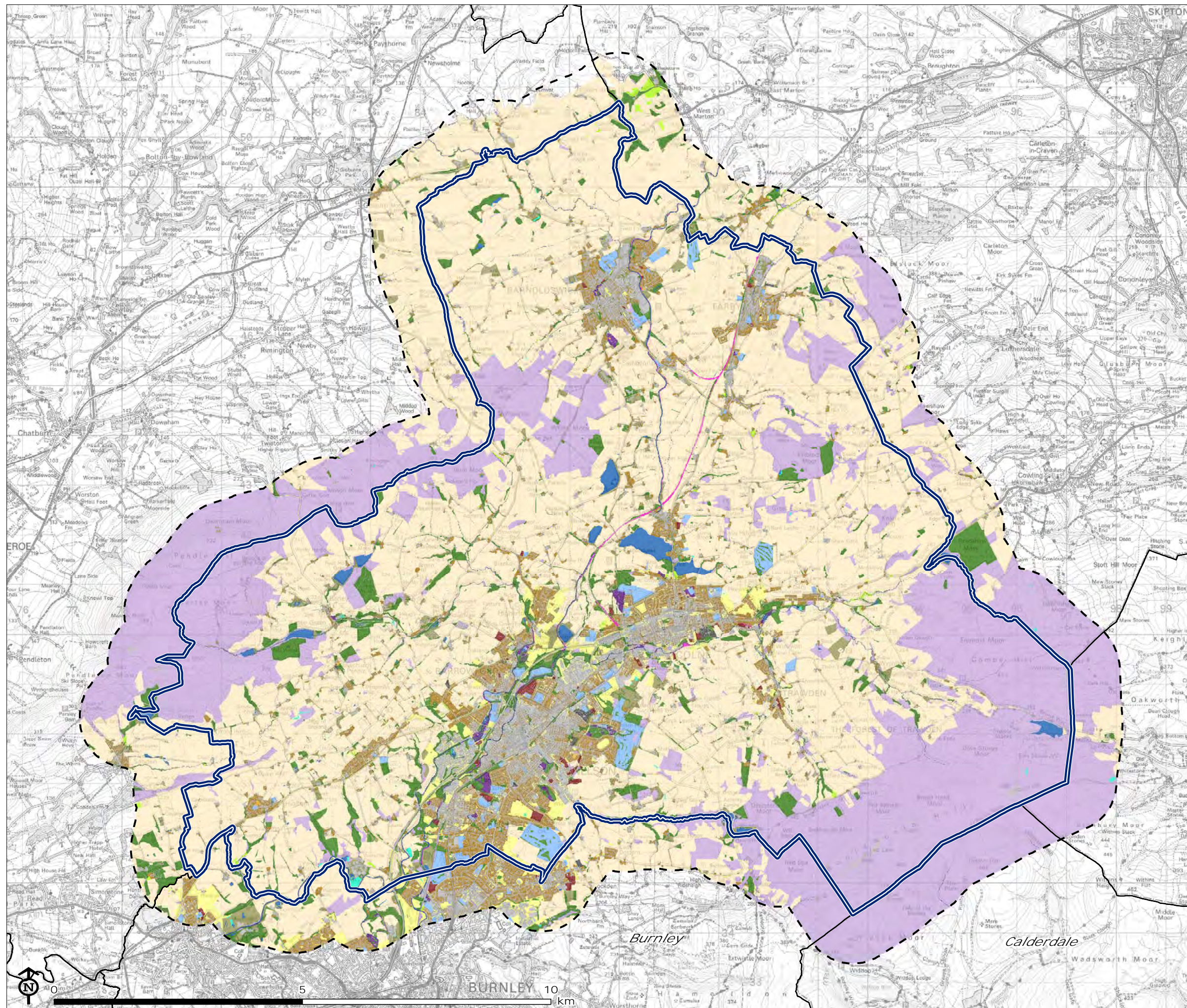


GI typology	Description	% of total area of Pendle Borough
<b>Private domestic garden</b>	Privately owned green space within the curtilage of individual dwellings, which is generally not publicly accessible. These plots of private land vary in size but often make up a significant part of the green fabric of urban areas. Land may include trees, shrubs, grass and flowering plants.	4.1%
<b>Scattered trees</b>	In the absence of street tree data, only scattered trees could be identified from OS Mastermap.	0.1%
<b>Waterbody</b>	Reservoirs and larger waterbodies.	0.9%
<b>Watercourse</b>	Canals, rivers, drains and springs.	0.5%
<b>Wetland</b>	Areas identified as marsh in OS Mastermap.	0.1%
<b>Woodland</b>	Deciduous, coniferous and mixed woodland.	4.2%
<b>Unassigned: assume GI</b>	Not possible to classify based on Ordnance Survey attribution.	2.3%
<b>Not GI</b>	Manmade surfaces including roads, railways, buildings, rocky areas etc.	7.9%

- 2.21 The typology assessment shows that a little over half of Pendle is agricultural land. Grassland, heathland, moorland or scrubland is the next largest typology with 20.6% coverage. Woodland and private gardens have a similar coverage with each representing around 4% of the GI typologies.
- 2.22 Garden sizes vary considerably across the Borough, with some only a couple of square metres in size, which may reflect the large proportion (56%)<sup>16</sup> of terraced properties in the Borough, particularly within the dense built up areas. However, overall, gardens cover a little over 690ha in total. This is a considerable resource and even if only 10% of these gardens are 'greened', that would represent a significant contribution to the Borough's GI, especially in urban settlements.
- 2.23 Almost 8% of the Borough is not classed as GI, therefore suggesting that Pendle has a high coverage of GI.

<sup>16</sup> Nathaniel Lichfield and Partners (2013) Burnley and Pendle Councils Housing Needs Study and SHMA. Available at: [https://www.pendle.gov.uk/info/20072/planning\\_policies/277/evidence\\_base\\_documents/4](https://www.pendle.gov.uk/info/20072/planning_policies/277/evidence_base_documents/4).





## Pendle Green Infrastructure Strategy

Figure 2.1: GI typology assessment



Map Scale @A3: 1:75,000





## National, Regional and Local Policy Context

- 2.24 GI will be delivered through the planning and development process, in addition to the actions of the wider Council functions, Parish Councils, local land owners, communities and businesses. It is therefore necessary to have a clear understand of the policy context for GI within Pendle.
- 2.25 This section outlines the key national and local policies that have influenced the approach to this study. Further detail regarding these policies and their relevance and implications for the strategy is provided in **Appendix 1**.

### National policy

#### 25 Year Environment Plan

- 2.26 The very first action of the 25 Year Environment Plan is to embed an 'environmental net gain' principle for development:
- "We want to establish strategic, flexible and locally tailored approaches that recognise the relationship between the quality of the environment and development. That will enable us to achieve measurable improvements for the environment – 'environmental net gains' – while ensuring economic growth and reducing costs, complexity and delays for developers"*
- 2.27 It goes on to state that the Government wants:
- "to expand the net gain approaches used for biodiversity to include wider natural capital benefits, such as flood protection, recreation and improved water and air quality. They will enable local planning authorities to target environmental enhancements that are needed most in their areas and give flexibility to developers in providing them."*
- 2.28 The 25 Year Environment Plan sets a high bar, with the planning system clearly seen as a key mechanism for delivering upon its ambitions. The plan also sets out the Government's support for habitat creation, multi-functional SuDS requirements, and natural spaces close to where people live and work.
- 2.29 Natural England is currently leading delivery of a commitment in the 25 Year Environment Plan to draw up a national framework of green infrastructure standards. This work is ongoing at the time of undertaking this study.

#### National Planning Policy Framework

- 2.30 Published in in 2018, the revised NPPF<sup>17</sup> guides on the plan making process and decisions on development proposals that are decided by local planning authorities, and is expected to:
- improve housing delivery;
  - strengthen the plan-led system by focusing on strategic policies; and
  - encourage viability assessments at the plan-making stage.
- 2.31 The revised NPPF outlines the relevance of GI to the development of a Local Plan:
- Paragraph 20 highlights that: *'Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for...conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure.'*
  - Paragraph 91 requires that planning policies and decisions should aim to achieve healthy, inclusive and safe places; referencing safe and accessible green infrastructure, sports facilities and high quality public space as a means to achieving this.
  - Paragraph 150 states that: *'New development should be planned for in ways that avoid increased vulnerability to the range of impacts arising from climate change...including through the planning of green infrastructure.'*

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<sup>17</sup> Ministry of Housing, Communities and Local Government (2018) National Planning Policy Framework

- Paragraph 171 states that '*Plans should...take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure.*'
- Paragraph 181 links the requirement for the identification of green infrastructure provision and enhancement at the plan making stage to the improvement of air quality or mitigation of impacts relating to this issue.

2.32 The NPPF also provides a mechanism by which local authorities can protect some open spaces under a 'Local Green Space' designation (paras. 99 and 100).

#### *Planning Practice Guidance*

2.33 The national Planning Practice Guidance (PPG) provides further detail on the definition of GI and explains how it contributes to sustainable development. It also encourages a strategic approach to implementing GI into Local Plans through an evidence based approach.

2.34 Drawing on the multifunctional advantages of GI, the PPG also shows how GI can contribute to achieving the aims of wider planning policies and the importance of identifying them at the earliest opportunity when planning a GI initiative. Paragraph 032, explains that GI should be considered at an early stage in planning proposals and its funding should be secured through planning obligations, or the Community Infrastructure Levy (CIL).

### **Regional**

#### *North West Green Infrastructure Guide*

2.35 The guide was produced in 2008 by the North West Green Infrastructure Think Tank and highlights the importance of green infrastructure in planning for objectives relating to, using, or drawing upon the natural environment, including urban renaissance, rural renewal, social inclusion and community cohesion, health and well-being, and sustainable development.

2.36 The guide outlines how green infrastructure planning produces a comprehensive, interactive and highly flexible evidence base for a range of purposes, and defines five basic steps to green infrastructure planning.

#### *Lancashire Green Infrastructure Strategy*

2.37 The Lancashire Green Infrastructure Strategy was published in 2009 by the Lancashire Economic Partnership and argues that through planning GI and managing the physical environment, a more sustainable economy can be achieved.

2.38 The high level document sets out a vision, 11 GI interventions and suggests a number of objective outputs that can be used to measure the success of GI delivery.

### **Local**

#### *Adopted Local Plan Part 1: Core Strategy*

2.39 Pendle Local Plan Part 1: Core Strategy was adopted in December 2015. The Core Strategy sets out the strategic planning policies the Council will use to help guide development to the most sustainable places over the 15 year period between 2015 and 2030.

2.40 The Core Strategy identifies the importance of GI provision as part of its Strategy for growth and outlines its many benefits and functions; however it notes that existing GI provision in the urban areas of the Borough is limited. The Core Strategy observes that the planning system should orchestrate the provision of new infrastructure, identifying GI, alongside new development, which should be funded by developers. Specifically, Strategic Objectives 9 and 10 both support access to green areas that are to be used for recreation and protects the natural and historic environment, which respectively reflect some of the wider objectives of this GI Strategy.

- 2.41 Core Strategy Policy ENV1 'Protecting and Enhancing Our Natural and Historic Environments' requires that existing open spaces are protected from development and, in circumstances where a development proposal would result in the loss of open space or sports and recreational buildings and land, the applicant must comply with the criteria and requirements of paragraph 74 of the NPPF (2012) and a financial contribution may be acceptable where a specific replacement site has been identified and the contribution provides the full cost of implementing the works required. This policy also states that the Council will work with local communities to identify and designate Local Green Spaces, where appropriate, in the Pendle Local Plan Part 2: Site Allocations and Development Policies.
- 2.42 Core Strategy Policy LIV5 'Designing Better Places to Live' requires that provision for open space and/or GI should be made in all new housing developments. It also requires open space/GI to be concentrated in areas of identified deficiency in the West Craven Towns and in the M65 corridor, particularly in Nelson and parts of Brierfield. In rural Pendle it states that linkages should be made to the surrounding countryside. Further details on the policies within the Core Strategy relating to GI are set out in **Appendix 1**. Policy WRK6 'Designing Better Places to Work' also requires open space provision within new development in a Business Park context. Policies SUP2 'Health and Well-being' and SUP4 'Education and Training' promote the provision and enhancement of open space and encourage an increase of natural surfaces, trees, shrubs and planting within development proposals.
- 2.43 Following on from the adoption of the Pendle Local Plan Part 1: Core Strategy, the Council intends to publish the Local Plan Part 2: Site Allocations and Development Policies (LP2). The Council has already begun working on drafting the policies and assessing over 300 sites that have been put forward for allocation for the Preferred Options version of LP2. The emerging LP2 will complement the Core Strategy and allocate sites for housing and employment uses, designate sites for environmental protection and contain policies to guide and manage development up to 2030.

#### *Biodiversity Audit*

- 2.44 Pendle Biodiversity Audit was published in 2010 and aims to support the preparation of spatial planning policies for the Local Plan. The Audit identifies the international and national statutory biodiversity designated sites in Pendle: the South Pennine Moors Special Protection Area (SPA), the South Pennine Moors Special Area of Conservation (SAC) and the South Pennine Moors Site of Special Scientific Interest (SSSI). There are also four Local Nature Reserves (LNRs).
- 2.45 The UK Government's recommendation of 1 hectare (ha) of LNR coverage per 1,000 of the population is referred to in the Biodiversity Audit. This however is recognised as an 'aspirational target' as the declaration of an LNR is bound by legislation that can result in significant financial implications for the Council. The Biodiversity Audit therefore caveats the target by stating it needs to be flexible to ensure that other land use requirements are met within the Borough. At the time of the publication of the Biodiversity Audit, LNR coverage in Pendle was 15.3ha, whereas meeting the Government's requirement would require 90ha of LNR land within the Borough. This GI strategy acknowledges the valuable contribution these sites make to the biodiversity function of the GI network, as well as other designated and non-designated sites.

#### *Strategic Flood Risk Assessment*

- 2.46 The Pendle Strategic Flood Risk Assessment (SEFRA), produced in 2006, provides the history of flooding in the Borough which can help inform decision making now and in the future. This document is currently being updated and although the current iteration refers to outdated planning legislation, there are direct links to GI. For example Chapter 7 of the SEFRA sets out flood risk mitigation measures that include the provision of Sustainable Drainage Systems in new developments and reducing agricultural and upland runoff through the provision of buffers and hedgerow improvements. Both of these mitigation measures support the provision of green corridors and multifunctional space, which are both GI components.



### *Parks Strategy*

- 2.47 The Borough of Pendle's Park Strategy 2007-2017 was published in 2007 and is now out of date, however some of its findings have helped inform this GI Strategy. The Park Strategy outlines that there are 11 parks across the Borough comprising of:
- Three District Parks – Parks that offer a range of facilities and uses that attract people from across the Borough.
  - Seven Local Parks – Formal and informal recreational space that is able to host community events. These Local Parks attract people from the surrounding neighbourhood.
  - One Small Local Park and Garden – Small parks or green spaces for the immediate local community.
- 2.48 Combined, these areas represent 69.41ha, which translates to 0.78ha of park space per one thousand residents. These figures show there is very little parkland space in Pendle and the document states that there are limited opportunities for expanding existing parks and creating new parks. However, the document does acknowledge there are opportunities to reclaim land on the periphery of existing parkland which could be used for new facilities and services.
- 2.49 In the preparation of the strategy, extensive consultation was undertaken on how the Parks in Pendle are used. The key findings of relevance to this GI Strategy are listed below:
- The main reason for choosing a particular park to visit is based on the closest proximity and most convenient to home and the majority of park visitors arrive there by foot.
  - Parks are an important space for exercising, with many of the respondents going to parks to simply 'walk'.
  - Over a third of the children who responded to the survey visited a park at least once a week, with 'after school' being the main time of visiting for 9-11 year olds.
  - There is not enough provision for teenagers.
  - Older children did not like the graffiti, vandalism and litter found in parks.
- 2.50 The GI Strategy seeks to recognise and aid the recent successes in Pendle's parks and ensure that their appreciation from the diverse range of communities and functions are maintained. For example, eight of the Borough's parks consistently qualify for Green Flag status which demonstrates that many of the parks and green spaces are well managed and serve the community they are located within.

### *Children's and Youth Play Area Strategy*

- 2.51 Pendle Borough's Children's and Youth Play Area Strategy 2006-2016 highlights that there are no national standards or guidance on local requirements for youth play provision, including informal free use Multi-Use Games Areas (MUGAs) and Skate park facilities. The Strategy therefore reflects local need and the wider local authority objectives. Although the Strategy is now out of date, and many of the recommendations have been addressed, a few of the key issues still remain which are of relevance to this GI Strategy:
- Vivary Bridge and Waterside wards have above the Borough average proportions of young people.
  - Facilities are not well-lit which limits their use in the winter months.
  - Where appropriate, new play areas should be sited with a buffer zone of 20m to the nearest residential dwelling to limit adverse effects such as noise.
  - Cycle racks should be provided at facilities, particularly those designed for teenagers.

### *Open Space Audit*

- 2.52 The Open Space Audit for Pendle was completed in June 2018. The audit identified all open spaces falling within 300m of a defined settlement boundary within the Borough of Pendle. Analysis of the data identified areas of surplus or deficit in open space quantity provision; identified areas of deficient in access to open space; and highlighted sites of high priority for improvement due to poor 'quality' scores. Identified deficiencies in open space quantity, accessibility and quality will be used to identify recreation GI opportunities in Pendle, in particular opportunities to increase the health and well-being of the local population.





Image: Pendle Water © R Greenhalgh (cc by-sa/2.0) [cropped]

## Part 2: Green Infrastructure Themes

## Part 2: Green Infrastructure Themes

All GI assets either individually, or in combination with other sites, will contribute to several cross-cutting themes. This section of the strategy discusses each of these themes in turn including:

- Landscape and sense of place (Chapter 4).
- Cultural heritage (Chapter 5).
- Biodiversity and ecological networks (Chapter 6).
- Active travel, access and recreation (Chapter 7).
- Water resources (Chapter 8).
- Health and well-being (Chapter 9).

For each theme in turn the following questions are considered:

- How does the theme relate to GI? why is it important to GI? and what benefits can it deliver?
- What is the true value of the Borough's GI assets?
- What are the potential impacts of climate change?
- What existing initiatives are there in Pendle that are already enhancing GI assets?
- Drawing on findings of the desk based studies and stakeholder engagement, what are the key issues, priorities and opportunities and for the identified theme?

For each of the identified opportunities, guidance is provided where their delivery should be targeted to maximise impact (ie within the M65 corridor, Barnoldswick, Earby or Rural Pendle). Where relevant, Borough wide opportunities are also identified.

All of the GI priorities and opportunities are summarised in **Table 9.1**. This table also illustrates the cross cutting nature and multifunctional benefits of each priority.



### 3 Landscape and sense of place

**GI, if appropriately designed and located, can help to restore degraded landscape character, enhance aesthetic value and promote a sense of place. In turn, GI can support economic growth by helping to make attractive places for people to live, learn, work or visit.**

#### Pendle's landscapes

- 3.1 Pendle's towns and villages sit within a rural landscape that is widely recognised as one of the most beautiful in Britain<sup>18</sup>. Whilst it is highly valued and provides a much cherished visual amenity, it is underused by many local residents. GI can help to encourage local residents to (re)connect with the open countryside on their doorstep.
- 3.2 There are three distinctive spatial areas within Pendle, including the urban M65 Corridor towns, the smaller and more isolated West Craven towns, and the villages and hamlets spread across rural Pendle<sup>19</sup>.
- 3.3 Approximately 14% of the Borough in the area surrounding Pendle Hill lies within the Forest of Bowland Area of Outstanding Natural Beauty (AONB)<sup>20</sup> (see **Figure 3.1**). The current<sup>21</sup> AONB Management Plan<sup>22</sup> outlines the Vision for the AONB, which is to retain the AONB's '*sense of local distinctiveness, notably the large-scale open moorland character of the Bowland Fells, traditional buildings and settlement patterns of villages, hamlets and farmsteads*'. It also requires that '*natural and cultural heritage is sympathetically managed and contributes to a sustainable and vibrant local economy*' and that management of the AONB will improve the '*quality of the landscape for all*'.
- 3.4 The AONB Management Plan<sup>22</sup>, which is currently being updated, highlights six distinctive qualities of the AONB which contribute to its 'sense of place' and should be protected and enhanced. These include:
  - Wild open spaces.
  - A special place for wildlife.
  - A landscape rich in heritage.
  - A living landscape.

<sup>18</sup>The Guardian (2018) The best views in the UK: readers' tips. Available at: <https://www.theguardian.com/travel/2018/apr/21/readers-tips-uk-best-views-england-scotland-wales-rural-city>.

<sup>19</sup> Pendle Borough Council (2015) Pendle Local Plan Part 1 – Core Strategy: 2011-2030. Available at: <https://www.pendle.gov.uk/corestrategy>.

<sup>20</sup> Using AONB and Borough area figures presented in Pendle Borough Council (2015) Pendle Local Plan Part 1 – Core Strategy: 2011-2030. Available at: <https://www.pendle.gov.uk/corestrategy>.

<sup>21</sup> The Management Plan 2019 – 2024 review is currently taking place.

<sup>22</sup> Forest of Bowland Area of Outstanding Natural Beauty and Landscapes for life (2014) Forest of Bowland Area of Outstanding Natural Beauty Management Plan (April 2014 – March 2019). Available at: <http://forestofbowland.com/Management-Plan>.

- Delicious local food and drink.
- A place to enjoy and keep special.

3.5 There are 159 Natural England National Character Areas (NCAs) within England, each of which is distinctive with a 'unique sense of place' and countryside character. There are three NCAs within the Borough, including:

- **Bowland Fringe and Pendle Hill (NCA 33)**<sup>23</sup>

The northernmost and westernmost extents of the Borough, north of Barnoldswick and east of Barley, lie within this NCA.

This area within Pendle is '*a diverse landscape of herb rich hay meadows*', and also contain '*lush pastures, broadleaved woodland, parkland and waterbodies*'. The western parcel lies within the Forest of Bowland AONB. The key features within the northern and western sections of this NCA are river valleys and woodland. The area feels predominantly rural and its character is heavily influenced by the long farming history within the area. A priority for the area is the '*protection of its rich and distinct landscapes, including the substantial extent of seminatural woodland, tree-fringed rivers, species-rich hay meadows, and irregular field patterns defined by well-maintained hedgerows and hedgerow trees*.' To protect the rural quality of the open countryside, it is considered essential to '*control and manage the development of the urban fringe and farmsteads to ensure the use of appropriate materials and styles*'.

- **Lancashire Valleys (NCA 35)**<sup>24</sup>

The majority of the Borough lies within this NCA.

This area in Pendle is '*bounded to the north-west by the Bowland Fells fringe and the Millstone Grit outcrop of Pendle Hill*'. A small proportion of the Borough's population in this area are located west of Barrowford within the Forest of Bowland AONB. The area consists of a wide vale of the tributaries to the rivers Ribble and Calder. This '*visually contained landscape has a strong urban character*' in comparison to the remainder of the Borough. Nelson and Colne expanded significantly during the Industrial Revolution and as a result the towns are characterised by mills and Victorian-stone terraced housing. Although numerous examples of the area's industrial heritage remain, these are now matched by '*substantial areas of contemporary industrial development*'. Agriculture, which was once the major source of income in the area before industrialisation, is now '*fragmented by the built environment, industry and housing*'. The remaining pockets of farmland are concentrated along the fringes of Pendle Hill and in the north around Skipton. These are used predominantly for extensive livestock rearing. This NCA is well served by a Public Right of Way (PRoW) network that includes a section of the Pennine Bridleway and a 205 mile long national trail. The area also contains a number of country parks and Local Nature Reserves. These assets provide numerous opportunities for residents and visitors to engage with the landscape.

- **Southern Pennines (NCA 36)**<sup>25</sup>

The southwest of the Borough, west of Colne, lies within this NCA.

This area within Pendle comprises '*large-scale sweeping moorlands, pastures enclosed by drystone walls, and gritstone settlements contained within narrow valleys*'. The area also contains '*internationally important mosaics of moorland habitats that support rare birds such as merlin, short-eared owl and twite*'. Extensive open access land and numerous footpaths are available, making it important for recreation. The area is also easily accessible from large towns, such as Colne, and offers a 'sense of escapism'. Future challenges in the area include

<sup>23</sup> Natural England (2015) NCA Profile: NCA Profile: 33 Bowland Fringe and Pendle Hill (NE372). Available at: <http://publications.naturalengland.org.uk/publication/3522238?category=587130>.

<sup>24</sup> Natural England (2013) NCA Profile: NCA Profile: 35 Lancashire Valleys (NE452). Available at: <http://publications.naturalengland.org.uk/publication/12237027?category=587130>.

<sup>25</sup> Natural England (2014) NCA Profile: 36 Southern Pennines (NE323). Available at: <http://publications.naturalengland.org.uk/publication/511867?category=587130>.

managing the increased recreational demand within the area, improving water quality, restoring blanket bog and 'managing the land to reduce downstream flooding'.

- 3.6 The NCA Profiles also highlight the key assets within these areas that contribute to a sense of place. These include:
- Large towns and communications corridors.
  - Scattered rural villages and hamlets in lower hills.
  - Strong Industrial heritage.
  - Leeds and Liverpool Canal.
  - Many river valleys.
  - AONB designation.
  - Undulating rolling landscape.
  - Open and expansive moorland landscape.
  - Country Parks, Local Nature Reserves and other local green spaces.
- 3.7 A more detailed Landscape Character Assessment for Lancashire<sup>26</sup> highlights the variability of landscapes within Pendle Borough by identifying nine landscape character areas within six landscape character types as shown in **Figure 3.1**.
- 3.8 In addition to these more rural landscape character areas, the assessment defines three urban landscape character types within the Borough:
- **The Historic Core** focussed in the centre of Colne.
  - **The Industrial Age** areas, covering the majority of the M65 corridor settlements.
  - **The Suburban** area, located in the far east of Nelson.
- 3.9 The majority of land within Pendle is farmland. The agricultural land within Pendle is predominantly classified as the lower quality Agricultural Land Classification Grades 4 or 5 and the grazing of sheep and livestock are the most common farm types<sup>19</sup>.
- 3.10 The Vision for the adopted Core Strategy<sup>19</sup> aims to maintain local identity, protect and enhance high quality landscapes, provide a positive contribution to the Borough's attractive and diverse landscapes and townscapes, and create a greener urban environment with attractive neighbourhoods where residents are encouraged to live more healthy and active lifestyles.
- 3.11 Landscape changes will however result from climate change impacts in the future. A summary of the potential effects that may occur to the landscapes within Pendle are set out in the following box:

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<sup>26</sup> Lancashire County Council (2000) A Landscape Strategy for Lancashire: Landscape Character Assessment. Available at: <http://www.lancashire.gov.uk/council/strategies-policies-plans/environmental/landscape-strategy/>.



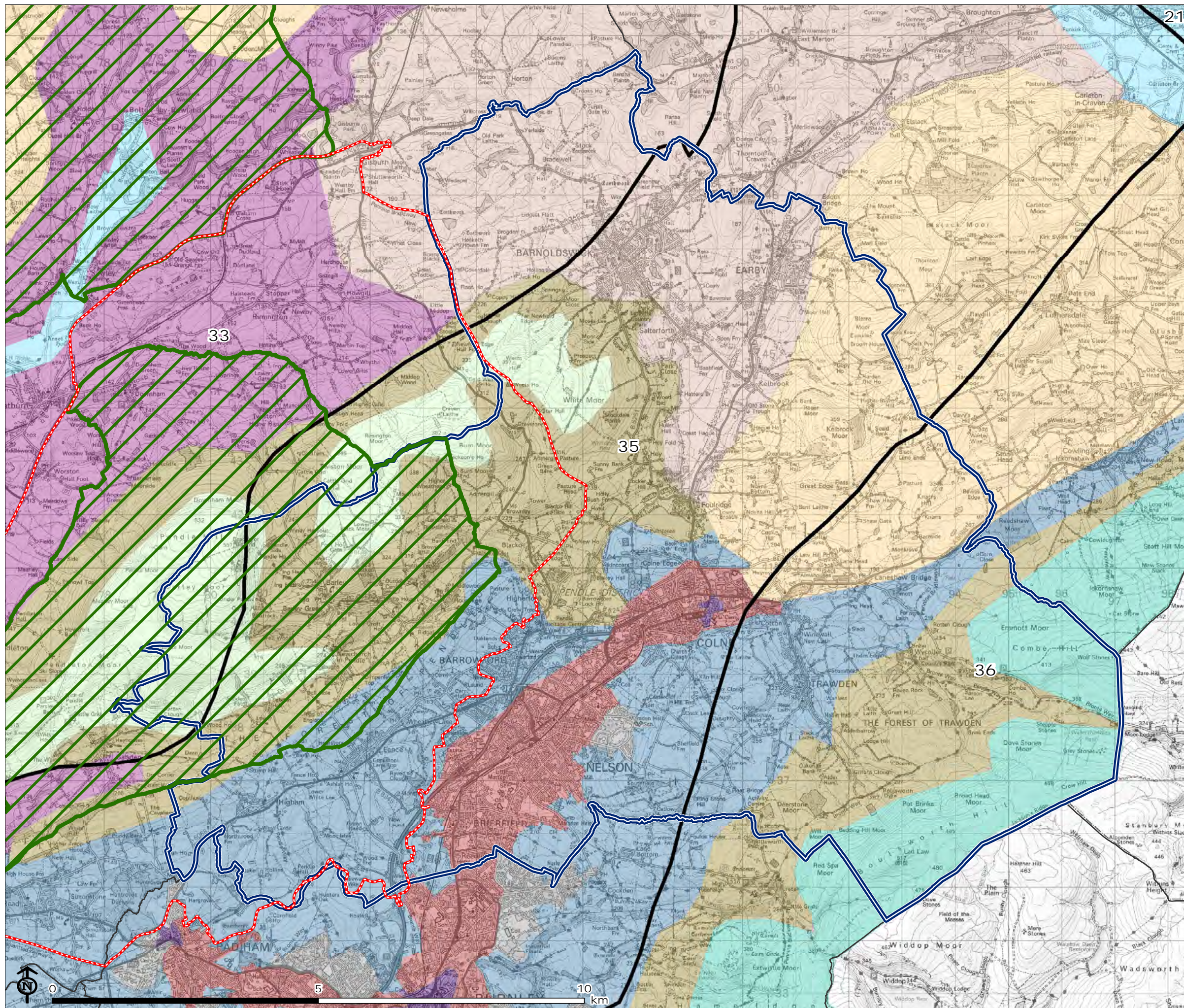


## Climate Change

The Natural England National Character Area Profiles for the Bowland Fringe and Pendle Hill NCA 33, the Lancashire Valleys NCA 35 and the Southern Pennines NCA 36 highlight the potential impacts of climate change upon these landscapes. These include:

- Prolonged periods of drought leading to the drying out of peat habitats, making them more prone to soil erosion and wildfire events, releasing carbon into the atmosphere and reducing their wildlife value.
- Potential for more favourable conditions for crops and other farming practices not presently possible within this area and subsequent change in cropping patterns and types of crops, altering the character of the landscape. Expansion of arable crops into areas currently under permanent grassland.
- Threat to trees and woodland from changing pests and diseases and extreme weather events.
- Possibility of more meadows replacing pastures at higher altitudes.
- Pressures for renewable energy development and the expansion of bio-energy crops into areas currently under permanent grassland.





## Pendle Green Infrastructure Strategy

Figure 3.1: Landscape context

- Pendle Borough Council
  - Local Authorities
  - Forest of Bowland AONB
  - Pendle Hill Landscape Partnership Scheme
  - National Character Areas
- 21: YORKSHIRE DALES
- 33: BOWLAND FRINGE AND PENDLE HILL
- 35: LANCASHIRE VALLEYS
- 36: SOUTHERN PENNINES
- Lancashire Landscape Character Types
- 01 Moorland Plateaux
  - 02 Moorland Hills
  - 04 Moorland Fringe
  - 05 Undulating Lowland Farmland
  - 06 Industrial Foothills and Valleys
  - 11 Valley Floodplains
  - 13 Drumlin Field
  - 14 Rolling Upland Farmland
  - 22 Historic Core
  - 23 Industrial Age
  - 24 Suburban

Map Scale @A3: 1:70,000





## Existing Initiatives

- 3.13 A number of existing landscape initiatives are already delivering GI provision and enhancements at a landscape scale in Pendle. The two examples below demonstrate the multifunctional benefits that GI can deliver when considered at a landscape scale:

### Pendle Hill Landscape Partnership<sup>27</sup>

- 3.14 The Pendle Hill Landscape Partnership is led by the Forest of Bowland AONB and aims to restore, enhance and conserve the heritage and landscape of Pendle Hill, reconnect people with their past and their landscape, bring the two sides of the hill together, and create a sustainable future for the environment, heritage and for visitor's experience of Pendle Hill<sup>28</sup>. The Landscape Partnership covers an area just beyond just the AONB boundary and provides strong linkages between biodiversity, cultural heritage and access. The scheme is made up of a dozen projects which safeguard the area's wildlife and heritage and improve people's access to this popular countryside area. The Landscape Partnership was awarded a National Lottery grant of £1.8million by the Heritage Lottery Fund in January 2018. These funds will be delivered from 2018-2022 and will be matched by a further £1m raised locally.

### ELWOOD Programme

- 3.15 ELWOOD (East Lancashire Woodland) is now disbanded, but when operational it was a programme that was rolled out across the local authority areas of Blackburn with Darwen, Burnley, Hyndburn, Pendle, Ribble Valley, Rossendale and Chorley with the aim of making a major contribution to the economic, social and environmental well-being of the area through the creation of a network of new and improved woodland. The Vision Statement was to create a *"multi-use sustainable woodland landscape throughout East Lancashire developed by and contributing to the quality of life of the people who live and work there."* Within Pendle the Partnership have provided funding for woodland planting schemes and the establishment of waymarked trails.

## What are the key issues, priorities and opportunities?

- 3.16 The following section provides a summary of the stakeholders comments on the key issues relating to landscape and GI within the Borough. Further details of the stakeholder views collated through consultation are presented in **Appendix 2**. This is followed by a review of the issues, priorities and opportunities for enhancing the use and appreciation of the Borough's Landscapes.

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<sup>27</sup> Forest of Bowland (2018) Pendle Hill Landscape Partnership. Available at: [www.forestofbowland.com/Pendle-Hill-LP](http://www.forestofbowland.com/Pendle-Hill-LP).

<sup>28</sup> REAL (2018) Pendle Hill Landscape Partnership. Available at: <https://pendle.realtd.co.uk/local-services/pendle-hill-landscape-partnership>.

#### Stakeholder views

- Pendle Hill is a key asset within the Borough but it is not accessed to any significant degree by the urban population. There is a need to provide further support for Pendle Hill Landscape Partnership and its objectives, taking into consideration the potential need to carefully manage recreational pressure at sensitive locations.
- There is a lack of connection between the dense urban areas and the wider countryside - there is a need to promote greater access to the wider countryside.
- There is a lack of respect within the urban environment which can be seen by the high levels of litter dropping and fly tipping.
- There are different attitudes towards open space, and there is a need to understand local demand and the desires of the local population.
- As a former mining area there are substantial tracts of low quality, reedy and boggy "farmland" areas which would benefit from improvement.

3.17 Four key issues and priorities have been identified from the review of baseline information and stakeholder consultation. These priorities are described below and **Figure 3.2** identifies spatial opportunities for GI to enhance the landscape and sense of place.

#### Creating gateways to the countryside

- 3.18 Today two-thirds of the population of Pendle are concentrated in four contiguous settlements - Nelson, Colne, Brierfield and Barrowford. This densely populated urban area has a combined population of approximately 63,350<sup>29</sup> with much of the housing stock comprising Victorian dense terraced housing (built for the workers of the former textile mills) with limited outdoor space. Many of these areas also coincide with the highest areas of deprivation and reduced life expectancy. Whilst many of these areas have limited access to open space in the form of their own back gardens, the Open Space Audit (2018) has shown that nearly all areas have good access to some form of Natural Greenspace and that nearly all properties (99.9%) are within 720m (9 minute walk) of a Natural Greenspace site. However, in many areas there is a lack of connection between the dense urban areas and the wider countryside with many residents unaware, or ill at ease with exploring the potential opportunities in the countryside on their doorstep. Barnoldswick and Earby are an exception to this as the Pendle Way passes through both of these West Cravern Towns and links to the Pennine Way (National Trail) which passes nearby these settlements.
- 3.19 **Figure 3.2** shows transition zone between settlement boundaries and the existing Public Rights of Way. There are numerous links between the existing urban areas and the wider countryside but in many cases these access points are poorly defined on the ground as shown in the photograph in **Photograph 3.1a**.
- 3.20 A key priority is to ensure that there is sufficient legibility and permeability to enable urban residents to interact with, and experience the high quality landscapes beyond the urban centres. An example of an enhanced 'gateway' to the countryside is shown in **Photograph 3.1b**. Key opportunities include enhancing existing, and creating new gateways to the countryside in these urban/rural transition zones. This could be through improved signage, aesthetic improvements, improved sightlines to the countryside beyond, and path surfacing and maintenance.

<sup>29</sup> ONS (2011) Nomis - Local Area Report for areas in England and Wales. Available at: <https://www.nomisweb.co.uk/reports/localarea>.

- 3.21 Particular consideration should be given to the opportunities to improve these gateways and links to the countryside as part of planning applications that come forward for development on the urban edge.



**Photograph 3.1a: Existing gateway to countryside at Waidshouse Road in Nelson.**



**Photograph 3.1b: Creating a more inviting gateway to the countryside.**

Priority L1:	Ensure that there is sufficient legibility and permeability to enable urban residents to interact with and experience the high quality landscapes beyond the urban centres.	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity L1a	Enhance existing, and create new gateways to the countryside in these urban/rural transition zones.	✓	✓		
Opportunity L1b	Improve signage and waymarking to lead residents and visitors into the wider countryside.	✓	✓	✓	✓

- 3.22 Whilst opportunities exist in every settlement to enhance the gateways to the countryside, in order to maximise the impact in terms of health and well-being benefits, the potential gateways within the most deprived areas (according to the Index of Multiple Deprivation) have been prioritised and are shown on **Figure 3.4**. These are primarily found on the edges of Barnoldswick and the M65 corridor. These are indicative and should be verified through fieldwork.

#### Reflecting landscape character in new development

- 3.23 Development, if inappropriately designed, has the potential to erode the character of the local landscape and the quality of place. New development and any associated GI therefore needs to be designed to respect and enhance the existing landscape character. Developers should be aware of an area's landscape character and strategic GI goals and appreciate the role GI can play in both mitigating the visual and landscape impacts of new development and in creating sensitively and well-designed places. There are two main allocations set out in the Pendle Core Strategy (the strategic housing site at Trough Laithe and the strategic employment site at Lomeshaye) as shown in **Figure 3.2**. Policies LIV2 and WRK3 of the adopted Core Strategy require that high quality landscaping schemes are developed for both these developments. The same principles should also be applied for all future development within the Borough.
- 3.24 The design of adjoining developments should be considered carefully to incorporate and enhance the GI of the Borough. Where a new scheme borders a development incorporating elements of GI adjacent to the boundary, the landscape plan for the new development should acknowledge this and where appropriate incorporate similar elements to extend them into, or through the site. This would help to reinforce existing GI provision, create a more cohesive network of green corridors and avoid the fragmentation of habitats.

Priority L2:	Ensure that new development respects and enhances the existing landscape character and sense of place.	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity L2a	Ensure all new development, particularly within the strategic and employment site allocations, takes account of the Landscape Character Assessment and use of good design. Ensure that proposed developments and associated GI reflect the key characteristics and special features of the existing landscape.	✓	✓	✓	✓
Opportunity L2b	The design of adjoining developments should be considered carefully to incorporate and enhance the GI of the Borough. Where a new scheme borders a development incorporating elements of GI adjacent to the boundary, the landscape plan for the new development should acknowledge this and where appropriate incorporate similar elements to extend them into or through the site. This will help to reinforce existing GI provision, create a more cohesive network of green corridors and avoid the fragmentation of habitats.	✓	✓	✓	✓

### Creating Prestige Settlement Approach Corridors

- 3.25 The experience and perception of settlement approaches is a key part of green infrastructure and essential for the creation of a positive sense of place when arriving and travelling through or past settlements. Within the context of Pendle, this applies particularly to the four joined settlements of Nelson, Colne, Brierfield and Barrowford within the M65 Corridor, the West Craven Town of Earby, but also a number of the settlements in Rural Pendle, Kelbrook, Foulridge, Laneshawbridge, Higham and Fence. GI can contribute positively to the sense of place by helping to create attractive environments along the key gateways and corridors to and within the main towns (i.e. around railway stations, M65, A and B roads, and bus stations).
- 3.26 **Figure 3.2** shows where these key routes are located. These have been identified by applying a 100m buffer around railway stations, motorways, A and B roads, and bus stations. These are considered to be the key approaches into and through Pendle.
- 3.27 The adopted Core Strategy Vision aims to maintain local identity, protect and enhance high quality landscapes, provide a positive contribution to the Borough's attractive and diverse landscapes and townscapes, and create a greener urban environment with attractive neighbourhoods where residents are encouraged to live more healthy and active lifestyles. Specific opportunities to ensure there is a strong sense of place for visitors, investors and residents arriving in the Borough include enhancing the streetscape within these zones by tree planting, general planting, or temporary greening of brownfield sites – i.e. planting of wildflower meadows. Species selection needs to recognise the future impacts of climate change, and to maximise the biodiversity benefits of planting, perennial planting should be prioritised over seasonal plants. Efforts should also be made to encourage people to explore beyond the gateways through appropriate signage and links to waymarked walks and interpretation trails and gateways into the wider countryside (see Priority L1).
- 3.28 **Figure 3.2** also identifies locations on the brownfield register that are not yet re-developed. Consideration should be given to the opportunities in these locations in terms of their ability to perform a role in enhancing the public realm, if they are not being considered for development.



Priority L3:	Ensure that there is a strong sense of place for visitors, investors and residents arriving in the Borough.	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity L3a	Improve the public realm and streetscapes, by increasing tree and general planting. Sense of place can be achieved by ensuring the design is informed by the local landscape character and the use of local native plant species.	✓	✓	✓	
Opportunity L3b	Consider greening opportunities including wildflower meadows and tree planting for vacant brownfield land which is not proposed for development.	✓	✓	✓	

- 3.29 To further prioritise the opportunity areas illustrated in **Figure 3.2**, corridors within 300m of the M65 corridor, Barnoldswick and Earby have been highlighted on **Figure 3.4** as the best zones in which to consider public realm improvements. **Figure 3.4** again highlights land on the brownfield register that is not currently subject to planning permission.

### Sustainable Land Management

- 3.30 The majority of agricultural land in the Borough is Grade 4 according to the Agricultural Landscape Classification. Data on Environmental Stewardship Agreements from Natural England suggest that only a relatively small proportion of the Borough's landscape is managed through Environmental Stewardship. In 2016, Environmental Stewardship was replaced by the Countryside Stewardship Scheme and data suggests that uptake of options under this scheme have to date been relatively limited in Pendle. The BHS sites at Fir Trees Brook Pasture (Entry Level Stewardship), Black Moss Pasture (Higher Level Stewardship) and Hagg Wood (Management Plan) all have positive management programmes in place. Much of the wider countryside however does not.
- 3.31 There is an opportunity to enhance sustainable land management practices to improve the functionality of farmland, particularly where this could deliver enhanced landscape quality or biodiversity connectivity. **Figure 3.2** identifies agricultural land in Pendle and highlights those areas that are currently entered in the agri-environment scheme under an ongoing Environmental Stewardship agreement, or a new Countryside Stewardship agreement.

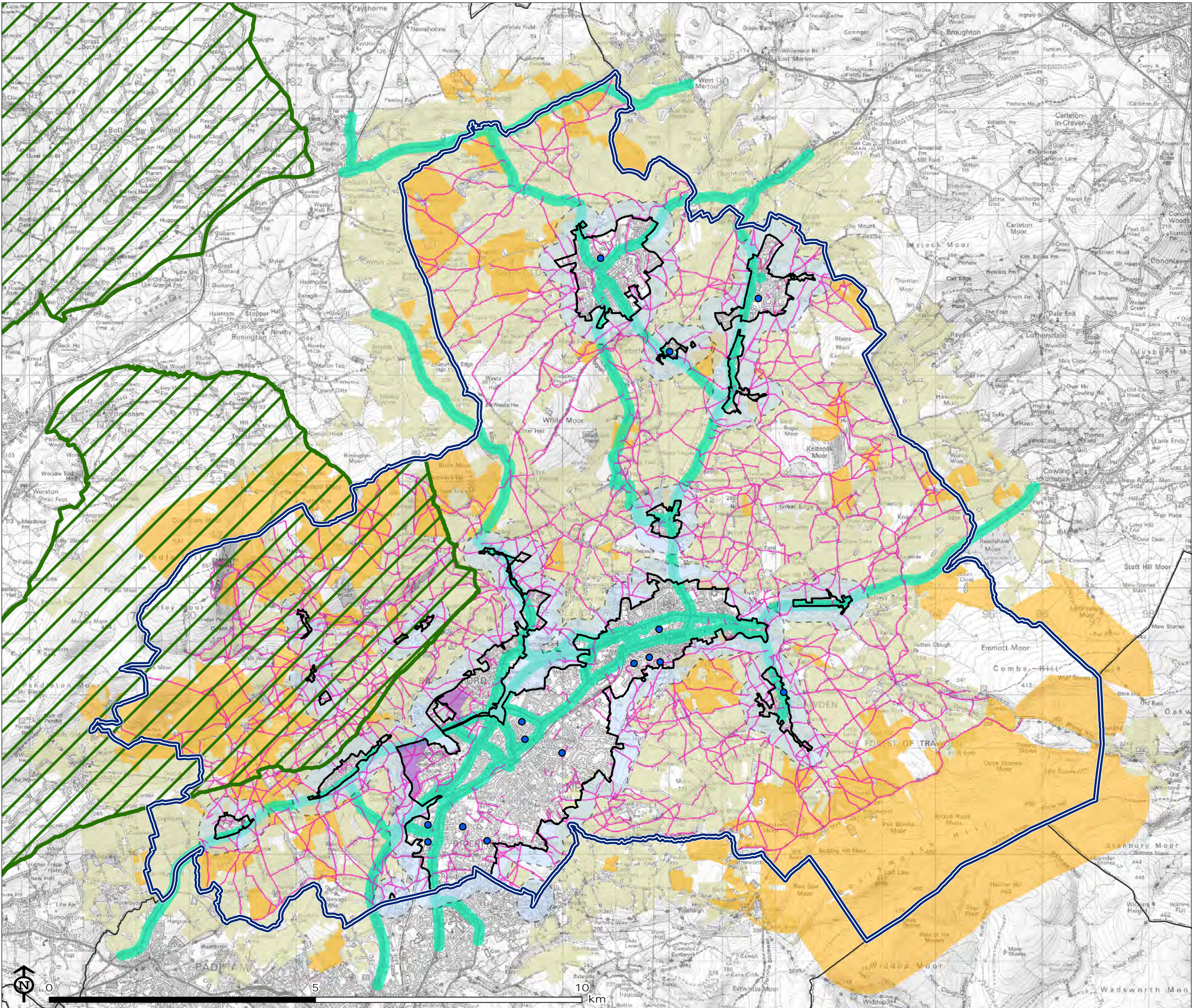
Priority L4:	Encourage sustainable land management practices.	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity L4a	Encourage landowners and farmers to uptake agri-environment scheme options such as the current countryside stewardship scheme (or its replacement) that make a positive contribution to the landscape and provide opportunities for biodiversity enhancements.				✓

- 3.32 **Figure 3.4** shows agricultural land that is not under an agri-environment agreement. These are considered good opportunities to encourage and work with landowners and farmers to explore the benefits of using agri-environment scheme options to make a positive contribution to the landscape (and wildlife).



Pendle Green Infrastructure Strategy

Figure 3.2: Identifying spatial opportunities to enhance landscape and sense of place

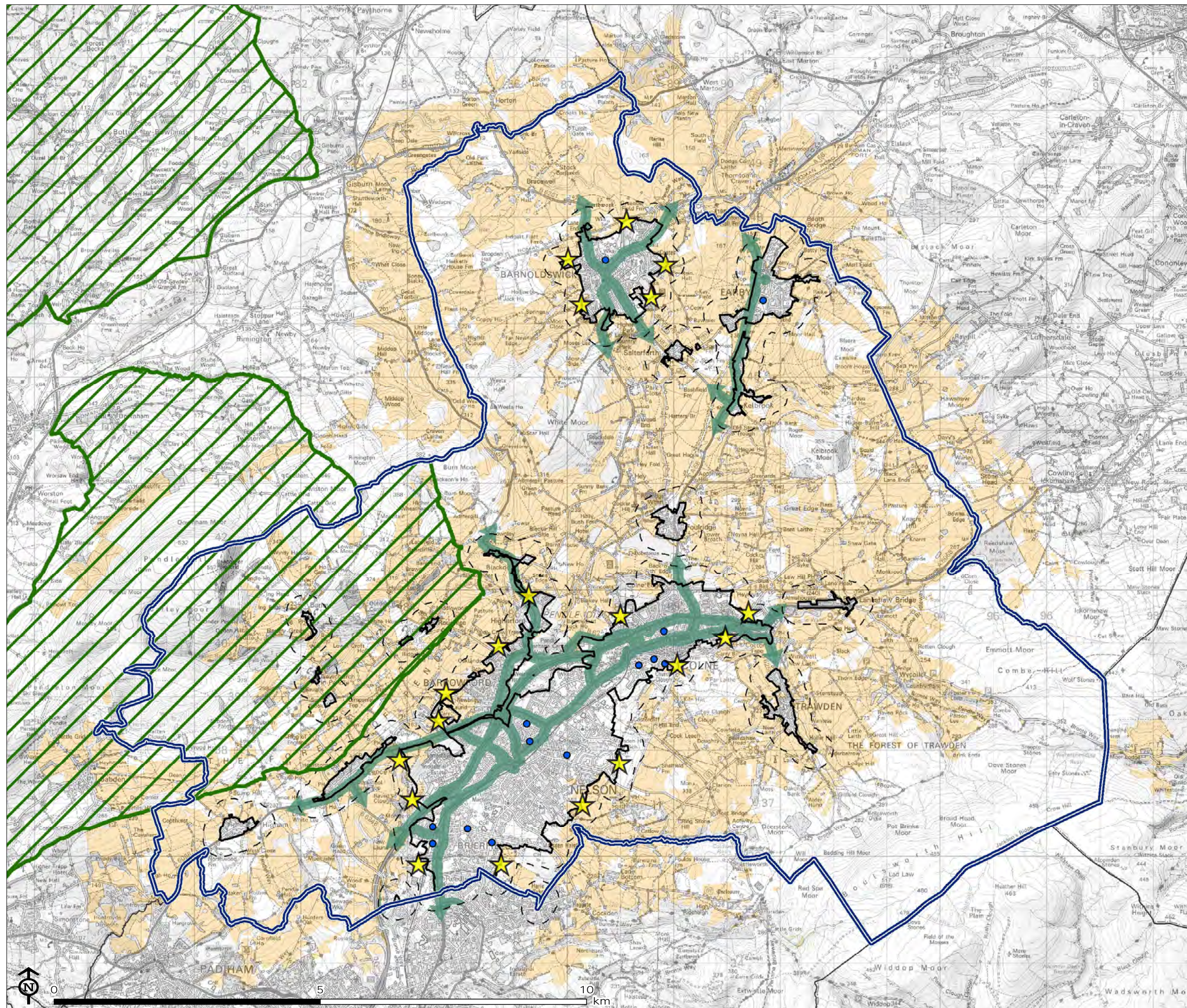


- Pendle Borough Council
- Local Authorities
- Forest of Bowland AONB
- Settlement Boundary
- Within 300m of Settlement Boundary
- Existing Public Rights of Way
- Areas allocated for development
- Key corridor into and through towns
- Agricultural land
- Land on the Brownfield Register not yet permitted
- Land under agri-environment scheme stewardship

Map Scale @A3: 1:70,000







## Pendle Green Infrastructure Strategy

Figure 3.4: Spatial priorities for enhancing landscape and sense of place

- Pendle Borough Council
- Local Authorities
- Forest of Bowland AONB
- Settlement Boundary
- Within 300m of Settlement Boundary

### Area-specific opportunities

- L1a: Improve key gateways to countryside (indicative)
- L3a: Create green corridors into and through towns
- L3b: Plant up vacant brownfield land
- L4a: Deliver sustainable land management

### Borough-wide opportunities

L1b: Enhance and create new gateways to the countryside.  
 L2a: Ensure new development takes account of landscape character assessment and good design.  
 L2b: Design of adjoining developments should be considered carefully to incorporate and enhance the GI of the Borough. Landscape plans for new development should acknowledge adjacent development and where appropriate incorporate similar elements to extend them into or through the site.

Map Scale @A3: 1:70,000





## 4 Cultural heritage

**GI, if appropriately designed and located, can help to enhance the setting of historic features and assist with the interpretation of cultural heritage assets. In turn, these assets can provide recreational opportunities to local residents, as well as support economic growth through tourism.**

### Pendle's cultural heritage

- 4.1 Pendle's rich and diverse history, ranging from the Iron Age to the industrial age, makes a significant contribution to the special identity, character and distinctiveness of the Borough. It provides a sense of place, enriching the quality of life of its residents, and contributes to the local economy through leisure and tourism, acting as a focus for heritage-led regeneration. GI can also help enhance the setting of cultural assets on a small scale but also improve historic landscapes at a wider scale.
- 4.2 Pendle has a rich cultural heritage, which is reflected in the number and range of designated heritage assets, as shown in **Figure 4.1**. There are currently 329 Listed Buildings and 11 Scheduled Monuments within the Borough<sup>30</sup>.
- 4.3 Conservation Areas are designated by local authorities due to their special architectural or historic interest<sup>31</sup>. There are 23 Conservation Areas within Pendle, ranging from Victorian residential, commercial or industrial areas, to those with a more rural character based on ancient farming settlements and villages<sup>32</sup>. These Conservation Areas cover over 14% of the Borough<sup>19</sup>.
- 4.4 The adopted Core Strategy<sup>19</sup> highlights the heritage assets that make a particular contribution to the local character and distinctiveness of Pendle:
- The pre-industrial, farming heritage of the 16th-18th centuries: houses and barns.
  - The industrial heritage of the textile industry: including weavers cottages, mills (in particular the weaving sheds and chimneys) and terraced housing.
  - The Leeds and Liverpool canal corridor: and its associated assets including locks, bridges and warehouses.
  - The sandstone masonry and stone slates: of the traditional local vernacular building styles.
- 4.5 The adopted Core Strategy<sup>19</sup> Vision aims to conserve and enhance the historic environment, and enhance the setting of historic buildings via urban green spaces. Key objectives and policies within the Core Strategy include protecting, maintaining and enhancing sites that make a positive contribution to character and townscape; conserving and enhancing heritage assets and their settings; and requiring new developments to contribute to sustaining or improving the quality, appearance and character of the public realm by enhancing heritage assets and their setting.

<sup>30</sup> Historic England (2018) Search The List. Available at: <https://historicengland.org.uk/listing/the-list/>.

<sup>31</sup> Ministry of Housing, Communities & Local Government (2012) National Planning Policy Framework: 12. Conserving and enhancing the historic environment - Paragraphs 126 to 141. Available at: [https://www.gov.uk/guidance/national-planning-policy-framework/12-conserving-and-enhancing-the-historic-environment#paragraph\\_127](https://www.gov.uk/guidance/national-planning-policy-framework/12-conserving-and-enhancing-the-historic-environment#paragraph_127).

<sup>32</sup> Pendle Borough Council (2018) Conservation areas. Available at: [https://www.pendle.gov.uk/info/20068/conservation\\_and\\_listed\\_buildings/22/conservation\\_areas](https://www.pendle.gov.uk/info/20068/conservation_and_listed_buildings/22/conservation_areas).

- 4.6 Preserving the industrial heritage along the Leeds and Liverpool Canal is also identified as a key priority. The Leeds and Liverpool canal is the longest canal in Britain built as a single waterway and offers rural walks and noteworthy heritage<sup>33</sup>. Within Pendle, this canal provides one of the most scenic waterways in England, particularly from Barrowford to Barnoldswick, and includes a Georgian feat of engineering called 'The Mile Tunnel' or 'Foulridge Tunnel'<sup>34</sup>.
- 4.7 Although there are no Registered Parks and Gardens in Pendle, there are numerous heritage and town trails within the Borough, providing cultural as well as recreational opportunities for visitors and residents<sup>35</sup>. One of the most notable trails is the Pendle Witches Walking Trail within and around Barley, which covers the story of the famous Pendle Witches. In keeping with the Witches theme, the 'Vicky Witch Trail' at Victoria Park is another example which seeks to engage children with cultural heritage and GI. The trail is based on local legends and includes six activity stations<sup>36</sup>. There are also four existing Tackler Trails; town trails that give an insight into the cotton industry, the canal, and water power. Other trails with cultural heritage interest include:
- The Jonas Moore Walk.
  - Brontes in Pendle Walk.
  - Colne Heritage Trail.
  - Ferndean Way.
  - Beating The Bounds Walk – Barnoldswick.
  - Stream & Steam Trail – Barnoldswick.
  - Pendle Way
- 4.8 Further information on these are provided in the following section.
- 4.9 The terraced houses also form key historic assets in their own right, providing a reminder of the towns historic links to the mills and their roots in the textile industry. However, these densely built-up areas can limit the opportunities for new GI. In the past, municipal parks were provided alongside the terraced housing to provide areas for recreation, and many of their historical features can be found today and are an important part of Pendle's cultural heritage. For example there are many architectural features such as a pseudo-Roman spa bath, an Icosahedral Sundial, a coach house and many historical and stone carvings can be found within Marsden Park<sup>37</sup>. The lake found at Ball Grove Park was once used by a local tannery built in the 1860s<sup>38</sup>.
- 4.10 Heritage assets are however at risk from climate change impacts in the future. A summary of the potential effects that could occur are set out below.

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<sup>33</sup> Canal & River Trust (2018) Leeds & Liverpool Canal. Available at: <https://canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network/leeds-and-liverpool-canal>.

<sup>34</sup> Visit Pendle (2018) Leeds & Liverpool Canal. Available at: <http://www.visitpendle.com/explore-pendle/leeds-and-liverpool-canal>.

<sup>35</sup> Visit Pendle (2018) Heritage & Town Trails. Available at: <http://www.visitpendle.com/things-to-do/walking/heritage-and-town-trails>.

<sup>36</sup> Visit Pendle (2018) Vicky Witch welcomes you to Victoria Park. Available at: <https://www.pendle.gov.uk/vickywitch>.

<sup>37</sup> The Friends of Marsden Park (2013) Available at: <http://marsdenparkfriends.blogspot.com/p/history-of-marsden-park.html>.

<sup>38</sup> Visit Pendle (2018) Ball Grove picnic site and Local Nature Reserve leaflet. Available at: [https://www.pendle.gov.uk/downloads/file/3971/ball\\_grove\\_park\\_site\\_leaflet](https://www.pendle.gov.uk/downloads/file/3971/ball_grove_park_site_leaflet).



## Climate Change

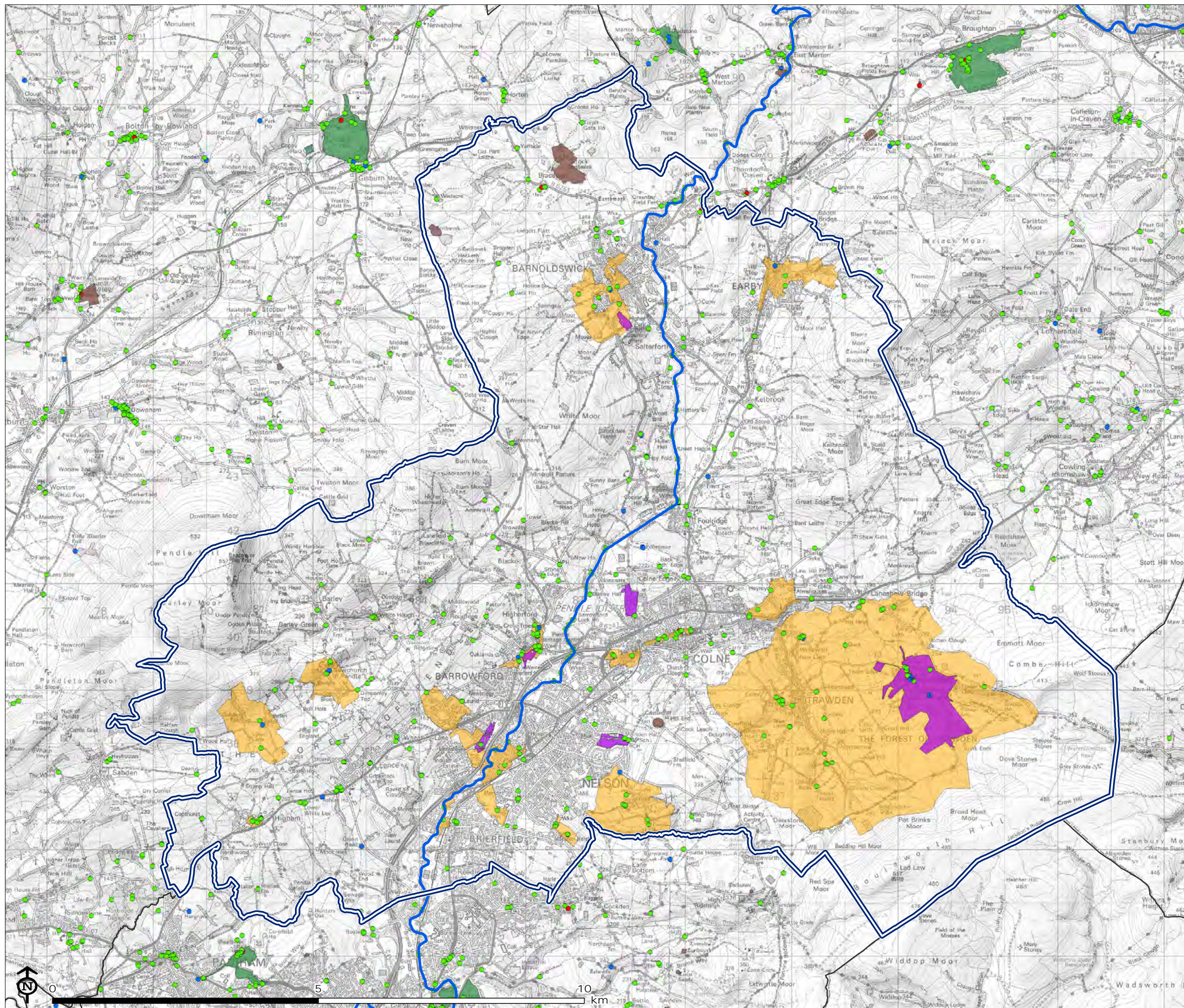
Historic England provides guidance on the potential threats to heritage assets due to climate change<sup>39</sup>:

- Potential environmental impacts on the historic environment include flooding and extreme weather events. Climate change is continually increasing the likelihood, magnitude and frequency of these events.
- Structures and buried archaeology are in increasing danger from extremes of wetting, drying and temperature fluctuation.
- Human actions undertaken to adapt to, or mitigate for the changing environmental conditions as a result of climate change could have significant impacts on buildings and archaeology.

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<sup>39</sup> Historic England (2018) Heritage, Climate Change and Environment. Available at: <https://historicengland.org.uk/research/current/threats/heritage-climate-change-environment/>.





## Pendle Green Infrastructure Strategy

Figure 4.1: Cultural heritage context

- Pendle Borough Council
- Local Authorities
- Scheduled Monuments
- Registered Parks and Gardens
- Conservation Areas
- Leeds and Liverpool Canal
- Key Municipal and Country Parks

Listed Buildings

Grade

- I
- II\*
- II

Map Scale @A3: 1:70,000





## Existing initiatives

- 4.11 There are a number of existing initiatives linked to GI and heritage assets within Pendle. The initiatives listed below demonstrate that through focusing on cultural heritage assets, they can enhance the recreational opportunities for local residents and visitors and increase their links to GI in Pendle.

### Pendle Witches Trail

- 4.12 In the shadow of Pendle Hill there are a series of villages, which tell a story of intrigue and witchcraft nearly 400 years old. Starting at the Pendle Heritage Centre, in Barrowford near Nelson, there is a trail which follows the route the Pendle Witches took through the Ribble Valley to Lancaster Castle where they stood trial<sup>40</sup>. The Pendle Witches Trail encompasses key heritage assets from the story, Newchurch where the 'Eye of God' can be found to ward off evil and Faugh's Quarry where one of the witches is claimed to have met the devil.

### Tackler Trails

- 4.13 These comprise of four, mainly town trails, which provide an insight into the cotton industry, the canal, and water power. Points of interest along the way include the 16<sup>th</sup> Century Marsden Hall, Lomeshaye Marsh Local Nature Reserve, St Mary's church, and Selina Cooper's home, a famous local suffragist, and fighter for worker's rights. The people, places and buildings and their stories are brought to life on these trails by interpretation panels alongside the canal. The Tacklers Trail is a linear trail following the canal from which the other three trails branch off from, interlinking with other routes creating a range of circular routes, thereby providing a broad range of walking opportunities for different members of the community and visitors.

### The Jonas Moore Walk

- 4.14 Developed by a local walking guide leader, the four and a half mile Jonas Moore Walk explores the mathematician's place of birth and the trail guide<sup>41</sup> provides information on the historic assets and landscapes walkers pass by. When walking the route, hikers are able to interact with the landscape and learn about the story of the Pendle Witches (who lived near Jonas' family home) and visit settlements and landscapes of Goldshaw Booth which date back to the medieval times.

### Brontës in Pendle Walk

- 4.15 The Bronte Sisters, famous for their literary work, gathered inspiration for their books from the people and countryside around them and they frequently walked to the hamlet of Wycoller in Pendle. The trail map<sup>42</sup> for this six or eight mile walk includes places that featured in the Brontes book including Wycoller Hall, which was the basis for Ferndean Manor in Charlotte Bronte's novel 'Jane Eyre'. The trail also includes walking up old tram tracks that ceased operation in 1928, walking through the Forest of Trawden which was described as a wasteland in the Domesday Book and Pulpit Styles which are thought to have been used by George Fox and John Wesley.

### Colne Heritage Trail

- 4.16 This trail is set in the town centre of Colne. The trail map<sup>43</sup> identifies and explains all the cultural heritage assets along a route within the town centre. Together these assets tell the story of Colne's past, particularly from 1796 when the Leeds and Liverpool Canal opened. This provides local residents and visitors to engage with the town's history, and the trail map includes stories relating to wider historic events, such as family home and monument of Wallace Hartley, the bandmaster of the Titanic. This trail strengthens local community's and visitor's sense of place, while the cultural assets themselves enhance the Colne's townscape and character.

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<sup>40</sup> [https://www.visitlancashire.com/dbimags/Pendle\\_Witches\\_Trail.pdf](https://www.visitlancashire.com/dbimags/Pendle_Witches_Trail.pdf)

<sup>41</sup> Visit Pendle (2018) Jonas Moore Walk. Available at: <http://www.visitpendle.com/things-to-do/jonas-moore-walk-p930950>.

<sup>42</sup> Visit Pendle (2018) Brontes in Pendle Walk. Available at: <http://www.visitpendle.com/things-to-do/brontes-in-pendle-walk-p840540>.

<sup>43</sup> Visit Pendle (2018) Colne Heritage Trail. Available at: <http://www.visitpendle.com/things-to-do/colne-heritage-trail-p840900>.

### Ferndean Way

- 4.17 This three mile linear route follows Cone Water before continuing along the Pendle Way which traces Wycoller Beck into Wycoller<sup>44</sup>. The trail identifies and details six cultural heritage features which can be found along the route.

### Beating the Bounds Walk – Barnoldswick

- 4.18 This nine mile circular walk follows a 2,000 year old ancient tradition where local people would walk the boundaries of their local parish to mark it with their willow wands and this is seeking to protect the ancient boundary line<sup>45</sup>. To ensure that the ancient boundary line is preserved and commemorated, the Pendle Council's Canal Corridor Fund which is co-ordinated by Barnoldswick Town Council is funding a scheme to install replica boundary stones along the old parish boundary and interpretation boards in strategic locations. This walk seeks to provide walkers with further cultural experiences, particularly in autumn when the Beating the Bounds Community Walk takes place around the ancient boundaries of Barnoldswick.

### Stream and Steam Trail - Barnoldswick

- 4.19 This trail enables walkers to witness cultural heritage assets that were influential in the changes in Barnoldswick's industrial past, from the earliest water powered mills, on to steam power, and then to modern engineering processes<sup>46</sup>. The creation of this trail was part of a wider scheme to repair many cultural assets in the town as well as implementing footpath improvements; all of which contribute to improved townscape and character.

### The Pendle Way

- 4.20 The Pendle Way is a 45 mile circular footpath split into eight distinct sections taking walkers through Barnoldswick, Thornton-in-Craven, Wycoller, Reedley, Newchurch and Pendle Hill. The latter part of the route has associations with the Pendle Witches and the Bronte sisters.

### The Pendle Hill Landscape Partnership

- 4.21 See paragraph 3.14 for more information on this Partnership.

## What are the key issues, priorities and opportunities?

- 4.22 The following section provides a summary of the stakeholders comments on the key issues relating to heritage and GI within the Borough. Further details of the stakeholder views collated through consultation are presented in **Appendix 2**. This is followed by a review of the issues, priorities and opportunities for GI to enhance the appreciation of the Borough's heritage assets.

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<sup>44</sup> Visit Pendle (2018) Ferndean Way. Available at: <http://www.visitpendle.com/things-to-do/ferndean-way-p840550>.

<sup>45</sup> Visit Pendle (2018) Beating The Bounds Walk - Barnoldswick. Available at: <http://www.visitpendle.com/things-to-do/beating-the-bounds-walk-barnoldswick-p840400>.

<sup>46</sup> Visit Pendle (2018) Stream & Steam Trail. Available at: <http://www.visitpendle.com/things-to-do/stream-and-steam-trail-p556590>.

#### Stakeholder views

- Many of the Scheduled Monuments within the Borough have strong links to the landscape where there are opportunities to enhance their setting.
- The terraced former mill worker houses are an historic asset in their own right; although much of this housing stock is in poor condition.
- Cultural boundaries should be recognised, i.e. the former Yorkshire/Lancashire boundary in the northeast of Pendle.
- Greater awareness and improved maintenance is needed of the existing Tacklers Trails.
- There is further scope to improve the interpretation of heritage assets within the Borough and to develop additional trails explaining facts and assets of historic interest.

- 4.23 Three key issues and priorities have been identified from the review of baseline information and stakeholder consultation. These priorities are described below.

#### Enhance the setting of cultural heritage assets

- 4.24 Designated heritage assets, including the listed buildings, Conservation Areas and scheduled monuments within the Borough, are afforded their own statutory protection by local and national policy. However, GI has the potential to enable such assets to be better appreciated by local residents and tourists. The protection and enhancement of GI can also preserve and enhance the setting of historic assets, which can be of importance to the significance of heritage assets themselves.
- 4.25 **Figure 4.2** shows areas that are within close proximity (100m) to Scheduled Monuments, the Leeds and Liverpool Canal and key Municipal and Country Parks. It is noted that 100m is not the official setting of these historic features, as this is subject to individual assessments. However, the area that surrounds these features provides an indication of where GI has the potential to benefit these features. All GI typologies have the potential to perform heritage functions through GI protection, enhancement and creation.
- 4.26 **Figure 4.3** shows that a key priority is to ensure the setting of cultural heritage assets is protected and enhanced so that they can be appreciated. This could include reviewing existing street furniture, street lighting and signage in close proximity to these assets which has the potential to 'clutter' and adversely affect their setting. On the other hand, in some places there may be appropriate opportunities to provide benches to create 'destination locations' i.e. points from which the assets can be better appreciated.



Priority C1: Ensure the setting of cultural heritage assets is protected and enhanced.		M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity C1a	Review street furniture, street lighting and signage to reduce any 'clutter' within these zones that might detract from appreciation of the assets. However, ensure that there is sufficient provision of benches for the young and elderly to sit and appreciate key assets if they are not an existing 'destination location'.	✓	✓	✓	✓



Pendle Way providing access along the Leeds & Liverpool Canal. The abutments of former railway bridge are the remains of the now dismantled Barnoldswick railway line  
© John Tomlinson(cc-by-sa/2.0)

### Improving and enhancing the interpretation of assets

- 4.27 There are numerous heritage assets located within Pendle Borough where there is no existing access or interpretation provided. As such, local residents and visitors are unlikely to visit these features. GI can provide access to and help with the interpretation of historic features, with the potential to support economic growth through tourism and provide recreational opportunities.
- 4.28 **Figure 4.2** shows the relationship between heritage assets and the existing Public Rights of Way network. In the case of the larger parks, these routes often traverse the parks themselves.

- 4.29 **Figure 4.3** highlights the existing Public Rights of Way that are within 10 minutes' walk (800m) of Scheduled Monuments, the Leeds and Liverpool Canal and key municipal and country parks. A key priority is to ensure that there is sufficient interpretation within this zone to allow residents and visitors to interact with and explore these assets to provide a strong sense of place and support the tourism economy. This could include through the addition of signage and wayfinding, as well as enhancing existing and creating new heritage trails.

Priority C2: Ensure that there is sufficient interpretation to allow residents and visitors to interact with and explore these assets to provide a strong sense of place and support the tourism economy.		M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity C2a	Provide high quality interpretation to promote an understanding of cultural heritage assets. Ensure related assets in close proximity are identifiable as a cluster and navigation between them is facilitated and promoted.	✓	✓	✓	✓
Opportunity C2b	Enhance existing and seek new opportunities for heritage themed promoted walks.	✓	✓	✓	✓



Stock medieval settlement and part of its associated medieval open field system  
Scheduled Monument, accessible by footpaths © [Gary Rodgers](#) (cc-by-sa/2.0).

## Providing learning opportunities







- 4.30 The presence of historic assets affords the opportunity to provide learning opportunities where interpretation of the assets is provided. Learning opportunities could support the education of school children, as well as providing an attraction for tourists and local residents. This could provide educational benefits, support the local tourism economy, and increase the cultural understanding of Pendle Borough.
- 4.31 **Figure 4.2** shows the location of schools in Pendle and identifies the zones that are within 10 minutes' walk of each of these. This figure shows that there are a number of heritage assets that are within close proximity to a school and opportunities should be sought to maximise interaction between school pupils and the heritage assets.
- 4.32 **Figure 4.3** highlights historic and cultural assets that are within 10 minutes' walk (800m) of a school, as well as the existing Public Rights of Way within 10 minutes' walk of a cultural heritage asset and a school.
- 4.33 A key priority is providing learning opportunities for local communities. GI can support this by promoting safe access between historic assets and along good quality footpaths and cycle paths, including off-road paths. GI can also facilitate the interpretation of historic features through the addition of signage and information boards that are appropriate and engaging for all members of the local community. Opportunities to enhance interpretation where there are education facilities within close proximity to cultural heritage assets should also be prioritised.

Priority C3:	Provide learning opportunities for local school children	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity C3a	Promote safe access between assets and education facilities. Ensure that interpretation is appropriate and engaging for children and young adults as well as the wider community. Explore the use of social media platforms, mobile apps and interactive maps.	✓	✓	✓	

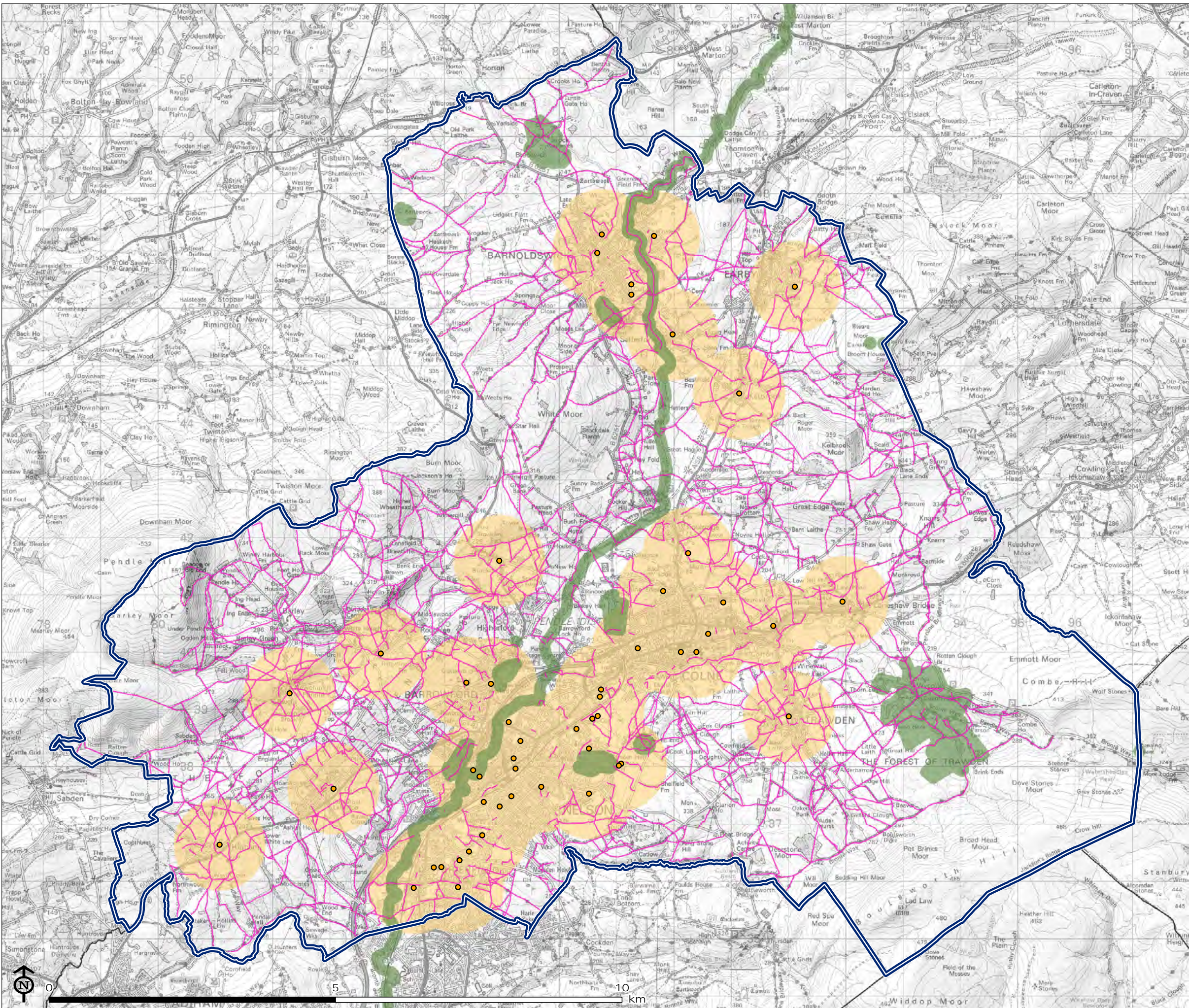


# Pendle Green Infrastructure Strategy

Figure 4.2: Identifying spatial opportunities to enhance cultural heritage assets

-  Pendle Borough Council
-  Local Authorities
-  Areas within 100m of a cultural heritage asset\*
-  Existing Public Rights of Way
-  Schools
-  Areas within 10min walk of schools

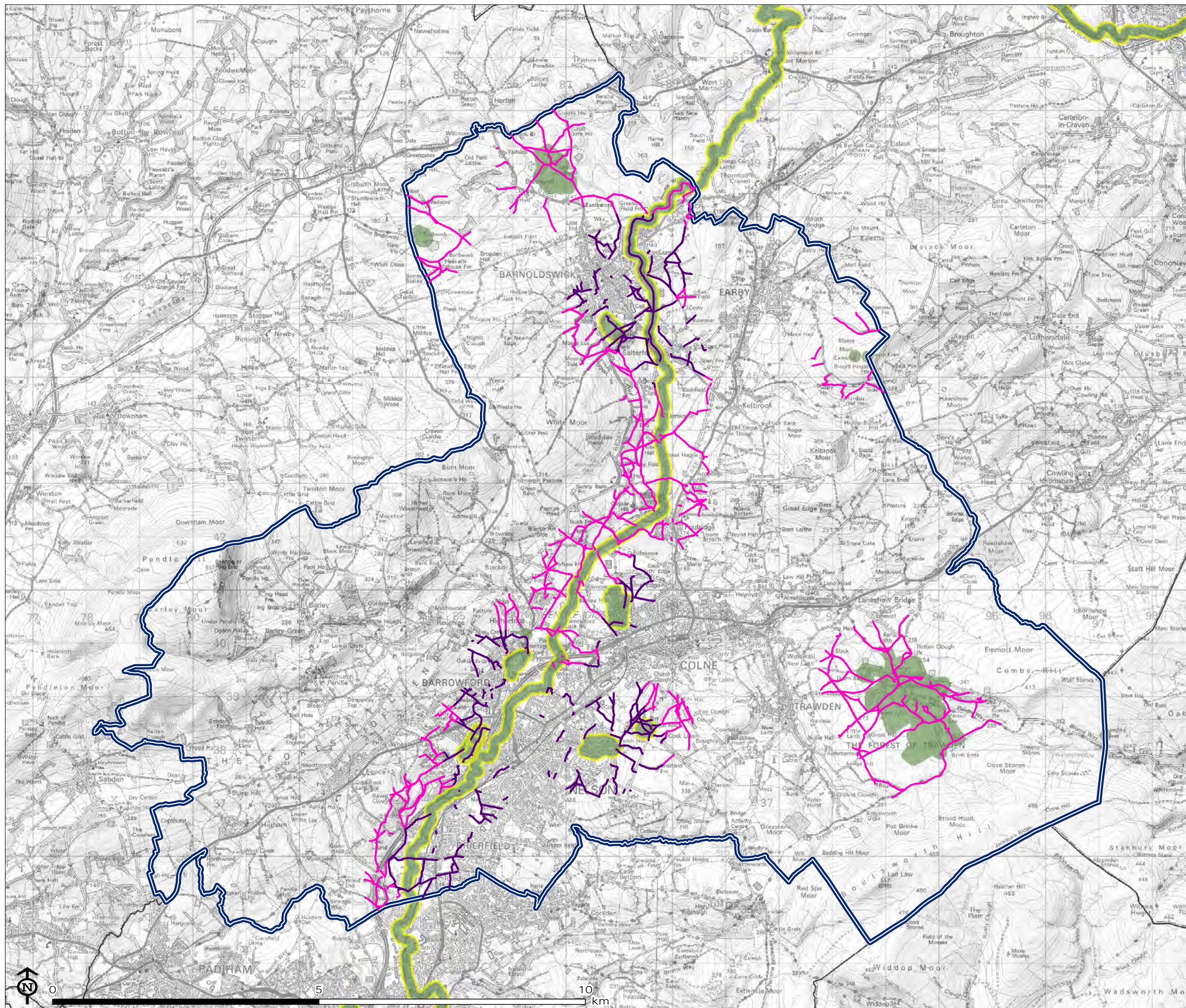
\*Including Scheduled Monuments, key Municipal and Country Parks and the Leeds and Liverpool Canal



Map Scale @A3: 1:65,000







## Pendle Green Infrastructure Strategy

Figure 4.3: Spatial priorities for enhancement of cultural heritage assets

- Pendle Borough Council
- Local Authorities
- Area-specific opportunities
  - C1a: Enhance setting of cultural heritage assets
  - C2a: PROW within 10mins walk of cultural heritage assets
  - C3a: PROW within 10 mins walk of cultural heritage asset and a school
  - C3a: Promote interpretation of and access to heritage assets within 10 mins walk of school

### Borough-wide opportunities

- C2a: Provide high quality interpretation for, and access to, cultural heritage assets.
- C2b: Enhance existing, and seek new opportunities for heritage themed walks.

\*Including Scheduled Monuments, key Municipal and Country Parks and the Leeds and Liverpool Canal

Map Scale @A3: 1:70,000





## 5 Active travel, access and recreation

GI, if appropriately designed and located, can help to create and enhance active travel routes, improving accessibility and providing new recreational opportunities. In turn, these offer the potential for local residents to make healthier lifestyle choices, whilst also supporting economic growth and sustainable tourism.

### Active travel, access and recreation in Pendle

- 5.1 Although the term active travel and recreation are similar, there are subtle nuances between the two:
- **Active travel** refers to journeys made by physically active means for example walking and cycling.
  - **Recreation** can include active travel, but encompasses a broader range of activities. It refers to something done for pleasure or to relax, so it could involve reading a book in a local park or by a river, or having a picnic in the countryside.
- 5.2 A well-functioning GI network includes adequate walking and cycling routes. If these are well designed and well connected, they can be used for both commuting routes and for recreational purposes.
- 5.3 Pendle is a predominantly rural borough, but almost two-thirds of its population live in just six towns and large villages. GI provides an opportunity to encourage local residents to (re)connect with the open countryside on their doorstep.
- 5.4 To successfully integrate active travel and green infrastructure, the barriers (both real and perceived) that make walking and cycling an inconvenient option must be overcome. This is particularly true for parents with young children and carers responsible for older people.
- 5.5 Safe and attractive off-road routes in the larger towns have the potential to offer multiple benefits. As part of an integrated and expanded active travel network, they can motivate people to change their behaviour and make healthier lifestyle choices by embracing sustainable travel options. In deprived areas, where walking and cycling are a viable alternative to journeys by car and public transport, particularly for shorter trips to school, work and community facilities, this can have a positive impact on health and well-being, and help to reduce levels of obesity in school children. These same routes can also help to create new habitats and open up wildlife corridors, helping to bring about net gains for biodiversity.

#### Active Travel and Access

- 5.6 Pendle is well-connected with good Public Rights of Way (PRoW) provision and cycle routes. The Pennine Bridleway, a 330km national trail, passes through the Borough, from the north west to the south east. This provides numerous recreational opportunities including walking, cycling and horse riding<sup>47</sup>. In addition, there are numerous PRoW (over 626km) as well as local and national cycle routes (over 145km) connecting Pendle's settlements to one another and the wider countryside (see [Figure 5.1](#)). The Leeds and Liverpool Canal, passing through the centre of the Borough from north to south, also offers walking and cycling opportunities and links to adjacent boroughs.

<sup>47</sup> National Trails (2018) Pennine Bridleway. Available at: <https://www.nationaltrail.co.uk/pennine-bridleway>.

- 5.7 Pendle's Cycling Legacy Strategy (2016)<sup>48</sup> aims to improve the physical infrastructure for cycling in Pendle, to make connections and fill in the gaps in the cycle network to create an accessible cycle network throughout Pendle, and to create and enhance cycling links to schools, Yorkshire, Gisburn Forest's cycling territory, the Forest of Bowland and Burnley.
- 5.8 The 2015 Lancashire Rights of Way Improvement Plan<sup>49</sup> aims to increase the maintenance and access of the PRoW network, ensure more gains and fewer losses through new developments, connect green spaces better with communities and urban areas, improve facilities on the network such as benches and toilets to encourage use by the elderly, very young or disabled, and improve signage and wayfinding to increase awareness.
- 5.9 The 2011 Lancashire County Council Local Transport Plan<sup>50</sup> promotes active transport, access and recreational opportunities, and highlights that these walking and cycling routes contribute to people's health and well-being.
- 5.10 Bus routes are also a key link between towns and countryside, however there are issues with the quality of service, particularly in relation to the frequency and reliability of services connecting rural locations.
- 5.11 The adopted Core Strategy<sup>19</sup> policies require new developments to enhance opportunities for walking and cycling by connecting to existing pedestrian and cycle routes. Where appropriate it also states that new links should be provided to help increase connectivity and close gaps in the network.

## Recreation

- 5.12 Playing pitches contribute to the social function and benefits of green infrastructure, including providing recreation opportunities and contributing to people's health and well-being (see the following GI theme). The Playing Pitch Strategy (PPS) for Rossendale, Pendle and Burnley (2016)<sup>51</sup> found that for Pendle overall:
- There is a surplus in **adult grass football pitches** both currently and in the future.
  - There is an overall deficiency in **youth 11v11 grass football pitches** both currently and to meet future demand.
  - There is shortfall in future demand for **youth 9v9 grass football pitches**, however there is a surplus in provision for these type of pitches at present.
  - There is a surplus in **mini 7v7 grass football pitches** both currently and in the future.
  - There is an overall deficiency in **mini 5v5 grass football pitches** both currently and to meet future demand.
- 5.13 The PPS<sup>51</sup> also notes there is deficiency in provision of 3G football pitches, cricket pitches and rugby union pitches. In contrast, the PPS concluded that there are a sufficient number of tennis courts, hockey pitches and bowling greens to meet current and projected demand.
- 5.14 Previously, the Children's and Youth Play Area Strategy 2006-2016<sup>52</sup> reported issues within the Borough with regards to the quantity, quality and access to play areas. However this Strategy is now out of date and modernisation of much of the play equipment has now occurred and further provision has been made in priority wards that formerly were deficient.

<sup>48</sup> Pendle Borough Council (2016) Pendle's Cycling Legacy Strategy 2016 – 2021. Available at: [https://www.pendle.gov.uk/downloads/file/6692/pendles\\_cycling\\_strategy\\_2016-21](https://www.pendle.gov.uk/downloads/file/6692/pendles_cycling_strategy_2016-21).

<sup>49</sup> Lancashire County Council (2015) Lancashire Rights of Way Improvement Plan 2015 – 2025. Available at: <http://www.lancashire.gov.uk/council/strategies-policies-plans/environmental/>.

<sup>50</sup> Lancashire County Council (2011) A Strategy for Lancashire: Local Transport Plan 2011 – 2021. Available at: <http://www.lancashire.gov.uk/council/strategies-policies-plans/roads-parking-and-travel/local-transport-plan/>.

<sup>51</sup> Knight, Kavanagh & Page (2018) Rossendale, Pendle & Burnley Playing Pitch Strategy and Action Plan 2016 – 2026. For Rossendale Borough Council, Pendle Borough Council and Burnley Borough Council. Available at: [https://www.pendle.gov.uk/downloads/file/9049/report\\_and\\_action\\_plan](https://www.pendle.gov.uk/downloads/file/9049/report_and_action_plan).

<sup>52</sup> Pendle Borough Council (2006) Borough of Pendle Children's & Youth Play Area Strategy – 2006-2016.



- 5.15 The Open Space Audit for Pendle was completed in June 2018. The audit identified all open spaces located within 300m of a defined settlement boundary. Analysis of the data identified areas of surplus or deficit in open space quantity provision; identified areas deficient in access to open space; and highlighted sites of high priority for improvement due to poor quality scores. Further information on the Open Space Audit is contained in **Chapter 9**.
- 5.16 The delivery of safe active travel routes has the potential to get people out of their cars and walk and cycle instead. This in turn can help to displace carbon emissions from private car travel as set out below:



## Climate Change

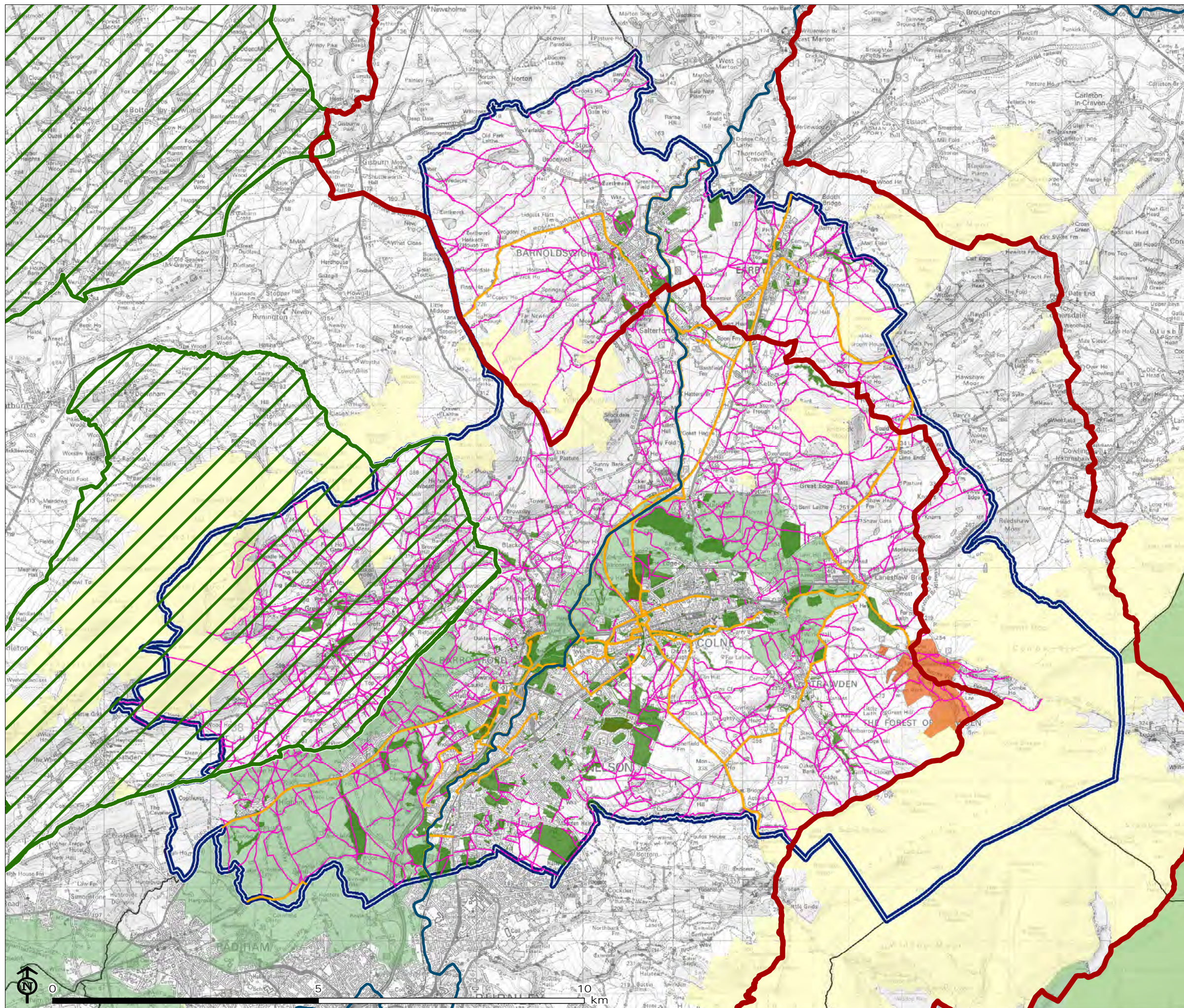
The 2011 Lancashire County Council Local Transport Plan<sup>53</sup> highlights that transport is a major source of carbon dioxide emissions which, in turn, is a major cause of climate change. It also notes that alternatives to private car journeys can reduce the impacts of transport upon climate changes and a key priority of the plan is to enhance the provision of walking and cycling opportunities, as well as public transport opportunities, in the region.

The plan highlights that walking and cycling routes need to be direct and attractive to use and an improved public realm and new infrastructure is required to make regular walking and cycling a viable alternative for more people.

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<sup>53</sup> Lancashire County Council (2011) A Strategy for Lancashire: Local Transport Plan 2011 – 2021. Available at: <http://www.lancashire.gov.uk/council/strategies-policies-plans/roads-parking-and-travel/local-transport-plan/>.





## Pendle Green Infrastructure Strategy

Figure 5.1: Active travel, access and recreation

- Pendle District
- Local Authorities
- Forest of Bowland AONB
- Cycle Routes
- National Trails
- Public Rights of Way
- Leeds and Liverpool Canal
- CROW Access land
- Sites included in Open Space Audit
- Wycoller Country Park
- Green Belt

Map Scale @A3: 1:70,000





## Existing initiatives

- 5.17 Enhancing and maintaining components of GI such as PRoW, cycle routes, play spaces, semi natural and natural spaces can help encourage local communities and visitors to travel sustainably and also provide locations for recreation. Notable existing initiatives which seek to improve active travel, access and recreation within Pendle include:

### Pendle Walking Festival 2018<sup>54</sup>

- 5.18 The Pendle Walking Festival is one of the UK's biggest free walking festivals held over seven days in August each year. It consists of guided walks, many run by volunteers, every day over the festival period. It is geared to suit walkers of all abilities, ranging from easy walks of a couple of miles to challenging walks like the Pendle Way.

### Active Ants<sup>55</sup>

- 5.19 Active Ants is a Primary School Digital Health Programme operating in Lancashire and is being delivered by several partners. The programme aims to support children achieving one hour of physical activity a day, in line with the Chief Medical Officer guidelines. To date, the programme has been piloted at 20 primary schools across Lancashire, and was fully evaluated by Active Lancashire in May 2018. The scheme also includes a programme of encouraging children to walk to school. The National Lottery has awarded £9,500 to Active Ants Pendle. This one year scheme began in July 2018 and seeks to demonstrate progress and recognition for being active as a family<sup>56</sup>.

### Steven Burke Sports Hub and the Pendle BMX Pump Track

- 5.20 Located within the heart of Pendle, these venues are connected to other GI assets; the Leeds and Liverpool Canal and National Cycle Network Route 68, providing a great example of a well-connected GI network promoting active travel. The Steven Burke Sports Hub is a base for adult and children cycling training. The 1.1km road circuit is within the boundary of Swinden playing fields and celebrates the Borough's Olympic Gold medallist, Steven Burke. The Pendle BMX Pump Track 200 metre long track is designed from the novice BMX rider to the elite and lies within the Steven Burke Sports Hub.

## What are the key issues, priorities and opportunities?

- 5.21 The following section provides a summary of the stakeholders' comments on the key issues relating to active travel, access and recreation within the Borough. Further details of the stakeholder views collated through consultation are presented in **Appendix 2**. This is followed by a review of the issues, priorities and opportunities for GI to deliver and/or enhance these features within Pendle.

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<sup>54</sup> Visit Pendle (2018) Pendle Walking Festival 2018. Available at: [www.visitpendle.com/whats-on/pendle-walking-festival-2018-p799190](http://www.visitpendle.com/whats-on/pendle-walking-festival-2018-p799190).

<sup>55</sup> Active Lancashire (2018) Active Ants. Available at: [www.activelancashire.org.uk/projects/active-ants](http://www.activelancashire.org.uk/projects/active-ants).

<sup>56</sup> Big Lottery Fund (no date) Active Ants Pendle. Available at: <https://www.biglotteryfund.org.uk/funding/grants/0031062094>.



#### Stakeholder views

- The canal is a key recreational asset and the canal towpath is of importance for cycling, walking and biodiversity, but is in need of improved access.
- The Canal and River Trust and partners are developing England's first Coast to Coast canoe trail by 2020, including a section through Pendle.
- Existing PRow and cycle networks are underused due to: poor connections between urban and rural areas; lack of knowledge about networks; poor signposting and a general lack of public confidence in map reading. There is also a general lack of information about disabled access.
- There is a need to establish walking and cycling routes of different lengths for differing demands. Dedicated cycle ways away from road traffic should be created for safe family recreation and to link parks and homes.
- Improvements are required to damaged footpaths along Pendle Water, as well as at Higham, Thorneyholme and Whitehough.
- There is a general lack of volunteers and funding for footpaths and open spaces and there can be difficulty sustaining GI in urban areas such as pocket parks.
- There is a need for the Council to work in partnership with the NHS, Public Health England and health professionals to deliver opportunities for 'Green prescriptions' recognising the critical link between recreation and health and well-being.

- 5.22 Four key issues and priorities have been identified from the review of baseline information and stakeholder consultation.

#### Provide healthy, safe travel routes for commuters and visitors

- 5.23 Active travel routes, such as the extensive PRow network and cycle routes, can provide healthy and safe travel routes for commuters and visitors. Such routes discourage travel by private car, encourage exercise and reduce air pollution. Well designed and off-road routes can also increase safety. There are however areas within Pendle where active transport routes are lacking, or could be enhanced and GI could help to deliver these routes and enhancements.
- 5.24 **Figure 5.2** shows the locations of existing active travel routes as well as employment areas, public open space and schools. In particular, locations that are more than 5 minutes' walk from a dedicated cycle route are highlighted. Whilst most of the employment areas are well connected to the cycle network, there are some employment areas less well served in terms of access to the cycle network than others southeast of the M65.
- 5.25 A key priority is therefore to provide healthy, safe travel routes for commuters and visitors within Pendle Borough. Key opportunities include: seeking opportunities to provide safe walking and cycling routes between 'home and work', such as by the creation and enhancement of cycle routes between residential and employment areas; providing adequate cycle infrastructure in and

around key parks, retail and employment areas; and seeking to attract a cycle hire scheme to Pendle (as many people are unlikely to have space to store their own bikes at home). The provision of adequate lighting to enable the self-surveillance of routes to increase their perceived safety and use should also be considered.

- 5.26 Areas of the Borough that are more than 400m (5 minutes' walk) from a dedicated cycle route have been prioritised based on their proximity to employment areas. **Figure 5.3** shows that three employment areas in Nelson are less well served in terms of the existing cycle network. Opportunities should be sought to connect these employment areas to the cycle network. Within this same area, there are a high number of schools that would benefit from a high quality cycle route in this zone.

Priority A1: Provide healthy, safe travel routes for commuters and visitors		M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity A1a	Seek opportunities to provide safe walking and cycling routes between home, work and education. Sensitive and sustainable lighting design will avoid light pollution and reduce energy use as well as improving self-surveillance of routes.	✓	✓	✓	
Opportunity A1b	Seek to attract a cycle hire scheme to Pendle as many are unlikely to have space to store their own bikes at home.	✓	✓		
Opportunity A1c	Provide adequate cycle infrastructure in and around key parks and employment areas.	✓	✓	✓	





Examples of cycle infrastructure and off-road cycle routes to increase active transport use.

### Ensure sufficient shade along routes

- 5.27 GI can help to provide shade via the planting of street trees. These can also provide additional urban cooling, flood alleviation and biodiversity benefits. Shade is an important factor that can encourage the use of active transport methods, such as walking and cycling. This is becoming ever more important as a result of climate change with global temperature increases and warmer summers.
- 5.28 A key priority is to ensure there is sufficient shade along routes to enhance these routes and encourage their use. In order to do this, there is a need to map the existing street tree network and prioritise tree planting where gaps are identified. At present no data on street trees is available for Pendle.
- 5.29 Particular consideration should be given to the opportunities to improve these routes in proximity to schools, to encourage children to utilise active transport when travelling to and from school, helping to improve health outcomes for children and young people (a priority health objective for the Borough). **Figure 5.2** shows the existing active travel network and its relationship with schools.

Priority A2:	Ensure sufficient shade along routes	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity A2a	Seek opportunities to provide street greening through mapping the existing street tree network and prioritise tree planting where gaps are identified.	✓	✓	✓	

### Get residents walking in the countryside

- 5.30 Walking in the countryside can encourage exercise, provide a recreation opportunity, and positively contribute to mental health and well-being. As outlined in **Chapter 3 - Priority L1**, in many areas there is a lack of connections between the dense urban areas and the wider countryside, with many residents unaware or ill at ease with exploring the potential opportunities in the countryside on their doorstep.
- 5.31 **Figure 5.2** shows the existing Public Rights of Way network extending into the wider countryside.
- 5.32 **Figure 5.4** shows the potential gateways to the countryside identified in the Landscape theme and their relationship to the countryside, Green Belt and the existing Public Right of Way network. A key priority is to get residents walking and the creation of short and medium length circular routes in the countryside can encourage members of the public to do this. These routes should be well defined and of a length that residents would feel comfortable about using.
- 5.33 Where Green Belt land is considered for release, in line with the requirements of para 138 of the NPPF, opportunities should be identified to offset the impact of removing land from the Green Belt through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land.

Priority A3:	Get residents walking in the countryside	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity A3a	Create short and medium length circular routes within the urban/rural transition zone.	✓	✓		
Opportunity A3b	Seek opportunities to enhance access to and use of Green Belt land.	✓			✓

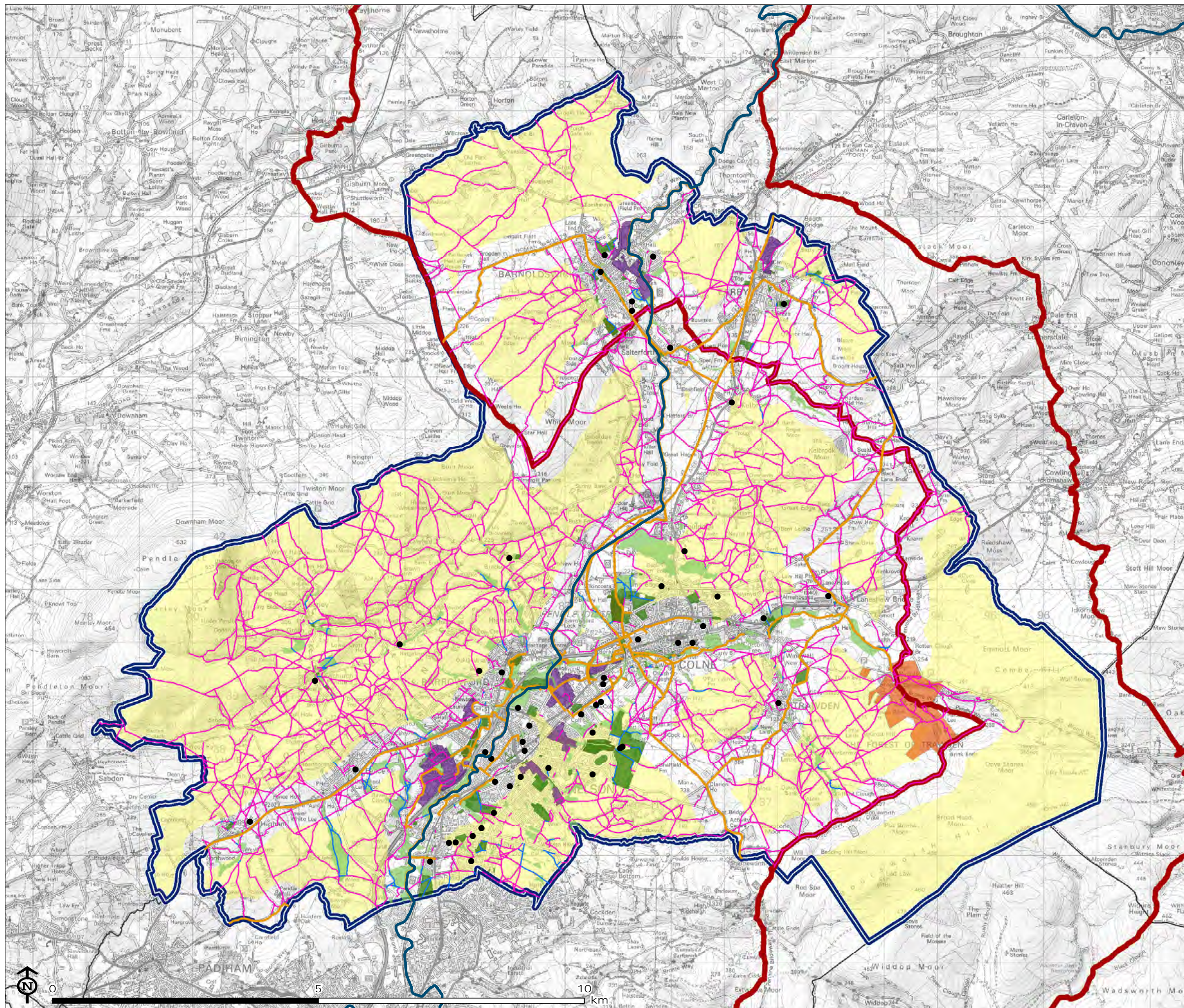
### Encourage water based recreation, including use of towpaths

- 5.34 Water features in Pendle include the Leeds and Liverpool Canal, Pendle Water, Colne Water and Lake Burwain (also known as Lower Foulridge Reservoir). These provide opportunities for water-based recreation for local residents and visitors. Existing recreational uses of Pendle's water bodies include boating opportunities along the Leeds and Liverpool Canal, as well as cycling and walking opportunities along the canal waterside, fishing and sailing at Lake Burwain (Lower Foulridge Reservoir). Additional recreation opportunities could be provided at many of Pendle's water assets to increase recreational opportunities across the Borough.
- 5.35 A key priority is to encourage water based recreation for local residents and visitors across the Borough. Key opportunities include improving the existing towpath along the canal and rivers, to improve access for users including walkers, joggers and cyclists, as well as pushchair and wheelchair users. Promoting existing and new water-based attractions could also be encouraged. **Figure 5.4** shows key water-based opportunities (canal and reservoirs).



Priority A4:	Encourage water based recreation, including use of towpaths	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity A4a	Promote water-based attractions.				✓
Opportunity A4b	Canal: Encourage Canal & River Trust to undertake towpath improvements where necessary.	✓	✓		





## Pendle Green Infrastructure Strategy

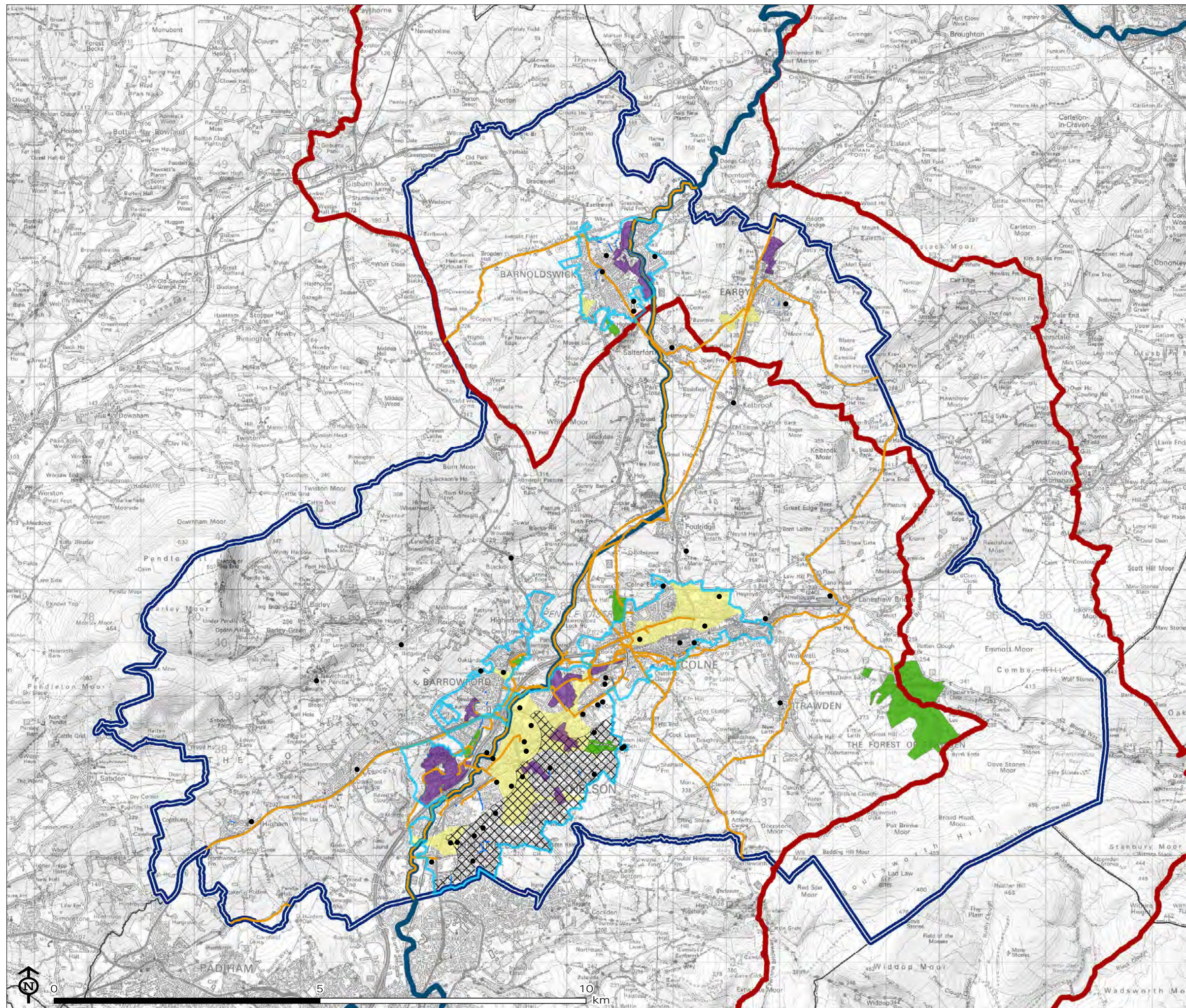
Figure 5.2: Identifying spatial opportunities for active travel, access and recreation

- Pendle District
- Local Authorities
- Employment areas
- Schools
- Cycle Routes
- National Trails
- Public Rights of Way
- Public Rights of Way within open space
- Leeds and Liverpool Canal
- Publicly accessible open space (audited)
- Limited/de facto access open space (audited)
- Wycoller Country Park
- Areas more than 5 mins walk from cycle route

Map Scale @A3: 1:70,000







## Pendle Green Infrastructure Strategy

Figure 5.3: Priority opportunities for active travel

- Pendle District
- Local Authorities
- Schools
- Public Rights of Way within open space
- Cycle Routes
- Leeds and Liverpool Canal
- National Trails
- Area-specific opportunities
  - A1a: Provide cycle routes
  - A1a: Provide safe, green walking routes
  - A1b: Cycle hire scheme
  - A1c: Improve cycle infrastructure in employment areas
  - A1c: Improve cycle infrastructure in key parks

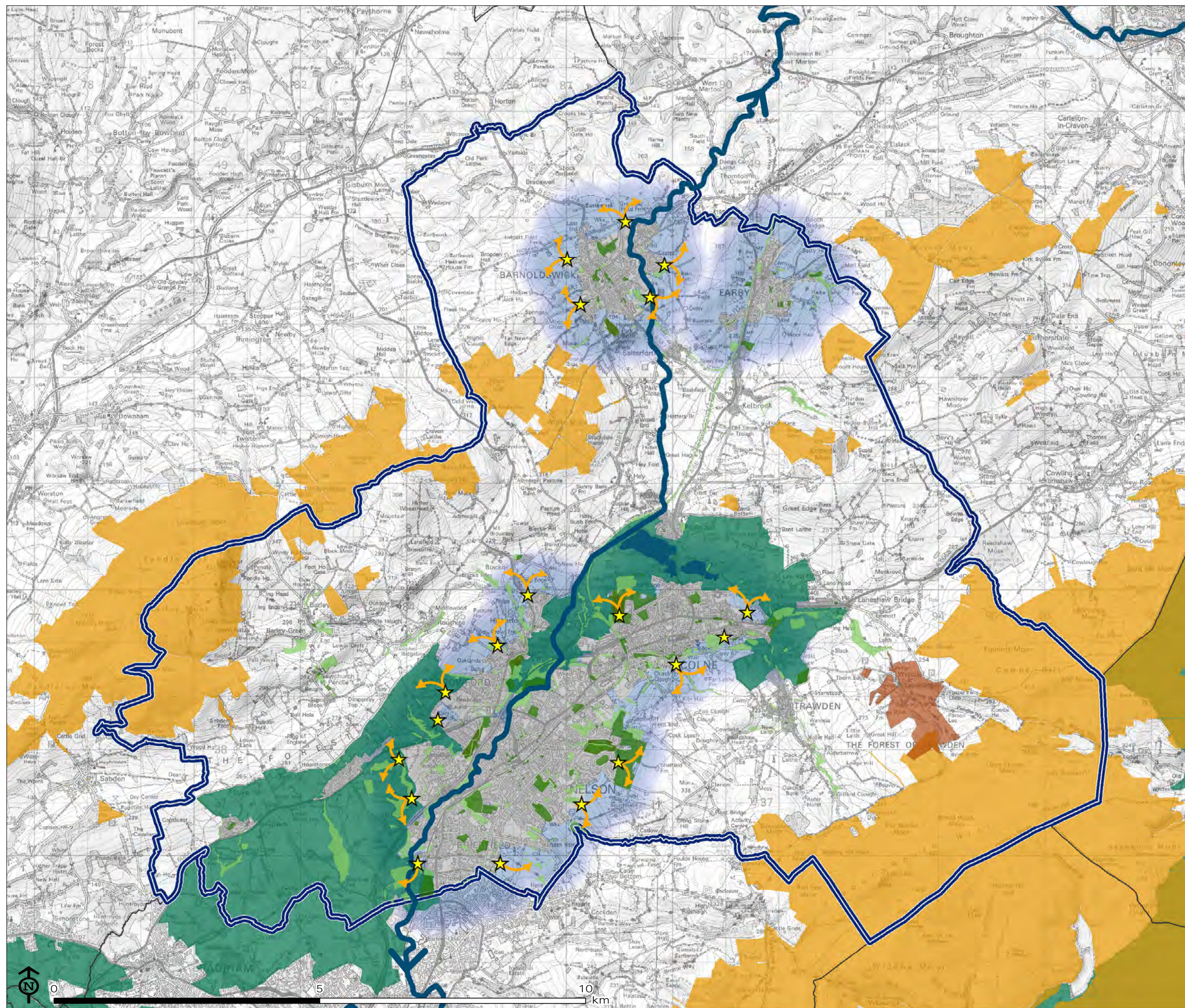
### Borough-wide opportunities

A2a: Seek opportunities to provide street greening through mapping the existing street tree network and prioritise planting where gaps are identified.

Map Scale @A3: 1:70,000







## Pendle Green Infrastructure Strategy

Figure 5.4: Priority opportunities for recreation and access to the countryside

- Pendle District
- Local Authorities
- Publicly accessible open space (audited)
- Limited/de facto access open space (audited)
- Wycolter Country Park
- Open access land
- Settlements
- Urban/rural transition zone
- Area-specific opportunities
  - L1a: Improve key gateways to countryside (indicative)
  - A3a: Provide short and medium length circular walking routes
  - A3b: Enhance access to and use of Green Belt land
  - A4a: Promote water-based attractions
  - A4b: Improve canal-based attractions and towpath

Map Scale @A3: 1:70,000





## 6 Biodiversity and ecological networks

GI, if appropriately designed and located, can help to protect and enhance habitats and ecological networks. In turn, GI can provide biodiversity benefits, supporting a diverse range of designated sites and species and increasing resilience to pressures such as climate change.

### Pendle's biodiversity and ecological networks

- 6.1 The UK Biodiversity Indicators (2018)<sup>57</sup> defines biodiversity as *"the variety of all life on Earth. It includes all species of animals and plants, and the natural systems that support them. Biodiversity matters because it supports the vital benefits we get from the natural environment"*.
- 6.2 Approximately one third of the Borough and over half of the open countryside within Pendle is protected by an international, national or local environmental designation (see **Appendix 1** - National, Regional and Local Policy Context- Habitats). Although these designated sites are dispersed across the Borough and sites are a range of sizes. These sites are significant to the GI network in terms of diversity and should be well connected to other designated sites by through wildlife corridors.
- 6.3 The Pendle Biodiversity Audit (2010)<sup>58</sup> identifies a number of statutory protected sites that are designated because of their international, national or local importance. The South Pennine Moors is located along the southeast of the Borough. The South Pennine Moors is located along in southeast of the Borough and is one of the largest unenclosed moorland areas in the country. It is designated as a:
- Special Protection Area (SPA): recognising the presence of several upland breeding species, including birds of prey and waders.
  - Special Areas of Conservation (SAC): acknowledging the presence of the number of important habitats including blanket bogs; European dry heaths; Northern Atlantic wet heaths, old sessile oak woods and transition mires and quaking bogs.
  - Sites of Special Scientific Interest (SSSI): this site is regarded as one of the largest unenclosed moorland areas in the country and contains a diverse and extensive range of upland plant communities.
- 6.4 According to a condition summary generated by Natural England<sup>59</sup>, the majority of The South Pennine Moors SSSI (approximately 94.68%) is recovering (also known as unfavourable recovering) meaning that despite all the necessary management mechanisms being in place, not all the areas within the site are fully conserved owing to issues such as over and under grazing and bracken encroachment<sup>59</sup>, however recovery is predicted provided that the restoration work is sustained.

<sup>57</sup> Department for Environment, Food and Rural Affairs (2018) UK Biodiversity Indicators 2018. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/729713/UKBI\\_2018v2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729713/UKBI_2018v2.pdf).

<sup>58</sup> Pendle Borough Council (2010) Local Development Framework for Pendle – Pendle Biodiversity Audit Summer 2010. Available at: [https://www.pendle.gov.uk/downloads/file/5678/pendle\\_biodiversity\\_audit\\_2010](https://www.pendle.gov.uk/downloads/file/5678/pendle_biodiversity_audit_2010).

<sup>59</sup> Natural England (no date) Designated Sites View, SSSI Condition Summary - Site: South Pennine Moors SSSI. Available at: <https://designatedsites.naturalengland.org.uk/ReportConditionSummary.aspx?SiteCode=S1007196&ReportTitle=South%20Pennine%20Moors%20SSSI>.

- 6.5 An additional 4.16%<sup>60</sup> of the SSSI is in unfavourable status meaning that these areas are not being conserved and will not reach favourable condition unless there are changes to the site management or external pressures. For example, surveys found that unconsented operations have resulted in loss and damage to habitat in Shoulder Nick and Grey Fosse Clough Moss and Field of the Mosses. Natural England report that restoration works are required to ameliorate the loss and damage to these areas and enforcement action is being undertaken<sup>59</sup>.
- 6.6 In contrast only 1.16% of The South Pennine Moors SSSI is in a favourable condition meaning these areas are being adequately conserved and the results from monitoring demonstrate that the features here are meeting all the mandatory site specific monitoring targets.
- 6.7 In addition to the above, there are several other biodiversity assets present within Pendle Borough (see **Figure 6.1**):
- Four Local Nature Reserves.
  - Eight Sites of Local Nature Importance.
  - 59 Biological Heritage Sites.
  - Two Country Parks (Letcliffe and Wycoller).
  - 17 areas of Ancient Semi-Natural Woodland.
  - In excess of 320 Tree Preservation Orders.
  - Two Local Geodiversity Sites.
- 6.8 There are also 18 UK Biodiversity Action Plan (BAP) key habitats and 39 key species (of which 29 are UK Priority Species) identified in Pendle<sup>57</sup>.
- 6.9 The 2012 Habitat Regulations Assessment for the Core Strategy Publication Report<sup>61</sup> concluded that the Local Plan Part One: Core Strategy is unlikely to cause significant effects on the integrity of Natura 2000 sites within and in proximity to the Borough. However, the increase in extent of housing proposed within the Borough has the potential to increase pressure on designated sites and sensitive semi natural habitats. The 2010 Pendle Biodiversity Audit identifies recreational pressure, development and inappropriate management as potential threats to designated sites within the Borough.
- 6.10 Those parts of south east Pendle, within the South Pennines SAC and SPA, are covered by the South Pennines Local Nature Partnership<sup>62</sup>. The National Character Area Profiles for the Southern Pennines NCA 36<sup>25</sup> highlights that large-scale habitat restoration within this NCA offers a significant opportunity to enhance climate change regulation. One of the key priorities within this area is to increase woodland coverage; however no opportunity sites for woodland planting were identified within the Borough by the 2013 South Pennines Woodland Creation Opportunities Portfolio<sup>63</sup>.
- 6.11 The 699 hectares of woodland in Pendle covers 4.1% of the Borough, significantly lower than the national average of 12.7% coverage. Of this, ancient semi-natural woodland can be found in 17 locations, but this accounts for less than 10% of total woodland cover. Although now disbanded, the ELWOOD programme (see **Chapter 3**) was established through Groundwork East Lancashire (now part of Groundwork Cheshire, Lancashire, Merseyside) and aimed to create a new forest in East Lancashire<sup>64</sup>. The ELWOOD programme identified that woodland within Pendle is located sporadically across the Borough, including in bands along the disused Colne-Skipton railway line, along river corridors, and in woodland clusters in both rural and urban areas. In 2010 Lancashire County Council also carried out work to look for opportunities to increase woodland cover.

<sup>60</sup> Figures do not add to 100 owing to rounding.

<sup>61</sup> Pendle Borough Council (2010) Pendle Local Plan Core Strategy Publication Report Habitat Regulations Assessment. Available at: [https://www.pendle.gov.uk/downloads/file/7575/habitat\\_regulations\\_assessment](https://www.pendle.gov.uk/downloads/file/7575/habitat_regulations_assessment).

<sup>62</sup> Pennine Prospects (2018) Local Nature Partnership. Available at: <https://www.pennineprospects.co.uk/local>.

<sup>63</sup> Forest and Land Ltd (2013) South Pennines Woodland Creation Opportunities Portfolio for Pennine Prospects and the Woodland Trust. Available at: <https://www.pennineprospects.co.uk/local/south-pennines-woodlands>.

<sup>64</sup> ELWOOD (2001) A strategy for woodland in East Lancashire.



- 6.13 Designated biodiversity sites form the basis of the Lancashire Ecological Network which seeks to protect, enhance and connect sites of biodiversity value, thereby helping the valuable flora and fauna of the area to adapt to the effects of climate change (see paragraph 6.29). An ecological network is collection of mixed core habitat sites that are linked by corridors, which are also habitats in themselves. The Lancashire Ecological Network maps ecological networks across the county. These maps are then used to identify areas of high 'landscape integrity' (natural habitats that have experienced minimal human impact). Local authorities are using this data to inform the preparation of their Local Plans.
- 6.14 These networks include grassland (see [Figure 6.2](#)) and woodland (see [Figure 6.3](#)). There are various corridors of the Lancashire Woodland Ecological Network present across Pendle, including along the former railway line extending northwards from Colne, around Bleara Moor in the northeast, along Pendle Water and Blacko Water in the west, along Moor Isles Clough and Spurn Clough in the south, and along Trawden Brook and Wycoller Beck in the south east.
- 6.15 There are also various corridors of the Lancashire Grassland Ecological Network present across Pendle, including along the former railway line and Leeds and Liverpool Canal extending northwards from Colne, at Kelbrook Moor in the northeast, along Trawden Brook and Wycoller Beck in the southeast, along Catlow Brook in the south, along the Leeds and Liverpool Canal in the south, along Moor Isles Clough and Fir Trees Brook in the southwest and around Lower Black Moss Reservoir, Upper Black Moss Reservoir and along Blacko Water in the northwest.
- 6.16 A further Ecological Network entitled wetland and streams was also intended, but due to data limitations, particularly in relation to rivers and streams, the modelling could not be finalised<sup>65</sup>.
- 6.17 The adopted Core Strategy<sup>19</sup> Vision aims to enhance urban green spaces to make a positive contribution to ecological networks and local biodiversity. In addition the objectives and policies within the Core Strategy aim to enhance and improve access to green spaces to encourage a greater appreciation of the valuable contribution they may make to biodiversity. The Core Strategy also seeks new development to respect the natural environment, maintain and enhance sites that are valued for the positive contribution they make to biodiversity, and make a positive contribution to the protection, enhancement, conservation and interpretation of the natural environment. It also seeks to ensure that sites which have been designated for nature conservation purposes are protected in a manner appropriate to the status of their designation.
- 6.18 Biodiversity is particularly at risk from climate change. A summary of the potential key issues relating to climate change and biodiversity within Pendle summarised below:

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<sup>65</sup> Lancashire Local Nature Partnership (2015) Lancashire Ecological Network Approach and Analysis (Version 1). Available at: <https://www.lancswt.org.uk/sites/default/files/2018-08/Lancashire%20Ecological%20Network%20Approach%20and%20Analysis%20Document%20v1.pdf>.



## Climate Change

The adopted Core Strategy<sup>19</sup> highlights that climate change adversely affects biodiversity and it is already forcing biodiversity to adapt either through shifting habitats, changing life cycles, or the development of new physical traits.

Biodiversity can however help to reduce the negative effects of climate change:

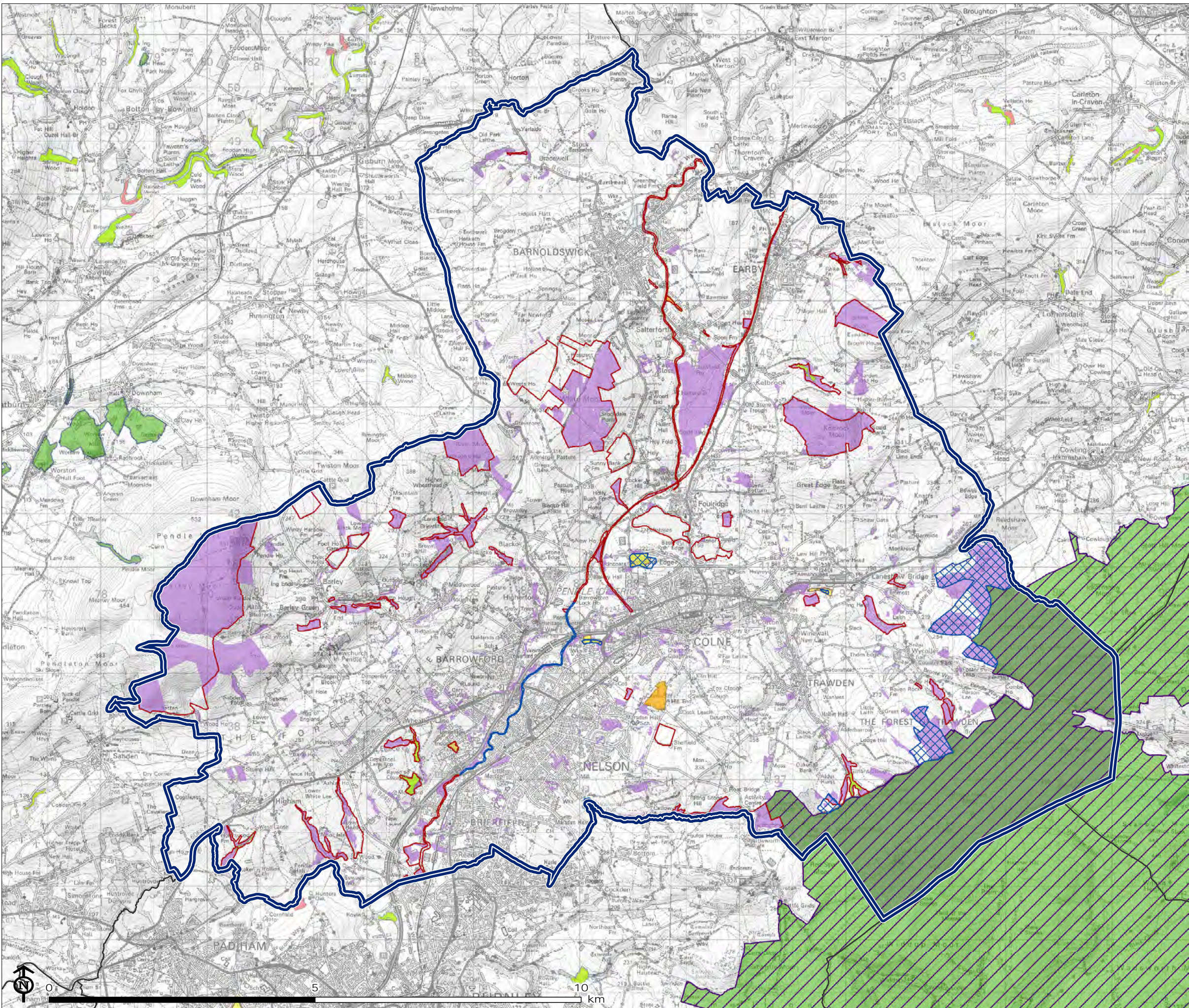
- Planting woodland and trees can help by: reducing flood risk by intercepting and absorbing water and delaying water flow; reducing pollution; providing a wind break; contributing to urban cooling; and reducing soil erosion.
- Woodland can also perform a carbon storing function (carbon sequestration) by converting atmospheric CO<sub>2</sub> into biomass.
- Upland peat bogs play a significant role in carbon capture and storage. Their conservation and restoration through the re-wetting of upland and lowland peat soils helps to create suitable conditions for a layer of living plants which absorb CO<sub>2</sub> from the atmosphere.

The Natural England National Character Area (NCA) Profiles for the Lancashire Valleys NCA 35<sup>24</sup>, the Bowland Fringe and Pendle Hill NCA 33<sup>23</sup> and the Southern Pennines NCA 36<sup>25</sup> highlight the climate change regulation services that the ecological network within Pendle provides. In particular, within the Southern Pennines NCA in the southeast of the Borough, the organic peaty soils generally have high carbon content and are associated with the large expanses of blanket bog and wet-heath habitats. This offers significant climate regulation where the habitats are in good condition. Degraded peat bogs release stored carbon dioxide and other greenhouse gases into the atmosphere and through water run-off. Large-scale habitat restoration within this NCA offers a significant opportunity to enhance climate change regulation.



# Pendle Green Infrastructure Strategy

Figure 6.1: Biodiversity context



- Pendle Borough Council
- Local Authorities
- South Pennine Moors SAC and Phase 2 SPA
- Site of Special Scientific Interest
- Priority Habitats
- Sites of Local Natural Importance
- Local Geodiversity Sites
- Biological Heritage Sites
- Ancient & Semi-Natural Woodland
- Ancient Replanted Woodland
- Local Nature Reserve

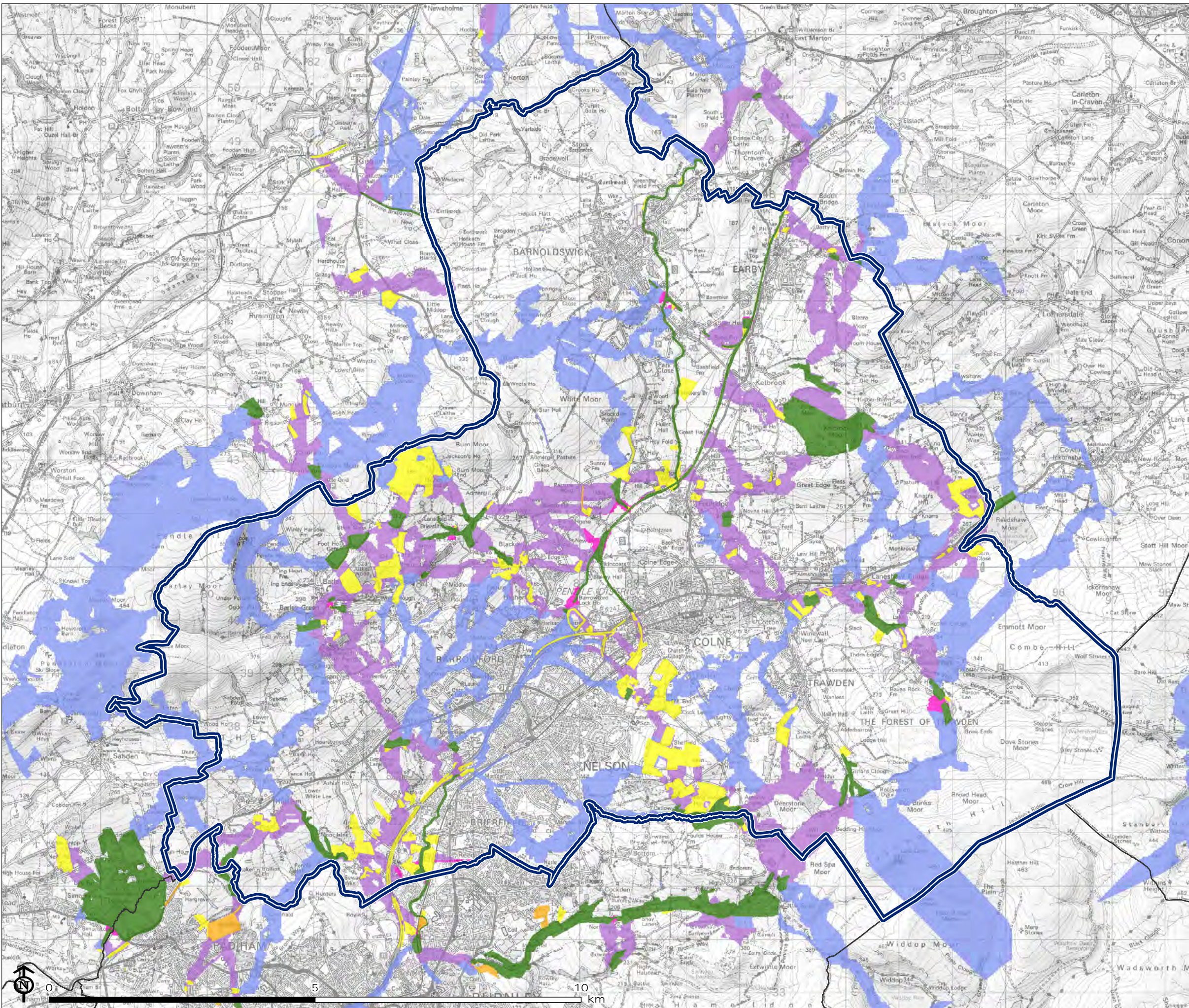
Map Scale @A3: 1:70,000





# Pendle Green Infrastructure Strategy

Figure 6.2: Ecological networks - grassland

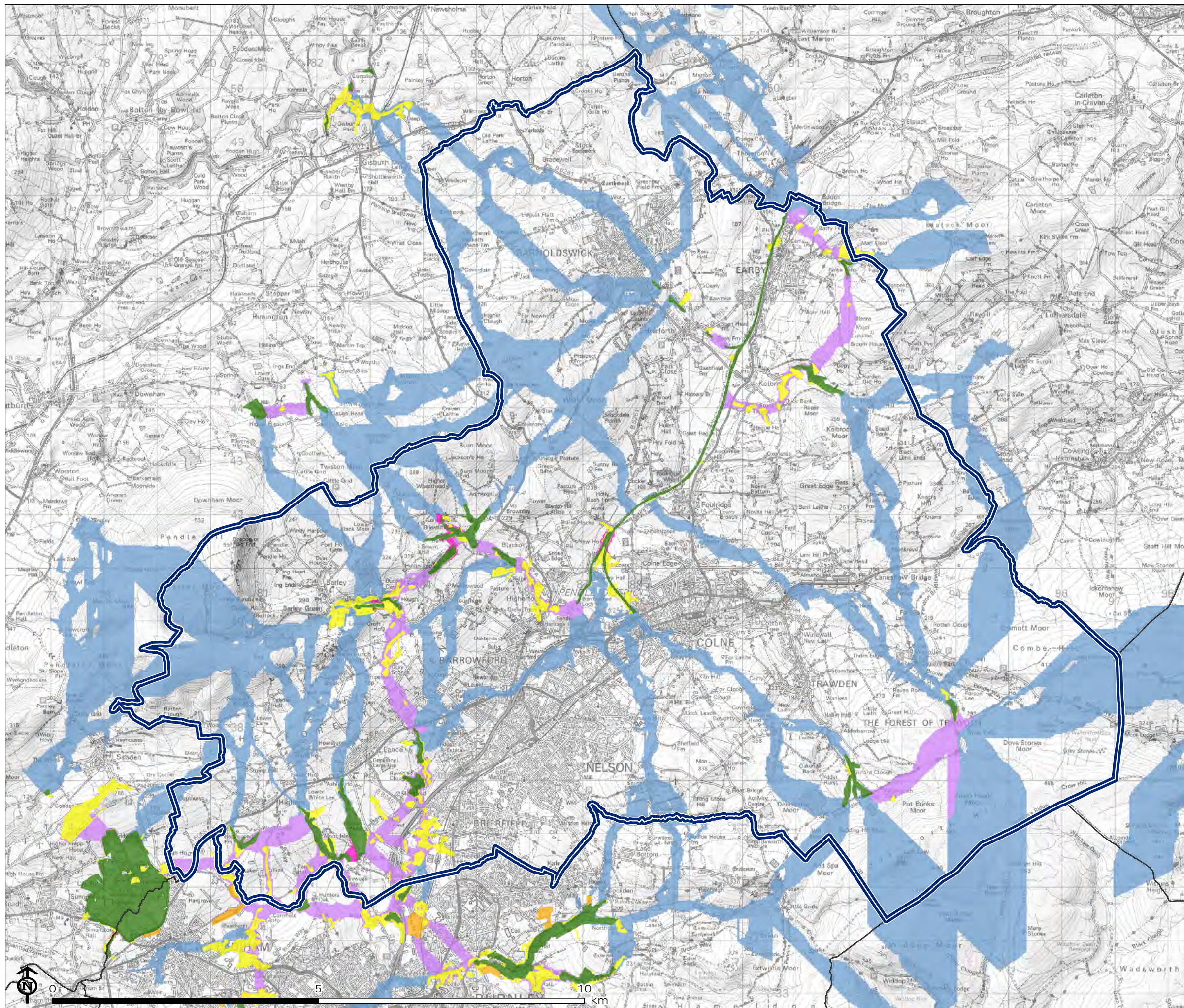


- Pendle Borough Council
- Local Authorities
- Grassland Ecological Network
  - Core Area
  - Stepping Stone
  - Stepping Stone Habitat
  - 0 to 250 m Corridor
  - 250 m to 3 km Corridor
  - > 3 km Corridor (for information only)

Map Scale @A3: 1:70,000







# Pendle Green Infrastructure Strategy

Figure 6.3: Ecological networks - woodland

- Pendle Borough Council
- Local Authorities
- Woodland Ecological Network
  - Core Area
  - Stepping Stone
  - Stepping Stone Habitat
  - 0 to 250 m Corridor
  - 250 m to 3 km Corridor
  - > 3 km Corridor (for information only)

Map Scale @A3: 1:70,000





## Existing initiatives

- 6.19 GI plays an important role in maintaining and enhancing existing habits and biodiversity networks which is important for species movement and habitat creation. As well as enhancing the ecological network, biodiversity led initiatives can also promote local community groups and provide benefits to the public realm. There are a number of existing initiatives seeking to address biodiversity issues within Pendle, some examples include:

### Lancashire Peat Partnership<sup>66</sup>

- 6.20 This partnership was set up in 2009 to co-ordinate peatland restoration projects within the uplands of the Lancashire sub-region and border areas. Through co-ordinated work, the aim is to promote peat restoration in relation to its benefits for carbon management, biodiversity, flood risk management, erosion control, water quality, fire risk management, landscape quality, natural beauty and recreation. This partnership is jointly funded by the Forest of Bowland AONB and the Environment Agency.

### Wildflowers for the Meadows<sup>67</sup>

- 6.21 This project aims to create a sustainable future for wildflowers by working with community groups and volunteers. Volunteers work with the project officer to collect seed, to grow them on into plug plants, and then to plant these back out into the edges of restored meadow sites. This project builds on the success of 'Bowland Hay Time' and 'Networks for Nectar', all funded by the Lancashire Environmental Fund.

### Roughlee Booth Habitat Working Group

- 6.22 Lancashire Wildlife Trust was commissioned to conduct a habitat survey of Roughlee Booth Parish, leading to the formation of a Habitat Working Group to look at ways of protecting the environment and local wildlife. A further commission has been planned for the Wildlife Trust to assist in the creation of wildlife corridors within the local area.

### Alkincoats Wildmeadow

- 6.23 Alkincoats Wildmeadow is a long term project with several outcomes envisioned. These include:
- Changing perceptions of modern public park management.
  - Improving biodiversity of a public park.
  - Bringing people closer to nature.
  - Helping to mitigate climatic change.
  - Supporting local pollinator species.
  - Raising awareness of the importance of insects.
  - Improving the natural features of the park.
- 6.24 The project began in 2012 with the planting of 200 fruit trees (a mix of various apples species, pear and cherry trees) on the redundant three hectare pitch and putt area. This was quickly followed by planting wildflower meadow seed throughout the area. The parts of the meadow that were not seeded had differential mowing techniques employed; some of the grass was cut normally and some was left to reach its full height, flower and seed. Grass paths have been regularly cut through the area to allow park visitors convenient access to the meadow. The meadow itself is being developed into a traditional hay meadow. This type of meadow was once widespread across the UK but has sustained severe losses since the 1960's due to drainage, ploughing and from the use of fertilisers.

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<sup>66</sup> Forest of Bowland (2017) Lancashire Peat Partnership. Available at: [forestofbowland.com/Lancashire-Peat-Partnership](http://forestofbowland.com/Lancashire-Peat-Partnership)

<sup>67</sup> Forest of Bowland (2017) Wildflowers for the Meadows. Available at: [forestofbowland.com/Wildflowers-Meadows](http://forestofbowland.com/Wildflowers-Meadows).



### Marsden Park Forest School

- 6.25 Opened in 2012, the Marsden Park Forest School uses a local woodland environment in Marsden Park as the 'classroom' allowing pupils to actively learn about their environment. The Marsden Park Forest School runs various themed sessions for children aged 3-11 year olds and as a holiday club for up to 14 years. It engages pupils at a young age within a natural and semi natural environment and promotes a healthy active lifestyle in the outdoors.

### Woodlands From Waste

- 6.26 Set up Lancashire County Council, this initiative aims to plant and maintain 2.5 million trees over a period of 25 years in the county<sup>68</sup>. This is equivalent to planting 100,000 trees per year, creating over 1000 hectares of new native woodland. It is estimated that this project will lead to an increase in Lancashire's woodland coverage by close to 10% compared to the woodland coverage in the county in 2010. This initiative sets to strengthen the GI network by providing new habitats and creating linkages, as well as improving opportunities to improve health, well-being, recreation and landscape enhancement.

## What are the key issues, priorities and opportunities?

- 6.27 The following section provides a summary of the stakeholder's comments on the key issues relating to biodiversity within the Borough. Further details of the stakeholder views collated through consultation are presented in **Appendix 2**. This is followed by a review of the issues, priorities and opportunities for GI to enhance biodiversity and ecological networks within the Borough.

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<sup>68</sup> Lancashire County Council (2019) Woodlands From Waste. Available at: <http://www3.lancashire.gov.uk/corporate/web/?siteid=5592&pageid=30717>.



### Stakeholder views

- There are fragmented habitats in need of connection by biodiversity corridors, which can be identified by using the Lancashire ecological network mapping. The canal and river corridors in particular also provide a great opportunity for biodiversity net gain.
- Pendle Borough has a statutory duty to deliver the 2020 targets as set out in the Convention on Biological Diversity Strategic Plan for Biodiversity 2011-2020. However achieving these targets are at threat due to limited resources.
- Japanese Knotweed, Giant Hogweed and Himalayan Balsam present a significant problem across Pendle and along its waterways.
- There is a need to engage with the farming community to encourage planting of hedgerows and move away from intensive agriculture.
- There is a lack of GI within urban areas and opportunities to enhance ecological networks through road side wildflower meadows. There are many brownfield sites that have the potential to deliver ecological benefits.
- There are opportunities to increase woodland coverage, particularly on the high ground in the Borough.
- There could be an opportunity to expand the extent of the proposed 'Northern Forest' to include parts of Lancashire including Pendle.

6.28 Five key issues and priorities have been identified from the review of baseline information and stakeholder consultation. These priorities are described below and illustrated in **Figure 6.4**.

### **Protect core biodiversity areas and increase resilience and connectivity of habitats and wildlife corridors**

- 6.29 Designated biodiversity sites, covering a third of the Borough and over half of the open countryside within Pendle are afforded their own statutory protection by local, national and international policy. However, GI has the potential to offer further protection to such sites, supporting designated species and habitats as well as protecting non-designated sites (particularly where the Local Plan designates areas of GI).
- 6.30 Such designated sites within Pendle form the basis of the Lancashire Ecological Networks, networks which seek to protect, enhance and connect sites of biodiversity value<sup>69</sup>. An ecological network is defined as<sup>65</sup>:

<sup>69</sup> Lancashire Local Nature Partnership (2014) Lancashire Ecological Network Approach and Analysis. Available at: <https://www.blackburn.gov.uk/New%20local%20plan%202/5.32%20Draft%20Background%20Paper%20for%20Ecological%20Networks.pdf>.



*'a collection of suitable habitat patches connected by movement corridors through the intervening habitat matrix. The development of an ecological network as a conservation strategy is intended to maintain the function of the ecosystem in order to support the conservation of species and habitats while also promoting land management strategies that limit the impacts of human activities on biodiversity.'*

- 6.31 Designated sites of at least county importance form the 'Core Areas' (existing protected areas) within the Lancashire Ecological networks. These are connected by '*corridors*' (continuous stretches of permeable habitat that can, over time, be utilised by species to move between Core Areas), '*stepping stones*' (sites of local ecological importance and areas of Priority Habitat above a minimum size threshold), and '*restoration areas*' (corridors, or areas, of permeable habitat, or degraded permeable habitat, within which the creation of new network features will enhance network functionality). GI therefore has the potential to deliver these corridors, stepping stones and restoration areas and enhance network functionality.
- 6.32 **Figure 6.1, Figure 6.2 and Figure 6.3** show the location of designated habitats across Pendle along with the grassland and woodland ecological networks as defined by LERN (Lancashire Environment Record Network). All GI typologies have the potential to perform biodiversity functions through GI protection, enhancement and creation.
- 6.33 **Figure 6.4** highlights spatial opportunities to deliver biodiversity enhancements to strengthen the GI network including within ecological networks.
- 6.34 A key priority is to protect and enhance the existing designated biodiversity areas by protecting, enhancing and expanding the identified ecological networks across the Borough. This could include developing habitats and habitat connectivity through wildflower planting and the development of green corridors, limiting human access to sensitive sites, protecting sites and corridors from adverse development and reducing the pressures on wildlife sites through the creation of wildlife buffers.

Priority B1:	Protect core biodiversity areas and increase resilience and connectivity of habitats and wildlife corridors	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity B1a	Using the ecological networking maps, protect core biodiversity areas by ensuring proposed developments do not directly or indirectly have adverse effects in these locations. These protections should be included in planning policy.	✓	✓	✓	✓
Opportunity B1b	<p>Within the ecological networks:</p> <ul style="list-style-type: none"> <li>• Encourage improvements to the quality of current sites by better habitat management.</li> <li>• Increase the size of current wildlife sites.</li> <li>• Enhance connections between, or join up, sites, either through physical corridors, or through 'stepping stones'.</li> <li>• Create new sites.</li> </ul> <p>and on land around the network:</p> <ul style="list-style-type: none"> <li>• Reduce pressures on wildlife by improving the wider environment, including through buffering wildlife sites.</li> </ul>	✓	✓	✓	✓



Example of a wildflower habitat to support biodiversity and habitat connectivity.



## Ensure development delivers biodiversity net gain

- 6.35 The Government's recently published 25 Year Environment Plan<sup>70</sup>, provides support for 'net environmental gain' in new development, and GI can help to deliver this where incorporated within development plans.
- 6.36 **Figure 6.4** shows the location of strategic allocations for housing and employment and their spatial relationship with existing core biodiversity areas and ecological networks.
- 6.37 A key priority is to provide new and enhance existing natural areas as part of developments within the Borough, including within strategic allocations for housing and employment. The incorporation of GI can provide biodiversity net gain by providing additional habitats and habitat connections, such as set out in the Lancashire Ecological Networks prepared by LERN (see above). This could be via the creation of green corridors, retention and expansion of hedgerow networks and development of wildflower meadows and verges.

Priority B2:	Ensure development delivers biodiversity net gain	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity B2a	Provide new, or enhancement of existing natural areas within new development, particularly within areas allocated for development, or other brought forward for development within the Borough.	✓	✓	✓	✓

## Supporting pollinators

- 6.38 B-Lines (as defined on **Figures 6.4** and **6.5**) are priority areas for restoring and creating a series of wildflower-rich habitats, to address the loss of flowers and pollinators within these defined 'insect pathways' running through our towns and countryside and towns. These pathways are the priorities using stepping stones to link existing wildlife areas and create a network. B-Lines are present within Pendle, extending westwards from Brierfield to the southwest of the Borough and northwards from Brierfield across the Forest of Bowland AONB. GI can support the development of new, and enhancement of existing, pollinator habitats within these B-Lines, which can attract pollinators to the Borough.
- 6.39 **Figure 6.4** shows the location of B-Lines in Pendle. Also shown is the relationship between these areas and outdoor sports facilities and schools. Areas around schools and sports fields could be set aside for wildflower planting.
- 6.40 Although a Borough-wide aspiration, a key priority is to develop pollinator habitats within these B-Lines. This could include through the development of wildflower meadows and corridors around sports fields, which could be delivered by schools, and within private gardens located within the B-Lines. Communities and schools could also be encouraged to develop these habitats through local competitions. **Figure 6.5** shows outdoor sports facilities within the B-Lines that could be explored in terms of biodiversity enhancements.
- 6.41 Within the M65 corridor, reducing hard surfacing through the creation of planted areas and making spaces for street trees will create opportunities for biodiversity, as well as flood alleviation.

<sup>70</sup> A Green Future: Our 25 Year Plan to Improve the Environment UK Government, Jan 2018.

Priority B3:	Supporting pollinators	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity B3a	Encourage community and school action to create corridors for pollinators. This could be through front garden competitions or setting aside areas around sports fields for school children to plant wildflowers in spring. Pollinator friendly planting should be provided alongside new development, within parks and along roadside verges.	✓	✓	✓	✓
Opportunity B3b	Promote pollinator friendly front garden improvements, particularly within B-line areas. Encourage the use of perennial plants for In Bloom projects rather than seasonal plants.	✓	✓	✓	✓
Opportunity B3c	Reduce hard standing surfaces through creating planted areas and make space for street trees.	✓	✓	✓	✓
Opportunity L4a	Encourage landowners and farmers to uptake agri-environment scheme options that make a positive contribution to the landscape and provide habitat opportunities.				✓

### Provide learning opportunities for local schoolchildren

- 6.42 The presence of biodiversity assets affords the opportunity to provide learning opportunities where interpretation of the assets is available. Learning opportunities could support the education of school children (e.g. Forest Schools), as well as providing an attraction for tourists and local residents. This could provide educational benefits, support the local tourism economy, and increase biodiversity across Pendle Borough.
- 6.43 **Figure 6.4** shows biodiversity assets within close proximity to schools. These form an area of search for opportunities to provide biodiversity-focussed learning opportunities for Pendle's schoolchildren.
- 6.44 A key priority is providing learning opportunities for local school children. GI can support this by promoting safe access between biodiversity sites and education facilities along good quality footpaths and cycle paths, including off-road paths. **Figure 6.5** shows biodiversity assets within 10 minutes' walk of a school.
- 6.45 GI can also provide interpretation of biodiversity sites through the addition of signage and information boards that are appropriate and engaging for children and young adults, as well as the wider community.

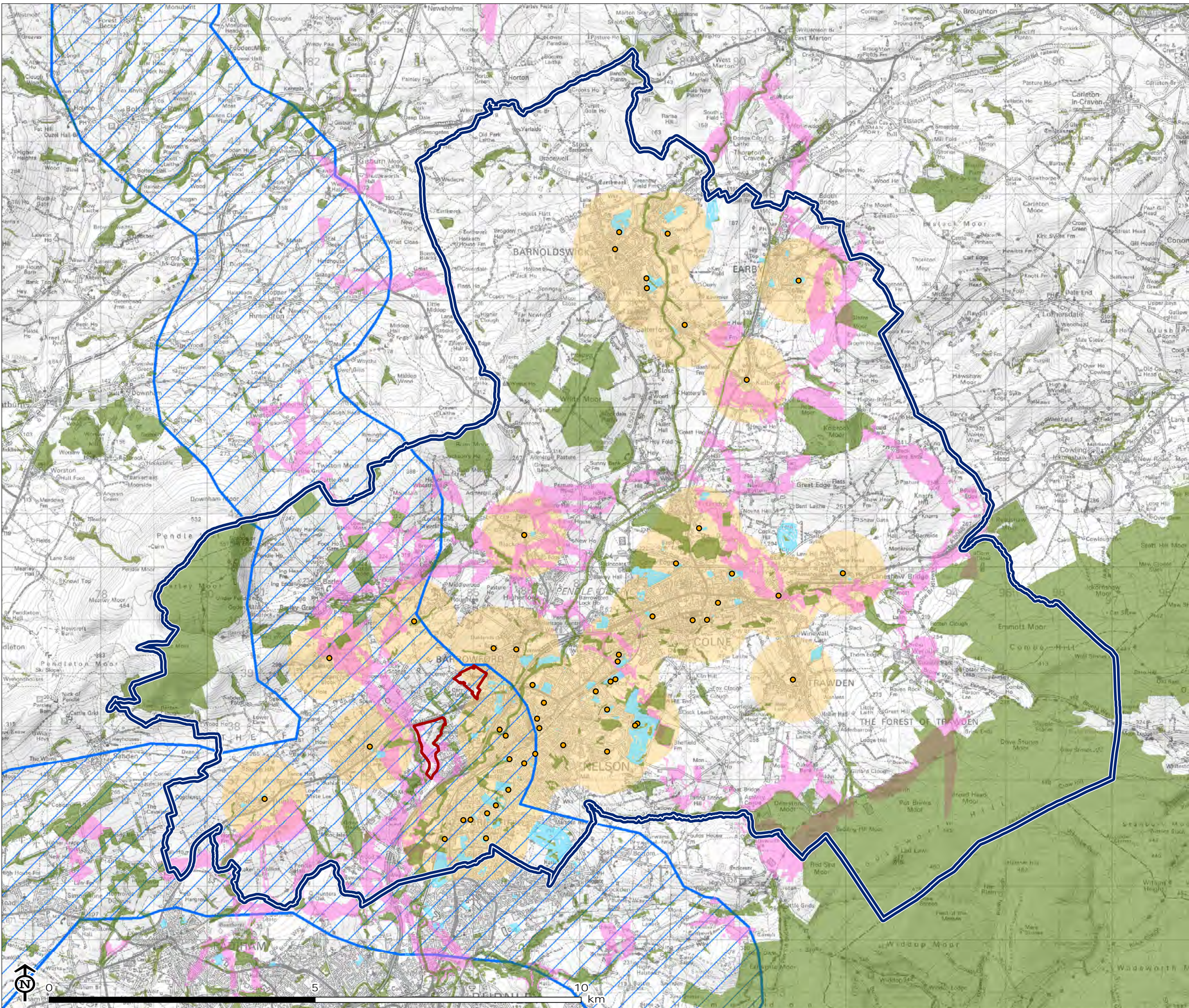


Priority B4:	Provide learning opportunities for local school children	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity B4a	Promote safe access between assets and education facilities to facilitate nature-based learning opportunities within close proximity to schools. Ensure that interpretation is appropriate and engaging for children, young adults and the wider community. Explore the use of social media platforms, mobile apps and interactive maps.	✓	✓	✓	
Opportunity B4b	Seek further opportunities for provision of 'Forest School' locations and support training of local education practitioners.	✓			



Pendle Green Infrastructure Strategy

Figure 6.4: Identifying spatial opportunities for biodiversity enhancements



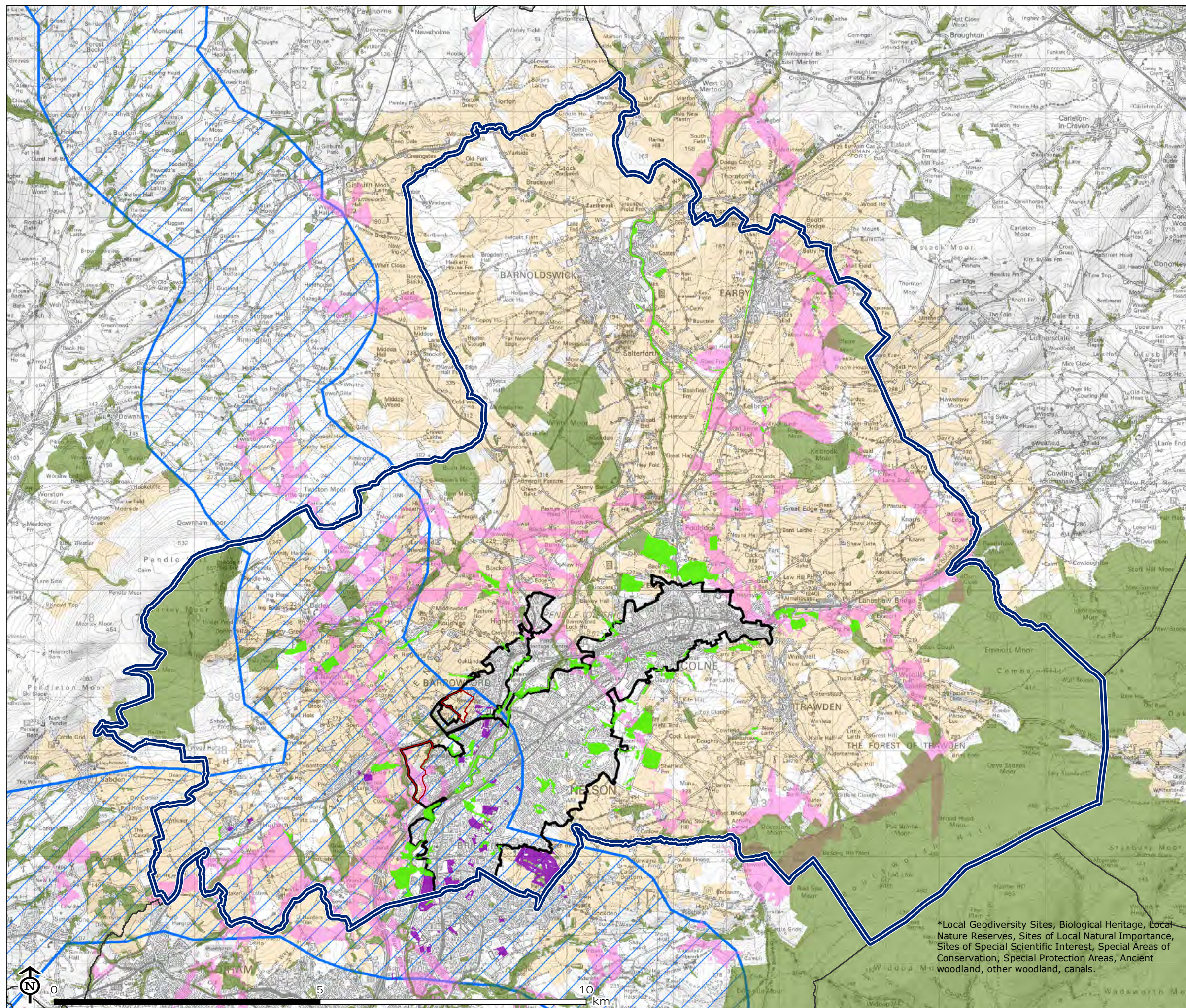
- Pendle Borough Council
- Existing designation/ habitat\*
- Woodland and grassland ecological network corridors\*\*
- B-lines
- Areas allocated for development
- Schools
- Areas within 10 mins walk of a school
- Outdoor sports facilities

\*Local Geodiversity Sites, Biological Heritage, Local Nature Reserves, Sites of Local Natural Importance, Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas, Ancient woodland, other woodland, canals.  
\*\*Corridors up to 3 km displayed

Map Scale @A3: 1:70,000







\*Local Geodiversity Sites, Biological Heritage, Local Nature Reserves, Sites of Local Natural Importance, Sites of Special Scientific Interest, Special Areas of Conservation, Special Protection Areas, Ancient woodland, other woodland, canals.

## Pendle Green Infrastructure Strategy

Figure 6.5: Spatial priorities for biodiversity enhancements to strengthen the GI network

- Pendle District
- Local Authorities
- Area-specific opportunities
  - B1a: Protect core biodiversity areas\*
  - B1b: Protect and enhance ecological network corridors
  - B2a: Take account of landscape & good design in strategic sites
  - B3a: Create pollinator corridors; plant up outdoor sports facilities within B-Lines
  - B3b: Promote pollinator friendly front garden improvements, particularly in B-line areas.
  - B4a: Promote interpretation of and access to biodiversity assets within 10 mins walk of school
  - B4b: Identify opportunities for 'Forest School'
  - L4a: Deliver sustainable land management

### Borough-wide opportunities

B1a: Protect core biodiversity areas.  
B2a: Provide new, or enhance existing natural areas within new development.  
B3c: Reduce hard standing surfaces through new planted areas and make space for street trees.

Map Scale @A3: 1:70,000





## 7 Water resources

**GI, if appropriately designed and located, can help to reduce flood risk as well as minimise water pollution, providing both economic and biodiversity benefits.**

### Pendle's water resources

- 7.1 Pendle has over 63km of streams and rivers designated as main rivers by DEFRA. The Borough is also traversed by 17.9km of the Leeds and Liverpool Canal and Pendle contains a number of reservoirs. These water assets benefit Pendle through their natural beauty, supporting internationally designated wildlife sites and providing opportunities for water sports and recreation.
- 7.2 GI can be used in both urban and rural environments to aid water management; by reducing the runoff volumes, peak flows and pollutant loads at a catchment wide scale right down to site level.

#### Recreation

- 7.3 The Leeds and Liverpool Canal passes through the centre of the Borough from north to south as shown in **Figure 7.1**. Constructed through the 1790s, the canal route has its own distinctive heritage of locks, bridges and warehouses<sup>71</sup>.
- 7.4 The water features within Pendle provide various recreational opportunities. The Leeds and Liverpool Canal offers boating opportunities, as well as providing cycling and walking opportunities along the waterside<sup>71</sup>. Foulridge Canal Cruises have been operating on the canal since 1993, providing canal cruises along the canal from Foulridge Wharf<sup>72</sup>. The many reservoirs that feed the canal are popular with water sports enthusiasts and new marinas have also opened at Reedley and Salterforth. The Hotel Boat Lady Teal is based at the Reedley Marina in the south of the Borough and is a 5 Star rated inland waterways hotel boat, offering cruises along the northern waterways, including through Pendle<sup>73</sup>. Pendle, Burnley and District Anglers Association operate on several stretches of water including Lake Burwain (also known as the Lower Foulridge Reservoir) north of Colne<sup>74</sup>. The Burwain Sailing Club also operated here<sup>75</sup>.

#### Catchment Management

- 7.5 Pendle Borough lies within two of the ten main River Basin Districts; the North West and the Humber where there are six Management Catchments<sup>76</sup> and nine Operational Catchments<sup>77</sup>. The network of rivers flowing through Pendle are shown in **Figure 7.1**. Under the Water Framework Directive and in terms of water quality, there are 16 water bodies in Pendle. Of these half are at less than 'good' status and three of these have been prioritised as high priority water bodies.

<sup>71</sup> Canal & River Trust (2018) Leeds & Liverpool Canal. Available at: <https://canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network/leeds-and-liverpool-canal>.

<sup>72</sup> Canal & River Trust (2018) Foulridge Canal Cruises Ltd. Available at: <https://canalrivertrust.org.uk/directory/3159-foulridge-canal-cruises-ltd>.

<sup>73</sup> Canal & River Trust (2018) Hotel Boat Lady Teal. Available at: <https://canalrivertrust.org.uk/directory/36422-hotel-boat-lady-teal>.

<sup>74</sup> Canal & River Trust (2018) 417: 417: 417: Pendle, Burnley and District Anglers Association. Available at: <https://canalrivertrust.org.uk/enjoy-the-waterways/fishing/fishery-list/417-pendle-burnley-and-district-anglers-association>.

<sup>75</sup> Burwain Sailing Club (2018) Burwain Sailing Club. Available at: <http://burwain.co.uk/>.

<sup>76</sup> Aire and Calder; Humber AWB, Humber GW, North West AWB; North West GW; and Ribble.

<sup>77</sup> Aire Upper; Aire and Calder Carb Limestone - Millstone Grit Coal – Measures; calder; Colne Water; Cumbria and Lancashire Canals and SWT; Douglas Darwen and Calder Carboniferous Aq; Leeds and Liverpool Canal; Ribble Carboniferous Aq; and, Ribble Middle - Settle to Calder.



- 7.6 Colne Water was identified as a priority river and the Ribble Rivers Trust was awarded by Catchment Restoration fund to boost the failing water status of this water body. As Colne Water was a heavily modified water body, the works were to contribute towards reaching good ecological potential through these objectives<sup>78</sup>.
- improving natural hydrology;
  - reducing overgrazing pressures;
  - facilitating riverine habitat and fish passage;
  - promoting the return to natural river processes.
- 7.7 The legacy of this project has brought benefits beyond the water environment; landscapes and townscapes have been enhanced and strong community partnerships have been forged.

## Flooding

- 7.8 Almost 450ha of the Borough is considered to be at high risk of flooding from rivers, whilst a further 530ha is regarded as being at low to medium risk, equating to 11% of the Borough being at risk of fluvial flooding.
- 7.9 The 2006 Strategic Flood Risk Assessment<sup>79</sup> highlights that the primary source of flood risk in Pendle is flooding associated with watercourses and that the majority of historical flood events (15 of the 36 recorded) are located within Barrowford. More recently, the 2015 Boxing Day Floods caused by Storm Eva affected many of Pendle's residents and businesses, causing damage to many properties and farms<sup>80</sup>.
- 7.10 The confluence of Pendle Water, which bounds Barrowford to the east and south, and Colne Water is located to the southeast of Barrowford. The southwest of the village and Lomeshaye Industrial Estate to the south, are within flood zones. In addition to Barrowford, the north of Barnoldswick, centre and south of Colne, centre of Nelson and the north of Brierfield are all within flood zones (see **Figure 7.1**). Secondary sources of flooding within the Borough include blocked and insufficient drainage structures, sewers, overland flow, the canal, groundwater and infrastructure failure<sup>79</sup>.
- 7.11 There are 941 residential properties (including 800 (85%) within Barrowford) and 294 commercial properties (including 120 (41%) within Lomeshaye and Carr Hall) identified as being at risk of flooding within Pendle. Flood defences are located along Pendle Water to the east and south of Barrowford, protecting the Newbridge area in the south of Barrowford. There are also defences located along Pendle Water to the north of Lomeshaye Industrial Estate. Flood zones 2 and 3 can also be found along the New Cut in Earby and in 2018, the construction of major new flood prevention works began in this town. The Strategic Flood Risk Assessment notes that not only are the costs associated with provision of new defences and continued maintenance of existing defences considerable, but defences may also have adverse effects on ecology and landscape<sup>79</sup>. However there are opportunities to incorporate a natural flood risk management approach which uses natural processes to reduce the risk of flooding such as changing land management practices and restoring meanders in rivers. Using these measures can incorporate various elements of GI such as planting woodland, creating floodplains can help protect, restore and emulate the natural functions of catchments<sup>81</sup>.
- 7.12 The Strategic Flood Risk Assessment indicates the likely impacts of climate change on flood risk (see below) and also notes that land use and land use change may have a more immediate effect on water resources within Pendle. The frequent location of development and urban areas in valley bottoms near major rivers across the Borough often leaves them vulnerable to the effects of land use change in the upper catchment and the likelihood of flash flooding. A number of the

<sup>78</sup> Ribble Rivers Trust (no date) Redressing Reasons for WFD Failure. Available at: <http://ribbletrust.org.uk/wp-content/uploads/2015/05/Colne-Water-Restoration-Project-Evaluation.pdf>.

<sup>79</sup> Pendle Borough Council (2006) Pendle Strategic Flood Risk Assessment: Stage 2 - Strategic Assessment of Flood Risk. Available at: [https://www.pendle.gov.uk/info/20072/planning\\_policies/277/evidence\\_base\\_documents/12](https://www.pendle.gov.uk/info/20072/planning_policies/277/evidence_base_documents/12).

<sup>80</sup> Pendle Borough Council (2018) Flooding incidents in Pendle. Available at: <https://www.pendle.gov.uk/info/20105/weather/358/flooding/3>.

<sup>81</sup> Gov.uk (2018) Working with natural processes to reduce flood risk. Available at: <https://www.gov.uk/government/publications/working-with-natural-processes-to-reduce-flood-risk>.



catchments in Pendle Borough have characteristics that indicate they respond quickly to rainfall events, which is supported by some records of historical flash flooding. The following land use changes are identified as potentially affecting flash flooding:

- Moorland management.
- Change in agricultural land use.
- Conversion from rural to urban land use.
- Hard surfacing of residential gardens.

- 7.13 The Strategic Flood Risk Assessment highlights the importance of the implementation of Sustainable Drainage Systems (SuDS) in new developments, with SuDS being instrumental in ensuring that the development does not adversely affect flood risk. Policy ENV7 of the adopted Core Strategy<sup>19</sup> outlines the types of appropriate SuDS, including living roofs, basins and ponds, filter strips and swales, infiltration devices, permeable surfaces, and tanked systems. Policy ENV7: Water Management, sets out a SuDs hierarchy that favours surface water management on new developments to replicate the current natural discharge process. GI can be used in a scheme's design to mimic the flow of surface water.
- 7.14 The Environment Agency invested into flood alleviation schemes following the December 2015 flooding event. This includes the Earby Beck gravel shoal removal and continued maintenance of the rivers around Earby to remove blockages<sup>82</sup>. The Environment agency also invested in works on the culverts within Victoria Clough to reduce flood risk<sup>83</sup>. These works replaced a collapsed culvert and provided new trash screens to prevent blockage, this is working in conjunction with a modelling and appraisal study of Earby Beck and its main tributaries. An increase in flood risk is one of the key potential effects of climate change. A summary of the key issues relating to climate change and flooding within Pendle are summarised below.

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<sup>82</sup> Lancashire County Council (2016) Pendle District Flood Report- Recommended Actions.

<sup>83</sup> Gov.UK (2018) £1m culvert repair work to reduce flood risk set to begin. Available at: <https://www.gov.uk/government/news/1m-culvert-repair-work-to-reduce-flood-risk-set-to-begin>





## Climate Change

The 2006 Strategic Flood Risk Assessment<sup>79</sup> highlights the impacts of climate change on water resources:

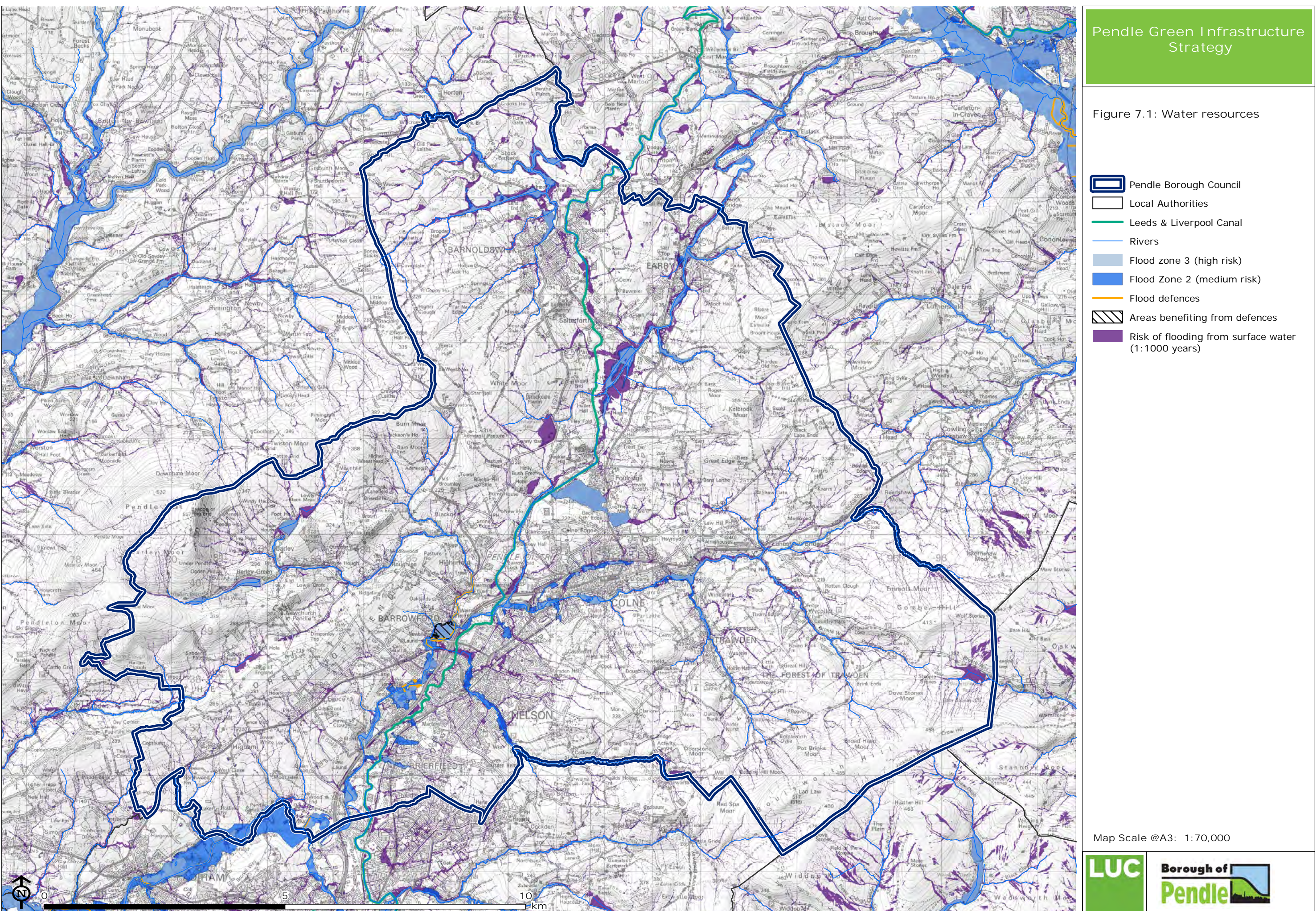
- Climate change is expected to cause winters to become wetter and summers to become drier, as well as cause more extreme weather events such as droughts, floods and storms.
- Climate change is identified as potentially having the largest effect on flood risk in the Ribble Catchment Flood Management Plan area and the UK Climate Impacts Programme (UKCIP) model predicts that by 2080 winter rainfall could increase by up to 30% and summer rainfall could decrease by up to 50% within the North West.
- There could be an increased likelihood of more intense summer storms and urban heat island effects could potentially exacerbate this. Wetter winters could cause groundwater levels to increase and potentially cause groundwater flooding in prone areas. Increased storminess and peak rainfalls will also cause increases in runoff, impacting existing surface water drainage sewers. The existing areas of flood zones provide some indication of where climate change might cause the most lateral expansion of flooding.

The adopted Core Strategy<sup>19</sup> highlights that climate change will result in an estimated 700 additional properties in Burnley and Pendle potentially being at risk of flooding in the future.



# Pendle Green Infrastructure Strategy

Figure 7.1: Water resources



Map Scale @A3: 1:70,000





## Existing initiatives

- 7.15 Existing initiatives which seek to improve water quality, minimise flood risk and incorporate GI within Pendle include:

### Ribble Life Partnership<sup>84</sup>

- 7.16 Created in 2011, originally part of a Defra funded pilot scheme driven by the EU's Water Framework Directive. It aims to engage local communities and other stakeholders to help improve the water quality at a local, catchment level. In 2015 the Partnership was awarded a grant from the Heritage Lottery Fund to develop its first project- Ribble Life Together Project. This project collected data to identify which areas needed the most improvement.

### Lancashire Peat Partnership<sup>66</sup>

- 7.17 As outlined in **Chapter 6**, the Lancashire Peat Partnership also seeks to promote peat restoration in relation to its benefits for carbon management, biodiversity, flood risk management, erosion control, water quality, fire risk management, landscape quality, natural beauty and recreation.

### Natural Flood Management of the Upper Trawden Brook Catchment<sup>85</sup>

- 7.18 This formed part of the 'North West Slow the Flow Project' and given that traditional flood defences were too costly, the project investigated whether natural flood management measures can work alongside traditional flood defence options to provide sufficient flood defence for Trawden. Modelling was a key element in the project delivery as the methods employed sought to quantify the extent of the natural flood management measures and therefore GI components, such as woodland creation, peatland restoration and working with the topography of the landscape could deliver additional temporary water storage capacity. The findings of this project are significant as Trawden is a representative scenario within the Western Pennines.

## What are the key issues, priorities and opportunities?

- 7.19 The following section provides a summary of the stakeholders' comments on the key issues relating to water resources within the Borough. Further details of the stakeholder views collated through consultation are presented in **Appendix 2**. This is followed by a review of the issues, priorities and opportunities for GI to improve water quality or reduce flood risk within Pendle.

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<sup>84</sup> Ribble Life Together (2018) Available at: [ribblelifetogether.org/ribble-life-together-partnership](http://ribblelifetogether.org/ribble-life-together-partnership).

<sup>85</sup> North West Regional Flood and Coastal Committee (no date) Slow the Flow North West Update. Available at: <https://thefloodhub.co.uk/wp-content/uploads/2018/12/Slow-The-Flow-NW-Newsletter-Final-Update-for-Partners.pdf>



#### Stakeholder views

- There is need to restore and repair the riversides in some areas which have been damaged by erosion and invasive species.
- The canal and river network is in close proximity to key urban areas within Pendle Borough, including Nelson, Brierfield and Barrowfield. Attractive waterside areas could be developed in these areas and informal riverside access could be improved.
- Canalisation of riverbanks in urban areas divorces people from the naturalness of the rivers which means that they are used by some for waste disposal.
- Earby, Barnoldswick and Nelson are identified as key areas for flood risk. It is imperative that sustainable urban drainage measures are implemented here.
- The river catchments in Pendle respond rapidly to rainfall, with the rapid onset of flooding. The role of GI is being increasingly recognised in helping to 'slow the flow'.
- Fishery improvement work has been carried out throughout the Borough with the removal of barriers to fish migration. Rivers have an important role for recreational angling. Improvements to the watercourse have resulted in significant improvements to the fish stocks.
- There is potential to use woodland areas to accommodate wetland/soak away areas for new development.
- There is opportunity to promote the supply of renewable energy from the canal using water source heat pumps due to its thermal energy resource.
- There are opportunities for developers to ensure that trees are included as part of SuDS proposals. Trees can reduce the likelihood of surface water flooding in urban locations by slowing the flow increases the possibility of infiltration.

- 7.20 Two key issues and priorities have been identified from the review of baseline information and stakeholder consultation. These priorities are described below and illustrated in [Figure 7.2](#).

#### Water interception

- 7.21 Flood risk can be increased by covering permeable surfaces with impermeable surfaces, such as tarmac and hard standing (reducing infiltration opportunities). New development on greenfield land therefore has the potential to increase the risk of flooding, however Policy EN7 of the Core Strategy requires all new developments proposed on a greenfield site to demonstrate that there are no alteration to runoff rates upon completion. GI can help to reduce flood risk by intercepting and storing rain water thereby reducing run-off rates, these provisions can form part of SuDs.
- 7.22 [Figure 7.2](#) shows areas that are at risk from surface water flooding (0.1% annual chance) and areas at risk of flooding from rivers (flood zone 2 and 3) within the M65 corridor, Earby and Barnoldswick.



- 7.23 A key priority is to make surfaces permeable and increase vegetation cover, to enable infiltration and limit run off rates and flood risk. This is particularly the case within the areas that have been identified as being at risk of surface water flooding. This could include measures such as: front garden greening; extending pavements to create planted areas; and planting street trees to intercept and store rainwater and reduce flood risk. Particular consideration should also be given to the opportunities to incorporate SuDS, green roofs and rain gardens<sup>86</sup> in new developments. These features will have the added benefit of keeping the ground cool as climate change acts to increase global temperatures.

Priority W1:	Water interception	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity W1a	Incorporate SuDS, green roofs and rain gardens in any new development.	✓	✓	✓	✓
Opportunity W1b	Reduce hard standing surfaces through creating planted areas, encouraging front garden greening and making space for street trees in areas at risk of flooding.	✓	✓	✓	
Opportunity W1c	Improve water quality in priority areas	✓	✓	✓	✓



Figure 7.3a: Existing street and front gardens along Rhoda Street, Nelson.

<sup>86</sup> Southwest Water defines rain gardens as a shallow depression in free draining soil planted with water tolerant plants. As surface water passes through the soil, silt settles out and the surface water is allowed to infiltrate into the ground. Rain gardens typically have an over-flow to allow excess rainfall to be safely routed away from homes or other sensitive areas.





**Figure 7.3b: Reducing hard standing surfaces through greening streets and front gardens.**

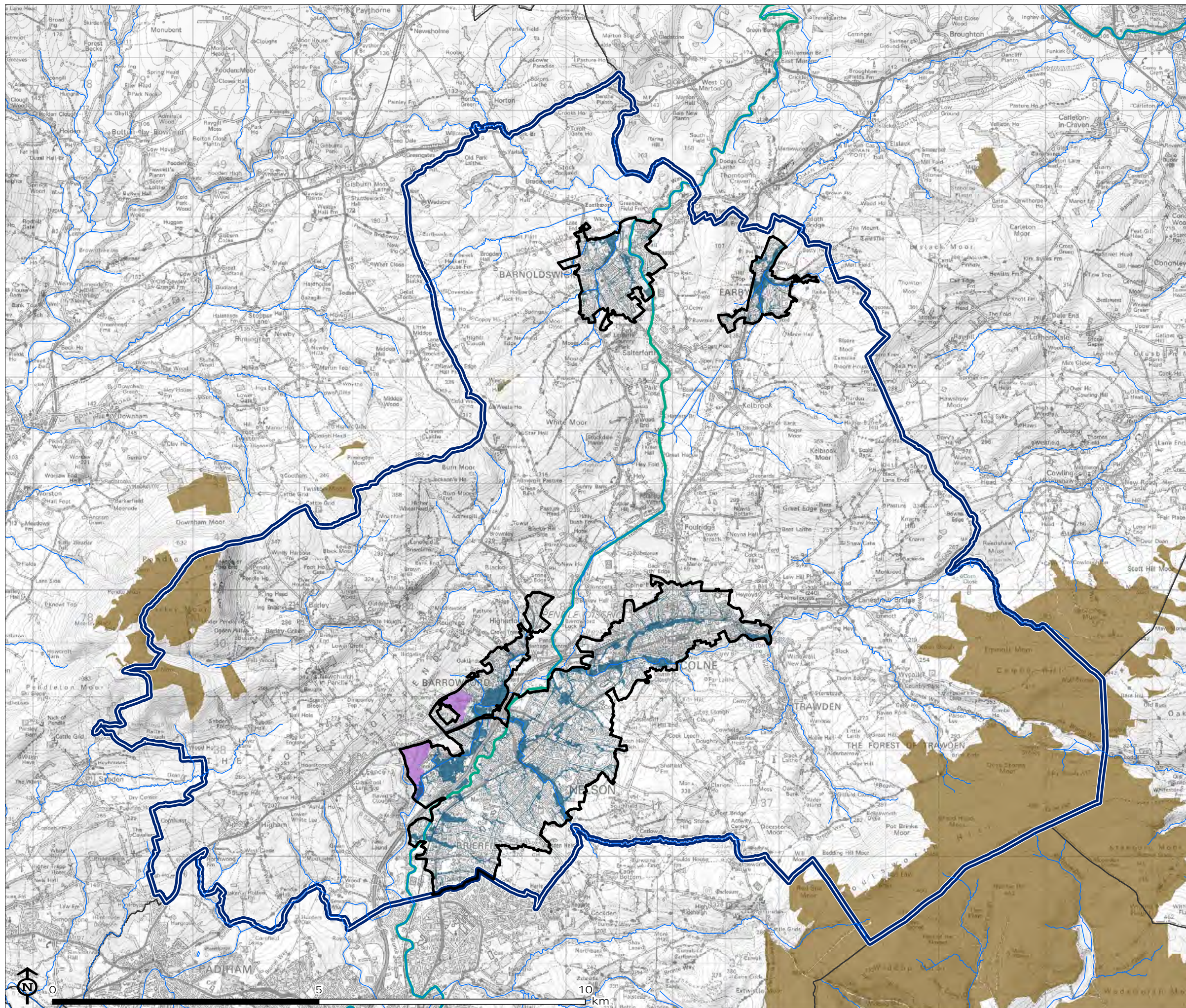
### Managing peatlands

- 7.24 Peatlands are present within Pendle, particularly on the South Pennine Moors. Peat plays a key role in limiting flood risk by retaining rainwater and slowing the rate at which it enters the river network. Peat also stores large amounts of atmospheric carbon, thereby playing a key role in carbon storage. **Figure 7.2** shows the location of Blanket Bog priority habitat in and around Pendle.
- 7.25 A key priority is to manage the peatlands within Pendle, maximising efforts to undertake peat management and restoration in locations where peatland quality is degrading. This could build on the various initiatives led by the Moors for the Future partnership<sup>87</sup>.

Priority W2:	Manage peatlands	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity W2a	Encourage landowners to undertake peat management and restoration.				✓

<sup>87</sup> <http://www.moorsforthefuture.org.uk/>





## Pendle Green Infrastructure Strategy

Figure 7.2: Spatial priorities for using GI to better manage water resources

- Pendle Borough Council
- Local Authorities
- Priority settlements for water management
- Leeds & Liverpool Canal
- Rivers

### Area-specific opportunities

- W1a: Incorporate SuDS, green roofs and rain gardens in new development.
- W1b: Increase surface permeability in areas at risk of flooding
- W2a: Undertake peatland management and restoration

### Borough-wide opportunities

- W1c: Improve water quality in priority areas.

Map Scale @A3: 1:70,000





## 8 Health and well-being

**Greener environments are important for human health, delivering significant benefits for both mental and physical well-being reducing (in combination with other factors) the occurrence of heart disease, respiratory and mental illnesses.**

### Health and well-being in Pendle

- 8.1 The population in Pendle is generally less healthy than within England in general. Recent statistics show that the percentage of physically active adults in the Borough is 48.2%, which is lower than the England average of 57.0%<sup>15</sup>. Pendle has a slightly higher proportion of obese children (20.2%) compared to the rest of England (19.8%), and a larger percentage of overweight adults (69.0% in Pendle compared to 64.8% in England). There are however significant variations within Pendle itself (see **Figure 8.1**) and whilst life expectancy for both men and women is generally slightly lower than the England average, it is 10.9 years lower for men and 7.2 years lower for women in the most deprived areas of Pendle compared to the least deprived areas. The main health priorities for Pendle therefore include encouraging healthy lifestyles, improving mental health and well-being, and improving health outcomes for children and young people (including reducing infant deaths).
- 8.2 **Figure 8.2** shows a range of factors that are influencing the environmental quality experienced in Pendle. This includes areas where average noise levels from roads exceed the recommended thresholds for day and night. Air Quality Management Areas (AQMA) are designated in places where levels of pollution are not meeting national air quality objectives and therefore can affect the health of people within that area<sup>88</sup>. One AQMA has been declared within Pendle (see **Figure 8.4**) and this is located at Skipton Road/Windsor Street in Colne. This AQMA was listed in 2011 due to the exceedance of nitrogen dioxide levels as a result of transport pollution.
- 8.3 Air pollution can place older people, children, people with pre-existing lung and heart conditions, and people on lower incomes at most risk of adverse health effects, including exacerbation of asthma, effects on lung function, increases in hospital admissions and mortality<sup>89</sup>. Recent research<sup>90</sup> found where vegetation acts as a barrier close to a source, concentrations immediately behind the barrier are reduced typically by a factor of approximately 2 relative to those which would occur without the barrier, whereas on the source side of the barrier concentrations are increased. Therefore GI provision could help in protecting vulnerable spaces such as school playgrounds from poor air quality, although it will not remove the pollutants entirely.
- 8.4 The provision of GI and open space plays an important role in encouraging healthy lifestyles and improving the quality of health of residents in the Borough. The 2018 Pendle Open Space Audit found that the areas on the edges of settlements, particularly in the M65 Corridor are well served with a number of open space sites. However, there is a noticeable lack of open space within the inner urban areas, specifically in central areas of Nelson, Colne and Brierfield.

<sup>88</sup> Defra (2018) Air Quality Management Areas (AQMA). Available at: <https://uk-air.defra.gov.uk/aqma/>.

<sup>89</sup> Defra (2017) UK plan for tackling roadside nitrogen dioxide concentrations. Available at: <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>.

<sup>90</sup> Air Quality Expert Group (2018) Impacts of Vegetation on Urban Air Pollution. Available at: [https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1807251306\\_180509\\_Effects\\_of\\_vegetation\\_on\\_urban\\_air\\_pollution\\_v12\\_final.pdf](https://uk-air.defra.gov.uk/assets/documents/reports/cat09/1807251306_180509_Effects_of_vegetation_on_urban_air_pollution_v12_final.pdf).



- 8.5 The findings from the quantity assessment of open space also found that most wards do not meet the quantity standards for several of the typologies, with five wards (Blacko & Higherford, Clover Hill, Horsfield, Old Laund Booth, Walverden) having deficiencies in all but one of the nine typologies assessed in the Open Space Audit. **Table 8.1** below and **Figure 8.3** identify the four key typologies and the wards which are a priority for increased provision.

**Table 8.1: The four key open space typologies and the wards which are a priority for increased provision**

Allotments	Natural and semi-natural green space	Parks and gardens	Play
<ul style="list-style-type: none"> <li>• Reedley (no allotments in the ward at all) but high numbers of gardens</li> <li>• Craven</li> <li>• Vivary Bridge</li> <li>• Horsfield</li> <li>• Walverden (no allotments in the ward at all)</li> <li>• Clover Hill</li> </ul>	<ul style="list-style-type: none"> <li>• Southfield</li> <li>• Craven</li> <li>• Horsfield</li> <li>• Coates</li> <li>• Walverden</li> <li>• Clover hill</li> <li>• Whitefield</li> <li>• Bradley</li> </ul>	<ul style="list-style-type: none"> <li>• Reedley</li> <li>• Brierfield</li> <li>• Southfield (No parks)</li> <li>• Earby</li> <li>• Waterside</li> <li>• Horsfield</li> <li>• Coates (No parks)*</li> <li>• Bradley</li> </ul>	<ul style="list-style-type: none"> <li>• Barrowford</li> <li>• Bradley</li> <li>• Craven</li> <li>• Horsfield</li> <li>• Reedley</li> <li>• Vivary Bridge</li> </ul>

\* Victory Park is in Coates ward but identified as a series of Outdoor Sports and Play Area sites rather than a Park.

- 8.6 The Local Plan will need to consider how new policy could help to retain and deliver new open space in these areas (Local Plan Part 1 see paragraph **2.38**, Local Plan Part 2 see paragraph **9.7**)
- 8.7 In addition to the spaces considered within the Open Space Audit, there is also a significant amount of open access land (as defined by the Countryside and Rights of Way Act) present across the Borough, offering open space benefits to Pendle's residents<sup>91</sup>.
- 8.8 Parks are important open spaces and are associated with the social benefits of green infrastructure. In addition, parks can also contribute to the biodiversity network, enhancing cultural heritage assets and some locations can even include initiatives that help reduce flood risk. The Parks Strategy (2007)<sup>92</sup> recognises the recent improvements in Pendle's parks. Its aim is to continue this success through protecting the parks whilst using the latest approaches in thinking, technology, management and maintenance to enhance and develop parks. The strategy also recognises the need to improve awareness of parks to encourage their use, and plans to update and improve all parks informational signage. These can lead to enhancements GI features and their accessibility in the Borough.
- 8.9 The following box provides a summary of the key issues relating to health and well-being that may arise as a result of climate change:

<sup>91</sup> Natural England (2018) CRoW & Coastal Access Maps – Search. Available at: [http://www.openaccess.naturalengland.org.uk/wps/portal/oasys/maps/MapSearch/?!ut/p/c5/04\\_SB8K8xLLM9MSSzPy8xBz9CP0os3gfdwMzDyNnA0v\\_kCBXA08DT38XHy9PQ38DE6B8pFm8AQ7gaEBAzjIPrN4M3cfCOMnfwnLg0A\\_CwNPC3MTI0cPbwMDY1OIPB7z\\_Tzyc1P1C3IjDLJMHBUQs8ezw!!/dl3/d3/L2dBIS9nQSEh/](http://www.openaccess.naturalengland.org.uk/wps/portal/oasys/maps/MapSearch/?!ut/p/c5/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gfdwMzDyNnA0v_kCBXA08DT38XHy9PQ38DE6B8pFm8AQ7gaEBAzjIPrN4M3cfCOMnfwnLg0A_CwNPC3MTI0cPbwMDY1OIPB7z_Tzyc1P1C3IjDLJMHBUQs8ezw!!/dl3/d3/L2dBIS9nQSEh/).

<sup>92</sup> Pendle Borough Council (2007) Parks Strategy 2007 – 2017. Available at: [https://www.pendle.gov.uk/downloads/file/1973/parks\\_strategy](https://www.pendle.gov.uk/downloads/file/1973/parks_strategy).





## Climate Change

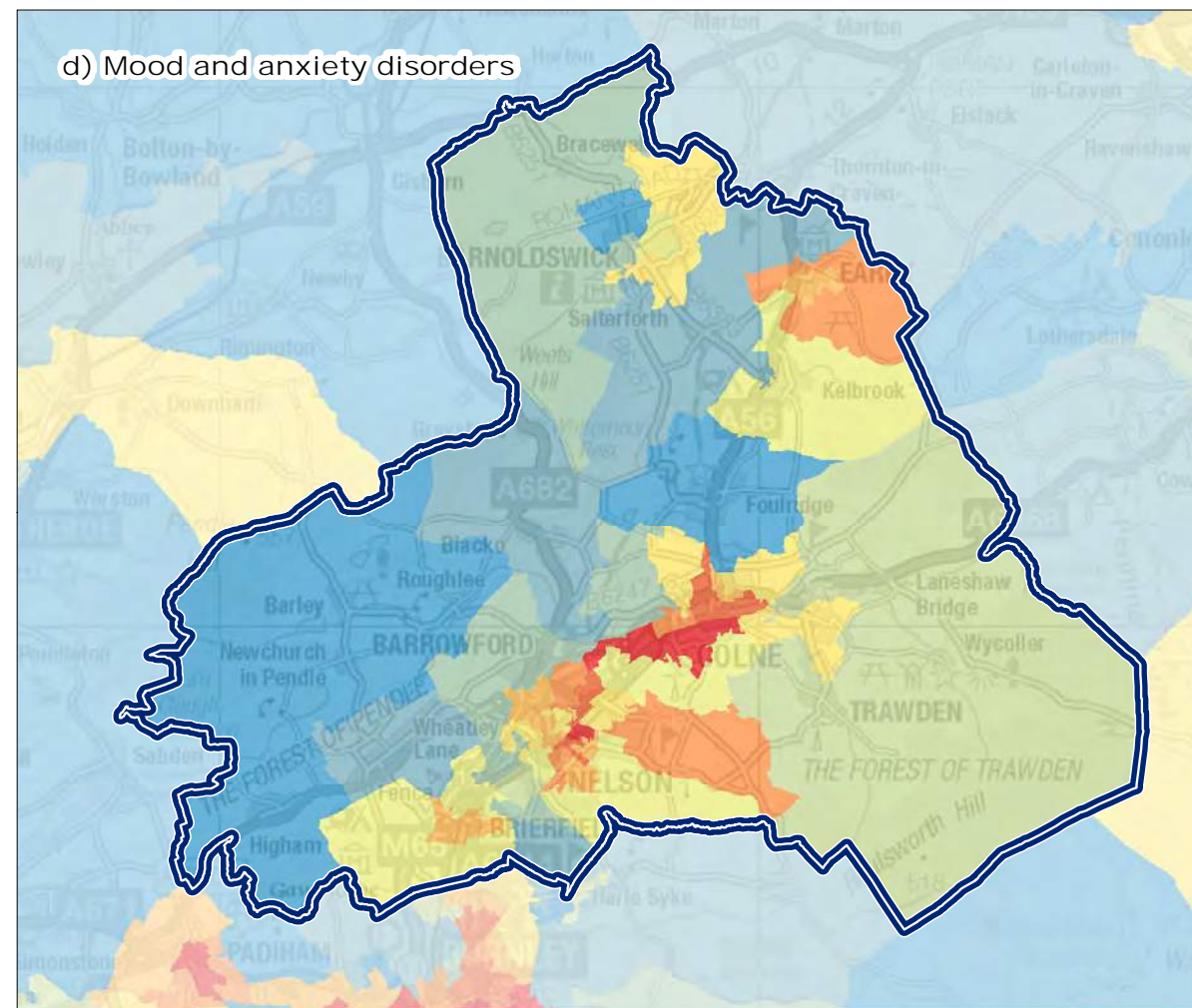
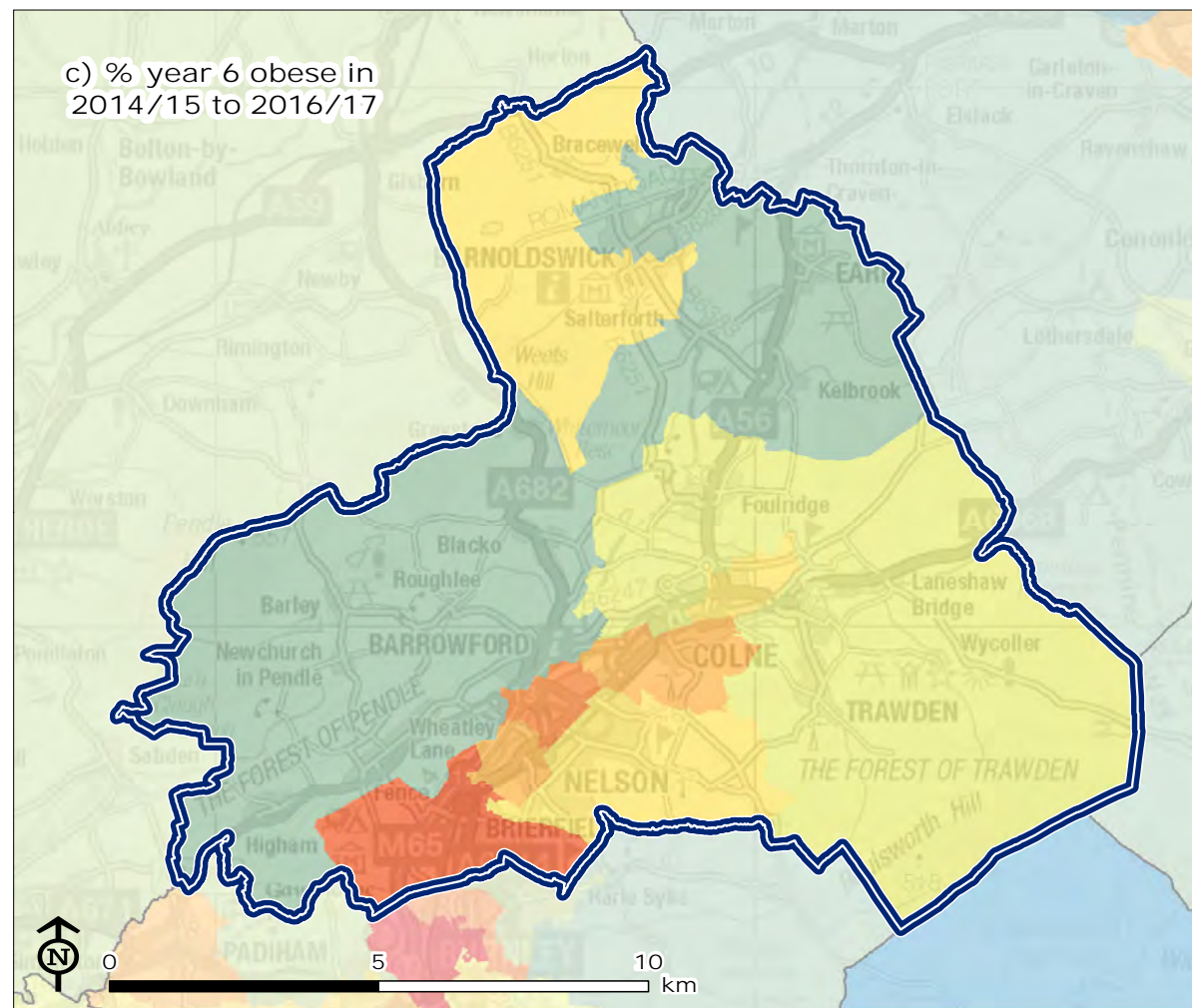
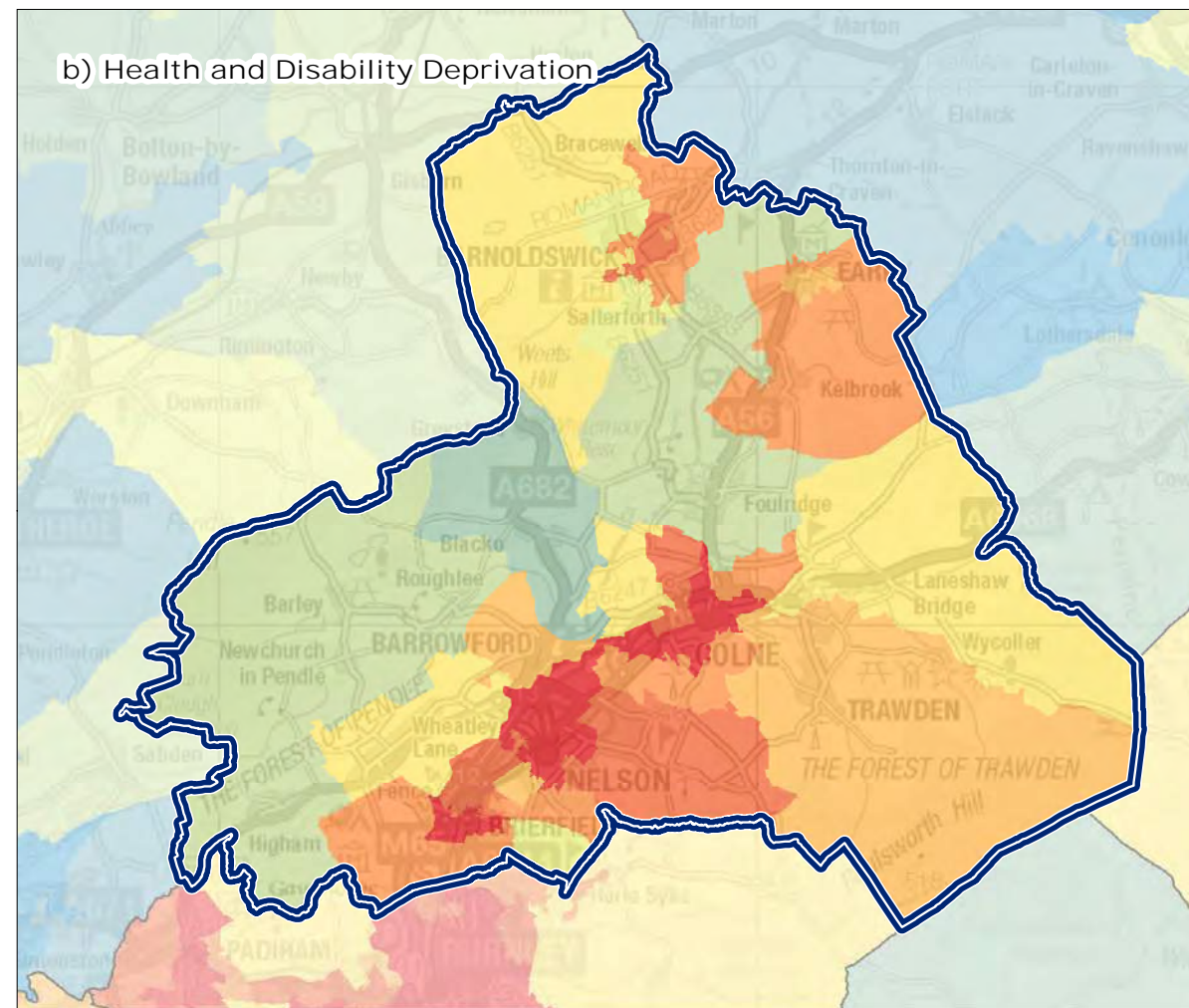
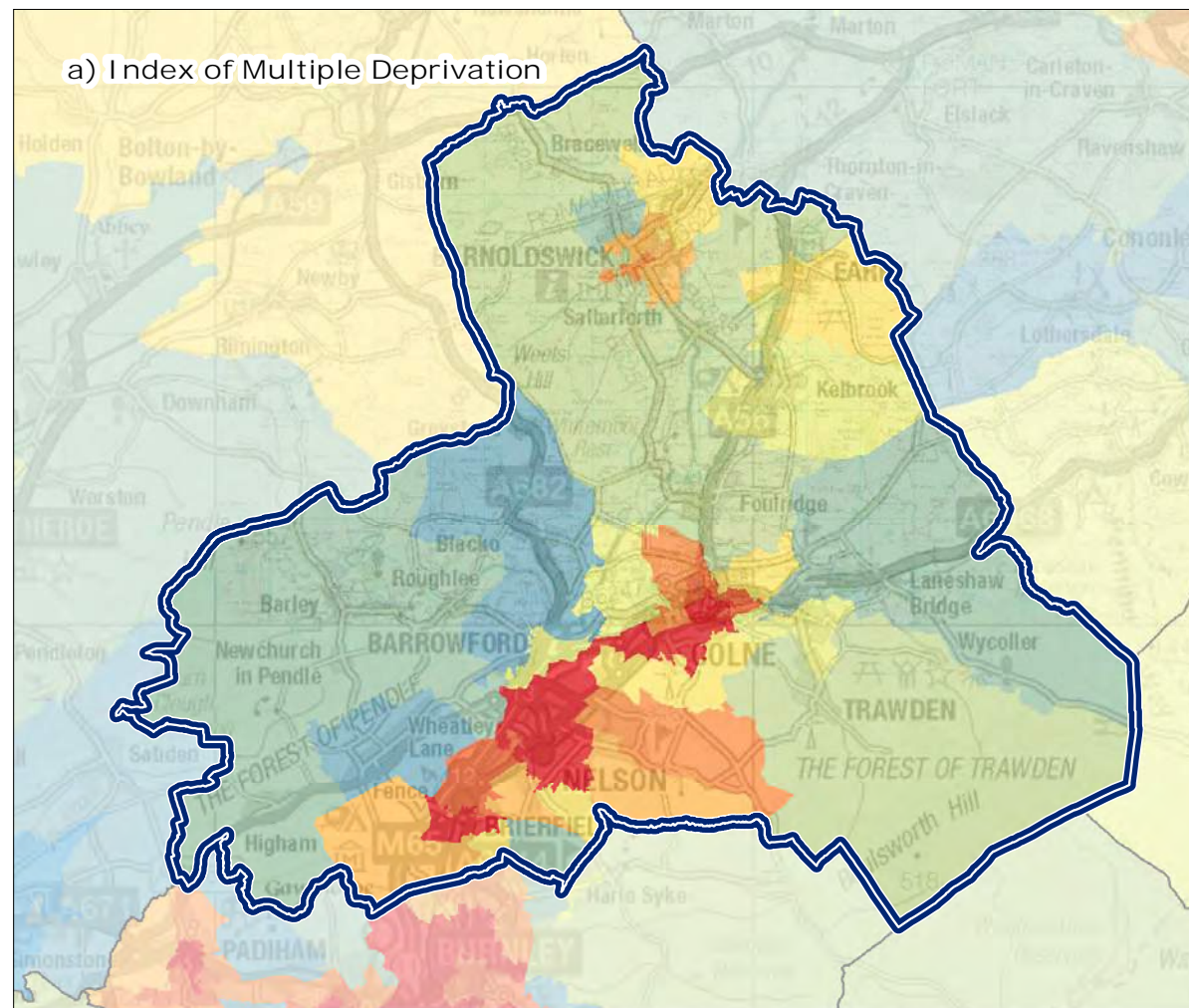
The 2012 Health Effects of Climate Change in the UK<sup>93</sup> report highlights the potential health impacts that may be caused by climate change:

- Climate projections indicate that annual mean temperatures will be around 2 to 5°C higher than present in the UK by 2080. Heatwaves are likely to become more frequent in the future in the UK and heat-related mortality, which is currently around 2,000 premature deaths per year, is projected to increase steeply in the UK throughout the 21st century, from around a 70% increase in the 2020s to around 540% in the 2080s. The elderly are more vulnerable to extreme heat than younger people, so future health burdens are likely to be amplified by an ageing population.
- Present day ozone-related mortality is estimated to be up to around 11,900 premature deaths per year, and there may be increases of up to between 14,000 and 15,000 for the 2030s depending on future ozone precursor emissions. Increasing temperatures by 5°C are projected to lead to an increased ozone related health burden of 4%, around 500 premature deaths per year.
- Climate change related changes in seasonality, temperature and weather patterns in the UK may have an effect on human exposure to pollen grains, as well as affecting the potency of aeroallergens.
- Climate change may exacerbate health risks associated with building overheating, indoor air pollution, flood damage and water and biological contamination of buildings. Hospitals, health centres and care homes may be adversely affected by high temperatures during heatwaves and flooding.
- Climate change may have an effect on ambient levels of Ultraviolet (UV) radiation in the UK. This could increase health risks associated with UV including some skin cancers.
- It is likely that the range, activity and vector potential of many ticks and mosquitoes will increase across the UK by the 2080s due to milder winters and warmer summers. There is also the potential for introduction of exotic species and pathogens.
- Climate change may also lead to reductions in the availability of certain food groups, which may lead to reductions in the nutritional quality of dietary intake in some population groups.

The Health Effects of Climate Change in the UK report also highlights the health co-benefits of measures to reduce greenhouse gas emissions. Examples include a decline in air pollution from measures to reduce anthropogenic greenhouse gas emissions, increased physical activity as a result of reduced car use in urban centres, and health benefits from reduced dietary saturated fat consumption from animal products. However, certain climate change mitigation policies, such as sealing buildings to increase energy efficiency, may lead to increased exposure to indoor air pollution.

<sup>93</sup> Public Health England (2017) Health Effects of Climate Change in the UK. Available at: <https://www.gov.uk/government/publications/climate-change-health-effects-in-the-uk>.





## Pendle Green Infrastructure Strategy

Figure 8.1: Health and well-being

Pendle Borough Council

Pendle Borough Council

Local Authorities

Key for maps a - b)

Deprivation decile

0 - 10% (most deprived/worst)  
 10 - 20%  
 20 - 30%  
 30 - 40%  
 40 - 50%  
 50 - 60%  
 60 - 70%  
 70 - 80%  
 80 - 90%  
 90 - 100% (least deprived/best)

Key for map c)

Percent 2014/5 to 2015/16

4.1 - 10.0%  
 10.1 - 12.5%  
 12.6 - 15.0%  
 15.1 - 17.5%  
 17.6 - 20.0%  
 20.1 - 22.5%  
 22.6 - 25.0%  
 25.1 - 27.5%  
 27.6 - 30.0%  
 30.1 - 36.8%

Key for map d)

Mood and anxiety disorders

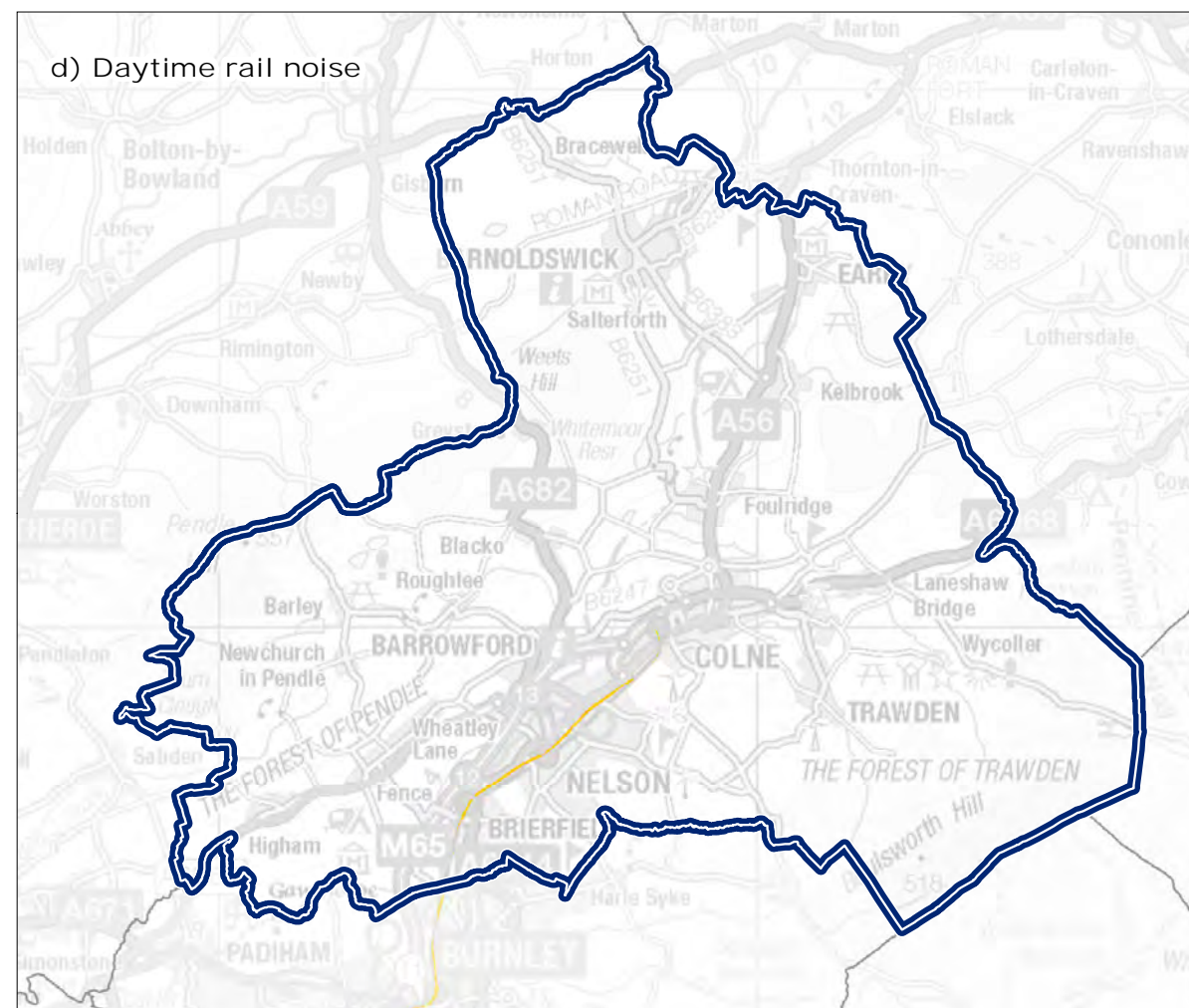
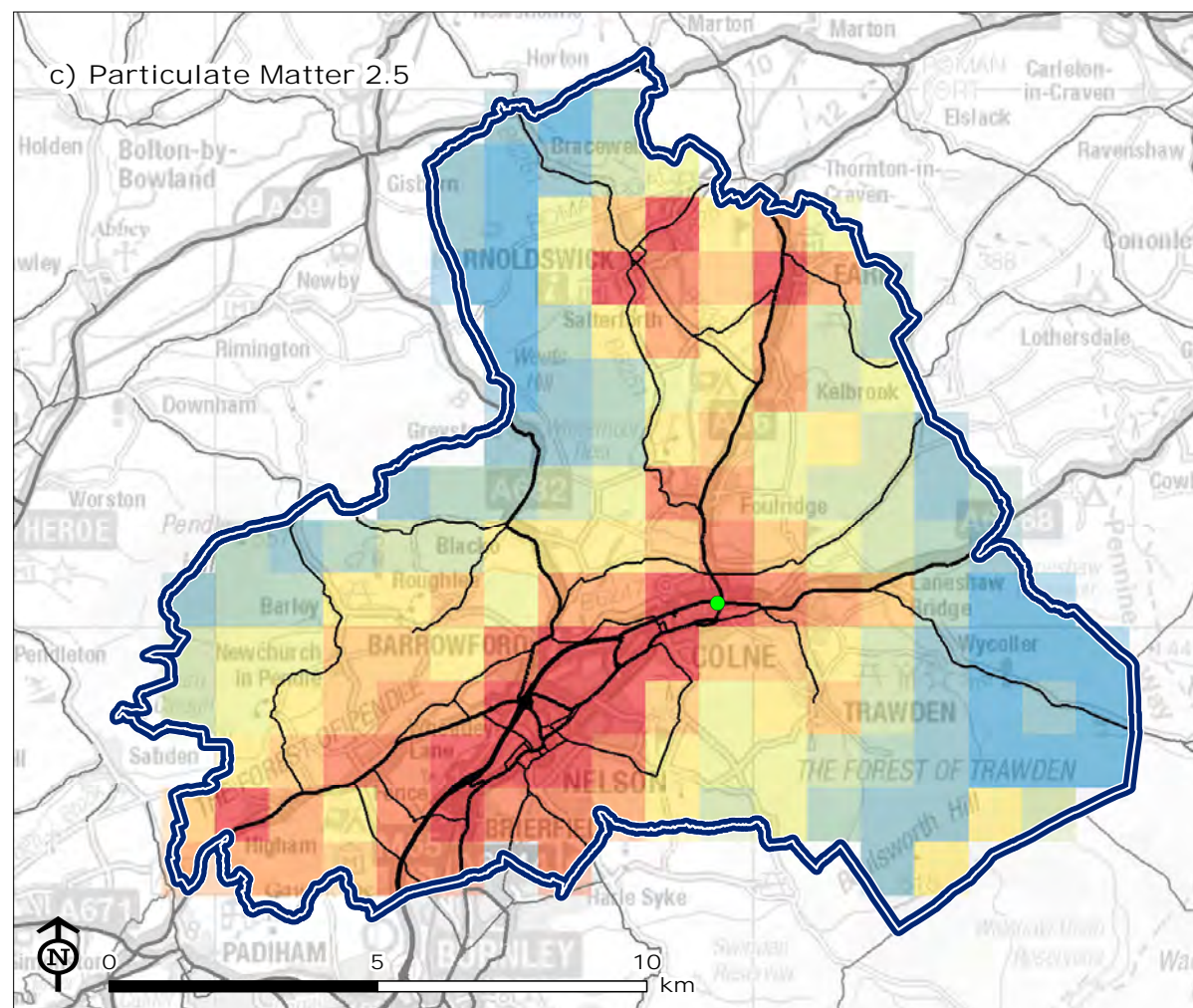
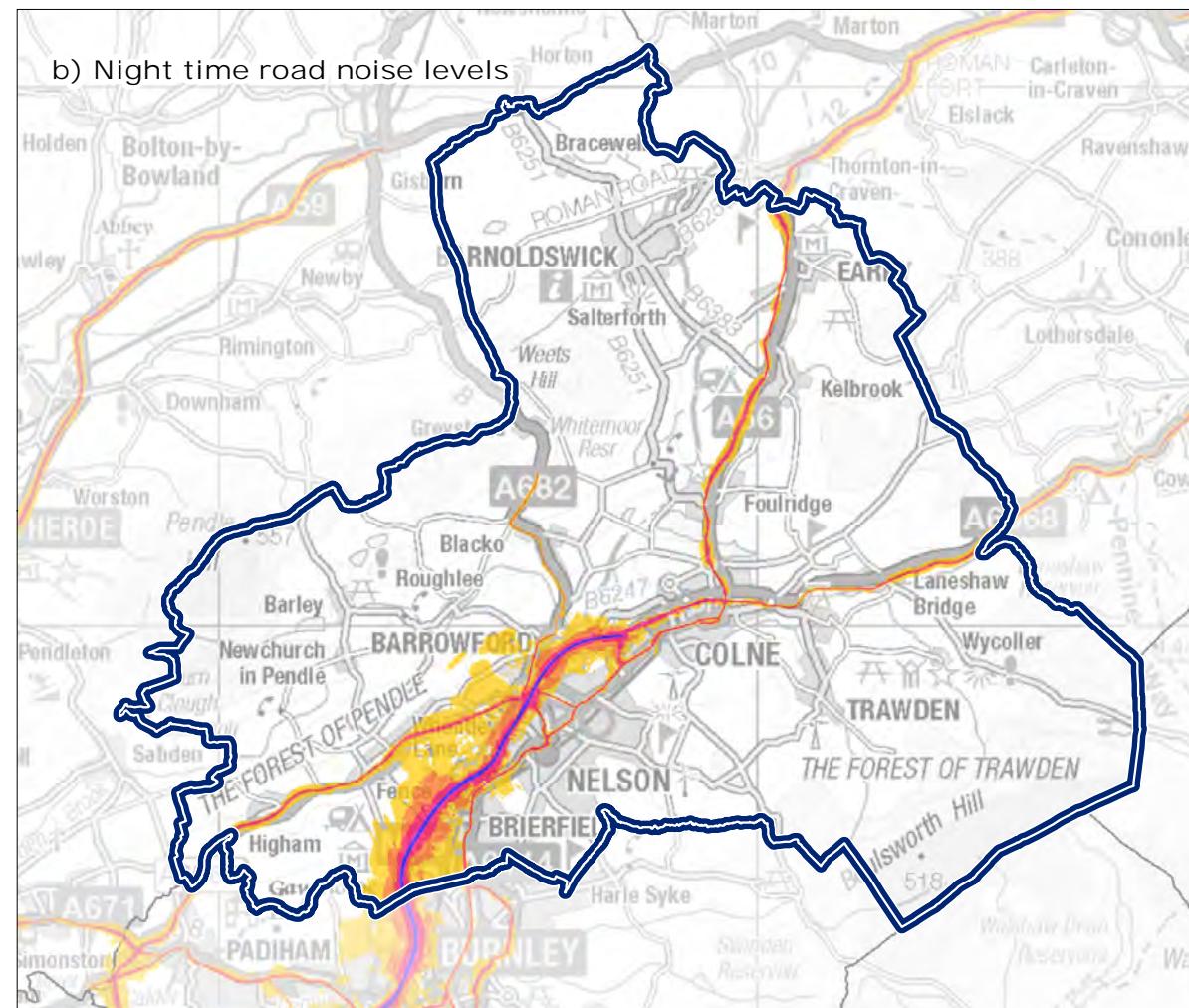
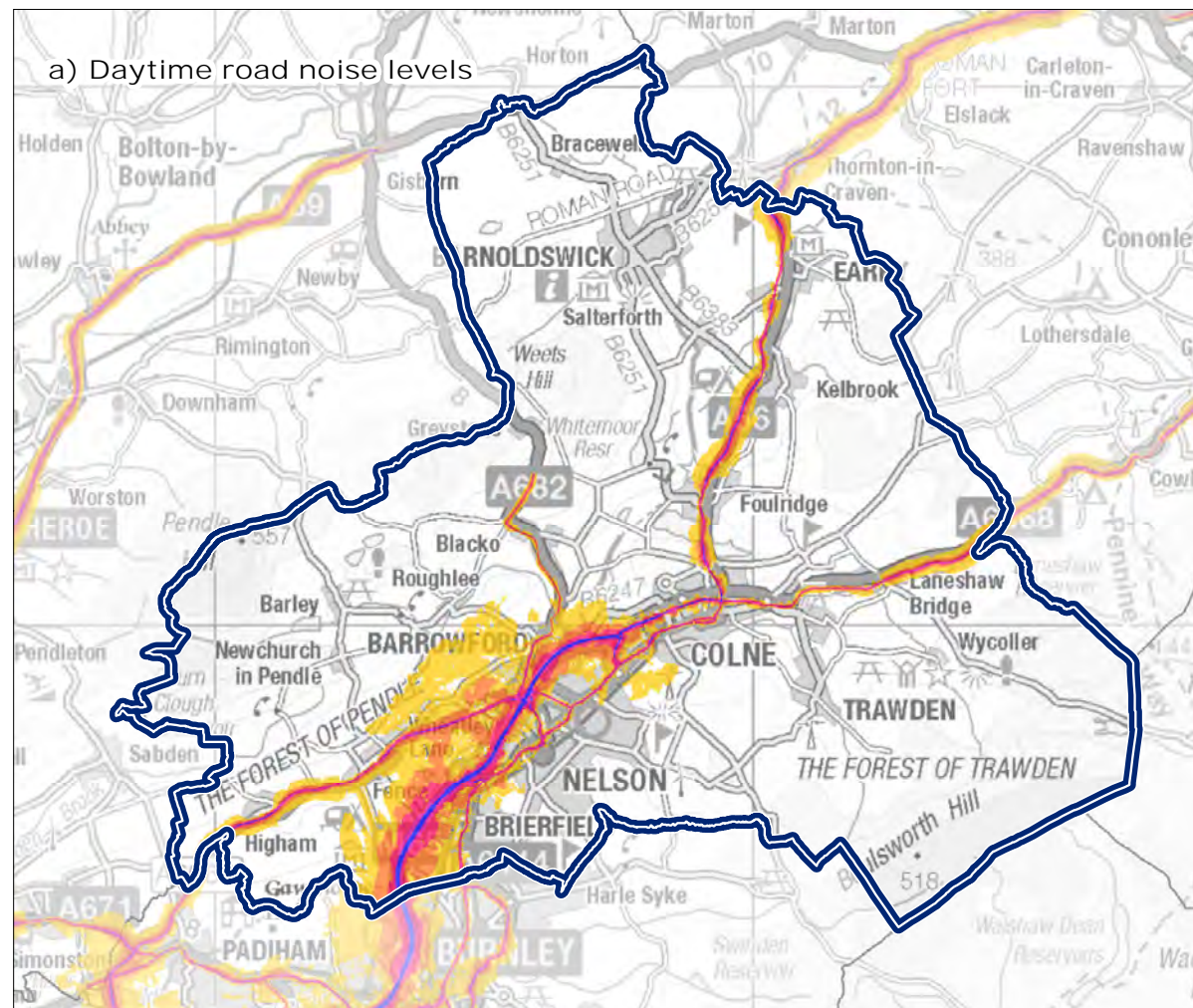
Lower

Higher

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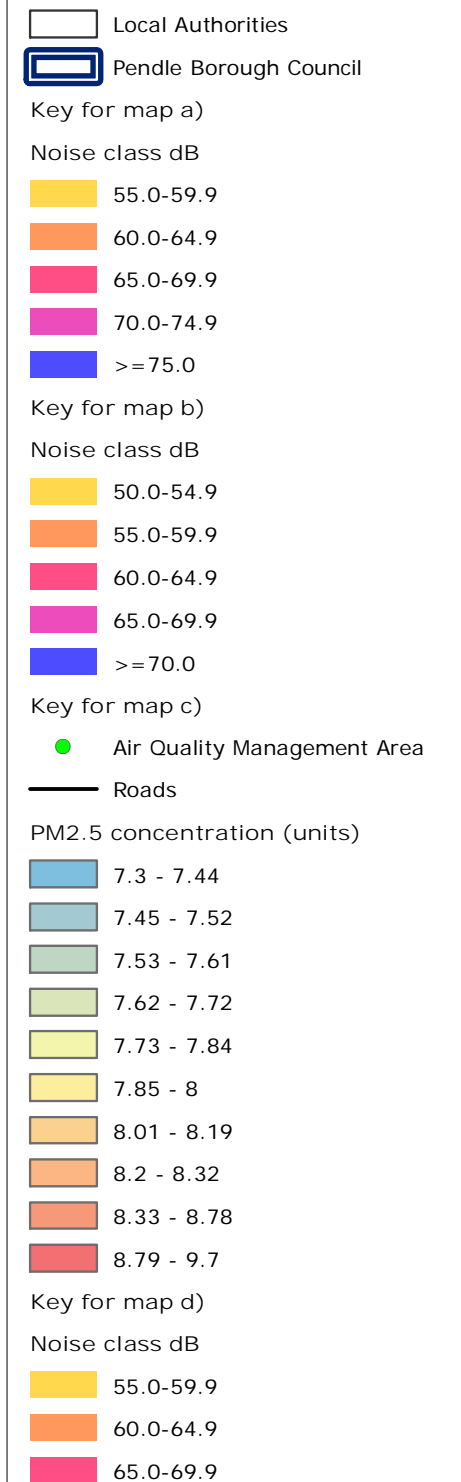






## Pendle Green Infrastructure Strategy

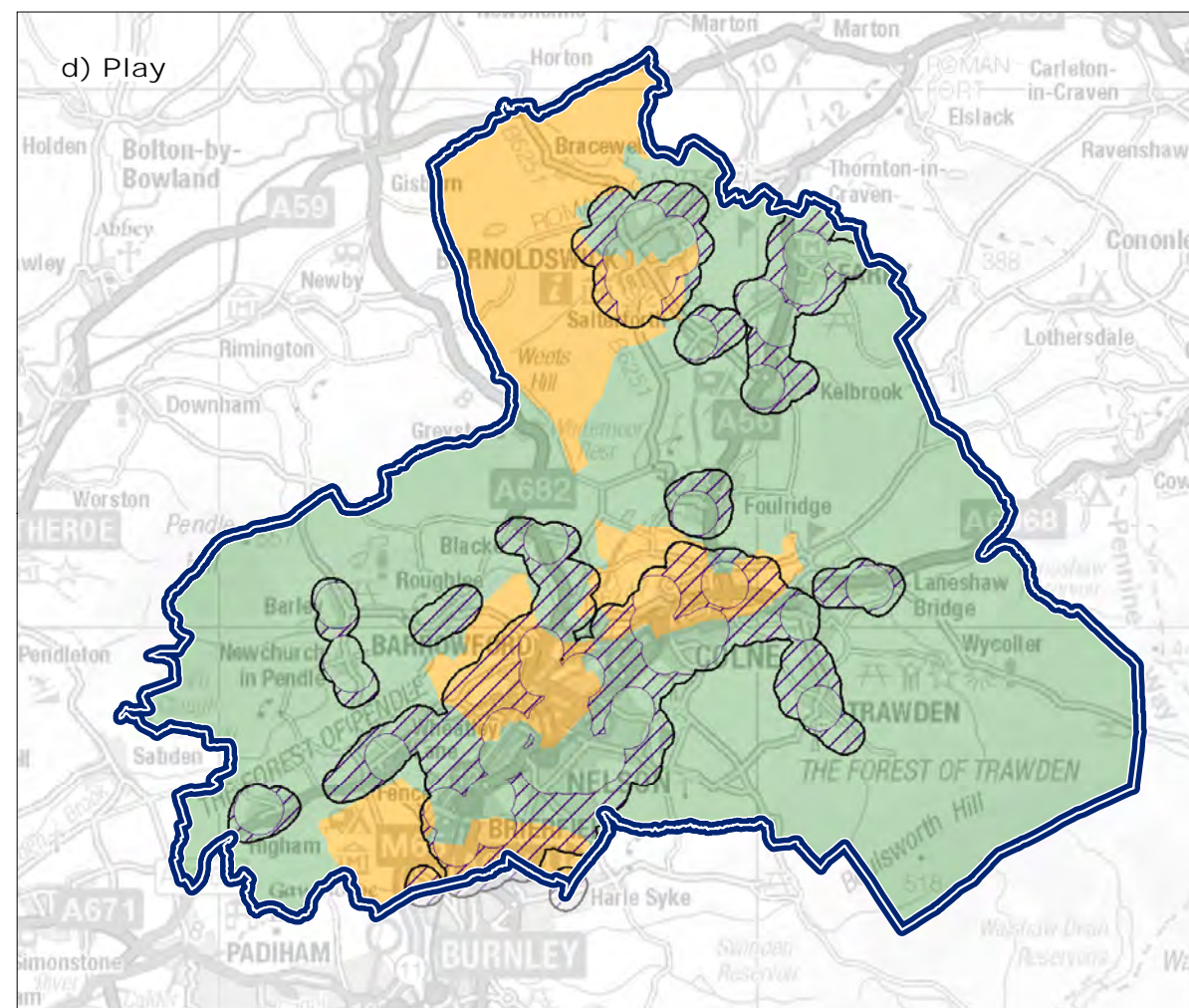
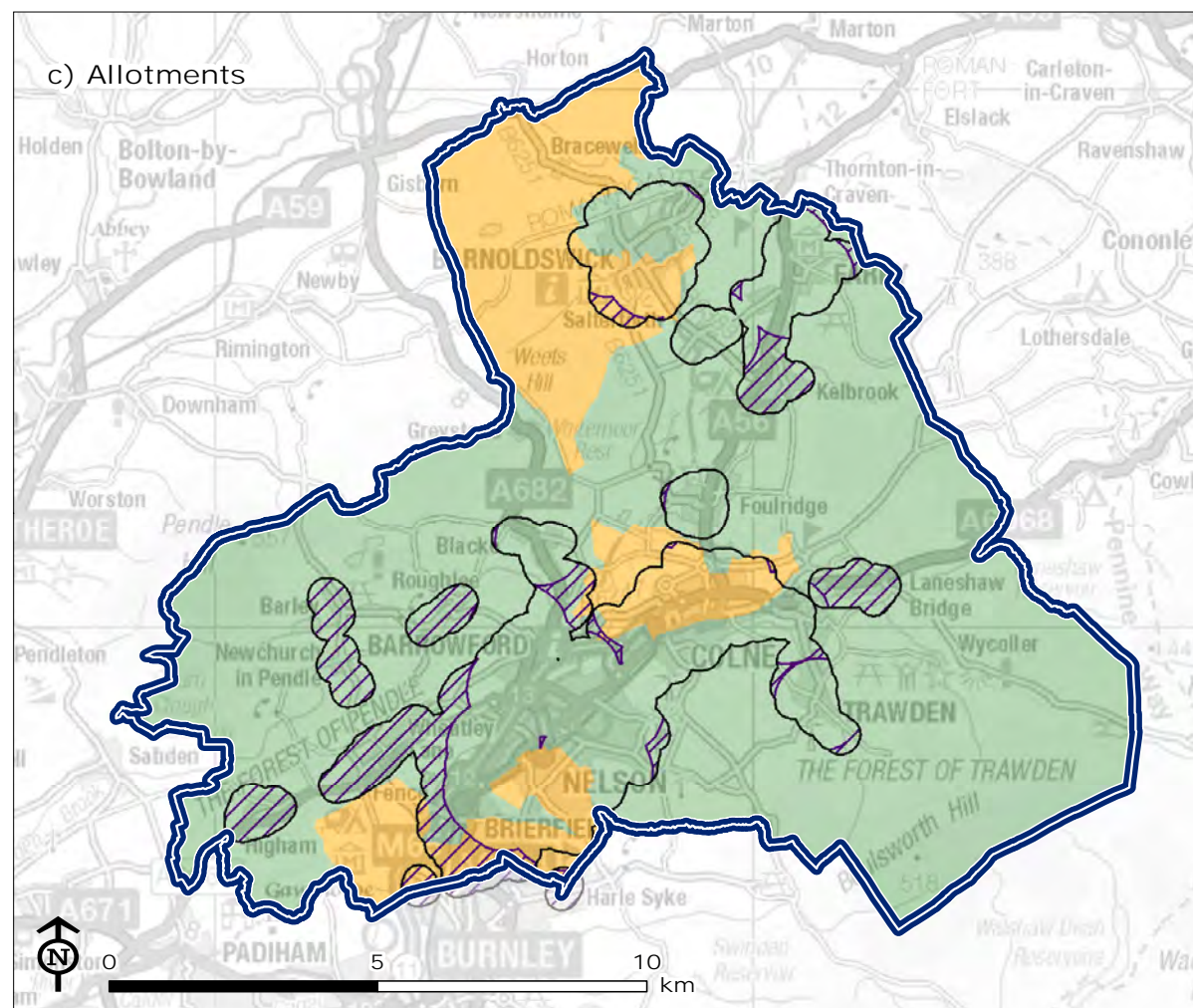
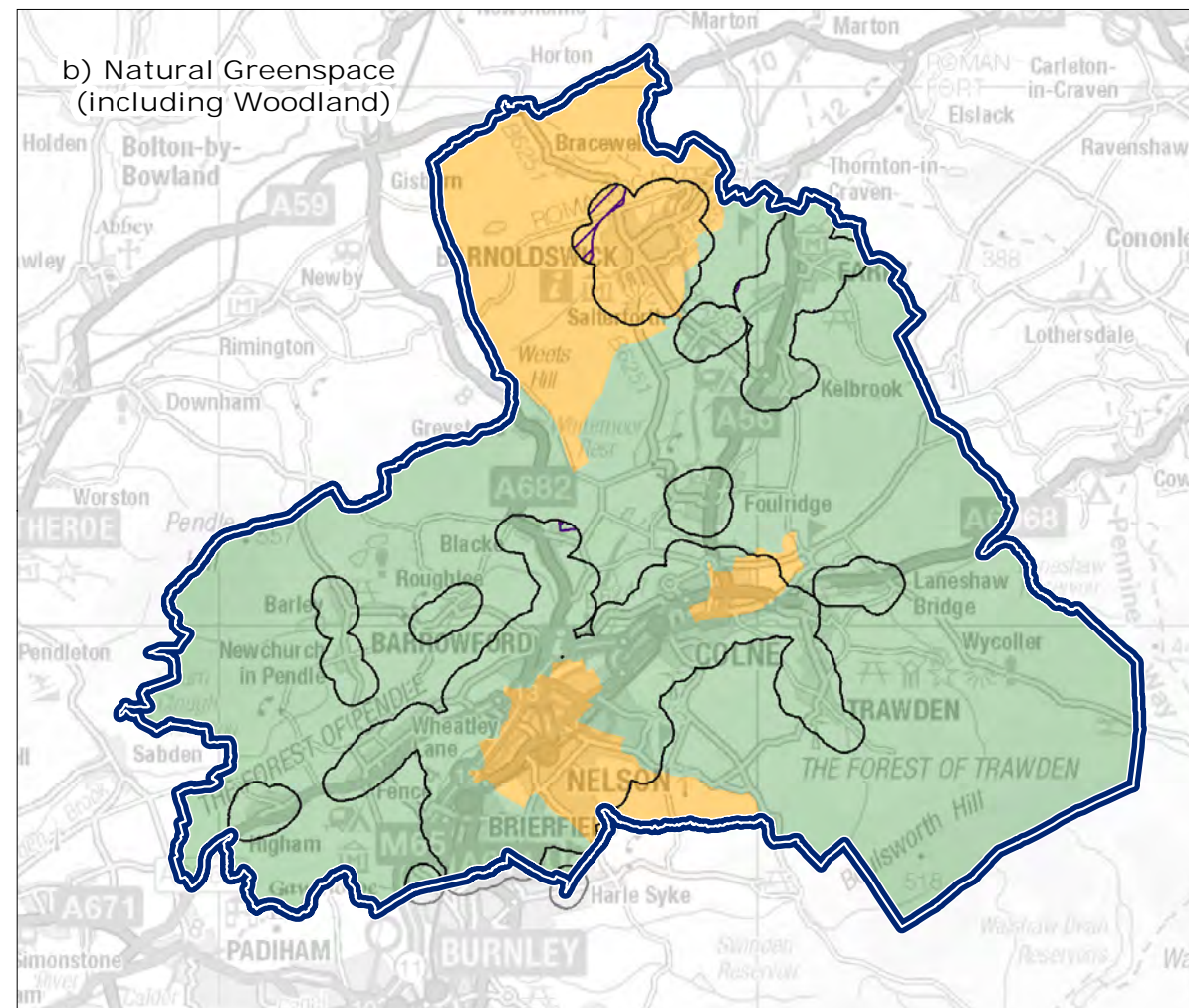
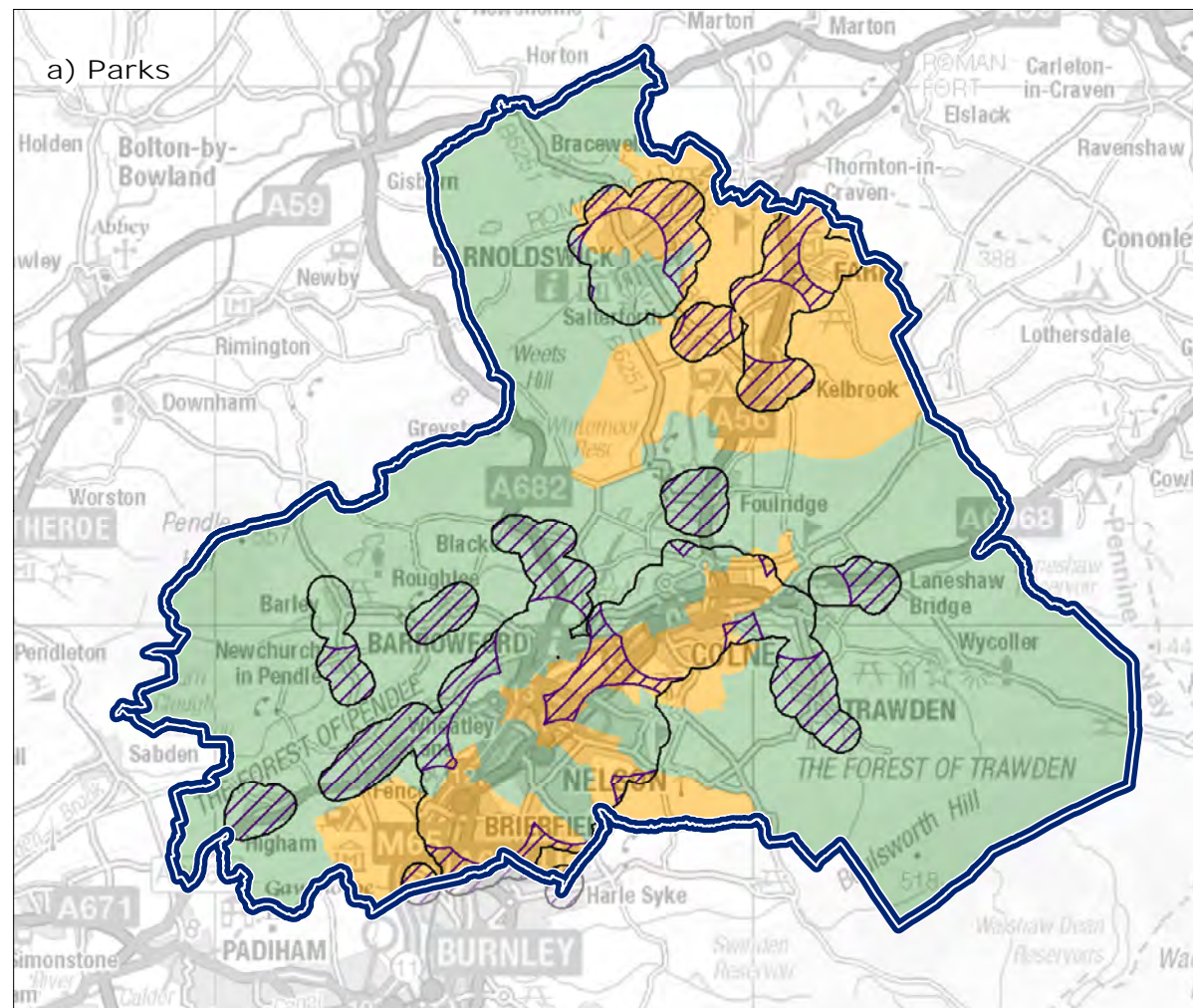
Figure 8.2: Environmental quality



Map Scale @A3: 1:140,000












## Pendle Green Infrastructure Strategy

Figure 8.3: Open space deficiencies

-  Pendle Borough Council
-  Settlement boundary buffer (300m)
-  Access deficiency
-  Wards with no quantity deficiency
-  Wards with a quantity deficiency



## Existing initiatives

- 8.10 Three notable existing initiatives seeking to address health and well-being issues within Pendle include:

### **Bodies in Motion- Garden Project, Brierfield<sup>94, 95</sup>**

- 8.11 Bodies in Motion is a community-focused charity providing a range of services including health and fitness facilities, accredited training, functional information and advice and guidance. The charity has developed a community greenhouse and gardening project with polytunnels, raised beds, composting area, workshop and sheltered seating area at Fleet Street in Nelson. The project's long term goal is to provide sustainable food for local charities, food banks and a community café.

### **Green Prescriptions<sup>96</sup>**

- 8.12 Some GP's within Pendle are prescribing 'Green Prescriptions'. A Green Prescription is a health professional's written advice to a patient to be physically active, as part of the patient's health management. Research undertaken in New Zealand, where Green Prescriptions originate from, found 6-8 months after receiving their green prescription, 63% of patients are more active than they were before and 46% lost weight.

### **Good Life Project<sup>97</sup>**

- 8.13 The Good Life Project is a therapeutic horticulture programme run by Pendle Leisure Trust and funded by the National Lottery Community Fund. The project is aimed at adults who are suffering from social isolation with a goal to improve their mental well-being, physical health and bring them together whilst caring for the Nelson community allotment. It gives them a chance to grow their own produce and develop skills such as nurturing, caring, concentration and co-operation in a fun, friendly and healthy environment.

## What are the key issues, priorities and opportunities?

- 8.14 The following section provides a summary of the stakeholders' comments on the key issues relating to health and well-being within the Borough. This is followed by a review of the issues, priorities and opportunities for GI assets in this area within Pendle.

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<sup>94</sup> Lancashire Environmental Fund (2017) Lancashire Environmental Fund Annual Report 2017. Available at: [www.lancsenvfund.org.uk/uploads/6/7/6/4/67640065/annual\\_report\\_2017\\_web.pdf](http://www.lancsenvfund.org.uk/uploads/6/7/6/4/67640065/annual_report_2017_web.pdf).

<sup>95</sup> Bodies in Motion (2018) Available at: [www.bodiesinmotion.co.uk](http://www.bodiesinmotion.co.uk).

<sup>96</sup> Bloomfield, D. (2014) Dose of Nature Evidence report. Available at: [www.health.govt.nz/our-work/preventative-health-wellness/physical-activity/green-prescriptions/green-prescription-research/green-prescription-patient-survey](http://www.health.govt.nz/our-work/preventative-health-wellness/physical-activity/green-prescriptions/green-prescription-research/green-prescription-patient-survey).

<sup>97</sup> <https://www.pendleleisuretrust.co.uk/services/good-life-project/>



#### Stakeholder views

- Promote woodland creation to improve the health and well-being, recreational opportunities and quality of life of residents.
- Suitable trees and woodland can improve air quality by adsorbing pollutants such as sulphur dioxide and ozone, intercepting harmful particulates from vehicle emissions, smoke, pollen and dust and they also release oxygen through photosynthesis. This can reduce the occurrence of the problems caused by chronic respiratory disease.
- GPs are giving out 'green prescriptions'. There is a need for the Council to work in partnership with the NHS, Public Health England and health professionals to provide suitable opportunities to fulfil green prescriptions.
- There is opportunity to engage local people in GI in a number of ways including:
  - Working with schools to take children into their local network of paths/GI and linking this with curriculum activities.
  - Working with secondary schools to identify cross-country running routes and using the local area for Duke of Edinburgh expeditions.
  - Encouraging newly retired people to join walking and cycling groups.
  - Promoting use of and providing support to local walking and running groups.

8.15 Six key issues and priorities have been identified from the review of baseline information and stakeholder consultation (see **Appendix 2**). These priorities are described below and illustrated in **Figure 8.4**.

#### Improving air quality/trapping air pollutants

- 8.16 Air pollutants can adversely affect human health, contributing to respiratory issues and early mortality. This includes air pollution from sources such as road traffic and employment sites. GI can help to limit the extent of human air pollution exposure through vegetation that can absorb and screen pollution.
- 8.17 Levels of NO<sub>2</sub> in Pendle generally do not exceed legal limits (40µgm<sup>-1</sup> annual mean or 200 µgm<sup>-1</sup> one hour mean not to be exceeded more than 18 times a year). However, levels of particulate matter (PM<sub>2.5</sub>) are close to the legal limit (25 µgm<sup>-1</sup> annual mean) in Windsor Road, and Rowlands Colne. **Figure 8.4** shows the areas that are in the top 10<sup>th</sup> percentile for PM<sub>2.5</sub> in Pendle. There is one Air Quality Management Area (AQMA) within this zone.
- 8.18 A key priority is to improve air quality across Pendle Borough by trapping air pollutants. Key opportunities include planting hedgerows and street trees, and encouraging front garden greening for properties within those areas that are in the areas experiencing high levels of PM<sub>2.5</sub> in Pendle. The planting of hedgerows, street trees and other vegetation close to pollution sources, such as along roads, can effectively screen this pollution, prevent it from being dispersed further afield and protecting human health.



Priority H1: Improve air quality/trap air pollutants		M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity H1a	Seek opportunities for hedgerow planting alongside heavily trafficked roads.	✓			
Opportunity H1b	Support front garden greening initiatives/competitions for properties in zones with high PM <sub>2.5</sub> levels.	✓			
Opportunity B3c (See Chapter 6)	Reduce hard standing surfaces through creating planted areas and make space for street trees.	✓			

### Increasing activity levels for adults

- 8.19 The main health priorities for Pendle include encouraging healthy lifestyles, and recent statistics show that the percentage of physically active adults in the Borough is lower than the national average<sup>15</sup>. There is therefore a need to increase activity levels of adults, and GI can help do this by providing open space. Open space encourages exercise and active recreation that contributes to both physical and mental health. **Figure 8.3** shows the areas within Pendle that are deficient in access to open space. A key priority is to increase activity levels for adults by delivering new open space or improving access to existing open spaces.
- 8.20 Whilst aspirational, and more likely to be deliverable in the longer term due to recent investment, green gym equipment in existing parks and recreation grounds could also be increased and publicised.

Priority H2: Increase activity levels for adults		M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity H2a	Provide new, or enhance access to existing areas of open space.	✓	✓	✓	✓
Opportunity H2b	Further increase provision of green gym equipment in existing parks and recreation grounds.	✓	✓		

### Improving activity levels for children

- 8.21 Childhood obesity is an increasing problem in the UK and the childhood obesity levels within Pendle are above the national average<sup>15</sup>. One of the main health priorities for Pendle is to improve health outcomes for children and young people. GI can help to encourage the physical activity of children by providing play equipment. **Figure 8.4** highlights the M65 Corridor as a priority area for supporting the provision of play equipment given current areas of deficiency in access to play as well as high prevalence of childhood obesity levels above the England average (reception and Year 6 age groups).
- 8.22 A key priority is to improve activity levels of children. Particular efforts should be made to provide play equipment as part of planning applications that come forward for development, particularly in the parts of the Borough where childhood obesity levels are above the England average. This will involve working closely with town and parish councils who are responsible for play areas in the Borough.



Priority H3:	Improve activity levels for children	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity H3a	Support opportunities to provide play equipment.	✓			

### Increase food growing opportunities

- 8.23 Food growing, such as at allotments, can provide health and well-being benefits through encouraging healthy eating. In addition, allotments offer further well-being benefits including facilitating social cohesion and recreation. **Figure 8.4** shows areas that are within 10 mins (800m) of schools and outside of existing allotment catchments.
- 8.24 A key priority is to increase food growing opportunities within Pendle by identifying vacant land outside of existing allotment catchments where allotments could be developed. Particular consideration should be given to the opportunities to provide allotments as part of planning applications that come forward for development and at schools; to encourage their use by communities and educate schoolchildren about healthy eating.

Priority H4:	Increase food growing opportunities	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity H4a	Identify areas of existing GI or vacant land that can support small-scale food growing activities.	✓	✓	✓	

### Improve mental health

- 8.25 Mental health and well-being is of as great importance as physical health and one of the main health priorities for Pendle is improving mental health and well-being. GI offers mental health benefits by providing open space for activity and relaxation. **Figure 8.4** shows areas that are in the top 10% most deprived nationally in terms of mood and anxiety disorders.
- 8.26 All of the priorities and opportunities identified above can assist with mental health. An additional key opportunity includes encouraging community gardening initiatives and funding of community gardeners for streets. Such initiatives have been successfully implemented in other parts of the country<sup>98</sup> through crowdfunding.

Priority H5:	Improve mental health	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity H5a	Encourage community gardening initiatives and funding of postcode gardeners for streets in areas where mood and anxiety levels are prevalent.	✓			

<sup>98</sup> 10 x Greener (2018) Let's make Daubeney and E5 #10xGreener! Available at: [10xgreener.org/](https://10xgreener.org/)

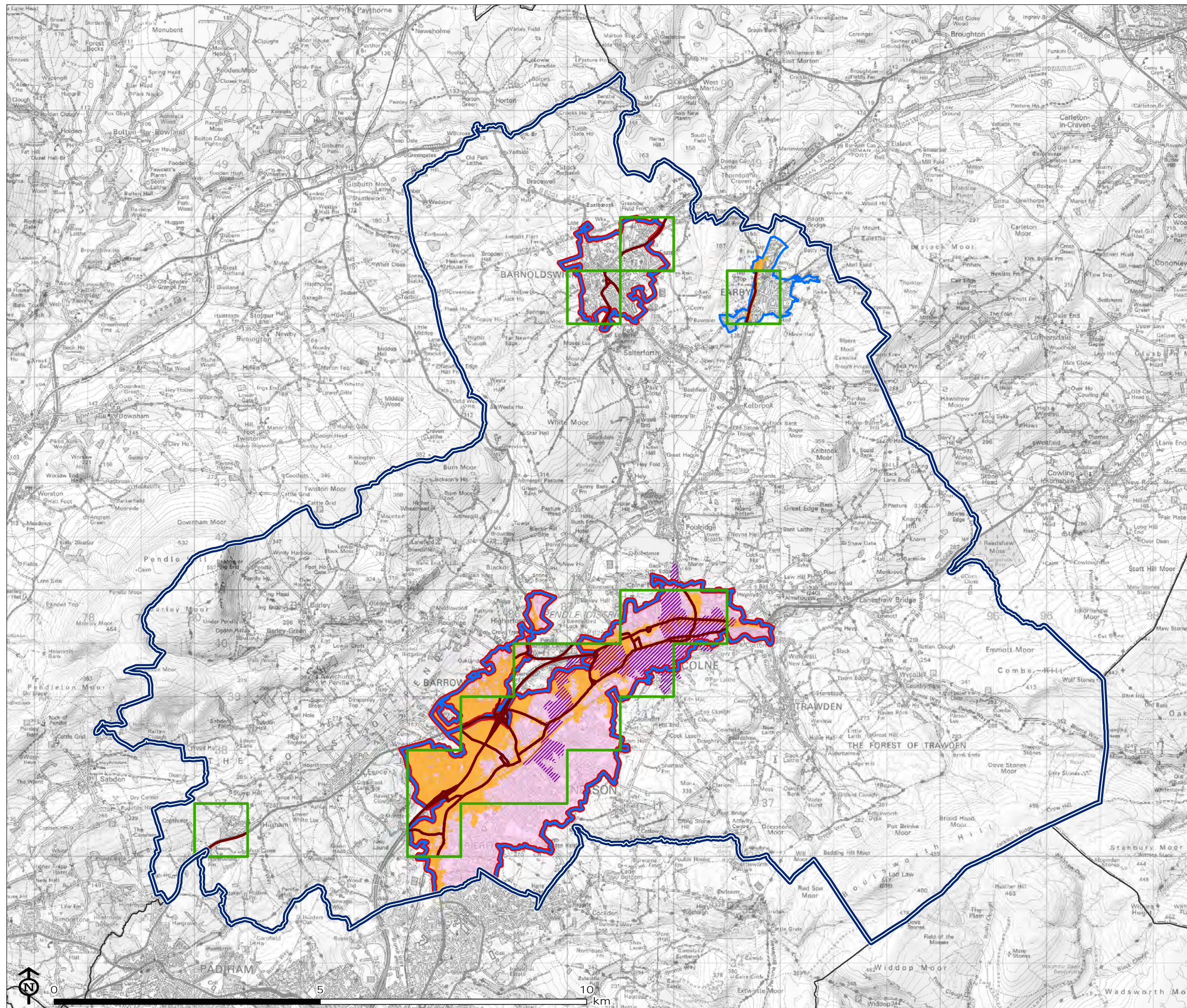


## Reduce the impact of noise pollution

- 8.27 Noise pollution can arise from a wide variety of sources including road and rail traffic, operational employment areas and agricultural activity. Noise pollution can adversely affect human health, as well as sensitive wildlife, and GI can help to mitigate noise pollution. **Figure 8.4** shows areas where road and rail noise exceeds the 55db legal limit.
- 8.28 A key priority is to reduce the impact of noise pollution within Pendle by creating vegetation barriers along transport links and around employment areas that produce high levels of noise. Vegetation barriers can also provide additional benefits such as enhancing habitat connectivity. Particular consideration should be given to the opportunities to develop such barriers as part of planning applications that come forward for development that will produce noise pollution, or development close to sensitive receptors (residential properties, school, health facilities etc).

Priority H6:	Reduce the impact of noise pollution	M65 corridor	Barnoldswick	Earby	Rural Pendle
Opportunity H6a	Seek opportunities to create vegetation barriers to reduce noise pollution, particularly in close proximity to sensitive receptors.	✓		✓	





## Pendle Green Infrastructure Strategy

Figure 8.4: Spatial priorities for using GI to improve health and well-being

- Pendle Borough Council
- Local Authorities
- H1a: Plant hedgerows alongside heavily trafficked roads
- H1b: Support front garden greening initiatives in zones with high pollution
- H2b: Increase provision of green gym equipment
- H3a: Support opportunities to provide play equipment  
B3c: Reduce hard standing surfaces through new planted areas and make space for street trees
- H4a: Encourage small-scale food growing activities on vacant land
- H5a: Encourage community gardening initiatives in areas where mood and anxiety issues are prevalent
- H6a: Create vegetation barriers to reduce noise pollution close to sensitive receptors

Borough-wide opportunities

H2a: Provide new, or enhance access to existing areas of open space.

Map Scale @A3: 1:70,000







Image: Atom Panopticon © Matthew Hartley (cc by/2.0)

## **Part 3: Key Opportunities and Policy Recommendations**



## 9 Summary of key opportunities and policy recommendations

- 9.1 A wide range of information has been consulted in the process of preparing this strategy, from a review of policy, stakeholder consultation and analysis of specific green infrastructure data for Pendle (types, functions, needs, assets etc.). Based on this information, a series of priorities have been developed and specific opportunities identified. The opportunities have been developed in response to the key issues for each priority. Wherever relevant, the opportunities are targeted at specific areas where the “need” is greatest, based on analysis undertaken. The proposed opportunities should not however restrict innovation.
- 9.2 The following chapter provides a summary of the key priorities and supporting opportunities identified within this strategy. It also identifies the multifunctional benefits that could be provided by each opportunity, as in many cases the opportunities identified can deliver benefits relating to a wide number of functions (see **Figure 9.1**).

**Figure 9.1: Multi-functionality of Pendle’s Green Infrastructure network.**



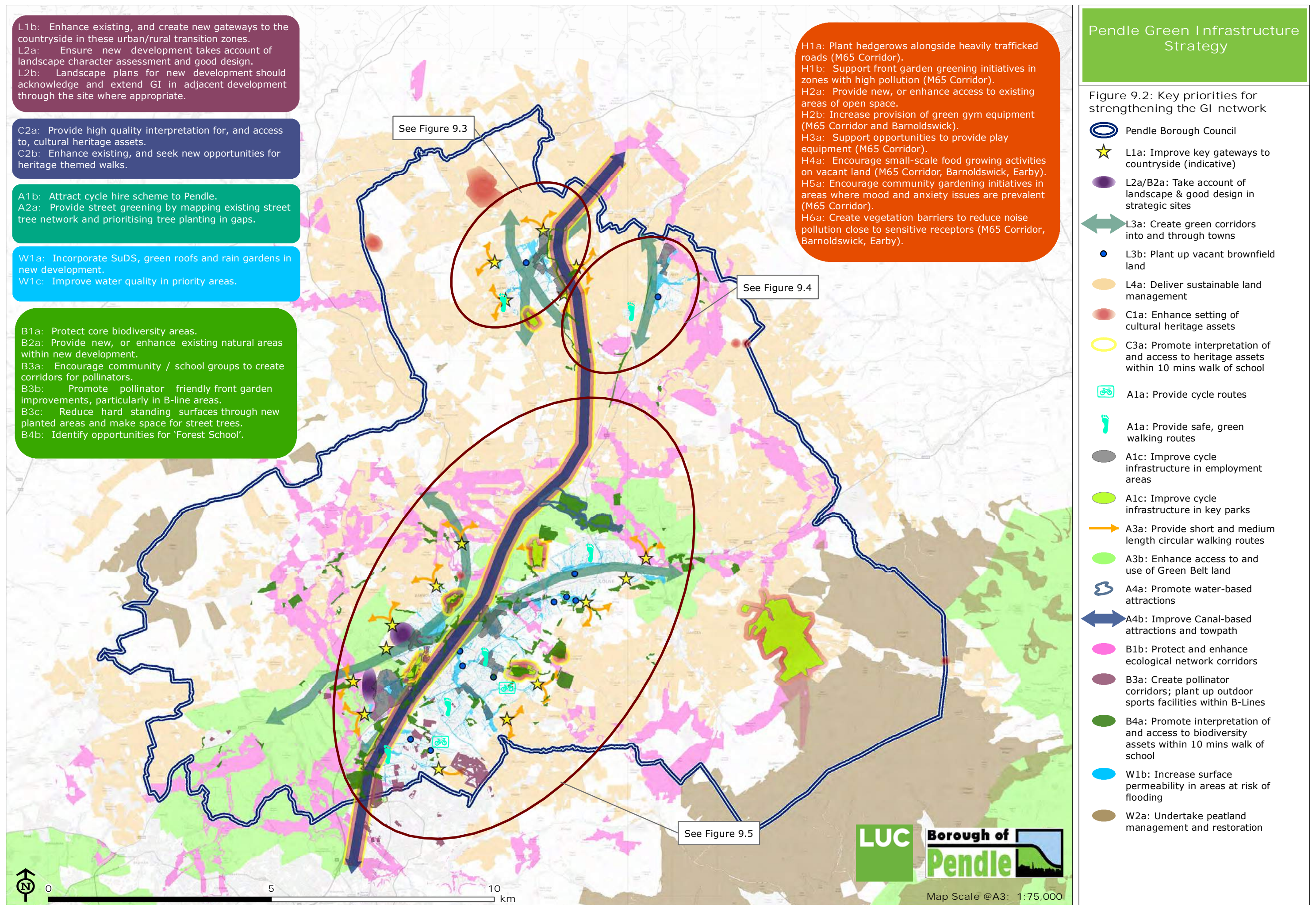


- 9.3 The chapter also provides guidance on how green infrastructure delivery should be embedded into the emerging Local Plan Part 2: Site Allocations and Development Policies (LP2) and other key strategies.

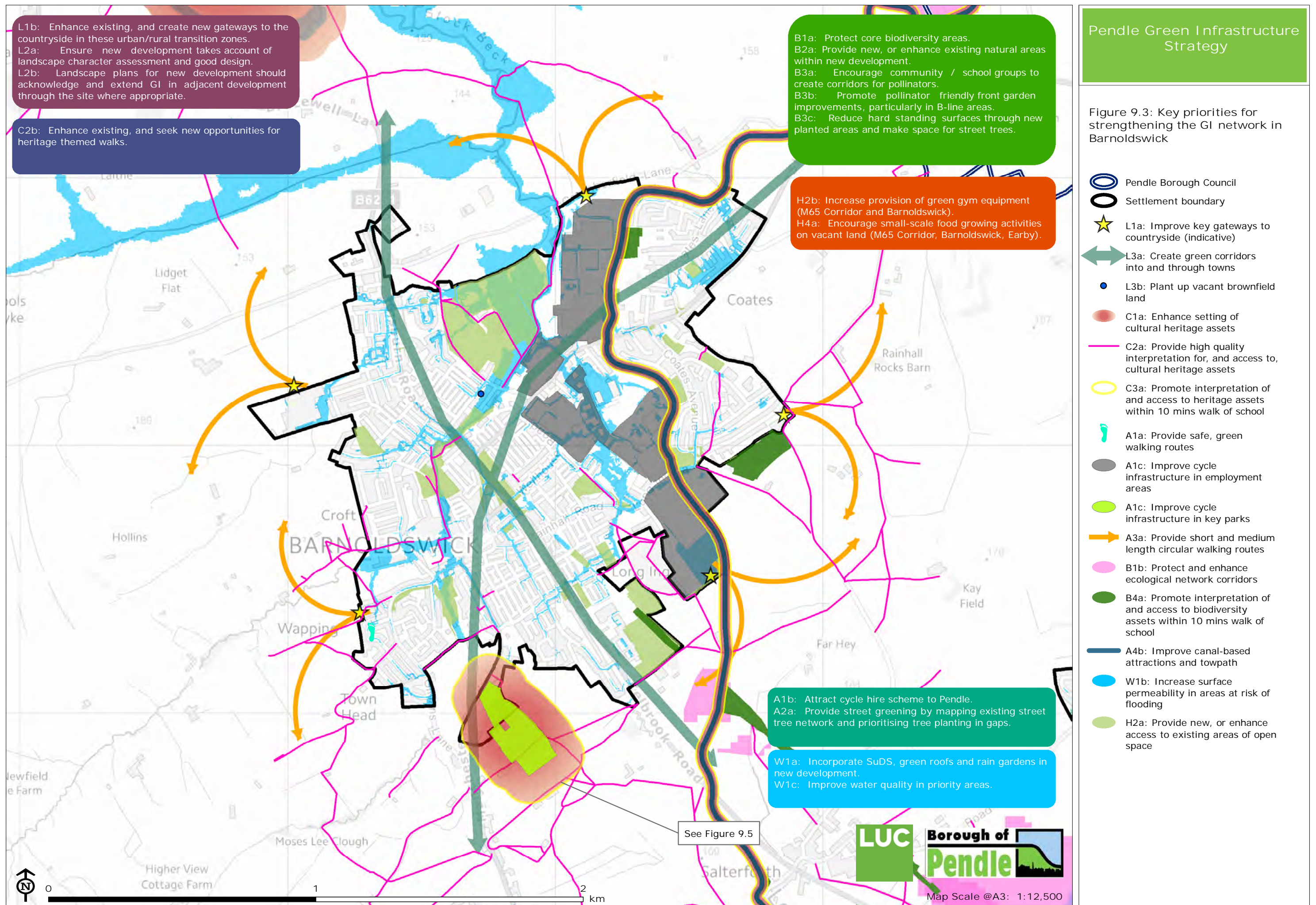
## Summary of key opportunities

- 9.4 **Table 9.1** lists all of the key priorities and supporting opportunities identified within this strategy and the multifunctional benefits they could deliver. Many of the opportunities can provide multiple benefits with health and well-being the most common function delivered; a key priority for Pendle.
- 9.5 Accompanying **Table 9.1** are **Figures 9.2-9.6** which summarise the key opportunities for GI provision within the following geographical areas:
- Pendle – **Figure 9.2**;
  - Barnoldswick - **Figure 9.3**;
  - Earby - **Figure 9.4**;
  - M65 corridor - **Figure 9.5**;
  - Rural Pendle - **Figure 9.6**.
- 9.6 These maps can be used as a starting point to inform discussions and guide actions with developers, parish councils, utility companies, national and local interest groups, and wider partners involved in the delivery of GI.

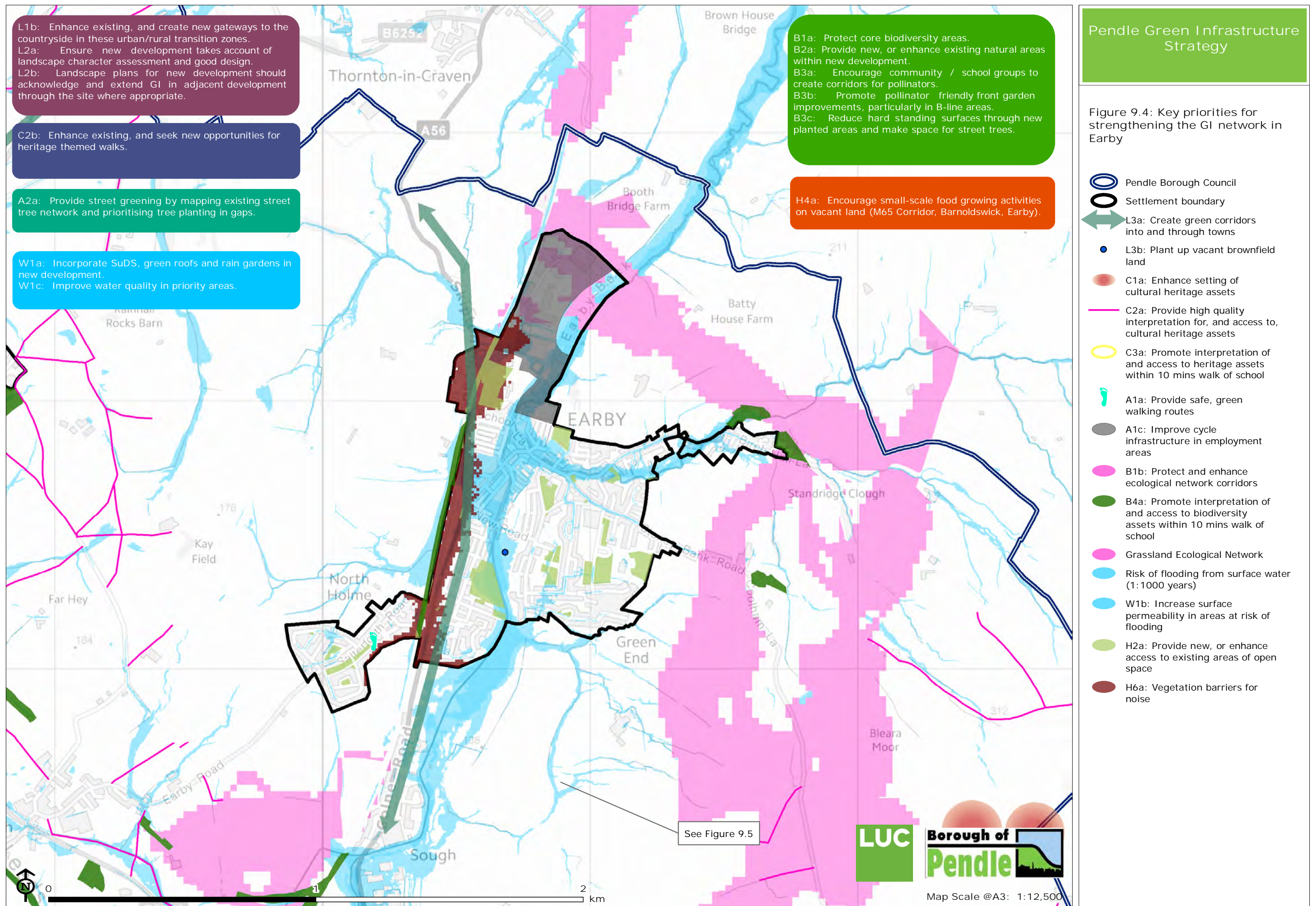




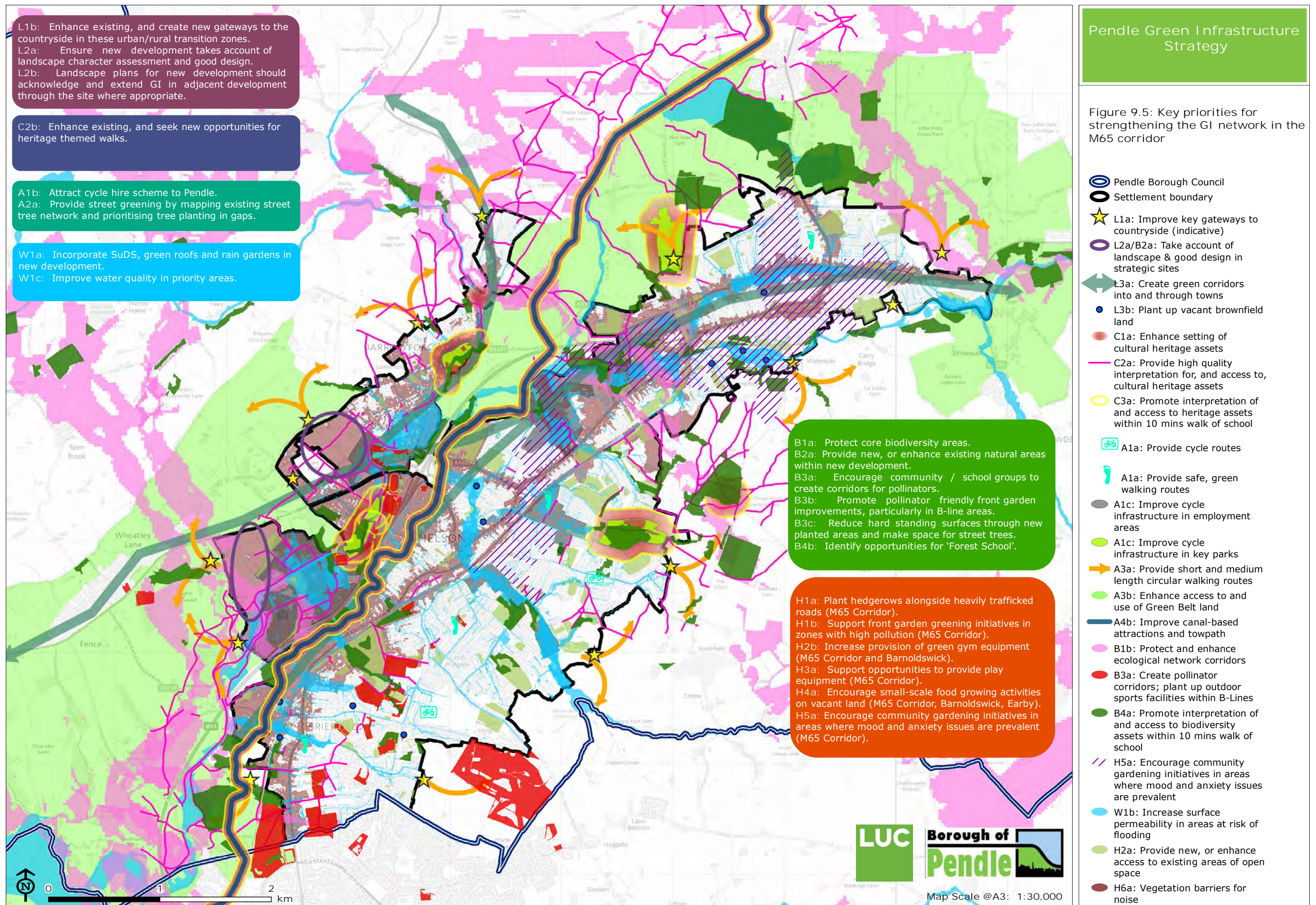














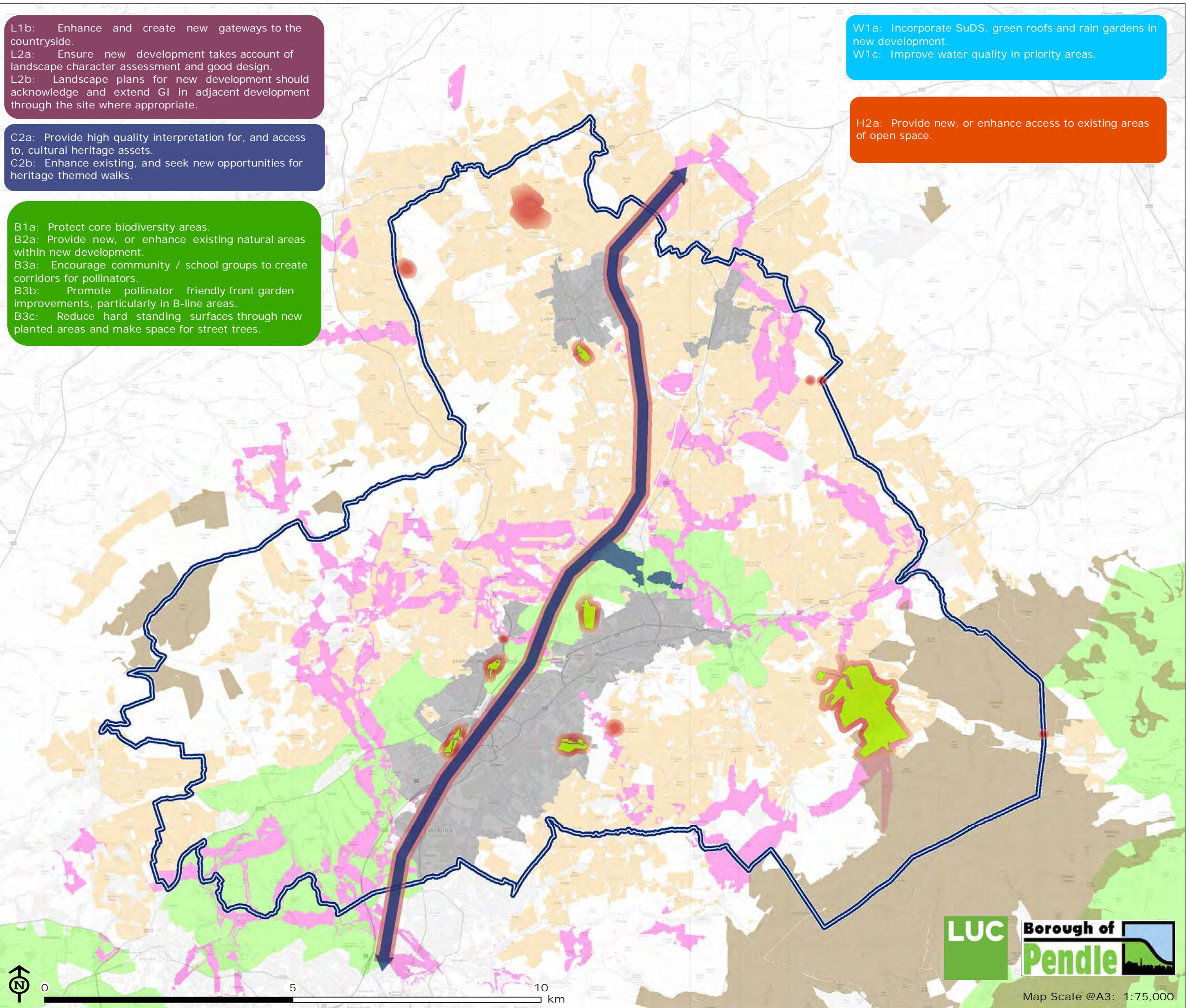
L1b: Enhance and create new gateways to the countryside.  
 L2a: Ensure new development takes account of landscape character assessment and good design.  
 L2b: Landscape plans for new development should acknowledge and extend GI in adjacent development through the site where appropriate.

C2a: Provide high quality interpretation for, and access to, cultural heritage assets.  
 C2b: Enhance existing, and seek new opportunities for heritage themed walks.

B1a: Protect core biodiversity areas.  
 B2a: Provide new, or enhance existing natural areas within new development.  
 B3a: Encourage community / school groups to create corridors for pollinators.  
 B3b: Promote pollinator friendly front garden improvements, particularly in B-line areas.  
 B3c: Reduce hard standing surfaces through new planted areas and make space for street trees.

W1a: Incorporate SuDS, green roofs and rain gardens in new development.  
 W1c: Improve water quality in priority areas.

H2a: Provide new, or enhance access to existing areas of open space.


















## Pendle Green Infrastructure Strategy

Figure 9.6: Key priorities for strengthening the GI network in rural Pendle











- Pendle Borough Council
- Main urban areas
- L4a: Deliver sustainable land management
- C1a: Enhance setting of cultural heritage assets
- A1c: Improve cycle infrastructure in key parks
- A3b: Enhance access to and use of Green Belt land
- A4a: Promote water-based attractions
- A4b: Improve Canal-based attractions and towpath
- B1b: Protect and enhance ecological network corridors
- W2a: Undertake peatland management and restoration
















**Table 9.1: Multifunctional benefits of each opportunity identified.**

Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
<b>Priority L1:</b>	<b>Ensure that there is sufficient legibility and permeability to enable urban residents to interact with and experience the high quality landscapes beyond the urban centres.</b>								
Opportunity L1a	Enhance existing, and create new gateways to the countryside in these urban/rural transition zones.								
Opportunity L1b	Improve signage and waymarking to lead residents and visitors into the wider countryside.								
<b>Priority L2:</b>	<b>Ensure that new development respects and enhances the existing landscape character and sense of place.</b>								
Opportunity L2a	Ensure all new development, particularly within the strategic and employment site allocations takes account of the Landscape Character Assessment and use of good design. Ensure that proposed developments and associated GI reflect the key characteristics and special features of the existing landscape.								
Opportunity L2b	The design of adjoining developments should be considered carefully to incorporate and enhance the Green Infrastructure of the Borough.								

















Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
	Where a new scheme borders a development incorporating elements of GI adjacent to the boundary, the landscape plan for the new development should acknowledge this and where appropriate incorporate similar elements to extend them into or through the site. This would help to reinforce existing GI provision, create a more cohesive network of green corridors and avoid the fragmentation of habitats.								
<b>Priority L3:</b>		<b>Ensure that there is a strong sense of place for visitors, investors and residents arriving in the Borough.</b>							
Opportunity L3a	Improve the public realm and streetscapes, by increasing tree and general planting. Sense of place can be achieved by ensuring the design is informed by the local landscape character and the use of local native plant species.								
Opportunity L3b	Consider greening opportunities including wildflower meadows and tree planting for vacant brownfield land which is not proposed for development.								





























Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
Priority L4:	Encourage sustainable land management practices.								
Opportunity L4a	Encourage landowners and farmers to uptake agri-environment scheme options such as the current countryside stewardship scheme (or its replacement) that make a positive contribution to the landscape and provide opportunities for biodiversity enhancements.								
Priority C1:	Ensure the setting of cultural heritage assets is protected and enhanced.								
Opportunity C1a	Review street furniture, street lighting and signage to reduce any 'clutter' within these zones that might detract from appreciation of the assets. However, ensure that there is sufficient provision of benches for the young and elderly to sit and appreciate key assets if they are not an existing 'destination location'.								
Priority C2:	Ensure that there is sufficient interpretation to allow residents and visitors to interact with and explore these assets to provide a strong sense of place and support the tourism economy.								
Opportunity C2a	Provide high quality interpretation to promote an understanding of cultural heritage assets. Ensure related assets in close proximity								

















Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
	are identifiable as a cluster and navigation between them is facilitated and promoted.								
Opportunity C2b	Enhance existing and seek new opportunities for heritage themed promoted walks.								
<b>Priority C3:</b>	<b>Provide learning opportunities for local school children.</b>								
Opportunity C3a	Promote safe access between assets and education facilities. Ensure that interpretation is appropriate and engaging for children and young adults as well as the wider community. Explore the use of social media platforms, mobile apps and interactive maps.								
<b>Priority A1:</b>	<b>Provide healthy, safe travel routes for commuters and visitors.</b>								
Opportunity A1a	Seek opportunities to provide safe walking and cycling routes between home, work and education. Sensitive and sustainable lighting design will avoid light pollution and reduce energy use as well as improving self-surveillance of routes.								












Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
Opportunity A1b	Seek to attract a cycle hire scheme to Pendle as many are unlikely to have space to store their own bikes at home.								
Opportunity A1c	Provide adequate cycle infrastructure in and around key parks and employment areas.								
<b>Priority A2:</b>	<b>Ensure sufficient shade along routes.</b>								
Opportunity A2a	Seek opportunities to provide street greening through mapping the existing street tree network and prioritise tree planting where gaps are identified.								
<b>Priority A3:</b>	<b>Get residents walking in the countryside.</b>								
Opportunity A3a	Create short and medium length circular routes within the urban/rural transition zone.								
Opportunity A3b	Seek opportunities to enhance access to and use of Green Belt land.								




















Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
Priority A4:	Encourage water based recreation, including use of towpaths.								
Opportunity A4a	Promote water-based attractions.								
Opportunity A4b	Canal: Encourage Canal & River Trust to undertake towpath improvements where necessary.								
Priority B1:	Protect core biodiversity areas and increase resilience and connectivity of habitats and wildlife corridors.								
Opportunity B1a	Using the ecological networking maps, protect core biodiversity areas by ensuring proposed developments do not directly or indirectly have adverse effects in these locations. These protections should be included in planning policy.								
Opportunity B1b	Within the ecological networks: <ul style="list-style-type: none"> <li>Encourage improvements to the quality of current sites by better habitat management.</li> <li>Increase the size of current wildlife sites.</li> </ul>								




















Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
	<ul style="list-style-type: none"> <li>Enhance connections between, or join up, sites, either through physical corridors, or through 'stepping stones'.</li> <li>Create new sites.</li> </ul> <p>And on land around the network:</p> <ul style="list-style-type: none"> <li>Reduce pressures on wildlife by improving the wider environment, including through buffering wildlife sites.</li> </ul>								
<b>Priority B2:</b>		<b>Ensure development delivers biodiversity net gain.</b>							
Opportunity B2a	Provide new, or enhancement of existing natural areas within new development, particularly within areas allocated for development, or other brought forward for development within the Borough (see section 6.35).								
<b>Priority B3:</b>		<b>Supporting pollinators.</b>							
Opportunity B3a	Encourage community and school action to create corridors for pollinators. This could be through front garden competitions or setting aside areas around sports fields for school children to plant wildflowers in spring. Pollinator friendly planting should be								



Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
	provided alongside new development, within parks and along roadside verges.								
Opportunity B3b	Promote pollinator friendly front garden improvements, particularly within B-line areas. Encourage the use of perennial plants for In Bloom projects rather than seasonal plants.								
Opportunity B3c	Reduce hard standing surfaces through creating planted areas and make space for street trees.								
<b>Priority B4:</b>	<b>Provide learning opportunities for local school children.</b>								
Opportunity B4a	Promote safe access between assets and education facilities to facilitate nature-based learning opportunities within close proximity to schools. Ensure that interpretation is appropriate and engaging for children, young adults and the wider community. Explore the use of social media platforms, mobile apps and interactive maps.								
Opportunity B4b	Seek further opportunities for provision of 'Forest School' locations and support training of local education practitioners.								












Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
Priority W1:	Water interception.								
Opportunity W1a	Incorporate SuDS, green roofs and rain gardens in any new development.								
Opportunity W1b	Reduce hard standing surfaces through creating planted areas, encouraging front garden greening and making space for street trees in areas at risk of flooding.								
Opportunity W1c	Improve water quality in priority areas.								
Priority W2:	Manage peatlands.								
Opportunity W2a	Encourage landowners to undertake peat management and restoration.								
Priority H1:	Improve air quality/trap air pollutants.								
Opportunity H1a	Seek opportunities for hedgerow planting alongside heavily trafficked roads.								



Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
Opportunity H1b	Support front garden greening initiatives/competitions for properties in zones with high PM2.5 levels.								
<b>Priority H2:</b>	<b>Increase activity levels for adults.</b>								
Opportunity H2a	Provide new, or enhance access to existing areas of open space.								
Opportunity H2b	Further increase provision of green gym equipment in existing parks and recreation grounds.								
<b>Priority H3:</b>	<b>Improve activity levels for children.</b>								
Opportunity H3a	Support opportunities to provide play equipment.								
<b>Priority H4:</b>	<b>Increase food growing opportunities.</b>								
Opportunity H4a	Identify areas of existing GI or vacant land that can support small-scale food growing activities.								



Green Infrastructure Functions		Landscape	Cultural heritage	Active travel	Access, recreation & play	Biodiversity	Water resources	Health and well-being	Social & economic regeneration
Priority H5:	Improve mental health.								
Opportunity H5a	Encourage community gardening initiatives and funding of postcode gardeners for streets in areas where mood and anxiety levels are prevalent.								
Priority H6:	Reduce the impact of noise pollution.								
Opportunity H6a	Seek opportunities to create vegetation barriers to reduce noise pollution, particularly in close proximity to sensitive receptors.								



## Embedding green infrastructure delivery into Local Plan Part 2 and other strategies

- 9.7 As outlined in **Chapter 1** of the report, the NPPF and legislative context provides strong support for enhancing green infrastructure because of the wide range of benefits it affords.
- 9.8 Development plans should give further expression to this by setting an overarching vision of green infrastructure delivery during the plan period. The adopted Core Strategy (2015) does this with the importance of Green Infrastructure reiterated in its vision, strategic objectives and detailed policies including:
- Policy SDP 6: Future Infrastructure Requirements.
  - Policy ENV 1: Protecting and Enhancing Our Natural and Historic Environments.
  - Policy ENV 2: Achieving Quality in Design and Conservation.
  - Policy ENV 4: Promoting Sustainable Travel.
  - Policy ENV 7: Water Management.
  - Policies LIV 2: Strategic Housing Site: Trough Laithe
  - Policy LIV 5: Designing Better Places to Live
  - WRK 3: Strategic Employment Site: Lomeshaye.
  - Policy WRK 6: Designing Better Places to Work.
  - Policy SUP 2: Health and Well-being.
  - Policy SUP 3: Education and Training.
  - Policy SUP 4: Designing Better Public Places.

### Recommendations on future policy development

- 9.9 Pendle Council has a duty to act on climate change, generate employment, maintain healthy functioning ecosystems, maximise physical and mental well-being, protect and promote cultural and heritage assets. The green infrastructure opportunities identified in this strategy will help achieve these aims. Green infrastructure will form part of the overall mitigation for planned site allocations (such as LIV 2 and WRK 3) but should also be central to any future development that comes forward for determination.
- 9.10 There is potential to strengthen the Council's GI policy approach in the emerging Local Plan Part 2, which will complement the Core Strategy and allocate sites for housing and employment uses, designate sites for environmental protection and contain policies to guide and manage development up to 2030. Key policy approaches that could be incorporated within this Plan include:
- requiring all development to deliver a net gain for biodiversity;
  - encouraging all developers to consider use of the "Building with Nature" standards<sup>99</sup>.
  - defining what type of green infrastructure is required, how much should be provided and where (in line with the priorities in this report); and
  - specifying the micro-green infrastructure features which are expected to be integrated within new built development.
- 9.11 The existing GI network should be clearly defined and mapped within the Plan to ensure that these GI features are protected. A digital version of this should be included on the Council's website, so that it can be updated as new GI features are created.

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<sup>99</sup> <https://www.buildingwithnature.org.uk/about>



- 9.12 The Local Plan Part 2 should also provide guidance on the green infrastructure features that are expected to be incorporated within a new development where viable. These will vary depending on the nature and type of development, however the opportunities highlighted within this report provide guidance on what could be expected and where.
- 9.13 Ideally the Local Plan Part 2 should include some spatial expression of priority areas, drawing on the relevant evidence (as set out in this report). This could take the form of GI opportunities map (e.g. **Figures 9.2-9.6**) which can then be used by development management officers in their early discussions with developers and ultimately in the determination of applications. As such it would be treated as a material consideration in planning decisions, adding weight to the GI opportunities and increasing the potential for their delivery.
- 9.14 This Strategy can also be used to inform the preparation of Neighbourhood Plans – helping local communities to identify and realise key GI opportunities within their local area.
- 9.15 A key issue for Pendle however will be the affordability of these measures and the extent to which it affects the viability of developments being proposed. This can only be determined on a case by case basis but it is essential, recognising the multi-functional benefits GI can deliver, that it is not treated as a ‘Cinderella’ issue in the list of requirements for new developments.

### **Recommendations for securing funding through development**

- 9.16 There are two main mechanisms by which financial contributions to GI can be secured from new proposed development through the planning process: S106 agreements and the Community Infrastructure Levy (CIL). Section 106 (of the Town and Country Planning Act) is used when it can be reasonably demonstrated that a development directly affects a community or GI feature, therefore investment in GI is needed as part of the mitigation package. The Community Infrastructure Levy was introduced through the Planning Act (2008) as a levy payable by developers towards the cost of local and sub-regional infrastructure to support development. This can apply to strategic Borough-wide projects, and does not need to be directly related to the proposed development.

#### *Section 106 agreements*

- 9.17 Developer contributions under Section 106 of the Town and Country Planning Act 1990 could provide a mechanism for securing funding for Pendle’s GI priorities. Section 106 agreements are a tool which makes a development proposal acceptable in planning terms, which would not otherwise be acceptable. There are three legal tests which must be met, in order for a Section 106 agreement to be appropriate:
- Must be necessary to make the development acceptable in planning terms;
  - Must be directly related to the development; and,
  - Must be reasonably related in scale and kind to the development.

- 9.18 The limitation of Section 106 has been that contributions could not be pooled (beyond 5 developments) to invest in a strategic site. However, the Government intends to lift the restriction on pooling in 2019. This means that S106 could be used to enhance or promote the wider network, and could fund the Borough-wide opportunities such as promoting access to the countryside, or engaging schools, young people and new residents.

#### *Community Infrastructure Levy*

- 9.19 As part of the preparation of the Core Strategy, the Council looked into the potential for obtaining contributions from the Community Infrastructure Levy (CIL). A Development Viability Study concluded that care homes, large food stores and retail warehouse development are the only property types capable of supporting contributions from CIL and that the margins available from these types of development (when other policy requirements and site specific S106 costs are discounted) will be negligible. On that basis the Council took the decision not to adopt a CIL Charging Schedule at the time, as the costs of introducing and administering CIL were likely to outweigh the benefits. Should viability improve however, the Council should revisit the opportunity to introduce CIL as a means of funding essential infrastructure.



### **Wider Funding**

- 9.20 Beyond funding from developer contributions, GI opportunities could be delivered from a diverse range of funding mechanisms. Funding will be dependent on the type of scheme, its origins and functions. Some proposals will need capital funding to establish a green infrastructure asset and subsequently revenue funding to secure its long term management. A new SuDS installation, for example, will require capital investment to initially create the scheme as part of development proposals, as well as revenue funding for its long-term maintenance and management to secure its functionality. Potential sources of funding for different forms of GI could include: agri-environment schemes; woodland grant schemes; endowments, community management trusts, parish councils and the local authority,
- 9.21 The capital and revenue costs of green infrastructure will be determined by the requirements of any individual scheme. Any GI viability assessment will need to be assessed against both the policy requirements and the functions which are being delivered. Green infrastructure can be a cheaper and more viable alternative to investment in more traditional grey infrastructure. Any assessment will also need to take into account all the multi-functional characteristics of green infrastructure, to ensure that functions are not costed twice.

### **The wider role of the Strategy**

- 9.22 Crucially, it should be recognised that a wide number of partners are required for the successful GI delivery. By definition, GI is 'cross-cutting'. Local authorities and their partners can facilitate delivery of the Strategy by reflecting green infrastructure opportunities and priorities in their own plan and strategies. This could be both within the Council (e.g. housing strategies and plans, highway maintenance, landscape management) and in partner organisations, eg NHS trusts – preventative care, parish councils, local schools, non-governmental organisations (NGOs), charities, local employers, community organisations etc. To this end we recommend also that the Strategy is formally adopted by the Council, as a cross-cutting Plan that should inform all relevant Council activities and beyond.



Image: Rear of New Market Street Colne with Pendle Hill © Richard Dwyer (cc by-sa/2.0) [cropped]

# Appendices



# Appendix 1

## National, Regional and Local Policy Context

Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
National		
25 Year Environment Plan (2018)	<a href="#">Policy 1</a>	The government's recently published 25 Year Environment Plan, provides support for 'net environmental gain' in development, habitat creation, multi-functional SuDS requirements, and natural spaces close to where people live and work.
National Planning Policy Framework (NPPF, 2012)	<a href="#">Paras 96 and 97, 149, 171 and 174</a> <a href="#">Duty to cooperate: Paras 24 - 27</a>	<p>Paragraph 96 highlights that <i>'planning policies should be based on robust and up-to-date assessments of the needs for open space, sports and recreation facilities'</i>.</p> <p>Paragraph 97 sets out the only circumstances in which an open space can be developed for different uses. It clarifies that existing open space should not be built on unless:</p> <ul style="list-style-type: none"> <li>• an assessment has been undertaken which has clearly shown the open space, buildings or land to be surplus to requirements; or</li> <li>• the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; or</li> <li>• the development is for alternative sports and recreational provision, the benefits of which clearly outweigh the loss of the current or former use.</li> </ul> <p>Paragraph 149 states that Local Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure... This GI Strategy will be informed by the Strategic Flood Risk Assessment (SFRA) and the Borough's Biodiversity Audit as well as knowledge shared by stakeholders from the Environment Agency and local river and wildlife trusts, thereby ensuring the latest knowledge and initiatives inform the GI Strategy.</p> <p>Paragraph 170 explains how GI should be addressed in Local Plans, including <i>'protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils'</i>. The purpose of this paragraph aligns with the aims of this GI Strategy.</p>



Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
		<p>Paragraph 171 states that Local Plans should take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.</p> <p>Paragraph 174 addresses the importance of protecting and enhancing biodiversity and geodiversity through mapping the components of ecological networks. This Strategy will map all the components of GI by theme, including biodiversity, at a Borough-wide scale, which will also incorporate a 10km buffer into Pendle's neighbouring local authorities.</p> <p>The 'duty to cooperate' is a legal requirement of the plan preparation process and is set out in Section 110 of the Localism Act. It is also outlined in the NPPF and paragraphs 24-27 provide further guidance on maintaining effective cooperation'. The duty to cooperate recognises linkages between neighbouring authorities and that development requirements cannot be wholly met by one single authority, so a joined up approach is required including joint evidence to inform key issues, and aligned plans across a series of authorities that include complementary policies that address key issues. This approach is essential to this Strategy as the GI network is not confined to one local authority – it extends beyond boundaries. As mentioned above, when mapping the GI network, a 10km buffer will be added to the Pendle Borough boundary. Furthermore, neighbouring authorities will be notified of this GI Strategy and will also be invited to attend stakeholder workshops.</p>
National Planning practice Guidance (NPPG)	<a href="#">Paragraphs 027 - 032</a>	<p><b>Paragraph 027</b> provides a definition of GI.</p> <p><b>Paragraph 028</b> explains how GI contributes to delivering sustainable development.</p> <p><b>Paragraph 029</b> explains the strategic approach to GI and essentially gives a rationale for GI Strategies and outlines how these strategies can be undertaken including how they should be evidence-based and how they can cross administrative boundaries. This paragraph also notes that Local Plans should identify both existing and future GI.</p> <p>Drawing the multifunctional advantages of GI, the following paragraph, <b>paragraph 30</b>, shows how GI can contribute to achieving the aims of wider planning policies.</p> <p>The long-term management and maintenance of GI is discussed in <b>paragraph 031</b> which states that the long term funding should be considered at the earliest opportunity when planning a GI initiative.</p> <p>Similarly, the final paragraph of the section, <b>paragraph 032</b>, explains that GI should be considered at an early stage in planning proposals and its funding should be secured through planning obligations or CIL.</p>

Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
<b>Regional</b>		
North West Green Infrastructure Guide		<p>The guide was produced in 2008 by the North West Green Infrastructure Think Tank, a number of partners including the North West Regional Assembly, which was the regional chamber for North West England until 2008.</p> <p>The guide highlights the importance of green infrastructure in planning for objectives relating to, using, or drawing upon the natural environment, including urban renaissance, rural renewal, social inclusion and community cohesion, health and well-being, and sustainable development.</p> <p>The guide outlines how green infrastructure planning produces a comprehensive, interactive and highly flexible evidence base for a range of purposes, including providing an accurate picture of green infrastructure within an area (essential in planning decisions and strategies), a tool for delivering health, economy and quality of life priorities, and attracting funding by demonstrating research needs and outcomes. The guide also defines five basic steps to green infrastructure planning, which will support the development of this GI Strategy:</p> <ol style="list-style-type: none"> <li>1. Partnerships and priorities</li> <li>2. Data audit and resource mapping</li> <li>3. Functional assessment</li> <li>4. Needs assessment</li> <li>5. Intervention plan</li> </ol>
<b>Local</b>		
Pendle Local Plan Part 1 Core Strategy 2011-2030 (adopted in December 2015)	<p>Vision</p> <p>Strategic objectives 2, 3, 4, 9, 10 and 11.</p> <p>Spatial Strategy</p> <p>Policies SDP 6, ENV 1, ENV 2, ENV 4, ENV 7, LIV 2, WRK 3,</p>	<p><b>The Vision</b> acknowledges the importance of the provision of green spaces in settlements, <i>"Urban green spaces enhance both the public realm and the setting of our historic buildings; they help the built environment adapt to climate change and make a positive contribution to ecological networks and local biodiversity ... Green spaces in the urban environment have improved the overall quality of life for local residents and enhanced the visitor experience"</i>. This sets out a rationale for the GI Strategy and strengthens the need for the document, as for these social, environmental and economic benefits to be realised, GI needs to be continual protected, enhanced and created – which is the primary aim of this GI Strategy.</p>



Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
	WRK 6, SUP 2, SUP 3, SUP 4,	<p><b>Strategic objective 2</b> requires infrastructure to provide for existing and new development aiding the formation of sustainable communities. GI is a form of infrastructure and therefore this strategy needs to ensure that GI provision supports both the current population in Pendle as well as new residents.</p> <p><b>Strategic objective 3</b> encourages high quality design to deliver fully accessible, attractive and safe places to live, work and play. The range of projects and opportunities identified in this GI Strategy must be inclusive for all, including the young, the old, those who have physical difficulties, those who are visually impaired and those who suffer with mental health problems.</p> <p><b>Strategic objective 4</b> focuses on the causes and impacts of climate change in Pendle and promotes the prevention, mitigation and adaption hierarchy. Due to its multifunctionality, GI can address all of these, and so the GI Strategy must identify a variety of projects and opportunities that contribute to the prevention, mitigation and adaption of climate change.</p> <p><b>Strategic objective 9</b> supports the provision of green open spaces and sports facilities to both improve the natural environment, including benefits to biodiversity and landscape, as well as promoting healthy lifestyles. The broad approach of this objective directly relates to the range of benefits that GI brings. The GI Strategy will ensure that a robust baseline is produced, covering all GI themes. New projects and opportunities that are identified to improve the GI network will together bring benefits to community health and well-being as well as environmental enhancements.</p> <p><b>Strategic objective 10</b> requires new development to protect, maintain and enhance wildlife, historic assets, character, landscape and townscapes. The GI Strategy will therefore need to ensure there are projects and opportunities that will enhance the Borough's assets.</p> <p><b>Strategic objective 11</b> aims to promote sustainable and active transport within the Borough and connections beyond Pendle. The GI network includes Public Rights of Way (PRoWs), cycle and walking routes, all of which help to encourage active lifestyles and reduce the need to travel by car, thereby also contributing to environmental benefits. The GI Strategy should include projects that help improve and/or create walking and cycling routes as well as looking at opportunities to improve connections to transport hubs, community centres, schools, places of employment, links to the countryside, the three spatial areas in Pendle and key settlements beyond Pendle's boundary.</p> <p>The <b>Spatial Strategy</b> identifies three spatial areas within the Borough; the M65 Corridor, the West Craven Towns and Rural Pendle, each performing a different function in Pendle, and the Spatial Strategy notes that the natural and historic assets contribute significantly to their local distinctiveness and attractiveness. The Spatial Strategy also acknowledges that these natural and historic assets are to be secured, created and enhanced as they will promote civic pride, tourism and attract new investment. The GI Strategy must</p>

Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
		<p>therefore ensure that projects and opportunities reflect the character of each spatial area.</p> <p><b>Policy SDP 6: Future Infrastructure Requirements</b> requires developers to provide on-site infrastructure and where viable, contributes to improving local infrastructure beyond the development boundary. Although not mentioned directly in the policy, but rather explained in the supporting text, this includes GI. The GI provision both on and offsite can help mitigate adverse effects and improve the public realm as well as providing biodiversity enhancements.</p> <p><b>Policy ENV 1: Protecting and Enhancing Our Natural and Historic Environments</b> seeks to ensure that new development makes a <i>"positive contribution to the protection, enhancement, conservation and interpretation of our natural and historic environments"</i> and contains sections on biodiversity and geodiversity, landscapes, historic environments and built heritage. The policy also contains a section directly covering GI and notes that open spaces are to be protected from development and proposals that aim to improve existing sites and new sites and the connections between them will be supported by the council. The GI Strategy must therefore identify opportunities in enhancing and creating open spaces and the network that connects them.</p> <p><b>Policy ENV 2: Achieving Quality in Design and Conservation</b> encourages high design standards within new developments and requires enhancements to the character and quality of the environment as well as improving accessibility. The GI Strategy will include projects and opportunities that will provide wildlife enhancement as well as improve cycling and walking connections. Policy ENV 2 also requires new development to have a neutral or positive impact on climate change including reducing their vulnerability to flooding and high temperatures. To meet this requirement, the policy also advises developments to incorporate areas of greenspace, soft landscaping, tree planting and Sustainable Drainage Systems (SuDS). All these are components of GI and they all can help an area adapt to climate change and mitigate its effects. These elements will therefore be included in this GI Strategy.</p> <p><b>Policy ENV 4: Promoting Sustainable Travel</b> promotes the use of sustainable transport and states that <i>"new developments should, wherever possible, exploit opportunities for walking and cycling by connecting to existing pedestrian and cycle routes. Where appropriate new links should be provided to help increase connectivity and close gaps in the network"</i>. The GI Strategy will include maps of the current provision of cycle and walking routes and, in collaboration with stakeholders, will identify gaps in the network.</p> <p><b>Policy ENV 7: Water Management</b> requires all new development to reduce surface runoff by implementing SuDS, where some features such as swales and attenuation ponds form GI elements.</p>



Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
		<p><b>Policies LIV 2: Strategic Housing Site: Trough Laithe and WRK 3: Strategic Employment Site: Lomeshaye</b> require these allocations to be accessible by walking and cycling routes and they are also to enhance biodiversity features and complement the existing landscape character. The GI Strategy will include site allocations on the baseline maps, which will help identify any gaps in the GI network in close proximity of these allocations.</p> <p><b>Policy LIV 5: Designing Better Places to Live</b> requires that provision should be made for open space and/or green infrastructure within all new housing developments. This provision should reflect the needs within the locality and also the tenure of the proposed residential development. Green infrastructure provision should connect and strengthen the existing green infrastructure network and be informed by existing and previous studies should as ELWOOD.</p> <p><b>Policy WRK 6: Designing Better Places to Work</b> encourages the use of open spaces in business parks located outside of urban areas and for business parks on the urban fringe, open space should be incorporate to aid the urban to rural transition. The policy also requires new development to incorporate green features.</p> <p><b>Policy SUP 2: Health and Well-being</b> aims to support the provision and enhancement of open space for local residents, encourage healthy ways to travel and provide better links to the natural environment. The GI Strategy will initially analyse the baseline of GI provision and then through consultation explore ways to improve these aspirations.</p> <p><b>Policy SUP 3: Education and Training</b> states that all facilities and services providing education training, no matter the age of the student, should be <i>"conveniently accessible to users, including by walking and cycling"</i>. The GI Strategy will therefore look at the PRoW and walking and cycling routes nearby centres for education.</p> <p><b>Policy SUP 4: Designing Better Public Places</b> requires new development to be located and designed to encourage walking, cycling, leisure, recreation and play to help promote active and healthy lifestyles. New developments should also increase the use planting.</p>
Pendle Biodiversity Audit (2010)	<p>Chapter 5: Statutory Wildlife Sites</p> <p>Chapter 6: Sites of Biodiversity Interest</p>	<p>Similarly to this GI Strategy, the Biodiversity Audit aims to support the preparation of spatial planning policies for the emerging Local Plan, as well as informing planning applications decisions.</p> <p>The Biodiversity Audit lists the statutory and non-statutory biodiversity sites in the Borough and identifies targets and potential threats to these areas. There are international and national statutory biodiversity designated sites in Pendle:</p>

Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
	Chapter 7: Pendle's Key Habitats	<ul style="list-style-type: none"> <li>• <b>The South Pennine Moors Special Protection Area (SPA)</b> designated for a variety upland breeding species, including birds of prey and waders. It is worth noting that both the Merlin and Golden Plover spend some of their time feeding outside the SPA on adjacent areas of in-bye land. This SPA is considered to be a very large site which in ecological terms is a single entity, however it has been sub-divided into two separate phases as its vast size has made the classification process too complex. Each phase represents a separate designation: <ul style="list-style-type: none"> <li>• Phase 1: Peak District Moors (South Pennine Moors phase 1) 29 March 1996</li> <li>• Phase 2: South Pennine Moors 26 June 1997</li> </ul> <p>The SPA was also extended on 30 November 2000</p> </li> <li>• <b>The South Pennine Moors Special Area of Conservation (SAC)</b> designated for its blanket bogs; European dry heaths; Northern Atlantic wet heaths, old sessile oak woods and transition mires and quaking bogs.</li> <li>• <b>The South Pennine Moors Site of Special Scientific Interest (SSSI)</b> designated for extensive areas of Atlantic blanket bog on the upland plateaux and species rich acidic flushes and mires.</li> </ul> <p>There are no Ramsar sites or National Nature Reserves in Pendle.</p> <p>As their name suggests, these sites cover the same area in Pendle and lie south-east of Nelson and Colne, covering the Borough's south-east boundary. The common target for the two European designations (the SPA and SAC) within the Pendle Boundary is to improve them into a favourable condition. All the sites face potential threats from <i>"lack of, or inappropriate, management/husbandry, recreational pressures, fire, pollution, vandalism and development. Any of these could lead to habitat fragmentation, increasing the risk of habitat degradation, associated (local) species extinction and the subsequent long-term viability of the site"</i>.</p> <p>It is important for this GI strategy to acknowledge that these sites provide a valuable contribution to the biodiversity function of the GI network. It is also a key priority for this GI Strategy to take into account the potential threats to these sites, and to ensure that any identified GI opportunities enhance these areas and do not increase pressure to these threats.</p> <p>Pendle also includes four Local Nature Reserves (LNRs):</p> <ul style="list-style-type: none"> <li>• Lomeshaye Marsh;</li> </ul>



Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
		<ul style="list-style-type: none"> <li>• Greenfield Road;</li> <li>• Alkincoats Woodland; and</li> <li>• Upper Ball Grove Lodge.</li> </ul> <p>Many of the potential threats to LNRs reflect those of the internationally designated sites.</p> <p>An overall target for the Borough is to respond to the UK Government's recommendation of 1 hectare (ha) of LNR coverage per 1,000 of the population. At the time of the publication of the Biodiversity Audit, LNR coverage in the Pendle was 15.3ha, where there should be 90ha of land designated. The GI Strategy should therefore take the UK Government's recommendation into consideration, taking note that other land requirements need to be balanced with suitable biodiversity provision.</p> <p>The GI Strategy should also take into account any designations or updates since the Biodiversity Audit was undertaken.</p>
Pendle Strategic Flood Risk Assessment (SFRA, 2006)		<p>Although two of the primary aims of this document were to take development guidance from the now redundant Regional Spatial Strategy and inform a previous Local Development Framework, the SFRA provides the history of flooding in the Borough which can help inform decision making now and in the future.</p> <p>This GI Strategy should outline the areas of flood risk in the Pendle and present a number of GI opportunities that reduce flood risk.</p>
Pendle Parks Strategy 2007-2017		<p>The purpose of this document is to build on the success of its preceding document, Pendle's first Park Strategy 1998-2005.</p> <p>The 2007-2017 document notes that there are 11 parks across the Borough comprising of:</p> <ul style="list-style-type: none"> <li>• Three District Parks – Parks that offer a range of facilities and uses that attract people from across the Borough.</li> <li>• Seven Local Parks – formal and informal recreational space is its single leisure use that is able to host community events. These Local Parks attract people from the surrounding neighbourhood.</li> <li>• One Small Local Park and Garden – small parks or green spaces for the immediate local community.</li> </ul> <p>Combined, these areas represent 69.41 hectares, which translates to 0.78 hectares of park space per one thousand residents. These figures show there is very little parkland space in Pendle and the document</p>

Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
		<p>states that there are limited opportunities for expanding existing parks and creating new parks. However, the document does acknowledge there are opportunities to reclaim land on the periphery of existing parkland which could be used for new facilities and services. In addition, the document explains it would consider implementing pocket parks, if the opportunity arose. This GI Strategy should therefore look at pocket park creation opportunities. Furthermore, this GI Strategy should also identify alternative sources of income for these parks, as the 2007-2017 Parks Strategy only focuses on the services and facilities provided by Pendle Borough Council.</p> <p>This document undertook extensive consultation on how the Parks in Pendle are used and key findings of relevance to this GI Strategy are listed below:</p> <ul style="list-style-type: none"> <li>• The main reason for choosing a particular park to visit is based on the most convenient and proximate to resident's homes and the majority of park visitors arrive there by foot.</li> <li>• Parks are an important space for exercising, with many of the respondent's going to parks to simply 'walk'.</li> <li>• Over a third of the children who responded to the survey visited a park at least once a week, with 'after school' being the main time of visiting for 9-11 year olds.</li> <li>• There is not enough provision for teenagers and younger children perceived teenagers and older children as a potential threat to bullying. Whereas older children did not like the graffiti, vandalism and litter found in parks.</li> <li>• Three quarters of respondents felt the Parks in Pendle are well looked after.</li> </ul> <p>The GI Strategy needs to recognise and aid the recent successes in Pendle's parks and ensure that their appreciation from the diverse range of communities and functions are upheld.</p>
Pendle Borough's Children's and Youth Play Area Strategy 2006-2016		<p>The document highlights that there are no national standards or guidance on local requirements for youth play provision, including informal free use Multi-Use Games Areas (MUGAs) and Skate park facilities and so this document reflects local need and wider local authority objectives. Issues and recommended improvements that should inform this GI Strategy are:</p> <ul style="list-style-type: none"> <li>• Vivary Bridge and Waterside wards have above the Borough average proportions of young people.</li> <li>• More provision is needed specifically for teenagers and of the few facilities that are available, there is a lack of awareness amongst teenagers that these facilities are available for them.</li> </ul>



Framework, plan or strategy	Key policies, paragraphs, objectives and/or pages	Relevance and implication for the Pendle Green Infrastructure Strategy
		<ul style="list-style-type: none"> <li>• There is no provision for young people with disabilities - it is recommended that the provision of a new play facility should be located near a Special Needs School.</li> <li>• Facilities are not well-lit which limits their use in the winter months.</li> <li>• Where appropriate, new play areas should be sited with a buffer zone of 20m to the nearest residential dwelling to limit adverse effects such as noise.</li> <li>• Cycle racks should be provided at facilities, particularly those designed for teenagers.</li> </ul>

# Appendix 2

## Consultation Responses



## Stakeholder Workshop

The following note provides a summary of the key points raised in the stakeholder workshop held on the 9<sup>th</sup> May 2018.

The attendees were divided into three groups and were asked to comment on the following themes in turn:

1. Landscape character and cultural heritage.
2. Biodiversity ecological networks and water resources.
3. Active travel, access and recreation & health and well-being.

For each topic they were asked to:

- Undertake a sense check and provide feedback on the initial findings.
- Identify and map key issues (including gaps in provision) and any opportunities related to GI in main settlements, including green corridors.
- Identify options for delivery, management and maintenance of the identified opportunities.

The following table provides a summary of the key comments raised under each theme.

### Landscape character and cultural heritage

#### *Review of Initial Findings*

- Pendle Hill Landscape Partnership – the area the Partnership covers goes beyond just the AONB boundaries. Suggested it would be good to include this on the maps. The Partnership provides strong linkages between biodiversity, cultural heritage and access. Agreed that it would be good to use this approach in the Strategy.
- Housing – Terraced houses form historic asset in their own right; viewpoints into towns and looking out. Concern expressed however that much of the housing stock is in a poor condition and there are high infant mortality rates etc. Need to consider whether housing is fit for purpose alongside historic considerations.
- Scheduled Monuments – noted that many of them have strong links to the landscape. Need to be careful how these are shown on the maps – ie as points or polygons.
- Noted that there are cultural boundaries that should be recognised – ie the former Yorkshire/Lancashire boundary in the north east of Pendle.

#### *Issues and Opportunities for Green Infrastructure in the Borough*

##### **Historic environment**

- Iron Age and Bronze age remains - suggested that it would be good to build in requirement if development takes place in close proximity to these assets to assist with their interpretation. Opportunity to develop routes, signs and interpretation information.
- There are four existing Tacklers Trails – these are town trails, which give an insight into the cotton industry, the canal, and water power. Greater awareness of these trails is needed and improved maintenance (currently not in print or promoted). Other existing trails include Steam & Stream, Bronte Way, Pendle 3 Peaks and Pendle Witches. Also opportunity to explain links to Quaker Movement.
- Need to make it easy for people to access routes and information and make it interesting for them to use.

##### **Landscape**

- Lack of connection between the dense urban areas and the wider countryside. Need to promote access to the wider countryside. Suggested could establish gateways to the countryside.
- Pendle Hill – identified as a key asset but noted that it is not accessed to any significant degree by the urban population.

## Landscape character and cultural heritage

### Cultural issues

- Noted there are different attitudes to open space, need to understand needs and desires of local population.

### *Delivery and Management Issues*

- In Craven, the GI Strategy specifies GI on a site by site basis.
- Strategy needs to be clear on 'Specificity' – how specific to be about GI in proposals.
- Community Infrastructure Levy – Suggested this could be used to lever in funding for strategic GI projects.
- S106 agreements can also be used. Good example cited is the Prospects Foundation in Hyndburn.
- Need to think about delivery of GI and housing in a radical way (Ancoats Manchester → groundworks/Mark Knight).
- Noted there is increasing pressure on Council budgets and running of Parks etc is being transferred to Local Parish Councils.
- Increasing privatisation of public land is also increasing the risk of reducing access to and the quality of open space.
- Need to focus delivery and action through existing agencies and mechanisms e.g. Parish Councils and Neighbourhood Plans (e.g. Trawden, Colne, Barrowford). There an opportunity for communities to identify themselves what they think they need.
- Need to encourage Parish Councils to be active in GI delivery.
- Noted that there are ever reducing numbers of people on volunteer groups - need to employ Council officer to get volunteers engaged.
- Need to raise awareness of Mental Health Issues and the importance of access to the landscape and environment in helping to address these issues.

## Biodiversity and ecological networks & Water resources

### *Review of Initial Findings*

- Need to ensure maps show Water Framework Directive, water quality and aquifers.
- Rivers, reservoirs and smaller streams need to be identified over flood areas.
- Ecological Networks: need to refer to LERN network but understand that this is not completed.
- Flood risk register – add opportunities, potential for discharge surface water to reduce flood risk.
- More explanation needed on ecological mapping:
  - Need to amend colour of blue – as looks like water.
  - Greater differentiation required in colour between 0-250 m corridor and 250-3km corridor.
  - More explanation required regarding length or width of corridors.
  - Explanation is required regarding how grassland is depicted.
- Suggested hedgerows and potential hedgerow corridors should be mapped.
- Noted that Lancashire has Phase 1 habitat survey digitalised.

### *Issues and Opportunities for Green Infrastructure in the Borough*

- Isolated/ lack of networks – ecological network mapping is a great tool for this; use of canal and river corridor can inspire collaboration.



- Need to identify opportunities to establish biodiversity corridors. The key test: is it going to link up and enhance biodiversity? Brierfield to Colne = no biodiversity linkages/connections – how do we join fragmented habitats?
- Have a statutory duty to deliver the 2020 targets – this should not be watered down when there is a lack of resources –should not be basing plans on economic resources (or lack thereof).
- The East Lancs Regional Park was not implemented due to the lack of joined up thinking between Local authorities, died with demise of regional agency – it had an economic driver. Now seeking a landscape designation and use to develop a sense of place and localism which is a completely different approach.
- Funded Panopticons project and ELWOOD – so some success which includes across bound ary working.
- Suggested that the canal and river corridors should be used as a thread/for greater use and biodiversity gain.
- Japanese Knotweed – invasive; throughout Borough:
  - On sites that people want to develop.
  - On canal owned sites.
  - Almost out of hand and requires regular management.
  - Skills required for its removal → Ribble Trust trained volunteers.
  - Pendle Borough Action Group, who are supported by the council, but need to find their own resources.
- Giant Hogweed is also prevalent albeit in more isolated areas (along M65; Pendle Water – downstream from there).
- Need to engage with the farming community, encourage planting of hedgerows, move away from intensive agriculture.
- Need to promote protection of high ground, bogs, wetlands, moorlands (and their management).
- More woodland and trees need to be planted to absorb more carbon. Upland and upstream – planting schemes need to accommodate change in climate (wetter weather).
- Need to establish more wild flower meadows – build on initiatives by Pendle Council. Barley Parish Council asked to create a wild flower meadow. Successful examples include Burnley – previous brownfield land converted into wild flower meadows (1 million trees = millennium project).
- Could encourage development of road side wild flower meadows/rain gardens – need to be innovative.
- Need to make better use of brownfield land:
  - For ecological benefits. These sites are already at the heart of communities – build a sense of community.
  - However, lack of consent is an issue – need to gain co-operation and support.
  - Some sites in flood risk areas.
- GI can also be used to improve urban environment – can be used for traffic calming.
- Earby was identified as a key area for flood risk. GI presents opportunity to increase surface water retention in urban areas – on buildings and on streets. Soakaways – planning should discourage concreting over green areas. Also need to incentivise farmers to store water.
- Canal can be used for surface water discharge – with Canal and River Trust as partner.
- There is a serious problem that river banks collapsing. Many public rights of way are next to watercourses and therefore there is erosion to the PRow.

## Biodiversity and ecological networks & Water resources

### *Delivery and Management Issues*

- Need to consider cross boundary effects between local authorities.
- Need to develop design principles for greening in specific areas.
- Opportunity to strengthen the stepping stone ecological network corridor along M65. If development needed in these areas, more corridors need to be identified around new development.
- Every planning application should have an environmental section to show how green initiatives are being implemented in the scheme (+ monitoring). Important to try to deliver net environment gain.

## Active travel, access and recreation & Health and well-being

### *Review of Initial Findings*

- Need to identify key local/national routes (e.g. Ferndean Way).
- Noted there are a number of permissive paths - disused railway line and cultural routes (local trails such as the Tacklers Trails (as noted above)).
- Consumer Data Research Centre (CDRC data) - this provides information on access to health hazards and assets index.
- Need to gather information on disabled accessibility.
- Allotments – identified as key resource as important for food growing and recreation etc.

### *Issues and Opportunities for Green Infrastructure in the Borough*

- Maintaining the network of existing PRoW is critical (but Council facing severe financial and staff constraints).
- Need to make better use of footpaths/existing networks, Pendle Sculpture Trail, Pendle Cycle network.
- Canal is a key asset - the Canal towpath is of importance for cycling, walking and biodiversity. Canal also provides strong link to other Boroughs. Pendle is not an island. The towpath is well used and is in a reasonable condition.
- Key issue: 'getting to the canal' – improving accessibility to the canal.
- Around towns, some riverside paths well used around towns but general hinterland is not well used. Reasons why wider PRoW network is less well used due to:
  - Lack of connection – countryside beyond.
  - Lack of knowledge.
  - Struggle to use map/compass.
  - Easy to get lost.
  - Lack of proper signposts, lots of paths.
  - Led activities and walks – need volunteers.
- Opportunity to make linear routes attractive to use especially as part of daily commute. Need to develop links to centre town. Routes need to be safe and in good condition. Better way marking is required and ideally traffic free.
- Also need to develop stronger links from parks to pedestrian networks and housing areas.
- Some of the PRoW are heavily used. Honeypots include Pendle Hill, Wycoller Country Park, Coldwell Reservoir and Pendle Heritage Centre.
- Need to develop routes of different lengths and purposes, from key 'honey pot' locations. This could include new themed trails.



## Active travel, access and recreation & Health and well-being

- New Colne-Skipton line – cycle path opportunity.
- Link data on “heat maps” to identify key links to footpaths and other networks and where there are gaps in the network.
- Better mapping is required of key routes and links – ie a GI public interface but who would host this and keep it up to date?
- Council does have a cycling officer – but don’t have cycling scheme.
- Steve Burke cycle hub (Swinden Playing Fields) is well used (1.5 – 2 km).
  - Everyone free to ride bike.
  - Cycle clubs (training rides).
  - Free to public.
  - Led cycle rides.
- Heath initiatives – parkrun; couch 2 5k; Your mile, your way; Green gyms (national scheme/trainers/volunteers); walking festival; neighbourhood competitions – all help to improve physical activity.
- Pendle walking festival – 70 walks over 9 days (many are run by volunteers).
- Could Target younger generation (Pokemon Go!). Social media could also be used as a driver.
- Links could also be made to the school curriculum, forest schools etc.
- Duke of Edinburgh Awards – good way of getting kids out into countryside (don’t have any campsites within Pendle). Toilet and shower facilities are needed and would be relatively cheap to provide.
- Need to work in partnership with NHS - Public Health England (work with health professionals).
- GP referrals – Mental Health, Doctors are giving out green prescriptions. Need to work with GPs.
- Better interaction between new developments and open space is required.
- Allotments are a key resource etc, they provide food, recreation and cultural benefits (especially for Asian communities).

### *Delivery and Management Issues*

- Need to explore ‘other’ funding sources (e.g. Public Health England).
- Stewardship schemes - opportunity for diversification for farmers. Change of land management via Brexit could present new opportunities.
- CIL/S106 provide opportunities for delivery of GI but ‘viability’ issues in areas of most need.
- Cultural barriers are a potential concern re. delivery. Need to engage with the community.
- Viability greater outside area of need (i.e. M65 corridor).
- Funding initiatives could include ‘Adopt parts of towpath’.
- Greater publicity and education is required. Publicity via cycle shops, cafes etc. could be better exploited.
- Need to reinvigorate volunteer network.
- Need to work cross boundary on specific opportunities (canal towpath/rail link).
- Think big!... even in times of austerity but NPPF requires deliverability.
- Natural capital accounting should be given greater emphasis (including in national policy).

## Email Consultation

In addition to the Stakeholder Workshop, additional consultation was undertaken via email with stakeholders who were unable to attend the workshop. The below tables summarise the responses from stakeholders with regards to each GI theme.

Landscape and sense of place
<i>Review of Initial Findings</i> <ul style="list-style-type: none"><li>GI strategy should incorporate up-to-date policy on Ancient Woodland</li></ul>
<i>Issues and Opportunities for Green Infrastructure in the Borough</i> <ul style="list-style-type: none"><li>Some land boundaries within farmland in the wider Higham area e.g. fences and stone walls are in a state of disrepair.</li><li>The Pendle Hill Landscape Partnership linked to but separate from the Forest of Bowland AONB is a welcome initiative has been successful in last 2-3 years in gaining funding. However, there is some concern the Higham with West Close Booth Parish Council will not benefit due to the area's location on the periphery of the project area.</li><li>There is opportunity to provide further support for Pendle Hill Landscape Partnership and its objectives.</li><li>In the Higham area there are substantial tracts of low quality, reedy and boggy farmland areas. These would benefit from woodland creation which is sparse in this area.</li><li>There is opportunity to create 'green wedges' between development sites.</li><li>Lack of GI in urban areas is a major issue. Connected to this issue are socio-economic factors and attitudes which give rise to a lack of respect towards the urban environment such as dropping litter and fly-tipping.</li></ul>
<i>Delivery and Management Issues</i> <ul style="list-style-type: none"><li>No specific issues stated related to landscape and sense of place</li></ul>

Cultural heritage
<i>Review of Initial Findings</i> <ul style="list-style-type: none"><li>Conservation of areas other than the built environment could be considered, notably archaeology utilising results from LiDAR examinations.</li></ul>
<i>Issues and Opportunities for Green Infrastructure in the Borough</i> <ul style="list-style-type: none"><li>The FoRA (Friends of Roughlee Appearance) are a key body in maintaining the local environment by gardening, conducting repairs, litter picking and 'balsam bashing' days.</li><li>The FoRA (Friends of Roughlee Appearance) have initiated a new Capital Grant wildflower planting project to improve the appearance of a concrete riverside buttress.</li><li>Fly-tipping and rubbish on farmland and grass verges is a significant problem in the Higham area.</li><li>Green Belt is at risk of being developed for housing or light industry in the Higham area.</li></ul>
<i>Delivery and Management Issues</i> <ul style="list-style-type: none"><li>High cost of maintaining GI within settlements, e.g. grass cutting and drainage.</li></ul>



## Active travel, access and recreation

### *Review of Initial Findings*

- Opportunities could be sought to develop dedicated cycle ways away from road traffic for safe family recreation.
- GI strategy should identify the Canal network as a walking and cycling route and should be explicitly referred to on a the baseline map.
- As the strategy is developed, it should include methodologies to allow for footpath and cycleways to be assessed so that any deficiencies in quality can be identified.
- GI strategy should include measures to ensure that development actively addresses the waterway, and improves the waterside environment.
- Aspirations of the document 'Nature Nearby, Accessible Natural Greenspace Guidance' by Natural England' should be reflected in the GI strategy.

### *Issues and Opportunities for Green Infrastructure in the Borough*

- Eroded public footpaths at Thorneyholme and Whitehough. A detour is in place at Thorneyholme and warning signs at Whitehough.
- Banks of the Pendle Water have become eroded damaging footpaths.
- There is opportunity to improve damaged footpaths along the Pendle Water, as well as at Thorneyholme and Whitehough.
- There is opportunity to utilise a woodland area created by the Woodland Trust in the Millennium in Old Laund Booth.
- In Higham Park, the lower field is unsuitable for its use as a football field due to a slope and size. However, the space extremely valuable as a good size general park area linked to the upper park field.
- Many footpaths in the Higham area are deteriorating or disappearing due to lack of resources.
- There is opportunity to improve drainage in Higham Village Park.
- Water based activities can contribute towards promoting health and active populations. Providing facilities for canoeing can provide significant benefit to young people by promoting healthy lifestyles, build confidence and new skills in communication.
- There is opportunity to promote improvements to the PRoW network, including improving quality of pedestrian routes and wayfinding (signage).

### *Delivery and Management Issues*

- Lack of volunteers and funding for footpaths and open spaces.
- There can be difficulty sustaining GI provision in urban areas such as pocket parks.

## Biodiversity and ecological networks

### *Review of Initial Findings*

- Proposals should foster enhancement of biodiversity, reduce and offset climate change, and foster social and environmental benefits.
- GI strategy should promote the preservation and enhancement of biodiversity along the canal, in order to ensure that the benefits of the green corridor is fully realised.
- GI strategy should explain what GI is, and isn't, and how it differs from Biodiversity, Ecological Networks, Ecosystem Services and Natural Capital.
- The strategy should refer to sites (statutory and non-statutory Geological and Wildlife Sites at,

## Biodiversity and ecological networks

where they exist, the international, national, county and district levels), habitats, species and ecological networks, the latter in line with the Lawton Review 2010.

- Baseline map should include Gibhill Fields as a site of Local Natural Importance as it has been demonstrated to meet the District Wildlife Site Guidelines.
- Ecological networks should be separated from the main body of the GI strategy report and given a section of their own.
- Suitable importance should be given to the protection, restoration and expansion of priority habitats in the main body of the GI strategy report.

### *Issues and Opportunities for Green Infrastructure in the Borough*

- Roughlee parish is in an AONB with a diverse habitat that supports a wide variety of flora and fauna, attracting visitors and walkers to the area.
- There is opportunity to create wildlife corridors in the Roughlee Parish region with support from the Lancashire Wildlife Trust.
- There is opportunity to extend Nature Reserve at Ball Grove Park.
- Promote alternative uses for Trawden Recreation Ground.
- There is opportunity to expand the extent of the Northern Forest to include parts of Lancashire.
- The Canal and River Trust network forms part of the strategic green network within Borough, and provides a link for biodiversity to travel through the Borough.
- There is opportunity to identify areas of mowed grass that could be planted to improve habitats.

### *Delivery and Management Issues*

- Lack of resources to maintain the network, notably the number of staff available.

## Water resources

### *Review of Initial Findings*

- Stillwater used as recreational fisheries could be included in the GI Strategy.
- GIS layer that shows the flooding register should be utilised. This could be used to identify areas where green infrastructure could mitigate future flooding.
- The GI Strategy could include a policy that requires a certain element of GI as part of any development, resulting in the reduction of surface water.

### *Issues and Opportunities for Green Infrastructure in the Borough*

- Erosion of the river banks of the Pendle Water is disrupting flow. This is made worse by the presence of Himalayan Balsam destroying the natural plants that hold the soil together, as well as sporadic heavy rainfall.
- There is opportunity to restore and repair of the riverside damaged by erosion and invasive species.
- Rivers play an important role in providing space for general amenity e.g. walking and birdwatching. Significant improvements in water quality have been made over the last 15 years, which have resulted in an improved environment for wildlife and for general amenity.
- There is opportunity to increase informal riverside access.
- Rivers have an important role for recreational angling. Improvements to the watercourse resulted in significant improvements in the fish stocks such as salmon.



## Water resources

- GI plays an important role in managing flood risk - The river catchments in Pendle respond rapidly to rainfall, with rapid onset of flooding.
- Flooding is a particular issue in the Nelson area. As such, it is important importance that sustainable drainage is implemented here.
- There is potential to use woodland areas to accommodate wetland/soak away areas for new development as baseline maps indicate woodland layers and flood zone areas are in a similar vicinity.
- With careful design, the waterways may provide sustainable options for site drainage from future developments.
- There is opportunity to promote the supply renewable energy from Canal and River Trust waterways due to its thermal energy resource.
- Canalisation of riverbanks in urban areas can reduce naturalness of the rivers and as a consequence are used by some for waste disposal.
- Attractive waterside areas could be introduced into urban areas.
- The Ribble Life Together project is an ambitious programme of improvement and engagement across the Ribble Catchment, with two projects currently in progress at Old Laund Farm and Barrowford.
- There is opportunity to improve the environment of the Pendle Water through further projects led by the Ribble Rivers Trust, such as restoration of a section of the Pendle Water currently lined with concrete.

### *Delivery and Management Issues*

- No specific issues stated in relation to water resources.

## Health and well-being

### *Review of Initial Findings*

- No specific feedback was given on the findings in relation to health and well-being.

### *Issues and Opportunities for Green Infrastructure in the Borough*

- There is lack of engagement by local people who miss out by not enjoying the local GI which is not far from the doorstep of every house in the Borough.

### *Delivery and Management Issues*

- No specific issues stated in relation to Health and Well-being.