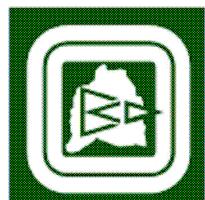


Bassetlaw District Local Development Framework

GREEN INFRASTRUCTURE STUDY



GREEN INFRASTRUCTURE STUDY



BASSETLAW
DISTRICT COUNCIL
NORTH NOTTINGHAMSHIRE

May 2010

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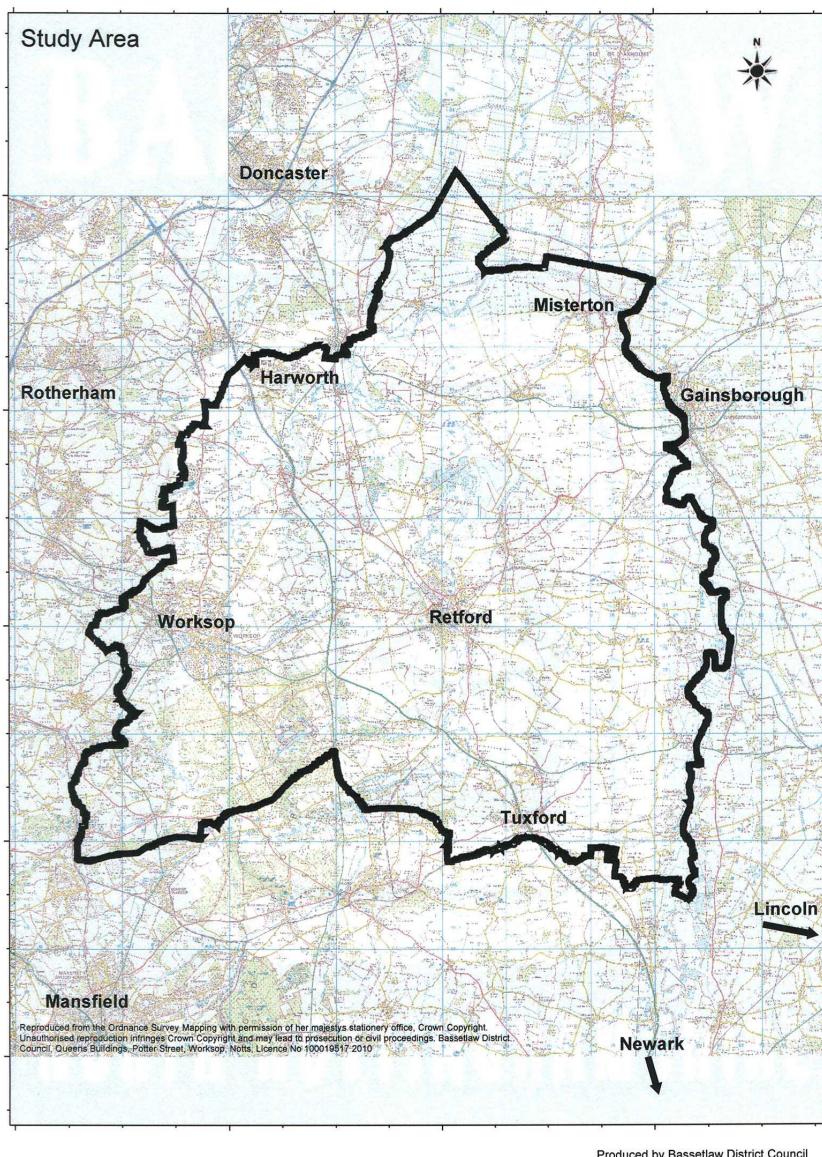
1. INTRODUCTION

Aim of the Study

The overall purpose of this study is to provide a long-term vision for green infrastructure within Bassetlaw to ensure that the strategic growth of the district is fully integrated with and informed by its green infrastructure and to ensure that no net loss of green infrastructure value or provision occurs. The vision will also address the improvement of green infrastructure within the rural areas of the district and the maintenance and improvement of connectivity between the district's urban and rural areas.

Strategic Growth

Map 1 – Study Area: Bassetlaw



Bassetlaw (Map 1) has a population of approximately 111,000. Under the East Midlands Regional Spatial Strategy Bassetlaw District Council are required to deliver

7000 new homes between 2006 and 2026. It is hoped that this will enhance the prosperity of the area and stimulate regeneration of an economy that has undergone massive restructuring over the last 20 years. Green infrastructure is a key aspect in delivering this level of growth and requires suitable evidence to ensure consideration is given to the overall impacts of development, taking account of environment in which it is set.

What is Green Infrastructure?

Green infrastructure is increasingly being adopted as a planning tool in the UK, having been developed in the USA and been initially adopted in the UK during the planning stage of the Thames Gateway Growth Area. Across America, and elsewhere in Europe, progressive cities are taking the idea of green infrastructure from something that is 'nice to have' to something that is fundamental to the way we prosper and develop. Further examples of successful green infrastructure delivery have been rolled out across the UK in Northamptonshire, Sheffield and Cambridge.

Green infrastructure comprises networks of multi-functional open space, at all scales. Its fundamental principles are therefore the multi-functionality of open space resources, to enable them to maximise public benefit, and the connectivity of these resources into functional networks to ensure that the overall value of the network is greater than the sum of its component parts.

Green infrastructure encompasses all open space elements within rural and urban landscapes. Examples include:

- Woodland
- Watercourses
- Playing fields
- Nature reserves
- Cemeteries
- Footpaths
- Hedgerows
- Amenity landscaping

Green infrastructure is recognised for its improvement of the "liveability" of areas; improving their attractiveness to residents, employees, visitors and investors and promoting physical and mental well-being through its use and enjoyment.

2. BASSETLAW DISTRICT

Environmental Context of the District

The five different landscape character areas that occur within the District heavily influence Bassetlaw's landscape and natural environment.

To the north the Idle Lowlands (part of the Humber Head Levels) are a predominantly flat, open arable landscape. To the west, the Magnesian Limestone Ridge supports fertile arable soils and large estate woodlands, with regenerated spoil tips providing evidence of the coal mining heritage of the area, which has also given rise to the main population centre of Worksop.

To the east of Retford, the second largest population centre, lie the Mid Nottinghamshire Farmlands which are characterised by a varied, undulating topography with a well-defined pattern of large hedged arable fields, some permanent pasture with some ridge and furrow and a nucleated pattern of settlements. At the eastern edge of Bassetlaw is the River Trent which exerts huge influence on the surrounding area by virtue of the expansive low-lying corridor of floodplain that broadly comprises the Trent Washlands.

The remaining area between Worksop and Retford and to the south of the District is the northern part of the Sherwood character area, characterised by the estates of Welbeck, Clumber, Babworth and Osberton, and woodland that although now relatively fragmented, represents the remnants of the once expansive Sherwood Forest.

The corridors of the Rivers Idle and Ryton, and the Rivers Meden, Maun and Poulter to a lesser extent also have a significant impact on the environmental character of the District. The Ryton and Idle in particular have supported a great deal of the historic industrial growth in Worksop and Retford respectively and while the natural environment has historically influenced human activity in Bassetlaw, so human activity has also contributed to the rich biodiversity of the District. Features such as the Chesterfield Canal along with gravel pits, sand pits and coal mines reaching the end of the operational lives now deliver great benefits in terms of both biodiversity and recreation.

3. APPROACH TO THE GREEN INFRASTRUCTURE STUDY

Geographical Scope

In identifying the extent of the District-wide Green Infrastructure network the scope of this study takes in the whole of the Bassetlaw area and also considers features that extend beyond the administrative boundaries at District, County and Regional level. However, as a strategic assessment this study does not incorporate every feature that may be regarded as a green infrastructure asset.

At this stage the study is restricted to assessment of strategic-level resources such as national designations, major watercourses and large areas of accessible open space or habitat complexes. The purpose of this restriction is to reduce the size of the study to a sensible scope, because the study of the entire District at the level of detail required for the urban centres would involve a considerable outlay of time and resources.

Further higher-level assessments of green infrastructure in urban areas will be undertaken at a later date and as deemed necessary in support of further Development Plan Documents.

Baseline Review and Analysis Methodology

The review of existing green infrastructure information involved three separate steps.

Step 1 involved a review of the national, regional and local policy context of green infrastructure, identifying particular items of policy either in support of or conflicting with the underlying principles of green infrastructure.

Step 2 was to collect and review existing information relating to the physical green infrastructure of the district. This was undertaken using the following seven strategic themes to provide structure and clarity:

- Landscape character
- Biodiversity and geodiversity
- Trees and woodland
- Historic environment
- Natural processes and environmental systems
- Recreation and tourism
- Access and movement

This information was collected via internet search and direct contact with local authority officers, statutory agencies and environmental stakeholders. Once reviewed, the information was summarised and a series of thematic plans were prepared showing the geographical context of the information.

The collected data regarding physical green infrastructure assets was then subjected to an objective assessment to determine which assets qualified as sufficiently valuable to be included as components of the existing green infrastructure network for the district. Assets were first divided into nodes (for discrete features, e.g. parks) and corridors (for linear features, e.g. watercourses) and were then assessed against scoring criteria to determine whether they qualified as these features and to what level they qualified, i.e. whether they were major or minor features. For both types of

features their multi-functionality and accessibility were assessed, with additional assessments of inherent value for nodes and connectivity for corridors.

The final list of major and minor nodes and corridors was then compiled into Map 9, which shows the extent of the existing green infrastructure network for Bassetlaw.

Step 3 was to research and review current initiatives in Bassetlaw that relate to green infrastructure. A list of the most initiatives was obtained through research and contact with key stakeholders and their core objectives and potential interaction with green infrastructure are summarised in Chapter 7.

4. STRATEGIC CONTEXT REVIEW

GI Policy Background

This chapter sets out the policy context within which Bassetlaw's green infrastructure can be strategically planned. It covers planning and other related policy at national, regional and local level, outlining policy support for green infrastructure and policy requirements and aspirations which green infrastructure has the potential to deliver against, or which shapes the planning and delivery of green infrastructure.

While this chapter provides a relatively brief overview of the green infrastructure policy context, a more comprehensive summary of the policies and their implications may be found in Appendix 1.

National Policy and Guidance

Green infrastructure is a relatively new concept in the UK, therefore it is not yet widely referenced directly in policy, although its principles and concepts are covered in a range of documents. The following national policy and key national guidance documents are relevant to green infrastructure:

- Working with the Grain of Nature: The England Biodiversity Strategy
- Biodiversity by Design: A guide for Sustainable Communities
- Habitats Regulations – the Conservation (Natural Habitats & Conservation) Regulations
- Natural Environment and Rural Communities Act
- Rural White Paper: A Fair Deal for Rural England
- Urban White Paper: Our Towns and Cities: The Future. Delivering an Urban Renaissance
- A Strategy for England's Trees, Woods and Forests
- Biodiversity: The UK Action Plan
- Sustainable Communities: Building for the Future (Sustainable Communities Plan)
- Green Infrastructure and the Urban Fringe
- Planning Policy Statement 1: Delivering Sustainable Development
- Planning Policy Statement 3: Housing
- Planning Policy Statement 5: Planning for the Historic Environment
- Planning Policy Statement 7: Sustainable Development in Rural Areas
- Planning Policy Statement 9: Biodiversity and Geological Conservation
- Planning Policy Statement 12: Local Spatial Planning
- Planning Policy Guidance Note 13: Transport
- Planning Policy Guidance Note 16: Archaeology and Planning
- Planning Policy Guidance Note 17: Planning for Open Space, Sport and Recreation
- Planning Policy Statement 25: Development and Flood Risk

Regional Policy and Guidance

- East Midlands Regional Plan (Regional Spatial Strategy)
- Space 4 Trees: The Regional Forestry Framework for the East Midlands
- River Trent Catchment Flood Management Plan
- Green Infrastructure: A guide and toolkit
- East Midlands Green Infrastructure Scoping Study

- Building the Visitor Economy: Strategic Plan 2008-2011

Nottinghamshire County Policy and Guidance

- Local Biodiversity Action Plan for Nottinghamshire
- Nottinghamshire Landscape Guidelines
- Draft Rights of Way Improvement Plan for Nottinghamshire

Local Policy and Guidance

- Bassetlaw Environmental Sites Assessment
- Bassetlaw Draft Strategic Housing Land Availability Assessment
- Bassetlaw Cleaner Safer Greener Strategy
- Bassetlaw Nature Conservation Strategy
- Bassetlaw Strategic Flood Risk Assessment
- Bassetlaw Sustainable Community Strategy
- Bassetlaw Landscape Character Assessment

No significant conflicts were identified between the above documents and the principles of green infrastructure. All of the documents broadly recognise the value of open space for a variety of functions and set the context for the strategic growth of Bassetlaw.

5. REVIEW OF EXISTING GREEN INFRASTRUCTURE

GI Background

LANDSCAPE CHARACTER

The consideration of landscape character is of high importance to the strategic assessment and planning of green infrastructure. This gives a good indication of which elements of existing green infrastructure are in keeping with the local landscape character and which are incongruous, for example geometric coniferous woodland within a relatively unwooded lowland landscape with an organic field pattern.

Understanding landscape character aids the planning of green infrastructure as it ensures that any new green infrastructure created will be in keeping with its surroundings and that the creation of new green infrastructure presents strong opportunities for the realisation of local landscape objectives, for example the restoration of local parkland landscapes.

National Character Areas

In 2005 Natural England produced the Character of England Landscape, Wildlife and Cultural Features Map. This map subdivides England into 159 National Character Areas (NCAs) that provide a picture of the differences in landscape character at the national scale. Character descriptions of each NCA highlight the influences which determine the character of the landscape, for example land cover and buildings and settlement. The four NCAs that cover the Bassetlaw area are:

- Humberhead Levels
- Southern Magnesian Limestone
- Sherwood
- Trent and Belvoir Vales

Nottinghamshire Landscape Guidelines

Since published in 1997, the Nottinghamshire Landscape Guidelines have provided a detailed and comprehensive countywide assessment of countryside character. The guidelines give a more detailed breakdown and analysis of the above NCAs, accounting for finer county variations that are not distinguishable at a higher level. As such, within Bassetlaw, the Trent and Belvoir Vales are divided into two separate Regional Character Areas (RCAs) – the Mid-Nottinghamshire Farmlands (which lies wholly within the county) and the Trent Washlands along the River Trent corridor. To more accurately reflect local character, the Humberhead Levels are referred to as the Idle Lowlands. Also, the RCAs are further sub-divided into areas of visual character.

Maps and summaries of the NCAs and RCAs covering the Bassetlaw area are included in Appendix 2.

Bassetlaw Landscape Character Assessment

The Bassetlaw Landscape Character Assessment has defined the landscape character of the administrative area of Bassetlaw District Council (BDC) and will form part of the evidence base for the LDF. It will be used by BDC to aid development control decisions on planning applications.

In accordance with PPS7¹ the document provides an objective methodology for assessing the varied landscape within Bassetlaw and contains information about the character, condition and sensitivity of the landscape to provide a greater understanding of what makes the landscape within Bassetlaw locally distinctive. The study has recognised this by the identification of Policy Zones (Map 2) across the five Landscape Character Types represented in Bassetlaw.

For each of the Policy Zones a series of Policy sheets has been developed which detail a landscape action for each Policy Zone. The landscape actions are defined as follows:

Conserve – actions that encourage the conservation of distinctive features and features in good condition.

Conserve and Reinforce – actions that conserve distinctive features and features in good condition, and strengthen and reinforce those features that may be vulnerable.

Reinforce – actions that strengthen or reinforce distinctive features and patterns in the landscape.

Conserve and Restore – actions that encourage the conservation of distinctive features in good condition, whilst restoring elements or areas in poorer condition and removing or mitigating detracting features.

Conserve and Create – actions that conserve distinctive features and features in good condition, whilst creating new features or areas where they have been lost or are in poor condition.

Restore – actions that encourage the restoration of distinctive features and the removal or mitigation of detracting features.

Restore and Create – actions that restore distinctive features and the removal or mitigation of detracting features, whilst creating new features or areas where they have been lost or are in poor condition.

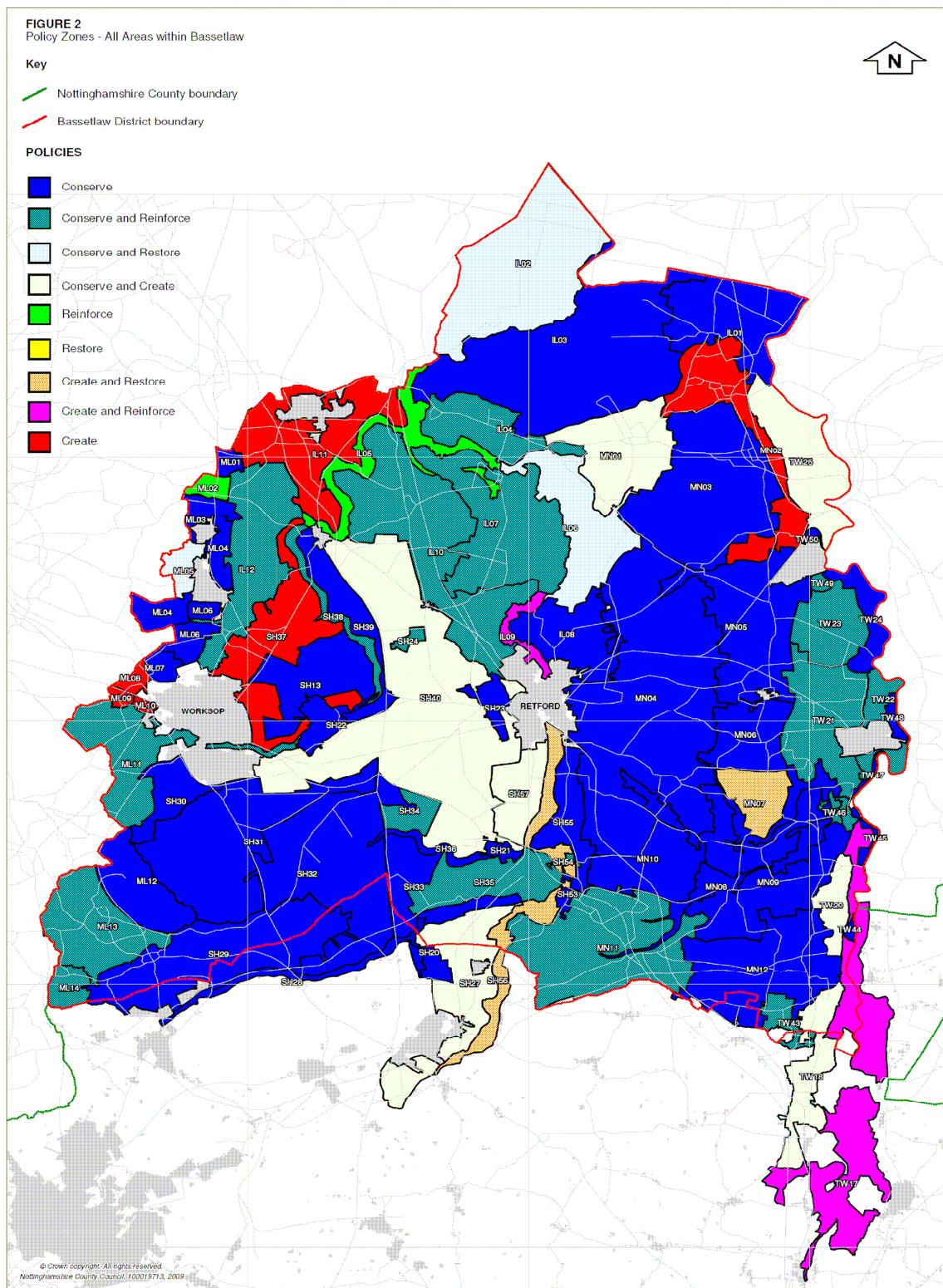
Reinforce and Create – actions that strengthen or reinforce distinctive features and patterns in the landscape, whilst creating new features or areas where they have been lost or are in poor condition.

Create – actions that create new features or areas where existing elements are lost or are in poor condition.

Map 2, below, summarises the landscape actions for the whole of the Bassetlaw area. The map indicates that the areas to the south of Worksop and to the east of Retford are key areas for landscape conservation, whilst land to the northeast of Worksop and the area surrounding Harworth Bircotes represent significant opportunities for landscape creation.

¹ The Government believes that carefully drafted, criteria-based policies in LDDs, utilising tools such as landscape character assessment, should provide sufficient protection for locally important landscapes, without the need for rigid local designations that may unduly restrict development.

Map 2 – Strategic Themes: Landscape Character



Summary of Landscape Character Trends

There is a great degree of variability within the landscape of Bassetlaw. From the heathland and woodland of the Sherwood area in the south, to the open plains to the north and clay farmlands in the east.

The greatest areas of landscape sensitivity include the land to the south of Worksop which incorporates the estates of Welbeck and Clumber. Both of these estates are of a visually unified character with strong cultural and functional integrity, comprising blocks of woodland and arable farmland with strong hedgerow field boundaries.

The Mid Nottinghamshire Farmlands to the east of Retford is also regarded as highly sensitive and should be conserved. It is an intensive arable and pastoral landscape where the historic field pattern is evident, particularly in the west near to Retford. Fields are separated by strong hedgerows, mostly hawthorn, and interspersed with woodland/plantation blocks providing a good green infrastructure. A visually unified area with a coherent functional integrity results in a good landscape condition overall.

BIODIVERSITY AND GEODIVERSITY

Overview

Bassetlaw contains the following biodiversity and geodiversity designations:

- Sites of Special Scientific Interest
- Local Wildlife Sites:
 - Biological Sites of Importance for Nature Conservation
 - Geological Sites of Importance for Nature Conservation
- Local Nature Reserves

Although no major geodiversity-specific designated features (such as RIGS) exist in Bassetlaw, a number of the SSSIs do have some features of geological interest, along with some of the Local Wildlife Sites. These features of special interest on these sites are identified on Map 3 below.

Sites of Special Scientific Interest (SSSI)

SSSIs are the country's very best wildlife and geological sites, including some of our most spectacular and beautiful habitats. The unique and varied habitats of SSSIs have developed over hundreds of years and often need active management to maintain their conservation interest.

There are 19 sites in Bassetlaw (identified below with full descriptions in Appendix 2) that have been scheduled by Natural England as SSSIs (including stretches of the Chesterfield Canal) covering broadleaved woodland, wetlands and grasslands. These are:

- Ashton's Meadow
- Barrow Hills Sandpit
- Bevercotes Park
- Castle Hill Wood
- Chesterfield Canal
- Clarborough Tunnel
- Clumber Park
- Dyscarr Wood
- Gamston and Eaton Woods and roadside verges
- Mattersey Hill Marsh
- Misson Line Bank
- Misson Training Area
- Mother Drain, Misterton
- River Idle Washlands

- Scrooby Top Quarry*
- Styrrup Quarry*
- Sutton and Lound Gravel Pits
- Treswell Wood
- Welbeck Lake

Local Wildlife Sites

Local Wildlife Sites (also known as Sites of Importance for Nature Conservation (SINC)s)) are locally designated sites that are considered to have county-level biological or geological significance. Local Wildlife Sites have been determined by Natural England to stand between SSSIs and the myriad of other sites of varying wildlife interest sites that make up the wider countryside. Local Wildlife Sites in some parts of the District include SSSIs but generally comprise the 'best' of the sites not recognised as part of the SSSI designations.

Local Wildlife Sites have been identified and protected across the county since 1991 as a result of hard work by many partners, including the Nottinghamshire Biological and Geological Records Centre (NBGRC), Nottinghamshire County Council, the District Councils, Nottinghamshire Wildlife Trust and Natural England.

Local Wildlife Sites are recognised for their species content, based both on species rarity or whether a community of species is present that reflects good examples of once-typical Nottinghamshire habitats. Rarity can be measured by local information, where it exists, or by reference to national criteria through the 'notable' species system devised by the Government's statutory advisor on issues of nature conservation, the Joint Nature Conservation Committee. What constitutes 'rarity' or being 'once-typical' varies from taxonomic group to taxonomic group. The NBGRC have tried to find common ground between groups but the information that is known about them varies a great deal, largely because of the varying levels of interest, expertise or difficulty of observation, so it has not always been possible.

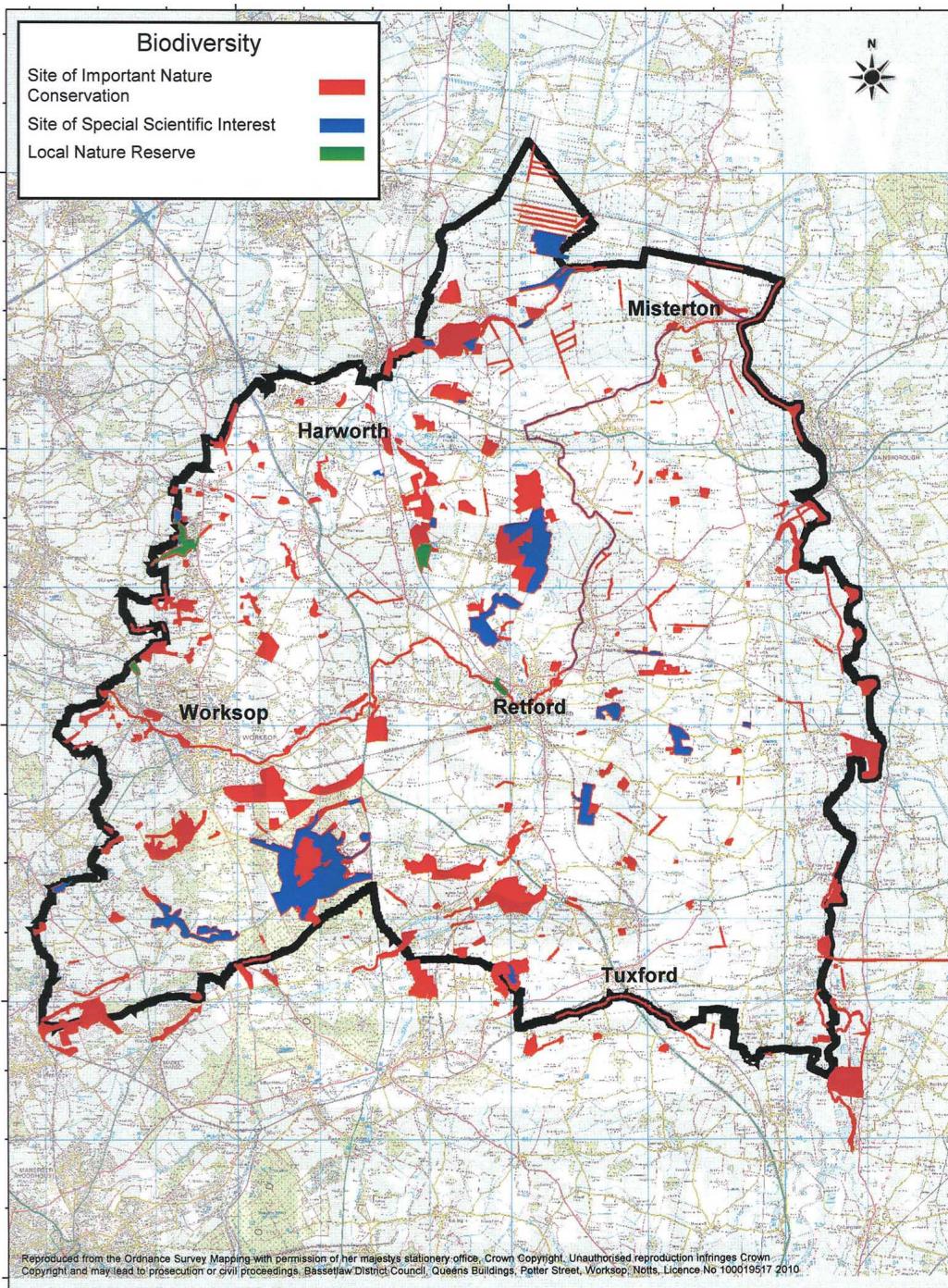
2009 figures indicate that there are 290 biological Local Wildlife Sites in Bassetlaw. These sites have been listed in Appendix 2. Of notable significance, however, are the sites at Clumber Park, Sutton and Lound Gravel Pits and Misson Carr as these fall within existing SSSI designations, as well as linking with other sites in the surrounding area, creating a wider network of habitats.

Local Nature Reserves (LNRs)

There are now four LNRs in Bassetlaw, covering an area of approximately 88 hectares. These are regarded as places with wildlife and or geological features that are of special interest locally. LNRs are also important as a means of connecting people with nature. Action taken, building on the aspirations of the *Bassetlaw Nature Conservation Strategy (2006)*, has seen proposals approved for the designation of three new LNRs in the District, in addition to the existing LNR at Daneshill Lakes (16 ha). The new LNRs include Langold Country Park (49 ha), Retford Cemetery (10 ha) and Woodsetts Pond (9 ha). Detailed descriptions of Bassetlaw's LNRs are contained in Appendix 2.

* SSSI with features of geodiversity interest

Map 3 – Strategic Themes: Biodiversity and Geodiversity



Produced by Bassetlaw District Council

Ancient Woodland

Ancient woodlands are those where there is believed to have been continuous woodland cover since at least 1600 AD. Before this time, planting was uncommon, so woodland present in 1600 AD is likely to have developed naturally. As the terrestrial habitat most representative of original, natural, stable conditions, ancient woodland is home to more threatened species than any other habitat in the UK.

There are currently 30 known areas of Ancient Woodland of two hectares or more in Bassetlaw, although many of these sites are also covered by SSSI or Local Wildlife Site designations.

Local Biodiversity Action Plan

Biodiversity Action Plans (BAP) provide the framework for prioritising actions towards protecting and enhancing the UK's biodiversity. Together, the UKBAP and the Nottinghamshire Local BAP (LBAP) identify key priority habitats and species. PPS9 also places a strong emphasis on the conservation of UKBAP and LBAP habitats and species through the planning system. In 1998 the Nottinghamshire Biodiversity Action Group, a partnership of many organisations throughout Nottinghamshire, launched their LBAP, identifying important, rare or threatened habitats and species in Nottinghamshire and providing action plans for their conservation. Several of these habitats and species occur in Bassetlaw.

Although GIS layers for BAP sites are not available, most key BAP sites are protected by environmental designations such as SSSIs and Local Wildlife Sites.

LBAP priority habitats and species for Bassetlaw are listed in Appendix 2.

Key biodiversity clusters

Map 3 (above) shows a number of areas where there is a proliferation of sites of biodiversity interest which therefore need protection from harmful development and have significant potential as green infrastructure assets. These clusters are described below.

Area south of Worksop

The area immediately to the south of Worksop, largely comprising the parkland estates of Clumber and Welbeck, falls within the Sherwood region and is one of significant value to Bassetlaw and North Nottinghamshire as a whole. Although there are a number of Local Wildlife Sites across this area it is primarily the large estates that dominate the overall character of the area and, in addition to the environmental and landscape assets they exhibit, are of significant cultural and historic value to the wider area. This area contains a wide variety of flora and fauna, characteristic of the Sherwood area, containing many examples of rare and important habitats including lakes, deciduous and coniferous woodland, heathland and farmland.

Idle Valley – Area north of Retford

This area contains the Sutton and Lound Gravel Pits, a SSSI covering 316 ha, and is something of a flagship environmental site in Bassetlaw. The SSSI is of enormous significance for over-wintering and breeding wildfowl and occupies a key location in the Idle Valley, which has long been degraded by intensive agriculture, flood defence works, mineral extraction and drainage schemes.

After half a century of aggregates extraction the central Idle Valley has developed into a unique wetland landscape and is home to an exceptionally rich assemblage of birds. Nottinghamshire Wildlife Trust is committed to securing the future of the Valley and its wildlife as a living landscape through the Idle Valley Project. The project area is recognised as being of regional significance for wildlife and Nottinghamshire Wildlife Trust aims to demonstrate that the enhancement of its wildlife habitats can be central to local economic and social regeneration.

Idle Valley – Area around Misson

This is a flat, low-lying landscape with rich, high-quality land that is intensively farmed. The landscape features that characterise this area, and give rise to areas of significant conservation interest, include the river washlands, ditches, dykes and large open fields and isolated woodland plantations. The washlands are important as feeding and roosting sites for populations of wintering and passage waterfowl, a variety of other wildfowl and wading birds. Additional interest is provided by the breeding bird community which includes snipe and redshank.

Deficit areas

While the baseline data suggests that some areas of Bassetlaw have a relative abundance of biodiversity interest, some areas conversely have a deficit. The following areas are identified as such.

Harworth

The area north of Langold and south of Harworth is a sizeable section of the corridor of settlements in the west of the District that incorporates Worksop in the south, Carlton-in-Lindrick, Costhrope, Langold, Oldcotes and Harworth Bircotes, with Blyth slightly to the east. This area as a whole represents a significant concentration of the District's population that originally built up around the coal mining industry that was once so prevalent in the area. While there are some areas of note in the southern stretches of this corridor, to the north there is little here in the way of sites of acknowledged importance for biodiversity that serve as district-level green infrastructure assets.

Southeast of District

There is also a notable deficit of green infrastructure assets to the southeast of Bassetlaw, between the town of Tuxford and the River Trent. Although this area is notable in terms landscape character there are no statutory environmental designations and very few other areas of significance for biodiversity.

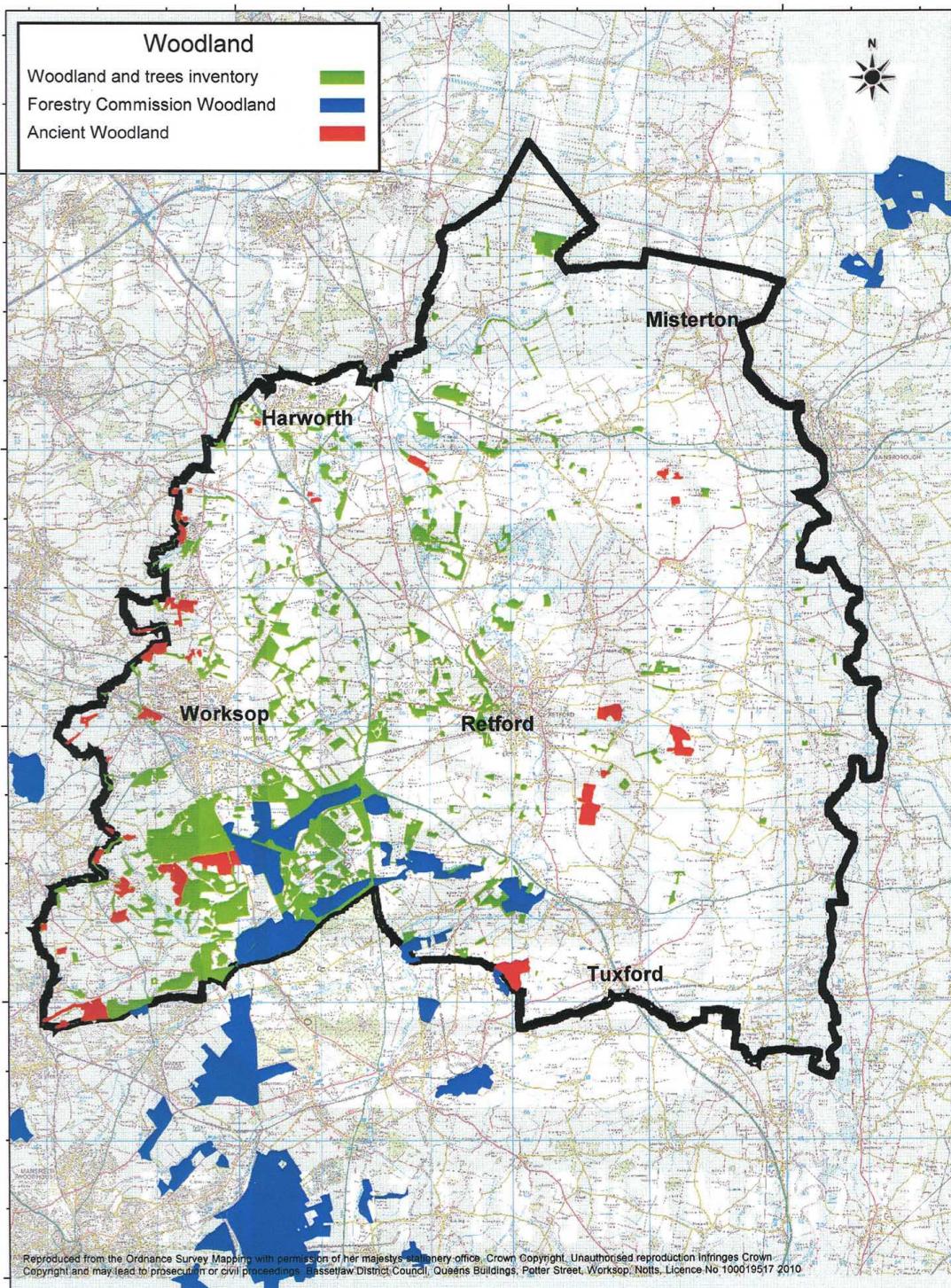
A notable factor in both of these areas of deficit is the absence of watercourses that characterise and contribute to the features of interest in many of the biodiversity concentration areas in the District.

TREES AND WOODLAND

Ancient Woodland

Ancient woodlands are those where there is believed to have been continuous woodland cover since at least 1600 AD. Before this time, planting was uncommon, so a wood present in 1600 AD is likely to have developed naturally. As the terrestrial habitat most representative of original, natural, stable conditions, ancient woodland is home to more threatened species than any other habitat in the UK. This assessment is supported by the UK Biodiversity Action Plan, which identifies that broadleaved woodland supports almost twice as many species of conservation concern as any other habitat. Ancient woodlands are also important from an amenity point of view.

Map 4 – Strategic Themes: Trees and Woodland



Produced by Bassetlaw District Council

There are currently 30 known areas of Ancient Woodland of two hectares or more in Bassetlaw (see Map 4), covering approximately 601 hectares. This represents around 22% of the total amount of Ancient Woodland in Nottinghamshire and approximately 2.4% of the East Midland's total. Many of these sites in Bassetlaw are also covered by SSSIs or Local Wildlife Site designations.

Forestry Commission Woodland

The Forestry Commission is responsible for managing the public forest estate in the region. They focus on creating and managing woodlands sustainably, making them attractive, rich in biodiversity, productive, useful to the community and accessible to as many people as possible on foot, bicycle or on horseback, whilst maintaining natural and cultural heritage.

Forestry Commission woodland in Bassetlaw (shown on Map 4) is not quite as extensive as in other parts of Nottinghamshire and is concentrated in the south of the District. However, there is still approximately 2300 hectares in Bassetlaw, including large parts of Clumber Park and the Welbeck estate, along with publicly accessible land on the regenerated site of the former Bevercotes Colliery.

Sherwood Forest

Sherwood Forest is a distinct geographical area, fully within Nottinghamshire, whose characteristics are influenced by the underlying sandstone of an ancient river delta, stretching from Nottingham city to the north of the county, beyond Worksop. This geology has created free-draining, nutrient-poor, sandy soils that represent a strong contrast to the richer farmlands to the south and east.

Although the edges of the ancient woodland, managed as pasture since Medieval times, have been eroded by agriculture, coal mining and commercial forestry efforts are being made to restore the historic landscapes through scrub clearance and selective thinning around ancient oaks and an adjacent area of ancient wood pasture from commercial forestry plantation. Also, Sherwood's heathlands, though fragmented, are also of national significance. These, along with rivers, streams and associated wetland habitats are priority habitats in the UK Biodiversity Action Plan and are a high priority locally, along with the oak-birch woodlands.

Historic Parkland

Although historic parkland is primarily referenced in the following section it should be noted that the District's Registered Parks and Gardens (including Clumber Park) and un-registered parks and gardens, such as the estate of Osberton Hall represent key concentrations of veteran tree collections and sites of strong botanical interest.

Summary of trees and woodland trends

Data provided under the National Inventory of Woodland and Trees gives a detailed, although not entirely comprehensive, indication of the extent of woodland in Bassetlaw. The distribution woodland and trees is generally consistent with the biodiversity concentrations identified above, with the greatest areas of cover to the west of the District and particularly to the south of Worksop. According to this data the total amount of woodland coverage in Bassetlaw is somewhere in the region of 10,762 hectares. This equates to approximately 16.89% of the total area of the District, which is almost double the average for England, of 8.5%². Breaking this figure down into woodland types reveals 2760 hectares are broadleaved deciduous species; 1770 hectares are coniferous; 515 hectares are mixed species; 20 hectares are shrubs; and 370 hectares are young trees.

² Forestry Commission National Inventory of Woodland and Trees (2001)

Woodland cover across the whole district is moderate with a mix of broadleaf and coniferous species. Coniferous species are prominent on regenerating spoil tips that are remnants of the once prominent coal industry. To the northeast woodland is sparser. However, given Worksop's association with the Sherwood Forest area, strong woodland cover is a characteristic feature of the area to the south of the town. Large areas of both deciduous, coniferous and mixed woodland spread across the parklands of the Dukeries estates. The Osberton and Babworth estates, extending out to the east of Worksop, create a distinct corridor of woodland plantations between Worksop and Retford.

HISTORIC ENVIRONMENT

Scheduled Monuments

Nationally important sites and monuments are given legal protection by being placed on a 'schedule'. English Heritage leads in identifying sites which are then placed on the schedule by the Secretary of the Department of Culture, Media and Sport. Scheduling first began in 1882 when the first Ancient Monuments Act was passed. Current legislation is the Ancient Monuments and Archaeological Areas Act 1979. Scheduling is the only legal protection specifically for archaeological sites and the preservation of these sites is given priority over other uses. Works proposed to a monument will always require Scheduled Monument Consent.

Monuments may not always be visible above ground and despite their name they may not always be ancient. There are over 200 classes of monument ranging from prehistoric burial mounds, medieval castles, deserted medieval villages to WWII defences. Scheduling is only applied if the site is of national importance and only then if it is the best means of protection. There are about 18,300 entries on the schedule, but nationally there are over 1 million archaeological sites. There are 35 scheduled monuments within Bassetlaw. These sites can be seen on Map 5 below and a full list can be found in Appendix 2.

Registered Parks & Gardens

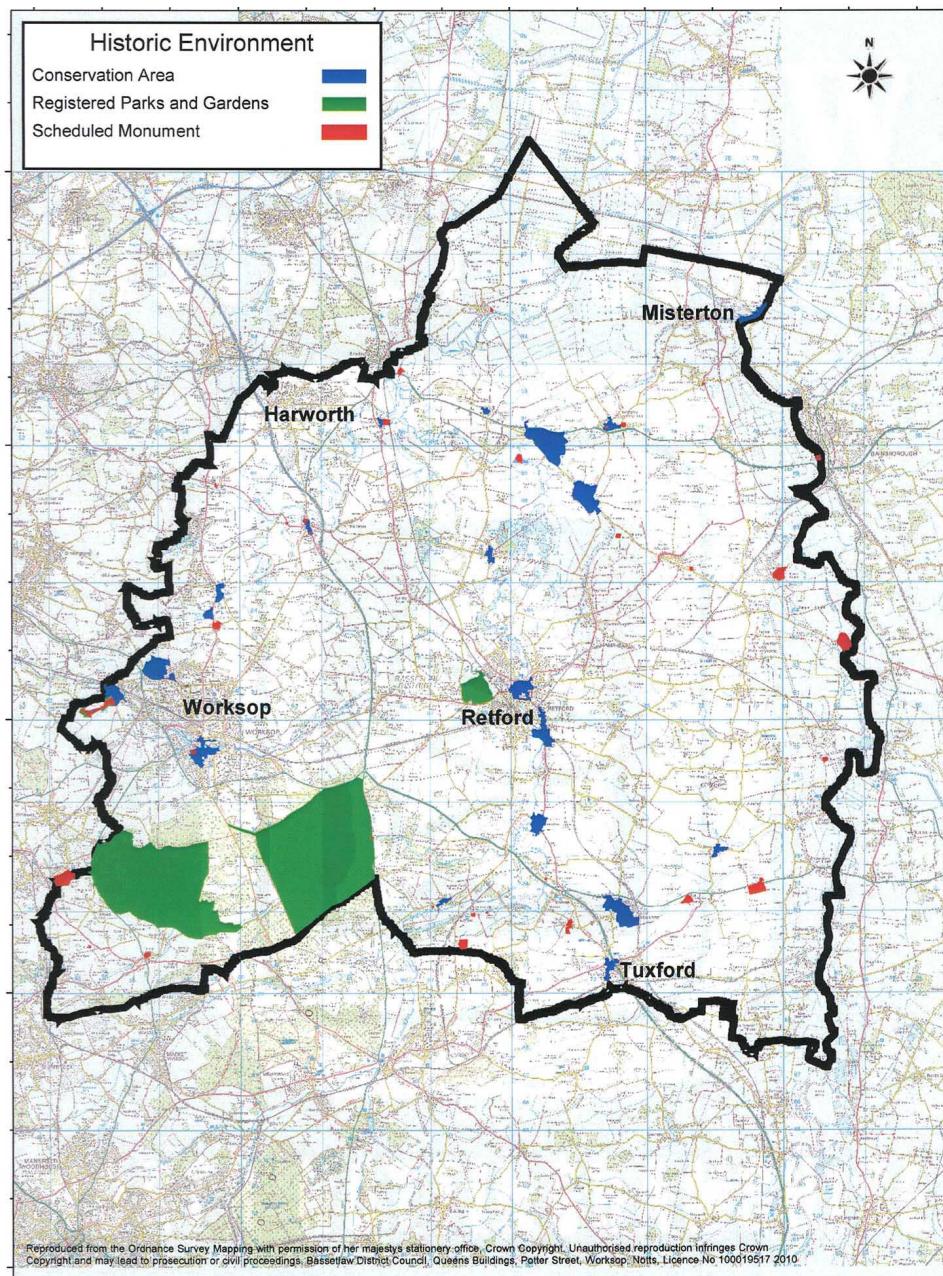
Registered parks and gardens make a rich and varied contribution to our landscape, with many containing rare and unusual plants and wildlife. In the *Register of Parks and Gardens of special historic interest in England* there are nearly 1450 sites, maintained by English Heritage. In Bassetlaw there are four parks, all of which are located to the south and west of the District. These include Babworth, Clumber, Shireoaks and Welbeck, although it should be noted that not all sites are accessible by the public.

Other Parks & Gardens

For an area of its size Bassetlaw has a significant number of large country houses and manor houses with associated estates and parkland that make valuable and distinctive contributions to the character of the District's landscape. Although, as noted above, four of these are formally identified as Historic Parks and Gardens, this designation does not give an accurate enough reflection of the extent of these estates across Bassetlaw. Indeed the number of relatively grand estates in close proximity to one another may be regarded as a unique feature of the District, with only private ownership and a subsequent lack of public access restricting these being a significant network of tourist attractions. These estates include Worksop Manor, Serlby Park, Osberton Grange, Wiseton and Bevercotes.

GIS data is available for these sites, however, beyond the list descriptions for listed buildings on the estates there is very limited information on the extent of the estate grounds themselves and lack the protection attributed to formally designated sites such as Historic Parks and Gardens.

Map 5 – Strategic Themes: Historic Environment



Produced by Bassetlaw District Council

Conservation Areas

A conservation area as defined by the Planning (Listed Buildings and Conservation Areas) Act 1990 is 'an area of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance'.

Conservation areas were first introduced with the Civic Amenities Act in 1967 which gave local authorities the power to designate conservation areas in the district. Since 1967 Bassetlaw District Council has designated 20 conservation areas, identified on Map 5, above. These are:

1. Blyth
2. Bothamsall
3. Clayworth
4. East Drayton
5. East Markham
6. Everton
7. Gamston
8. Gringley on the Hill
9. Lound
10. North Carlton
11. Retford
12. Scrooby
13. Shireoaks
14. South Carlton
15. Tuxford
16. West Stockwith
17. Wiseton/Drakeholes
18. Worksop
19. Retford South
20. Old Gateford

The majority of the conservation areas in Bassetlaw are historic town and village centres. Conservation area appraisals are being undertaken to review and identify specific features that contribute to their character, for example historic buildings and buildings which are locally significant, important green and open spaces, significant views, natural elements such as trees, and features which help make an area locally distinct. A number of other settlements are currently being assessed to determine whether they warrant conservation area status.

More detailed information on individual conservation areas will be included in the urban level assessment to show the interaction between the built and natural environment in a locality.

Listed Buildings

Listed Buildings are those buildings and structures defined by the Secretary of State as being of special architectural or historic interest. They include buildings and structures that are deemed to be of importance on a national scale. However, not all listed buildings are grand or attractive – sometimes architectural or historic significance may take precedence over visual qualities, and even fairly small structures such as milestones and water pumps may be listed.

There are over 1000 listed buildings in Bassetlaw. There is a rich variety buildings including churches, houses, barns, bridges and dovecotes. 42 of these are Grade I, with Hodsock Priory Gatehouse, Welbeck Abbey, Worksop Priory Gatehouse, Worksop Manor and Manor Lodge of particular note.

The County Council maintain a register of listed Buildings at Risk for the District that includes all grades of listing. English Heritage maintain a national register of grade I and II* buildings, with 10 buildings in Bassetlaw entered on this register, including the

grade I listed 14th century Worksop Priory gatehouse and the grade I listed Worksop Manor Lodge.

With regard to green infrastructure, a significant number of listed buildings are set in grounds that make an important contribution to the wider environment and landscape, so even if they are not publicly accessible, provide strong amenity value and wildlife habitat.

Sites and Monuments Register

There are a total of 1810 archaeological sites and features in Bassetlaw. This excludes most buildings but includes features such as find spots. This also includes the Scheduled Monuments found within Bassetlaw.

Summary of Historic Environment Trends

There are numerous parks and gardens distributed across the Bassetlaw area that, along with the Registered Parks and Gardens of Welbeck, Clumber, Shireoaks and Babworth, make valuable and distinctive contributions to the character of the District's landscape. The 'estate character' is particularly prominent to the south of Worksop with Clumber and Welbeck amongst the more grand ducal estates.

A great number of the settlements across Bassetlaw have what would be described as historic cores, with older vernacular agricultural buildings, traditional cottages and open spaces such as village greens and orchards between them. More modern residential development has grown out around these historic cores and, in some cases, infill development has resulted in the loss of historic open spaces although some fine examples are still evident.

The vernacular character of the District differs between the east and west. The east is typically characterised by buildings with redbrick walls and pantile roofs, while the west is more of a limestone area and this can be seen in the building materials utilised. The influence of the coal mining industry is also prominent in the west with villages having built up around colliery sites. Even where these collieries have closed large, regenerated spoil tips interrupt the usual topography and contribute to the landscape character.

NATURAL PROCESSES AND ENVIRONMENTAL SYSTEMS

Watercourses

The Rivers Ryton and Idle are the principal watercourses flowing through Bassetlaw, with the River Trent acting as the eastern-most boundary to the District. Small sections of the rivers Meden, Maun and Poulter also flow across the south of the District. These watercourses are valuable for biodiversity, providing many habitats for endangered species such as water voles and they are also important for dragonflies and kingfishers. Watercourses connect a large number of other sites of recognised importance in Bassetlaw as well as providing links with recreational access routes and opportunities for walking, cycling, bird watching, and fishing.

The River Idle runs through Retford to Bawtry Bridge and on to West Stockwith, where it connects with the River Trent. Most of the land surrounding the river is a broad flood plain which is now partly occupied by a number of sand and gravel pits. Its main tributaries are the River Poulter and the River Ryton. In the carrs and levels

of the Ryton valley, to the north and east of Worksop, a greener landscape is found and, in places, scrubby woodland and small plantations are the dominant landscape features.

Waterways

The only waterway of note within Bassetlaw is the Chesterfield canal. It spans the width of Bassetlaw with the section of the canal to the northeast of Retford, between Welham and Misterton, being regarded as the most important for biodiversity and is designated as a SSSI. This part of the canal supports a rare aquatic plant community characteristic of the brackish, eutrophic (nutrient-rich) water. The flora includes a number of nationally scarce species. The presence of this brackish water community, over 50 km inland, is of particular interest. The whole of the remainder of the canal is a Local Wildlife Site of aquatic and emergent botanical interest and zoological value, providing a linear route across the whole District.

The canal towpath, Cuckoo Way, is a long distance trail connecting Bassetlaw to neighbouring South Yorkshire and Derbyshire. The canal ends in a basin at Chesterfield.

Water Bodies

A significant number of water bodies exist throughout Bassetlaw, however, for the purposes of this study, only the largest and most prominent are referred to as green infrastructure features.

Of particular note, the lakes at Clumber, Welbeck and Langold are all man-made and were intended to be integral parts of landscaped parklands. Other notable water bodies include Sandhill Lake in Worksop, the Ash Lagoons at Sutton and Lound Gravel Pits and Daneshill Lake. These are primarily the result of mineral excavation sites that have since been flooded.

Flood Zones

The Environment Agency Flood Zone Map in the Bassetlaw Strategic Flood Risk Assessment (SFRA) shows the areas at risk from extreme events from river and tidal flooding.

The Environment Agency Flood Zone maps are precautionary in that they do not take account of flood defences and, therefore, represent a worst-case extent of flooding. The actual extent of flooding within Bassetlaw is mitigated to some degree by flood defences along the Rivers Ryton, Idle and Trent.

In Worksop, the River Ryton flows generally West to East with few maintained formal defences. The river passes through culverts in the town centre which are too small to carry a 1 in 100 annual chance flood, resulting in water backing up and flooding out of bank onto the surrounding land. Large open areas of land have been identified as particularly vulnerable to flooding and also two developed areas within Worksop town centre; firstly around Central Avenue, King Street, Allen Street, and Hardy Street; and secondly around Priorswell Road and Shelley Street.

In Retford the River Idle flows generally from South to North. A significant tributary is the Retford Beck joining the right bank of the River Idle from the East. The Idle has very few formal defences as it flows through Retford. The channel has been widened previously and contains much of the 1 in 20 year annual chance flood flows in bank.

There are very few features along the River Idle banks to prevent a 1 in 100 year annual chance flood spilling out of bank onto the adjacent land. Some properties are likely to be affected during a 1 in 100 year annual chance flood, particularly in the vicinity of Chancery Lane. Restriction of flow due to the presence of culverts on the River Idle does not have the same impact as on the Retford Beck, although there is some backing up of floodwater due to the culverts under Albert Road and Bridgegate.

The lower reaches of the Retford Beck are heavily culverted and are considerably under capacity to convey the catchment flows, resulting in frequent flooding at culvert entrances.

The Trent-side villages are predominantly protected by defences and the operation of IDB pumps. The River Trent Catchment Flood Management Plan (CFMP) recommends that existing flood risk management activities are reduced over the next 50 – 100 years in the A什holme and North West Lincolnshire Policy Unit which means that flood risk is accepted to increase over time. On the other hand, the CFMP advises that the preferred policy for the Sherwood Policy Unit is to continue with existing activities to manage flood risk at the current level.

The towns of Worksop and Retford lie within the Sherwood Policy Unit whereas the lower catchment of the River Idle, including West Stockwith, lies within the A什holme and North West Lincolnshire Policy Unit. Key villages considered in the SFRA are those with a history of flooding problems and where infill development is likely to have a significant effect on flood risk. Key villages include Clarborough, Hayton, Welham and Walkeringham where land drainage capacity problems are exacerbated by infill development; Sturton le Steeple and Beckingham which are situated on clayey impermeable soils, with poor land drainage and sewer networks and where infill development over the years has had significant impact. North Leverton where a watercourse passes through the village and the potential impact of development with direct sewer outfalls to the watercourse would have significant consequences; and Harworth, which has public sewer capacity problems and an inadequate land drainage system. There are also natural springs in the upstream areas of Harworth Bircotes which exacerbate surface water problems.

Flood risk outlines can be seen on Map 6.

River Catchment Information

The River Trent

The Trent originates on Biddulph Moor in Staffordshire, approximately 700 feet above sea level. At 171 miles long, after the Thames and Severn, the Trent is England's third largest river. It is navigable for 95 miles between Trent Falls and Shardlow where the Trent and Mersey Canal joins the river.

The River Trent catchment and all of its tributaries covers an area of 10,452 km². Major tributaries join the Trent from three main areas: The Peak District, South Midlands and the Lower Catchment. As a result there are distinct contrasts in catchment characteristics between these upland and lowland regions. Principal Urban Areas of the catchment include the West Midlands conurbation, Stoke-on-Trent, Derby, Leicester and Nottingham. The West Midlands in particular has a strong industrial heritage, which remains relevant and important today. Here, urban settlements are dense compared to the more rural East Midlands and sparsely populated downstream floodplains of the Humber estuary. Effective and appropriate flood risk management will form an important part of preserving and improving the social, economic and environmental assets of the area.

The River Idle

The River Idle flows in a general north to north-easterly direction, joining the River Trent at West Stockwith. The Idle catchment comprises the rivers Meden, Maun and Poulter, which meet near Gamston, and is joined downstream near Bawtry by the River Ryton.

The river rises and flows through Retford and the outskirts of Doncaster. The dominant land use is arable agriculture. Large areas in the north of the catchment are supported by a comprehensive system of land drainage to maintain their agricultural quality. Due to their low-lying situation these areas are also protected from flooding from the River Trent by extensive flood defences. However, these influences have seriously impacted wetland biodiversity in some areas of the catchment.

Sustainable Drainage Systems

At present there are no sustainable drainage systems (SuDS) in operation in Bassetlaw, largely due to lack of capacity within the Council to maintain them if adopted following the initial development stage. However, both the Council's Water Cycle Strategy and SFRA indicate a need to accommodate these in future developments. The SFRA advocates adopting above ground SuDS as public open space and amenity areas, given appropriate developer contributions via Section 106 Agreements. These contributions should be "ring fenced" specifically for the on-going maintenance of the SuDS facilities.

Climate Change

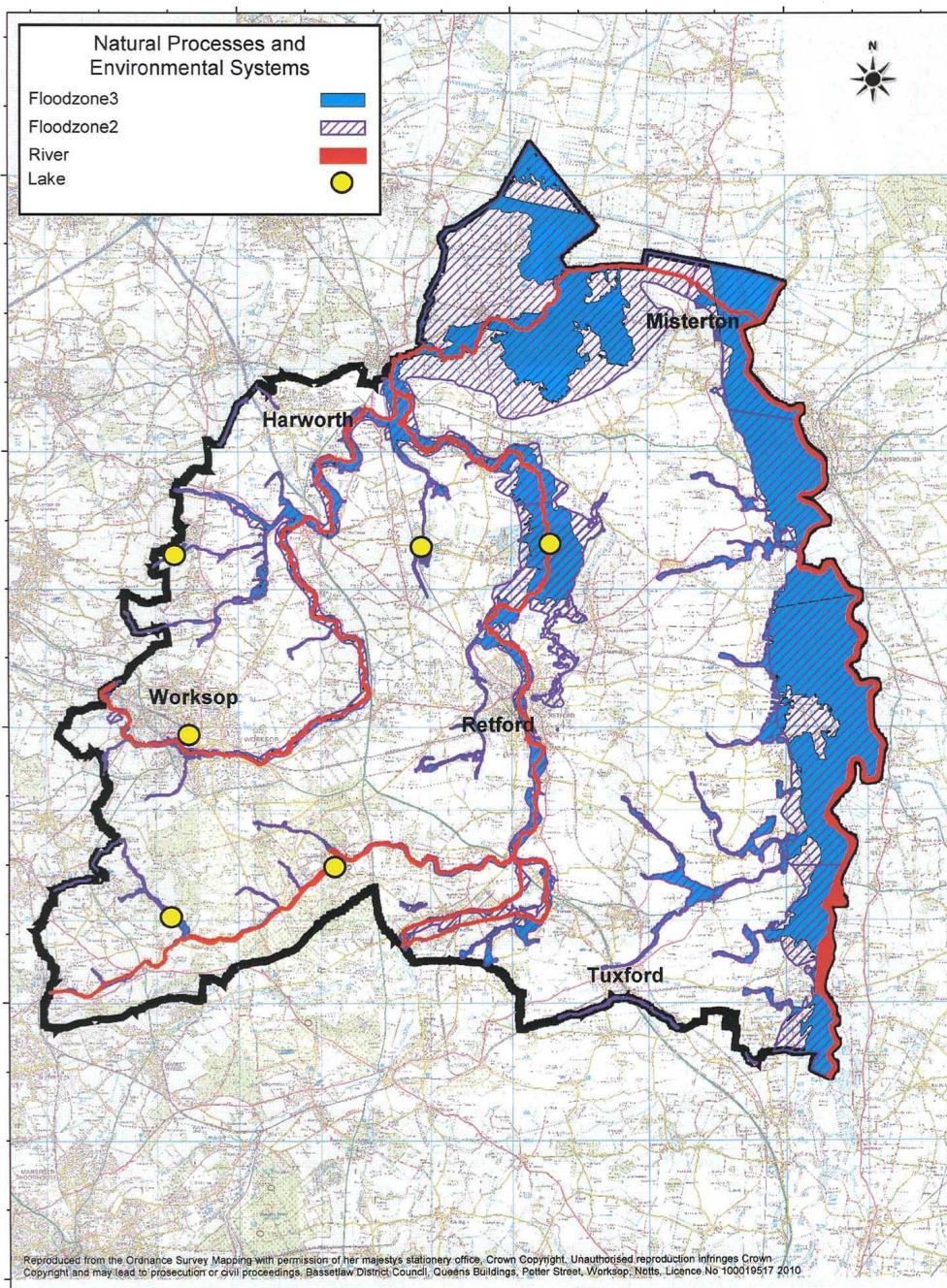
Large swathes of land around East Drayton, to the southeast of Bassetlaw, are set aside for growing biomass energy crops. Strawson's grow and supply short rotation coppice (fuel derived from sustainable willow), which takes up large amounts of land and the crop's unique appearance has a significant impact on the character of the surrounding landscape.

Natural Processes and Environmental Systems Trends

Map 6 shows the overall distribution of Bassetlaw's key areas at risk of flooding, as well as the primary watercourses and water bodies.

Watercourses, historically and presently, exert a major influence on the landscape and land uses in Bassetlaw. They dictate the pattern of development and form the key sources of the area's rich biodiversity and subsequent recreational resources. However, watercourses and water bodies also carry threats which were seen to devastating effect in the floods of June 2007. The impacts of these events have served to raise the agenda of flood risk in planning as a whole and ensure that future development plans are made fully in accordance with the recommendations of the SFRA. New development should, however, still seek to maximise the potential and opportunities that natural processes and systems present in Bassetlaw.

Map 6 – Strategic Themes: Natural Processes and Environmental Systems



RECREATION AND TOURISM

Overview

The Council's 'Open Space, Sport and Recreation Study' indicates that 25 open spaces in Bassetlaw, totaling just over 137 hectares, are classified as natural and semi-natural greenspaces.

The rural nature of the area, with easy access to the countryside, impacts upon resident's expectations in terms of natural greenspace availability. Therefore, recommendations for standards suggest that all residents are to be within 20 minute drive time of high quality provision. The study concludes that on this basis there are no gaps in the provision of natural greenspace in Bassetlaw.

Country Parks

There are only two country parks within the Bassetlaw area – Clumber Park and Langold Country Park.

Clumber Park comprises 3,800 acres of green open space and is managed by the National Trust. Notable features include the man-made lake with an ornamental bridge and the three mile-long Lime Tree Avenue. Clumber is designated as a SSSI and Historic Park and Garden.

Until the 1980's, Langold Park was provided as a recreational facility for miners by the coal board. BDC took over responsibility for the park following the closure of the pits and now manage the site as a LNR.

Registered Common Land

Registered common land is a piece of land owned and registered under the 1965 Common Land Act by one person, but over which other people can exercise certain traditional rights, such as allowing their livestock to graze upon it. There are around 0.5 million hectares of registered common land in England and Wales. There is, however, relatively little registered common land in Bassetlaw. Most of this comprises small pockets of land on the edge of villages, narrow tracks and lanes and roadside verges, generally less than one hectare. The largest single area of registered common land, at around 49 hectares, is located at Normanton Holme in the far southeast corner of the District, adjacent to the River Trent.

Countryside and Rights of Way Access Land

Under the Countryside and Rights of Way Act 2000 (CROW), the public can walk freely on mapped areas of mountain, moor, heath, downland and registered common land without having to stick to paths. As with registered common land, CROW access land is not a prominent feature of the green infrastructure in Bassetlaw. Given that only a small number of relatively insignificant sites are located across the area, they do not feature on the Recreation and Tourism map in the Appendices.

Forestry Commission Land

The Forestry Commission manages around 827,000 hectares of woodland in the UK and seeks to ensure that woodland is a useable and sustainable resource. The 2300 hectares of woodland under Forestry Commission management In the Bassetlaw area is mostly located to the south of District, between Worksop and Retford, across the Dukeries estates.

Nature Reserves

The four LNRs in Bassetlaw (Daneshill Lakes, Woodsetts Pond, Langold Country Park and Retford Cemetery) are described in detail in the Biodiversity and Geodiversity section. Although these are the only nature reserves within Bassetlaw that have been formally adopted, a number of other sites generally recognised for

their significant biodiversity. These sites are managed as nature reserves by the Nottinghamshire Wildlife Trust:

- Ashton's Meadow SSSI
- Clarborough Tunnel SSSI
- Daneshill Gravel Pits LNR
- Dyscarr Wood SSSI
- Eaton and Gamston Woods SSSI
- Idle Valley – a wetland landscape, home to an exceptionally rich ssemblage of birds. In partnership with North Nottinghamshire College the Trust has established the Idle Valley Rural Learning Centre, a local centre of excellence in rural education.
- Lady Lee Quarry – a 2.4 hectare disused flooded quarry, purchased from British Coal in 1995. The lake is rich in animal life and hosts various dragonflies and damselflies, frogs, toads and great-crested newts.
- Misson Carr (also known as Misson Training Area SSSI)
- Treswell Wood SSSI

Tourist Attractions

The main tourist attractions in the District include:

- Sundown Adventure Land – a theme park specifically for under-10's
- Clumber Park – historic parkland (National Trust)
- Mattersey Priory – remains of a small 13th-century monastery (English Heritage)
- Worksop Priory and Gatehouse – Priory church dating back to 1103 with 14th century Gatehouse.
- Bassetlaw Museum – based in Retford, collections include local history, archaeology, decorative and fine art, agriculture, costume and textiles. Awarded Nottinghamshire Museum of the Year 2009.
- Mr Straw's House – Worksop, a 1920's house captured in time (National Trust)
- Tuxford Windmill – operational windmill
- Scrooby village – strong connections with the Pilgrim Fathers

Navigable Waterways

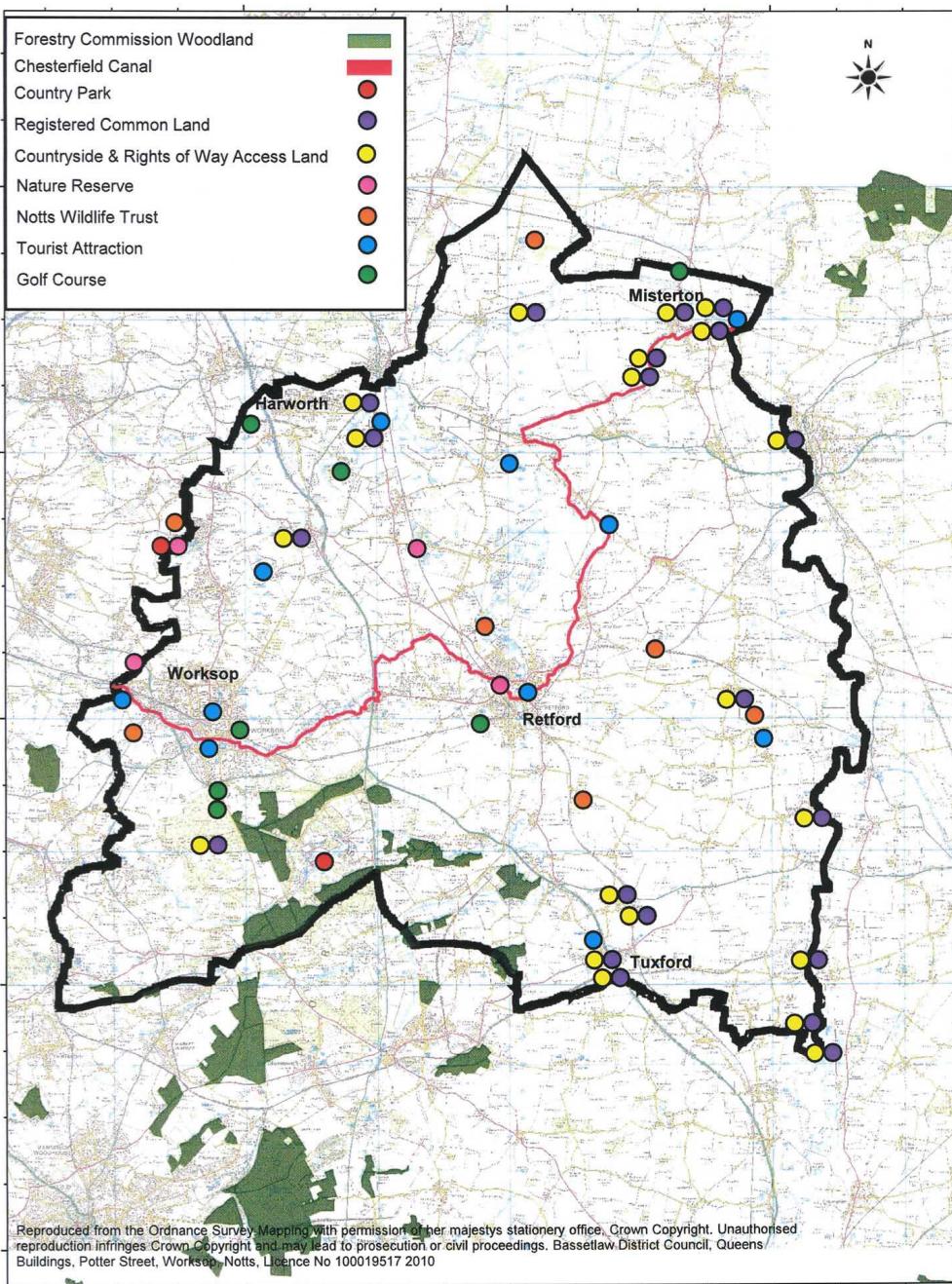
The Chesterfield Canal is the only navigable waterway within Bassetlaw. The River Trent is navigable in parts, although none of these are within this area.

The Chesterfield Canal Trust is a charitable company run entirely by volunteers, seeking to promote the full restoration and appropriate development of the canal. Facilities that support the navigation and active use of the canal within Bassetlaw include the marinas at either end of the District, in Shireoaks and West Stockwith, as well as Worksop and Retford Boat Club at Clayworth, near Retford.

Golf Courses

Golf is a popular recreational activity in the Bassetlaw area with seven different golf courses in the area itself, along with numerous others in neighbouring areas. To the west of the District are Kilton Forest, Worksop and College Pines, with Styrrup Hall, and Serlby Hall to the northwest, Retford to the east and Misterton to the north.

Map 7 – Strategic Themes: Recreation and Tourism



Produced by Bassetlaw District Council

Recreation and tourism trends

Map 7 shows the distribution of Bassetlaw's main recreation and tourism features. The main draw for tourists to the Bassetlaw area is to those attractions in the Sherwood area – namely Clumber Park. With such strong iconography around the figure of Robin Hood, this area retains prominence on a national scale. The Sherwood area also represents the largest recreational resource in Bassetlaw with such a strong network of woodland trails and distinctive and attractive landscapes.

The Chesterfield Canal has significant potential both as a recreational resource and a tourist attraction, although the full extent of this is yet to be realised on the water itself, on the adjacent towpath and at the marinas at either end.

There is great potential for growth of recreation and tourism within Bassetlaw. The area's connection with the Pilgrim Fathers represents an opportunity of particular significance.

ACCESS AND MOVEMENT

Public Rights of Way

As a rural District, Bassetlaw is well served by a network of Public Rights of Way comprising footpaths, bridleways and byways. The 'long-distance' trails that pass through Bassetlaw and reach beyond the District and regional boundaries cover a total distance of approximately 370km.

Long Distance Footpaths and Bridleways

Three long distance trails run through the Bassetlaw area (shown on Map 8).

The Cuckoo Way is 74km long and runs alongside the Chesterfield Canal for its duration. It provides good links for walkers between local villages, although offers little opportunity for cycling and none for horse riding.

The Trent Valley Way is approximately 124km long and follows the River Trent to the confluence with the Chesterfield Canal at West Stockwith.

The Robin Hood Way is 172km long, crossing lowland farmland and heathland, and visiting the great houses and parks of the Dukeries, before finishing at Edwinstowe.

Disused Railway Lines

There are a number of disused railway lines across Bassetlaw. While these corridors are not particularly extensive and have little formal integration in to the wider public rights of way network, they are used as informal recreation routes and there is a great deal of potential in them for creating new linear linkages across parts of the District.

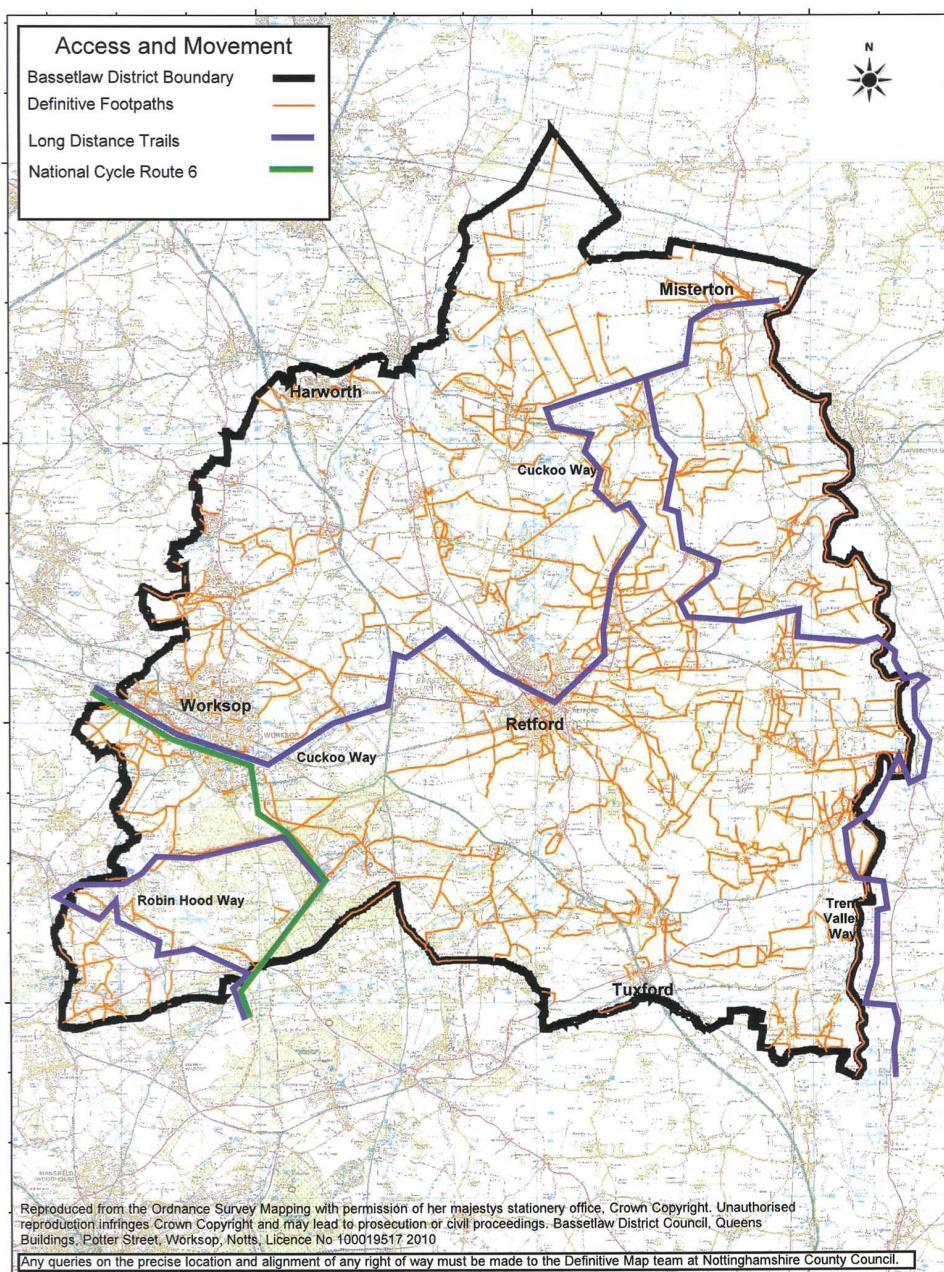
SUSTRANS Routes

National Route 6 provides a walking and cycling route that comes up through the area to the south of Worksop, through the town centre along the Chesterfield Canal corridor and out through Shireoaks towards South Yorkshire. The trail is evenly split between on and off road sections, although notably, most of the section that runs through Worksop is off-road.

Access and movement trends

With the exception of Robin Hood Way, the long distance routes across Bassetlaw generally follow watercourses. These routes are of more than local importance as they provide recreational linkages between Yorkshire, Derbyshire, Nottinghamshire and Lincolnshire. Other footpaths, bridleways and byways form quite an extensive network through and around many of the environmental sites across the District.

Map 8 – Strategic Themes: Access and Movement



Produced by Bassettlaw District Council

6. BASELINE INTERPRETATION AND ANALYSIS

Green Infrastructure Analysis

This chapter contains the analysis of the information collected in the previous chapter and identifies Bassetlaw's existing green infrastructure network.

Having undertaken a subjective assessment of the identified green infrastructure assets within Bassetlaw, initially at the District scale, this analysis identifies which assets qualify as green infrastructure features for inclusion in the network. Each asset has been assigned a score based upon a number of criteria specific to nodes and corridors and this score has been used to assess whether the features qualify as major or minor nodes or corridors/linkages.

Green infrastructure networks comprise two components: nodes and corridors. Nodes are features (or in some cases clusters of features) of value that may be important habitat complexes, characteristic landscape features, public parks or often a combination of these and other uses. Corridors are the linkages that connect the nodes into coherent, landscape scale frameworks that deliver significantly greater value than the nodes in isolation. They are the means for wildlife to move between nodes, providing different habitat functions whilst also enabling people to move between population centres and nodes. Examples include watercourses and bridleways.

At the District scale in Bassetlaw it was determined to include the following features as candidates for consideration as green infrastructure features:

- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserves (LNR)
- Biological SINCs (Sites of Importance for Nature Conservation) or Local Wildlife Sites
- Scheduled Monuments
- Registered Parks and Gardens
- Watercourses
- Waterways
- Water Bodies
- Biomass Installations
- Country Parks
- Registered Common Land
- Forestry Commission Land
- Ancient Woodland
- Tourist Features
- Golf Courses
- Rights of Way
- National Cycle Routes

A few of the identified green infrastructure assets fall within more than one of these categories, for example a SSSI may also be identified as a SINC, or an area of ancient woodland may also be a component of a SINC owned by the Forestry Commission. In such instances the asset has been included under all of these headings for consistency.

Each asset has been assessed in terms of its 'multi-functionality' (based on the seven strategic themes identified for this assessment) and their relative

'accessibility'. For potential nodes, the additional criterion of 'inherent value' has been assessed, whereas for potential corridors have been assessed in terms of the level of 'connectivity' they deliver.

The assessment involved allocating each feature a score of 1 (lowest) to 3 (highest), against the relevant criterion. The total score for each feature then determines the green infrastructure asset value. The results of this assessment are shown in Appendix 3.

While many features have not scored highly enough to be considered significant green infrastructure resources in the scope of this study, they will nonetheless be delivering a level of green infrastructure value at the local or site level and many have the potential to be developed into more significant resources through investment and management.

Given the nature of the scoring process features which have achieved the highest scores to qualify as major green infrastructure nodes and corridors are not always those with the greatest inherent value. Indeed some of the most prominent designated environmental sites in the District are not accessible by the public. Likewise, features of low inherent value can offer a high level of multi-functionality and accessibility.

Having assessed all relevant features against the subjective scoring criteria the following nodes and corridors have been identified as District-level green infrastructure features.

Major Nodes

Barrow Hills Sandpit	Bevercotes Park
Clumber Park	Gamston and Eaton Woods and roadside verges
Sutton and Lound Gravel Pits	Langold Country Park
Dyscarr Wood	Holbeck Prehistoric sites (Creswell Crags)
Wallingwells and Carlton Woods	Tong's/Dogholes Woods
Beckingham Wood	Bevercotes Colliery Site
Cuckney Hay Wood	Tile Kiln Wood, Welbeck
Daneshill Lakes	Treswell Wood
Little Broom Wood	

Major Corridors

The major corridors identified in the scoring analysis are the most significant green infrastructure assets in Bassetlaw, given their providing linkages for people and their visual influence on the landscape.

The key benefits offered by major corridors identified here is connecting the main urban centres in Bassetlaw to their rural hinterlands and beyond the boundaries of the District. The primary benefits of green infrastructure corridors for people are for recreation and sustainable off-road transport opportunities, while the ecological connectivity they provide helps overcome habitat fragmentation and increases the ability of the natural environment to adapt to climate change.

The major green infrastructure corridors identified in Bassetlaw comprise the following:

Chesterfield Canal	River Trent
River Idle	River Ryton

While the River Trent does not actually have the same level of node value as other major corridors the scale of the Trent alone ensure that it qualifies as a major green infrastructure corridor in Bassetlaw. It is one of the defining features of Nottinghamshire as a county and beyond, from north to south, forming the eastern-most boundary of Bassetlaw District and is highlighted in the Regional Spatial Strategy as a strategic river corridor and one of the most important contributors to biodiversity across the region.

The Chesterfield Canal spans the entire width of the District, joining the River Trent in the east and crossing into Rotherham to the west. The canal connects both of the District's main population centres, along with a number of smaller settlements and minor green infrastructure nodes. The canal qualifies as a major green infrastructure corridor, providing a high degree of multi-functionality for most of the areas it flows through.

The River Idle runs through the heart of Bassetlaw and is a key biodiversity connector, linking a number of minor nodes, acting as the primary source for several significant sites of recognised biodiversity interest and linking to the other major corridors in the District. Flowing through the heart of Retford, the River Idle links the urban area to the surrounding countryside to both the north and south of the town. Also, the River Ryton is fed by the Idle and connects a series of minor green infrastructure nodes, flowing through the centre of Worksop.

Minor Nodes

Minor nodes and corridors often represent features which have high potential to deliver greater value through increases in their accessibility to all users, facilities provision or habitat value, all of which could be provided by funds raised from adjacent development. Where minor features fall within development areas, their status could also be increased through expansion and buffering as part of the wider development open space framework.

Ashton's Meadow	Castle Hill Wood
Mattersey Hill Marsh	Misson Line Bank
Misson Training Area	River Idle Washlands 1
River Idle Washlands 2	River Idle Washlands 3
River Idle Washlands 4	Welbeck Lake
Woodsetts Pond	Retford Cemetery
Boon Hills Wood	Lady Lee Quarry
Shireoaks Park Water Garden	Wallingbrook Wood
Scratta Wood	Owday Wood
Rough Piece	Nab's Ashes Wood
Burntout Wood	Tranker Wood
Langold Cutting	Ash Holt, Styrrup
Manor Hills	Sandhill Lake
Forest Plantation Track	Kidney Clump Acid Grassland
Linghurst	Dunham Dubs
Bole Ings Flood Pasture	The Knob
Great Oak Square Wetland	Beverley Spring
Wheatley Wood	Long Plantation Bridleway
Walkeringham Claypits	Hundred Acre Wood
Gosling Carr	Bothamsall Grassland Plantation
Poulter Valley Plantation (East)	Poulter Valley Plantaiton (West)
Osberton Woodland (i)	Top Wood / Great Whin Covert
Sutton and Lound Gravel Pits	Cow Wood
The Bottoms, Wallingwells	Bevercotes Colliery Site and Lawn Covert
Kingshaugh Farm Earthwork	River Maun - Haughton
Blyth Wood	Manton Colliery
Lady's Grove, Nether Langwith	Askham Churchyard

St Helen's Church Grassland	The Old Hag, Holbeck
The Ashes	Cowclose Wood
Clown Hill Plantation	Graves Wood
Beckingham: Dog Island moat nr Gainsborough	Blyth Priory
Bothamsall Motte and Bailey Castle	Cuckney motte and bailey
Gringley on the Hill: Beacon Hill Camp	Haughton decoy and motte and bailey castle
Hayton castle, moated site and fishpond	Rampton: Fleet plantation moated site
Sturton le Steeple: Segelocum Roman Town	Babworth
Shireoaks	Lady's Grove
Sloswicks Springs	Steetley Wood
Gamston Wood	Beverley Spring
Crow Wood	Nab's Ashes Wood
Shireoaks Park Wood	Scratta Wood
Lord St Vincent Wood	Haddon Pasture
Worksop Priory	Budby Corner Plantation
Shireoaks Marina	Kilton Forest Golf Course

Minor Corridors

Trent Valley Way	Robin Hood Way
Cuckoo Way	River Meden
National Cycle Route 6	River Poulter
River Maun	

The combination of all these nodes and corridors create Bassetlaw's existing strategic green infrastructure network, set out on Map 9 (Appendix 4).

7. EXISTING GREEN INFRASTRUCTURE INITIATIVES

Overview

There are already a significant number of organisations involved in initiatives to protect and enhance environmental assets in Bassetlaw and seeking to secure associated economic and social gains.

Ongoing initiatives are an important aspect of the assessment and future planning of green infrastructure in Bassetlaw, making it essential that they are fully incorporated into this study. These initiatives and the lead organizations are key to gauging aspirations for the District's environment and identifying established and potential delivery mechanisms for the creation, enhancement and management of green infrastructure.

This chapter reviews existing initiatives in Bassetlaw, identifying their lead and support partners and their scope in relation to this study, summarising their objectives and analysing their potential contribution to green infrastructure.

On Trent – Trent Vale Landscape Partnership

Scope:

Gainsborough to Newark – thus incorporating the eastern boundary of Bassetlaw

Key partners:

- The Environment Agency
- The Wildlife Trusts
- Bassetlaw DC
- Newark & Sherwood DC
- West Lindsey DC
- British Waterways
- Natural England
- The RSPB
- Lincolnshire County Council
- Nottinghamshire County Council
- Groundwork

Background:

The River Trent in the Trent Vale is now often hidden from view and difficult to visit, therefore Trent-side communities have become disconnected from this natural feature which has influenced where and how they live.

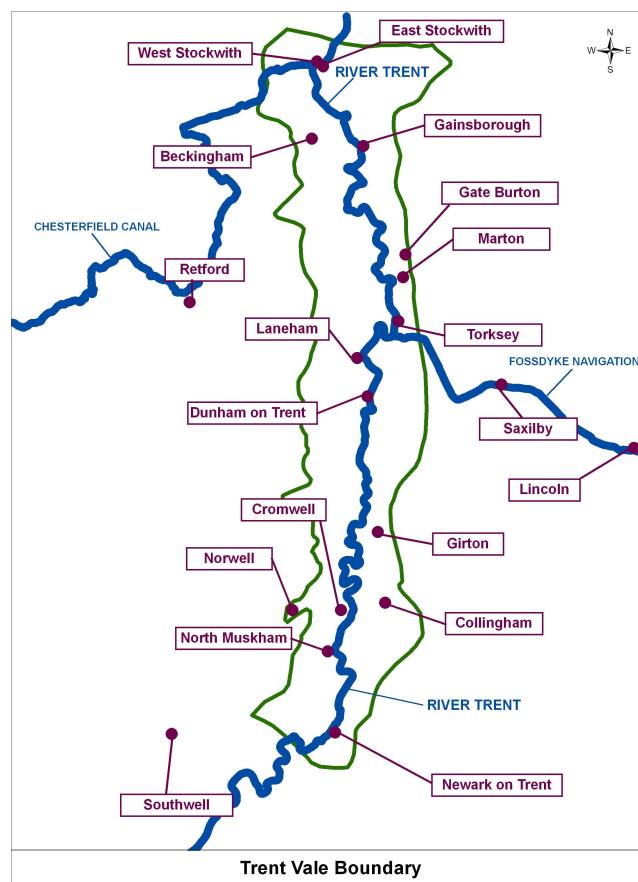
The Trent Vale Landscape Partnership aims to increase awareness about the river, its surrounding lands and its heritage, and to improve access for people to the river. This will be achieved by the development of a number of programmes and projects through the support of the Heritage Lottery Fund.

The Trent Vale Landscape Partnership area (see map below) follows the course of the River Trent from Newark in the South to East/West Stockwith (north of Gainsborough) and covers 388 square kilometres. The area boundary encompasses 55 parishes, that are adjacent the river, with a combined population of 68,000.

The Vision for the Trent Vale Landscape Partnership scheme is to build upon the strengths of Trent Vale to create a place where:

- There are a variety of high quality areas for people to access and enjoy; both locals and visitors understand and embrace the distinctive character of Trent Vale;
- Through partnerships across public and private sectors and sensitive stewardship agreements, traditional methods of landscape management and farming practices are employed to conserve and restore the rural character of the Trent Vale landscape;
- There is a mosaic of different habitats which support a rich diversity of flora and fauna of national importance;
- There is appropriate restoration of mineral extraction sites that contribute to the development of varied and priority habitat rich wetland areas;
- There is a wide understanding of the historic environment which is celebrated through the retention of traditional skills, sensitive landscape management to conserve and enhance key heritage features, education and interpretation;
- Both the local community and visitors understand the evolution of the area and assist in its sustainable development;
- New enterprises to provide local products and develop traditional crafts are encouraged.

Map 10 – Existing Initiatives: Trent Vale Landscape Partnership area



Interaction with Green Infrastructure

- Improving public access to the Trent and its surrounding landscape

- Encouraging sensitive and traditional land management practices to restore the landscape character
- Protecting, enhancing and seeking opportunities for habitat creation (including 150 hectares of BAP habitat)
- Contribution of the project's historic objectives to green infrastructure, in particular the enhancement of archaeological sites and conservation of the historic riverine landscape.
- Potential for new green infrastructure created within the Trent corridor to support the project by demonstrating and promoting best practice.

Nottinghamshire Wildlife Trust – SINC Target Areas

Scope:

Target Areas are identified for north and east Nottinghamshire, therefore largely covering the Districts of Bassetlaw and Newark & Sherwood.

Key partners:

- *Nottinghamshire Wildlife Trust*
- DEFRA
- Nottinghamshire County Council
- Bassetlaw DC
- Newark & Sherwood DC

Background:

Target Areas were selected by identifying clusters of SINCs near Wildlife Trust reserves. Other factors also considered included existing knowledge of the area with regard to landowner details and local contacts; characteristics of the area and its importance for biodiversity; and existing projects underway in the area.

Target areas identified in the Bassetlaw area include the following:

North Nottinghamshire Woodlands

An area of predominantly arable farmland and scattered woodlands on the Nottinghamshire Claylands, to the east of Retford. It includes the parishes of Clarborough, Grove, Treswell, Headon-cum-Upton, Gamston, Askham and East Markham. The Trust has four reserves in the Target Area – Clarborough Tunnel, Eaton Wood, Gamston Wood and Treswell Wood. There are 18 other SINCs in the area (excluding Trust reserves) (see below).

SINC	Name	Details
1/77	Gamston roadside verges	Species-rich roadside verges
1/78	Treswell Wood	One of the best remaining examples of ancient semi-natural broad-leaved woodland on clay soils in the county – of botanical and zoological interest
1/79	Eaton Wood	An excellent deciduous woodland of botanical and invertebrate interest
1/80	Gamston Wood	An excellent deciduous woodland of botanical and zoological importance
1/83	Caddow Wood (SK 754822)	Neglected coppice wood of considerable floristic interest
1/84	Castle Hill Wood, Horse Close Plantation and Swindell Spring Wood (SK 738805)	A unit of fine deciduous woodlands with a characteristic structure and species composition – of botanical and zoological interest
1/120	Askham Pasture (SK 744749)	A species-rich pasture with an

		especially notable damp community
2/438	Wood lane, Askham (SK 739762)	A track with herb-rich verges, mixed species hedges, and noteworthy drain communities
2/439	Grassland, Askham (SK 743751)	A notable community in a little improved grassland
2/440	Ash Holt Lane Marshy Grassland (SK 744752)	A good area of riparian marshy grassland
2/442	Brigg Lane (SK 755765)	A grass lane, notable for a good selection of herbs
2/443	Headon Verges (SK 756775)	Trackside verges with a notable flora, bounded by valuable hedges
2/619	Beverley Spring (SK 733782)	A characteristic tall coppice on Mercia mudstone
2/618	Darlton Wood (SK 736785)	A semi-natural deciduous woodland with a characteristic ground flora
2/435	Top Lodge Plantation (SK 725796)	A mature deciduous woodland with characteristic ground flora
2/436	Grove Pastures (SK 735790)	Two cattle-grazed fields with a good range of grasses and herbs
2/434	Headon Park Orchard (SK 740780)	An old orchard of botanical importance
2/628	Plaster Hill Plantation (SK 738813)	A mature plantation with a well-developed woodland flora
2/629	Hutchinson's Holt (SK 750818)	A belt of unmanaged woodland with a dense understorey
2/630	Caddow Wood (Southern Assarts) (SK 758819)	A discontinuous and rather open old woodland of some botanical interest
2/446	Dolegate Rd, East Drayton (SK 768759)	Species-rich roadside verges
2/441	Beast Wood Grassland (SK 760750)	A damp, neglected grassland with a valuable herb content
2/977	Leverton Road Flashes, Retford (SK 717 815)	Wet depressions in pasture. Former breeding site of snipe and redshank. Lapwing still breed irregularly in reduced numbers (Adrian Blackburn <i>pers comm.</i>).

The dominant SINC habitat in this area is broad-leaved woodland.

Landscape and Management Aims:

- Linking existing woodlands through improved hedgerow management, field margins and headlands
- Expanding existing broad-leaved woodland by creating new, native woodland around existing blocks.

The Lower Idle Valley

An open landscape of farmed, drained peaty soils (locally known as Carrland) characterised by open fields with ditches as boundaries, washlands along the River Idle and small areas of woodland. Many of the watercourses are SINCs for their aquatic plant communities and the area is significantly important for birds at a county level. The area also has the sandlands, which are farmed. Heathland used to occur on the sandy, nutrient-poor soils. It includes Gringley on the Hill, Misterton, Everton, Scaftworth and Misson Parishes.

SINC	Name	Details
2/634	Misson Training Ground	An important and extensive area of damp scrub and woodland of zoological as well as botanical interest
2/473	Chapel Baulk (SK 718983)	A narrow V-shaped length of interrupted drain with a noteworthy flora

2/636	Drain near Levels Farm, Misson	A length of species-rich drain
2/635	Snow Sewer	A deep drainage channel with a good aquatic flora
2/472	Levels Lane Drain (SK 713971)	A drain with excellent aquatic flora
1/85	Misson Line Bank (SSSI) (SK 714960)	An excellent mosaic of open water, marsh, grassland and scrub communities developed around a sequence of old borrow pits – of considerable botanical and zoological interest
2/575	Idle Stop Washland (SSSI)	One of five washlands along the R Idle representing the last fragments of a once extensive site of importance for both its plant and bird communities – also included is a representative stretch of the R Idle
2/424	Fox Covert Drain, Misterton (SK 722952)	A drainage channel with a valuable aquatic community
2/471	Mother Drain, Gringley (SK 715953)	A section of Mother Drain that is of botanical and zoological value
2/576	North Carr Drain Washland	One of five washlands along the R Idle representing the last fragments of a once extensive site of importance for both its plant and bird communities – also included is a representative stretch of the R Idle
2/569	Barrier Bank, Misson	A site of scrubby woodland and ruderal riverside vegetation incorporating a representative stretch of the R Idle
1/65	Delve Drain (SK 692946)	An excellent association of aquatic plant species
1/66	Carr Road Drains Complex (SK 720939)	A valuable sequence of drains of substantial botanical interest
1/82	Chesterfield Canal (Welham to Misterton) (SK 738920)	A representative stretch of canal supporting a nationally notable aquatic plant community characteristic of brackish waters, and rich in invertebrates
2/475	Shaw Ponds (SK 736921)	An old extraction pit, now a series of interlinked ponds with notable marginal and emergent vegetation
2/568	Everton Carr Drains	Species-rich drainage channels
2/425	Roe Drain, Everton (SK 703924)	A well-vegetated shallow drain supporting a notable plant community
1/67	Barrow Hills Sandpit (SK 682917)	An excellent area of grassland and scrub on glacial sands – of both invertebrate and botanical interest
2/578	Barrow Hills Plantation	A mixed plantation and secondary woodland of botanical invertebrate zoological interest
2/422	Bawtry Viaduct Washland (SK 655929)	One of 5 washlands along R. Idle representing the last fragments of a once extensive wetland site – of importance for both its plant and bird communities
2/420	Barrier Bank, Newington (SK 667936)	A valuable habitat mosiac of damp grassland, drains, ruderal vegetation and woodland
2/574	Newington Washland	One of 5 washlands along R. Idle representing the last fragments of a once extensive wetland site – of importance for both its plant and bird communities
2/573	Slaynes Lane Washland	One of 5 washlands along R. Idle representing the last fragments of a once extensive wetland site – of

		importance for both its plant and bird communities
2/423	Bawtry Road Works, Misson (SK 679951)	A gravel extraction works with an interesting colonising flora
2/969	Rugged Butts (SK 679955)	An extensive area of acid grassland with associated secondary woodland habitats

Landscape and Management Aims:

- Link existing wetland sites along the Lower River Idle
- Expand existing wetland areas with a the aim of sustainable water management of the River Idle and flood management
- Bring wetland sites under favourable management
- Bring grassland sites under favourable management
- Re-connection of River Idle with its natural floodplain.

Worksop Target Area

An area to the north and west of Worksop that is on the southern Magnesian Limestone ridge. It is predominately arable farmland with woodlands; disused quarries have wetland and calcareous grassland habitats. The River Ryton and the Chesterfield Canal run through the target area.

SINC	Name	Details
2/392	High Grounds Wood (SK 566796)	A mature deciduous woodland with a noteworthy ground flora, bounded by a valuable flowing drain
1/45	Lady Lee Quarry (NWT reserve) (SK 564795)	A diverse array of species-rich habitats developed on an old limestone quarry and adjacent track – of botanical and zoological interest
2/103	Lady Lee Pasture (SK 562794)	A pasture containing an interesting old limestone quarry
2/120	Holme Carr Wood (SK 556800)	Deciduous woodland with a notable ground flora
1/47	Shireoaks Water Park Garden (SK 550804)	A species-rich series of channels and pools edged by valuable woodland – of botanical and zoological interest
2/107	Scratte Wood (SK 540795)	A very species-rich remnant of old woodland
2/157	Steetley Wood Spoil Tip (SK 552785)	Calcereous spoil colonised by an interesting range of opportunistic calcicole plant species
2/401	Worksop Golf Course (SK 601775)	An interesting mosaics of habitats with a number of noteworthy species
2/391	Rhodesia Pool (SK 565802)	A small flooded quarry with a notable aquatic community
2/123	Oak Wood, Shireoaks (SK 554802)	A noteworthy deciduous woodland
2/394	Shireoaks Fishing Pond (SK 551811)	A pool and a diverse mixture of adjacent habitats
2/121	Tranker Wood (SK 568804)	A deciduous wood with a rich ground flora
2/1041	Gateford Sand Pit (SK 572813)	A good exposure of the Lenton Sandstone Formation (Lower Mottled Sandstone) and glacial drift
2/390	Sandhill lake (SK 581 793)	A recreational lake with a restricted but notable, emergent community

Landscape and Management Aims:

- Recreate calcareous grassland through arable reversion and restoration of mineral extraction sites
- Bring calcareous grassland sites under favourable management
- Expand area of woodland and aim to link woodlands
- Bring woodland sites under favourable management
- Bring wetland sites under favourable management.

Nottinghamshire Wildlife Trust – Idle Valley Project

Scope:

The Idle Valley Project (Retford)

Key partners:

- Nottinghamshire Wildlife Trust
- Natural England
- Tarmac

Background

In collaboration with partners including Tarmac Ltd, North Nottinghamshire College and Bassetlaw District Council as well as neighbouring landowners, local residents and community groups Nottinghamshire Wildlife Trust aims to:

- Link existing habitats and create wildlife corridors to enhance areas of natural heritage
- Improve public access by linking existing rights of way and creating accessible path networks
- Deliver a programme of practical skills training that supports the rural economy and promotes life-long learning
- Engage local residents through activities including open days, health walks and conservation work parties
- Develop a programme of environmental education focussed upon curriculum linked school activities and volunteer training
- Provide local landowners with advice on sympathetic land management to improve green infrastructure and build a protective buffer around existing fragile habitat areas

One of the Wildlife Trust's key partners in the delivery of the Idle Valley Project is North Nottinghamshire College. The College has a long held interest in developing a local centre of excellence in rural education and in Spring 2008 the College took a significant step towards realising its ambition by opening The Idle Valley Rural Learning Centre. Built on land owned by the Wildlife Trust adjacent to what will be the Idle Valley Nature Reserve, the new centre will not only provide students with a unique learning environment, it will directly contribute towards the conservation and management of the project site with the Wildlife Trust co-ordinating practical habitat management tasks. In time, it will also act as a gateway to the Idle Valley for the wider community.

At the time of writing the focus of the project is on access arrangements, initially working with County footpaths to address rights of way. More structured provision for horses is being sought – linking bridleways that currently stop in the middle of nowhere, with a similar approach being taken with footpaths. As we become more familiar with the site I expect to see more paths being brought forward, access for

birders as well as more general walking routes. These will include some that will be way marked.

We are working to link to the Chesterfield Canal, and hope to have a loop which connects the site with the canal. We are keen to work with other sites in the area to look at joint marketing and promotion opportunities.

Sherwood Forest Regional Park

Scope:

The proposed Regional Park project area broadly covers that which falls in the Sherwood Landscape Character Area, extending from the northern edge of Nottingham to the edge of the Idle Lowlands, just north of Worksop.

Key partners:

- Nottinghamshire County Council and District/Borough Councils
- Natural England
- National Trust
- Nottinghamshire Wildlife Trust
- Environment Agency
- EMDA
- Groundwork

Background

Regional Parks are used to define distinctive and extensive areas where management and spatial planning can bring about regionally significant economic, environmental and social benefits.

A study has been undertaken to establish the feasibility of taking the notion forward along with a Commencement Business Plan covering the first five years of the establishment and early implementation (delivery) of a Sherwood Forest Regional Park (i.e. 2008 to 2013). The business plan summarises the preferred option arising from the Sherwood Forest Regional Park Feasibility Study and sets out an action plan and delivery programme. The preferred option is to establish a Regional Park for Sherwood Forest which is governed by a public, private, voluntary sector partnership model.

Four key interlinked aims have been established and form the foundation for a Sherwood Forest Regional Park:

- Economic, environmental and social regeneration
- Creating a sense of pride and place, local community improvements and a new air of optimism
- Re-creating the Sherwood Forest environment as a living and working environment
- Enhancing access for visitors and residents.

Natural England – Higher Level Stewardship

Scope:

A nationwide project, with Entry Level plus Higher Level Stewardship schemes in operation in numerous parts of Bassetlaw including East Retford, Lound, Clumber/Carburton, Cuckney, Gamston and Bole.

Key partners:

- Natural England
- Landowners

Background:

Higher Level Stewardship (HLS) aims to deliver significant environmental benefits in high priority situations and areas. It involves more complex environmental management, so land managers will need advice and support.

HLS is usually combined with Entry Level Stewardship or Organic Entry Level Stewardship options, but unlike these entry into the scheme is discretionary. A wide range of management options are offered, which are targeted to support key features of the different areas of the English countryside.

HLS agreements are for ten years. Payments are sent out every six months and relate to the options that have been chosen. HLS includes payments for capital items such as hedgerow restoration.

RSPB – Beckingham Marshes

Scope:

Adjacent the River Trent, near Gainsborough, just outside the village of Beckingham.

Key partners:

- RSPB
- Environment Agency
- The Heritage Lottery Fund
- Bassetlaw DC
- West Lindsey DC

Background:

The RSPB, in partnership with the Environment Agency, is embarking on a new wetland creation project, at Beckingham Marshes near Gainsborough.

The project will benefit water voles, plus a host of other wildlife such as lapwings, otters and dragonflies which all depend on wetlands to live and thrive. Work will soon start to create many ditches and pools of water that will turn the area into a real wildlife oasis and a fantastic place for people to enjoy.

Forestry Commission – English Woodland Grant Scheme

Scope:

The English Woodland Grant Scheme (EWGS) is in operation in a number of the large areas of woodland in central and southern Bassetlaw. These largely comprise the estates of Babworth Park and Clumber Park, as well as a few smaller parcels of woodland across the District.

Key Partners:

- Forestry Commission
- Natural England
- EMDA

Background:

The EWGS is the Forestry Commission's suite of grants designed to develop the co-ordinated delivery of public benefits from England's woodlands. The Rural Development Programme for England (RDPE) supports EWGS and includes a new approach to delivering socio-economic funding through the Regional Development Agencies and Leader partnerships.

The EWGS comprises the following grants:

- Woodland Planning Grant – contributes to the costs of producing management plans for existing woodlands that meet the planning requirements of the UK Woodland Assurance Standard
- Woodland Assessment Grant – the Forestry Commission may consider that further information is required before decisions can be made about work in areas of woodland. Woodland Assessment Grant contributes to the standard costs of undertaking these specified assessments
- Woodland Regeneration Grant – supporting desirable change in woodland composition through natural regeneration and restocking after felling
- Woodland Improvement Grant – work in woodlands to create, enhance and sustain public benefits
- Woodland Management Grant – contribution to additional costs of providing and sustaining higher-quality public benefits from existing woodlands
- Woodland Creation Grant - encouraging the creation of new woodlands where they deliver the greatest public benefits, including annual Farm Woodland Payments to compensate for agricultural income forgone.

Environment Agency – Retford Beck Improvements

Scope:

Retford Beck, east of Retford.

Key Partners:

- Environment Agency
- Bassetlaw District Council
- Natural England

Background:

There is a proposed Flood Alleviation Scheme for Retford Beck included within our Medium Term Investment Plan. Medium Term Plans change with flood risk management priorities and so a project may stay in the Medium Term Plan for longer than the 5-year plan period. One of the key aims is to engage with key stakeholders such as the Local Authority at the earliest possible stage in a Flood Alleviation Scheme and the Bassetlaw Green Infrastructure Study is regarded as an important consideration in this.

Also, we look to work with Natural England; Local Authorities; Wildlife Trusts; our local Fisheries & Biodiversity Teams; and other stakeholders to identify potential sites and projects for habitat creation. Subject to the local circumstances, a key driver may be to create habitat identified in the Nottinghamshire Biodiversity Action Plan or the Humber River Basin Management Plan. Alternatively, it may be to work with Natural England to improve SSSIs to favourable conditions. Given that there are series of washland SSSIs alongside the River Idle through the District, this may be a reasonable approach.

Neighbouring Local Authorities/Cross-border Linkages

Bolsover DC Green Infrastructure Study:

- Identifies Creswell Crags as a major node and crossover point for both people and wildlife, via the Robin Hood Way.
- Opportunity for recreation and habitat linkages from Welbeck and Holbeck lakes and woodland into the Bolsover area.

Newark & Sherwood DC Draft Green Infrastructure Strategy:

- Identifies Robin Hood Way and the Trent Valley Way as strategic routes, seeking to enhance linkages visitor areas.

Mansfield DC Green Infrastructure Strategy:

- Although no specific references are made to cross border linkages between Bassetlaw and Mansfield the Rivers Meden and Maun are the primary corridors between the two districts.

Doncaster MBC

- Green infrastructure corridor mapping indicates Bawtry-Finningley, Bawtry Forest and the River Torne corridors adjoin Bassetlaw's administrative boundary.

8. NEEDS AND OPPORTUNITIES ASSESSMENT

Overview

This section sets out Bassetlaw's strategic green infrastructure needs and opportunities based on the analysis of the District's existing network. The assessment identifies existing deficits and requirements that may be generated with the strategic growth of the District.

There are key differences between identified needs and opportunities: needs are those areas where there are distinguishable gaps in the green infrastructure network, whereas opportunities occur where there is potential to create linkages between existing nodes. Indeed green infrastructure planning is not just about overcoming existing deficits and easing the pressures imposed by population growth, but needs to be visionary in seeking opportunities to maximise the multi-functionality and connectivity of the natural environment to secure the widest achievable benefits.

Assessment Limitations

Given that this assessment was undertaken at the strategic scale it is acknowledged that further work will be required at a later date to assess the finer details of green infrastructure requirements in and around individual settlements and development sites.

The limitation of the green infrastructure network needs assessment is that it is a subjective assessment, however consultation with environmental stakeholders seeks to ensure the assessment's validity.

Green Infrastructure Network Needs

Visual assessment of the existing green infrastructure network (Map 9) highlights two areas of strategic deficiency, both of which are largely related to the need for better connectivity with the wider network. These needs are highlighted on Maps 11 and 12.

Mid Nottinghamshire Farmlands Connectivity:

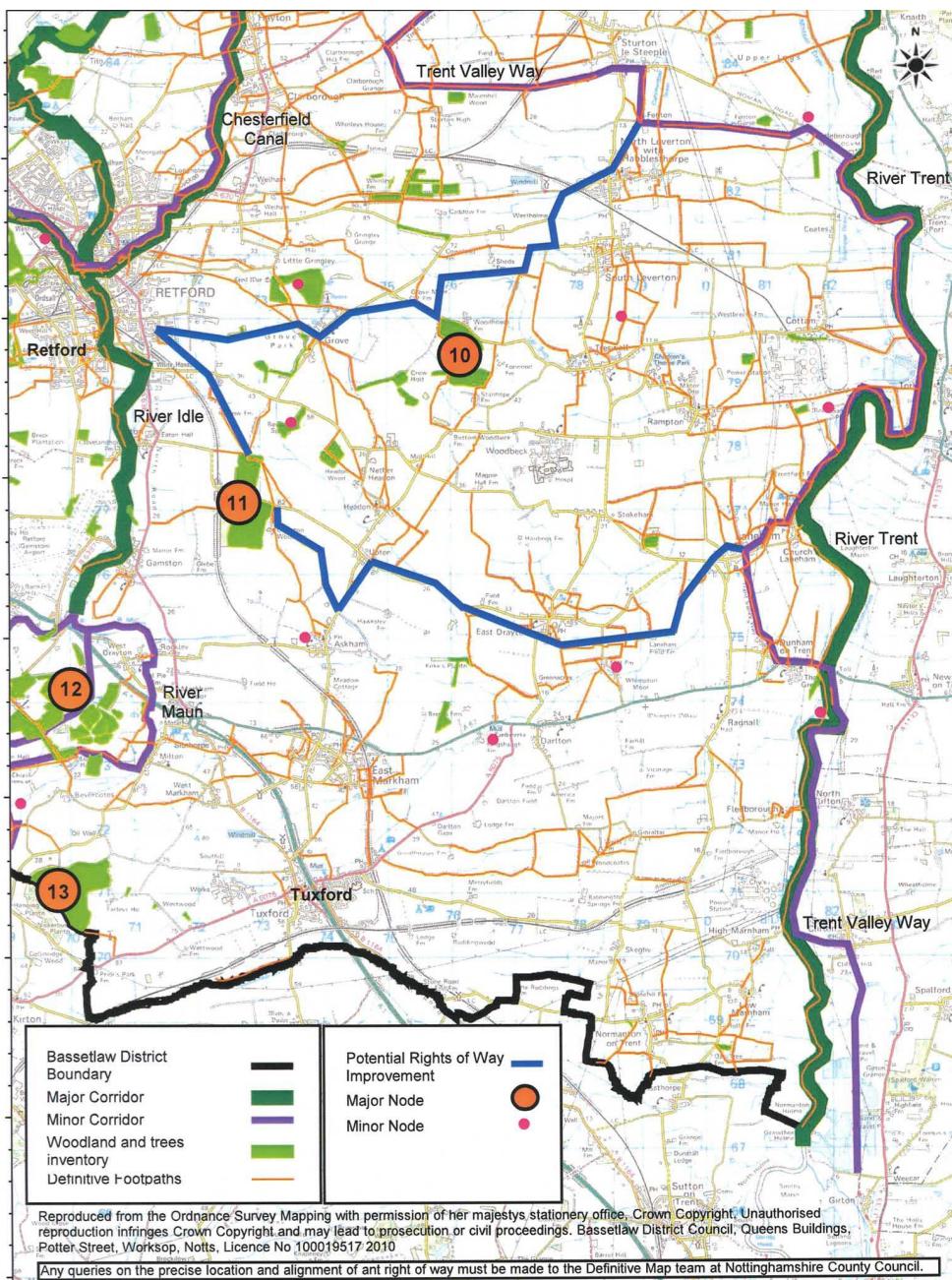
The area that lies to the east of Retford and to the west of the Trent Washlands/River Trent corridor stands out as the most prominent area of deficit within Bassetlaw's existing green infrastructure network.

Despite being identified in the LCA as an area of significant sensitivity requiring conservation of landscape features, existing green infrastructure nodes are somewhat sparse and fragmented, while there is a lack of corridors of strategic value. Indeed there are a number of potential green infrastructure assets in the area, however, they ultimately lack the multi-functionality of many other parts of the District. The source of the stark contrast between the LCA conclusions and the green infrastructure scoring may be largely due to the distinct lack of tree coverage in this area (as the National Inventory of Woodland and Trees data shows). While woodland and trees do make a significant contribution to the overall multi-functionality of an area, it is the intermittent tree coverage of the landscape that gives moderate-to-good visibility, thus having a high level of sensitivity.

Closer inspection of the Mid Nottinghamshire Farmlands reveals that along with the network of existing sites of biodiversity and historical interest, there is actually a

strong equestrian interest and an extensive network of public rights of way. As such, connectivity needs may be addressed by way of upgrading footpaths to bridleways; upgrading old farm tracks to footpaths; promotion of new recreational routes between existing nodes and settlements; and encouraging hedgerow management in order to enhance wildlife migration routes and overall biodiversity levels.

Map 11 – Bassetlaw Green Infrastructure Needs: Mid Nottinghamshire Farmlands



Produced by Bassetlaw District Council

Key opportunities for connectivity in the Mid Nottinghamshire Farmlands include:

- Trent Valley Way to Retford (North) (via North Leverton, Treswell Wood and Grove or Gamston and Eaton Woods)

- Trent Valley Way to Retford (South) (via Laneham, East Drayton, Upton and Eaton and Gamston Woods)
- Cuckoo Way to Trent Valley Way (via Clarborough)
- Treswell Wood to Eaton and Gamston Woods Circular

Although this is an area that is relatively isolated from likely focal points of strategic growth it should still be regarded as being a high priority to stimulate node enhancement and to address the relative deficit of features of biodiversity value. Subject to support from landowners, relevant stakeholders and access to funding this could be deliverable within a 5-10 year period.

Idle Valley (North of Retford):

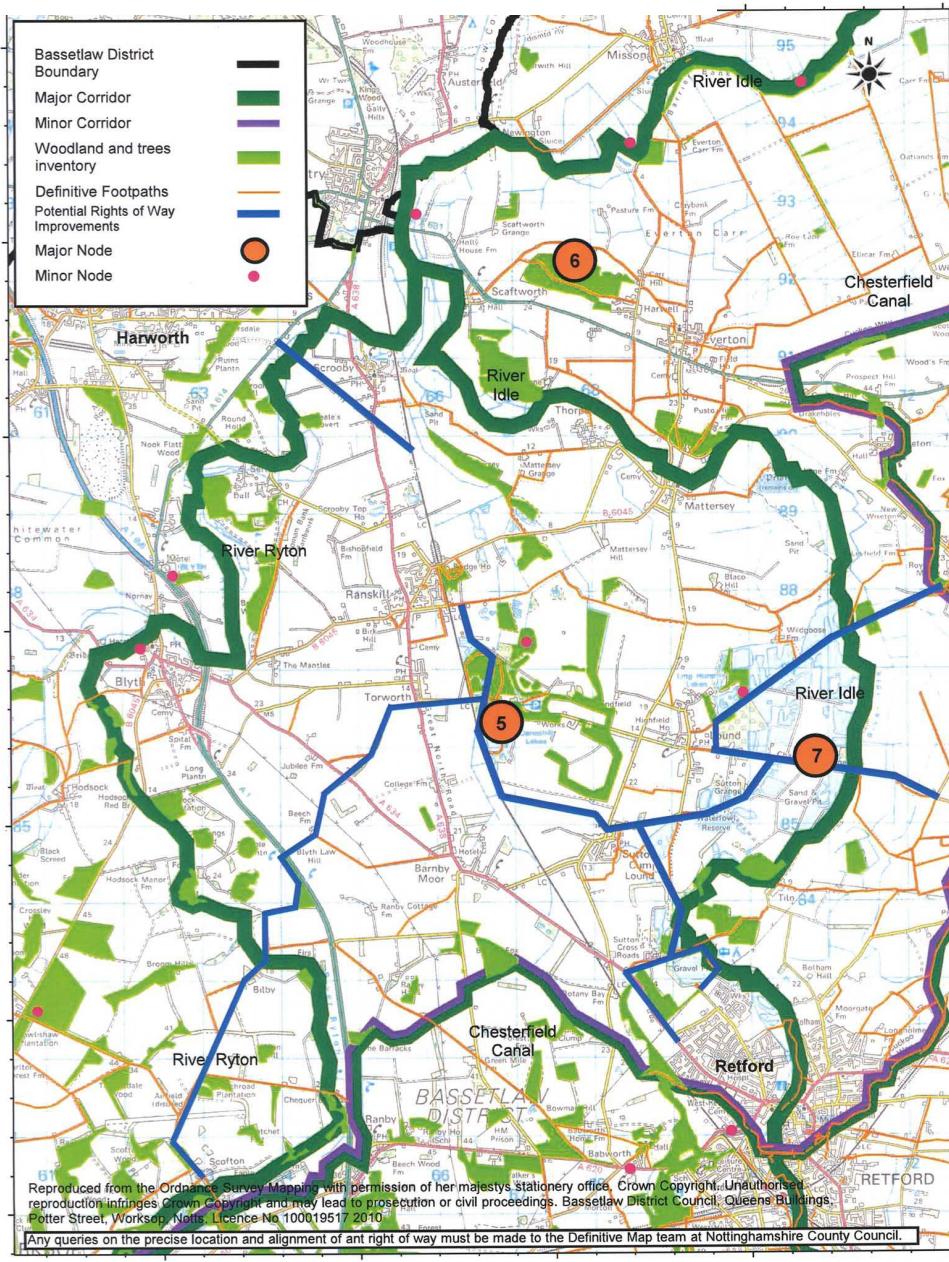
The central Idle Valley to the north of Retford is bound by the river channels of the Idle itself to the east and the Ryton to the west. This is an area of strong green infrastructure node-value, primarily due to it including the extensive Sutton and Lound Gravel Pits SSSI, which after half a century of aggregates extraction has developed into a unique wetland landscape and is now identified as a landscape requiring conservation and reinforcement.

Although there are strong road and rail linkages across this area in the form of the A638 Great North Road and the East Coast Mainline railway, the agricultural land in the valley creates a notable gap in habitat linkages and hedgerows, tree-belts and public rights of way becoming relatively fragmented, therefore failing to maximise the area's potential to connect people and wildlife. Given that potential green infrastructure features do already exist across the central Idle Valley there are distinct opportunities to create linkages between nodes and existing corridors (east to west) and more sustainable connections between the settlements of Retford and Harworth, via green infrastructure nodes and villages that lie between them and potentially utilising the disused railway line south of Scrooby.

Key opportunities for connectivity across the central Idle Valley include:

- Chesterfield Canal at Hayton, across Sutton and Lound Gravel Pits to Lound
- Sutton and Lound gravel Pits to Daneshill Lakes
- Daneshill Lakes via River Ryton to Chesterfield Canal at Scofton
- Appropriate management of hedgerows and tree-belts along these routes can facilitate wildlife movements

Map 12 – Bassetlaw Green Infrastructure Needs: Idle Valley



Green Infrastructure Network Opportunities

Further strategic green infrastructure opportunities have become apparent through the analysis of the existing network, particularly where it may be delivered in conjunction with new development. Strategic locations in Bassetlaw, set out in the Regional Spatial Strategy, include Worksop and areas to the north of the town (Carlton-in-Lindrick, Langold and Harworth) and Retford. As such, the opportunities identified below have been classified under the headings of urban fringe; creation and enhancement; and accessibility.

Urban Fringe Opportunities

A number of notable opportunities are evident in and on the edge of Worksop, including potential linkages from the town to Clumber Park and between minor and major green infrastructure nodes to create new corridors to the north and west of the town. Indeed, enhancing linkages between the centre of Worksop and the urban fringes can be part of wider opportunities for the town which, given its proximity to Clumber, should strive to better align itself with the tourist economy.

Green infrastructure has an important role to play in retaining visual distinction between Worksop and neighbouring settlements Rhodesia, Shireoaks and Carlton-in-Lindrick through enhancing tree cover and landscape planting. Also, enhancing the biodiversity value of the former Shireoaks Colliery site (and the adjacent marina) represents an opportunity to establish it as another green infrastructure node.

Where the River Idle runs through Retford the river channel and surrounding floodplain offer notable opportunities for recreation and habitat creation, linking to the Sutton and Lound Gravel Pits SSSI to the north. Improving the accessibility of the adjacent footpaths throughout the built-up area could encourage more walking and cycling into the town, without having to cross a single road.

In Harworth, improvements and management of Droversdale Wood and the adjacent disused railway line could help establish it as a green infrastructure node and corridor to connect to the Idle and Ryton corridors. Also, spoil tips associated with the colliery should be regarded as potential recreation and biodiversity opportunities. In the same way that the former Shireoaks Colliery site (along with numerous other in the region, to an even greater extent) has been regenerated through landscaping, the landscape legacy left by Harworth Colliery should be appropriately utilised by enhancing public access and making a distinctive feature for the area.

Creation and Enhancement Opportunities

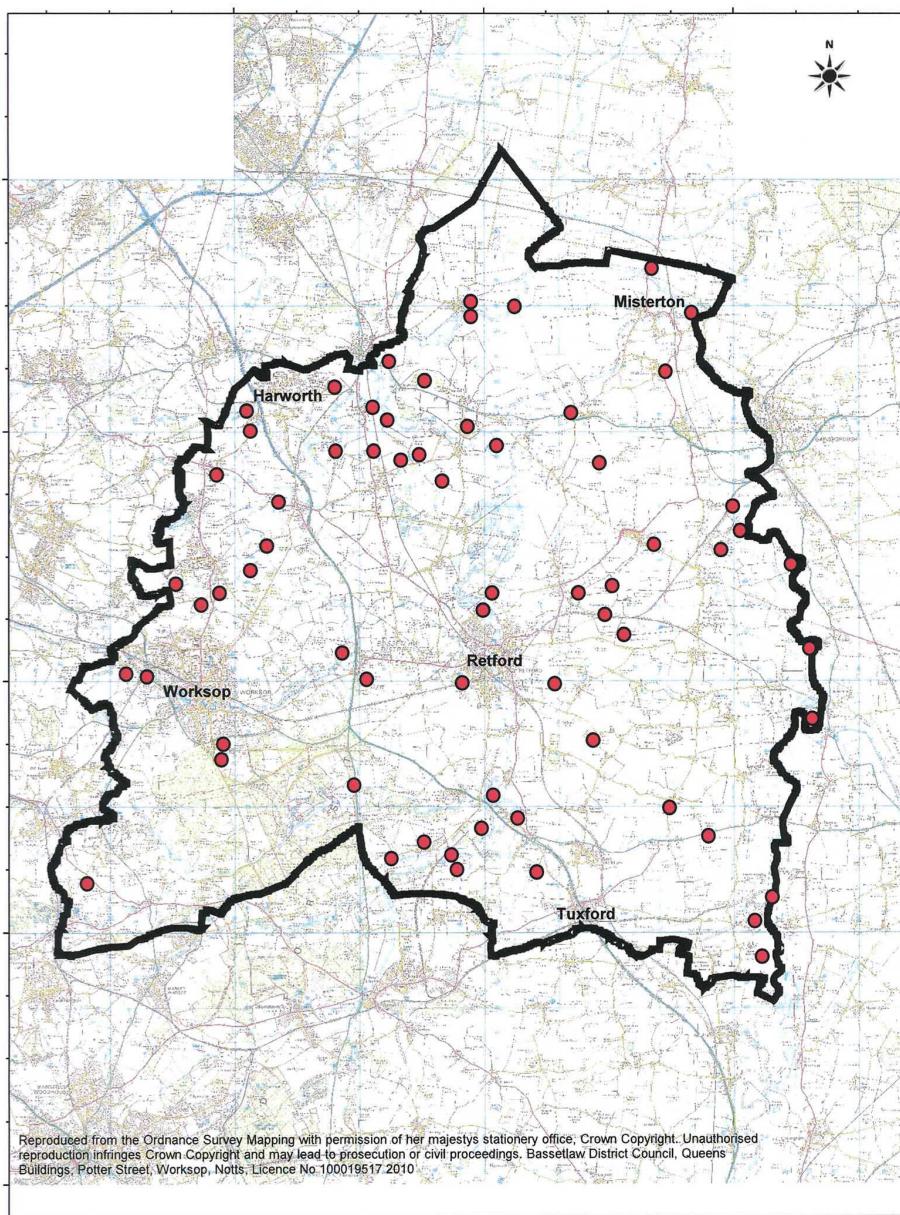
Between Worksop and Langold on the western edge of the District lie a series of major and minor green infrastructure nodes. Public rights of way should be established and/or enhanced between these nodes in order to create a new major corridor, with particular emphasis on seeking to create connections to Harworth which is currently rather isolated. New development occurring near to any of these existing nodes should create or enhance access routes to them and any development along the Chesterfield Canal corridor should improve accessibility for walking, cycling and horse riding. Particular attention should be given to the stretches of the canal within Worksop and Retford town centres.

As acknowledged previously, although many features have not scored highly enough to be included in the current district-wide network, they will nonetheless be delivering a level of green infrastructure value at the local or site level. As such, Map 13 identifies approximately 80 features that have the potential to be developed into more significant resources through investment and management. In addition to the existing Bassetlaw strategic green infrastructure network, developers should have regard for the location and potential of these sites and consider the possibility of enhancing their multifunctionality and connectivity in order that they may be brought up to a sufficient standard for inclusion in the wider network.

Analysis of this distribution indicates that there is definite potential to enhance the green infrastructure value of the area of need to the southeast of the District. Notably, however, even if other nodes in the area are enhanced Tuxford remains somewhat isolated.

With regard to the opportunities presented by existing initiatives in the area (identified in Chapter 7), it is important to have consideration of the contribution these will make to the District's green infrastructure network. Of the existing initiatives, it is likely that the works at Beckingham Marshes will have the greatest short-term impact, although any other prospective projects that take place through the Trent Vale Partnership may also be significant.

Map 13 – Potential Green Infrastructure Assets



Accessibility Improvement Opportunities

Where new development occurs and meets the established threshold requirement for open space provision opportunity should be sought to enhance existing nearby green

infrastructure nodes and improve access to them. Where appropriate, this could be considered as an alternative to on-site open space provision.

Similarly, opportunities should be taken to link up existing green infrastructure nodes for both wildlife and recreation, utilising existing rights of way and engaging landowners to establish new access routes and promote hedgerow plantation. Access along the River Trent is highlighted as one of the key objectives of the Trent Vale Landscape Partnership. This Study should support the delivery of existing initiatives already in operation in Bassetlaw, as well as seeking opportunities that may arise through the planning process.

Linkages between settlements and visitor areas should be prioritised, with an emphasis on provision of suitable visitor infrastructure in order that further attractions are brought forward to enhance the overall status of Bassetlaw as a ‘visitor destination’, drawing people beyond Clumber Park and into the town and villages.

9. A GREEN INFRASTRUCTURE VISION FOR BASSETLAW

Overview

This section sets out the vision for the future development of green infrastructure in Bassetlaw, including the overarching vision and particular elements of importance that will require specific attention to detail.

Overarching Vision

In 2026 green infrastructure will be an integral part of the development process, ensuring that people and places in Bassetlaw benefit from a strong network of multi-functional greenspaces.

Bassetlaw's environmental and cultural assets are widely regarded as being among the District's most prominent and attractive features, therefore it is of paramount importance to protect, maintain and enhance existing assets and promote development of new features. Indeed, a high quality natural environment will provide a benchmark to which residential and commercial development must aspire – attracting inward investment and stimulating economic growth and regeneration.

Green infrastructure should contribute to the management, conservation and improvement of the local landscape. Provision should not be made in isolation and opportunities should be sought to support and complement existing initiatives already in operation in Bassetlaw and neighbouring Districts and Boroughs. Where green infrastructure is provided as part of new development it should be connected to the existing network and designed to incorporate multiple functions, including visual amenity, biodiversity, sustainable drainage, natural shading, informal recreation, adventure play and organised sports.

Strong connectivity within and between the urban centres, rural villages and the wider countryside will minimise habitat fragmentation and contribute to green and attractive places where people enjoy living, working and visiting. Accessible, well-managed areas of the core habitats of woodland and river valley wetlands will encourage greater levels of biodiversity, support climate change mitigation and facilitate recreational opportunities for local residents.

Woodland

Woodland is a fundamental aspect of the green infrastructure network in Bassetlaw, providing a key recreational resource and wildlife habitat. The area to the southwest of the District is the most prominent concentration of woodland and represents the northern-most tip of the historic Sherwood Forest.

The significance of woodland in the East Midlands as a whole is noted in the RSS, where it is also identified as a regional priority, while Sherwood Forest in particular is designated as a Biodiversity Conservation Area. The RSS promotes significant increases in native woodland cover in ways that respect local landscape character, creating new areas of woodland to optimise the social, environmental and economic value of existing woodland and seeking opportunities to increase woodland cover along principal transport corridors, Strategic River Corridors and as part of landscaping schemes and open space provision in new developments.

Over the last century the extent of the historic Sherwood Forest has been significantly fragmented, particularly around Worksop and Retford, thus native

woodland plantation initiatives should be encouraged, connecting with ancient woodland, screening the impacts of new development and creating linkages between the urban realm and the rural fringe – especially between Worksop and Clumber Park. Within this area, opportunities should be identified for the restoration of heathland habitats.

Where other swathes of woodland in private ownership exists on the fringes of the two towns, positive engagement should be held with landowners to facilitate public access and to encourage provision of public rights of way across currently restricted estate land.

Wetland

The River corridors across Bassetlaw are another key feature of the District's green infrastructure network. The channels and washlands of the Rivers Trent, Idle and Ryton have all been fundamental in shaping settlements and industry, while providing valuable floodplains and wildlife habitats. Also, areas where sand and gravel extraction have occurred in the past and have now been restored to open water represent a transition from grey to green infrastructure. While a number of examples exist and are being developed at Daneshill, Sutton and Lound Gravel Pits and Sandhill Lake, similar opportunities for wetland habitat creation and restoration should be sought elsewhere in the District.

As the River Trent is identified in the RSS as a Strategic River Corridor (therefore also a Biodiversity Enhancement Area) distinct opportunities for habitat creation exist here, as is evident in the forthcoming Beckingham Marshes project. This exemplifies the potential that exists in existing pastoral land to reclaim and re-create wet grassland as a wildlife habitat and flood alleviation measure.

All watercourses in the District should be conserved and enhanced in terms of biodiversity and accessibility. Connections between wetland areas for both people and wildlife should be improved, particularly facilitating access on foot from nearby settlements and providing appropriate visitor infrastructure in order to educate visitors about the biodiversity content of individual sites.

Connectivity

Connectivity is one of the defining features of a green infrastructure network and as with any other form of infrastructure, isolated features deliver relatively little value compared to when they function as part of a coherent network. Linking isolated features is therefore a key driver in enhancing the future success of Bassetlaw's green infrastructure network.

Opportunities will be sought to enhance the accessibility of existing green infrastructure corridors, such as the Trent Valley Way, Cuckoo Way and alongside the Rivers Idle and Ryton. Similarly, linkages between existing green infrastructure nodes will be encouraged in order to facilitate creation of new corridors connecting identified nodes together. Key opportunities for this include along the Magnesian Limestone Ridge between Worksop and Harworth, across the Idle Valley (north of Retford) and to the southeast between Retford and the River Trent.

Given that Clumber Park already serves as a visitor attraction that draws people from a catchment straddling both the East Midlands and Yorkshire, it acts as a gateway to the wider area and therefore should be well connected via sustainable transport

routes and enhancing the visitor infrastructure within the towns of Worksop and Retford and green infrastructure nodes.

10. GREEN INFRASTRUCTURE STANDARDS FOR SUSTAINABLE DEVELOPMENT

Green infrastructure should be regarded in the same way as other forms of infrastructure and be an essential component of new development. Where enhancement or provision occurs, it should not be made in isolation, but rather it should be connected into the existing green infrastructure network of Bassetlaw.

Green spaces are often just regarded as the space left over after planning and not given sufficient consideration as to how it connects and contributes to the environment in which it is set. The result is often small, fragmented areas of green space that do not deliver the potential benefits the surrounding population require.

General Standards

In order to ensure green infrastructure is planned and delivered in a well integrated, coherent manner a number of general standards should be adhered to for new developments occurring across Bassetlaw:

- Existing green infrastructure assets must be protected and enhanced
- All new development should respond to the location of existing green infrastructure through its design and layout. Green infrastructure provision occurring near to existing nodes or corridors should consider how they connect to district-wide network and/or the possibility of enhancing these instead of making on-site provision.
- New green spaces should be designed to deliver a broad range of functions to ensure maximum efficiency in land given over to this use
- Developers should agree robust delivery and funding mechanisms with Bassetlaw District Council prior to commencement of development to secure the high quality creation and ongoing management of green infrastructure.

Thematic Standards

Landscape Character

New development and regeneration activity will take full account of landscape and townscape character at all stages in the planning and delivery process.

Bassetlaw comprises a variety of landscape types and therefore development should reflect this, moving away from a “generic landscaping” approach and integrating into the character of the surrounding area. Where development is located near to existing woodland and wetland habitats, opportunities should be realised for habitat creation.

Biodiversity and Geodiversity

Development and regeneration will take full account of existing features of biodiversity value and geological interest, and will seek to achieve a net gain in the overall biodiversity of Bassetlaw through the creation of appropriate habitats in appropriate locations.

A wide range of wildlife species and habitats occur in Bassetlaw, most notably, extensive areas of woodland, wetland and remnants of heathland. It is important

therefore, that new developments identify and respect existing habitats on individual sites, and seek opportunity to reverse fragmentation and improve management.

The robustness of biodiversity and geological assets should be increased by creating new semi-natural greenspaces to act as a buffer to development and other impacts. Where habitat creation opportunities arise, developers should seek guidance from Bassetlaw District Council, Nottinghamshire Wildlife Trust and the Nottinghamshire Biological and Geological Records Centre, in accordance with the Nottinghamshire Local Biodiversity Action Plan.

Trees & Woodland

Development will ensure the protection of existing areas of ancient woodland, ancient trees, and historic forest and parkland landscapes. Landscaping schemes will seek to increase woodland connectivity through the establishment of new woods and tree belts, and will contribute to a net gain in the District's woodland cover.

Bassetlaw has double the national average tree cover, making woodland a distinctive feature of the District's natural environment, particularly to the south and west which is the northern tip of the historic Sherwood Forest. Indigenous woodland should be a key feature of landscaping schemes, providing linkages between areas of existing woodland and be designed to achieve a high level of multifunctionality, deterring anti-social use.

Historic Environment

Development and regeneration will protect and interpret the historic environment, preserving identified features and areas of interest.

Trees, verges, hedgerows, amenity spaces and the wider countryside all contribute positively to the character and quality of Bassetlaw's historic environment. New development should therefore acknowledge this contribution by demonstrating sensitive consideration of the local vernacular, promoting visual connectivity between urban areas and surrounding landscapes and, where appropriate, seeking re-use of existing buildings of historical and architectural merit.

Natural Processes and Environmental Systems

Development will take account of natural processes, including flooding and other hydrological processes, and will seek sustainable means of mitigating the hydrological impacts of development. Development will also assist in the mitigation of the impacts of climate change through the incorporation of urban tree planting and the use of a variety of sustainable technologies, for example renewable energy, sustainable urban drainage systems (SUDS) and green roofs (where appropriate).

The potential impacts of climate change pose considerable challenges to future development in Bassetlaw. Integration of natural features and use of SUDS offer high potential for green infrastructure creation and enhancement, particularly in and around the channels and valleys of the Rivers Trent, Idle, Ryton, Meden, Maun and Poulter, all of which have a significant influence on the District's landscape character and development pattern. However as with all green infrastructure, it is important to establish robust mechanisms for the ongoing management of these features especially given the valuable drainage function that they serve.

Recreation and Tourism

Development will provide high quality, natural and sustainable recreational facilities which will not only serve the immediate needs of residents, but will also provide for the surrounding area. Development in key tourist areas, e.g. Clumber Park, will avoid negative impacts upon areas of sensitivity and where possible will contribute to the tourist economy and infrastructure through, for example, the provision of additional tourist accommodation, services and facilities.

High quality recreation opportunities are critical to the sustainability of new developments, as access to open space confers multiple benefits while a lack of access to open space is recognised as being potentially harmful, particularly to the development of children and young people. New development should be designed with the community to encourage community cohesion and co-located with other community infrastructure, incorporating well-designed and appropriate visitor facilities to increase the appeal of individual sites and wider areas, wherever possible.

Access and Movement

Development will provide opportunities for sustainable movement both within the development and into the wider area, for example facilitating sustainable access between residential and employment areas, and connecting town centres to the rural hinterland. The canal and river corridors through Worksop and Retford should be enhanced to improve off-road movement through the built-up areas, into the rural/urban fringe and beyond the District boundaries.

Bassetlaw has several long distance trails and a national cycle route amongst a number of other public rights of way across the urban and rural parts of the District. It is important to extend these into new residential and employment areas to facilitate sustainable travel options. Wherever possible, footpaths, bridleways and cycleways should be associated with green corridors to enhance their multifunctionality.

11. NEXT STEPS

The Planning System

At present, the key vehicle for enhancing existing and delivering new green infrastructure is the planning system.

The green infrastructure standards for sustainable development, set out above, will be used to inform Local Development Framework policies and allocations in Development Plan Documents. Using the District's existing green infrastructure network as a guide, the strategic growth of Bassetlaw can be planned to ensure green space provision achieves a high level of multifunctionality and connectivity.

Partnership Working

While being one of the key drivers for delivering green infrastructure, it is acknowledged that the planning process alone cannot ensure the long-term sustainable development of Bassetlaw's green infrastructure network. Various stages in the process will require involvement from the wider Council, relevant stakeholders, landowners and those managing on-going projects. This is particularly important, given that the key areas of need (i.e. the Mid Nottinghamshire Farmlands and the Idle Valley) are in parts of the District where no significant new development is planned. Without the funding leverage that can be secured through nearby development projects additional means of funding and implementation must be identified.

To build on the findings of this study, further steps will be necessary to set more specific objectives to be achieved through the planning and development process and to go beyond the remit of planning and set a wider strategy for green infrastructure delivery. These steps may include:

- Pushing green infrastructure further up the corporate agenda to ensure the Council is properly resourced and positioned to act as a lead organisation for 'partnership working';
- Establishing a 'Green Infrastructure Implementation Plan' and/or a Supplementary Planning Document. This should identify specific delivery partners, mechanisms and secure appropriate sources of both capital and revenue funding;
- Undertaking local-level assessments of green infrastructure needs and opportunities in and around settlements identified for accommodating significant growth during the Core Strategy plan period. These assessments should set out green infrastructure briefs for specific areas, to which prospective developers should adhere;
- Monitoring the impact of future growth on Bassetlaw's existing green infrastructure network.