Interim Planning Guidance Note 11
Green Infrastructure

Landscape

Cultural Heritage

Networks for People and Wildlife

Nature Conservation

Sustainable Development

Health and Well-being

Pride in Place

Local Parks

Tourism

Mansfield District Council

Creating a District where People can Succeed

IPG

Interim Planning Guidance Note 11: Green Infrastructure

Adopted 7 April 2009

Prepared by Mansfield District Council

Photo credits:

All photos in this document were taken in Mansfield District or are representative of Mansfield District. Many thanks to: Andrew Lowe, John and Eileen Smith, Andy Parks (In Step Health Walks), Natural England and Nottinghamshire Wildlife Trust.

Foreword and Document Summary

Foreword

This Interim Planning Guidance (IPG) Note 11 was produced by Mansfield District Council in partnership with Nottinghamshire Wildlife Trust and with support from the Greenwood Community Forest and Nottinghamshire County Council. This document has been produced following consultation of a draft version which went out for consultation between 24th September and 5th November 2008.

This IPG draws upon relevant policy, government guidance, greenspace standards, best practice, and background information to provide a practical methodology for identifying key areas for Green Infrastructure (GI) protection, enhancement, and creation within the district.

Summary

The current Mansfield District Local Plan was adopted in 1998 and was intended to guide development in the district until 2006. Legislative changes mean that the Local Plan will be replaced by a Local Development Framework (LDF) made up of a number of Local Development Document (LDDs). In accordance with Governmental agenda on sustainable development, it is considered important to have guidance in place in reference to Green Infrastructure.

The Council has taken the opportunity to bring forward a number of Interim Planning Guidance (IPG) notes to be used as material planning considerations in the interim period before new policy documents can be brought forward as part of the LDF.

The guidance contained within this document will be used as an evidence base as part of the LDF, and as a material consideration in the determining of planning decisions. It will ensure that the environmental, social and historical importance of the network of green sites within Mansfield is taken account of in the future.

This IPG will provide a strategic framework for the Mansfield District Council GI Action Plan which, is envisaged, will subsequently inform a Supplementary Planning Document (SPD) after the adoption of the relevant policies within the LDF.

Acknowledgements

There have been numerous people whose feedback, valuable insights and local expertise have greatly added to the Mansfield District Green Infrastructure IPG; without them this project would not have been possible.

The Mansfield District Green Infrastructure (GI) Steering Group played a central role in the development of the Green Infrastructure IPG. Steering group organisations included:

- Mansfield District Council-Planning Policy Section
- Nottinghamshire Wildlife Trust
- Greenwood Community Forest
- Nottinghamshire County Council- Country Parks and Conservation Service
- Mansfield District Council- Parks and Street Care Services Department
- Mansfield District Council- Regeneration Section

Additional stakeholder organisations and individuals have given time, resources and/or feedback during this project:

- Mansfield District Council Citizen's Panel
- Nottinghamshire County Council- Landscape Team
- Nottinghamshire Biological and Geological Records Centre
- Nottinghamshire County Council- Transport Department
- Nottinghamshire County Council- Public Rights of Way Team
- Nottinghamshire Biodiversity Action Group
- East Midlands Biodiversity Forum
- Mansfield District Council- Policy, Performance and Research section
- Sherwood Forest Trust

Many thanks go to all of the above.

Vision Statement

The Vision for Green Infrastructure In Mansfield District

"Protect, enhance and create a diverse, accessible and multi-functional network of green spaces that links landscape, biodiversity, and heritage assets with the social, economic and environmental needs of all people living, working and visiting Mansfield District."

In doing so, Green Infrastructure strategies and plans for Mansfield District will provide evidence and recommendations for:

- Protecting and enhancing biodiversity and important ecological habitats.
- Protecting and enhancing landscape character, cultural heritage and local distinctiveness.
- Promoting sustainable development through relevant planning guidance.
- Addressing climate change adaptation by integrating with National Indicator (NI 188) Adaptation to Climate Change action planning and other policy work.
- Providing an enhanced backdrop for attracting business and inward investment for promoting a high quality and attractive place to live, work and visit.
- Facilitating greater health and fitness opportunities through improved walking and cycling opportunities and linkages within an integrated recreational trails network.
- Connecting people to nature by facilitating greater access to outdoor classrooms and accessible natural greenspace.
- Enhancing urban development and regeneration through the integration of the existing greenspaces, new green infrastructure and sustainable design principles.

Useful Acronyms

Below is a list of useful acronyms used in this report. Please see Appendix A for a Glossary of terms.

AW	Ancient Woodland
BAG	Biodiversity Action Group
EMRA	East Midlands Regional Assembly
GI	Green Infrastructure
GIS	Geographic Information System
LBAP	Local (Nottinghamshire) Biodiversity Action Plan
HAP	Habitat Action Plan
IPG	Interim Planning Guidance
IRS	Integrated Regional Spatial Strategy
JSP	(Nottinghamshire and Nottingham) Joint Strategic Structure Plan
LDF	Local Development Framework
LNR	Local Nature Reserve
MASP	Mansfield Ashfield Strategic Partnership
MDC	Mansfield District Council
NBGRC	Nottinghamshire Biological and Geological Records Centre
NCC	Nottinghamshire County Council
NNR	National Nature Reserve
NWT	Nottinghamshire Wildlife Trust
SAP	Species Action Plan
SAC	Special Area of Conservation
SG	Steering Group
SINC	Site of Important Nature Conservation
SSSI	Site of Special Scientific Interest
UKBAP	United Kingdom (National) Biodiversity Action Plan

Interim Planning Guidance Note 11: Green Infrastructure

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Part 1:

An Introduction to Green Infrastructure

1.0 Green Infrastructure Explained

Introduction

Green Infrastructure (GI) is an emerging concept which has a broad range of applications. It is an integral part of our built and natural environment and is a central component of sustainable development.

This document offers a strategic overview of Green Infrastructure specifically in relation to planning policy. Together with its sister document, the Mansfield District Council GI Action Plan (2009), it sets out a strategic framework for informing the protection, enhancement, creation and future GI investment of a connected greenspace network within Mansfield District.

The following section offers a brief introduction to GI. For more detailed information on the document's approach to GI please see sections 5 and 6. A glossary of Green Infrastructure terms can be found in Appendix A.

1.1 What is Green Infrastructure and why is it important?

What is Green Infrastructure?

- It is a combined network of linked natural and managed green areas and other green assets within urban, urban fringe and rural settings.
- Includes important linkages for both people and wildlife. For example, trail networks for accessing greenspace as well as habitat networks for supporting wildlife.
- It is set within and contributes to social, environmental and economic benefits required for sustainable communities.
- Contributes to reducing CO_2 and adapting to climate change.

Central to our understanding of GI is its interconnected nature. It is a concept rooted in sustainable development and is set within, and contributes to, a high quality natural and built environment. A well-connected GI network is essential for enhancing the quality of life for present and future residents and visitors. GI also provides a framework that can be used to guide future growth, land development and land conservation decisions.

What makes up Green Infrastructure?

Green Infrastructure is made up of a range of individual components and resources. These vary in size, shape and use; they include a wide spectrum of greenspace types ranging from formal recreational and natural areas, to much smaller areas such as private gardens. These include but are not limited to:

- Allotments
- Amenity space
- Landscaped areas within and around developments
- Brownfield and Greenfield sites
- Farmland and pasture land
- Natural and semi-natural habitats including heathland, woodlands, meadows and reedbeds
- Areas of formal landscaping in and around buildings and civic areas(e.g. surgeries, churches, market squares) and development sites (e.g. retail, residential)
- Urban parks, gardens, and landscaping including trees and verges
- Green Roofs
- Local Nature Reserves
- Waterways, water bodies e.g. rivers and lakes
- Public rights of ways, cycle trails and other recreational routes
- Historic parks and gardens as well as private gardens
- Village greens
- Sports areas e.g. golf courses, football pitches and cricket grounds
- School playing fields
- Cemeteries
- Greenspace adjacent to historic monuments and tourist attractions
- Roadside verges
- Landscape character and historical settings
- Sustainable Urban Drainage Systems (SUDS)

1.2 Benefits of Green Infrastructure

Well-designed and integrated Green Infrastructure can deliver a range of benefits; these benefits can be economic, social and environmental in nature and they are often interwoven.

Combined, these benefits have a considerable and measurable impact upon quality of place and liveability at a local level. Planning for an integrated Green Infrastructure network is essential for:

- Protecting and enhancing what we have;
- Providing sustainable approaches to development; and
- Maintaining and supporting a district in which everyone can thrive.

Benefits of Green Infrastructure	
Economic Benefits[1] An attractive environment and investment in green spaces supports inward investment. A healthy environment is also essential for activities that support basic needs such as agriculture and renewable energy production.	• Improving and sustaining land values • Attracting people to the district to live, work and spend their leisure time • Branding an area with a green image and providing resources for tourism. • Attracting higher quality business and creating opportunities for new commercial activity, such as tourism and conservation.
Social Benefits[2] Publicly accessible green space offers a wealth of social benefits by improving our physical and mental well-being through increased opportunities for exercise and recreation, contributing to community cohesion and enhancing quality of place.	• Providing a range of outdoor recreation and healthy lifestyle pursuits though well-connected cycle and walking trails and a range of formal and informal recreational greenspace. • Facilitating neighbourhood regeneration by providing a framework for improving the quality and attractiveness of the built environment. • Providing physical spaces for community events and outdoor festivals. • Bringing people closer to nature and wildlife. • Providing areas of tranquillity and quiet contemplation.
Environmental Benefits[3] The protection and enhancement of the natural environment allows people and wildlife to be more resilient and adapt to climate change; this ensures an overall healthier environment for all. Important historical and landscape features are central to shaping local identity and instilling a sense of pride in where we live.	• Facilitating better air quality through tree planting and improving flood prevention and management through sustainable drainage systems. • Contributing to sustainable development by creating and enhancing important linkages between built-up areas and the wider biodiversity network. • Protecting and enhancing our existing natural and cultural resources for present and future generations.

[1] Natural England, January 2006.
[2] Natural England, March 2005.
[3] Town and Country Planning Association, 2004.

Whilst some benefits of Green Infrastructure are more direct, others may seem less obvious.

For example:

- Indirect economic benefits may be gained through decreased costs to the National Health Service (NHS) by improving people's mental and physical well-being through exercise and living in a place with more parks and open spaces; thus, decreasing demands on doctor's surgeries and the need for prescription drugs and reduced hospital inpatient stays.[4]
- Decreases in anti-social behaviour by bringing people in closer contact with nature through work on nature reserves, thus creating a greater sense of ownership and pride in the local environment.[5]
- Protecting areas of open greenspace such as parks, pastures and farmland, village greens and other areas of open countryside helps to preserve important views and vistas that help shape the wider landscape.
- Making the most effective use of limited land resources by strategic planning for optimal multi-functionality.

1.3 A Taste of Green Infrastructure in Mansfield District

Below are a few examples of existing Green Infrastructure and current programmes and initiatives in Mansfield District that provide GI benefits. The forthcoming GI Action Plan will expand on these and other opportunities for providing GI benefits in the District.

- The Timberland Trail links the people of Mansfield with the Maun Valley Local Nature Reserve, Titchfield Park, the town centre, Vicar Water Country Park and the National Cycle Network. In doing so, it creates opportunities for recreation, enjoyment of nature, and exploring Mansfield's historical past through healthy activity.
- As part of the *Get Active* programme facilitated through the MDC Leisure and Cultural Services Department, a community allotment was set up to facilitate active involvement in growing food locally and improving health and healthy eating.
- Mansfield District proudly boasts 9 Local Nature Reserves (LNRs) providing easy access for enjoying nature and keeping fit. They also act as outdoor classrooms and green gyms (opportunities to take part in volunteer habitat management activities).
- Mansfield District Council is a partner in the Greenwood Community Forest, which enables Nottinghamshire's communities to create, improve and enjoy woodlands and other quality accessible green spaces.

[4] CJC Consulting, October 2005.
[5] Dr William Bird, June 2007.

1.4 Principles of Green Infrastructure

The following table sets out Mansfield District Council's 8 key principles of effective Green Infrastructure planning.[6] [7]

Principle
Principle 1: Sustainability Green Infrastructure contributes to sustainable communities and should be a primary consideration in local planning and designing of new development.
Principle 2: Design in and plan for Green Infrastructure at initial stages of development. New development should integrate Green Infrastructure provision as early as possible into the scoping and application process, rather than be considered as an afterthought. GI planning should take into account existing features and sites, as well as, identify key areas for enhancement and creation.
Principle 3: Linkage is key. The desired outcome for Green Infrastructure planning and design is physical and functional connectivity. It is vital that individual green spaces and trails function as part of the wider GI network. Connections should be identified, enhanced and created on both strategic (District, and where possible, across district boundaries) and local (neighbourhood and individual site) levels.
Principle 4: GI should be designed to reflect and enhance an area's distinctive character GI should incorporate and enhance local landscape character, habitats and historical features. It should also aim to support community priorities and strategies. Design should aim to promote a sense of place for residents and visitors.
Principle 5: Multi-functionality A well-planned GI network and planned GI provision should identify and integrate combined environmental, social, and economic benefits where appropriate.
Principle 6: Green Infrastructure is grounded in environmental and land-use planning policies and principles. GI planning and design should, where possible, incorporate ecological principles, greenspace standards, and planning policy guidance.
Principle 7: Planning for Green Infrastructure involves diverse stakeholders. GI planning and design should engage partnership working including a diverse group of stakeholders including representatives from the environmental, regeneration, planning and parks/leisure sectors. The creation of new GI and enhancement of existing GI should also be implemented through co-ordinated planning, delivery and management.
Principle 8: Investment for the future. Green Infrastructure is an important public investment in which everyone can benefit. In order to meet current and future sustainability objectives, Green Infrastructure must be integrated into corporate and district policy and practice on a strategic level, including the Local Development Framework. GI should be designed with future maintenance and adaptation in mind, including, for example, reducing anti-social behaviour and adapting to climate change. In addition to capital funding, maintenance funding and support should be sought and built into agreements.

[6] Benedict and McMahon, 2001.
[7] ECOTEC, 2006.

1.5 Why Have a Green Infrastructure IPG?

The present and future scale and pace of development requires major changes to the traditional ways of planning and providing for green and open space. Just as growing communities need to improve and develop their grey infrastructure (i.e. roads, sewers, utilities), their green infrastructure needs to be upgraded and expanded in line with growth.

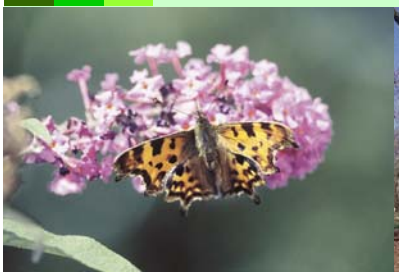
Green Infrastructure (GI) differs from conventional approaches to open space planning because it considers multiple functions and benefits of green space alongside land development, growth management and built infrastructure planning. It also incorporates environmental infrastructure including biodiversity networks and landscape character. Developing a Green Infrastructure IPG involves more than an exercise in re-labelling of green and open spaces.

In order to strive for sustainability and make best use of available resources, GI must be planned strategically and integrated into planning, regeneration and parks/leisure sectors, for example through the local development framework process, in a meaningful and sound manner. Thus, it is important to promote and manage green resources through integrated networks rather than through a piecemeal approach.

Placing GI within the context of the local planning system provides an excellent opportunity to plan for greener communities alongside other infrastructure. It also seeks to ensure that the delivery, protection, enhancement and creation of environmental resources, e.g. landscape features and habitat networks, are central to local planning decisions.

Please see sections 5 and 6 for more details on the Mansfield District Council Green Infrastructure IPG approach to green infrastructure.

2.0 The Big Picture: An Introduction to Green Infrastructure Policy





Introduction

Support for local Green Infrastructure policy and investment is driven by a combination of strategies, policies, and planning guidance at the international, national, regional, sub-regional and local levels. This section provides a summary of the key policies that underpin the need for Green Infrastructure protection, enhancement and creation in Mansfield District.

2.1 International and National Policy and Strategy

There are two main strands of international and national policy that underpin local Green Infrastructure planning:

- Sustainable development strategies
- UK planning policy statements and guidance.

These stress the importance of integrating environmental, social and economic benefits.

International and National GI Policy and Strategy Summary

- The renewed Sustainable Development Strategy: European Council (DOC 10117/06)
- UK Sustainable Development Strategy: '*Securing the Future' (*2005)
- *Sustainable Communities Plan* (2003)
- *Sustainable Communities: People, Places and Prosperity* (2005)
- UK Government Planning Policy Statements and Guidance Notes (various)
- Countryside in and Around Towns (2005)

European Commission Sustainable Development Strategy (DOC 10117/06)

From a broad perspective, the European Council's Sustainable Development Strategy (SDS) stresses that environmental, social and economic needs are interdependent components that reinforce each other and thus, they should advance together; this requires an integrated approach to policy making.

The strategy sets overall objectives, targets and actions for seven key priority challenges until 2010; the environment is central to all of these priorities.

- Climate change and clean energy
- Sustainable transport
- Sustainable production and consumption
- Public health threats
- Better management of natural resources
- Social inclusion, demography and migration
- Fighting global poverty

Similar priorities are found at the UK national level. The EC SDS's influence on local GI policy is, in practice, filtered down from the UK national level and subsequently the regional level.

National Policy

There are a number of individual national strategies and policies which, together, help guide GI work at the local level. For example, where GI strategies are used to inform the Local Development Framework process, national Planning Policy Statements (PPSs) and Planning Policy Guidance notes (PPGs) provide useful frameworks for integrating relevant policy with specific GI components.

The list of national strategies and policies underpinning GI are numerous including those centred around climate change, quality of life, mental and physical health, and economic regeneration. Below is a summary of the core sustainability-related policies/strategies that underpin the importance of integrating GI at the local level.

Sustainable Communities Plan (2003)

The Sustainable Communities Plan (2003), Deputy Prime Minister and produced by the Department of Communities and Local Government (DCLG), sets out a vision and strategy for sustainable communities across the country. The primary emphases are on providing decent homes for all and a good quality local environment for all regions. From this national plan, regional action plans were written.

The East Midlands Regional Action Plan sets out an action plan, based on national priorities, for implementing sustainable development within the region. Its main points of action are:

- Reversing deprivation and outward migration
- Addressing affordable housing demand with a balanced approach to safeguarding countryside assets
- Improving environmental quality

UK Sustainable Development Strategy: 'Securing the Future' (2005)

This national strategy sets out the purpose and principles for sustainable development for the entire UK. This is a UK government document. Central to this strategy is the obligation for the social and economic sectors to integrate environmental protection and enhancement measures with their policies and operations; at the same time, the environmental sector has an obligation to better understand and promote socio-economic benefits as they relate to the natural environment.

The UK Sustainable Development Strategy Priorities for Action

Priorities for Action	**Relationship to GI Planning at the District Level (examples of)**
Sustainable Consumption and Production: seeks to 'achieve more with less', or in other words, to use resources more efficiently.	• Integration of sustainable design schemes such as green roofs and sustainable urban drainage systems.
Climate Change and Energy: seeks to 'secure a profound change in the way we generate and use energy, and in other activities that release these gases.' At the same time, it highlights the need for climate change adaptation.	• Promoting walking and cycle networks and enhancing linkages (non-car transport) • Identifying networks for the movement of wildlife so that they can adapt to climate change • Providing policy and management recommendations for minimising the impacts of climate change such as urban heat effects and flooding
Natural Resource Protection and Environmental Enhancement: seeks to gain a better understanding of our environmental limits; to find ways in which to better enhance the environment, and to encourage a more integrated policy framework.	• Identify key areas for protection, enhancement and creation • Providing policy and management recommendations re: environmental capacity and council services • Linking funding with identified environmental/biodiversity enhancement needs • Addressing sustainable design requirements as they relate to environmental/biodiversity enhancement needs
Sustainable Communities: aims to create sustainable communities that embody the principles of sustainable development at a local level.	• Identify where existing and potential multi-functional benefits exist, therefore highlighting where GI best contributes to sustainability.

Sustainable Communities Plan, *Sustainable Communities: People, Places and Prosperity* (2005)

The *Sustainable Communities Plan: People, Places and Prosperity (2005)* builds on the Sustainable Communities Plan (2003) and sets out a five-year implementation plan to revitalise neighbourhoods, strengthen local leadership, and increase regional prosperity in order to create places in which people want to live and work. It is also a partner strategy to the UK government's 5-year strategy for housing: *Sustainable Communities Homes for All (2005)*. It is also a Department of Communities and Local Government (DCLG) document.

This plan mirrors similar aims and objectives from the above mentioned international and national sustainable development strategies, thus providing a useful reference point for addressing GI planning at a local level. It also stresses that 'creating sustainable communities involves every part of government' as well as involvement from local communities; part of the MDC Green Infrastructure IPG involves integrating survey results from a Mansfield District Council Citizen's Panel survey regarding green infrastructure in Mansfield District (Please see Section 3).

Countryside in and Around Towns (2005)

Countryside in and Around Towns (CIAT) was jointly published by the Countryside Agency (now Natural England) and Groundwork. In response to increasing development pressures within urban fringe areas (i.e. countryside in and around towns), this document provides a useful framework for translating national sustainability objectives at a local level.

Function	Explaination
A Bridge to the Country	Urban parks, country parks, public rights of way and other greenspaces are joined up to form continuous green corridors between town and country.
A Gateway to the Town	Green spaces within towns provide a means for inward investment by attracting people through tourism and high quality places to live and work.
A Health Centre	Urban fringe areas provide an important respite from the stresses of urban living. It contains spaces for informal and formal recreation including areas for quiet contemplation.
A Place for Sustainable Living	Where new development is planned, decisions should be based on a well-planned and healthy green infrastructure.
A Classroom	CIAT provides hands-on learning opportunities in a variety of outdoor classrooms.
A Recycling and Renewable Energy Centre	CIAT plays an important part in the sustainable management of waste generated in urban areas and provides opportunities for producing renewable energy.
A Cultural Legacy	CIAT provides opportunities for conserving cultural resources as well as the opportunity to connect people via foot and cycle paths to the District's cultural and historical heritage.
A Productive Landscape	CIAT provides a physical and visual buffer between built-up urban areas and the countryside. It also provides areas for local food production.
An Engine for Regeneration	CIAT can be used as a resource for regeneration, linking green spaces within urban neighbourhoods to the wider green infrastructure network.
A Nature Reserve	Urban fringe contains important wildlife habitat for the protection and enhancement of biodiversity.

Planning Policy Statements and Guidance Notes

Planning Policy Guidance notes (PPGs) and their replacements, Planning Policy Statements (PPSs), are prepared by the UK government to explain statutory provisions and provide guidance to Local Authorities and others on planning policy and the planning system. They also explain the relationship between planning policies and other policies which have an important bearing on issues of development and land use. Local authorities must take national PPSs and and guidace notes PPGs into account when preparing their local development documents.

Currently, PPS12: Local Spatial Planning (2008) is the only national policy guidance statement/guidance note that specifically addressess Green Infrastructure. In addition to PPS12, there are individual PPSs and PPGs that collectively provide the necessary framework for setting out a national planning policy dimension for GI. Relevant planning policy statements and guidance are summarised in Appendix E.

Planning Policy Statement 12: Local Spatial Planning

PPS12 defines green infrastructure as 'a network of multi-functional green space, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities'.

It also states that the local planning authority 'core strategy [within their Local Development Framework] should be supported by evidence of what physical, social and green infrastructure is needed to enable the amount of development proposed for the area, taking account of its type and distribution. This evidence should cover who will provide the infrastructure and when it will be provided. The core strategy should draw on and in parallel influence any strategies and investment plans of the local authority and other organisations.'

2.2 Regional Policy and Strategy

Regional Policy

At the regional level, Green Infrastructure policy and strategy takes on a more spatial context whilst, at the same time, continuing its sustainability-themed approach. The Integrated Regional Strategy (IRS) and its component strategies provide the main backdrop for spatial and sustainability priorities in the East Midlands. Together, these strategies strengthen the requirement for Local Authorities to integrate regional priorities such as green infrastructure into local planning policy.

The East Midlands Regional Assembly (EMRA) identifies Green Infrastructure as a priority for the East Midlands and recognises its central role in pursing sustainable development objectives.

Regional GI Policy and Strategy Summary

- Integrated Regional Strategy (2000)
- Regional Environment Strategy (2002)
- Regional Economic Strategy (2006)
- East Midlands Regional Plan (March 2009)

Integrated Regional Strategy (2000)

The IRS is the region's sustainable development framework and provides an overarching structure for all the regional strategies in the East Midlands.

The IRS is split into four themes, and thus four corresponding strategies:

- Regional Environment Strategy
- East Midlands Regional Plan (2009)
- The Regional Economic Strategy
- Regional Social Strategies

The IRS framework seeks to ensure that its component policies and strategies are not prepared in isolation but instead integrated within a much wider context. It also provides the framework for securing greater integration in the delivery of national and regional policies. The Regional Environmental Strategy and the East Midlands Regional Plan (2009) are the most directly applicable to GI planning and therefore summarised below.

Contribution of Green Infrastructure to IRS Priorities

IRS Regional Priorities	Contribution of GI
Reduction of inequalities	GI provides a resource for reducing inequalities such as poor health by linking areas of informal and formal recreation with projects aimed at exercise and healthy living. Areas with high levels of multiple deprivation are more likely to have a greater need for easily accessible greenspace.
Conserve and enhance the natural environment	Taking a GI approach to planning and delivery provides an opportunity to integrate ecological benefits (air quality, flood control, protection of biodiversity) with social and economic benefits. The GI approach sets out strategic approach to protecting and enhancing our natural resources at a local level by viewing them as connected networks of habitats and protected sites rather than isolated sites (see section 7).
Create sustainable and healthy communities	High quality and easily accessible GI is central to many aspects of our physical and mental well-being and thus adding to our quality of life (see Section 10).
Improve economic regeneration	A high quality local environment is a significant factor in attracting inward investment such as tourism and adding to property values. GI helps create a positive and inviting image and helps define local distinctiveness; this, in return can benefit economic growth.
Use natural resources more efficiently and reduce impacts of climate change	GI has a vital role in mitigating the effects of climate change at the local level by helping to reduce flood risk, improve air quality and provide corridors for the movement of wildlife (see Section 8).

Regional Environment Strategy (2002)

Protecting and enhancing the natural environment are key components of the IRS. EMRA identifies the environment as a priority area for action. The *Regional Environment Strategy* provides a framework for environmental policy development in the East Midlands by highlighting the issues that must be addressed and identifying key environmental objectives and policy requirements.

Objectives of the Regional Environment Strategy

- To protect, improve and manage the rich diversity of the natural, cultural and built environment and the archaeological assets of the region.
- To manage change by enhancing and conserving the environmental quality of the region including high standards of design and to maximise the re-use of previously used land and buildings.
- To manage the natural resources of the region including water, air quality and minerals in a prudent manner and to seek to minimise waste and to encourage re-use and recycling of waste materials.
- To involve people, through changes to lifestyles and activities in minimising adverse local, regional and global environmental impacts.

The key challenge for the region is *"to integrate considerations of the environment in all decision making as part of the move towards a sustainable region."* The inclusion of Green Infrastructure into local policy frameworks facilitates this integration.

The objectives above are further reflected in the East Midlands Regional Plan (2009) as they relate to spatial planning considerations.

East Midlands Regional Plan (March 2009)

The East Midlands Regional Plan (March 2009), also known as the East Midlands Regional Plan (2009), is the overarching spatial policy and sustainability planning framework document for the East Midlands until 2021. The East Midlands Regional Plan (2009) replaces the Nottinghamshire and Nottingham Joint Structure Plan.

The East Midlands Regional Plan identifies key spatial and infrastructure priorities and policies; in doing so, it sets out broad principles for the distribution of development and planning objectives within the East Midlands.

The East Midlands Regional Plan specifically addresses GI in **Policy 28: *Regional Priorities for Environmental and Green Infrastructure***. GI is defined as comprising 'networks of multi-functional greenspace which sit within, and contribute to, a high quality natural and built environment required to deliver sustainable communities.' The East Midlands Regional Plan recognises that GI should contribute to the wider Environmental Infrastructure by addressing, for example, local climate change, air quality amelioration, and floodplain management.

Policy 28 stresses that Local Authorities (e.g. Mansfield District Council), statutory environmental bodies (e.g. Natural England, Environment Agency) and developers should work together with voluntary bodies, land owners and local communities to ensure the 'delivery, protection and enhancement' of Environmental Infrastructure across the Region.'

East Midlands Regional Plan (2009) Policy 28: *Regional Priorities for Environmental and Green Infrastructure*

Local Authorities and those responsible for planning and delivery of growth and environmental management across the Region should work together to*…(includes excerpts from Policy 28)*

- Assess the capacity of existing Environmental Infrastructure to accommodate change in order to inform decisions on the scale, location and phasing of new development. Account should be taken of current deficits and likely future demand, including those likely to result from climate change, to identify any further needs or constraints;
- Within Local Development Frameworks, develop 'green infrastructure plans' based on character assessments of the existing natural, cultural and landscape assets and the identification of new assets required to meet the needs of existing and expanding communities;
- Increase access to green space that can be used for formal and informal recreation, educational purposes and to promote healthy lifestyles, without increasing pressures on sensitive sites, especially those designated under the European Habitats Directive;
- Identify funding and delivery mechanisms for the creation and further management of Green Infrastructure including from the planning system and other funding sources such as EU funded Environmental Stewardship schemes.

Additional East Midlands Regional Plan (March 2009) policies relevant to Green Infrastructure planning include:

- Policy 26: Protecting and Enhancing the Region's Natural and Cultural Heritage
- Policy 27: Regional Priorities for the Historic Environment
- Policy 29: Priorities for Enhancing the Region's Biodiversity
- Policy 30: Regional Priorities for Managing and Increasing Woodland Cover
- Policy 31: Priorities for the Management and Enhancement of the Region's Landscape
- Policy 33: Regional Priorities for Strategic River Corridors
- Policy 35: A Regional Approach to Managing Flood Risk

As a section of the East Midlands Regional Plan (2009), the Northern Sub-Regional Spatial Strategy (hence referred to as the Northern SRS) provides additional direction and guidance for Local Development Frameworks on issues of sub-regional importance setting out a context for sustainable regeneration. The Northern SRS includes the sub-regional areas of Ashfield (excluding Hucknall), Mansfield, Newark and Sherwood, Bolsover, Chesterfield, NE Derbyshire (excluding the Peak District) and Bassetlaw.

The Northern SRS identifies a clear need to create GI strategies in Policy Northern SRS 4; this is a clear reflection of regional priorities. This policy establishes a clear need for creating local GI strategies, thus, contributing to effective greenspace planning.

Policy Northern SRS 4:
Enhancing Green Infrastructure through Development

'Local Development Frameworks and other strategies will, when identifying the location and nature of development or infrastructure provision, ensure that consideration is given to where the greatest public benefit would be gained through the enhancement of Green Infrastructure. For this purpose, the multiple benefits identified in the East Midlands Public Benefit Analysis project, the key strategic environmental opportunities set out in the Northern Coalfields Environmental Study and other relevant work should be used. Green Infrastructure Plans will be used where possible to achieve this.

The Northern SRS also identifies: the need to develop tourism opportunities as they relate to GI; the importance of the Greenwood Community Forest's role in guiding woodland creation and healthy living opportunities; the Sherwood Forest as a distinct area requiring protection; and the requirement that development be sensitively located and design in order to protect and enhance local landscape character and distinctiveness.

2.3 Local Policy and Strategy

Historically, planning policy has, for the most part, addressed environmental, recreational, sustainable transport, historical, and landscape protection and enhancement requirements separately i.e. through discrete policies and/or through their individual components such as individual designated sites. Green Infrastructure focuses on the relationships between these components through networks of individual green spaces, foot paths and cycle ways.

As seen through the East Midlands Regional Plan (2009), local authorities are now required to incorporate GI within any new and emerging planning policies and development plans. GI policy should aim to view these components in concert with each other, hence placing them within the context of an integrated GI network.

Local Planning Policy Framework

Recent policy changes now require Local Planning Authorities (LPAs) to create Local Development Frameworks (LDFs) in order to replace existing Local Plans.

LDFs contain a number of complimentary documents, instead of one main planning document, which set out proposals and policies guiding future development; one which is intended to be more flexible and user-friendly.

In the interim period of the Mansfield District Council LDF being adopted, saved policies within the Local Plan still apply.

Together, the MDC Green Infrastructure IPG and the MDC GI Action Plan provide an important evidence base for the emerging Mansfield District Council LDF, specifically in relation to open space and environmental infrastructure related issues. The GI Action Plan will identify existing MDC Local Plan (1998) policies these alongside proposed actions and policy recommendations.

Mansfield District Council Corporate Plan

The MDC Corporate Plan sets out the Council's corporate vision and priorities over a ten year period (2005 - 2015). It provides a framework for what the District Council wants to achieve, who is responsible for these achievements and by when they will be achieved. It reports on these achievements annually.

Overall, **Mansfield District Council's Vision aims to:**

- Create a more positive image of Mansfield District to help local people, businesses and investment in the area
- Improve confidence, pride and dignity, so that everyone can enjoy a good quality of life in their neighbourhoods

To achieve this vision, the **MDC Corporate plan sets out five priorities**:

- Reduce crime and disorder
- Ensure decent homes for all
- Revitalise our district, town centres and neighbourhoods
- Develop a high quality, clean, green and pleasant environment
- Ensure effective leadership and management

Green infrastructure has a central role to play in contributing to the following corporate priorities:

Priority	Examples of GI Contributions
To revitalise our district, town centres and neighbourhoods	A green and pleasant environment plays a key role in inward investment and urban regeneration. Simply put, this is about making an area more physically attractive. The environment is an important factor in the branding of an area; it has a significant impact on tourism and liveability.[8]
To develop a high quality, clean, green and pleasant environment	Accessible and high quality local greenspaces provide a wide range of recreational services and opportunities to address health inequalities.[9] A healthy environment provides important services such as flood amelioration, greater resilience to climate change, and improved air quality.

[8] Natural England, 2006.

Priority	Examples of GI Contributions
To ensure decent homes for all	Environmental quality plays a significant role in determining where people choose to live.[10]

Mansfield Sustainable Community Strategy (2007-15)

The Community Strategy sets out a vision and objectives for the future of Mansfield. It was prepared by the Mansfield Ashfield Strategic Partnership (MASP). Its ideas will be taken forward via the LDF Core Strategy.

The Strategy's vision:

'A Mansfield District where everyone enjoys a good quality of life, with confidence, pride and dignity, and which attracts people, business and investment to our area.'

The Strategy highlights 7 key themes. Each theme consists of outcomes and their corresponding targets and actions. The 7 themes include:

1. People in our Community
2. Our Town Centre
3. Liveability
4. A Safer Mansfield District
5. Our Economic Prosperity
6. A Healthier Mansfield
7. Learning

Together, the Green Infrastructure IPG and Action Plan play an important role in supporting and implementing relevant priorities and actions within the Mansfield Sustainable Community Strategy. They specifically address the 'Liveability' themed outcomes but also address corresponding sustainability needs within the 'Economic Prosperity' and 'Town Centre' themed outcomes.

Nottinghamshire County Council and Mansfield District Council Strategies

There is a wide range of individual county and district strategies that relate directly to green infrastructure planning. These are listed in Appendix E. They provide valuable background information for developing the MDC Green Infrastructure IPG and the MDC Analysis and Implementation Plan.

[9] Allan Bird, 2007.
[10] ODPM, 2003.

3.0 Local Perspectives on Greenspace

Introduction

In February 2007, questions were put forth to the Mansfield District Council (MDC) Citizen's Panel in order to gain a better understanding of views on green and open space in Mansfield District. This survey was also used to inform the development of this document and will also inform the GI Action Plan. The Citizen Panel survey acted, in essence, as an initial public consultation exercise. Additional future consultation will be required to inform policy, use and management recommendations in the GI Action Plan (2009).

Results from the Citizen Panel questionnaire showed overwhelming support for green spaces in the District. They also highlighted additional needs such as better promotion of green and open spaces within the district, such as Local Nature Reserves.

3.1 Mansfield District Citizen's Panel

The Mansfield Citizens' Panel is comprised of approximately 1,000 District residents who broadly represent the make-up of the '18 years-of-age and plus' population of the District. It is coordinated by the Mansfield District Council Policy, Performance and Research department, who carry out regular surveys.

The results from each survey are then fed back to the Council departments which have submitted questions, so they can then inform the delivery of services in the best possible ways. The surveys provide an initial means of public consultation and/or a means to inform additional surveys and consultation processes.

3.2 Summary of GI Survey Results

Below is a brief summary of the MDC Citizen's Panel results (February 2007) regarding green and open spaces. For a more detailed summary, including graphs and charts, please see Appendix F.

- Almost all (98%) of the Citizen's Panels think that green and open spaces are important to the District.

- *'Relaxing, sitting and quiet contemplation'* and *'improving health and wellbeing'* are aspects which they feel are most important when thinking about green and open spaces.

- *'Protecting and enjoying nature and wildlife '*is something that is important to everyone in the District.

- They thought it was important to see green landscaping throughout the district, namely: *'where they live; along roads and travel networks; and where they spend their leisure time'*.

- 83% were aware of at least one Local Nature Reserves (LNR) or other specified natural area within or adjacent to the District. Most were aware of Maun Valley Park, Vicar Water and Sherwood Forest/Pines. Citizens mainly visit these, on average, about once a month. They visit Local Nature Reserves for *'wildlife, fresh air, bird watching, photography, exercise, walking, picnics, and to get away from people, town and traffic'*.

- They also thought that Mansfield District Council should promote *'Sherwood Forest and LNR's'* to people living outside of the District.

- 79% use their nearest park or green space for *'exercise, dog walking, ball games, playgrounds and relaxation'*

- 83% thought that it was important green spaces should be linked throughout the district for commuting, exercise and leisure pursuits, access to the countryside, and protecting/enjoying wildlife.

- A majority of people (95%) agreed that *'being in green and open spaces and seeing wildlife added to their general well-being and satisfaction.'*

- Members of the Citizen's panel also said that there are too few facilities for '*young people aged 11 –18 and not enough smaller local parks'*. They thought the number of *'larger public parks'* was just right and some thought there were too many *'allotments'*.

Part 2:

Identifying Green Infrastructure in Mansfield District

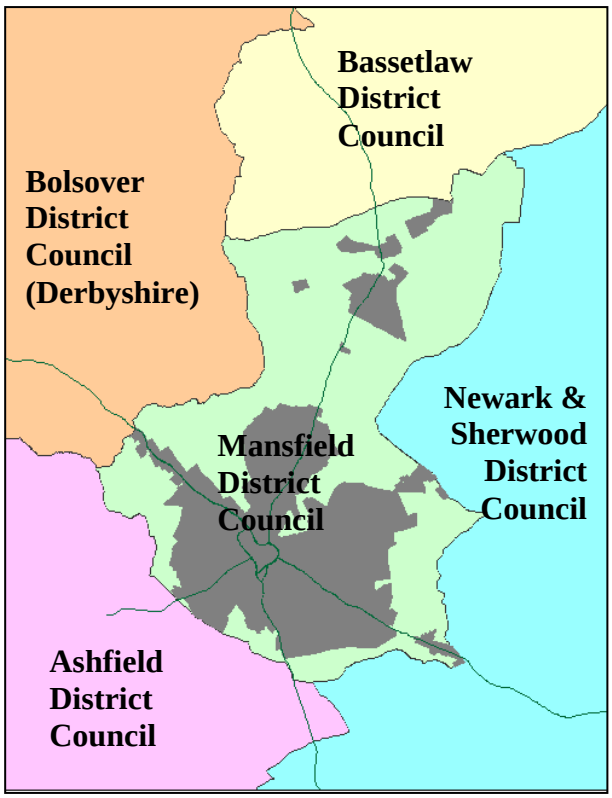
4.0 Setting the Scene: The Local Environment

Introduction

This section gives a brief and broad-brush portrait of Mansfield District in relation to geography, natural environment, historical environment, and landscape character, climate change adaptation and development and regeneration issues. Detailed maps on district GI networks, network gaps and linkages and site specific policy and management recommendations are part of the GI Action Plan (2009). Sections 7-9 also provide more detailed information on designated sites, habitats, and landscape character.

4.1 Local Geography

Situated in north-west Nottinghamshire, Mansfield District covers approximately 77 square kilometres (30 sq. miles). Elevation ranges between 120 and 180 metres above sea level.



It shares a common border with Bolsover District Council in Derbyshire and with the districts of Bassetlaw, Newark-Sherwood, and Ashfield in Nottinghamshire. Despite being one of the smallest districts, Mansfield District has the prominent urban core (Mansfield Town and Mansfield Woodhouse combined). This urban core is also shared with Ashfield District (Sutton and Kirkby-in-Ashfield). Mansfield town serves as a sub-regional centre for North Nottinghamshire as well as adjacent parts of Derbyshire. The 2007 mid-year population estimate showed that the district has a population of approximately 100,100[11].

The 2004 Indices of Multiple Deprivation for the 354 local authorities in England rank Mansfield 33rd most deprived overall with almost 20% of residents living in the top 10% most deprived areas in the Country[12]. The district suffers from a high level of acute social problems that present wide-ranging challenges; many of these exist as a result of the rapid decline in the textile and coal mining industries in the 1980s.

Despite Mansfield's urban character, the District boasts a rich natural, cultural and recreational resource. It is a unique melding of market towns, urban greenspace, rare limestone grasslands, ancient Sherwood Forest habitats, open countryside, river corridors, and mining heritage.

[11] ONS mid year 2008 figures
[12] OPPM 2004

4.2 Landscape Character

Landscape is an integral part of the historic and natural environment. It is generally categorised, in planning terms, by its *character* and its special designation status. Mansfield District doesn't contain any nationally designated landscapes, nor does it include any designated Greenbelt areas, although it does currently include locally designated landscapes such as Mature Landscape Areas. Please see ***Section 9*** for further information on policy, status of local landscape designations and more details of what makes up landscape character.

Landscape character is the recognisable pattern of elements that occurs in a particular landscape including, for example, historic (e.g. field boundaries) and natural features (e.g. woodland), geology, viewpoints, and vistas. The 'Nottinghamshire Landscape Guidelines' (Nottinghamshire County Council 1997) defines landscape character in the county through the use of *Regional Character Areas (RCA) and Landscape Types.* The District falls within two distinctive *Regional Character Areas*: Sherwood & Magnesian Limestone Ridge RCAs.

Please see ***Section 9*** for a detailed explanation of landscape character, Regional Character Areas and relevant policy. Additionally, the *Nottinghamshire Landscape Guidelines* is currently being further revised to include *Landscape Policy Zones* which should help guide future GI protection, creation and enhancement work.

The enhancement of GI through greenspace and habitat creation, as well as through the design of new development, should always endeavour to strengthen local landscape diversity and distinctiveness e.g. paying close attention to existing landscape features (both natural and historical) and maintaining important vistas.

4.3 The Historic Environment

The District's urban and rural settings reflect an important fusion of old and new. The surrounding landscapes and townscapes are testaments to this fusion. For example, the underlying geology is sometimes reflected in building materials and settlement patterns. Today, the many reminders of the past are intermixed with the district's green and open spaces; these historical features provide further opportunities to focus tourism, educational and recreational based activities set within the wider Green Infrastructure network.

These historical reminders include elements from both the countryside and the built environments. They include, for example, listed buildings, conservation areas, and designated sites, as well as, historic field boundaries, local landmarks, archaeological remains and historic parks and gardens.

One of the goals of Green Infrastructure planning is to work in concert with these features and patterns, in order to preserve and restore local heritage and enhance visual attractiveness and access to sites (where appropriate). GI networks linking

town and country or different parts of a settlement should also have regard to landscape character as well as urban character.

Mansfield is an ancient town believed to have existed since the Celtic era. The remains of a Roman villa found north of Mansfield Woodhouse show evidence of Roman settlement around 450-475 AD. Until the 18th century, Mansfield town itself was an isolated rural town; this is reflected in today's landscape i.e. Mansfield urban areas are surrounded by large areas of open countryside.

Located within the historic royal Sherwood Forest hunting grounds, Mansfield town was known as the 'King's Great Manor in the Forest of Sherwood.' Today, the District still contains important reminders of how vast the royal woods were; these include fragmented wooded areas mixed with heathland, open woodland pasture and acid grassland. Parliament Oak, a historic tree located near the town of Market Warsop, still marks the place where King John held his parliament when he was hunting in Sherwood Forest. Large sections of the District fall within the Sherwood Forest Special Landscape and Heritage Areas.

Historically, the district remained mostly wooded until the mid 1700s; at this time the Industrial Revolution began and urban areas such as Mansfield town and Mansfield Woodhouse expanded.

As in the past, Mansfield Town still serves as an active market town and remains an important hub for out-lying areas. In addition to market trade, the district has been an important industrial centre for industries such as coal, textiles, stone and sand quarrying and brewing. Mansfield's railway viaduct remains an important reminder of the area's industrial heritage. Also see ***Section 7*** for more information on the historic environment.

4.4 The Water Environment

The rivers Maun and Meden bisect the District from west to east and provide important green corridors for people and wildlife. The river corridors play strategic roles in linking green spaces together and providing opportunities for urban regeneration and wildlife enhancement.

There is an increasing need to protect, enhance and create new GI in order to mitigate against the effects of flooding and improve water storage capabilities. Examples include the creation of sustainable drainage systems (SUDS) and the protection and enhancement of naturally occurring wetlands which also enhance biodiversity and landscape character. Below are brief descriptions of the District's 2 major river corridors.

River Maun: The River Maun flows from Kings Mill Reservoir in Ashfield District and then makes its way through Hermitage, Oakham and Quarry Lane Local Nature Reserves. In two sections near the town centre the river is culverted underground: 1) near Nottingham Road reappearing in the Town Centre at Titchfield Park; and 2)

northeast of Tichfield Park at Bath Lane and resurfacing at Carr Bank Park. From here it flows northeast toward Maun Valley Local Nature Reserve and then through the countryside towards Edwinstowe. The Maun supports rare species such as the white-clawed crayfish and water voles. It is popular with both anglers and walkers.

River Meden: In contrast, the River Meden is less developed and thus, has a more rural, untamed character. It supports rare habitats such as wet grasslands and wet woodlands, ancient lime woodlands and historic water meadows. The Meden flows through the Pleasley Vale area along the Meden trail towards Sookholme and up through Market Warsop, Meden Vale and then on towards Budby Forest within the Sherwood Forest region.

4.5 Biodiversity

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Biodiversity encompasses the whole variety of life on earth. It is not restricted to rare or threatened species but includes the whole of the natural world from the commonplace to the critically endangered.

Protecting and enhancing biodiversity are essential components of sustainable development. Biodiversity provides us with many goods and services e.g. flood prevention, detoxification of pollutants, pollination of crops, opportunities for education and recreation, and increasing mental and physical well-being, to name a few.

Mansfield District has a rich natural heritage comprising of a wide range of important wildlife habitats, some of which are internationally rare including magnesian limestone grassland and lowland heathland. Heathland supports rare lizards and birds such as Nightjar. Magnesian limestone grassland harbours a rich diversity of wildflowers and rare butterflies. The District also supports areas of ancient woodland and internationally important Sherwood oak-birch woodland. Please see ***Section 7*** for more on designated sites and ***Section 8*** for more on habitats.

Sadly, many of the natural and semi-natural habitats within the District have become fragmented; habitat loss is the number one cause of declines in biodiversity. Statutory sites such as Sites of Special Scientific Interest (SSSI) make up a relatively small fraction of protected wildlife sites in the District.

Therefore, in addition to designated sites, it is important that GI plans identify priority areas for protection and enhancement as well as creation whilst creatively balancing development pressures. Overall, the adoption of green infrastructure principles within local planning policy will support a healthier and more resilient environment by, for example:

- Seeking to protect and enhance the most valuable sites
- Improving linkages between sites
- Promoting the incorporation of wildlife-friendly landscaping into development schemes including incidental greenspace

4.6 Access, Recreation and Tourism

Recreational greenspace as well as trail networks form integral parts of the Green Infrastructure network. Together, they create opportunities for improving health and add to the overall quality of life for people living in and visiting the District.

The Council and its partners have established and continue to develop a number of walking and cycling routes linking both town centres and local greenspaces. There are also a number of long-distance routes within the district including: the Timberland Trail, Mansfield Way, Teversal Trail, and Maun Valley and Meden Valley Nature trails. The National Cycle Route number 6 is connected to the District by the Timberland Trail near Vicar Water Country Park. More work is needed to actively promote these trail networks in order to make best use of our resources.

A well-connected public rights of way network is essential for providing access from urban areas to the countryside for both local and visiting populations. These should also be well connected to green spaces, neighbourhoods, local points of interest, leisure centres, and visitor attractions, and public transportation. This allows ease of movement, greater recreational choice and increased tourism opportunities.

The District contains a number of sites which are accessible for informal and formal recreation, including: formal public parks such as Car Bank and Titchfield, Local Nature Reserves, accessible woodlands, village greens, churchyards, outdoor sports pitches, golf courses, restored collieries, and smaller pockets of incidental openspace within housing areas.

Variety is the spice of life. It is essential that different types and sizes of greenspace are well distributed in the District in order to meet the variety of recreation and 'quality of life' needs within a community. This variety of greenspace is also important for supporting a healthy environment i.e. clean air and water, reduced flood risk, and a diversity of wildlife.

Identifying and improving linkages and access are primary goals of Green Infrastructure planning. ***Please see Section 10 for more on recreational access.***

4.7 Greenspaces from Town to Countryside

Below is a brief portrait of Mansfield District's greenspaces moving from town to countryside.

Urban Greenspace: Approximately one-third of the District is classified as urban. The majority of its built-up areas are located in the south of the District (Mansfield Town and Mansfield Woodhouse) and the far north (Meden Vale, Market Warsop and Church Warsop). Greenspaces within the urban area are generally smaller than those in the open countryside. This is due to constraints on space and intensity of built-up areas such as housing developments and employment zones.

The importance of urban greenspaces for wildlife is often overlooked, because they are typically small and/or man-made. Even though this is generally the case,

together these urban greenspaces make up an integral resource for wildlife and people alike. Landscaping around buildings, public areas, private gardens, pocket parks and churchyards all add value to the Green Infrastructure network. These greenspaces are further enhanced if they are landscaped with native plants and nest boxes for birds and bats.

Urban Fringe Greenspaces: Urban fringe typically exists as a transitional zone between urban areas and the wider countryside. Greenspaces within this area are generally located on the edge of more intensely built-up areas. Sometimes they may be situated between the 'fingers' of urban settlement areas, thus acting as important 'green lungs' and open breaks.

Greenspace within the District's urban fringe often include Local Nature Reserves, restored post-industrial land, and arable land. They are typically less intensely managed than urban greenspaces which has its benefits as well as its setbacks. Benefits include a more natural character and higher biodiversity value than smaller, formal urban parks. They also play an important role in linking urban areas to the wider countryside, both visually and for general recreational access e.g. green corridors.

Urban fringe greenspace often suffers from development pressures, vandalism and neglect. It is important that a balance is struck between providing for natural and semi-natural wildlife areas and well-maintained greenspace for safe recreational access.

Countryside Greenspaces: Moving away from urban fringe areas, the District opens out towards the countryside. Footpaths crisscross farmland, pastures, and large areas of natural Sherwood forest and planted Forestry woodland. Like in the urban fringe, the river corridors of the Maun and Meden continue to provide green corridors for the movement of people and wildlife.

4.8 Growth and Regeneration

The East Midlands Regional Plan (2009) housing requirement for Mansfield District is 12,200 houses (equivalent to 488 dwellings per year) for the period of 2001-2026. This is a significant increase from the figures given by the Nottingham and Nottinghamshire Joint Structure Plan figures of 3,000 dwellings for the 2001-2021 period (equivalent to150 dwellings per year).

As of the 1st April 2008, Mansfield District Council will need to find an additional 6,318 dwellings by 2026. This equates to approximately 211 ha of land based on an average density of 30 dwelling per hectare (ha). With these figures in mind, pressures will be placed on the District's green and open spaces for housing and business development.

Key decisions will need to be made in relation to the location of urban growth and the need for any urban extensions as part of the creation of the Local Development Framework , to replace the existing Local Plan.

It is essential to balance greenspace needs with development pressures as best as possible. GI is an important tool for assessing environmental capacity and constraints. In addition, if designed properly, new development can act as a key resource for funding the enhancement of existing GI and the creation of new GI. Opportunities where this is possible can be an important conduit for local regeneration, thus an opportunity to raise design standards as well as making the district a thriving and pleasant place to live, work and visit.

Funding of GI creation and enhancement projects in the District will need to be funded from a variety of sources predominantly through new development providing land and funding via Section 106 agreements. This will be addressed further within the GI Action Plan.

4.9 Climate Change

In the UK, changes in climate are generally expected to result in:

- Annual warming with an increase in the number of very hot days and a decrease in the number of very cold days, especially in and around urban centres (known as the urban heat effect).
- Generally wetter winters and an increase in precipitation intensity
- A decrease in soil moisture in the summer
- Sea level rising

(For more information on climate change projections, please see: UK Climate Impacts Programme, www.ukcip.org.uk/scenarios)

Responding and adapting to climate change requires well-informed planning policy and recommendations for greenspace creation and management. Identifying key

protection, enhancement and creation areas through GI mapping is essential for facilitating the implementation of local climate change adaptation policies.

Specific examples of climate change adaptation measures include:

- Providing habitat networks for wildlife so that they have a greater ability to move in response to climate change effects.
- Integrating sustainable drainage systems and sensitive flood design systems in flood risk areas.
- Integrating green spaces and landscaping within the built environment in order to create additional shade as a result of warmer summers. A 10% increase in the amount of greenspace within built-up areas will likely reduce urban surface temperatures by 4 ˚C.[13]

[13] Greenplaces, pg. 5, June 2007

5.0 Mansfield District GI Approach

Introduction

The East Midlands Regional Plan (2009) highlights the requirement on Local Authorities to develop Green Infrastructure (GI) plans in response to increased growth pressures, as well as the need to ensure the delivery, protection and enhancement of environmental infrastructure.

©Nottinghamshire Wildlife Trust

In September 2006, Mansfield District Council (MDC), in partnership with the Nottinghamshire Wildlife Trust, Greenwood Community Forest and Nottinghamshire County Council, began laying the foundation for a Green Infrastructure strategy for the District. The development Green Infrastructure IPG has been guided by a steering group and consultation with additional stakeholders from both statutory and voluntary sectors (please see section 5.2).

This document takes a pro-active and integrated approach to greenspace planning. It places the environment at the centre, whilst considering multiple functions and benefits of greenspace, including social and economic benefits. This is the first Interim Planning Guidance Note to take such an integrative and comprehensive approach to the District's green and open spaces.

The IPG also provides a framework for a GI Action Plan. The GI Action Plan (2009) provides specific planning policy, management and investment recommendations as well as site specific and GI Network maps. Central to this action plan is identifying areas where protection is vital, where enhancement, creation and investment is required and where development can enhance GI and vice versa.

5.1 MDC Green Infrastructure: Aims and Objectives

The following aims and objectives underpin the direction of the MDC Green Infrastructure IPG and the GI Action Plan.

Aim A

Develop a strategic framework for protecting and enhancing a multifunctional GI network in Mansfield District in order to inform the Local Development Framework and provide an evidence base for future planning and open space related decisions.

Key objectives include:

1. Identify relevant policies, strategies and initiatives from international, national, regional, local (County and District) levels that support the aims of the MDC Green Infrastructure IPG. **(Please see Section 2.)**

2. Develop a methodology framework for strategically analysing GI assets in relation to landscape character, sites/areas sensitive to development, recreational access, natural greenspace standards, multi-functionality, and habitat networks.
   (Please see sections 6-11.)
3. Identify and map existing GI assets in Mansfield District that reflect the area's local distinctiveness in respect to Landscape Character, Natural and Cultural Environment, and Recreational Access. **(Please see Section 12 and the GI Action Plan.)**

4. Identify and map the GI network in respect to multiple scales and across District boundaries, where possible. **(Please see Section 5.3)**

5. Identify and map GI in respect to its multiple environmental, social and economic functions based on national, regional and local sustainability objectives and guidance. **(Please see section 11 and the GI Action Plan.)**

Aim B

Develop supporting text and draft policy wording to inform the LDF and Supplementary Planning Documents (SPD).

Key objectives include:

1. Identify areas in Mansfield District that:
    a. Should be protected from built development;
    b. Require creation and/or enhancement in order to improve GI quality and functionality;
    c. Have the potential to establish and improve important GI Networks such as habitat and recreational access networks;
    d. Could accompany/enhance built development; and
    e. Have low GI significance and could provide for development and GI improvement.

    (Please see* the GI Action Plan*)

2. Integrate key regeneration and growth areas initiatives, where appropriate. **(*Please see* the GI Action Plan)**

Aim C

Create a long-term vision for GI within Mansfield District

Key objectives include:

1. Identify key planning priorities (recommendations) for protecting and enhancing the GI network **(Please see the GI Action Plan)**.

2. Identify initial ways in which to monitor GI provision in relation to international, national, regional and local policy and targets **(*Please see* the GI Action Plan)**.

3. Identify additional strategies, current and potential, which could be further actively linked with the Green Infrastructure IPG **(see Section 2.4 and the GI Action Plan)**.

4. Establish a resource list and data bank for future mapping requirements **(for more information contact the Planning Policy Department)**.

5. Engage MDC departments as well as other statutory and non-statutory organisations, and local communities in the process and early outcomes of the Green Infrastructure IPG **(see Section 5.2 and the GI Action Plan)**.

6. Identify possible projects for supporting the implementation of the Green Infrastructure IPG **(*Please see* the GI Action Plan)**.

5.2 Working in Partnership

Due to the varied nature and wide-ranging application of Green Infrastructure, GI strategies require a partnership approach in order for them to be well-informed, practical and relevant. Partnership working has been important at all stages of development (see Appendix B).

It has also been important to seek guidance and feedback from a range of disciplines including planning policy, nature conservation, regeneration, recreation and community development. The Mansfield District Council Citizen's Panel was also consulted on GI related issues (see Section 3 and Appendix F).

The establishment of the Mansfield District GI Steering group was an important part of joint partnership working.

Steering Group Representation

- Mansfield District Council
- Nottinghamshire Wildlife Trust
- Greenwood Community Forest
- Nottinghamshire County Council

Steering Group Main Functions

- Pool local knowledge and expertise
- Act as a forum and sounding board for the overall development of the Green Infrastructure IPG and its component parts
- Provide on-going strategic consultation.

Individuals from outside the MDC GI Steering Group were also consulted. This was important for procuring data, seeking additional advice and expertise, and linking in with other relevant projects.

Stakeholders were consulted from both statutory and voluntary organisations; these have included, for example, members from the Nottinghamshire County Council (NCC) Conservation and Country Parks team, NCC Landscape team, the Nottinghamshire Biological and Geological Records Centre, the Nottinghamshire Biodiversity Action Group, and Natural England as well as other individuals from outside and within Mansfield District Council. Please see *Acknowledgements* for a complete list of stakeholders consulted.

Consultation with relevant stakeholders and the public will continue to play an important part of writing the GI Action Plan and creating relevant maps.

5.3 Spatial Structure: GI Action Plan

GI Study Area

Green Infrastructure does not stop at the district boundary; therefore, the GI study area covers the entire Mansfield District area plus a 1 km buffer beyond the district boundary. The inclusion of a buffer area takes into account the continuous nature of GI as well as the need to define a manageable study area.

It is intended that this IPG provides a framework and methodology for the forthcoming GI Action Plan. Maps of the overall GI resource, network maps as well and mapping results and recommendations are available in the Action Plan. In order to provide a well-informed GI Action Plan, consultation with a variety of partners, including bordering district councils, is required.

Scale

Underpinning GI is the premise that strategic outcomes (i.e. recommendations and actions) are best realised at a broader landscape scale i.e. district-wide as opposed to the site-specific scale e.g. individual neighbourhoods or wards. This is because GI is not about isolated green spaces, but rather about the inter-connectiveness of individual greenspace.

Simply put, this includes looking at patterns (mosaics and networks) formed from individual parcels of land within a broad (although defined) geographic area.

By viewing GI on a landscape scale, this allows us to identify:

- Relational patterns between existing green spaces;
- Key functional networks;
- Strategic gaps within these networks; and
- Ways to best to fill these gaps i.e. by creating new green infrastructure, in order to best protect and enhance the larger GI network.

Part 3:

Mansfield District
Green Infrastructure Network

6.0 Mansfield District Green Infrastructure Network

Introduction

Green Infrastructure (GI) offers an integrative approach to greenspace planning. It stems from the need to identify:

- What are the main GI resources, functions and benefits?
- What green infrastructure should be protected?
- What elements of GI should be enhanced through creation and linkage?
- Which areas contribute to sustainable development?
- Which areas might be developed in the future?

In order to address these questions effectively it is important to look at patterns existing in greenspace; in doing so, the individual components that make up GI must first be teased apart before they can be viewed in combination with one another. These components include, for example, landscape character, designated sites, priority habitats, recreational greenspace, and trails.

This document specifically addresses ***Aim A*** (please see Section 5.1); it identifies relevant planning and sustainability policy and defines key GI network components (please see Sections 6.1 and 6.2). In doing so, it also provides a methodology for addressing ***Aim B*** of the IPG: identifying areas for protection, enhancement, creation, sustainable design, and future investment.

Further to this document, the GI Action Plan provides detailed maps (**Aim A, parts 3, 4 & 5**) and planning, management, funding, and monitoring recommendations (**Aims B & C**). Please see Section 5.1. This is based on computer-based mapping analyses, site visits, and consultation with a variety of stakeholders.

This section of the Green Infrastructure IPG introduces the methodology to be taken forward in the GI Action Plan and thus, provides a template for analysing green infrastructure within Mansfield District.

6.1 Mansfield District GI Methodology

The Mansfield District GI Methodology was developed in consultation with the GI Steering Group (please see Section 5.2). It aims to reflect the complexity of green infrastructure within the District in relation to relevant policy, guidance and best practice (please see Section 2).

The flow-chart below helps to illustrate how individual GI network components contribute to the combined GI Network and its intended outcomes i.e. how the

individual GI components interact and contribute to final recommendations within the GI Action Plan (please see Section 6.3). GI network maps can be found in the Action Plan (2009).

Mansfield District GI Network components include:

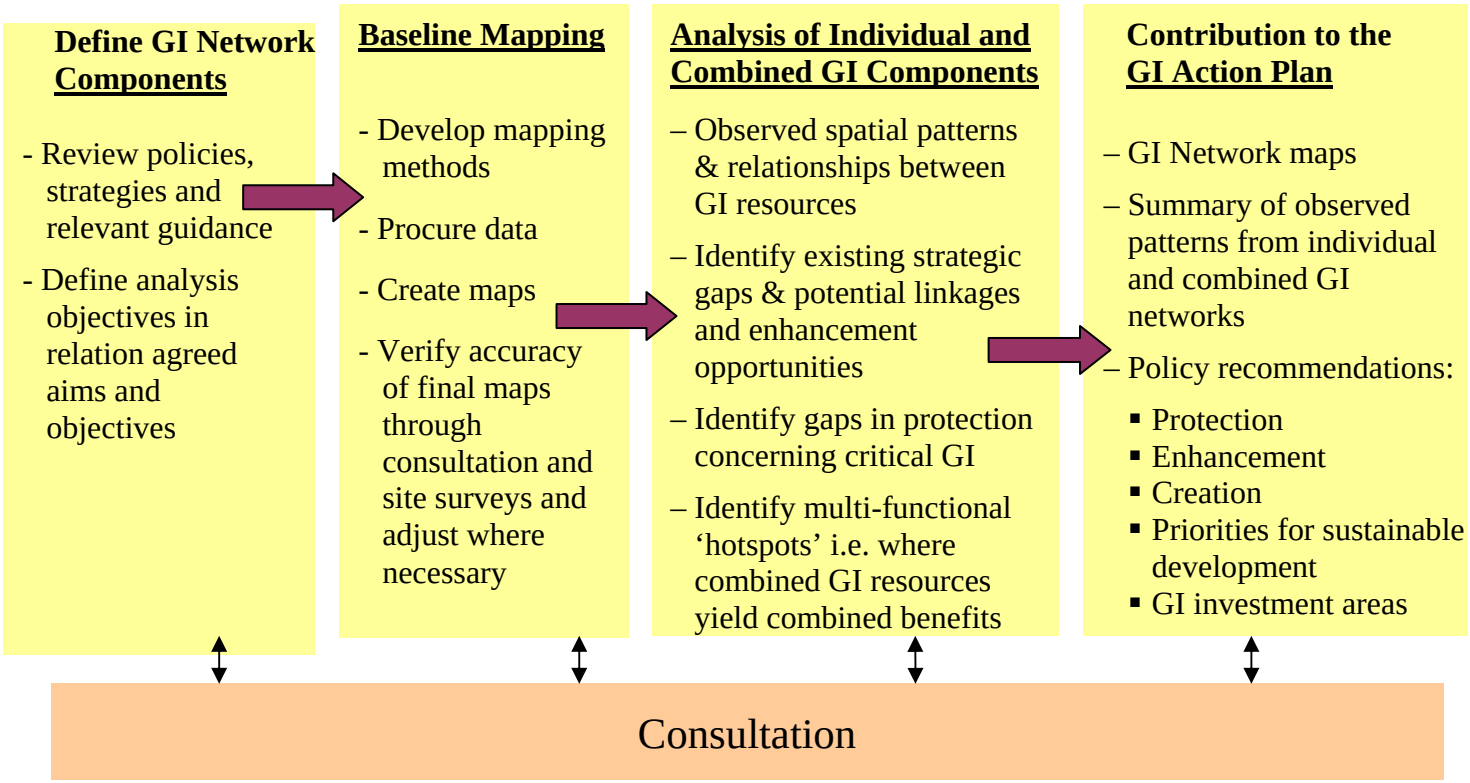
- Sites Sensitive to Development
- Habitats Network
- Landscape Character
- Recreational Access
- Multi-functionality

See page 36 for a summary of each GI Network Component.

6.2 GI Network Components

The combined Mansfield District GI Network is composed of 5 key network components as mentioned above. Each component has a special role to play in making sense of the District's combined GI resources and opportunities. Separately, they provide a means in which to identify and analyse existing patterns in the District's greenspace. Together they contribute to informing decisions regarding GI protection, enhancement, creation, sustainable design and further GI investment. Each network component is mapped and then compared with each other in the GI Action Plan in order to inform policy and management recommendations.

The following diagram demonstrates how the individual network components were developed and how they contribute to informing recommendations in the GI Action Plan.



Sites Sensitive to Development

- Relates to relevant planning policy and guidance.
- Identifies the key designated sites and national and regional priority areas that contribute to GI.
- Overall, identifies key development constraints through a joined-up network of designated sites and areas sensitive to development.

Landscape Character & Connectors

- Takes into account Nottinghamshire Landscape Guidelines and policy recommendations and tranquillity.
- Explores and identifies key areas that provide or have the potential to provide openspace links (green lungs) between urban areas, urban fringe and the wider countryside.
- Reviews the role of existing open space breaks including green wedges in the district for policy recommendation in the Local Development Framework.
- Explores the enhancement potential of existing landscape detractors (areas of previously developed land).

Combined GI Network

Recreational Access Network

- Explores how effectively the District's existing walking and cycling trails connect to long-distant routes, key greenspace destinations and points of interest, including district parks, historical landmarks and the wider countryside.
- Assesses the District's greenspaces in line with Natural England's Accessible Natural Greenspace standards (ANGSt).

Multi-functionality

- Relates to sustainability policy objectives.
- Explores how greenspace within the district offers combined environmental, social and economic benefits.
- Includes, for example: opportunities to improve health, adapting to climate change, tourism and local food production.

Habitat Network

- Relates to priority habitats identified in UK and Nottinghamshire Biodiversity Action Plans and relevant biodiversity targets, policy and guidance.
- Identifies areas that can act as important wildlife reservoirs and linear linkages, e.g. corridors.
- Acts as a tool to identify critical areas for the protection, enhancement and creation for wildlife and their habitats.

6.3 Policy and Management Recommendations: GI Action Plan

The mapping of individual GI network components and their combined analysis provide the evidence base for making informed planning policy and greenspace management recommendations. These recommendations, supporting maps and spatial considerations are found in the GI Action Plan (2009).

Central to this action plan is identifying areas that:

- Should be protected from built development;
- Require creation (e.g. new greenspace & trails) and/or enhancement (e.g. management changes) in order to improve GI quality and functionality;
- Have the potential to establish and improve important GI linkages and buffers;
- Could accompany/enhance built development through sensitive landscaping, sustainable design and/or new greenspace provision; and
- Show low GI significance and could provide for development and further GI creation and investment e.g. through additional funding.

7.0 Network of Sites Sensitive to Development

Introduction

One of the main objectives of the Green Infrastructure IPG is to identify areas that should be protected from development. The first step in identifying key protection areas includes mapping existing statutory and locally designated sites as well as national and regional priority areas; thus, providing an environmental 'constraints' background.

Historically, designated sites have quite often been viewed in isolation of each other rather than as part of an interconnected network. By viewing them in relation to one another and on a landscape-scale, we are able to plan for development and additional green infrastructure from an informed and strategic perspective.

This mapped network may also provide further perspectives on where and how these areas interact to form multi-functional hubs and corridors. For example, river corridors provide a range of services such as habitats for wildlife, repositories of archaeological remains, and opportunities for recreation.

The 'Sites Sensitive to Development' network component is based on national and regional priorities and planning policy and guidance. It contains sites of natural, cultural and landscape importance including:

- Ecological and geological designated sites
- Strategic river corridors, flood risk areas, surface run-off areas, flood storage areas
- UK and Nottinghamshire Biodiversity Action Plan priority habitats
- Woodlands of national and regional importance
- Areas of national, regional and local historical significance including, for example, areas of archaeological significance, registered historic sites and conservation areas.

It is important to point out that this network component of this IPG cannot be viewed in isolation and must be considered in tandem with the other GI network components (please see Sections 6.1 & 6.2). Maps illustrating this GI network component are made available in the GI Action Plan (2009).

7.1 Policy Background

There are a number of international, national, regional, county and district policies relating to the protection and enhancement of the historical and natural environment. These are outlined in **Appendix C**; they are also integrated into the following sections as they relate to specific aspects of this GI network component.

7.2 Designated Sites of Biological and Geological Importance

The East Midlands region covers 12% of England's total land area, although, as a region, it has the lowest percentage of surface area covered by statutory protected sites for natural and geological conservation (e.g. SSSI) in all of England: approximately 4.5%.[14] This figure mirrors a similar trend in the region's overall decline in biodiversity. Biodiversity has probably declined faster in the East Midlands that anywhere else in Britain in recent decades.[15]

Statutory protected (designated) sites include those of international and national import such as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSI); these sites represent examples of the most important reservoirs for biodiversity and hold the highest protection value.

In addition to these statutory sites, there are a number of locally designated wildlife sites (in Nottinghamshire they are known as SINCs). Many of these are of SSSI quality, although often lack appropriate recognition and protection through local development plans. Together, as a combined network, statutory sites and locally designated sites contribute to a more stable and higher quality environment for wildlife and people alike.

National and regional policies state (e.g. NERC Act 2006) that Local Authorities have an obligation to conserve biodiversity. Planning policy statement 9 (PPS9) stresses that networks of natural habitats should be protected from development and that criteria-based policies are developed in relation to locally designated wildlife sites.

[14] Natural England, 2004
[15] EMBF, Towards a Regional Biodiversity Audit for the East Midlands, 2004.

Summary of Natural and Geological Designated Sites Found in and Adjacent to Mansfield District

Level of Site Protection	Designated Sites located in within and adjacent to Mansfield District	Number within and adjacent to Mansfield District***	Designated By
Internationally Designated Sites and Proposed Sites	Special Area of Conservation (SAC)*	1 adjacent to Mansfield District (MD): Birklands and Bilhaugh SAC	UK Government/ European Commission
Nationally Designated Sites	National Nature Reserves (NNR)*	1 adjacent to MD: Sherwood Forest NNR	Natural England
	Sites of Special Scientific Interest (SSSI)*	6 SSSIs within Mansfield District; 6 adjacent to MD	
Regionally County and Locally Designated Sites	Local Nature Reserves*	9 LNRs within Mansfield District	Mansfield District Council in consultation with Natural England
	Local Wildlife Sites: Sites of Importance for Nature Conservation (SINCs)**	Approx. 80 SINCs within Mansfield District; Approx. 35 adjacent to Mansfield District	Nottinghamshire SINC Panel made up of Local Authorities and conservation bodies (see below).
	Regionally Important Geological and Geomorphological Sites (RIGS)**	15 RIGS within Mansfield District	Nottinghamshire RIGS panel made up of Local Authorities and conservation bodies.

Notes on the Above Table:

*Statutory protected sites

**Non-statutory site of natural and/or geological importance of County importance or greater

***This includes sites within Mansfield District as well as those that fall within a 1km buffer area adjacent to the district boundary.

Internationally Designated Sites

The Biklands and Bilhaugh **Special Area of Conservation (SAC)** covers 271.84 hectares of rare heathland and birch-oak woodland; it is located east of Warsop just across border with Newark and Sherwood District; the SAC overlaps with the Sherwood Forest NNR.

Nationally Designated Sites

Sherwood Forest **National Nature Reserve (NNR)** covers 507.8 hectares and is located near Edwinstowe. Although technically located in the Newark and Sherwood district, it butts up against the Mansfield District-Newark Sherwood District boundary line within the Sherwood Forest area, not far from Market Warsop. It shares boundaries and similarities with the Birklands and Bilhaugh SAC representing examples of rare heathland and woodland plants and wildlife.

Mansfield District is a particularly important area in the county as it accounts for 10% of Nottinghamshire's **Sites of Special Scientific Interest (SSSIs)**; total SSSI area in the District measures 167.22 ha, despite the District area only covering approximately 3.7% of the County (Office of National Statistics 2005). SSSIs are spread across the district and represent regionally and nationally rare habitats from calcareous limestone grassland, heathland, wetlands and ancient woodland.

Regionally and Locally (County and District) Designated Sites

Mansfield Distinct currently boasts 9 **Local Nature Reserves (LNRs)**, the most LNRs per district in the County. They are more-or-less distributed evenly throughout the District and are managed primarily by the Mansfield District Council Parks Department. LNRs are areas of special local wildlife or geological interest; the purpose of LNRs is also about connecting people with nature.

Sites of Important Nature Conservation (SINCs) are locally designated wildlife sites that are considered to be of county-level importance, or higher, for their biodiversity significance. Even though these sites do not have statutory protection like SSSIs, they fulfil key roles in protecting biodiversity and meeting national biodiversity targets in which Local Authorities are required to meet. Embedded into the planning system, SINCs link in with other statutory sites to create a healthy network of biodiversity corridors and stepping stones.

Regionally Important Geological and Geomorphological Sites (**RIGS)** are currently considered the most important places for earth science (soils and geology) outside statutorily protected land such as SSSIs. The designation of RIGS is one way of recognising and protecting important geological and landscape features for future generations to enjoy.

7.3 Strategic River Corridors and Flood Risk Areas

National and Regional policies, such as the East Midlands Regional Plan, highlight river environments as very important resources for protecting and enhancing our natural and cultural heritage and for the delivery of Green Infrastructure. In the past, floodplains have been dramatically altered through canalisation and development. The protection and enhancement of river corridors offer excellent opportunities for restoring ecosystem functioning*, easing the pressures of urban flooding, improving water quality and assisting in delivering urban regeneration projects where appropriate (thus attracting inward investment to an area).

Policy 33 of the East Midlands Regional Plan states that Local Authorities, such as Mansfield District Council, and other relevant public bodies should work together to 'protect and enhance the multi-functional importance of strategic river corridors as part of the Region's Green Infrastructure, including for wildlife, landscape and townscape, regeneration and economic diversification, education, recreation, the historic environment, including archaeology, and managing flood risk.' Hence, river corridors often offer opportunities for designating green corridors that can act as 'green lungs' for accessing the countryside, facilitating the movement of wildlife and minimising the effects of climate change.

Mansfield District Council commissioned PRS consultancy to produce a Strategic Flood Risk Assessment in 2008 which addresses flooding as well as opportunities for wildlife enhancement. It identifies strategic flood zones, surface run-off areas, and biodiversity priority enhancement areas.

* *Where feasible, allowing floodplains to return to a more natural regime provides for a better functioning natural system or 'ecosystem'. This in return provides a range of benefits for both people and wildlife as mentioned above. Ecosystems contain communities of living organisms and the nonliving elements of their surroundings including: habitats and geophysical and other natural processes in which life depends.*

River Corridors: Functions and Benefits

Function	Benefit
Biodiversity Resource and Landscape Enhancer	• Supports habitats for rare and priority species such as water voles and white-clawed crayfish. • Supports continuous habitat mosaics through wildlife corridors. • Contributes to UK Biodiversity Action Plan and Local Biodiversity Action Plan targets. • Acts as an important visual landscape feature and physical landscape connector for supporting green corridors.
Flood Risk Zones and Flood Storage Areas	• If planned for and managed sensitively, the protection and enhancement of these areas contribute to minimising the effects of climate change such as severe flooding.
Historical and Cultural Resource Bank	• Protects and preserves archaeological and historical information.
Recreational Access & Mental and Physical Well Being	• Links with recreational access routes to provide opportunities for walking, cycling, bird watching, and fishing.

The integration of Sustainable Urban Drainage Systems (SUDS), is a key element of Green Infrastructure. They are integral parts of flood risk management and mitigating the impact of climate change. SUDS comprise a wide range of techniques, including green roofs, swales, detention basins, ponds and wetlands; these components should be used in combination and are often referred to as the SUDS Management Train.

7.4 Biodiversity Action Plan Priority Habitats and Species

The UK is a signatory to the Internal Convention on Biodiversity and so has an international legal obligation to protect and conserve our biodiversity. As a result, guiding national policy states that there should be no net loss of UK Biodiversity Action Plan (UKBAP) priority habitats and species and that there should be a concerted effort between Local Authorities, statutory bodies, and voluntary organisation towards contributing to UKBAP as well as Local Biodiversity Action Plan (LBAP) targets.

Mirroring this national emphasis, the East Midlands Regional Plan (2009) asserts that 'large scale development in such areas [UKBAP priority habitats] could prejudice the achievement of Regional Biodiversity targets.' Appendix D summarises the biodiversity targets for priority habitats in Nottinghamshire.

Biodiversity Action Plans provide the framework for prioritising actions towards protecting and enhancing the UK's biodiversity. Together, the UKBAP and the Nottinghamshire LBAP identify key priority habitats and species. PPS9 places a

strong emphasis on the conservation of BAP and LBAP habitats and species through the planning system.

Many individual species found in the District are protected by law, such as water voles, white-clawed crayfish and all species of bats. At a strategic scale it is not possible to map species distribution in a meaningful way, however, where known, their presence will also be an additional factor in valuing the importance of particular areas, such as the Rivers Meden and Maun.

UK and Local Priority Habitats Found in Mansfield

UK Biodiversity Action Plan (UKBAP)	Nottinghamshire Local Biodiversity Action Plan (LBAP) equivalent
Arable Field Margins	Farmland: Arable Farmland, Arable Field Margins and Improved Grassland
Hedgerows	Hedgerows: Including ancient and/or species-rich hedgerows
Eutrophic standing waters	Eutrophic and Mesotrophic Standing Waters
Mesotrophic Lakes	Eutrophic and Mesotrophic Standing Waters
Ponds	Eutrophic and Mesotrophic Standing Waters
Rivers	Rivers and Streams
Lowland meadows	Unimproved Neutral Grassland
Lowland fens	Fens, marshes and swamps
Lowland mixed deciduous woodland	Mixed Ash Dominated Woodland& Oak-Birch Woodland
Open Mosaic Habitats on Previously Developed Land	Urban and Post-Industrial Habitats
Lowland calcareous grassland	Same as UKBAP
Lowland dry acid grassland	Same as UKBAP
Lowland heathland	Same as UKBAP
Lowland Wet Grassland	Same as UKBAP
Wood-Pasture & Parkland	Same as UKBAP
Reedbeds	Same as UKBAP
Wet Broadleaved Woodland	Same as UKBAP
	Planted Coniferous Woodland

7.5 Woodlands of National and Regional Importance

Woodland habitats and ancient woodlands in particular, are among our richest natural, social and historical resources. They offer a wide range of benefits for wildlife and people alike. Woodlands often have high levels of biodiversity and contribute to a sense of pride and identify for an area. In Mansfield District, the

Sherwood Forest is a distinct part of the local landscape character and history. Woodlands also provide recreational opportunities for walking and cycling and contribute to mitigating the effects of climate change.

This section focuses on those woodlands identified for their national and regional importance. National and regional policies, including Planning Policy Statement 9 and the East Midlands Regional Plan (2009), recognise that particular types of woodland are irreplaceable and extremely sensitive to development.

Woodlands of National and Regional Importance within Mansfield District

Woodland Type	Brief Description	Local Geography
Ancient Woodland (AW)	Ancient woodlands are defined by Natural England based on historical evidence and species diversity. They have significant ecological value. AW also includes Ancient semi-natural and Ancient replanted woodland.	Examples of ancient woodlands in the district include Lord Stubbins SSSI. The full extent of AW in the District is unknown and further survey work is needed. There are approximately 7 known sites within the district and 13 adjacent sites.
Wet Woodland	Wet woodland is a rare type of woodland located, mainly, along floodplains. It is recognised as a UKBAP and LBAP Priority Habitat.	Small pockets of this woodland can be found along the Meden and Maun rivers.
Sherwood Forest	Sherwood Forest includes a mosaic of habitats including heathland, oak-birch woodland and acid grassland.	Within the District, much of this woodland is located in the Sherwood Forest Special Landscape Area.
Individual Trees: Tree Preservation Orders Veteran Trees	Certain individual trees have special protection status: Tree Preservation Orders (TPOs). 'Veteran Trees' are identified for their biological and cultural interest and also for their size and age structure. They are also known as Ancient Trees. It has been estimated that Britain may be home to around 80% of Europe's ancient trees.	Trees with TPO status are found throughout Mansfield District. Examples where Veteran trees can be found in Mansfield District: - Ancient Hedgerows - Warsop: Parliament Oak - Sherwood Forest area

7.6 The Historic Environment

Mansfield District has a rich historic environment (see Section 4.4). Archaeological remains and historic landmarks are a part of our local identity and contain irreplaceable information about our past.

Understanding the relationship between historical resources and their settings can facilitate their protection and enhancement now and into the future. The integration of nationally designated sites (e.g. scheduled ancient monuments) and local

historical landmarks (e.g. historic parks & historic churchyards) with new and existing Green Infrastructure offers exciting opportunities for improving tourism, education and the overall visual attractiveness of the District. Conservation Area management plans, landscape character guidelines and historic and urban characterisation studies can help inform this understanding. The East Midlands Regional Plan (2009) Policy 27 recognises the need for this integration.

Local examples of where historical resources have been successfully integrated with GI include: recreational themed trails such as the Archaeological Way in the Pleasley area and the protection of key viewpoints and viewscapes in Conservation Areas. Opportunities exist for further integration (see GI Action Plan 2009).

National legislation and Planning Policy Guidance Notes (PPGs) 15 and 16 provide for the protection of a number of designated sites, of which listed buildings, scheduled monuments, conservation areas and registered historic parks and gardens are found in the District.

Designated Historical Sites/Areas in Mansfield District

Historical Resource	Brief Description	Local Geography
Registered Parks and Gardens	Registered Parks and Gardens are sites that are placed on the national 'Register of Parks and Gardens of Special Historic Interest'. This register is compiled and maintained by English Heritage.	Mansfield Cemetery
Conservation Areas (CA)	These are areas of special architectural and/or historical significance. Although listing procedures are generally focused on individual buildings, CAs encompass a much broader landscape perspective. Combined features such as historic property boundaries and land use, building material, landscaping and design, green and open space and important views and vistas, make up the character of an area. In addition, CAs often provide important green linkages between townscapes and countryside. Trees within CAs are also protected.	There are 8 Conservation Areas in Mansfield District. Each has varying amounts and types of greenspace.
Scheduled Ancient Monuments (SAM)	SAMs include a range of archaeological sites. These are given legal protection by being placed on a national schedule. Scheduling is applied only to sites of national importance. English Heritage is responsible for identifying and maintaining it. Scheduled monuments are not always ancient, or visible above ground. They range from prehistoric standing stones and burial mounds, through the many types of medieval sites, to the more recent results of human activity, such as collieries and wartime pillboxes.	Examples of SAMs in and around the District include: King's Mill Viaduct and the remains of a Roman Villa.

PPG16 which specifically covers archaeological remains is currently being revised. Currently, National planning guidance (PPG16) states that archaeological remains identified as being of national significance, whether scheduled or not, should be preserved. In addition to nationally recognised remains, those remains of local importance may also be identified as particularly worthy of preservation in Local Development Plans.

Archaeological remains are a product of our ancient human history spanning thousands of years from the prehistoric era to the early 20th century. These remains range from settlements, burial grounds, places of worship, ancient crop patterns and individual artefacts. In Mansfield District, these include, for example, remains of a Roman villa, stone tools, and mediaeval buildings.

In order to preserve and protect archaeological resources and their settings to the best of our knowledge, it is important for Local Authorities to have an overall picture of where these resources exist, their level of sensitivity to development, of which there are, essentially, four main categories*:

Categories of Areas of Archaeological Significance

*Source: Nottinghamshire County Council

Category	Explanation
High sensitivity	These are the best preserved and most recorded sites including statutory sites (scheduled monuments) and other areas where there is a high likelihood that land change activities would result in damage to archaeological remains.
Medium sensitivity	These are sites known to contain significant archaeological artefacts or context material but have rarely been objectively studied; the degree of preservation is unknown and requires further investigation.
Unknown value	The absence of evidence is NOT the same as evidence of absence. Many areas of Nottinghamshire have not been investigated in detail. The fact that there is no known archaeology does not mean that there is no significant archaeology in those areas.
Destroyed evidence	This includes in-situ archaeology that has been destroyed by development or has been investigated and found to be significant enough to warrant conservation.

7.7 Overview of Further GI Analysis

This section provides the rationale and framework for identifying, mapping and analysing areas sensitive to development within Mansfield District. It defines the necessary recourses and assets that should be included in the *Network of Sites Sensitive to Development* network component maps and analysis work; these are included in the forthcoming GI Action Plan.

Network of Sites Sensitive to Development

Aims:

- Identify relevant national, regional and local policy and planning guidance regarding sites and areas sensitive to development i.e. sites and areas identified as key resources for protecting biodiversity and the natural and historical environment.
- Map the above as a combined network in the District as well as 1km outside the District boundary.
- Provide recommendations for linking in with the overall GI resource in Mansfield District.

Analysis Objectives:

- Create a map showing a combined network of all designated natural and cultural sites and priority areas e.g. national priority habitats. These maps act as a 'development constraints maps' i.e. layers with all sites and areas sensitive to development as described by national, regional and local policy.
- Create a map showing the above network reclassified into zones of national, regional and local (district and county) importance.
- Identify appropriate protection and enhancement buffer zones.
- Identify patterns within the above network including strategic gaps and linkages within the above network as well as, key overlap areas (i.e. multi-functionality).
- Identify potential linkages in relation to other GI networks and additional patterns the greenspace distribution (e.g. parks and other recreational areas).

8.0 The Habitats Network



Introduction

Mansfield has a rich natural heritage comprising of a wide range of important habitats and a rich diversity of plant and animal species. This rich natural heritage includes internationally and nationally rare habitats such as heathland, acid grassland, limestone grassland (also known as calcareous grassland), and ancient oak-birch woodland. A wealth of wetland habitats can be found along the flood zones of the rivers Maun and Meden including reedbeds, wet woodlands and water meadows. Likewise, these habitats support rare and nationally important species such as white-clawed crayfish, night jar, skylark, and water vole.

Together these individual habitats form inter-connected clusters and networks. Networks of natural and semi-natural habitats provide a valuable resource for protecting and enhancing biodiversity; they provide links between designated sites such as SSSIs and local wildlife sites acting as routes for wildlife to move from one place to another. Essentially they provide a place for wildlife to live and thrive.

Over time, habitats such as ancient woodlands and heathlands have become fragmented and isolated. For many species, habitat fragmentation is the primary cause of local extinction. In order to reverse this trend and create an environment for wildlife to thrive, priority habitats and habitat networks must be sensitively managed and integrated into local government policy and practice.

Local Authorities, such as Mansfield District Council, have a statutory obligation to protect and enhance habitat networks (please see section 8.1). Planning for an integrated habitat network is also becoming increasingly important in the face of climate change. A better intact and well-connected network of habitats ensures to a more resilient environment for wildlife and humans alike.

Overall, habitat networks are an integral part of good urban design and sustainable development. This GI network component plays an important strategic role in enhancing biodiversity and planning for a healthy, functioning environment into the future. This network component is made up of 4 sub-network strands. Please see the ***Section 8.3*** for more information.

8.1 Policy Background

Biodiversity is the the variety of life on earth, and includes all plants and animals and the natural systems that support them such as habitat networks. In the East Midlands, as a whole, it is under tremendous pressure- degradation and declines in biodiversity are generally recognised to have been greater here than in any other English region (EMBF 2003).

In 2006, Section 40 of the NERC Act extended the responsibility of conservring biodiversity held by Central Government (Countryside and Rights of Way Act 2000) to all Local Authorities. Thus, Local Authorities like Mansfield District Council now have a statutory responsibility to protect and enhance biodiversity in all aspects of their work from local policies within Local Development Frameworks to the management of District owned land.

This statutory duty includes contributing to UK Biodiveristy Action Plan (UKBAP) targets by ensuring a 'no net loss of BAP habitats and species in the region'. Together the UK Biodiversity Action Plan (UKPAP) and the Nottinghamshire Local Biodiversity Action Plan, help provide a means of prioritising actions for conservering priority habitats and species (see section 7.4). See Appendix D regarding priority habitat targets for Nottinghamshire.

National planning policy (PPS9), stresses that Local Authorities should take steps to further the conservation of priority habitats by maintaining, stengthening and protecting habitat networks. In addition, Policy 29 of East Midlands Regional Plan (2009) states that action is required to create, protect and enhance networks of semi-natural greenspaces in urban areas and to create, protect and enhance landscape features 'which act as corridors and *stepping stones,* essential for the migration and dispersal of wildlife.'

The following table summarises the key policies and strategies with regards to the protection and enhancement of habitats networks in Mansfield District.

Policy Driver	Relevant Policy
Sections 40 & 41 of the Natural Environment and Rural Communities Act (NERC) 2006	Local authorities such as MDC now have a statutory responsibility to further the protection and conservation of biodiversity including priority species and habitats. This responsibility relates to all aspects of their work, including protection and enhancement through the local planning system, development considerations and habitat management on council land.
PPS9 & Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System	Local Authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible strengthened or integrated within it.
UK Biodiversity Action Plan (UKBAP) & Nottinghamshire Local Biodiversity Action Plan (LBAP)	The UKBAP sets out national targets for particular vulnerable habitats and species. The LBAP compliments the UKBAP by setting targets for priority habitats and species at the county level. LBAPs are based on a partnership approach with LAs. Both plans provide a means of prioritising action for Local Authorities.

East Midlands Regional Plan (2009)	***Policy 29: Priorities for Enhancing the Region's Biodiversity***, outlines several measures for the protection, enhancement, as well as, creation of priority habitats and the creation, protection and enhancement of habitat networks including key features such as corridors and stepping stones. Additional policies (30: Regional Priorities for Managing and Increasing Woodland Cover & 33: Regional Priorities for Strategic River Corridors) highlight priorities for addressing specific habitats. Policy 30 recognises the Greenwood Community Forest, Sherwood Forest areas and other woodlands of national and regional importance. Policy 33 emphasises maintaining the multi-functional importance of rivers.
Northern Sub-regional Spatial Strategy (part of the East Midlands Regional Plan (2009))	Raises the profile of the Sherwood Forest and stresses the importance of protecting and enhancing this distinctive landscape and its natural and historic assets. The Sherwood Forest Landscape Character Area cover over 2/3 of the District.
Nottinghamshire Joint Structure Plan	Policy 2/1: Sustaining Biodiversity & Policy 2/6: Wildlife Habitat Creation
Mansfield District Nature Conservation Strategy (1997)	Policy 2 states that the 'Council will take appropriate action to protect and enhance the wildlife network of reservoirs, corridors, links and sites identified in this IPG.'

Biodiversity Conservation and Enhancement Areas

In addition to the above policies, The East Midlands Biodiversity Forum (part of EMRA) has identified strategic areas for the protection and enhancement of biodiversity within the region. These include Biodiversity Conservation Areas (BCAs) and Biodiversity Enhancement Areas (BEAs), respectively. The East Midlands Regional Plan (2009) states that new sites and important linking habitat corridors should be identified for these areas.

BCAs and BEAs are not statutory designations; rather, they highlight areas in need of collaborative, multi-agency action towards the conservation and enhancement of the region's biodiversity.

BCA and BEA in Mansfield District	
Sherwood Forest BCA	BCAs represent the areas with the most intact and highest quality resources in the region; if well managed, they can act as reservoirs for wildlife, thus contributing to the recovery of biodiversity to a sustainable level in the East Midlands. They also represent examples of areas with the greatest need for protecting connectivity and concentrating landscape-scale enhancement projects.
The Coalfields BEA	BEAs represent areas in which biodiversity may be at greatest risk or already is severely degraded and thus requires urgent action. This area has relatively few protected sites or sites which are very small in size. They require a concerted effort for habitat restoration and creation.

Both BEAs and BCAs are important tools for making further recommendations on protection and enhancement areas within Mansfield District. These are incorporated further in the MDC GI Action Plan.

8.2 What Makes A Habitat Network?

The natural environment is complex; most plants and wildlife rely on either a particular habitat (e.g. broadleaved woodland, heathland) or a particular combination of habitats (habitat mosaic) to thrive. Wildlife (and even plants) need to be able to move around in order to find food and suitable places to live, breed and raise young; they must also be able to move in order to survive changes in their environment, for example disturbances caused by climate change or development.

Providing and planning for a greater range of habitats and better connected habitats network are two ways in which to increase overall stability for local wildlife populations.

Definition: A habitat network is a configuration of habitats that allows species to move and disperse through the landscape. They are typically made up of a series of related habitats that support similar functions e.g. support species with similar requirements or share a common underlying geology.

Habitat networks are simple yet useful tools that help us make sense of environmental complexity. Mapping habitat networks helps to illustrate the extent of habitat fragmentation (gaps in connectivity) and additional patterns at a *landscape scale* (see section 5.3). In doing so, this allows us to focus efforts on reversing declines in biodiversity at a broad-brush or strategic level by highlighting potential areas for protection, creation and enhancement.

Essentially, Habitat Networks are composed of four basic parts:

Network Component	Brief Description	Examples
Patches	An individual habitat area, for example, a single *patch* of heathland. These vary in size, shape and location. These are the *building blocks* of habitat networks.	Oaktree Heath
Reservoirs	Large collective patches which have within them: a) a good variety of connected and high-quality natural or semi-natural habitats and b) support a rich diversity of species.	Pleasley Vale
Corridors	Long, narrow areas of continuous habitat that provide important links for the movement of wildlife. These are important for less mobile species and/or species intolerant of agricultural/developed land.	Maun River corridor Railway lines
Stepping stones	Isolated habitat patches of high nature conservation value that act as *stop-over* points between i.e. reservoirs and corridors; they facilitate the movement of more mobile species across inhospitable landscapes.	Urban parks Small patches of woodland

8.3 Habitat Networks in Mansfield District

It is important to stress that this GI network component offers a broad-brush view of the District's biodiversity resource rather than an in-depth ecological assessment; the later requires a much finer-grained analysis. Nonetheless, it is an important first step in:

- Understanding where habitats link together and where gaps exist (i.e. extent of habitat fragmentation within the district).
- Identifying what areas are important to protect, enhance and create; thus identifying overall 'pinch-points' for addressing overall Biodiversity Action Plan targets.
- Identifying where current management practices as well as new development can benefit habitat networks through enhancement (e.g. sensitive landscaping and maintenance) and the creation of new greenspace.

The 'Habitats Network' network component broadly groups individual habitats found in the District into 4 main categories or *sub-networks*. These include:

- Broadleaved and mixed woodlands
- Lowland heathland, acid grassland and coniferous woodland
- Calcareous grassland and lowland meadows including unimproved neutral grassland
- Wetlands and river corridors

In addition to this section, please consult the Mansfield District Council Nature Conservation Strategy (1997) for more information on habitat descriptions in the District. Further mapping and analysis work within the GI Action Plan is based on digital Phase 1 habitat mapping.

Woodlands

Woodlands, and ancient woodlands in particular, are among some of the most diverse terrestrial habitats. This part of the combined GI *habitats network* component includes: broadleaved, mixed woodland and areas of scrub (young trees and shrubs). The district has a mixture of plantation woodland, natural and semi-natural woodland. Small pockets of woodland are designated as ancient woodland; these are mostly located in the northern-western parts of the District and just outside the District boundary to the south.

Please note that ***coniferous woodland*** is included with the heathland/acid grassland habitat network for its potential contribution to heathland re-creation. ***Wet woodland*** is considered within the wetland habitat network.

Woodland Habitat Network *Biodiversity Action Plan (BAP) Priority Habitat		**Characteristic Plant and Wildlife Species (examples of)**
Ancient Woodland (AW)	Ancient woodlands represent some of the most species-rich and oldest woodlands in the country; thus, they have significant ecological and cultural value. They are designated by Natural England based on historical evidence and species diversity. AW also includes Ancient semi-natural and Ancient replanted woodland (also see section 7.5).	Specialised plant species: Wood anemone, bluebells, dog's mercury, violets Some AWs in the District contain Lime, a rare tree species.
Natural and Semi-natural Broadleaved Woodland *(includes specific BAP priority habitats; see section 7.4)	This category includes woodlands with trees that loose their leaves in the autumn; this designation covers a variety of different woodland types including oak-birch, ash, and lime woodlands. The composition of tree species generally depends on the soil type.	The diversity of birds, invertebrates and plants often depends on the composition of tree species and woodland age.
Mixed Woodland	Mixed woodlands contain a mixture of deciduous and coniferous trees. These are generally a result of woodlands planting either for amenity, conservation or timber sale. Woodlands act as important landscape features, providing recreational value, and helping to mitigate effects of climate change.	Various invertebrate bird and plant species make mixed woodlands their homes.
Scrub	Scrub is transitional woodland habitat made up of locally native shrubs, usually less than 5m tall, occasionally with a few scattered trees. It may also include bracken. Certain bird and insect species rely on areas of scrub for nesting and foraging. Scrub is an important component of individual habitats such as heathland, grasslands and broadleaved woodland. For the purpose of simplicity, it is included with this habitat network.	Various willow species, young birch, gorse, buddleia, etc Various grass and wildflower species.

Lowland Heathland and Acid Grassland

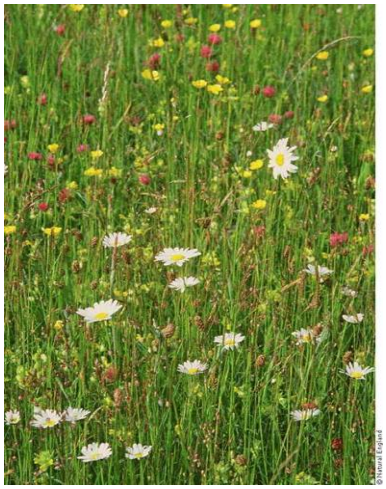
Lowland heathland and acid grassland are both nationally rare habitats and support priority species such as night jar and rare invertebrates. Both habitats are also important landscape features of the Sherwood Forest area within the District.

Lowland heathland and acid grassland have become fragmented within Nottinghamshire as a whole. Providing continuity through the linkage of existing sites and the creation of new sites as well as protecting the quality of sites through sensitive management are key conservation priorities. Opportunities exist to create heathland from ex-colliery sites and felled coniferous woodland.

In Nottinghamshire, pockets of heathland and acid grassland often overlap, creating intricate habitat mosaics (Nottinghamshire Biological and Geological Records Centre); it is often difficult to determine where one starts and the other starts. Both are listed as UK BAP priority habitats and can support similar plant and animal species. For the purpose of this IPG, heathland and acid grassland are grouped together.

Lowland Heathland-Acid Grassland Network *Biodiversity Action Plan (BAP) Priority Habitat ♦LBAP, Nottinghamshire BAP		**Characteristic Plant and Wildlife Species (examples of)**
Lowland heathland*♦	Heathland is a broad term that refers to a mosaic of damp and dry habitats, characterised by a predominance of attractively flowering ericaceous dwarf shrubs such as heather and gorse. Acid-loving clump grasses, bracken, and mosses are also characteristic of heathland. They are found on acid soils, particularly, Sherwood sandstone.	Nightjar Heather Common lizard Wax-cap fungi Wide diversity of insects and spiders
Acid grassland*♦	In Nottinghamshire, heathland and acid grassland habitats are often found together, forming intricate habitat mosaics. Characteristic grasses include wavy-hair grass, sheep's fescue and common bent.	
Coniferous Woodland♦	Conifer stands in Nottinghamshire are composed of planted non-native species. These areas also include recently felled conifer woodlands. Often mosaics of heathland and acid grassland can be found in openings (rides and glades) in these woodlands. Coniferous clear fells often present an excellent opportunity for heathland re-creation. Coniferous woodlands also act as an important landscape features.	Bracken Bramble Heather

Lowland Calcareous Grassland and Unimproved Neutral Grassland


©Natural England

Both lowland calcareous and unimproved neutral grassland are internationally rare and threatened habitats. Both are rich in wildflowers and sadly in decline nationally. In Nottinghamshire, both grasslands are also highly fragmented and thus important conservation priorities. Development and nutrient enrichment from agriculture are the main factors for the decline and increased fragmentation of these habitats.

Most calcareous grasslands in Mansfield District are protected as SSSIs, although some smaller fragments and newly created sites lie outside these statutory designations. They are found generally on shallow magnesian limestone outcrops. Unimproved neutral grasslands have a scattered distribution throughout the District; they can be found on neutral soils. Both

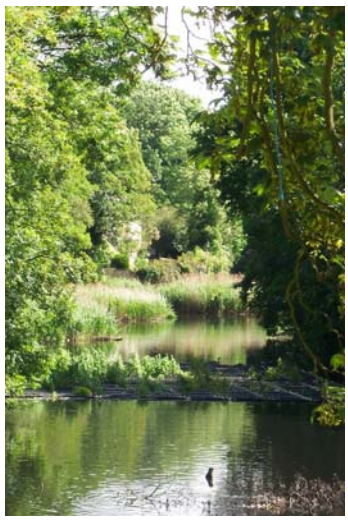
grasslands also have a low nutrient content i.e. they haven't been enriched by fertilisers.

Generally, these two habitats are distinct but some crossover between species and location is known to occur (source: Nottinghamshire Biological and Geological Records Centre). Both can be found on calcareous deposits. Sometimes it is difficult to differentiate between the two. Detailed soil analyses in addition to phase 1 habitat mapping are required where there is overlap; this type of information is often lacking. For the purposes of the MDC GI Habitat Network analysis work, both grasslands are mapped together.

Lowland Calcareous-Unimproved Neutral Grassland Network *Biodiversity Action Plan (BAP) Priority Habitat ♦LBAP, Nottinghamshire BAP		**Characteristic Plant and Wildlife Species** **(examples of)**
Lowland Calcareous Grassland*♦	Calcareous grassland, otherwise known as Magnesian limestone grassland, is perhaps the rarest habitat in the District. They can be found in the Pleasley area and along the River Meden. Generally restricted to areas of shallow, lime-rich soils overlying magnesian-limestone rocks on areas unsuitable for agriculture. Calcareous grasslands are rich in wildflowers and support diverse invertebrate populations. In Nottinghamshire, this is perhaps one of the rarest and most fragmented habitat in the county.	Various orchid species Quaking grass, sheep's fescue, downy oak grass Rock rose, cowslip, wild carrot, salad burnet Skylark, Stoat, Dingy skipper
Unimproved Neutral Grassland*♦ (Lowland meadows in UKBAP)	This is a locally specific habitat which occurs on neutral, nutrient poor soils; they are primarily associated with enclosed and managed areas such as hay meadows and pastures. It can also be found on recreational sites, churchyards, roadside verges and post-industrial land. One example in Mansfield District is Oakham Local Nature Reserve.	Yorkshire fog grass, thistles, ox-eyed daisy, bee orchid Skylark, Dingy skipper, Meadow pipit

Wetland Habitats

Wetlands include a wide range of habitats closely associated with open water or where the water table is just below the surface of the ground for most of the year. Wetlands comprise many different individual habitat types; these often intermix into one another, making differentiation difficult. Individual habitats include: rivers and streams, ponds and lakes, wet woodlands, reedbeds, fens, marshes, and wet meadows.



Larger areas of continuous wetland in Mansfield District are generally associated with the rivers Maun and Meden, land surrounding the King's Mill Reservoir and the Rainworth Lakes area. Smaller wetlands are located in areas such as Spa Ponds, Cauldwell Brook, Bleak Hills Land Ponds and Nettleworth Lake.

The amount and distribution of floodplain wetlands (those associated with rivers and streams) has greatly diminished in recent decades. This is mainly due to drainage works associated with agricultural intensification and development of floodplains for housing and industry. There is now increasing awareness amongst planners and land developers that existing wetlands need to be conserved, and others created, as these habitats perform a vital function in regulating water flow and reducing severity of floods.

Wetland Habitat Network *Biodiversity Action Plan (BAP) Priority Habitat ♦LBAP, Nottinghamshire BAP		**Characteristic Plant and Wildlife Species (examples of)**
Wet woodland*♦	Wet woodland is associated with low-lying, wet areas along the side of rivers and lakes and where the water comes to the surface. They are dominated by alder and willow species. This is a very scarce habitat in the district restricted to small pockets. Examples of wet woodland in the district include Rainworth Lakes and along the River Meden east of Warsop.	Willow, alder, black poplar, rushes and sedges Dragonflies and rare moth species Woodcock, Tree pipit, Otters
Wet Grassland/Water Meadows♦	Periodically inundated pasture or meadow with ditches which maintain the water levels containing standing brackish or fresh water. Naturally occurring wet grassland is one of the fastest diminishing wetland habitats in Britain. Man-made wet grasslands called 'water meadows' are also rare in the district; they are part of an historic agriculture practice.	Water voles Lapwing Ragged robin (flower) Curlew
Reedbeds*♦ and other miscellaneous wetlands	Reedbeds are composed largely of common reed and are often associated with areas of open water, ditches, and other wetland habitats. Hermitage LNR contains reedbeds. In Nottinghamshire, wetland habitats are most commonly found on the margins of water bodies, in areas of mining subsidence and in the more natural environment of floodplains.	Dragonflies, bats Redshank, Grey heron Reed bunting, Snipe Reeds, Yellow iris
Ponds and Lakes*♦ (Eutrophic and mesotrophic standing waters)	There are relatively few natural standing waters in Nottinghamshire. Most have been artificially created such as King's Mill Reservoir and those on former quarry sites. Smaller ponds exist on agricultural land and private gardens. Larger areas of water bodies act as stopovers for migratory birds as well as important feeding areas for bats. Margins of lakes and ponds are important habitat for aquatic invertebrates.	Large variety of waterfowl Frogs and toads Bats and various types of invertebrates such as dragonflies, beetles and newts
Rivers and Streams*♦	There are 2 main river corridors, the Maun and Meden. Both provide valuable wildlife corridors that traverse the district. Both rivers vary in habitat and water quality depending on their location, physical structure and type of vegetation present.	White-clawed crayfish, water voles, otters, bats Dragonflies, Kingfisher Variety of grasses, sedges, shrubs, and water-loving plants such as marsh marigold.

8.4 A Focus on Urban Wildlife

Nature does not stop at the boundary between the countryside and urban areas. Although typically smaller and more fragmented than the wider countryside, urban wildlife habitats play an important role in conserving and enhancing biodiversity. Together, often these smaller areas greenspace in urban areas, when linked to other areas, add up to make better connected network for wildlife to thrive and for people to enjoy.

Gardens, church yards, amenity spaces, urban parks and landscaped areas around buildings all contribute to the overall *Habitat Network*. Often the value of urban habitats is underestimated. It is important that these areas are included in local planning policy frameworks and greenspace management plans.

Although often intensely managed, urban habitats provide an oasis within a dense, built environment. Urban areas, in fact, can support a higher diversity of wild species per unit area than intensively farmed countryside. Roofs become nesting sites for birds and bats and private gardens offer plentiful food year-round. Green and brown roofs (please see Glossary) provide additional habitat within the urban setting.

Urban nature reserves and parks often provide the only local contact with nature for people living in towns and cities because they are generally more accessible. A majority of Mansfield's Local Nature Reserves are located within the urban or urban fringe boundary. These areas offer important opportunities for education and urban regeneration and help to create a higher quality of life and well-being. In a survey carried out by the Mansfield District Council Citizen's Panel (2007), 95% of people in the district agreed that being in green and open spaces and viewing wildlife added to their general well being and satisfaction (please see Section 3 and Appendix F for more details).

8.5 Overview of Further GI Analysis

This GI network component sets out the rationale and framework for identifying, mapping and analysing a combined habitats network in the District. Network maps are available in the forthcoming GI Action Plan. The Action Plan identifies and makes planning and management recommendations regarding key areas for the protection, enhancement and creation of biodiversity.

Habitats Network

Aims:

- Identify relevant national, regional and local policy re: biodiversity and the natural environment.
- Identify and map UK and Nottinghamshire priority habitats within Mansfield District as well as 1km outside the District boundary.
- Identify strategic gaps, reservoirs and movement corridors for biodiversity within and adjacent to the District.
- Identify strategic areas and opportunities for re: protection, enhancement and creation of priority habitats.
- Provide recommendations on the protection and enhancement of priority habitats as well as recommendation for integration with the built environment and overall GI resource in Mansfield District.

Analysis Objectives:

- Create individual habitat networks maps based on four main habitat grouping: 1) woodlands; 2) heathlands, acid grassland and coniferous woodlands; 3) calcareous and unimproved neutral grasslands; and 4) wetlands.
- Create a combined habitats network map from the above.
- Identify gaps and key reservoirs and linkages within the habitats network including essential movement corridors for urban wildlife.
- Analyse and describe observed patterns in habitat network maps and the combined habitats network map.
- Compare identified reservoirs and linkages with other GI Framework Components and additional patterns in greenspace distribution (e.g. commercial landscaping).

9.0 Landscape Character and Connectors

Introduction

Landscape reflects the relationship between people and place; the District's landscape, as we view it today, is a product of its underlying geology, natural features and phenomena, and historical land use over the centuries. Surviving landscape features and patterns, include pockets of woodland, open pasture and arable land, viewpoints and vistas, collieries, river corridors and historic field boundaries. Together these form the backdrop for linking green infrastructure networks whist supporting economic development, protecting our natural and cultural heritage and contributing to our sense of enjoyment and pride in place.

Understanding local landscape character sets the context for identifying:

- Strategic green corridors or 'green lungs' linking urban areas to the wider countryside
- Key patterns and features that make up local landscapes and opportunities their protection and enhancement including the restoration of disused and derelict sites
- Critical areas for providing visual breaks between settlements
- Opportunities for sensitively integrating and designing new green infrastructure and promoting sustainable development practices

Character is identified by examining the modern landscape in terms of its structure, form, natural features and historical processes. Traditionally, the conservation of the natural and historic environment has focused on the protection and management of individual designated sites. By relying solely on this approach, there is danger isolating these sites further and under-appreciating other areas. Landscape character offers a different approach by placing more emphasis natural and historic characteristics that give a locality its sense of place.

The Nottinghamshire Landscape Character Guidelines' (1997) *regional* ***character areas*** and ***landscape types*** informed this section of the Green Infrastructure IPG, and thus provides a standardised approach to looking at landscape character in the county The main aims of this GI network component are summarised in Section 9.5. Maps and policy recommendations can be found in the forthcoming Green Infrastructure (GI) Action Plan.

9.1 Policy Background

National policy (PPS7) confirms that nationally designated landscapes such as Areas of Outstanding Natural Beauty and National Parks have the highest status of protection with relation to landscape. Within Mansfield District and surrounding areas there are no nationally designated landscapes or Green Belt areas.

In response to this, Nottinghamshire County Council (NCC) and Mansfield District Council (MDC) designated local landscape areas. These areas include Mature Landscape Areas, Sherwood Forest Special Conservation Area, Sherwood Forest Heritage Area, and MDC Open Breaks and Green Wedges (see table below). In the interim period of the Local Development Framework (LDF) becoming adopted, these areas are protected from development and remain saved policies in the MDC Local Plan (1998).

Recently, national policy and guidance has shifted away from focusing on locally designated areas and towards a broader, more inclusive landscape character approach. This approach will need to be taken into account in preparing the LDF. In the county, the Nottinghamshire Landscape Character Guidelines (Nottinghamshire County Council 1997) contains specific guidelines and recommendations for conserving, enhancing and restoring local landscape character. It identifies 10 regional character areas in the county, which are further divided into 35 landscape types.

NCC is currently undertaking a more detailed landscape character assessment of the county in response to changes in national and regional policy. This assessment aims to produce *Landscape Policy Zones* linked with policy objectives for landscape conservation, enhancement, restoration and regeneration. In the absence of these *Landscape Policy Zones*, local landscape designations are still relevant for informing criteria-based policies (PPS7 paragraph 25).

Policy 31 of the East Midlands Regional Plan (2009) asserts that Landscape Character Assessments should inform the preparation of Local Development Frameworks.

Policy 31 also recognises that certain areas, such as Sherwood Forest, have a distinct landscape, historic, ecological and woodland interest, special to the people of the East Midlands and the character of the this area should be protected and enhanced. In addition, The East Midlands Regional Plan also highlights landscape features that need to be better conserved or enhanced through sensitive development and management.

Those relevant to Nottinghamshire include:

- Remnant heathlands, veteran trees and forest wood pasture with acid grassland in Nottinghamshire
- Ridge and furrow field patterns in Nottinghamshire
- Pre-enclosure landscapes and historic parklands

In light of national and regional policy, it is important that the Local Development Frameworks contain clear and concise policies that, seek to protect and enhance local landscape character and quality.

Local Landscape Designations

Designation	Brief Description
Sherwood Forest Special Landscape Area	Contains areas of high landscape, nature conservation, recreational and tourism value. Includes tourism destinations and designated conservation areas such as SSSIs.
Sherwood Forest Heritage Area	Contains the areas of highest landscape, nature conservation and heritage value in the county. Contains remnants of ancient oak woodland and heathland that once typified Sherwood Forest. Contains Sherwood Country Park, SSSIs, SAC and NNR.
Mature Landscape Areas (MLAs)	MLAs commonly contain one or more of the following features: mature deciduous woodland, intact field patterns, permanent grassland/heathland/parkland and mature river or stream courses. Mansfield has 3 which are described in the MDC Local Plan 1998 (NE8A-C). These include: A) the River Maun, B) the River Meden, and C) Nettleworth Manor, Mansfield Woodhouse.
Mansfield District Open Breaks	Recognised in the MDC Local Plan as sensitive gaps aimed at preventing the merging of settlements. There are 4 such gaps described in the MDC Local Plan 1998 (NE4A-D). These areas are generally located within the urban fringe areas of the District.
Mansfield District Green Wedges	Recognised in the MDC Local Plan 1998 as areas of high recreational, landscape and ecological value. These areas provide important links between Mansfield District's urban fringe areas and countryside. There are 3 green wedges described in the MDC Local Plan 1998 (NE5A-C). These include: A) Maun Valley, B) Radmanthwaite/Mansfield Woodhouse, and C) Cauldwell Brook.

9.2 Landscape Character and Features

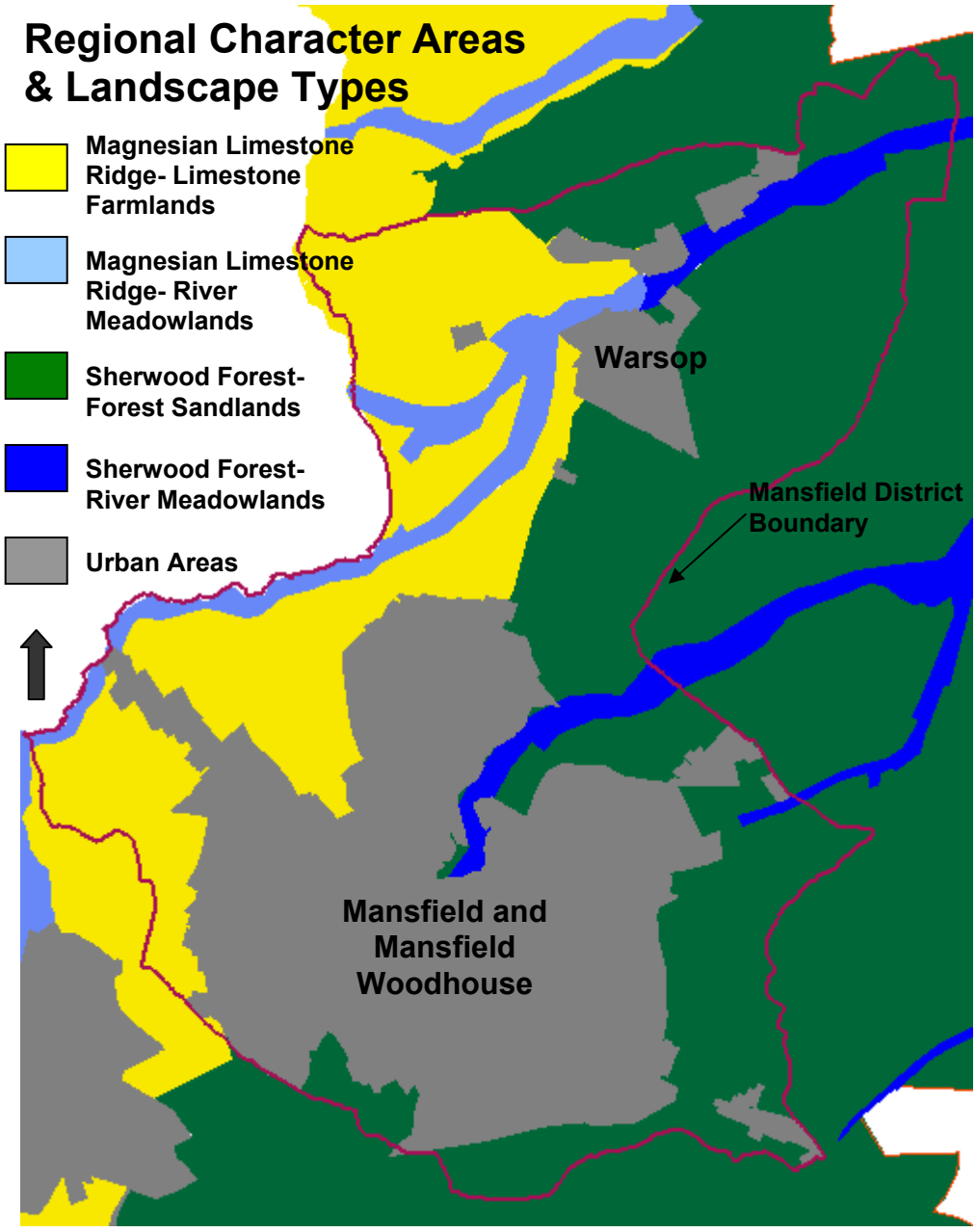
Mansfield District is split between the ***'Sherwood'*** and ***'Magnesian Limestone Ridge'*** Regional Character Areas (RCAs).

Regional Character Areas are defined as: *'Distinct, geographically specific regions where common physical, historical, ecological and cultural associations impart a sense of unity to the landscape. Well known examples include the Fens, Yorkshire Dales and White Peak' (NCC 1997).*

These two main RCAs are further sub-divided into *Landscape Types*. Landscape Types are defined as: *'Types of countryside which have a unity of character due to particular combinations of landform and landcover and a consistent pattern of characteristic features.*

Within the Sherwood RCA, Mansfield District is included in the ***'Sherwood Sandlands'*** and ***'River Meadowlands'*** Landscape Types. Within the Magnesian Limestone Ridge RCA, the District is included in the ***'Limestone farmlands'*** and ***'River Meadowlands'*** Landscape Types.

This section of the IPG includes a summary of each LT and the key features that make them unique, as identified in the NCC Landscape Character Guidelines (1997). Recommendations and more detailed maps can be found in the forthcoming GI Action Plan.



Landscape Types

Sherwood RCA- Forest Sandlands Landscape Type

The ***Forest Sandlands LT*** covers a very broad area of the county bisecting the districts of Bassetlaw, Newark and Sherwood, Mansfield, Ashfield, Gedling as well as the northern edge of Nottingham city. It is the dominant landscape type within the Sherwood RCA and includes the heartland of the Sherwood Forest and the eastern fringe of the Nottinghamshire Dukeries.

The landform of the ***Forest Sandlands LT*** is distinctly rolling and undulating; well wooded, consisting of a mosaic of woodland, acid grassland and heathland; and is also influenced by large areas of agricultural land. The general pattern of the landscape can be viewed as a patchwork of alternating woodlands and open farmland.

The coal industry has also influenced this landscape, shaping settlement patterns within the urban fringe as well as more rural areas. Some pit tips impose quite an urban feel to otherwise rural areas; these are generally seen as landscape *'detractors'*. On a positive note, collieries and tips offer opportunities for enhancing landscape quality, through sensitive habitat and recreational green space creation. Examples in and around the District include Sherwood Colliery and Vicar Water Country Park.

Forest Sandlands Key Natural and Cultural Features

- Dissected undulating topography
- Frequent views of wooded skylines
- Strong heathy character reflected in widespread occurrence of heathland, acid grassland, bracken and gorse scrub
- Geometric pattern of large-scale arable fields outlined by hedges
- Planned layout of straight roads
- Large coniferous and mixed broadleaved plantations
- Mining settlements and associated spoil heaps
- Scrubby semi-natural woodland intermixed with heath and ancient oak-birch woodland

Sherwood RCA- River Meadowlands Landscape Type

In Mansfield District, the ***River Meadowlands LT*** is defined by the floodplains of the Maun and Meden. Outside urban areas, significant areas of these river corridors have been retained as grassland or pastureland. Other areas of the floodplains are flanked by woodlands, heathland and arable land. Along the Meden, permanent grasslands, wet (flood) meadows and wet woodlands provide a strong sense of naturalness.

Approximately 60% of the Maun is flanked by arable land resulting in high levels of fragmentation of the natural environment; this indicates a need for further environmental and landscape enhancement e.g. flood amelioration and habitat creation.

River Meadowlands Key Natural and Cultural Features

- Meandering river channels, sometimes defined by woodland edges
- Permanent pastures and wet meadows
- Fringing alder, willows and riparian scrub
- Alder and willow carrs (wet woodland)
- Mine sites, pit tips on urban edges
- Areas of heathland and acid grassland

Magnesian Limestone Ridge RCA- Limestone Farmlands Landscape Type

This Landscape Type extends from Langold in the North of the County, to the Broxtowe area of Nottingham city. It covers the western half of Mansfield District, including the western fringes of Market Warsop and Mansfield Woodhouse.

The area is distinctively arable with large estate woodlands and a gently rolling landform. Woodlands play an important role in hiding areas of built development. Woodland, especially in areas of lower elevation, also give this Landscape Type a sense of enclosure. Some of these areas include a small number of ancient woodlands. Settlements are strongly nucleated. Pit tips within this landscape type offer opportunities for enhancement.

Limestone Farmlands Key Natural and Cultural Features

- Gently rolling escarpments
- Large estate woodlands and belts of trees
- Views often framed by woodland
- Where view more open, wooded skyline is an important feature
- Area with distinct agricultural flavour
- Settlements compact and strongly concentrated including mining settlements

Magnesian Limestone Ridge RCA- River Meadowlands Landscape Type

In Mansfield District, this Landscape Type includes the narrow floodplains of the River Meden. These floodplains support rich areas of ancient woodland and unimproved wet meadows or pasture; these are areas of high ecological value. The area is generally free of human habitation giving the area a tranquil and rural character.

River Meadowlands Key Natural and Cultural Features

- Pastoral landscape dominated by grazing rather than intense farming
- Meandering river channels with patches of trees but largely open feel
- Grazing meadows with important wet grassland
- Important wildlife resource
- Human habitation is sparse

9.3 Tranquillity

It is often difficult to encapsulate landscape character on paper, especially in relation to landscape quality. One way in which to describe, measure and map landscape quality is tranquillity. Policy 31 of the East Midlands Regional Plan (2009) recognises the importance of tranquillity. **Tranquillity** is the defined as the quality of calm experienced in places with mainly natural features and activities, free from man-made disturbances.

For many, the chance to experience tranquillity is what makes the countryside different from cities. In a survey by the Department for Environment, Food and Rural Affairs (DEFRA) 58% of people said that tranquillity was the most positive feature of the countryside. DEFRA went onto identify the following aspects that contribute both negatively and positively to experiencing tranquillity.

Features that have a positive impact on tranquillity include:

- Natural landscape, including woodland
- Presence of rivers, streams, lakes
- Birds and other wildlife
- Wide open space

Features that have a negative impact on tranquillity include:

- Cars and motorbikes, trains, aircraft, roads and railways
- Light pollution
- Towns, cities and villages
- A large number of people
- Pylons, power lines, masts and wind turbines

The former DEFRA and Campaign to Protect Rural England have produced a tranquillity map covering the East Midlands. It scores areas on a sliding scale.

The 'Landscape Character and Connector' GI Component uses this map to cross reference existing local landscape designations and to identify potential areas for protection and enhancement.

9.4 Landscape Connectors: Urban Area to Countryside

In light of continued growth needs, urban fringe areas are often placed under pressure from development. At the same time, the urban fringe is a resource that is often poorly understood and undervalued (please see Sections 2.1 and 4.7). Urban fringe areas perform a range of functions providing, for example:

- Access to the wider countryside
- Open, visual breaks between settlements
- Opportunities for regeneration
- Important habitat network linkages for wildlife

Many of the District's local landscape designations are located within urban fringe. Conservation Areas and their management plans also provide a means of identifying and addressing important landscape connectors providing opportunities for enhancing urban-to-countryside linkages.

It is important that the right balance is struck between development needs and the need to protect and enhance landscape character, recreational access links and ecological functions. This necessitates a closer look at the areas between urban greenspace and the wider countryside. It also requires that Local Development Frameworks, in light of changes within national planning policy guidance (PPS7), examine local landscape designation policy alongside landscape character guidelines as well as strategic GI recommendations. It is also important that key landscape features are integrated into urban areas rather than merely stop at the urban boundary.

In additional to the Nottinghamshire Landscape Guidelines, the upcoming Nottinghamshire Landscape Policy Zones, and the Nottinghamshire Historic Landscape Characterisation Project (1998-2000) are perceived as useful data resources for helping to inform the GI Action Plan maps and recommendations.

9.5 Overview of Further GI Analysis

This GI network component sets out the rationale and framework for identifying, mapping and analysing a landscape character and key features in the District. Network maps are available in the forthcoming GI Action Plan. The Action Plan identifies and makes planning and management recommendations regarding key areas for the landscape protection, enhancement, restoration and regeneration.

Landscape Character and Connectors

Aims:

- Identify relevant national, regional and local policy and guidance regarding landscape designations, features and character.
- Identify key areas within the urban fringe that provide or have the potential to provide 'green lungs'—open space linkages between urban areas and the wider countryside. Also identify strategic opportunities for restoring and enhancing landscape character.
- Evaluate the strategic role of existing local landscape designations (e.g. open breaks and green wedges) and make recommendations (i.e. do these still fill important strategic roles regarding landscape protection? Are other options better?)
- Provide protection, enhancement, restoration and regeneration recommendations for MDC's Local Development Framework based on the above (See the GI Action Plan) with relevance to the natural and built environment.

Analysis Objectives:

- Consider the following data to help inform the GI Action Plan and in meeting the aims above:
  - Key natural and historical landscape features within each Landscape Character Area
  - Locally designated landscape areas i.e. Mature Landscape Areas (MLA), Sherwood Forest area designations, Mansfield District Council (MDC) Green Wedges and MDC Open Breaks
  - Tranquillity Maps (Campaign to Protect Rural England (CPRE)
  - Landscape Detractors e.g. previously developed land
  - Nottinghamshire Historic Landscape Characterisation mapping and Nottinghamshire Policy Zone work
- Analyse and describe observed patterns within and between the above maps. Provide new map based on mapping analyses and consultation.
- Relate the landscape character and above maps with the other GI network components.

10.0 Recreational Access Network

Introduction

Connectivity is a key objective of Green Infrastructure, in particular providing access to greenspace* destinations by sustainable means. Recreational access routes such as Public Rights of Way (PRoW), cycle paths and other established trail networks provide valuable recreational and sustainable transport links to local greenspaces, the wider countryside and other destinations such as historical and cultural attractions and town centres.

A well-planned for and integrated access network as well as an adequate provision of high quality and accessible greenspace greatly enhance people's quality of life e.g. providing opportunities for improving health and well-being, enjoying the outdoors and being able to better access resources.

The main aim of this GI network component, 'Recreational Access Network', is to provide an evidence base for current and future planning needs (e.g. Local Development Framework policy recommendations) and to highlight opportunities for improving access and use of the District's trail networks and publicly accessible greenspace. Specific outcomes include, for example:

- Identifying strategic recreational access routes in relation to key greenspace destinations, visitor attractions, town centres, public transport links and the wider recreational trail network.
- Identifying strategic network gaps
- Evaluating the adequacy of publicly accessible greenspace provision and identifying deficiencies
- Linking with the Council's Recreational Openspace audit (known as PPG17 audit)
- Making recommendations, where necessary, for strengthening accessibility to greenspace

It is important to note that this GI Component is, namely, an assessment of strategic recreational routes rather than a rights of way improvement plan or sustainable transport strategy. Sustainable transport issues, for Mansfield District, are more specifically covered through county rights of way and cycle strategies summarised in Section 10.1.

This network component compliments a parallel Council recreational openspace study (PPG17 Audit) currently being conducted (in process as of 2009). See Sections 10.1 and 10.2 for more information.

10.1 Policy Background

Publicly accessible openspace and walking and cycling routes play important roles in delivering key Government objectives including: improving health and well being and delivering sustainable development. In relation to planning policy, walking and cycling networks fit within both sustainable transport and recreational openspace policy frameworks; the later is the focus of this section. Recreational access is addressed in relation to:

- Access networks (e.g. rights of way and cycle networks)
- Access to the countryside
- Provision of accessible natural green space.

The following table summarises the key relevant recreational openspace and trails policy/strategy placed within the context of green infrastructure and local authority openspace requirements.

Legislation/ Strategy	Description	Relevance to Green Infrastructure
Countryside Rights of Way Act 2000	Sets out national legislation (permissions and restrictions) for rights of way trails, access to the countryside and nature conservation.	Public access land is defined as mountain (land over 600 metres), moorland, heathland, downland, and registered common land open to all walkers who may wander freely of trails. Duties are observed by the Natural England and National Parks Authority. Requires local highway authorities to produce a Rights of Way Improvement Plan for their area, taking into account the needs of the public in terms of recreation, exercise, and enjoyment of the countryside, and considering the particular needs of less able people.
National Planning Policy Guidance Note 17 (PPG17 2002)	National policy framework for the protection, enhancement and development of openspace and recreational facilities including public rights of way and cycle routes. PPG17 requires that Local Authorities (Las) should encourage better accessibility of existing openspace and sports and recreational facilities (also see section 10.3 below).	PPG17 requires Local Planning Authorities (LPAs) to conduct open space audits and set open space standards within their local district area. Ease of access to local public open space, particularly on foot, should be an important consideration in Local Development Framework preparation. Rights of way and cycle trails are considered important 'recreational facilities' and LAs are required to 'protect and enhance those parts of the rights of way network that might benefit open space' as well as seek opportunities to provide better facilities for walkers, cyclists and horse-riders.
Mansfield District Council Openspace (PPG17) Audit and Strategy work (In Process as of Jan. 2009)	Based on PPG17 --national policy guidance. Includes a quality audit of the District's recreational openspace, play areas, school playing fields, allotments and incidental openspace. Sets local standards for current and future provision requirements.	Whilst the Green Infrastructure and the PPG17 work are separate studies, they overlap in fundamental areas and inform each other with relation to greenspace protection, enhancement, creation requirements. Please see Section 10.2 for more information.

Legislation/ Strategy	Description	Relevance to Green Infrastructure
East Midlands Regional Plan (2009)	Policy 28: Regional Priorities for Green Infrastructure Policy 40: Regional Priorities for Culture, Sport and Recreation	Policy 28 stresses that Local Authorities (LAs) should work to increase access to green space. In connection with Policy 41, the East Midlands Regional Plan states that the network of statutory rights of way and the countryside, as a whole, are valuable resources for providing opportunities for informal recreation.
Nottingham and Nottinghamshire Joint Structure Plan (2006)	Policy 6/3 covers public rights of way and other recreational routes	Public rights of way and other recreational routes will be provided, maintained and wherever possible improved. For new routes, priority will be given to developing routes linking urban areas to the countryside and the reuse of former railway lines and other transport features such as canals. Circular routes should link to 'gateway sites' such as country parks and community woodland as well as longer distance routes such as Sustrans National Cycle network.
NCC Rights of Way Improvement Plan (2007-2012)	Prepared in accordance with the Countryside and Rights of Way Act 2000. Provides a detailed strategy for the provision and enhancement of rights of way and other recreational routes.	Policies cover specific rights of way improvements such as trail maintenance and public safety.
A Trails Strategy for Mansfield (1998)	Describes existing and potential trail system(s) in the District and sets out series of policies. Prepared by MDC through consultation with the Trails sub-group of the Action Mansfield Countryside Task Force group.	Policies include, for example: - Protection and enhancement of existing trail networks - Linkage with regional and national networks - Publicity There is an urgent need to further implement these policies into practice. The MDC Analysis and Implementation Plan offers a means for integrating Trail Strategy policies with MDC Local Development Framework (LDF) and other openspace policies.
Mansfield District Cycling Strategy (2000)	Describes the District's cycle networks. Sets out a series of policies addressing sustainable transport and encouraging cycle use.	Policies include, for example: - Assessing local need - Linkage with regional and national networks - Increasing awareness Some of these policies have been addressed but there is a need to further implement these policies into practice. The MDC Analysis and Implementation Plan offers a means for integrating Cycle Strategy policies with future LDF and openspace policies.

10.2 Recreational Openspace (PPG17) and Green Infrastructure

Both Openspace (PPG17) and Green Infrastructure strategies take into account the protection, enhancement and creation of local green and open space provision, thus contributing essential evidence regarding future planning constraints and provision requirements for the Local Development Framework (LDF).

Both studies have informed and continue to inform each other in complimentary ways:

- Defining Greenspace typologies (types of greenspace to be considered). Some typologies differ slightly due to differences in the aims of both studies. For example: GI includes all sports pitches and parks into one 'Parks and Recreation' typology, whereas PPG17 separates these out. Likewise, GI goes into more detail in defining separate natural and semi-natural openspace typologies, whereas PPG17 lumps these together into one 'Natural and Semi-natural' typology.
- Mapping and database development
- Identifying key considerations re: public access to greenspace
- Identifying strategic areas for the protection, enhancement and creation of greenspace
- Informing planning policies on greenspace funding e.g. 106 Agreements

Summary of Key Contributions of the Mansfield District Council Openspace (PPG17) and Green Infrastructure Work:

Green Infrastructure	PPG17: Recreational Openspace Provision
Primary Focus: Networks of natural and managed greenspace and cycle and walking trails. Also historic environment, landscape character and combined public benefits.	**Primary Focus**: Specific outdoor sports and recreational sites, allotments, & play areas.
Study Area: Whole of Mansfield District including urban, urban fringe and wider countryside. Includes 14 separate typologies.	**Study Area**: Mansfield District urban area. Some urban fringe areas but only those relating to the above. Includes 12 separate typologies.
Main aims: to identify protection and enhancement needs (natural and cultural environments) and to also seek to strengthen GI networks by identifying strategic gaps and deficiencies and providing recommendations for GI investment and creation.	**Main aims**: to set local standards for recreational openspace and to identify protection and enhancement needs as well as recommendations for the creation of new greenspace in relation to these local standards.
Key work areas include: • IPG Note 11: strategic GI framework • Action Plan: network maps, LDF policy recommendations, and greenspace management & investment considerations • On-going monitoring of GI Action Plan	**Key work areas include**: • Undertaking audit of existing provision • Site quality surveys • Shared council database • Setting local standards for sport and recreation openspace and allotment provision • LDF policy recommendations

10.3 Trail Networks and Accessing Greenspace

The Mansfield District GI Recreational Access Network takes into account all walking, cycling and horse riding trails that link to strategic greenspace destinations. The types of trails and greenspaces included in this analysis are outlined below. Analysis results and planning policy recommendations can be found in the MDC GI Action Plan.

Types of Recreational Access Routes

There are a number walking, cycling and horse riding routes throughout the District which fall within the following categories:

General Category	Definition
Definitive Footpaths, Bridleways and Byways (Rights of Way trails)	Footpaths – Paths defined by footuse.
	Bridleways – paths that can be used on foot, horseback and pedal cycles.
	Restricted byways – paths open to walkers, cyclists, horse riders and vehicles that are not mechanically propelled (such as horse and cart).
	Byways – paths open to all traffic.
Established Local Routes	There are a number of routes and paths, whilst not having definitive status, are used extensively by local people. This category also includes established long-distant routes identified in the MDC Trails Strategy (1998).
Green Corridors	'Green corridors' is a *planning policy* term for describing all cycleways, rights of way and river and canal banks as set out in PPG 17. Currently, there are 4 recognised green corridors in the Mansfield District Council Local Plan.
Guided Walking Routes	There are a number of published leaflets outlining walks in and around Mansfield District. These are resources used by local residents, walking groups, school groups, and visitors to the District. Examples include: Mansfield Town trail, Church Warsop circular walk, and Oak Tree Heath walks.
Cycle Paths	There are a series of on and off-road cycle trails including shared cycle/pedestrian routes and cycle-only trails. Some paths utilise disused railways lines. These are implemented by Nottinghamshire County Council.
National, Regional and Countywide Routes	These include established long-distant routes of national, regional and county significance. National routes that pass through the District and connect the District's wider trail network include: - Robin Hood Way (88 miles) - The Sustrans National Cycle network (National Cycle Route 6)

Strategic Greenspace Destinations

In order to provide more flexibility and to enhance experience, it is important, that walking and cycling networks provide links to key greenspace destinations, visitor attractions, urban centres, and public transport hubs within and adjacent to the District. In addition to ensuring these physical links are in place, these opportunities must also be well promoted so that these resources are well utilised and appreciated.

The GI Action Plan takes into consideration the following areas/points of interest that an integrated trail network should link to:

- Major destination greenspaces: *High-profile* & *high-quality* sites including Country and Green Flag parks that attract a large number of visitors. Includes greenspaces that host major cultural events and festivals. For example: country parks, Titchfield Park, Carr Bank Park, Kings Mill Reservoir, and Sherwood Pines.
- Natural greenspace attractions: Includes wildlife reserves (e.g. Local Nature Reserves) and green corridors that attract visitor interest e.g. bird watching. Also includes publicly accessible woodlands identified by the Woodland Trust and Forestry Commission, e.g. Harlow Wood. These are areas that can sustainably balance visitor pressure whilst still acting as biodiversity resources.
- Tourist attractions: Major natural, cultural and recreational tourist attractions, e.g. historic churchyards and local landmarks. Defined by the Mansfield District Council Tourism Strategy (1999).
- Urban Centres: Includes urban centres within the District as well as adjoining areas e.g. Clipstone, Sutton-in-Ashfield, Rainworth, Edwinstowe.
- Train Stations and Bus Terminals: Major non-car transport linkages. Train and bus hubs offer greater choice and flexibility when incorporated into walking and cycling journeys.
- Leisure centres and major sport pitches: Local Authority and private leisure centres and major outdoor sports pitches, including golf courses.
- Long-distance national, regional, county and district routes: Examples include the National Cycle route, Robin's Hood Way, Maun Valley trail, Timberland Trail

10.4 Accessible Natural Greenspace Standard

Access to natural greenspace plays an important role in sustainable communities. It is important that people, particularly children and elderly people, should have access to greenspace close to where they live and within a reasonable distance.

National Planning Policy Guidance Note 17 (PPG17) requires Local Authorities to undertake open space assessments in order to make informed protection, creation and development decisions; this includes both qualitative and quantitative assessments. Is there an 'adequate' supply? Is there a surplus? In addition to providing adequate amounts of openspace, it recognises the important contribution nature makes to our social and economic wellbeing.

PPG17's companion guide points to the *Accessible Natural Greenspace Standard (ANGSt*), established by Natural England, for ensuring adequate provision for accessing places of wildlife interest for people living within towns and cities. Thus, it provides a benchmark for ensuring that an adequate amount of accessible natural greenspace is available in a local area.

The ANGSt assessment will be done in association with the Mansfield District Council's local PPG17 study. The GI Action will include results from the ANGSt assessment, including maps and figures, and suggest policy recommendations as a result.

Accessible Natural Greenspace Standard

- No person should live more than 300 metres (in a straight line) from their nearest area of natural greenspace of at least 2 hectares in size.
- There should be at least 1 hectare of Statutory Local Nature Reserves per 1,000 people living within the District.
- There should be at least 1 accessible and defined 20 hectare site within two kilometres of home.
- There should be at least 1 accessible and defined 100 hectare site within five kilometres of home.
- There should be at least 1 accessible and defined 500 hectare site within ten kilometres of home.

'Natural greenspace' is defined by Natural England as 'land, water and geological features which have been naturally colonised by plants and animals and which are accessible on foot to large numbers of residents'. This is a rather loose definition. For the purposes of the Green Infrastructure IPG and Action Plan, publicly accessible natural greenspace in the District is defined as the following:

- Public parks and recreation grounds (as identified in MDC's PPG17 study)
- Publicly accessible golf courses (where private membership not required)
- Cemeteries and historic churchyards
- Local Nature Reserves and accessible SSSI, SINCs, SACs NNRs (see section 7.2) and other local wildlife reserves

- Open access land e.g. heathland as defined by the Countryside Rights of Way Act 2000
- Access woodlands as identified by the Woodlands Trust and Forestry Commission
- Reservoirs and fishing ponds with public access
- Publicly accessible areas of incidental openspace or amenity space above 0.4 ha.
- Other land with public rights of way access trails such as green corridors and areas of open countryside

10.5 Overview of Further GI Analysis

This section defines the components relating to recreational access routes and the accessible natural greenspace requirements. Additional maps, patterns observed and policy recommendations can be found in the GI Action Plan.

Recreational Access Network and Accessible Natural Greenspace Analysis

Aims:

- Identify relevant national, regional and local policy in relation to recreational access networks (Public Rights of Way and cycling routes) and guidelines for accessible natural greenspace provision.
- Map and identify: key access routes, gaps and linkage/enhancement needs.
- Assess how well the district meets Accessible Natural Greenspace Standards (ANGSt) and make recommendations on the findings.
- Provide recommendations for strategic protection and enhancement needs as well as for integrating access networks within new development.
- Provide recommendations for improving linkages to long-distance strategic walking and cycling routes and areas of interest. Include recommendations for improving publicity and promoting use e.g. tourism, healthy lifestyle choice.

Analysis Objectives:

- Conduct an Accessible Natural Greenspace analysis of the District's greenspaces based on Natural England's Accessible Natural Greenspace Standards (ANGSt). Create corresponding maps.
- Create a 'Recreational Access Network' map showing strategic walking and cycling routes and other Public Rights of Way trails and points of interest (e.g. accessible greenspace destinations, tourist destinations and the wider countryside).
- Identify strategic gaps, physical barriers and potential linkages in the mapped recreational access network (described above).
- Compare observed patterns in the above maps with other GI Framework Components.

11.0 Multi-functionality

Introduction

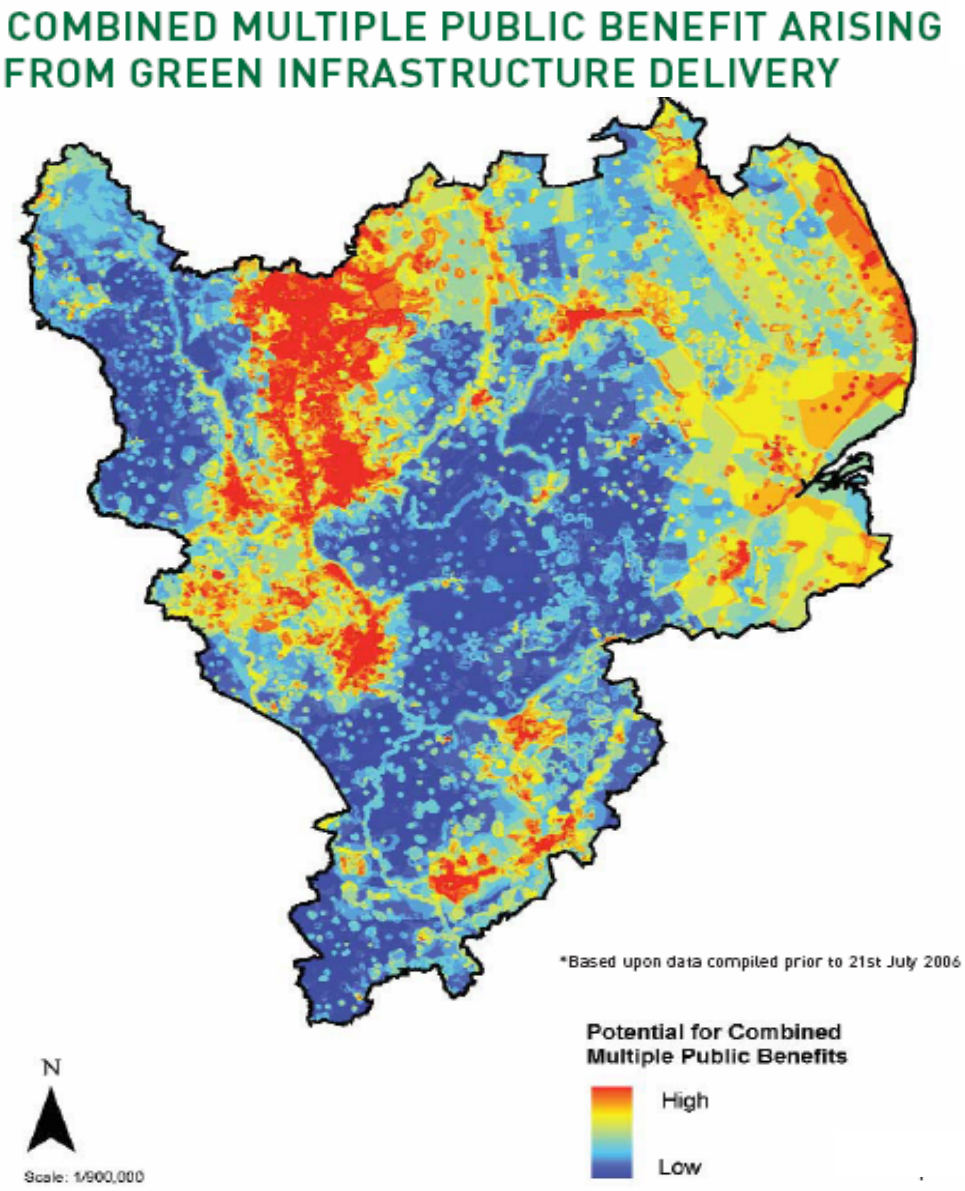
Greenspaces no matter the size or shape or whether they are located in an urban centre or the countryside can offer a wealth of benefits to local residents and visitors. Often a city park or public woodland will have multiple functions or public benefits associated with it; providing, for example, opportunities for exercise, climate change adaptation, and urban regeneration (also see *Countryside in and Around Towns* in Section 2.1).

Green Infrastructure (GI) differs from conventional approaches to greenspace planning because it considers multiple environmental, social and economic benefits (i.e. multi-functionality) in concert with land development, growth management and built infrastructure planning. Wherever possible, GI should be planned and designed so as to maximise these benefits.

The term *multi-functionality* or multiple *public benefit* and its relevance in Green Infrastructure strategies and plan was coined by the East Midlands Regional Assembly (EMRA) as part of its work on GI in the region. EMRA published a series of 'Public Benefit' maps (2006) that summarise combined economic, social and environmental GI benefits (see combined multiple benefit map below). The maps were based the Integrated Regional Strategy Framework and created to determine where GI investments might best contribute to the region's aspirations for a vibrant economy, healthy social and quality environment.

This GI network component builds on this concept and provides a methodology for assessing the combined functions/pubic benefits of greenspaces (both existing and potential) in Mansfield District. Individual maps can be found in the forthcoming GI Action Plan.

It is important to note that, multi-functionality is delivered by the GI network as a whole and helps contribute to our broadening understanding of green infrastructure. For this reason, multi-functionality must be looked at in combination with the other GI network components. For example, whilst an area of land may score low in relation to multi-functionality, it may hold strategic importance in other areas such as landscape character.



The red areas on the map indicate where the greatest number of public benefits can be achieved, thus the highest degree of multi-functionality.

11.1 Policy Background

Multi-functionality stems from the need to identify the resources that contribute to sustainable communities. This network component identifies and defines relevant GI functions in relation to the following sustainability objectives and policy guidance:

- Key national and regional sustainability objectives (see Section 2 for a summary of international, national and regional sustainability drivers)
- Planning Policy Statement 1 (see below)
- Mansfield District Council Sustainability Appraisal objectives (see below)
- Countryside In and Around Towns (see Section 2)

Sustainable development is the core principle underpinning planning. Planning Policy Statement 1: *Planning for Sustainable Development* addresses four aims of sustainable development:

- Social progress
- Effective protection of the environment
- The prudent use of natural resources
- Maintenance of high and stable levels of economic growth and employment

PPS1 states that these aims should be pursued in an integrated way. Mapping areas of multi-functionality is one way in which to identify where this is possible.

At a local level, all Local Development Framework (LDF) documents are required under the Planning and Compulsory Purchase Act 2004 to undergo monitoring work in the form of Sustainability Appraisals. The objective of Sustainability Appraisals is to promote sustainable development.

The MDC Sustainability Appraisal identifies local objectives and indicators in relation to national and regional sustainable development objectives. The table below summarises these objectives and relates them to the relevant GI functions.

Sustainability Appraisal Objective			**Corresponding MDC GI Function**
Environmental	SA1	To increase biodiversity levels	Contribution to Biodiversity
	SA2	To protect and enhance the rich diversity of the natural, cultural and built environment and archaeological assets of the district	Contribution to Biodiversity Cultural and Historical Heritage
	SA3	To manage prudently the natural resources including land, building stock, water, air quality, soils and minerals.	Air Quality Amelioration & Climate Change Mitigation Flood Amelioration Local Food Production
	SA4	To minimise the environmental impacts of waste and pollution (also includes reducing the amount of contaminated or degraded land).	Air Quality Amelioration Contribution to Local Tourism (potential)
	SA5	To minimise energy usage and reduce dependency on non-renewable resources	Beyond the scope of existing mapping resources.
	SA6	To make efficient use of existing infrastructure, help reduce the need to travel by car and improve accessibility to jobs and services	Sustainable Transport
Economic	SA7	To create high quality employment opportunities	Labour productivity and Image and Investment Contribution to Local Tourism
	SA8	To develop a strong culture of enterprise and innovation	Contribution to Education & Contribution to Improving Educational Deprivation
	SA9	To provide the physical conditions for a modern economic structure	Labour productivity and Image and Investment

Sustainability Appraisal Objective			Corresponding MDC GI Function
Social	SA10	To ensure that the housing stock meets the current and future needs of the population	Contribution to Urban Regeneration
	SA11	To improve health and reduce health inequalities	Informal and Formal Recreation & Opportunities to Improve Health
	SA12	To provide better opportunities for people to enjoy the District's heritage and participate in cultural and recreational activities	Contribution to Local Tourism Accessible Greenspace
	SA13	To improve community safety, reduce crime and the fear of crime	Beyond the scope of existing mapping resources.
	SA14	To promote and support the development and growth of social capital (community level activities and organisations)	Contribution to Social Regeneration

11.2 Individual Green Infrastructure Functions

As outlined in the section above, key GI functions identified in this IPG reflect national, regional and local (District) sustainability objectives. These GI functions were identified and defined in consultation with the GI Steering Group (see Section 5.2); they also reflect functions identified in the *East Midlands GI Scoping Study* (September 2005), EMRA Public Benefit Mapping project (2006) and the *Greenwood Community Forest GI Study* (August 2005). The GI functions below are colour-coded in relation environmental (green), Economic (blue) and Social (yellow) sustainability objectives (see Section 11.1), although, in reality, there will be a degree of overlap.

Due to the strategic nature of the Green Infrastructure IPG, it is only possible to identify *plausible* GI functions. These arise from existing and potential uses:

- **Existing GI Functionality:** Assumes that these functions would not need additional intervention to alter their physical properties. Physical intervention is defined as GI creation e.g. tree planting, wetland creation, new greenspace allocation OR physical enhancement e.g. restoration OR promotion as a valuable reseource.
- **Potential GI Functionality:** Potential or 'additional' functionality that could be generated through further physical intervention.

It is important to note that function definitions are also influenced by computer mapping capabilities and data availability; computer mapping acts as a modelling tool, thus, as mentioned above, it is only possible to determine plausible or approximate *functionality* (see the table on the following pages). Please also see the GI Action Plan for mapping results.

Green Infrastructure Functions

Function	**Existing** (without need for physical intervention)	**Potential** (need for additional physical intervention)
Flood Amelioration	Identifies GI that currently benefits water attenuation, inception and infiltration abilities in the District. Includes, greenspace within flood zones 2&3. Uses results from the Mansfield District Strategic Flood Risk (SFRA) Assessment (2007).	Identifies areas with scope for increasing water attenuation, inception and infiltration: 1) areas with scope for building sustainable urban drainage systems (SUDs) including, for example, soakaways, retention ponds and wetland creation and 2) other areas indicated in the Mansfield SFRA such as surface run-off areas.
Air Quality Amelioration & Climate Change Mitigation	Identifies GI that directly contributes to the amelioration of poor air quality specifically, greenspace buffering high-use traffic areas. Also includes woodland within the District's urban boundaries (Mansfield, Mansfield Woodhouse, & Warsop) acting as CO_2 sinks.	All greenspace within a specified distance from major transport routes e.g. Mansfield-Ashfield Regeneration route that may be suitable for tree planting or other greenspace enhancement/creation. Land with significant archaeological significance is used as a constraint.
Local Food Production	Identifies allotments and arable land where existing infrastructure indicates that it has the potential to contribute to local food production: i.e. arable land within Agricultural land classification1&2 areas.	Same as the 'existing' local food production function. It is difficult to separate out the two due to limitations in data availability.
Cultural and Historical Heritage	Areas of known cultural and historical significance including, for example, known archaeological sites of high sensitivity, historic churchyards, registered parks and gardens, disused colliery and pit tips, Conservation Areas, greenspace surrounding scheduled monuments, Sherwood Forest. etc.	Same as the 'existing' function. It is difficult to separate out the two due to limitations in data availability. There is also scope within existing historic and cultural areas that may need enhancement or promotion as a valuable resource.
Contribution to Biodiversity	Identifies designated wildlife sites (SSSI, LNR, etc), priority habitats and land in stewardship agreements that contribute to important nature conservation.	Identifies other areas of 'natural essence' e.g. urban parks, recreation grounds and allotments in which there is scope for improving biodiversity value. Also includes SINCs on land that MDC owns and arable land where active management would enhance biodiversity (based on National Indicator 198).

Function	**Existing** (without need for physical intervention)	**Potential** (need for additional physical intervention)
Sustainable Transport	Foot and cycle trails within the District as well as those leading to urban centres outside the District that contribute to sustainable non-car transport.	Footpath and cycle trail gaps identified in the Recreational Access network component.
Contribution to Local Tourism	Identifies known visitor attractions e.g. parks as well as greenspace surrounding historical and cultural points of interest for people within and outside the District.	Includes areas of land that currently act as visual 'detractors' in the District such as brown-field and previously developed land over 4 ha and thus, if restored a greenspace, could contribute to improving the image of District.
Labour productivity and Image and Investment	Greenspace can have indirect positive effects in relation to inward investment (attracting business) and attracting people to settle. Identifies inward investment sites in the District: 1) greenspace which increases visual attractiveness (landscaping around major employment areas and civic areas e.g. libraries, churches) and 2) greenspace close to transport routes and existing strategic investment corridors.	Identifies greenspace within planned inward investment areas in the District: 1) proposed business sites, 2) neighbourhood renewal areas and 3) proposed strategic investment corridors. Source of data: MDC Planning Policy and MDC Urban Regeneration
Contribution to Social Regeneration	Identifies GI areas that offer opportunities for community level activities and organisations. This includes: 1) Known greenspace locations from a specified list where community events take place e.g. Friends Groups, Groundwork, MDC programmes and 2) additional greenspaces that are set up to support community events e.g. LNRs, major parks, outdoor sports facilities, allotments.	Identifies 1) Greenspace within areas of high Multiple Deprivation (2004).
Informal and Formal Recreation & Opportunities to Improve Health	Identifies informal and formal recreation areas which contribute to improving overall mental and physical health in district. This includes, for example, publicly accessible greenspace (e.g. parks & allotments), areas of quiet contemplation (e.g. cemeteries) and trails.	Identifies greenspaces that have scope for improving health inequalities in the District in relation to IMD Health Scores and locally identified PCT data e.g. those households with limiting long-term illness, self-reported general health and permanent sickness and disability.

Function	**Existing** (without need for physical intervention)	**Potential** (need for additional physical intervention)
Contribution to Education & Contribution to Improving Educational Deprivation	GI plays an important role in the National Curriculum including arts, sciences and physical education. Identifies accessible greenspace within 800m of school address points. Also includes all Local Nature Reserves (LNRs) and Accessible Woodlands.	Identifies greenspaces that may contribute to reducing inequalities in education based on 2004 Indices of Deprivation in the East Midlands.
Access to Natural Greenspace (ANGSt)	Identifies areas that meet Accessible Natural Greenspace Standards (ANGSt): 1) all Local Nature Reserves; 2) accessible greenspace within 300m of residential addresses; 3) existing designated* greenspace over 20ha; 4) existing designated greenspace over 100ha. *Established park or accessible nature reserve	Areas with significant potential to reduce ANGSt deficits: 1) Local residences not within 300m of accessible greenspace and 2) inaccessible greenspace and derelict land which have the potential to increase amount of accessible greenspace.

11.3 Assessing Multi-functionality

Whilst it is important to understand individual functions/benefits of green infrastructure, assessing combined public benefits (multi-functionality) helps, for example, to: consolidate resources; realise new opportunities; and highlight areas in need of protection, enhancement and creation.

The following approach to mapping and displaying multi-functionality is based on a cumulative scoring system. This involves:

A) Defining individual functions as in the above table.

B) Creating individual function maps (13 total)

C) Creating multi-functional maps by combining individual function map data.

Each individual GI function is given a score of 1; thus, the overall multi-functionality score ranges between 1-13. The subsequent mapped results (see the forthcoming GI Action Plan) favour a broad understanding of where combined public benefits exist and overlap.

This includes 2 separate maps:

1) **Combined 'existing' multi-functionality**: identifies possible areas for protection, funding prioritisation and/or and integration with other existing MDC and partnership services/programmes; and
2) **Combined 'potential' multi-functionality**: identifies potential priority areas for GI further enhancement and creation, investment and/or integration with sustainable design.

11.4 Overview of Further GI Analysis

This section defines multi-functionality, its importance and how it will be identified (mapped) and assessed. Individual function and multi-functionality maps, notes on observed patterns and further recommendations can be found in the GI Action Plan. Aims and analysis objectives include the following:

Multi-functionality

Aims:

- Define existing and potential GI functions in relation to national, regional and local sustainability objectives.
- Provide recommendations GI regarding protection, enhancement and GI investment.
- Identify further opportunities for improving and promoting the individual and combined public benefits of Green Infrastructure including opportunities for accessing resources.

Analysis Objectives:

- Define multi-functionality and methods for analysing it.
- Produce individual GI function maps and combined multi-functionality maps.
- Identify multi-functionality hotspots as well as areas of low functionality.
- Compare identified patterns in multi-functionality with other GI network components (specifically 'Network of Sites and Areas Sensitive to Development' and 'Landscape Character and Connectors').

Part 4:

Moving Forward: Further Analysis and Implementation Needs

12.0 Conclusions and Next Steps Forward



Green Infrastructure (GI) is made up of greenspace assets and linkages that form interconnected networks within urban, urban fringe and rural settings. It is a concept rooted in sustainable development that recognises that such assets provide multiple social, economic and environmental benefits for people and wildlife alike. It is essential that we identify important existing GI assets and linkages (please see section 1.1) as well as future needs and opportunities, if we are to plan for an improved natural and built environment and to ensure an enhanced quality of life for present and future residents and visitors.

The Mansfield District Council (MDC) Green Infrastructure IPG is the first MDC document to take such a specific, integrated and comprehensive approach to the District's green and open spaces. It provides a framework for identifying and defining key GI resources, as well as, needs and opportunities in the District. It is a useful guide for ensuring future growth, land conservation and development decisions are carried out as sustainably as possible.

Whist it is primarily planning policy focused, with an emphasis on sustainable development, this Green Infrastructure IPG has much wider guidance applications such as, for urban regeneration and openspace management.

In addition to this IPG, the forthcoming GI Action Plan provides detailed maps and recommendations for future allocation and action; it will act as an action plan for identifying areas where protection is vital, where enhancement, creation and investment is required, and where development can enhance GI and vice versa. It will also identify opportunities for linking with joint partnership working, improving site management, and promoting public benefits.

The MDC Green Infrastructure work is divided into 3 main phases. Please see following sections for key outcomes and approximate timetable.

- **Green Infrastructure IPG**: Policy framework and methodology.
- **GI Action Plan**: an action plan that provides future planning policy, management and monitoring recommendations. Central to this action plan is identifying areas where protection is vital, where enhancement, creation and investment is required, and where development can enhance GI and vice versa.
- **Implementing the GI Action Plan and monitoring progress**: putting recommendations into action and monitoring progress.

12.1 Delivery Functions

Green Infrastructure IPG

The main functions of the Green Infrastructure IPG are to provide:

- Vision, aims and objectives for GI planning in the District.
- An important evidence base for the emerging MDC Local development Framework and ensuring that the environmental, social and cultural importance of the network of green sites and trail networks within Mansfield District are taken account of in future planning decisions.
- A framework (methodology) for identifying: 1) strategic GI hubs and corridors, 2) areas that need to be protected, enhanced and/or created; 3) areas that contribute to sustainable development and communities; and 4) areas where development could provide for important enhancement of the Green infrastructure network including the creation of new GI.

Central to the above framework, this IPG identifies strategic areas (networks) which will provide the focus for its sister document—the GI Action Plan. These strategic networks include:

- Network of Sites Sensitive to Development (based on national and regional priorities and planning policy)
- Habitats Network
- Recreational Access Network and Accessible Natural Greenspace
- Landscape Character and Connectors
- Multi-functionality (combined public benefits and opportunities for strengthening green infrastructure resources)

GI Action Plan

Broad functions of the GI Action Plan include:

- Creating maps based on the 5 GI network components and conducting spatial analyses, through computer-based mapping and site visits.
- Providing recommendations and drafting policy wording to inform the Mansfield District Council (MDC) Local Development Framework and other openspace evidence needs.

  Recommendations are based on the above spatial analyses; this includes but is not limited to:

  - Identifying strategic protection, enhancement, creation, sustainable design and overall GI investment areas within Mansfield District.
  - Integrating key regeneration and growth area initiatives, where appropriate.
  - Providing sustainable design recommendations for new developments.
  - Identifying opportunities for optimising public benefits GI offers and providing recommendations for improving functionality of and access to GI resources.

- Creating a long-term vision for an integrated and thriving GI Network within Mansfield District.
- Continuing to engage with stakeholders from Mansfield District Council, other statutory and non-statutory organisations, and the community.

2.2 Next Steps Forward

The next steps forward include:

Outcome	Estimated Time Period (as of September 2008)
Draft Green Infrastructure IPG consultation period	September-November 2008
Mapping and site-based spatial analyses of the District's GI resource	October 2008-Summer 2009
Produce the Draft GI Action Plan	Summer/Autumn 2009
Draft GI Action Plan consultation period	Autumn 2009
Implementation and Monitoring	Review of Action Plan at least every 3 years

12.3 Green Infrastructure Conclusions

Conclusions from the Green Infrastructure IPG can be summarised as follows:

- International, national regional and local policy widely supports the need for local authorities to produce GI strategies. To be effective GI must be integrated into local policy and practice on a strategic level.
- The Green Infrastructure IPG provides an important tool for supporting and planning for sustainable development and communities i.e. by providing a much needed framework for GI planning.
- The IPG also provides a methodology for underpinning and carrying forward the GI Action Plan which will provides detailed maps and policy and management recommendations for future allocation and action in the District.
- Overall, GI provides a range of benefits for wildlife and people alike (e.g. health and well-being, inward investment, adaptation to climate change and biodiversity enhancement). Effectively planning for and managing Green Infrastructure supports a more resilient and robust environment.
- Mansfield District has varied environmental, historical, and recreational resources. Important resources include, for example, the District's historical and geographic ties with the Sherwood Forest, Local Nature Reserves (LNRs), historic churches, long-distant cycle and walking routes, green flag parks, and accessible woodlands. At present, these resources are generally under-promoted and thus under-recognised by local residents and visitors.
- The District supports rare species such as nightjar, white-clawed crayfish and water voles as well as internationally rare priority habitats such as magnesian limestone grassland, heathland and oak-birch woodland. The District also includes areas of ancient woodland.
- The District has 9 LNRs (more than any other Nottinghamshire district). The combined area of Sites of Special Scientific Interest (SSSIs), Sites of Important Nature Conservation (SINCs) and LNRs account for 9.7% of the District's total area. Overall, the district's SSSIs account for 10% of Nottinghamshire's SSSI land area.
- Mansfield faces continuing needs for further built development which places pressures upon remaining green spaces. However, effective planning and design that includes careful integration and enhancement of green infrastructure can bring positive environmental, social and economic benefits. The GI Action Plan will provide a tool to encourage such integration.
- The protection and enhancement of existing GI and the creation of new GI will need to employ a variety of means, resources and consultation.

2.4 Contacts

For more information regarding this IPG or other inquiries with regards to Green Infrastructure in Mansfield District, please contact Planning Policy at Mansfield District Council.

Tel: (01623) 463195

Email: planningpolicy@mansfield.gov.uk

An electronic copy of the Mansfield District Council Green Infrastructure IPG can be found on: http://www.mansfield.gov.uk/ipg.

Appendices

Appendix A: Glossary

Ancient woodland (AW): areas of woodland and woodland plants dating back to 1600 A.D. AW is often described as an irreplaceable resource because it supports specialist plants and wildlife. AW is formally defined on maps by Natural England and is given a degree of administrative protection e.g. in PPS9 and local development documents.

The definition of Ancient Woodland includes two sub-types: 1) Ancient Semi-Natural Woodland (ASNW) composed of native tree species that have not been planted and 2) Planted Ancient Woodland Sites (PAWS) are ancient woods in which the former tree cover has been replaced, often with non-native trees.

Biodiversity: Short-hand for 'biological diversity'. Encompasses the whole variety of life on Earth. It includes all species of plants and animals, but also their genetic variation, and the complex ecosystems of which they are part. It is not restricted to rare or threatened species but includes the whole of the natural world from the commonplace to the critically endangered.

Biodiversity Action Group: the Nottinghamshire Biodiversity Action Group is made up of various government and voluntary organisations in the county who collectively contribute to local biodiversity targets through, for example, monitoring and recording, conservation management, habitat creation, education, and local policy. The BAG employs one full time co-ordinator, hosted by Nottinghamshire County Council.

Biodiversity Action Plan (BAP): This is the UK Government's response to the Convention on Biological Diversity (CBD) signed in 1992. It describes the UK's biological resources and outlines detailed action plans for protecting and enhancing priority species and habitats; it has 391 Species Action Plans, 45 Habitat Action Plans and 162 Local Biodiversity Action Plans with targeted actions.

Local Biodiversity Action Plans (LBAPs), such as the Nottinghamshire Biodiversity Action Plan (1994), were proposed as a way of stimulating effective local action for meeting national priorities identified in the UK Biodiversity Action Plan, as well as for priorities for species and habitats which are particularly cherished or valued in local areas.

Brownfield: previously developed land that is or was occupied by a permanent structure (of non-agricultural use) and its associated fixed surface infrastructure. Examples include: private gardens, sewage works, derelict land, and former industrial and mineral extraction sites e.g. colliery sites. Depending on the type of previous development, brownfield sites can provide important habitat for wildlife.

Buffer Zone: an area that surrounds or encapsulates an area in which a line is drawn within a specified distance of the original boundary line OR a strip of land that separates one land use from another. This area may demarcate a boundary extension and/or act as a barrier for minimising adverse effects.

Calcareous grassland: in Mansfield District, this grassland is found on magnesian limestone deposits, usually where these deposits are located near the soil surface. This is an internationally rare as well as a national and local priority habitat. Calcareous grasslands are rich in wildflowers such as orchids and support a diversity of wildlife. **Also see Section 8.3.**

Conservation Area: areas of special architectural or historic interest. Conservation areas give broader protection than listing individual buildings: all features, listed or otherwise, within the area, are recognised as part of an area's *character*. These include, for example, the historic layout of roads, paths and boundaries; characteristic building and paving materials; a particular 'mix' of building uses; public and private spaces, such as gardens, parks and greens; and trees. Section 69 of the Civic Amenities Act 1967 gives local councils the power to designate Conservation Areas. **Also see Section 7.6**

East Midlands Biodiversity Forum: an advisory group to the East Midlands Regional Assembly made up of representatives from statutory and voluntary sectors such as Natural England, Forestry Commission, Wildlife Trusts and Local Biodiversity Action Groups.

Floodplain: The areas of land which naturally receive flood water from rivers. The include the river channel, flood defences, and wetlands. They provide many functions such as flood water storage, flood alleviation, retention of nutrients, havens for wildlife.

Fragmentation (habitat): a measure of the degradation and loss of habitats and wildlife sites, based on the average size and distance between areas. Habitat fragmentation is the principle cause of local extinction. Contributors to habitat fragmentation include: development and die back due to the lack of proper conservation management and natural disasters.

Greenspace or green space: any vegetated area of land or water within the urban area or countryside. It includes, for example, parks, gardens, reservoirs, allotments, and nature reserves. Greenspaces act as the 'green lungs' of our towns and cities contributing to improving people's physical and mental health by providing places for informal recreation - walking, cycling, sitting, socialising and children's play - and 'breathing spaces' to take time out from the stresses of modern life.

Heathland: in Mansfield District, located on open areas of acidic, sandy soils dominated by small shrubs including heather and gorse. It can also include birch scrub. A nationally rare and priority habitat located in the west of the district. An important habitat of Sherwood Forest woodland. **Also see Section 8.3.**

Index of Multiple Deprivation: a composite measurement of different dimensions or domains of deprivation. Deprivation refers to unmet need, which is caused by a lack of social, educational, environmental and financial resources of all kinds. People are in poverty if they lack the resources to escape deprivation. The more easily measured material deprivation relates to diet, health, clothing, housing, household facilities, environment and work. For further info, see *The English Indices of Deprivation,* 2004.

Indices of Deprivation: The Indices of Deprivation 2004 provide a powerful tool for the identification and analysis of deprived areas across England. The Indices combine 37 separate indicators of deprivation, into a ward-level Index of Multiple Deprivation.

Interim Planning Guidance Note (IPG): Provides local planning guidance advice prior to the adoption of the relevant Local Development Document within the Local Development Framework (LDF). IPGs will be taken into account as material considerations in the determining of planning applications pending completion of the Local Development Framework.

Landscape character: an expression of pattern within the landscape, resulting from particular combinations of natural (physical and biological) and cultural factors such as field boundaries, woodlands, land use, geology, habitats, and rivers.

Landscape Character Assessments and Guidelines: provide a framework for describing an area in a systematic and objective way; they help define the boundaries of distinct landscape character areas**.** Assessments are carried out by and guidelines defined by the Nottinghamshire County Council Landscape Team. Landscape character guidelines are used to inform development proposals and conservation work in an area. They highlight important landscape features that, if destroyed, would alter the existing character. **Also see Section 9**.

Landscape-scale: the view/perspective that encompasses a wide area such as a district or county rather than individual sites or neighbourhoods in which sustainable, strategic planning takes place including the ability to identify patterns such as networks and reservoirs. **Also see section 5.3.**

Limestone grassland: see calcareous grassland.

Linkage: individual plots or areas of land which connect system components such as greenspace hubs and networks together; these include, for example, wildlife corridors, green corridors, recreational routes, green interfaces between the natural and built environments, etc. Also see 'network.'

Listed building: buildings or structures of special architectural or historic interest that are included on a list, approved by the Secretary of State, giving key details of each building. They require special consent for any proposals for their alteration, extension or demolition.

Local Biodiversity Action Plan (LBAP): Also known as the Nottinghamshire Biodiversity Action Plan. See Biodiversity Action Plan.

Local Development Framework (LDF): replaces the Mansfield District Council local plan. The LDF is a collection of separate but interrelated documents that together guide where and what kind of development will take place in the District in the next 10 years or so. It consists of a core strategy and a portfolio of individual development documents, proposal maps, action plans and planning policy guidance.

The LDF has a key role in delivering Mansfield's version for regeneration and sustainable development of the District, and in implementing the priorities in 'the Big Picture: Mansfield's Community Strategy 2003-2008.'

Network: The desired outcome for all green infrastructure initiatives is the creation of a greenspace network made out of different linkage and network components. Networks are made up of smaller greenspace linkages or connectors e.g. corridors, hubs e.g. destinations and reservoirs and individual sites. Examples of networks that make up Green Infrastructure are: habitat networks and trail networks.

Quality of life: a broad measure of society's 'happiness' based on a combination of factors, such as: physical and mental well-being, community belonging, identifying with the local environment, access to services and economic resources, leisure time, and environmental cleanliness and quality. It is an important objective of sustainable development.

Priority Habitat and Priority Species: a habitat/species that is rare, vulnerable or declining. Priority Habitats/Species are those of greatest concern both at national and local levels. Each one has a UKBAP and/or LBAP action plan which is a statement to guide both national and local policy and action. **Also see Section 7.4**.

Reedbeds: habitat composed largely of common reed, and are often associated with areas of open water, ditches, and other wetland habitats. UKBAP and Nottinghamshire LBAP priority habitat. **Also see section 8.3.**

Species: a term or basic unit of biological classification assigned to a particular type of living organism capable of interbreeding and producing fertile offspring. Species often have both common and scientific names. For example, water vole is also known as *Arvicola terrestris*.

Strategic river corridor: a planning concept, identifying the principle rivers of the East Midlands as multi-functional, landscape-scale, cross-boundary features of the region of major importance for biodiversity, landscape and outdoor recreation. **Also see Section 7.3**.

Unimproved neutral grassland: unfertilised grassland habitat occurring on neutral, nutrient poor soils; they are primarily associated with enclosed and managed areas such as hay meadows and pastures. Contains diverse variety of wildflowers and supports a variety of wildlife. Also known as 'lowland meadows'. **Also see section 8.3.**

Wetland: habitats closely associated open water or where the water table is just below the surface of the ground for most of the year. Includes, for example, wet woodland, water meadows, marsh, reedbeds and swamp.

Wet woodland: woodland associated with low-lying, wet areas along the side of rivers and lakes and where the water comes to the surface. They are dominated by alder and willow species. Nationally and locally scarce and priority habitat. **Also see section 8.3.**

Wildlife corridor: long, narrow areas of continuous habitat that provide important links for the movement of wildlife. These are important for less mobile species and/or intolerant of agricultural/developed land. **Also see Section 8.2.**

Wood pasture: Internationally rare habitat of historical and landscape importance. Associated with large parks and estates. Often include veteran trees and rare bats and invertebrates. UKBAP and Nottinghamshire LBAP priority habitat.

Appendix B

MDC Green Infrastructure IPG: A Methodology

In August 2006, Mansfield District Council (MDC) joined in partnership with Nottinghamshire Wildlife Trust (NWT) to create a green infrastructure (GI) strategy for Mansfield District. This came as a response to requirements within the East Midlands Regional Plan (2009) as well as evidence needs for MDC's upcoming Local Development Framework (LDF). In September 2006, a Green Infrastructure Officer position was filled and the Mansfield GI Steering Group established.

Below is a brief summary of how Mansfield District Council's Green Infrastructure IPG was developed. The methodology below outlines the main stages that have contributed to the development of the Green Infrastructure IPG as well as additional stages supporting the GI Action Plan and other future GI project work.

Mansfield District Green Infrastructure Methodology

I. Project Conception

A comprehensive and strategic evidence-base of the District's green spaces was needed to inform the core strategy and preferred development options of Mansfield District Council's Local Development Framework. Mansfield District Council collaborated with the Nottinghamshire Wildlife Trust to fund a 1 year Green Infrastructure Officer post to create a Green Infrastructure IPG.

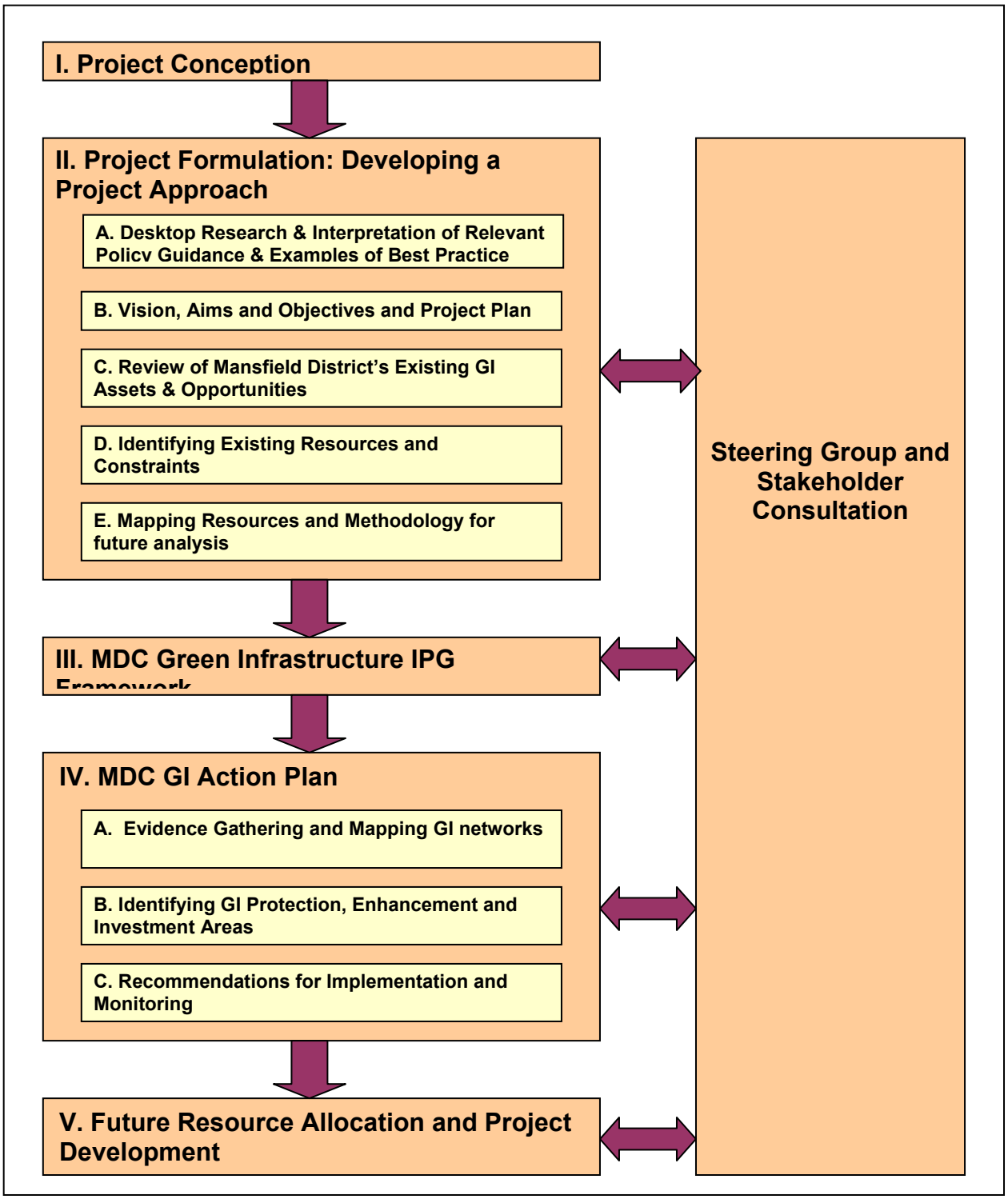
II. Project Formulation: Developing a Project Approach

The initial stage of the project development included a range of parallel steps; these included:

A. Desktop research;
B. Drafting the project's vision, aims and objectives;
C. A precursory review of Mansfield District's GI assets and opportunities;
D. Survey of available resources and constraints; and
E. Establishing a mapping methodology for future analysis.

The primary challenge at this stage was to develop a framework for the Green Infrastructure IPG in order to reflect Mansfield District Council's planning policy needs whilst addressing the wider principle of GI as an overarching concept (see section 1). This required collaboration and consultation with the Mansfield District GI Steering Group as well as additional stakeholders at all stages of the project's development. It is important to note that the following individual stages are not, in themselves, separate; they may include elements of other stages (i.e. do not follow a strict linear process).

Outline of the Mansfield District Green Infrastructure Methodology



A. Desktop Research Interpretation of Related: Policy, Guidance & Examples of Best Practice

A comprehensive review of existing GI policy (see Section 2), greenspace standards, GI guidance and examples of best practice was undertaken. This provided the background for the IPG's Vision, Aims and Objectives as well as a much needed framework for integrating national and regional policy and defining GI at the district level.

Existing GI guidance and best practice examples included:

- Natural England Accessible Natural Greenspace Standards
- East Midlands Regional Plan (2009)
- Green Infrastructure Planning Guide (Davies et al., 2006)
- East Midland Regional Assembly (EMRA)'s Green Infrastructure Scoping Study and Public Benefit Mapping project
- Northamptonshire's Environmental Character and Green Infrastructure Suite
- Greenwood Community Forest's GI Mapping Project
- Countryside in and Around Towns (Groundwork and the Natural England)
- Cambridgeshire Green Infrastructure IPG (Cambridgeshire Horizons, 2006)

Please see the Bibliography (Appendix G) for more information and additional sources.

B. Vision, Aims and Objectives and Project Plan

The MDC Green Infrastructure IPG's vision, aims and objectives were written in consultation with the Mansfield District GI Steering Group. They reflect MDC Corporate Plan priorities, address Local Development Framework needs and reflect key GI principles (see Section 1.4). They also address future GI Analysis and Implementation needs such as identifying protection, enhancement and creation areas.

A project plan and timeline was drafted and reviewed by the GI Steering Group in December 2006.

C. Review of Mansfield District's Existing GI Assets & Opportunities

An initial review of local GI assets (see Sections 1 and 3) was an essential step in terms of gaining an overall perspective on the quality, types, uses and distribution of greenspace in Mansfield District. This review stemmed from a variety of surveys and sources; it drew upon local expertise, aerial photography maps, digital mapping data, on-the-ground surveys and MDC local strategies such as the Nature Conservation Strategy and Trails Strategy. In addition, this stage was useful in defining mapping methodologies, collating digital mapping resources, and proofing data formats.

D. Identifying Existing Resources and Constraints

When undertaking any project, it is important to identify, where possible, existing resources as well as resource constraints. In recognising existing constraints, it may be necessary to adapt methodologies and seek out additional sources and expertise.

Examples of project constraints and challenges included:

- Obtaining up-to-date: guidance, data and background information.
- Data availability and formatting
- Compatible GIS systems

These constraints are addressed in the MDC GI Action Plan, as and where appropriate, in order to provide a better picture of the evidence base used to inform mapping analysis outcomes and policy recommendations.

E. Mapping Resources and Methodology

Computer mapping, otherwise known as Geographic Information Systems (GIS) is an important tool for identifying spatial patterns in existing greenspace (e.g. identifying deficits as well as key network connectors). GIS is also useful for other analysis work such as calculating spatial statistics.

The GI Action Plan uses computer mapping for identifying areas for protection, enhancement, creation and future investment based on key analysis objectives in this Green Infrastructure IPG.

In order to make best use of available GIS mapping resources, it was important to:

- Define types of greenspace (GI typologies): GI typologies are the building blocks for mapping greenspace and analysing patterns; individual GI typologies include, for example, natural and semi-natural habitats, outdoor sports facilities, parks and gardens, allotments, etc. Please see the MDC GI Action Plan for additional information.
- Procure up-to-date data: Where possible, the most up-to-date mapping data was procured from relevant sources; in addition, a database containing meta-data information was set up to document all sourced GIS data. Please see the MDC GI Action Plan for additional information.
- Verify and proof available data: It is necessary to review existing mapping data for errors, where possible. This is particularly important because analysis outcomes from the GI Action Plan act as a spatial evidence base for the MDC Local Development Framework and other strategic planning policy decisions.
- Develop practical mapping methods: Mapping methods were derived from a combination of best practice and relevant guidance. Some methods are limited to mapping capabilities and resources.

III. MDC GI Framework

Please see Section 6 for more details. This was formed through consultation with the MDC GI Steering Group.

IV. MDC GI Analysis and Implementation

The Green Infrastructure IPG acts as the framework for guiding future action.

A. Evidence Gathering and Mapping GI Networks

This includes mapping all important GI resources as outlined in each of the main GI Components; this includes analysis aims, objectives and outcomes; these can be found in section 6.2 as well as at the end of sections 7, 8, 9, 10 and 11 of this IPG. Mapping methods are based on available resources and best practice examples; they are outlined in more detail in the GI Action Plan. Input from stakeholders is also important at this stage in setting out key aims for the GI Action Plan so that information is both useful and practical.

B. Identifying GI Protection, Enhancement, Creation and Investment Areas

The identification of strategic linkages, hotspots and gaps, provide the evidence base for making informed recommendations on overall GI Protection, Enhancement, Creation and Investment Areas.

This is based on a combination of: relevant planning policy and policy guidance, observed patterns from individual GI component analysis work, combined GI component analysis work and MDC Planning Policy LDF requirements (please see sections 6-11 for more details). It is important that individual GI components are not viewed in isolation of each other but rather as a combined resource.

Strategic decisions are made in consultation with the MDC Planning Policy section and a variety of relevant stakeholders including, for example, the MDC Parks department, Regeneration, Environmental Health and Leisure teams, environmental organisations, trail working groups, Nottinghamshire County Council, Mansfield Area Strategic Partnership, and others.

C. Recommendations for Implementation and Monitoring

Primary recommendations will be used to support the Local Development Framework (LDF) including suggestions for protection and enhancement as well as suggestions for creation, and sustainable design and development guidance. These will be used to inform the core strategy work and related Supplementary Plan Documents (SPD) for the LDF.

In addition to recommendations for planning policy, the MDC GI Action Plan will provide broad implementation and monitoring recommendations for strengthening the overall Mansfield District GI network. A GI project 'wish-list' will essentially help target overall district opens pace improvements and future needs in relation to recreational access, climate change, and biodiversity enhancement needs. This includes, for example, recommendations for developing local trails for improving healthy living choices as well as biodiversity enhancement measures.

V. Future Resource Allocation and Project Development

The GI Action Plan provides a platform for identifying future areas for funding and allocating additional resources for GI projects within Mansfield District. It also acts a useful resource for targeting individual GI-related community projects.

Appendix C: 'Network of Sites Sensitive to Development' Policy Background: Designated Sites and Areas for Protecting the District's Natural and Cultural Heritage

This appendix is intended to complement section 8: Network of Sites Sensitive to Development. The table below provides a summary of relevant planning policy and guidance related to the protection and enhancement of the natural and historical environment. It lists those policies and guidance documents of primary importance rather than provide a comprehensive bibliography.

Components	Sub-components	Specific Policy Relating to Designation and Protection	National, Regional and Local Planning Policy and Relevant Policy Guidance
Designated Sites of Biological and Geological Importance	International sites (SACs)	• EC Habitats Directive 1992 • Conservation (Natural Habitats &c.) Regulations 1994	• East Midlands Regional Plan (2009) Policy 26: Protecting and Enhancing the Region's Natural and Cultural Heritage • Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9) • Mansfield District Council Nature Conservation Strategy: Policies 1, 2, 4 and 9 • Putting Wildlife Back on the Map: A Biodiversity Strategy for the East Midlands • Regional Environment Strategy • Nottinghamshire and Nottingham Joint Strategic Plan (JSP) policies: 2/1, 2/2, 2/3, & 2/4 • Working with the Grain of Nature: A Biodiversity Strategy for England (2002)
	National sites (SSSIs and NNRs)	• The Wildlife and Countryside Act 1981 • Countryside and Rights of Way Act 2000 • National Parks and Access to the Countryside Act 1949 • Natural Environment and Rural Communities Act 2006	
	County and District sites (LNRs, SINCs and RIGS)	• National Parks and Access to the Countryside Act 1949 • Nottinghamshire SINC panel criteria • DEFRA Local Sites Guidance 2005	

Components	Sub-components	Specific Policy Relating to Designation and Protection	National, Regional and Local Planning Policy and Relevant Policy Guidance
UKBAP and Local BAP Priority Habitats	Please see section 8.4 for list of UK and Nottinghamshire priority habitats	• Countryside and Rights of Way Act 2000 • UK Biodiversity Action Plan • Nottinghamshire Local Biodiversity Action Plan	• Section 40 of the Environment and Rural Communities Act (NERC) 2006. • East Midlands Regional Plan (2009) Policy 29: Priorities for Enhancing the Region's Biodiversity • Regional Environment Strategy • Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9) • Northern SRS Policy 5: Sherwood Forest Regional Park • Mansfield District Council Nature Conservation Strategy Policy 2 • Putting Wildlife Back on the Map: A Biodiversity Strategy for the East Midlands • Working with the Grain of Nature: A Biodiversity Strategy for England (2002) • Nottinghamshire and Nottingham Joint Strategic Plan (JSP) policy 2/6
Areas of Archaeological Significance	Ancient Monuments Archaeology sites and remains	• Ancient Monuments and Archaeological Areas Act 1979 • Nottinghamshire Historic Environment Record	• PPG16:Archaeology and Planning • East Midlands Regional Plan (2009) Policy 27: Priorities for the Historic Environment • Nottinghamshire and Nottingham Joint Strategic Plan (JSP) policy 2/11 • Regional Environment Strategy • Heritage Protection for the 21st Century: A Heritage Protection White Paper (2007)

Components	Sub-components	Specific Policy Relating to Designation and Protection	National, Regional and Local Planning Policy and Relevant Policy Guidance
River Corridors and Flood Management	Flood Risk Zones	• Designated by the Environment Agency (National Risk Assessment 2004)	• EC Water Framework Directive (2000/60/E) • PPS 9: Biodiversity and Geological Conservation (PPS9) • PPS25: Development and Flood Risk • East Midlands Regional Plan (2009) Policy 32: A Regional Approach to Water Resources and Water Quality • East Midlands Regional Plan (2009) Policy 33: Regional Priorities for Strategic River Corridors • East Midlands Regional Plan (2009) Policy 35: A Regional Approach to Managing Flood Risk • Nottinghamshire and Nottingham Joint Strategic Plan (JSP) policies: 2/13 & 2/16 • Putting Wildlife Back on the Map: A Biodiversity Strategy for the East Midlands • Regional Environment Strategy • Action for Floodplain Biodiversity (Natural England 2004)
	East midland flood storage areas	• Designated by the Environment Agency (National Risk Assessment 2004)	
	Water courses and water bodies	• Nottinghamshire Local Biodiversity Action Plan (Rivers and Streams priority habitat)	
Historical Environment	Registered Parks and Gardens	• Register of Park and Gardens of Historic Interest in England 1985 • Sites designated by English Heritage	• PPG15: Planning and the Historic Environment • East Midlands Regional Plan (2009) Policy 27: Priorities for the Historic Environment • Regional Environment Strategy • Nottinghamshire and Nottingham Joint Strategic Plan (JSP) policies: 2/11 and 2/12 • Heritage Protection for the 21st Century: A Heritage Protection White Paper (2007)
	Ancient and Scheduled Monuments	• Ancient Monuments and Archaeological Areas Act 1979 • Nottinghamshire Historic Environment Record • Sites designated by English Heritage	
	Conservation Areas	• Sections 69 and 72 of the Planning Act 1990	

Components	Sub-components	Specific Policy Relating to Designation and Protection	National, Regional and Local Planning Policy and Relevant Policy Guidance
Woodlands of National and Regional Importance	Ancient Woodland	• Designated by Natural England	• Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS9) • East Midlands Regional Plan (2009) Policy 30: Regional Priorities for Managing and Increasing Woodland Cover • Nottinghamshire and Nottingham Joint Strategic Plan (JSP) policy 2/8 • Putting Wildlife Back on the Map: A Biodiversity Strategy for the East Midlands • Sub-Regional Spatial Strategy Policy 5 (East Midlands Regional Plan 2009) • Greenwood Community Forest • A Strategy for England's Trees, Woods and Forests
	Sherwood Forest Woodland	• Nottinghamshire Local Biodiversity Action Plan (Oak-birch woodland priority habitat) • Nottinghamshire Heathland Strategy	
	Wet Woodland	• Countryside and Rights of Way Act 2000 • UK Biodiversity Action Plan • Nottinghamshire Local Biodiversity Action Plan	
Local Landscape Designations	Mature Landscape Areas	• Nottinghamshire County Council's Countryside Appraisal	• PPS7: Sustainable Development in Rural Areas • East Midlands Regional Plan (2009) Policy 31: Priorities for the Management and Enhancement of the Region's Landscape • Sub-Regional Spatial Strategy Policy 5 (East Midlands Regional Plan 2009) • Nottinghamshire Landscape Guidelines 1997 (local designations are based on county landscape character assessments)
	Nottinghamshire County Council special landscape designations for Sherwood Forest	• Plan for Sherwood Forest 1988, Nottinghamshire County Council • 1991 Nottinghamshire Structure Plan	
	Mansfield District Council Open Breaks	• Mansfield District Council Local Plan (1998)	
	Mansfield District Council Green Wedges	• Mansfield District Council Local Plan (1998)	

Appendix D

Biodiversity Targets: Local Biodiversity Habitat Management and Recreation Targets for Nottinghamshire (2006)

The following table summaries the biodiversity targets related to national and local Biodiversity Action Plan (BAP) priority habitats (please see Section 7.4). Only those priority habitats found within Mansfield District are listed. Information has been supplied by the Nottinghamshire Biodiversity Action group.

All baseline data and targets are from the Nottinghamshire February 2006 Habitat Action Plan Target Review. Baseline data was calculated from a combination of sources including SSSI surveys (Natural England), SINC surveys (Nottinghamshire Biological and Geological Records Centre) and additional survey data supplied by Nottinghamshire Biodiversity Action Group (BAG) members.

Although comprehensive, there may be sites that are unaccounted for; this requires a more in depth survey of priority habitats at county and district levels. For additional information, please contact Nottinghamshire BAG.

Priority Habitat	**2005 Baseline area**	**Maintain Extent through protection and management**		**Achieve Favourable Condition (Enhancement)**		**Restoration**		**Expansion/ Creation**		**Overall Condition**
		2010	**2015**	**2010**	**2015**	**2010**	**2015**	**2010**	**2015**	
Lowland calcareous grassland	200ha	200ha	325ha	140ha	200ha	125ha	50ha (175ha total)	Figures combined with Restoration targets		27% existing habitat in favourable condition
Unimproved neutral grassland	688ha	688ha	1,488ha	482ha	688ha	800ha	1,264ha	Figures combined with Restoration targets		28% existing habitat in favourable condition
Lowland wet grassland	350ha	350ha	561ha	245ha	350ha	211ha	1,910ha	Figures combined with Restoration targets		12% existing habitat in favourable condition
Lowland dry acid and heathland mosaic	1,500ha	1,500ha	3,500ha	12,000ha	1,500ha	1,000ha	1,000ha	Figures combined with Restoration targets		45% existing habitat in favourable condition

Priority Habitat	2005 Baseline area	Maintain Extent through protection and management		Achieve Favourable Condition (Enhancement)		Restoration		Expansion/ Creation		Overall Condition
		2010	2015	2010	2015	2010	2015	2010	2015	
Fens, marshes and swamps	120ha	120ha	220ha	84ha	120ha	100ha	100ha	Figures combined with Restoration targets		20% existing habitat in favourable condition
Reedbeds	10ha	10ha	210ha	7ha	9ha	200ha	200ha	Figures combined with Restoration targets		60% existing habitat in favourable condition
Mixed ash-dominated woodland	644ha	644ha	660ha	No data	660ha	16ha	No data	No data		56% existing habitat in favourable condition
Oak-birch woodland	347ha	347ha	347ha	No data	347ha	No data	No data	No data		46% existing habitat in favourable condition
Coniferous woodland	5.643ha	5.643ha	5.643ha	No data	No data	No data	No data	Figures combined with Restoration targets		No data
Lowland wood pasture and parkland	10,000ha	10,000ha	10,000ha	No data	7,500ha	No data	No data	Figures combined with Restoration targets		No data
Wet woodland	65ha	65ha	65ha	65ha	65ha	No data	No data	No data		89% existing habitat in favourable condition
Urban and post-industrial habitats	No data	The Nottinghamshire BAG concluded that it was unrealistic to set a figure for the baseline resource for this habitat type; there is a need to ascertain all the site falling within this category.						Figures combined with Restoration targets		No data
Eutrophic and mesotrophic standing waters	894ha	894ha	894ha	447ha	671ha	150ha	150ha	Figures combined with Restoration targets		44% existing habitat in favourable condition
Rivers and streams	> 3.3 ha	> 3.3 ha	> 3.3 ha	No data	No data	No data	8ha	Figures combined with Restoration targets		No data

Appendix E: Summary of GI Policy

Below is a summary of the key policies strategies and guidance that support Green Infrastructure planning and implementation.

Driver	Key Policy/ Strategy/Guidance	Level
Sustainability	European Council's Sustainable Development Strategy (SDS) 2006	International
	Securing the Future- the UK Sustainable Development Strategy (2005)	National
	Sustainable Communities: People, Places and Prosperity 2005	National
	East Midlands Integrated Regional Strategy (IRS)	Regional
	UK Sustainable Communities Plan (2003)	National
	PPS1: Delivering Sustainable Development	National
Biodiversity and the Natural Environment	UK Biodiversity Action Plan (UKBAP)	National
	Nottinghamshire Local Biodiversity Action Plan (LBAP)	County
	Section 40 NERC Act 2006 (Biodiversity Duty) & Guidance for Local Authorities on Implementing the Biodiversity Duty (Defra 2007)	National
	East Midlands Regional Environment Strategy (2002)	Regional
	Mansfield District Nature Conservation Strategy (1997)	District
	PPS9 Biodiversity and Geological Conservation (2005)	National
	A Strategy for England's Trees, woods and Forests (Defra, 2007)	National
	Putting Wildlife Back on the Map- A Biodiversity Strategy for the East Midlands (2005)	Regional
	Mansfield District Council Tree Strategy (2007)	District
	A Guide to Biodiversity and Planning for Nottinghamshire and Nottingham (2006)	County
Climate Change and Flood Risk	Planning and Climate Change: Supplement to Planning Policy Statement 1	National
	UK Climate Change Programme (2006)	National
	Energy White Paper 'Our energy Future- creating a low carbon economy' (2003)	National
	Climate Change Adaptation by Design: a guide for sustainable communities (Town and Country Planning Association 2007)	National
	Making Space for Water (Defra 2007)	National
	Mansfield District Strategic Flood Risk Assessment (2008)	District
Landscape Character & the Countryside	Countryside in and Around Towns (the Natural England and Groundwork)	National
	East Midlands Rural Action Plan (2007)	Regional
	PPS7: Sustainable Development in Rural Areas (2006)	National
	Nottinghamshire Landscape Guidelines (1998)	County

Driver	Key Policy/ Strategy/Guidance	Level
Recreational Access	Accessible Natural Greenspace Standards (Natural England). Found in Assessing needs and opportunities: a companion guide to PPG17.	National
	Countryside Rights of Way Act 2000	National
	Nottinghamshire County Council Cycle Strategy (2006-2010)	County
	NCC Rights of Way Improvement Plan (2007-2012)	County
	A Trails Strategy for Mansfield District (1997)	District
	Mansfield District Cycling Strategy (1999)	District
Spatial Planning	Various Planning Policy Guidance Notes and Statements	National
	East Midlands Regional Plan (2009)	Regional
	Nottinghamshire and Nottingham Joint Structure Plan (2006)	County
	Mansfield District Council Local Plan (1998)	District
Health and Well-being	Living Places: Cleaner, Safer , Greener (2002)	National
	Air Quality Strategy (2000)	National
	PPG17 Sport and Recreation (2002)	National
	Air Quality Updating and Screening Assessment Report (2006)	District
	Our Health, Our Care, Our Say White Paper (2006)	National
	Investment for Health: A Public Health Strategy for the East Midlands	Regional
	Mansfield Get Active programme	District
Economic	Making it Happen the Northern Way (UK Government 2004)	National
	Regional Economic Strategy (2006)	Regional
	Mansfield District Tourism Strategy (1999)	District
Cultural Heritage	PPG15 Planning and the Historic Environment (1994)	National
	PPG16 Archaeology and Planning (1990)	National
	Mansfield District Conservation Area Appraisals (various)	District
	A Cultural Strategy for Mansfield District (2007)	District
Quality of Place	Green Space, Better Places (DTLR 2002)	National
Tourism	Mansfield District Tourism Strategy: Historic Past, Vibrant Present, Exciting Future (1999)	District
	Nottingham and Nottingham Tourist Information website http://www.visitnottingham.com/	County
	Visitor Information Mansfield Museum	District

Summary of relevant Planning Policy Guidance Notes and Statement Underpinning Green Infrastructure

PPGs and PPSs which relate to Green Infrastructure planning:

PPS 1 Delivering Sustainable Development (2005) & PPS1 Supplement: Planning and Climate Change: set out the Government's overarching planning policies on the delivery of sustainable development and climate change, respectively, through the planning system.

PPG 2 Green belts (written 1995, amended 2001): outlines the history and extent of Green Belts and explains their purposes.

PPS 7 Sustainable Development in Rural Areas (2006): sets out the Government's planning policies for rural areas.

PPS 9 Biodiversity and Geological Conservation (2005): sets out planning policies on protection of biodiversity and geological conservation through the planning system.

PPS12 Local Spatial Planning (2008): explains what local spatial planning is, and how it benefits communities. It also sets out what the key ingredients of local spatial plans are and the key government policies on how they should be prepared. It should be taken into account by local planning authorities in preparing development plan documents and other local development documents.

PPG 13 Transport (2001): PPG13's objectives are to integrate planning and transport at the national, regional, strategic and local level and to promote more sustainable transport choices both for carrying people and for moving freight.

PPG 15 Planning and the Historic Environment (1994): sets out policy for the historic environment including Conservation Areas and their surroundings, historic/listed buildings and other statutory designations such as Historic Parks and Gardens, and World Heritage Sites.

PPG 16 Archaeology and Planning (1990): sets out the Secretary of State's policy on archaeological remains on land, and how they should be preserved and recorded both in an urban setting and in the countryside.

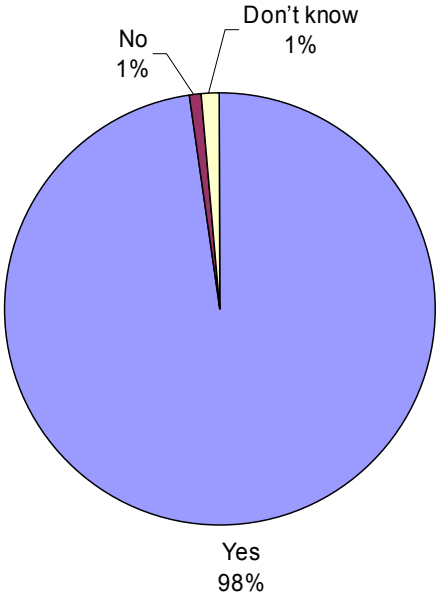
PPG 17 Planning for Open Space, Sport and Recreation (2002): sets out the policies needed to be taken into account by regional planning bodies in the preparation of Regional Planning Guidance and by local planning authorities regarding recreational and natural greenspaces.

PPS 25 Development and Flood Risk (2006): sets out Government policy on development and flood risk.

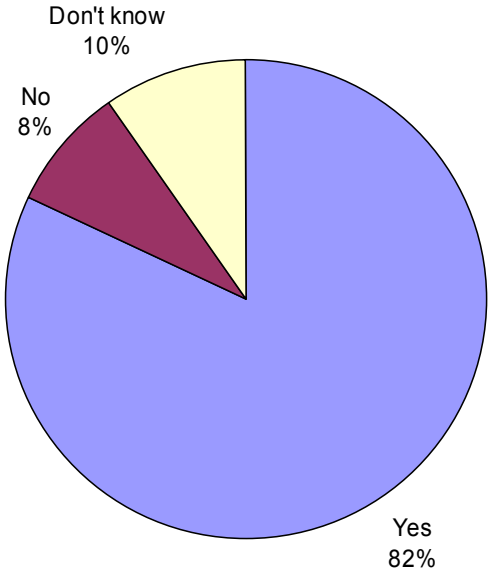
Appendix F: Mansfield District Council Citizen's Panel Questions and Results

The following are examples of questions asked of the MDC Citizen's Panel on green and open spaces within the District and their corresponding statistics.

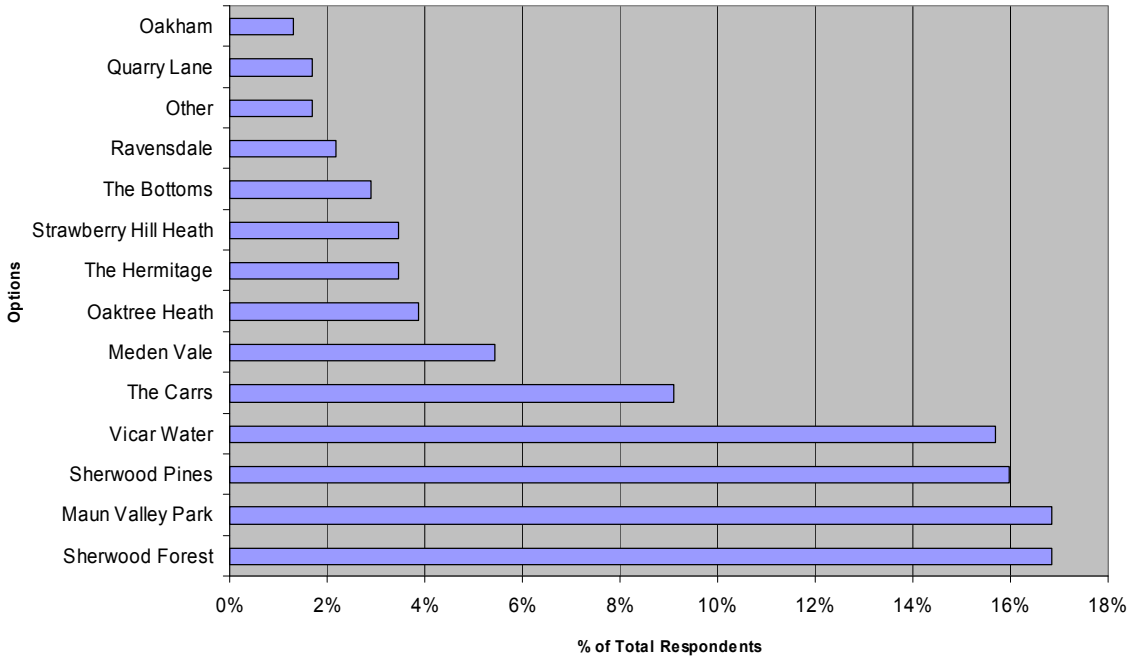
In your opinion, are green and open spaces important...?



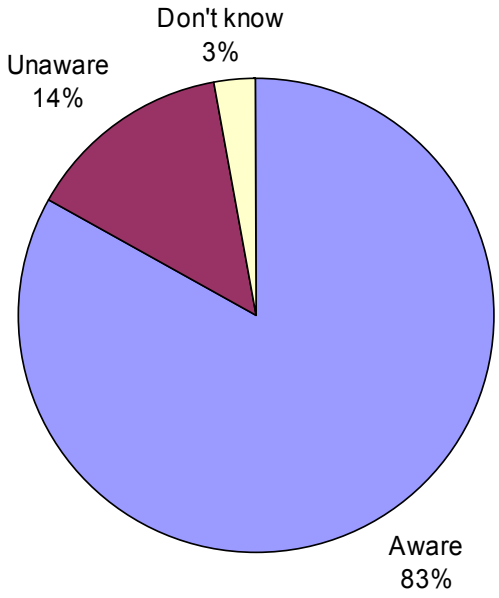
Do you think that green and open spaces should be linked throughout the District...?



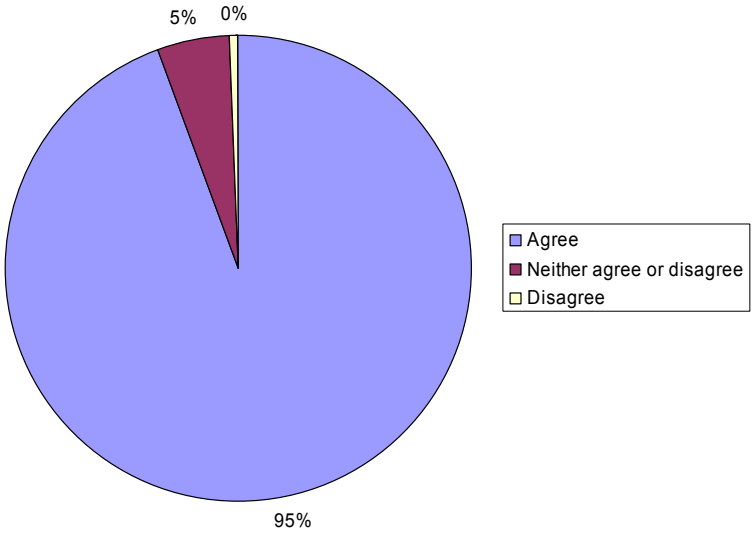
Please state which of the following LNR's / wildlifes reserves you are aware of in the District...?



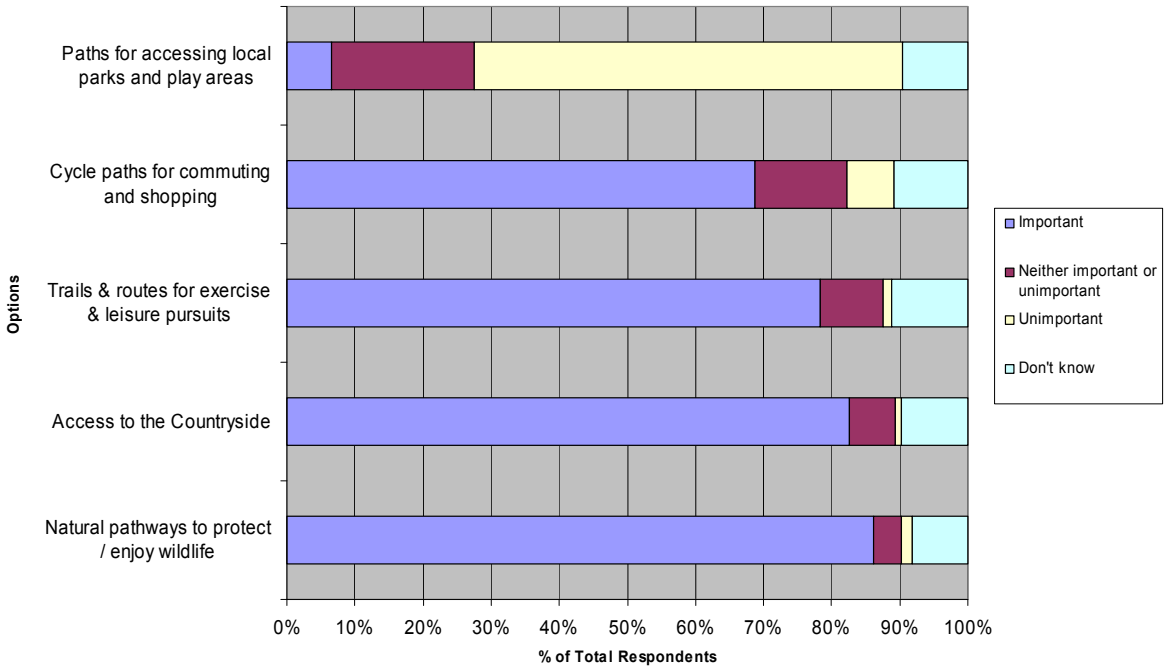
Are you aware or unaware of any LNR / wildlife reserves within the District...?



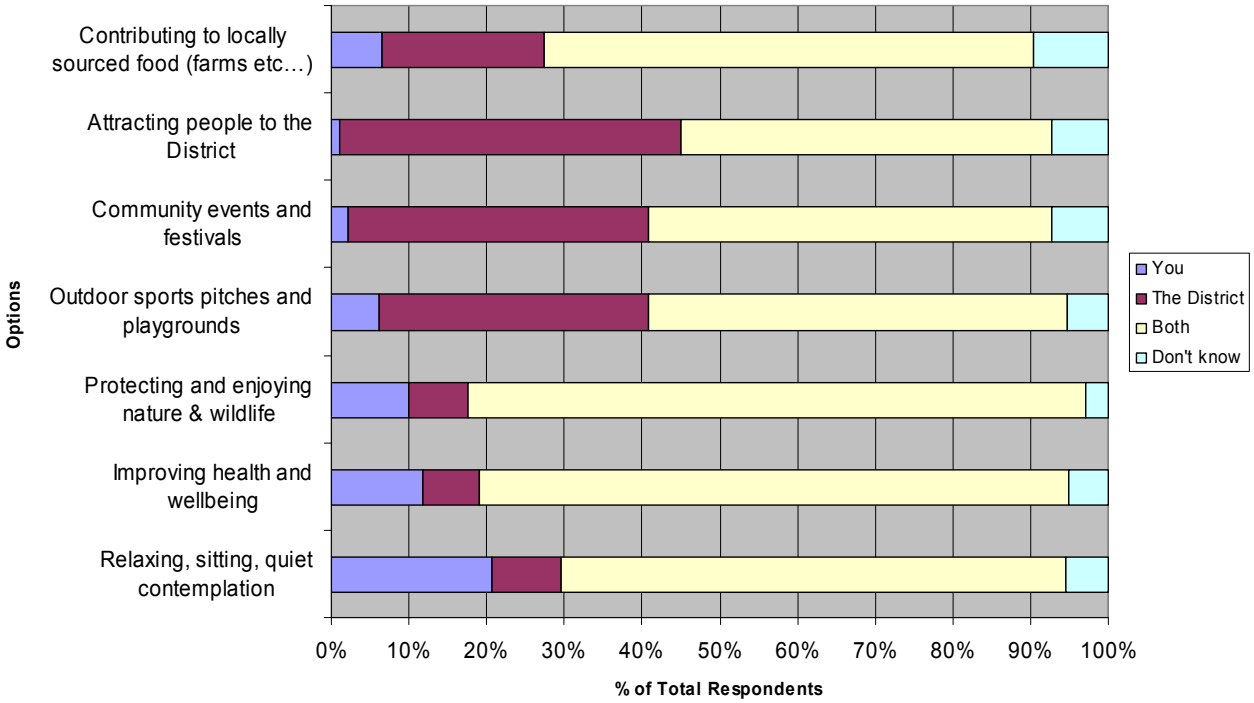
To what extent do you agree or disagree with the following statement: Being in green and open space and/or seeing wildlife adds to my general wellbeing and satisfaction...?



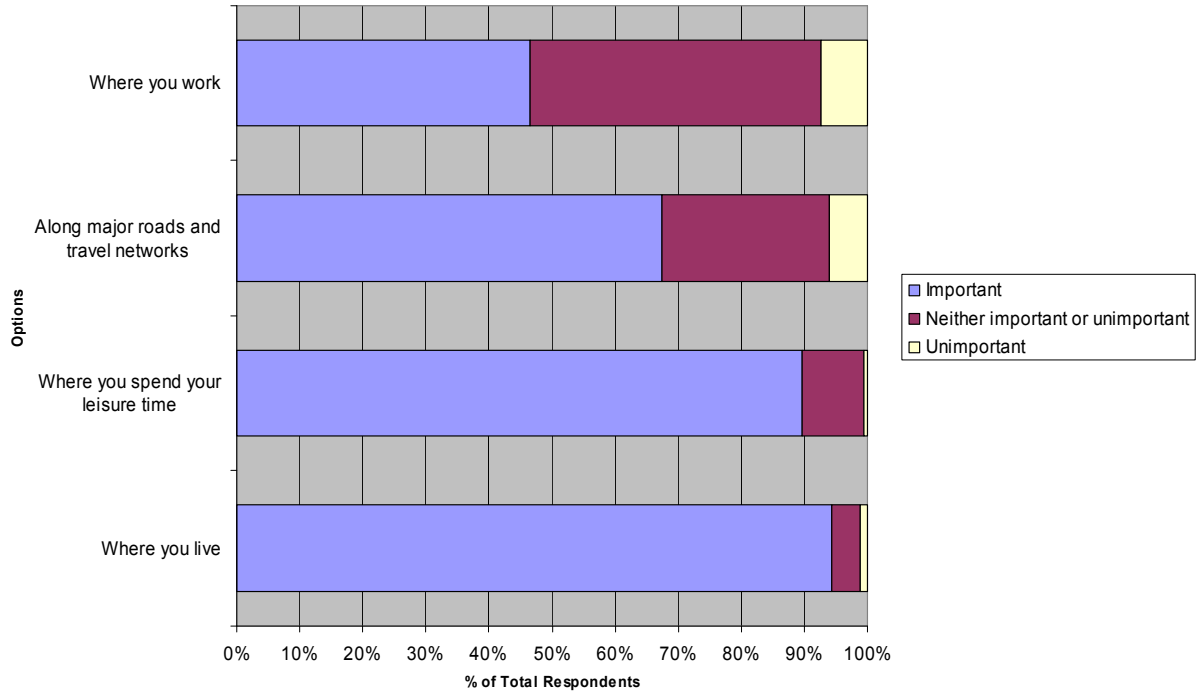
Of the following types of links, how important or unimportant do you think they are to the District as a whole...?



Are the following aspects of green and open spaces more important to you or the District of Mansfield or both...?



How important or unimportant is it for you to see green landscaping such as parks, gardens and trees in and around the built environment of the District...?



Appendix G: References

Benedict, M.A and McMahon E.T. May 2001. ***Green Infrastructure: Smart Conservation for the 21st Century***. Sprawl Watch Clearinghouse Monograph Series: Washington D.C.

Dr William Bird. June 2007. ***Natural Thinking: Investigating the links between the Natural Environment, Biodiversity and Mental Health***. A report for RSPB.

Cambridgeshire Horizons. 2006. ***Quality of Life Programme: Green Infrastructure Strategy***.

C Davies, R. M. MacFarlane, C McGloin, & M. Roe. 2006. ***Green Infrastructure Planning Guide, Version 1.1***.

CJC Consulting. October 2005. ***Economic Benefits of Accessible Green Spaces for Physical and Mental Health: Scoping Study Final report***. Prepared for the Forestry Commission.

Defra. 2007. ***A Strategy for England's Trees, Woods and Forests***.

East Midlands Biodiversity Forum and the East Midlands Regional Assembly. May 2006. ***Putting Wildlife Back on the Map: a biodiversity strategy for the East Midlands***.

East Midlands Biodiversity Forum. 2004. ***Towards a Regional Biodiversity Audit for the East Midlands***.

East Midlands Regional Assembly. 21 July 2006. ***Green Infrastructure For the East Midlands: A Public Benefit Mapping Project***.

East Midlands Regional Assembly. September 2005. ***East Midlands Green infrastructure Scoping Study Final Report*.**

ECOTEC. October 2006. ***City Region Green Infrastructure Strategic Planning: Raising the Quality of the North's City Regions***. ECOTEC: Leeds.

Greenspaces. 'Scientific boost for parks.' June 2007, Issue 36, pp. 5.

Greenwood Community Forest and Forestry Commission. August 2005. ***Greenwood Community Forest and Nottingham City Green Infrastructure and Public Benefit Mapping Final Report***. Report prepared by TEP.

Government Office for the East Midlands. March 2009. ***East Midlands Regional Plan***. TSO: London.

Handley, J and Carter, J (2006) **Adaptation Strategies for Climate Change in the Urban Environment.** Draft final report to the National Steering Group. University of Manchester.

Mansfield District Council. 2006. ***General Development Control Policies Sustainability Appraisal Scoping Report***.

Mansfield District Council. November 1998. ***Mansfield District Local Plan***. Directorate of Development Services, MDC.
Mansfield District Council. 1997. ***A Trails Strategy for Mansfield***.

Mansfield District Council. 2005. ***Mansfield District Council Corporate Plan 2005-2015***.

Mansfield District Council. October 1997. ***Nature Conservation Strategy of Mansfield District***.

Mansfield District Council. 2000. ***Mansfield District Cycling Strategy.***

Mansfield District Council. 2002. ***State of the Environment Report***.

Milton Keynes and South Midlands Environment and Quality of Life sub-Group. February 2004. ***Planning for Sustainable Communities: A Green Infrastructure Guide for Milton Keynes and the South Midlands***.

Natural England. January 2006. ***The environment, economic growth and competitiveness - The environment as an economic driver***. Natural England publication ENV002. http://www.naturalengland.org.uk/.

Natural England. March 2005. ***Healthy Environments: Improving our quality of life***. A Natural England publication. http://www.naturalengland.org.uk/.

Natural England. 2004. **Nature for People: The Importance of Green Spaces to East Midlands Communities**. http://www.naturalengland.org.uk/.

Nottingham City Council. 2007. ***Breathing Space: A Strategic Framework for the Management of Nottingham's Open and Green Spaces 2007-2017***.

Nottinghamshire County Council. 1997. ***Nottinghamshire Landscape Character Guidelines***.

Nottinghamshire Biodiversity Action Group. 1994. ***Nottinghamshire Local Biodiversity Action Plan***.

River Nene Regional Park. 2006. ***Making the Connection: Northamptonshire Green Infrastructure Strategy***.

The Mersey Forest. June 2006. ***St Helens Urban fringe Action Plan Final Project Report***.

Town and Country Planning Association. 2004. ***Biodiversity by Design: A guide for sustainable communities***. <http://www.tcpa.org.uk.>

This leaflet can be provided in a variety of formats if required. Please do not hesitate to contact us on 01623 463463 if you require interpretation of this form or need help reading it.

Polish
W razie potrzeby możemy dostarczyć tę broszurę alfabetem Braille'a lub w powiększonym formacie. Jeżeli potrzebuje Pan(i) wyjaśnienia tego tekstu lub pomocy w przeczytaniu go, prosimy o skontaktowanie się z nami pod numerem 01623 463463.

Turkish
Bu broşür, talep edildiğinde, körler alfabesi (Braille) ya da büyük baskı formatında elde edilebilir. Bu formun çevirilmesini ya da okunmasında yardım isterseniz, lütfen 01623 463463 numaralı telefondan bizimle temasa geçmekten kaçınmayınız.

Cantonese (Chinese Traditional)
如果需要，我們可以提供這份傳單的盲文版本或大字印刷體版本。如果你要求翻譯或者需要幫助來閱讀這份表格，請別猶豫，致電 01623 463463與我們聯係。

Latvian
Šī buklete ir pieejamā Braiļa vai palielinātajā drukā, ja tas ir nepieciešams. Ja jums nepieciešams šī bukleta tulkojums vai palīdzība tā lasīšanā, lūdzu, sazinieties ar mums pa tālruni – 01623 463463.

Russian
Этот буклет может быть напечатан шрифтом Брайля или более крупным шрифтом. Если вам необходима помощь с переводом или чтением этого буклета звоните по тел. 01623 463463.

Urdu
یہ لیف لیٹ، بوقتِ ضرورت، بریل یا بڑے پرنٹ میں بھی مہیا کیا جا سکتا ہے۔ اگر آپ کو اس فارم کا ترجمہ چاہئے ہو یا آپ کو اس کے پڑھنے میں مدد چاہئے ہو تو برائے مہربانی ہم سے اس نمبر پر 01623 463463 رابطہ کرنے میں بلکل نہ ہچکچائے گا۔

Bengali
প্রয়াজন অনুযায়ী এই লীফলট ব্রইল অথবা বড় অক্ষরর আকার দওয়া যাব । এই ফরমর অনুবাদর প্রয়াজন হল অথবা এটা পড়ত সাহায্যর দরকার হল 01623 463463 নাম্বার আমাদর সাথ যাগাযাগ করত দ্বিধা করবন না ।

Mansfield District Council
Interim Planning Guidance Note 11
Green Infrastructure
Adopted 7 April 2009

Mansfield District Council
Creating a District where People can Succeed