

Green Infrastructure and the Regional Spatial Strategy for Yorkshire and the Humber: developing the evidence base.

A report for the Yorkshire and Humber Assembly

Green Infrastructure and the Regional Spatial Strategy for Yorkshire and the Humber: developing the evidence base.

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Executive Summary

The context for the growth and development of the Green Infrastructure agenda in Yorkshire and the Humber is well summed up by the 2006 Northern Way report which proposed a framework for City Regions to integrate Green Infrastructure into their forward strategic planning¹:

"...When strategically planned...Green Infrastructure can be seen to have the potential to create a truly sustainable community by integrating environmental assets and processes with key elements of economic renaissance such as housing renewal, inward investment, site and infrastructure development..."

- ***Policy development informed with robust evidence***

There is a growing and compelling body of evidence that substantiates the potential for Green Infrastructure to make a major contribution to the economic, social and environmental well being of individuals, and society. In addition, it is now acknowledged that Green Infrastructure has a major role to play in alleviating, and adapting, to climate change.

The aim of this research is to contribute to the development of a strategic approach to Green Infrastructure by establishing evidence base requirements for the Region, thereby ensuring that Green Infrastructure has a pro-active influence upon decisions regarding future locations for growth and development. The development of an evidence base will also have great potential to inform the type and nature of development wherever it happens to be located and to contribute towards the development of sustainable communities.

- ***Growing our understanding of strategic Green Infrastructure***

In particular, the study has been concerned with identifying those components of the overall Green Infrastructure asset base that should be regarded as being of strategic importance to the future growth and prosperity of the Region and its sub Regions – referred to in this report as "Strategic Green Infrastructure". Therefore, the evidence base that has been developed in this report has a particular focus upon identifying indicators in relation to these strategic assets – including our National Parks and other protected

¹ 'City region green infrastructure strategic planning: raising the quality of the North's City regions': The Northern Way/ECOTEC (2006):

landscapes through to key linear assets such as rivers, canals and trails, and historic landscapes which contribute to the cultural identity of the Region.

- ***Assets and types, functions and benefits***

Increasingly, the Green Infrastructure agenda is being perceived as a key component of 'smart growth' and this is reflected by the status of Policy YH8 "Green Infrastructure" as a core policy within the recently published Yorkshire and Humber Plan – the RSS for the Region.

However, there is now a clear requirement to substantiate this Policy with a well developed evidence base which seeks to develop better understanding of Green Infrastructure in the following key areas:

- ▶ Where and how is the Region's Green Infrastructure spatially distributed according to type and how can this inform the growth agenda?
 - ▶ What aspects of this overall Green Infrastructure asset base are of particular importance from a strategic perspective and, therefore, of particular importance to the RSS?
 - ▶ What roles or functions do these assets play in the social, economic and environmental well being of the Region?
 - ▶ Where are the benefits of these functions realised presently and where is there a need for improvement, either to existing underperforming assets, or in terms of investing in new Green Infrastructure where there is a deficiency?
- A baseline for the future, the context for growth

The importance of establishing a clear definition of what Green Infrastructure is and what it can and does contribute towards the social, economic and environmental well-being of the Region, is critical as a 'baseline of understanding' for Regional stakeholders to sign up to and progress against.

However, the extent to which the regional strategies of Yorkshire and the Humber reflect the importance of Green Infrastructure is patchy at present. This may be because of the lack of real leadership to date with respect to Green Infrastructure, something which has now been more than adequately provided by the Yorkshire and Humber Plan and its core policy YH8 Green Infrastructure - and a raft of complementary policies which recognise

the role and contribution that a well developed and high quality network of Green Infrastructure can play towards economic, social and environmental outcomes.

This report identifies that Green Infrastructure and the important role it plays in promoting the well being of the Region and in stimulating and supporting growth, particularly in relation to housing and the economy, is now firmly embedded within the RSS. However, there remains the potential for Green Infrastructure to become even more prominent, particularly if the role of Green Infrastructure in contributing towards flood alleviation, climate change management and the enhancement of social and economic outcomes are made more explicit and properly evidenced.

1.0 Introduction

1.1 ECOTEC Appointment

ECOTEC Research and Consulting Limited were appointed by the Yorkshire and Humber Regional Assembly (the Assembly) in January 2008 to undertake the development of an evidence base for Green Infrastructure in the Yorkshire and Humber Region.

1.2 Purpose, Scope and Expectations

The aim of this research is to contribute to the development of a strategic approach to Green Infrastructure by establishing evidence base requirements for the Region, thereby ensuring that Green Infrastructure has a pro-active influence upon decisions regarding future locations for growth and development. The development of an evidence base will also have great potential to inform the type and nature of development wherever it happens to be located, so that Green Infrastructure principles are integrated into places accommodating new growth as well as existing urban areas.

In particular, the study has been concerned with identifying those components of the overall Green Infrastructure asset base that should be regarded as being of strategic importance to the future growth and prosperity of the Region and its sub Regions – referred to in this report as "Strategic Green Infrastructure". Therefore, the evidence base that has been developed in this report has a particular focus upon identifying indicators in relation to these strategic assets.

1.2.1 The Terms of Reference² clearly articulate the overall purpose of the study:

- **Objective 1:** To summarise the work to date on Green Infrastructure and evidence base requirements evidence base requirements, with an overview of other regions' evidence bases.
- **Objective 2:** To identify existing coverage of Green Infrastructure in regional strategies, including the draft Plan (Proposed Changes) policies ENV8 and ENV15.
- **Objective 3:** To establish what data and arrangement exist in the region which are or could be used to monitor Green Infrastructure through quantitative and qualitative measures.
- **Objective 4:** To identify the gaps in the evidence base and suggest approaches to complete these gaps if necessary.

² Green Infrastructure and the Regional Spatial Strategy for Yorkshire and the Humber: Evidence Base Development Study Brief (2008), Yorkshire and Humber Assembly

- **Objective 5:** To examine and integrate existing information to meet the evidence base requirements.

In short, the task is defined by our key research question: what are the key requirements of a Green Infrastructure evidence base which can contribute towards the development of a strategic approach to Green Infrastructure across Yorkshire and the Humber?

1.3 Methodology

In order to meet the requirements as set out above, the research team undertook the following key activities, guided by the Assembly led Steering Group:

- An assessment of existing data availability in respect of Green Infrastructure strategic planning to support evidence base development.
- Survey of key regional stakeholders in regards to type, distribution, quantity, and quality of the Green Infrastructure asset base.
- A review of the strategic landscape in respect of Green Infrastructure objectives for Yorkshire and the Humber.
- Mapping and gapping to support the development of the evidence base in order to identify the scope and availability of Green Infrastructure 'metadata' across the region.
- Face to Face and telephone Interviews with key stakeholders across the North of England in respect of key Green Infrastructure projects and existing data availability.
- Workshops with Green Infrastructure thematic stakeholders in order to identify and test the emerging findings of the evidence base.
- Development of key recommendations from the research based upon findings and stakeholder consultation.

1.4 Report Structure

The remainder of our report is structured as follows:

- **Chapter 2:** Understanding Strategic Green Infrastructure – explains the key terms of reference for the study.
- **Chapter 3:** Context for the development of a Green Infrastructure evidence base – sets out how Green Infrastructure relates to a wider set of national and regional policies and activities.
- **Chapter 4:** Green Infrastructure and policy development in Yorkshire and the Humber – considers how Green Infrastructure objectives are currently integrated within key regional strategies, including the RSS.

- **Chapter 5:** The strategic role of Green Infrastructure in Yorkshire and the Humber – develops the notion of a set of strategic Green Infrastructure assets and interventions.
- **Chapter 6:** Developing the Green Infrastructure evidence base – brings together the evidence base requirements in a comprehensive framework.
- **Chapter 7:** Conclusions and recommendations – provides an analysis of further work required to develop the evidence base and in particular to develop the capability of identifying strategic Green Infrastructure.

- **Annex One:** RSS Evidence Base development – an audit of English Regional activity.
- **Annex Two:** Greenspace Audits in Yorkshire and the Humber – a review of progress.
- **Annex Three:** Case Study – City of York.

2.0 Understanding Green Infrastructure

2.1 Defining Green Infrastructure

The Yorkshire and Humber Plan³ Policy YH8 "Green Infrastructure" defines Green Infrastructure as follows:

"...Green Infrastructure (GI) is an important component of ensuring future development provides positive benefits for the region and helps deliver sustainable communities. GI includes strategic networks of accessible, multifunctional sites (including playing fields, parks, woodland, informal open spaces, nature reserves and historic sites) as well as linkages (such as the principal transport corridors, river corridors and floodplains, wildlife corridors and greenways). These contribute to maintaining the region's biodiversity and environmental quality as well as people's well-being. GI networks should consist of a series of features (both existing and new), appropriate at various spatial scales, preferably with links connecting smaller, more local sites with larger, more strategic ones, including the region's National Parks and key nationally and internationally important habitats. Networks can provide links between town and country, between different parts of an urban area, and between existing and new development. Linear GI (greenways and riparian areas along rivers, streams, canals etc) is integral in securing connectivity for wildlife and accessibility for people. GI also offers potential benefits in terms of responding to climate change and its impacts, including mitigating flood risk by putting areas unsuitable for built development into a variety of green infrastructure uses..."

Policy YH8 carries on to state that:

"...GI networks should consist of a series of features (both existing and new), appropriate at various spatial scales, preferably with links connecting smaller, more local sites with larger, more strategic ones, including the region's National Parks and key nationally and internationally important habitats. Networks can provide links between town and country, between different parts of an urban area, and between existing and new development. Linear GI (greenways and areas along rivers, streams, canals etc) is integral in securing connectivity for wildlife and its adaptation to the impacts of climate change, and accessibility for people..."

³ The Yorkshire and Humber Plan: Regional Spatial Strategy to 2026 (GOYH, 2008)

2.2 Understanding, identifying and measuring Green Infrastructure

This definition may be further developed through an understanding of the asset base that comprises Green Infrastructure, its functions and benefits. Green Infrastructure is most commonly described in the following terms:

- **Type and Typology** – the component parts of Green Infrastructure, defining and describing the assets that comprise it.
- **Functions and Benefits** – building upon the simple typology, it is then possible to assign a variety of functions to those forms: the key roles that individual and networked Green Infrastructure assets perform in relation to the economy, society in general and to the natural environment – the latter including the ecosystem services that it incorporates and provides.

2.2.1 A typology of Green Infrastructure

The following table 2.1 provides a working typology for Green Infrastructure which is used in this report to develop the evidence base in terms of the broad range of Green Infrastructure that exists and the key characteristics pertaining to this. The typology set out here seeks to be responsive to the particular characteristics of the Region, whilst building upon previously widely accepted typologies, such as that set out in PPG17 – Planning for open space, sport and recreation (ODPM, 2002).

Table 2.1 Green Infrastructure typology

Type of Green Infrastructure	Sub sets (examples)
Parks and public gardens	Urban parks, Country Parks
General amenity space	Village greens, doorstep greens.
Outdoor sports facilities	Golf courses, sports pitches, playing fields.
Woodland	Copses, ancient woodland
Water and wetland	Rivers, streams, canals, wetlands, lakes and ponds.
Moorland and heath	CROW open access land.
Coastal habitat	Dunes.

Type of Green Infrastructure	Sub sets (examples)
Agricultural land	Arable, pasture, horticulture, meadows, non food crops.
Allotments	Community gardens, orchards and urban farms.
Cemeteries	Churchyards and burial grounds.
Derelict land	Derelict, under utilised and neglected land.
Private gardens	-
Street trees	-
Transport corridors	Roadside verges, railway embankments, canals, PROWs.
Historic and culturally significant landscapes	Landed estates.

2.2.2 Functions and Benefits of Green Infrastructure

Work in the North West Region undertaken by the North West Regional Development Agency and Natural England under the banner of the Natural Economy Northwest has developed a set of key benefits of Green Infrastructure⁴. This set is useful when assessing the strategic importance of Green Infrastructure assets and interventions because it goes beyond a simple assessment of what exists (or what might exist) and enables stakeholders to understand the relative strategic importance of those assets and potential interventions.

Thus, an understanding of the functions and benefits of Green Infrastructure allows for an improved understanding for why strategic interventions should be made and where they should be made spatially to maximise benefits.

Critically from the perspective of this report, it also enables the development of an evidence base against key indicators which goes beyond form and function and allows stakeholders to develop rationales based upon benefit to the Region/sub regions. Key benefits and a brief description of each is shown in Table 2.2 below:

⁴ www.naturaleconomynorthwest.co.uk

Table 2.2 Green Infrastructure Key Benefits and Functions

Key Benefit	Key Function
Climate change adaptation and mitigation	Green Infrastructure provides natural air conditioning for urban areas and absorbs greenhouse gases.
Flood alleviation and Water Management	Greenspace, trees, soft surfacing and SUDS reduce and control run-off, increase permeability and provides storage capacity.
Quality of Place	Green Infrastructure provides for higher quality living and recreational environments.
Health and Well-being	Access to greenspace provides multiple health benefits through increased physical activity and improved air quality.
Land and Property Values	House prices and commercial rents are enhanced by proximity to high quality greenspace.
Economic growth and Investment	High quality Green Infrastructure attracts and retains industry and skilled workers.
Labour productivity	Green Infrastructure integrated with industrial areas leads to higher productivity and reduced absenteeism.
Tourism	High quality rural environments attract tourists: greener cities become more attractive to visitors.
Recreation and Leisure	Well networked Green Infrastructure provides new opportunities for outdoor recreation and leisure.
Land and Biodiversity	Well managed countryside creates higher value employment in conservation, forestry and farming and well maintained habitats and species retention.
Products from the land	Biofuel and biomass production enables reduced reliance on fossil fuels. Local food and drink produce improves regional image and opens up new markets for farmers.

2.3 In summary

Green Infrastructure in the Region is extensively defined by the Yorkshire and Humber Plan – in line with definitions that have been developed in other English Regions. Defining Green Infrastructure in terms of its forms (i.e. the typology) and functions is a relatively

straightforward process, given the work that has been done (and is on-going) in other Regions, for example, the North West and East Midlands.

The importance of establishing a clear definition of what Green Infrastructure is and what it can and does contribute towards the social, economic and environmental well-being of the Region, is critical as a 'baseline of understanding' for Regional stakeholders to sign up to and progress against.

In addition and of particular importance from the perspective of the RSS is the need to focus more clearly upon the strategic nature of Green Infrastructure in contributing to and setting the scene for the growth agenda. This understanding is partly gained by attaching relative importance to the types of Green Infrastructure that exist and their spatial context. However, of greater importance is an improved appreciation of the functions and benefits that flow from high quality Green Infrastructure assets, properly networked and invested in. Regionally, sub Regionally and locally.

3.0 Context for the development of a Green Infrastructure evidence base

3.1 Introduction

There are a number of key contextual factors that underpin the need to develop a robust evidence base in relation to Green Infrastructure from the perspective of the RSS. These are:

- the forthcoming mini review of the RSS;
- the national planning framework within which the RSS sits;
- the sustainable communities agenda; and
- the integration of Green Infrastructure and the emerging sub national agenda, spatial strategies and within the overarching context of the Northern Way.

3.1.1 RSS Review

The requirement to review the Regional Spatial Strategy – The Yorkshire and Humber Plan, stems from the Housing Green Paper “Homes for the Future: More Affordable, More Sustainable” which was published in July 2007. The Green Paper sets out that by 2011 Assemblies’ will review Regional Spatial Strategies to reflect the Government’s plans for increased rates and levels of house building.

The Yorkshire and Humber Regional Planning Board considered and a broad approach to the RSS Review in December 2007. The Board stressed the need for the Review to be seen as a continuous development of the Yorkshire and Humber Plan, rather than a wholesale review. The Regional Planning Board agreed that the focus of the RSS would be on three overall themes:

- Levels of growth
- Locations for growth
- Infrastructure for growth

Within the broad approach agreed by the Regional Planning Board work has already begun on reviewing the evidence base for many of the work streams. The aim of the evidence base review is to ensure that work being undertaken in the Region such as housing land assessments and infrastructure studies will cover the whole of the Region in a consistent way.

3.1.1.1 *Work streams*

In line with the broad approach the RSS Review will consist of the following work streams.

- Work stream 1: Sustainability Assessments
- Work stream 2: Scale and Type of Housing Growth
- Work stream 3: Possible Locations of Growth
- Work stream 4: Infrastructure
- Work stream 5: Adaptation
- Work stream 6: Consultation and Engagement
- Work stream 7: Option Analysis
- Work stream 8: Policy Revisions

Clearly the work streams overlap in places and link together - but identifying these work streams helps to organise and articulate the RSS Review work programme, including the review and development of the evidence base, options analysis, developing policies and preparing materials and information.

3.1.1.2 *Specific additional studies*

Informing the Review will be a number of studies which are planned or on-going at present:

- **Assessment of the Use of Evidence on Transport Constraints and Opportunities in the Mini Review of RSS:** this study will look at ways of using existing transport evidence base on transport constraints and opportunities to proactively inform options for housing growth.
- **Review of Strategic Flood Risk Assessments (SFRAS) in Yorkshire and Humber:** the aim of this study is to examine Strategic Flood Risk Assessments from across the Yorkshire and Humber Region and to identify their strategic implications at the sub area level set out in the Yorkshire and Humber Plan.
- **Mapping Policy Implications of LDF Core Strategies:** the purpose of this study is to test the ability of the current policy approach in RSS and other options investigated by LPAs in their core strategy work to accommodate higher levels of growth.
- **Green Infrastructure – Evidence Base Development:** the purpose of this study is to help develop a common evidence base and approach to infrastructure in the region. This will help to ensure that growth is planned in a way that responds to infrastructure capacity and opportunities, as well as highlighting possible constraints and phasing issues.

3.1.2 The National Planning Policy Framework

3.1.2.1 *Integrating Green Infrastructure*

The need to include Green Infrastructure as an integral part of the planning process is now established in adopted and emerging national policy guidance.

- **Planning Policy Statement 1 (PPS1): Delivering Sustainable Development** (2005) sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. PPS1 recognises that the condition of our surroundings has a direct impact on people's quality of life, and that improvements of the natural and built environment can bring social and economic benefit for local communities.
- **Planning Policy Statement: Planning and Climate Change – Supplement to PPS1** (2007) sets out how planning, in providing for the new homes, jobs, and infrastructure needed by communities, should help shape places with lower carbon emissions and resilient to the carbon change now accepted as inevitable. It clearly sets out how planning should contribute to reducing emissions and stabilising climate change and take into account the unavoidable consequences. In particular, it emphasises that when selecting land for development planning authorities should take into account "*...the contribution to be made from existing and new opportunities for open space and green infrastructure to urban cooling, sustainable drainage systems, and conserving and enhancing biodiversity...*"
- **Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation** (2002) sets out the role of the planning system in relation to the assessment and provision of sport and recreational facilities and recreational open space, requiring policies to be developed based on standards for provision of open spaces, including green spaces. It advises local authorities to carry out assessments of existing and future requirements for open space and recreational facilities. It states that local authorities should undertake an audit of quality, quantity and accessibility of open space. It recognises the role of open spaces in enhancing quality of life, and in particular the role of local networks of high quality and well managed open spaces in creating attractive urban environments.
- **Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation** (2005) sets out planning policies on the protection of biodiversity and geological conservation through the planning system. Local authorities are required by PPS9 to maintain networks of natural habitats by "*...avoiding or repairing the fragmentation and isolation of habitat...*" undertaken "*...as part of a wider strategy for the protection and extension of open space and access routes...*" PPS9 also emphasises the role of previously developed land to host locally important biodiversity, and the importance of retaining or incorporating such interest into developments. It also notes the

opportunities for building-in biodiversity features as part of the design of development proposals.

3.1.2.2 *Developing policy grounded by evidence*

As importantly, the national planning system today has a clear requirement for RSS' to be firmly grounded by a well developed evidence base, as illustrated by the following guidance, and this is a clear guiding principle for the development of this study:

- **Planning Policy Statement 11 (PPS11): Regional Spatial Strategies** (ODPM, 2004) – published to replace the previous guidance relating to Regional Planning, PPS11 provides clear guidance to those responsible for the development of RSS in relation to the need for evidencing policies in the following areas:
 - ▶ Developing locational criteria relating to those policies identifying new growth.
 - ▶ Developing output targets and indicators for policies, which should be kept to a minimum and follow on from the establishment of objectives, policies and targets.
 - ▶ Developing social, environmental and economic contextual indicators for monitoring progress in the Region.

- **Planning Policy Statement 12 (PPS12): Local Development Frameworks** (ODPM, 2004) – PPS12 was published to replace former guidance relating to Development Plans and is designed to assist local planning authorities in preparing their Local Development Frameworks (LDF). As such, it is critical that the RSS in preparation takes due account of the requirements pertaining to LDFs. In relation to evidencing policies, PPS12 states that the LDF should contain "*...an integrated set of policies which are based on a clear understanding of the economic, social and environmental needs of the area and any constraints on meeting those needs...*" Furthermore, section 1.3 (vi) states that local development documents comprising the LDF must be "*...based upon a robust and credible evidence base...*"

3.1.3 Delivering the Sustainable Communities Agenda

The Sustainable Communities agenda in the UK has developed from the ODPM's Sustainable Communities Plan, "Sustainable Communities: Building for the Future" (2003), which set out the government's response to housing market imbalances and the issues of affordability and low demand.

The decision to tackle low demand housing, make substantial investment in the growth areas of the South East, and raise the standard of homes, brought the practicalities involved in delivering Sustainable Communities into sharp focus. It was recognised that a holistic approach was necessary, addressing not only housing problems but also a wider

range of issues relating to the physical environment, the economy, the quality of services and amenities, accessibility and the overall quality of life. This was true not only of the growth areas of the South East but also of areas at risk of abandonment in the Midlands and the North.

The ODPM Five Year Plans "Homes for All" (2005) and "People Places and Prosperity" (2005) develop the government's strategy for delivering Sustainable Communities. Homes for All focused on promoting more choice and affordability in the housing market. People, Places and Prosperity broadened the scope of the government's approach to Sustainable Communities through the promotion of better governance; strong leadership and the revitalisation of neighbourhoods. These two complementary plans reinforce the government's commitment to delivering sufficient numbers of appropriate, adequate and affordable housing supported by environments that provide excellent services, ensure participation, tackle disadvantage and increase prosperity.

In 2005, the UK's EU Presidency provided an opportunity for the Member States to agree a set of defining principles for sustainable communities. The Bristol Accord, which was agreed at the Ministerial Informal held in Bristol in December 2005, provides a framework (or set of outcomes) that can be used for benchmarking the impacts of policy interventions in the creation of attractive and successful places. These outcomes are:

- active, inclusive and safe;
- well run;
- environmentally sensitive;
- well designed and built;
- well connected;
- thriving;
- well served; and
- fair for everyone.

These core components of creating Sustainable Communities present a vision which has gained the commitment of many stakeholders. However, turning the vision into reality raises key questions of delivery. The success of Sustainable Communities policies depends on multi-disciplinary approaches involving the effective interaction of spatial planning, the environment, transportation, economic development, and a number of other policy interventions. Green Infrastructure can be viewed as providing a cross cutting theme enabling this wide range of outcomes to be achieved.

3.1.4 Delivering the Sub National Agenda

The recent government Review of Sub-National Economic Development and Regeneration (HM Treasury, 2007) proposes changing the way RDAs report outputs to the government in the future (and therefore how 'progress' and value for money is measured. It is envisaged that RDAs will in future have the responsibility for delivering a single output – increasing Gross Value Added (GVA) per capita. The way that this is achieved and, therefore, the outputs set by RDAs to demonstrate and measure this GVA growth, will be accountable only to the individual RDA. Currently the new Outputs Framework is undecided, and hence there is an opportunity to influence the decision process involved in establishing these outputs - to advocate the role that Green Infrastructure has to play in increasing GVA in Yorkshire and the Humber.

Additionally, the Review signalled government's intention to move towards a single integrated regional strategy (IRS) by 2010, bringing RES and RSS together. The evidence base developed here (alongside those for critical and social infrastructure) can therefore play a key role in advocating a more flexible approach which is sensitive to the many impacts and benefits Green Infrastructure investment can have.

3.1.5 Regional Spatial Strategies and Green Infrastructure

Green Infrastructure is terminology that is used both to describe an approach to future planning and development, as well as shorthand for 'all things green' inside and outside our cities, towns and villages. As such, it is recognised by stakeholders that for Green Infrastructure to be successfully incorporated into strategic implementation plans at regional and sub regional levels, the RSS is a key document in ensuring that Green Infrastructure is both maintained and developed.

Regionally, Natural England has undertaken an audit of RSS provision concerning the coverage of Green Infrastructure policies across the country. The results, albeit still at various points in the 'draft plan' stage, was encouraging and has provided the study team with a good baseline of existing regional activity upon which to analyse good practice from other regions.

From the Yorkshire and Humber perspective, the progress that has been made in the development of the RSS has been encouraging with Green Infrastructure established as a core policy (YH8), supported by a raft of policies in the Environment section which can be cross referenced back to Green Infrastructure:

- **ENV1** Development and flood risk (sustainable drainage schemes, canopy cover, and peat blanket bog management).
- **ENV2** Water resources (water resource capacity).

- **ENV5** Energy (energy crop production, biomass).
- **ENV6** Forestry, trees and woodlands (key Green Infrastructure assets – maintenance and future cover).
- **ENV7** Agricultural land (key Green Infrastructure asset – diversification potential).
- **ENV 8** Biodiversity (maintenance and creation of habitats).
- **ENV9** Historic environment (maintenance/improvement of key rural landscapes).
- **ENV10** Landscapes (maintenance / improvement of key rural landscapes/assets).
- **ENV11** Health, recreation and sport (Green Infrastructure providing opportunities for healthy recreation)
- **ENV12** Regional waste management objectives (re-use of landfill sites for new Green Infrastructure).

Overarching all is YH8 Green Infrastructure which provides a strong statement and direction for LDFs, albeit with room for development as the evidence base develops, in particular with regard to the wider social and economic benefits investment can bring and the opportunities for providing 'strategic hooks' into sections dealing with economy and housing in particular.

3.1.6 Green Infrastructure and the Northern Way

The 2006 report from the Northern Way Sustainable Communities team "City Region Green Infrastructure Strategic Planning - Raising the Quality of the North's City Regions" argues that for Green Infrastructure to be properly planned for and networked in a manner which creates real benefits to business, communities and for natural ecological systems, planning needs to take place at a spatial level which allows for a strategic view to be taken across a geographic area which is large enough for real impact to be seen and allows for that network to be properly linked across artificial political boundaries. It goes on to argue for that appropriate level to be the City Region scale:

"...The placing of Green Infrastructure within this city regional context is opportune because of the rise of the City Region as the natural level for planning for the economic renaissance of our towns and cities across the North of England, linking the green space agenda directly with the regeneration agenda with which it is integrally bound..."

The Northern Way report argues that the benefits of this approach to Green Infrastructure planning can be viewed as contributing to economic, social and environmental agendas:

- **Economic**, because of the opportunities Green Infrastructure opens up for new commercial activity, particularly in tourism, agriculture and the renewable energy sectors, new employment in the conservation and land management sectors, and the

increasingly quantifiable benefits that an attractive environment and investment in green spaces can bring in terms of attracting and retaining business.

- **Social**, because of the benefits accessible green spaces and investment in measures which improve air and water quality bring to public health, its contribution to community cohesion and sense of place, along with new opportunities for formal and informal recreational activities.
- **Environmental**, because of the conservation and creation of wildlife habitats and corridors, reductions in air and water pollution and the contribution made towards reducing climate change impact.

3.2 In summary

The context for the growth and development of the Green Infrastructure agenda in Yorkshire and the Humber is well summed up by the 2006 Northern Way study to develop the framework for City Regions to integrate Green Infrastructure into their forward strategic planning⁵:

"...When strategically planned and measured (across a City Region), Green Infrastructure can be seen to have the potential to create a truly sustainable community by integrating environmental assets and processes with key elements of economic renaissance such as housing renewal, inward investment, site and infrastructure development..."

Increasingly, the Green Infrastructure agenda is being perceived as a key component of 'smart growth' and this is reflected by the status of Policy YH8 "Green Infrastructure" as a core policy within the recently published Yorkshire and Humber Plan – the RSS for the Region.

However, there is now a clear requirement to substantiate this Policy with a well developed evidence base which seeks to develop better understanding of Green Infrastructure in the following key areas:

- Where and how is the Region's Green Infrastructure distributed according to type?
- What aspects of this overall Green Infrastructure asset base are of particular importance from a strategic perspective and, therefore, of particular importance to the RSS?

⁵ 'City region green infrastructure strategic planning: raising the quality of the North's City regions': The Northern Way/ECOTEC (2006):

- What roles or functions do these assets play in the social, economic and environmental well being of the Region?
- Where are the benefits of these functions realised presently and where is there a need for improvement, either to existing underperforming assets, or in terms of investing in new Green Infrastructure where there is a deficiency?

4.0 Green Infrastructure and policy development in Yorkshire and the Humber

4.1 Introduction

The RSS clearly does not stand in isolation from the rest of the strategic 'landscape' of Yorkshire and the Humber and it is critical for the eventual adoption of the RSS by stakeholders that there is a level of consistency expressed within the RSS with a series of key strategies at Regional and sub regional level. This chapter reviews the key economic and environmental strategies that cover the Region, and assesses the extent to which Green Infrastructure is embedded in those documents and their policies, and whether there is any potential for Green Infrastructure to become even more prominent in the policies and measures contained within those documents.

PPS 11 is explicit in stating that, with regard to the broad strategic framework of the Region:

"...It is essential that the RSS both shapes and is shaped by other regional strategies. If the RSS and other strategies are not aligned in their key objectives and vision, and support one another, the region's ability to deliver will be compromised..."

It is also critical that the RSS itself provides consistency throughout its analysis and policy recommendations, thematically and spatially. Therefore this chapter begins with an analysis of the RSS and the extent to which Green Infrastructure is integrated and the key issues that this highlights for the Region.

4.2 The Regional Spatial Strategy

The purpose of the Regional Spatial Strategy (RSS) is to guide the growth and development which is anticipated in the region over the next 15-20 years. The strategy states the need for 22,000 new houses a year until 2025 and annual job growth of nearly 30,000, the majority of which will be focussed on the region's cities and sub-regional towns.

The RSS clearly acknowledges the importance of Green Infrastructure, and the environment generally, to the well being of the region. Green Infrastructure is prominent in all three sections of the strategy; the Core Approach, sub-area policies and themes.

4.2.1 Core Approach

4.2.1.1 *Headline outcomes*

Of the eight headline outcomes, five have particular relevance to Green Infrastructure:

- **Cities and towns** have been transformed and are attractive, cohesive and safe places where people want to live, work, invest and spend time in – here Quality of Place is highlighted as a headline indicator, with Green Infrastructure potentially a major contributor to this.
- Inequalities have been reduced, the **health and well-being** of the population has improved – Green Infrastructure is specifically identified within the headline indicators in relation to investment in Regeneration Priority Areas.
- People have better **accessibility** to opportunities and facilities, the use of public transport and walking and cycling has increased – Green Infrastructure provides a well developed network of non motorised routes able to join people up to opportunity without recourse to private motorised transport.
- **Environmental quality** has been raised, resource demands from development minimised and the region is responding proactively to the global and local effects of **climate change** – the Green Infrastructure agenda is strongly linked to both quality of the asset base (as well as quantity) and has well established links to climate change adaptation and mitigation.
- The use of the region's land and existing social, physical and green **infrastructure** has been optimised – Green Infrastructure is highlighted as a contextual indicator.

4.2.1.2 *Core policies*

Alongside analogous core policies relating to climate change (YH2) and green belts (YH9), Green Infrastructure enjoys its own core policy (YH8). YH8 calls for areas and networks of Green Infrastructure to be:

- Identified.
- Protected.
- Created.
- Extended.
- Enhanced.
- Managed and maintained.

The emphasis in YH8 is upon ensuring that Green Infrastructure is well defined and protected and that LDFs ensure that the existing and potential asset base is invested in to

ensure it plays as great a role as possible towards social, economic and environmental outcomes.

The policy also begins to identify a portfolio of assets which are of "*...particular significance...*", pointing towards the development of the strategic Green Infrastructure asset base which is developed later in this report. Those identified here are:

- National and inter regional trails.
- Floodplains
- Woodlands.
- Biodiversity.
- Heritage.
- Distinctive landscapes.

4.2.2 Sub-areas

Rather than make site specific allocations for land or development, the RSS focuses on broad locations. The strategy clearly identifies the Cities of Leeds, Sheffield and Hull (the emerging City Regions), and the 13 sub-regional towns, as the areas where the majority of housing and employment growth will be concentrated.

4.2.2.1 *Leeds City Region*

Leeds City Region is the largest sub-area in the RSS, accounting for 48% of the Region's population. The RSS estimates that the area will need to accommodate 60% of the Region's jobs and household growth over the next 15-20 years. In terms of where that growth might take place, Bradford and Leeds are identified as the focus for most of the growth in housing and jobs. There is also a recognition that the benefits from that growth need to be geographically shared out.

Outside the City and sub-regional towns, coalfield towns are identified as to be a focus for housing renewal and development and employment opportunities, as is the Aire Valley and the EASEL area (East and South East Leeds) and Leeds is the one area in the Region where house building may have to take place in the Green Belt.

In terms of strategic Green Infrastructure, the RSS notes that the area has low levels of tree cover, and mentions the potential for the creation of an extensive community forest, particularly given the importance of woodland to flood alleviation.

4.2.2.2 *South Yorkshire*

The RSS states that policies should continue to promote Sheffield as a regional city, to transform the sub-regional towns and to have the city and these towns as the main focus of growth. Job growth potential could be 9,000 a year, and housing growth nearly 5,000 a year, from 2008.

Many parts of the sub-region are particularly prone to flooding, as evidenced most recently by 2007 floods in Sheffield and Doncaster.

In terms of strategic Green Infrastructure, there is a proposal to increase woodland planting in line with the South Yorkshire Forest Plan, and to encourage biomass planting in Doncaster, Barnsley and Rotherham. There is also a commitment to enhance the environment of former coalfield settlements (e.g. Dearne Valley).

4.2.2.3 *Humber estuary*

The RSS states that policies should continue to promote the role of Hull as a major city, and to strengthen Scunthorpe and Cleethorpes and Grimsby as sub-regional towns, and the other towns in the sub-region as principal towns. The focus of growth should be on Hull and the sub-regional towns.

In terms of strategic Green Infrastructure there is reference to the potential for the sub area, given its coastline, to generate significant growth in the renewable energy sector, particularly in relation to the development of Wind Farms.

4.2.2.4 *York*

The RSS states that policies should continue to develop the role of York as a sub-regional city, i.e. the focus of most development and investment, and Selby and Malton as principal towns. The strategy also states that the benefits of York's growth needs to be spread to other parts of the sub-region.

York, along with Selby, will be the primary focus for new housing developments. In Malton, any housing provision should be aimed specifically at increasing diversity.

In terms of Green Infrastructure, managing flood risk is a major priority for this sub-region, and an issue where Green Infrastructure has a major potential role.

4.2.2.5 *Vales and the Tees Links*

The RSS supports the growth of Catterick Garrison, based on a planned expansion of the base, to enable it to perform the role of a principal town.

New developments should be focussed in the principal towns within the sub-region, i.e. Thirsk, Ripon, Northallerton, and Richmond/Catterick.

4.2.2.6 *Coast*

The RSS supports the promotion of Scarborough as the sub-regional town, with Bridlington and Whitby as the principal towns. In terms of Green (or blue) infrastructure, the RSS proposes that Scarborough to Flamborough coastline should become part of the Heritage Coast.

There is reference to the potential for the sub-region, given its coastline, to generate significant growth in the renewable energy sector, particularly in relation to the development of Wind farms.

4.2.2.7 *Remoter Rural*

The RSS encourages tourist related development in the remoter rural areas which does not damage the features of the area. There is an emphasis on the need for agricultural land to diversify into other uses, such as tourism.

With regard to housing, there needs to be an appropriate level of market housing, and appropriate affordable housing, with new housing developments should be restricted to local service centres, and address affordable housing shortage. The RSS states that all new housing in National Parks is for local need only, hence there no targets for new housing in these areas

Flooding is a major issue downstream, and the RSS refers to the potential for more tree cover in upland areas to address this, minimising flooding in major urban centres such as Leeds and York.

4.2.3 Thematic areas

The third section of the RSS deals with the key themes of Environment, Economy, Housing, and Transport.

4.2.3.1 *Environment*

This section contains policies on a number of areas that have implications for growth, and where Green infrastructure could have an important role to play. These include Forestry, Trees and Woodland, Health and Recreation, Agricultural Land and Bio-diversity. The main issues/policies mentioned in this section are:

- The need to use the environment to mitigate flood risk.
- The need for policies to have regard to the economic and social, as well as the environmental benefits of Green Infrastructure.
- The need for local plans to retain and provide substantial connected green networks in urban, urban fringe and countryside areas.

- The need for more woodland, including for biomass planting.
- Diversification is key to the efficient future use of agricultural land.

4.2.3.2 *Economic growth*

Potential annual job growth in the region is estimated at 29,160 for the duration of the RSS, nearly half of which is forecast for West Yorkshire.

Although this section sets out the potential net change in new employment land by each local authority area, the strategy states that the region has more employment land currently allocated than will be required in the future.

Tourism is identified as a significant driver for economic growth across the Region, and suggests most areas could cope with more visitors, particularly in the east of the Region. The need for specific support to encourage this development is proposed, and clearly investment in strategic Green Infrastructure could play a major part in attracting visitors and encouraging growth in the tourism industry.

4.2.3.3 *Housing*

The RSS states that local policies and strategies should ensure the delivery of 22,140 new houses each year across the region between 2008 and 2025, a significant increase on 2001- 2004 when 18,000 per year were provided. The highest priority for development location is brownfield, followed by infill and lastly extensions to existing settlements

In terms of location, the strategy states more than 50% should occur in the 3 regional and 13 sub-regional cities and towns. It also states that 65% of housing should be on brownfield sites, which would suggest a need for more urban Green Infrastructure to support larger populations.

In relation to affordable housing, which is a major issue in many parts of the region, particularly the remoter rural areas, there is a target of 30-40% proportion targets for affordable housing included in the RSS.

4.2.3.4 *Transport*

The RSS is committed to ensuring people have better access to facilities, to reducing the growth in traffic congestion, to raise environmental quality and to address the global and local effects of climate change. The RSS therefore proposes the provision of improved facilities for cyclists and pedestrians, and routes to schools, and of enhancing the accessibility of new housing developments generally.

Green Infrastructure could have a major role in addressing these issues, for example the provision of green transport corridors (along roads or canals), from housing developments to schools, work places and facilities.

Policy T5 (Transport and tourism) within the Regional Transport Strategy section stresses the importance of Green Infrastructure to providing alternatives to car use, i.e. the need to “...*identify, protect and develop appropriate facilities for long distance walking, cycling and horse-riding routes...*”

4.2.4 In summary

Clearly Green Infrastructure and the important role it plays in promoting the well being of the Region and in stimulating and supporting growth, particularly in relation to housing and the economy, is firmly embedded within the RSS. However, there remains the potential for Green Infrastructure to become even more prominent, particularly if the role of Green Infrastructure in contributing towards flood alleviation, climate change reduction and the enhancement of land and property values is made more explicit.

Each of the sub-area sections within the RSS has an environment section which emphasises the importance of the environment to the development and prosperity of those areas. However, there is no explicit mention within these sections of Green Infrastructure, as opposed to the environment, as a concept. Nor is there an explicit recognition of the economic benefits of Green Infrastructure (or of the environment), or the role of Green Infrastructure in alleviating the extent and impact of climate change.

There is also scope within the sub areas section of the RSS to place a much greater emphasis on the need to manage and enhance Green Infrastructure within the principal towns, given the importance of Green Infrastructure to the well being of urban areas. The function of the countryside as a major provider of Green Infrastructure could also be stressed within this section of the strategy.

4.3 Regional Economic Strategy (RES)

The Regional Economic Strategy recognises the contribution the environment and Green Infrastructure makes to the quality of life of the Region, and how in turn an improved quality of life has economic benefits as it helps attract inward investors and new residents.

Notably, conserving and protecting the environment forms part of one of three overall RES aims. Also, RES Objective 5, 'Transport, Infrastructure and Environment',

encourages enhanced land management and woodland creation as a contributor to mitigating pollution and global warming.

Objective 5d (iii) recognises the importance of harnessing “...*the potential of the natural and built environment, including sustainable approaches to tourism, farming and forestry...*”

4.4 Regional Biodiversity Strategy (RBS)

This section is based on the consultation document that was published in 2007 and is effectively an outline strategy. The final document is due to be published in 2008.

Assuming the final strategy is not fundamentally different from the draft, the RBS will make a clear link between biodiversity, Green Infrastructure, the environment and the economic, environmental and social development of the Region.

The RBS will set out the extent of high quality strategic Green Infrastructure in the Region, which it defines as being comprised of:

- 3 National Parks (North York Moors, Yorkshire Dales, and the Peak District).
- 27 internationally important Natura 2000 sites, including Special Protection Areas for birds (SPAs) and Special Areas for Conservation (SACs).
- 384 nationally important Special Sites of Scientific Interest (SSSIs).
- Numerous Local Nature Reserves and non-statutory ‘Local Sites’.

Perhaps more so than any other strategy in the Region, the RBS recognises and fully acknowledges the wide range of benefits that Green Infrastructure, and the environment, can have in relation to well being, the economy, health and in helping mitigate and respond to climate change. For example, 2 of the 10 proposed aims of the strategy are:

- To promote the economic, social and environmental values of biodiversity and thus ensure that its role in sustainable development is fully appreciated.
- To promote the role of biodiversity and maximise its contribution to climate change mitigation and adaptation; by increasing habitat creation, restoration and ecological connectivity to improve the region’s resilience to climate change.

The strategy will also include measures and approaches reflecting the importance of the Region’s environment to combat flooding, for example “...*the flood defence potential of well managed uplands and washlands...*”

The strategy refers to the importance of urban green spaces (including private gardens and public parks) to biodiversity and the “...role of the natural environment in contributing to environmental quality, investment potential, and quality of life, to encouraging diversification and growth within the rural and urban economies...”

The consultation paper also makes the recommendation that approaches in the strategy should:

- encourage nature-based eco-tourism as a means of supporting rural economic regeneration schemes;
- ensure that new residential (housing) development maximises opportunities for habitat creation;
- support the role of the natural environment as a tool for improving quality of life and mental and physical health; and
- support the role of the natural environment as a tool for improving mental and physical health, and overall quality of life (e.g. Green Gyms, walking and cycling routes).

4.5 Yorkshire and Humber Climate Change Action Plan (CCAP)

Green Infrastructure and the environment do not feature strongly in the CCAP. Although reference is made to urban drainage problems and the need for Sustainable Drainage Schemes (SUDS) to address this, the case for Green Infrastructure having the potential to make a significant contribution to flood alleviation, and of alleviating the impact of climate change generally, is not made.

The Plan does refer indirectly to the potential for Green Infrastructure to address global warming, i.e. for more woodland being needed to increase carbon sequestration. However, none of the actions noted in the CCAP are directly placed within the context of a Green Infrastructure strategic framework.

4.6 Leeds City Region Development Programme

Although the Leeds City Region Development Programme (CRDP) includes a section on sustainable communities and quality of life, neither Green Infrastructure nor the environment feature prominently in the document. This is no doubt linked to the stance taken within the document that culture, leisure and tourism are not perceived as City Region core issues at present.

Another reason for the relatively low profile of Green Infrastructure, and 'green' issues in general, within the CRDP could be the fact that the economic and financial benefits that Green Infrastructure can generate have not yet been fully acknowledged within the Region's policy and strategic framework. Nonetheless, the City Region has clearly made considerable strides since the CRDP was published in driving forward the Green Infrastructure.

4.7 Sheffield City Region Development Programme

Sheffield stands out amongst the Region's CRDPs as fully recognising the importance of Green Infrastructure, and the environment, as both an economic driver and a key local asset. The document refers to the area having three distinctive features, one of which is an "outstanding environment and rural areas" and states that the area has a quality of life that other City Regions can only aspire to.

The Peak District National Park is recognised as the strongest brand in the City Region, and Sheffield is hailed as the "greenest city in England"; two reasons why Green Infrastructure is recognised within the Programme as a key economic asset of the City Region.

The document also contains a section headed 'Green Infrastructure' which recognises the economic benefits that green assets can provide, and refers to the need for another regional, or national, park to strengthen the environmental assets of the City Region.

4.8 Hull City Region Development Programme

Neither Green Infrastructure nor the environment generally is a major feature of Hull's City Regional Development Programme. Although reference is made in the introduction section to the fact that immense potential exists in the City Region for enhanced green and blue infrastructure, e.g. the Lincolnshire Lakes and Hull's waterfront, the Programme does not contain any sections, or propose any specific measures, in relation to Green Infrastructure or the environment.

The Programme does include a section on renewable energy, and bio-fuels. However, no mention is made of the potential for Green Infrastructure to make a contribution to the renewable energy sector, or indeed the importance of Green Infrastructure to the production of bio-fuels.

4.9 Local Authority Greenspace audits

Annex Two of this report gives details of progress in each Local Authority area across the Region with regard to Greenspace Audits undertaken as directed by PPG17 and other related strategies undertaken by that Authority.

In addition, Annex Three describes progress in one of the Region's Local Authority areas – the City of York – in taking forward their Greenspace Audit towards a full Green Infrastructure Strategy and Action Plan.

Progress across the Region in taking forward PPG17 Audits is, for the most part, highly encouraging. The importance of these audits is that they provide the local baseline for Green Infrastructure assets, quantitatively and qualitatively, which in turn can be aggregated up to the sub Regional and Regional level and used to compare progress.

4.10 In summary

There is a growing and compelling body of evidence that substantiates the potential for Green Infrastructure to make a major contribution to the economic, social and environmental well being of individuals, and society. In addition, it is now acknowledged that Green Infrastructure has a major role to play with regard to climate change.

However, the extent to which the regional strategies of Yorkshire and the Humber reflect the importance of Green Infrastructure is patchy. This is almost certainly because of the lack of real leadership to date with respect to Green Infrastructure, something which has now been more than adequately provided by the Yorkshire and Humber Plan and its core policy YH8 Green Infrastructure and a raft of complementary policies which recognise the role and contribution that a well developed and high quality network of Green Infrastructure can play towards economic, social and environmental outcomes.

While progress towards local understanding of and action on Green Infrastructure is encouraging as a result of PPG17 Greenspace Audits being undertaken by Local Authorities across the Region, this local commitment is not yet wholly reflected at the sub Regional level, particular as currently expressed in two of the Region's three CRDPs – Sheffield being the clear exception.

5.0 The strategic role of Green Infrastructure in Yorkshire and the Humber

5.1 Introduction

A defining feature of this research is the requirement to examine Green Infrastructure in the Region in relation to its capacity to contribute strategically towards the growth of the Region, in particular relative to the need to accommodate growth in housing numbers and the economy. In order to do so, therefore, it is critical to first establish what might be considered to be 'strategic Green Infrastructure', how this is defined and delineated in relation to the total assets which comprise the Region's Green Infrastructure and what role this can play in relation to the growth agenda.

5.1.1 Strategic Green Infrastructure – a definition

For the benefits of the Green Infrastructure agenda to be optimised, there is a need for Green Infrastructure to be strategically planned for, invested in and managed at all spatial scales from the regional to the local and from urban centres through to the open countryside around and between our towns and cities. It is critical to recognise that Green Infrastructure networks and systems operate across political and administrative boundaries and across diverse landscapes where the character of an area must be central to understanding the role that Green Infrastructure can perform and the form it may take.

Planning at the different spatial scales referred to above enables the different benefits of Green Infrastructure to be optimised in three ways:

- **Firstly**, by enabling previously separate interventions or investments to be aligned and coordinated, thus saving resources, delivering the agreed priorities in regional and sub regional strategies and achieving an improved cost-benefit ratio as a result.
- **Secondly**, by enabling the functions (and thus the benefits) of any one 'piece' of Green Infrastructure to be optimised through proactive management, thus delivering a wider range of benefits from an investment.
- **Thirdly**, by enabling the functions of Green Infrastructure as a system to be maximised, for example reducing the flood risk of an urban area through upstream interventions.

Thus, strategic interventions should not be limited according to scale or location specifically, although these factors will clearly come into play. More importantly from a

strategic perspective is the function and benefit that intervention can bring, in relation to the priorities for the Region expressed in the RSS and other key Regional strategies.

However, that said, PPS 11 "Regional Spatial Strategies" (ODPM, 2004) states from the outset that the RSS should "...confine itself to matters of genuine regional and, where appropriate, sub-regional importance..." and "...should not address local issues which should be the subject of a LDD..." Furthermore, PPS11 goes on to state that "...the RSS should...establish the locational criteria appropriate to regionally or sub regionally significant housing, business, retail and leisure uses, or to the location of new inward investment sites..."

Consequently, it is critical for this report to provide a differentiation between all Green Infrastructure in its totality and that which allows for strategic outcomes to be realised at the Regional and sub Regional spatial scale. Hence, a working definition of what comprises "strategic" Green Infrastructure has been developed to help understanding and guide the development of the evidence base:

"Strategic Green Infrastructure comprises those assets of the Region's physical and natural environmental asset base and their connectivity that have a greater significance for the Region, its sub Regions and/or its sub-areas, because of the role it plays (i.e. its function) or because of the geography it occupies (i.e. its place) in relation to priorities for the social, economic and environmental well-being of the Region/sub Region both now and in the long term and in relation to future development and growth".

5.1.2 Key variables

Within this working definition and in order to identify a broad network of strategic Green Infrastructure in the Region there are clearly a number of key variables which must be taken into account:

- **Location** – for example, proximity to and spatial relationship with major settlements and corridors (e.g. public transport and main river corridors).
- **Areas, Networks and Corridors** – the spatial relationship of one asset to another and the opportunity to maintain and/or develop linkages between these, thereby enabling corridors and networks of Green Infrastructure to be extended and enhanced.
- **Functionality** – in terms of services provided to human and wildlife populations and ecological processes.
- **Accessibility** – the extent to which an asset may be accessed, affecting its functionality and thereby, potentially, its strategic importance.

- **Designation** – international and national designations are key identifiers of strategically important *in situ* Green Infrastructure.
- **Cross boundary linkages** – the proximity of an asset to adjacent strategic Green Infrastructure in another Region.
- **Timescale** – assets that are, or need to be, of lasting importance over long periods of time (e.g. at least 15-20 years).

5.2 Strategic Green Infrastructure in the Yorkshire and Humber Region

The following table 5.1 establishes an indicative list of those Green Infrastructure assets which may be regarded as having strategic importance to the Yorkshire and Humber Region, either at a Regional or sub Regional spatial scale. The development of this typology has the potential to develop and become more refined over time and at this stage is presented as 'indicative' on the basis that it has been subject to limited consultation.

Table 5.1 Existing strategic Green Infrastructure – indicative typology.

STRATEGIC GREEN INFRASTRUCTURE		
REGIONALLY SIGNIFICANT		
Asset	Rationale	RSS Policy reference
National Park	<i>National landscape protection designation</i>	<i>RR1 – Upland natural environment. LCR1 – Landscape Joint Character Areas.</i>
Area of Outstanding Natural Beauty	<i>National landscape protection designation</i>	<i>RR1 – Upland natural environment. LCR1 – Landscape Joint Character Areas.</i>
Site of Special Scientific Interest	<i>National nature and geological conservation designation (including SINC's and LNRs where designated)</i>	<i>E6, LCR1 & VTL1– Internationally important biodiversity sites</i>
Special Area of Conservation	<i>International nature conservation designation (habitats, excluding birds)</i>	<i>E6, LCR1 & VTL1 – Internationally important biodiversity sites</i>
Ramsar site	<i>International nature conservation designation (wetlands)</i>	<i>E6, LCR1 & VTL1 – Internationally important biodiversity sites</i>

STRATEGIC GREEN INFRASTRUCTURE

Asset	Rationale	RSS Policy reference
Special Protection Area	<i>International nature conservation designation (birds)</i>	<i>E6, LCR1 & VTL1– Internationally important biodiversity sites</i>
National Nature Reserve	<i>National nature and geological conservation designation</i>	<i>E6, LCR1 & VTL1 – Internationally important biodiversity sites</i>
Regionally Important Geological and Geomorphological Site	<i>International nature conservation designation (habitats, excluding birds)</i>	<i>ENV8 – Calcareous grasslands, heaths and bogs, limestone pavements and meadows.</i>
Registered battlefield	<i>Historic landscapes. Open space only.</i>	<i>ENV9 – Historic landscapes...registered battlefields...</i>
Scheduled Ancient Monument	<i>Historic landscapes. Open space only.</i>	<i>ENV9 – Historic landscapes. ENV9 – Prehistoric landscapes.</i>
Green Belt	<i>National landscape planning designation</i>	<i>Y1 – York Green Belt. YH9 – Green Belt.</i>
CROW Access land	<i>Accessible greenspace.</i>	<i>RR1 – Upland natural environment</i>
National Trail	<i>National access designation</i>	<i>YH8 – National and inter-regional trails</i>
National Cycle Network	<i>Sustrans developed national network of cycleways</i>	<i>YH8 – National and inter-regional trails</i>
Heritage Coast	<i>National landscape protection designation</i>	<i>ENV10 – Coastal landscapes.</i>
Southern Pennine Uplands (as defined by SCOSPA)	<i>Cross regional significant moorland, important for recreation, biodiversity, water management and climate change mitigation.</i>	<i>RR1 – Upland natural environment. E6, LCR1 & VTL1 – Internationally important biodiversity sites.</i>

STRATEGIC GREEN INFRASTRUCTURE

Asset	Rationale	RSS Policy reference
Main River, Critical Ordinary Watercourse and Flood Zone (as defined by EA)	<i>National water quality, supply and protection of people and property designation</i>	<i>E6 – Waterways. ENV3 – Reservoirs and some rivers. YH8 – Floodplains.</i>
Key Canal (as defined by BW)	<i>Key linear routes connecting urban areas and rural hinterlands.</i>	<i>E6 - Waterways</i>
World Heritage Site	<i>International heritage designation (excluding built up areas)</i>	<i>ENV9 – World heritage sites.</i>
Registered Parks and Gardens of special historic interest (I, II and IIa)	<i>English Heritage maintained Register of Heritage Sites.</i>	<i>YH4 – Corridors and areas of green space.</i>
Grade 1 and 2 Agricultural Land	<i>Importance for food and non food crop production</i>	<i>ENV7 – agricultural land.</i>
Woodland of 30ha and above with current design plan	<i>Production, climate change, biodiversity and recreation value.</i>	<i>YH8 & ENV6 – Woodlands.</i>
Ancient woodland	<i>Significant cultural heritage value.</i>	<i>ENV6 – Ancient woodlands.</i>
SUB REGIONALLY SIGNIFICANT		
Asset	Rationale	RSS Policy reference
Recreational Route	<i>Non motorized routes enabling access to towns and countryside.</i>	<i>ENV11 – Walking and cycling routes.</i>
Site of Importance to Nature Conservation (SINC)	<i>SINCs form a significant network of Green Infrastructure not always covered by international or national designations.</i>	<i>SY1 – Greenspace and important biodiversity. ENV8 – Calcareous grasslands, heaths and bogs, limestone pavements and meadows.</i>

STRATEGIC GREEN INFRASTRUCTURE		
Asset	Rationale	RSS Policy reference
Sports and Playing Field	<i>Importance sub regionally for access to recreation and health benefits.</i>	<i>ENV11 – High quality facilities for sports and recreation.</i> <i>YH8 – Sport and playing field.</i> <i>YH4 – Corridors and areas of green space.</i>
Reservoir	<i>Water control and supply, biodiversity and recreation benefits.</i>	<i>ENV3 – Reservoirs and some rivers</i>
Woodland above 30ha with EWGS management plan.	<i>Sub regional importance relating to timber/biofuel production.</i>	<i>YH8 & ENV6 – Woodlands.</i>
Woodland above 20ha meeting Woodland Access Standard	<i>Access for recreational purposes.</i>	<i>YH8 & ENV6 – Woodlands</i>
Coast (excluding regionally significant Heritage Coast)	Significant for biodiversity	<i>ENV10 – Coastal landscapes</i>

5.2.1 Strategic Green Infrastructure corridors

In addition to identifying the separate key strategic assets, it is important to consider Green Infrastructure as a set of networked and interlinked assets. One aspect of this network which has attracted the attention of Green Infrastructure planners is the notion of identifying strategic corridors which both bring together key assets and identify areas of deficiency or need.

Corridors and networks are significant concepts in Green Infrastructure thinking because of the functionality of such corridors in relation to:

- the movement of people (via non motorised routes);
- the movement of wildlife;
- the accessibility of urban dwellers to the countryside in and around towns and cities;
- and

- The ecosystem services that such corridors provide – for example, the capacity of a floodplain in relation to water movement and management.

As such, it is perhaps more accurate to refer to these as *Strategic Opportunity Corridors*, uniting key strategic assets identified above which may be important to include from the perspective of conservation or protection, alongside identified geographies where the Green Infrastructure is in clear need of improvement, or where other indicators, for example Indices of Multiple Deprivation (IMD), show that there is a need which could be addressed through Green Infrastructure investment – health, cohesion, crime, for example.

Strategic Opportunity Corridors may be identified at a variety of spatial scales:

- International (EU level).
- National (UK level).
- Cross border/trans Regional.
- Regional.
- Sub Regional.

5.2.2 Mapping Strategic Opportunity Corridors

Today, Geographical Information Systems (GIS) provide the capacity to quickly and easily map Green Infrastructure in terms of the asset base, at a wide variety of spatial scales. Most often this is done by identifying the agreed typology (see 2.2.2) and then layering datasets within GIS to provide a complete picture for the required geography. GIS then enables the user to 'zoom' in and out according to the level of detail required. A good example of such a map is included in Annex Three (City of York case study).

Such mapping is most useful in identifying where the existing asset base currently is and when cross referenced with the indicative list of strategic Green Infrastructure, it becomes feasible to begin to identify strategic opportunity corridors – for example, those which are focused upon rivers and floodplains or other linear assets and designations.

However, it is important to note that asset mapping gives no information with regard to:

- The quality of the asset base.
- The functionality of the asset base.
- Where there is societal need which may be addressed through improving quality, functionality or quantity of Green Infrastructure.

These features are harder to map using consistent quantitative evidence and data sets. However, processes can and have been developed which bring together a number of key

datasets to inform the development and delineation of these Strategic Opportunity Corridors (albeit such delineation may involve 'fuzzy' or permeable boundaries). These datasets may include:

- Quality assessments or condition surveys of key strategic assets.
- Utilisation of the Accessible Natural Green space Targets (Angst) and Woodland Access Standards to identify localities of good/poor accessibility to Green Infrastructure.
- Indices of Multiple Deprivation relating to strategic issues which the evidence base suggests Green Infrastructure is able to address (refer to the Key Benefits and Functions table 2.2 in section 2.2.3) – e.g. health.
- Contextual datasets relating to air quality, noise, landscape character, for example, again relative to the Key Benefits identified as being of strategic importance to the Region/sub Regions.

Two helpful examples of work undertaken elsewhere in the country are shown below as illustration of the processes applied to this task:

5.2.3 East London Green Grid Framework⁶

The East London Green Grid aims to create a network of interlinked, high quality open spaces that connects town centres with public transport, the Green Belt, and major employment and residential areas. The framework includes all Green space which are categorised as regional parks, metropolitan parks, district parks, local parks and open spaces, small open spaces, gardens, play areas, pocket parks, small areas of open space, linear open spaces and paths along canals and waterways. However, the Framework only maps the larger areas of green space, from regional parks to local parks. Although the document does highlight where London is deficient in respect of major green spaces, and in terms of access to nature, it does not systematically set out where the gaps are between green spaces, or how they might be filled.

Six 'green grid' areas are designated, which sets out the major pieces of strategic Green Infrastructure, identifies where some of the gaps are, and where "strategic open spaces" could be created, but does not define why these spaces would be strategic, for example on the basis of economic, social or environmental benefits.

⁶ East London Green Grid Framework – Supplementary Planning Guidance to the London Plan, Greater London Authority (2008)

5.2.4 Tees Valley Green Infrastructure Strategy⁷

This strategy aims to create a network of green corridors and green spaces, and defines Green Infrastructure as green spaces that can link together create an informal but planned network.

The strategy distinguishes between strategic, sub-regional, district and neighbourhood levels, or scales, of Green Infrastructure, and maps major landscape designations (heritage coast, national park etc.) bio-diversity features, natural processes, major areas of derelict, vacant and unused land, strategic open spaces (including green wedges, parks, woodland, North York Moors National Park, and connectivity (e.g. footpaths and cycle paths)

The strategic network comprises 17 green corridors, a mixture of actual (e.g. coastlines and rivers) and potential corridors. Although the strategy does suggest where new pieces of Green Infrastructure might be needed to enhance the link (e.g. new country parks, new river crossings, new footpaths and cycleway etc) it does not identify specific gaps, or how they might be filled in order to create a strategic green corridor.

5.2.5 Conclusion

Both case studies have sought to define and map a green framework, or grid, of strategic corridors. However, neither have systematically plotted the smaller pieces of Green Infrastructure (footpaths, play areas, sports fields etc.), where the gaps are between areas of Green Infrastructure or how they could be filled. There is no clear definition of what constitutes strategic Green Infrastructure, nor is there a clear rationale for designating the areas (East London) or corridors (Tees Valley), set out in terms of the economic, social or environmental benefits that each area or corridor will deliver.

However, both case studies illustrate the opportunities that exist to develop the notion of corridors in a pragmatic manner by mapping assets (all assets or a selected set) and identifying linkages – actual or potential – between these assets.

5.3 In summary

Some Green Infrastructure assets are of such significance - due to international or national designation primarily – that they are easily identified as strategically important to the Region (and beyond).

⁷ Tees valley Green Infrastructure Strategy, Tees Valley Joint Strategy Unit (2008)

However, for most assets, the extent of their strategic importance is only revealed as a result of filtering through an assessment framework based upon need and opportunity – and accounting for the range of key variables set out within section 5.1.2. This points very clearly towards the need for a strategic Green Infrastructure Assessment Framework to be developed to further refine the outcomes of this study and to filter the evidence base through – thereby enabling policy makers to become increasingly sophisticated in determining and identifying that Green Infrastructure which is of strategic importance, where it is located, guide investment towards it and to measure progress in relation to it.

Alongside this framework development, the next key stage for the Region is to map the asset base and develop a set of indicators and datasets which can be used to further refine the identification of Green Infrastructure, map its incidence and identify broad strategic opportunity corridors. Further refinement of these corridors will need to be brought about in due course by cross referencing Green Infrastructure assets with indicators relating to need and opportunity.

Finally, the process underway in the Southern Pennines led by Natural England which has refined a methodology for identifying and agreeing the Green Infrastructure corridors across the three boroughs of Calderdale, Kirklees and Bradford will be of value as a 'bottom up' approach to corridor delineation, contrasted with the 'top-down' approach proposed by this report in seeking to develop the evidence base relative to strategic Green Infrastructure.

6.0 Developing the Green Infrastructure evidence base

6.1 Introduction

The Regional Spatial Strategy for Yorkshire and the Humber is clearly informed and directed by government guidance set out in Planning Policy Statement (PPS) 11: Regional Spatial Strategies (ODPM, 2004). This document makes it clear from the outset that the RSS should not only be consistent with other regional strategies, as discussed in the previous chapter of this report, but too should seek to be well evidenced with policies quantified and output targets set and monitoring arrangements set in place.

This evidence base is critical both to support the policy from the outset – why is Green Infrastructure strategically important to the Region and where is the evidence to robustly substantiate the policy – as well as to enable progress to be tracked over time against a set of indicators.

This report does not go as far as to establish targets for Green Infrastructure or propose a monitoring (and evaluation) framework. However, it is clearly a necessity here to develop the evidence base, which will flow out of a set of Key Indicators. This in time can be used as the baseline against which target outputs (and outcomes) may be developed along with a framework for monitoring and evaluating success.

6.2 Learning from other Regions

The research for this report undertook an investigation of the state of evidence bases in relation to Green Infrastructure policies across the eight other English Regions, primarily to learn lessons from potentially more advanced approaches. The summary of this research is contained in Annex One.

The only significant progress that the research uncovered in other Regions was in relation to the North West where the Natural Economy Northwest programme has developed an extensive evidence base in relation to a set of eleven Key Benefits of Green Infrastructure investments⁸ and this is drawn upon significantly in this report in relation to the development of the strategic evidence base supporting YH8 of the RSS.

⁸ The Economic Benefits of Green Infrastructure: a review of the evidence base for the economic value of investing in Green Infrastructure

It is interesting to note, therefore, that even in Regions where Green Infrastructure policy and implementation is relatively well advanced – for example, London and the South East in relation to the Thames Gateway, or the East Midlands in relation to Milton Keynes/South Midlands – the evidence base supporting policy and intervention does not exist to any serious extent beyond the base mapping of assets, some functions and corridors.

6.3 The evidence base framework

The key aspect of this report is to provide the Assembly and regional stakeholders with a framework for reviewing, monitoring and evaluating evidence in relation to strategic Green Infrastructure. This chapter sets out a framework which seeks to capture the widest range of indicators available relative to Green Infrastructure in the Region and to thereby enable the evidence that is available to be utilised to identify and measure progress against existing and future Green Infrastructure.

The evidence base proposed by this report is described in tabular format below and is divided into three distinct sections:

- First, indicators which may be considered to be **Contextual** to Green Infrastructure. In other words indicators which measure against qualities or features associated with Green Infrastructure at a Regional scale, enabling policy makers to track the overall progress of the Region.
- Second, indicators in relation to each **Type** of Green Infrastructure as defined earlier by the proposed Typology – quantitative and qualitative.
- Finally, a set of indicators are proposed in relation to the **Key Benefits** of Green Infrastructure. Clearly, benefits derived from Green Infrastructure vary according to a range of factors (type, location, accessibility and scale primarily). Nonetheless, the proposed set of output and outcome indicators may be applied to any individual or set of Green Infrastructure asset – and improved benefits may be derived from functionality enhancement related to these four factors.

This process of considering Green Infrastructure in these different dimensions provides the potential to assess Green Infrastructure strategically at spatial scales from the Regional through to the sub regional. This consideration can be made both in terms of the significant assets which development (and the RSS) needs to pay regard to as growth is planned and in terms of the network and corridors that exist or may be developed.

GREEN INFRASTRUCTURE EVIDENCE BASE FOR YORKSHIRE AND THE HUMBER

Table 6.1: CONTEXTUAL KEY INDICATORS

KEY INDICATORS				
Indicator	Evidence provided	Metric	Source	Spatial scale
Proportion of built up area/countryside and open space.	The extent to which the Region is losing or gaining green space.	Km2	GLUD	Regional/Sub Regional
Tranquility	The extent to which urbanisation impacts upon the Region.	500m cells	CPRE Tranquility Index	Regional/Sub Regional
Noise	The extent to which noise associated with transport and industry primarily impacts upon the Region.	10m cells	Defra Noise monitoring	Sub Regional only at present
Joint Character Areas	The context for new Green Infrastructure investment + evidence of change in urban and rural areas.	Km2	Natural England	Regional/Sub Regional

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Table 6.2: LANDSCAPE SCALE GREEN INFRASTRUCTURE KEY INDICATORS

TYPE	AREAS	KEY INDICATORS			
		Indicator	Metric	Source	Spatial scale
National Parks	Yorkshire Dales	Condition	Ha	NPA Records	Sub Regional
	North York Moors	Visitor numbers	Numbers	Natural England	
	Peak District*				
Areas of Outstanding Natural Beauty	Nidderdale	Condition	Ha	Natural England	Sub Regional
	Howardian Hills	Visitor numbers	Numbers		
	Lincolnshire Wolds				
Green Belts	West Yorkshire	Total area of Green Belt	Ha	CLG / Local Planning Authorities, 2007	Regional Local Planning Authority level
	York	Additions and deletions	Ha		
	South Yorkshire				
National Trails	Pennine Way	Length	Km	NPA / AONB Records	Sub Regional
	Cleveland Way	Condition	Km	NE Condition Survey	Sub Regional
	Yorkshire Wolds Way	Use / Visitor Numbers	Trail length/Numbers	NE User Survey 2007	Sub Regional
Sites of Special Scientific Interest	384 across Region	Numbers in the region	Ha	Natural England	Sub Regional
		Condition	Site	Natural England	Sub Regional

TYPE	AREAS	KEY INDICATORS			
		Indicator	Metric	Source	Spatial scale
National Nature Reserves	7/8 NNRs in Yorkshire and Humber	Numbers in the region Condition	Ha Site	Natural England	Sub Regional
Community Forests	South Yorkshire Forest (White Rose Forest)	Hectares under management Area of Community Forests	Ha Ha	Natural England / Forestry Commission White Rose Forest South Yorkshire Forest	Sub Regional
Sites of Importance for Nature Conservation (SINCs)	Region-wide	Number Condition	Ha Site	Local Authorities	Local Authority

* The Peak District National Park is covered in its entirety by the East Midlands Regional Spatial Strategy.

Table 6.3: GREEN INFRASTRUCTURE TYPOLOGY KEY INDICATORS

TYPE	KEY INDICATORS			
	Indicator	Metric	Source	Spatial scale
1. Parks and public gardens	Number of public open spaces	Ha	Generalised Land Use Database (GLUD), CLG 2005	Sub regional
	Area of registered parks and gardens by grading (one and two)	Ha	English Heritage	Regional
	Green Flag/Green Pennant awards	Number	Green Flag	Sub regional
2. General amenity space	Amount of natural and semi natural land	Ha	Generalised Land Use Database, DCLG, 2005	Regional
	General Landuse – area covered by agriculture, woodland, water or river, urban.	Ha	Defra, Ordnance Survey, Forestry Commission	Local
	Number of Millennium Greens and Doorstep Greens (provision of new public open space)	Number	Natural England	Local
3. Outdoor sports facilities	Number of sports and playing fields in a local authority area	Number	Local Authority records	Local
4. Woodland	Area of Ancient Woodlands	Ha	Natural England / Forestry Commission	Regional
	Condition of woodland SSSIs	Site	Natural England	Sub Regional
	Total area of woodland cover	Ha	National Inventory of Woodland and Trees	Sub Regional

TYPE	KEY INDICATORS			
	Indicator	Metric	Source	Spatial scale
5. Water and Wetlands	Area of water	Km ²	GLUD, CLG	Regional
	Length of water courses	Km	Environment Agency	Sub Regional
	Extent of canal network	Km	Environment Agency	Sub Regional
	Area of Floodplain	Km ²	Environment Agency	Sub Regional
6. Moorland	Area of Moorland	Ha	Natural England	Sub Regional
	Area/condition of SSSI	Ha	Natural England	Sub Regional
	Area/condition of Natura 2000 sites	Ha	Natural England	Sub Regional
	Area/condition of ESAs under management	Ha	Natural England	Sub Regional
7. Coastal habitats	Extent of Sensitive Marine Area	Ha	Natural England	Regional
	Length of Coastline	Km ²	Local Authorities / National Parks	Regional
	Area of coastal sand dunes	Ha	Natural England	Regional
	Area and length of Heritage Coast	Ha/Km	Natural England	Regional
	Area of RAMSAR sites – wetlands of international importance	Ha	Natural England RSPB	Sub Regional

TYPE	KEY INDICATORS			
	Indicator	Metric	Source	Spatial scale
8. Farmland	Area of Farmland	Ha	Generalised Landuse Database	Regional Sub Regional
	Agricultural Land Classification (Grade 1-5)	Ha	Natural England	Local
9. Allotments	Survey of allotments, community gardens and city farms (document to be reviewed for potential data)	Number	CLG, 2006	Local
	Number of allotment sites in each local authority area	Number	Local Authorities	Local
10. Cemeteries	Number of cemeteries in each local authority area	Number	Local Authorities	Local
11. Derelict land	Previously developed land that has been vacant or derelict for more than 5 years	m ²	CLG DSO	Local
	Total area of derelict land and building sites	m ²	Landuse Statistics, CLG	Sub Regional
	Area of brownfield land available for development	m ²	NLUD (National Landuse Database)	Sub Regional
12. Private gardens	Area of domestic gardens	m ²	Generalised Landuse Database, CLG	Local
13. Street trees	Number of Trees with Tree Preservation Orders (TPOs)	Number	Local Authorities	Local

TYPE	KEY INDICATORS			
	Indicator	Metric	Source	Spatial scale
14. Transport corridors	Extent of Road network	km	GLUD	Regional
	Extent of Railway network	km	GLUD	Sub Regional
	Extent of Public Right of Way network	km	GLUD	Local
15. Historic and cultural landscapes	Area/Number of Scheduled Ancient Monuments	Ha/number	English Heritage	Regional
	Total land under the management of English Heritage and the National Trust	Ha	English Heritage	Sub Regional
	Area of registered battlefields	Ha	English Heritage	Sub Regional

Table 6.4: GREEN INFRASTRUCTURE BENEFIT KEY INDICATORS

KEY BENEFIT	RSS STRATEGIC PRIORITY - High, Medium, Low	KEY INDICATORS	
		Output Indicators	Outcome Indicators
1. Climate Change adaptation & mitigation	High	Total greenspace/countryside Urban greenspace Street trees	Increased carbon capture and storage Improved air quality e.g. ozone and CO2 Stabilised urban temperatures
2. Flood alleviation and water management	High	SUDS Floodplain development	Reduced number/impact of flood events Improved liveability
3. Economic growth and investment	High	Greenspace quality	Improved image of Region Increased inward investment
4. Land and Property Values	Low	Greenspace Quality of greenspace Waterway/waterside improvements Green business parks	Enhancement to house prices Enhancement to rental levels Higher occupancy rates
5. Labour productivity	Low	Green business parks	Increased productivity Reduced days lost to industry through sick

KEY BENEFIT	RSS STRATEGIC PRIORITY - High, Medium, Low	KEY INDICATORS	
		Output Indicators	Outcome Indicators
		Accessible greenspace	leave.
6. Tourism	Medium	Urban greenspace Protected landscapes Accessible greenspace Accessible woodland	Increased natural tourism GVA Increased natural tourism employment Higher tourist/visitor numbers
7. Products from the Land.	Low	Biomass Biofuels Managed woodland Local produce	Greater renewable energy capacity Increased local distinctiveness and identity from food and drink sectors
8. Health and Well-being	Medium	Accessible greenspace Accessible rights of way Healthy Walking schemes	Reduced incidence of asthma, obesity, coronary heart disease (chronic non communicable conditions/long term limiting illnesses). Enhanced liveability
9. Recreation and Leisure	Medium	Rights of Way, cycle ways Accessible greenspace	Improved Quality of life Reduced incidence of long term limiting illnesses Enhanced liveability

KEY BENEFIT	RSS STRATEGIC PRIORITY - High, Medium, Low	KEY INDICATORS	
		Output Indicators	Outcome Indicators
10. Quality of Place	High	<ul style="list-style-type: none"> Greenspace provision Accessible greenspace Street trees Community ownership of public greenspace 	<ul style="list-style-type: none"> Improved air quality Reduced noise levels Improved quality of life Reduced crime/fear of crime Enhanced liveability
11. Land and Biodiversity	Medium	<ul style="list-style-type: none"> Habitats protected, maintained, created Land in stewardship 	<ul style="list-style-type: none"> Increased biodiversity

7.0 Conclusions and recommendations

7.1 Introduction

This final chapter set out the key conclusions from the analysis undertaken of the evidence base for the Region and our key recommendations with regard to ensuring that the evidence base is robust and, critically, able to be utilised in a way that is both flexible enough to monitor and measure all Green Infrastructure, as well as identify that which is strategically important to the Region.

7.2 Study purpose

As set out in Chapter 1, the key aim of this research was to contribute to the development of a strategic approach to Green Infrastructure by establishing evidence base requirements, thereby ensuring that Green Infrastructure has a pro-active influence upon decisions regarding future locations for growth and development.

The research has also reviewed the position of Green Infrastructure auditing and evidence base development in the Yorkshire and Humber region and compared development here with that in other Regions, in order to establish our current position and identify what may be learned from elsewhere.

The key relationship of this study to the strategic 'landscape' of the Region is with reference to the RSS and attention has been paid to the drivers relating to this key Regional strategy as a result, not least the overriding objective of providing an evidence base framework which is robust and established within the timeframe set out for the review of the RSS.

The task in essence then was to define the key requirements of a Green Infrastructure evidence base which can contribute towards the development of a strategic approach to Green Infrastructure across Yorkshire and the Humber.

7.3 Key conclusions

7.3.1 Why develop an evidence base?

Our research and discussions with the Steering group have identified a number of key drivers for the growth and development of an evidence base in the Region relative to Green Infrastructure:

- First, to identify what is of value and should therefore be protected, maintained or enhanced.
- Second, to identify where there are deficiencies or disparities at a Regional or sub Regional level as a way of identifying where intervention should take place.
- Third, to meet national guidance about the robust nature of RSS policy being grounded in evidence.

All three are compelling reasons to have undertaken this research. The evidence base framework presented here provides the RSS with the capability for the first time in the Region to bring forward evidence at sub Regional and Regional levels which support the direction proposed by the RSS in policy YH8 and those policies which support it for a strong Green Infrastructure dimension to growth in Yorkshire and the Humber.

7.3.2 The Regional Spatial Strategy

The Yorkshire and Humber Plan as currently drafted has a strong set of environmental policies relative to Green Infrastructure, including of course YH8 which is specific to Green Infrastructure itself. From our analysis of the Plan and YH8 in particular, there are a number of key conclusions to draw:

7.3.2.1 *Green Infrastructure policy*

The policy YH8 has three key sections:

- Section A is directive about what should be done, i.e. identifying, protecting, creating, extending, enhancing, managing and maintaining Green Infrastructure. This is an ambitious statement but does provide the key context for what how the evidence base associated with Green Infrastructure should be developed from a baseline position through to analysis based upon a SWOT analysis of the Region/sub Regions.
- Section B is instructive about what LDFs should contain and forms the basis for the development of LDF policies over time.
- Section C identifies particular priority assets. This is potentially an area for development but does serve a key purpose of linking Green Infrastructure back to other environmental policies in particular.

The policy points towards the need to provide indicators which provide data relating to the amount, type, accessibility and quality of existing Green Infrastructure. When mapped spatially, this range of indicators is able then to illustrate which sub Regions and localities are well provided for in terms of Green Infrastructure and where investment may be required.

Of these key proposed indicators, the most difficult to address presently is that relating to quality. The typology proposed by this report allows for the component assets to be measured quantitatively. Furthermore, the utilisation of the Accessible Natural Greenspace Target (ANGsT) tool allows for the accessibility of the asset base to also be usefully assessed relative to where people live. However, it is certain that quality of the Green Infrastructure is of key importance when considering the extent to which it is a functional asset.

Related to quality and of equal importance certainly is the omission of indicators which relate to the functionality and in particular the *multifunctionality* of the Green Infrastructure asset base. This is pointed towards by indicators relating to the types of Green Infrastructure which prevail: however, it is important to be able to understand beyond this simple analysis what functions any 'piece' of Green Infrastructure plays and how this might be developed/enhanced through investment.

7.3.2.2 *Green Infrastructure outcomes*

YH8 states that the outcomes of intervention is that "...*Green Infrastructure has improved and a more accessible and healthy environment is available...*" From an evidence base perspective, this view considerably underplays the considerable social and economic, as well as environmental, outcomes that Green Infrastructure can contribute towards.

There is no doubt, backed by a weight of evidence, that access to high quality Green Infrastructure can improve health outcomes, However, Green Infrastructure investment can contribute to improved quality of place and quality of life across a wider range of outcomes and indicators relative to these.

7.3.3 Sub area analysis

The analysis of the sub areas identified by the RSS point towards a variance across of the Region of the need for Green Infrastructure investment and intervention. This variance can be broadly characterised by those sub areas where investment is required to:

- Conserve and maintain the asset base where growth in terms of housing and industry is likely to be low; and
- Improve and develop the asset base where growth is likely to be high.

So, for the Region's three City Regions, based on the key urban centres of Hull, Sheffield and Leeds/Bradford, the requirement is to utilise an evidence base to grow new Green Infrastructure and to improve quality, accessibility and functionality of that which exists presently.

For those sub areas of a more rural nature, beyond the City Regions, the priority shifts to a need to maintain and conserve what is a considerable and mostly well functioning Green Infrastructure asset base.

This differentiation should not underplay the critical roles that the Green Infrastructure of the 'rural hinterlands' of the City Regions: indeed, it is arguable that for some functional priorities – for example, relating to climate change and flood alleviation – the role of the uplands and farmland beyond the major urban areas is absolutely critical to the future fortunes of the Region.

7.3.4 Developing Strategic Green Infrastructure

The evidence base as presented in this report provides for the identification of Green Infrastructure at whatever spatial scale is required, according to the typology and benefits framework presented, depending upon the availability of evidence in relation to the indicators which have been identified.

However, beyond this and particularly in relation to the purposes of the RSS, there is a clear need to identify that Green Infrastructure which may be regarded as strategically important to the Region. This is both relevant in terms of the types of Green Infrastructure and also in terms of the role (function and benefit) that it performs.

The research undertaken in this report has provided a definition of what constitutes strategic Green Infrastructure in terms of what is important to the strategic priorities identified by the RSS. This can be summarised as:

- Those key assets which are of national and international significance from the perspective of landscape value, biodiversity and recreational amenity.
- Those assets which play a significant role in terms of the future prosperity in contributing towards the economic and social 'offer' of the Region.
- Those corridors which may be identified which have the potential to play important roles in joining up the network of Green Infrastructure assets with population centres.

7.3.4.1 *Progress in the Region*

The Yorkshire and Humber region may be regarded as being 'ahead of the game' in two key respects with regard to the development of strategic Green Infrastructure, compared to other Regions nationwide:

- Firstly, the review of other RSS has established that no similar efforts have yet been concluded which attempt to identify at a Regional scale what evidence is required to support RSS policy in the way that this research does. Other Regions have developed 'prospectus' (West Midlands) and Guides (North West/North East) and several have driven forward sub Regional strategies which are well developed (Thames Gateway, Milton Keynes/South Midlands, Lancashire, Tees Valley). These are approaches which require further investigation to establish the best fit for a similar approach in time for Yorkshire and Humber in translating this evidence base into regional and sub Regional strategies.
- Secondly, the Region has a well advanced set of Local Authority greenspace audits, which provides a firm foundation for the evidence base at a Regional level and will also enable rapid progress to be made towards implementation of both strategic and local Green Infrastructure investment plans. These audits need to be properly reviewed to establish best practice and commonality of approach in line with the PPG17 guidance and also to enable them to develop further as integrated Green Infrastructure plans at the local level, measuring provision both quantitatively and qualitatively.

7.4 Key recommendations

7.4.1 Developing the evidence base

This report provides a framework which enables evidence to be structured according to a typology of Green Infrastructure assets as well as according to the benefits that it provides. From the perspective of providing a baseline of evidence, there is an opportunity presented now for the RSS to provide a comprehensive audit for the Region and its identified sub areas. This baseline may be critical in monitoring provision at a macro scale which may be tracked into the future.

The key aspect of this evidence base development is with regard to the utilisation of GIS to enable the Region to be mapped comprehensively according to a set of agreed indicators, as proposed in this report. The use of GIS is critical to enable data gathered to be broken down to smaller geographic units: of utility in terms of local Greenspace Audits and strategies developed at a Local Authority level and also for the 'tagging' of data relative to strategic corridors and assets.

It is a key recommendation of this study then that a process is begun of mapping the Green Infrastructure asset base at a strategic level for the Region, utilising the typology set out in this report and importing best practice from Regions and sub Regions (for example, Lancashire and the Tees Valley) where this process has already been completed.

7.4.2 Strategic landscapes, sites, networks and corridors

The framework provided by this report can now be utilised to develop the notion of a set of strategic assets – landscapes, assets and corridors – which together may be regarded as a strategic network. The utility of this will be critical in mapping and providing the context for future growth for the Region.

The key issues here relate to refining the strategic asset base defined in this report using a well developed analysis and evaluation framework:

- Those assets which must be regarded as of strategic importance as they stand.
- Those assets which can be 'joined up' as strategic corridors, particularly in relation to population centres.

The former are potentially relatively easily identified. This report identifies a set of assets which are critical components of the Region's Green Infrastructure network recognised by a set of national and international designations, including:

- ▶ National Parks.
- ▶ Areas of Outstanding Natural Beauty.
- ▶ Sites of Special Scientific Interest.
- ▶ National Nature Reserves.
- ▶ Green Belts.
- ▶ National Trails.

The latter is a more challenging task: work currently being progressed by Natural England seeking to identify strategic corridors relating to both Green Infrastructure and biodiversity will, in time, provide a basis for development in relation to the wider set of benefits identified in this report. This on-going work by Natural England as currently configured began with an initial focus upon accessibility issues but has now been expanded to incorporate economic data as well as that relating to biodiversity (and access). This provides a considerable progression for the Region from where it currently stands in understanding the spatial distribution of strategic Green Infrastructure and as such should be regarded as a most valuable piece of work which will develop an excellent basis for future development, for example in relation to wider social and economic benefit.

7.4.3 Integrating activity – the need for regional and city regional strategies

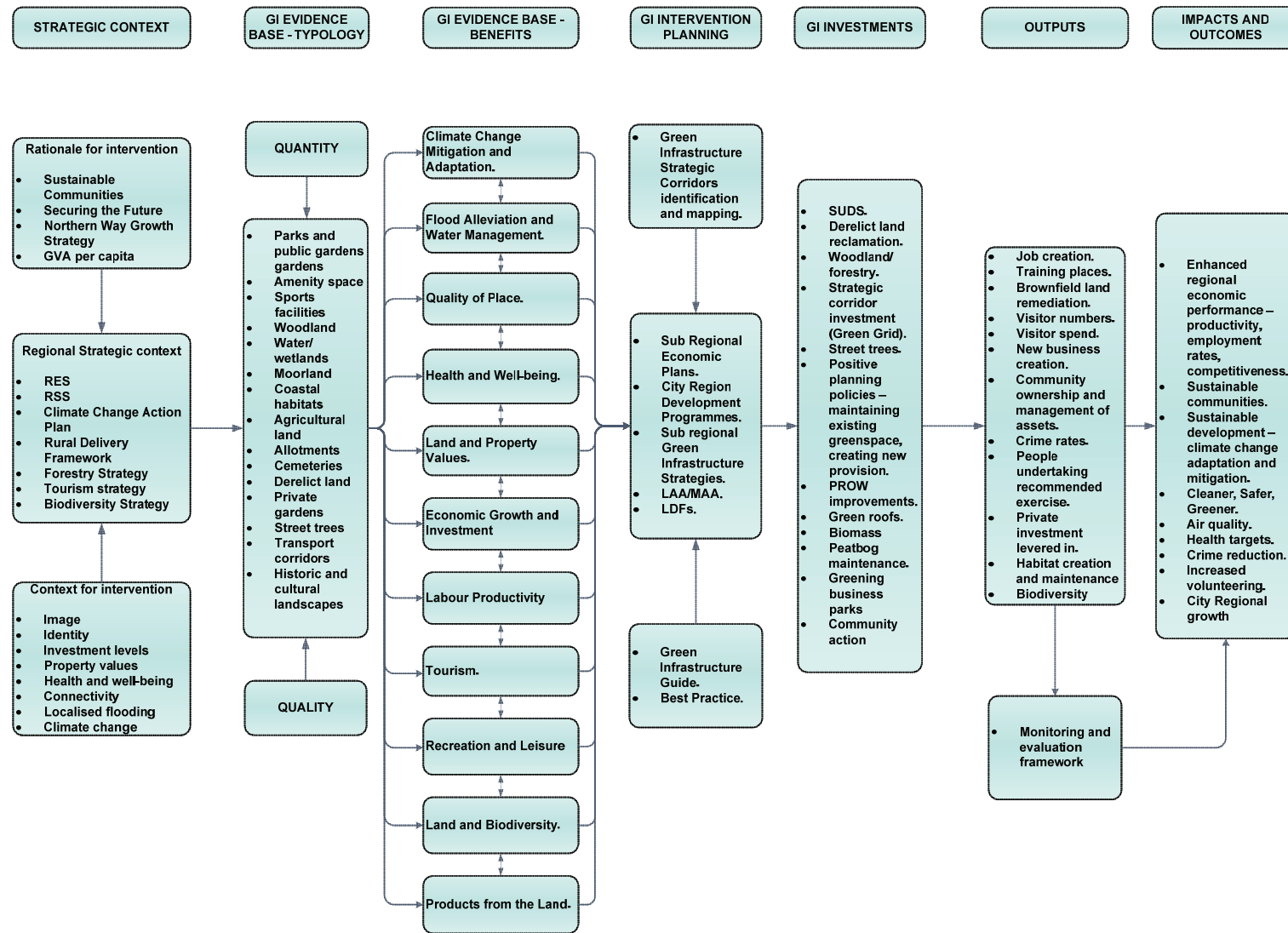
The evidence base provided for in this report provides the basis for agreement across the Region for the further development of strategies to see the actual implementation of Green Infrastructure policies at a sub regional level.

Of critical importance is the need for a Regional perspective which provides the context for all Green Infrastructure activity in Yorkshire and Humber at a more local level, which in turn also looks beyond the Region and links into national and co-joining Regional activity and priorities – to the North East Region (Tees Valley), North West (Greater Manchester and Lancashire) and East Midlands (Derbyshire, Nottinghamshire and Lincolnshire). This is begun by the RSS and YH8 in particular. However, there is a need for this policy to be developed into a strategy for the Region which enables Greenspace Audits and Green Infrastructure strategies to be developed at a sub Regional level.

At an intra Regional level, the three identified City Regions – Leeds, Sheffield and Hull and Humber Ports – are identified as the critical spatial areas where Green Infrastructure investments may have the greatest impact relative to population nodes and growth potential. As such, it is a key recommendation of this report that each City Region develops its own Green Infrastructure Strategy and Action Plan in line with the RSS policy and the evidence base framework proposed in this report.

Figure 7.1 overleaf proposes a strategic framework for this and illustrates how the evidence base can be integrated within a process leading from RSS policy through to local implementation.

Figure 7.1: Green Infrastructure strategic framework



**Annex One: RSS evidence base
development – an audit of English
regional activity.**

Table A1.1: REVIEW OF GREEN INFRASTRUCTURE EVIDENCE BASES ACROSS ENGLAND

Region and contact details for GI work	Does the RSS include a GI Policy? Was a copy provided / sourced?	Is the Policy supported by a GI Evidence Base?	1. Progress in relation to Green Infrastructure? 2. Content of evidence base?	Evidence Sources Used / Identified	Any Other Issues to Note
<p>South East Regional Assembly</p> <p>Cath Rose – 01483 555200</p>	<p>No specific GI policy as it stands: http://www.eipsoutheast.co.uk/downloads/documents/20070208104752.doc</p> <p>Draft RSS was subject to EIP in 06/07 and SERA are currently awaiting proposed changes from Government Office. EIP has recommended a 'cross-cutting' policy to read:</p> <p>"Green Infrastructure comprises managed networks of multi-functional open space which provide a natural link between town and country for the purposes of delivering economic, social and environmental objectives.</p> <p>Local authorities and partners should work</p>	<p>No. However, SERA are working with NE and EA to develop a supporting evidence base (exploring if that can be shared)</p> <p>SERA have undertaken an 'environmental infrastructure reports'. Exploring if this has links to GI.</p>	<p>The Assembly is involved in work being led by NE and EA on a 'framework' for GI in the SE, which is looking at setting out a regional definition of GI and identifying tools, data sources and best practice examples for local authorities to draw on in implementing GI, including funding options and long term maintenance. Outline of the framework is below and the final product is due to be completed in April.</p> <p>However, the outline defines GI as:</p> <p>Functions & multifunctionality</p> <p>Multifunctional - large number of functions attributed to GI by all organisations</p> <p>Spatial scope is both the urban and wider countryside</p> <p>Strategically planned - delivering quality of life via natural environment</p> <p>Fit for purpose within the planning system</p> <p>Top functions were climate change, sustainable transport, access recreation, biodiversity and water/flood management</p>	<p>None identified</p>	<p>Thames Gateway work is being led by the Sub Regions and the Local Authorities.</p> <p>SERA have had limited input at a regional level.</p>

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	<p>together to plan for and provide connected and substantial networks of accessible multi-functional green space in urban and urban fringe areas and adjacent countryside to ensure that an improved and healthy environment is available for the benefit of present and future communities. This will be particularly important in the areas that are identified to accommodate the largest amounts of new growth but the provisions of this policy apply region-wide."</p> <p>SERA are expecting 'proposed changes' to recommend a GI policy.</p>				
<p>South West 01823 270101</p>	<p>Yes Yes – GI1 Draft RSS for the South</p>	<p>No</p>	<p>Key Points within RSS policy: What is GI? A definition and typologies Quality of life</p>	<p>None identified</p>	

Region and contact details for GI work	Does the RSS include a GI Policy? Was a copy provided / sourced?	Is the Policy supported by a GI Evidence Base?	1. Progress in relation to Green Infrastructure? 2. Content of evidence base?	Evidence Sources Used / Identified	Any Other Issues to Note
	West, 2006 – 2026		<p>Benefits of GI</p> <p>Existing and new, local and strategic, urban and rural</p> <p>'Blue Infrastructure'</p> <p>Understanding of existing assets – location, size, function, accessibility, user groups, intensity of use</p> <p>Identify 'areas of opportunity' or 'GI demand' – clear objectives and priorities – mapping</p> <p>Work already undertaken to identify areas of opportunity and targets include the South West Regional Nature Map and Rebuilding Biodiversity Initiative, Biodiversity Action Plans, Catchment Flood Management Plans, and Forest Plans</p>		
East of England 01284 728151	An all encompassing policy on environmental infrastructure – Policy ENV1 East of England Plan, Draft revision to the RSS for the East of	No	Key within RSS policy: Sustainable and economic development objectives Multiple hierarchy of GI provision e.g. location, function, size and levels of use –	None identified	

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	England, December 2004		spatially and geographically Existing natural, historic, cultural and landscape assets – analysis provided by Characterisation Assessments		
East Midlands 01664 502584 Alison Hepworth – Policy Advisor Environment	Not a specific GI policy but mentioned in three other policies – MKSM Strategic Policy 3; MKSM Northamptonshire Policy 2; and MKSM Northamptonshire Policy 4 Regional Spatial Strategy for the East Midlands (RSS8)	No	Key points within RSS policy: Sustainable communities – GI – health, recreation and education Northampton – River Nene Regional Park Corby, Kettering and Wellingborough – Rockingham Forest and provision of new GI	Unsure	
West Midlands 0121 678 1056 Chris Blakeley – Strategic	Only mentioned once in the document – Policy QE10 – transforming the environment of the Black Country Regional Spatial Strategy for the West Midlands – January	No	Key points within RSS policy: Achieving urban renaissance in the Black Country – transforming the environment Joint Black Country Landscape Action Plan (incorporating a Canal Management Plan) – based on the West Midlands GI approach – to define and deliver GI and	None identified	

Region and contact details for GI work	Does the RSS include a GI Policy? Was a copy provided / sourced?	Is the Policy supported by a GI Evidence Base?	1. Progress in relation to Green Infrastructure? 2. Content of evidence base?	Evidence Sources Used / Identified	Any Other Issues to Note
Advisor Environment	2008		Blue Infrastructure – topography, biodiversity, historic assets and exercise benefits		
North East Regional Assembly Claire Thorn – 0191 497 8469	Yes, policies 5b, 6 and 7 http://www.gos.gov.uk/nestore/docs/planning/rss_fpc/a.pdf	No	GI was not included as part of the first draft of the RSS. Secretary of State asked for it to be included as part of the first set of proposed changes.	None	Part of the reasoning GI was put forward for inclusion by Secretary of State was to provide context for other RSS policies
North West Regional Assembly Debra Holroyd – 01942 777 917	Yes. Policy EM3 – Green Infrastructure Plans, strategies, proposal and schemes should: • Identify, promote and deliver multi-purpose networks of greenspace, particularly where there is currently limited access to natural greenspace or	Yes to an extent but no explicit evidence base is in existence.	NWRA are in the process of completing a GI guide. Policy also draws on existing ECOTEC GI work relating to NENW and the economic benefits of GI, and the LEP Lancs. GI strategy currently under construction.	Not explicitly but the direction to GI will be provided through the 'Guide': http://www.greeninfrastructureenw.co.uk/resources/GI_section1and2_LO.pdf	

Region and contact details for GI work	Does the RSS include a GI Policy? Was a copy provided / sourced?	Is the Policy supported by a GI Evidence Base?	1. Progress in relation to Green Infrastructure? 2. Content of evidence base?	Evidence Sources Used / Identified	Any Other Issues to Note
	<p>where connectivity between these places is poor; and</p> <ul style="list-style-type: none"> Integrate Green Infrastructure provision within existing and new development, particularly within major development and regeneration schemes. <p>http://www.nwra.gov.uk/downloads/documents/imported/rp_kMqZ_Submitted_Draft_Regional_Spati.pdf</p>				
<p>London Plan</p> <p>Jane Coulson – 020 7983 4100</p>	<p>Yes, but it is integrated across the whole plan.</p> <p>Policies 3D8 to recognise GI and networks of open spaces has been identified</p> <p>Policy is called 'realising the value of open space and green</p>	<p>Not explicitly.</p>	<p>London Assembly referred the project team to 2 documents which are supporting the 'cross-cutting' approach to GI. The 2 attached links provide supporting SPD and guide to direct use of open space, natural environment and GI towards alleviating the pressures of development and multifunctional spaces across London.</p> <p>http://www.london.gov.uk/mayor/planning/docs/access-to-nature.pdf</p> <p>http://www.london.gov.uk/thelondonplan/d</p>	<p>None identified</p>	<p>Blue ribbon network policy to recognise all inter-relationships with London's waterways and water bodies</p> <p>Also LA is considering GI and use/function of</p>

Region and contact details for GI work	Does the RSS include a GI Policy? Was a copy provided / sourced?	Is the Policy supported by a GI Evidence Base?	1. Progress in relation to Green Infrastructure? 2. Content of evidence base?	Evidence Sources Used / Identified	Any Other Issues to Note
	infrastructure: http://www.london.gov.uk/thelondonplan/docs/londonplan08_ch3.pdf		ocs/spg/spg-east-lon-green-grid.pdf		green space through a project called the 'green arc'. This is considering the urban fringe areas and the importance of recreation and leisure opportunities of open space surrounding greater London.

Annex Two: Greenspace Audits in Yorkshire and the Humber – a review of progress.

Table A2.1: LOCAL AUTHORITY GREENSPACE AUDITS IN YORKSHIRE AND HUMBER

Area	Green or Open Space Audit or Strategy	Year Completed or Expected	Comments	Indicators / GIS	Contact	Email Address
Leeds City Region						
Bradford	Yes - conducted Open Space Audit with Action Plan	2005/06	Green Infrastructure Joint Project - This study is being coordinated by Natural England (NE) and has involved manually mapping a draft green infrastructure onto base maps with a range of other information marked on e.g. flood plain, access land, SPA/SACs.	As part of the Green Infrastructure Joint Project further data analysis and verification will be conducted including: formatting of the results from the project; Conference in March 31 at Media Museum Bradford presumable covering: 1. Presentation of the results of mapping existing green infrastructure in Kirklees Calderdale and Bradford.2. Discussion and agreement on how best to represent green infrastructure in a mapped format.	Jane Scott	jane.scott@bradford.gov. uk
Calderdale	Currently conducting an Open Space Audit	2008			Margaret Hutton	Margaret.Hutton@calderdale.gov.uk
Kirklees	Currently conducting an Open Space Audit	2008			Jeff Keenlyside	01484 533 422
Leeds	Currently conducting an Open Space Audit	2008	Are currently conducting an audit of all open space and recreation sites above 0.2 ha. Due to the large number of sites this will take about 18 months to complete. There is a draft Parks and Greenspace Strategy (2007) but this work was undertaken by the Parks and Countryside Service and is quite	Yes - as part of the draft parks and greenspace strategy, greenspace was mapped.	Chris Bolan	christopher.bolan@leeds.gov.uk

			separate to the work the Development Department is undertaking at present.			
Wakefield	Yes - Greenspace Strategy	2004-09	-	Qualitative 'perception' focus groups (60 in total). Physical survey of existing greenspace by type, size, use and any special features (mapped using GIS). Devised 18 key actions to improve greenspace	Richard Hollinson	rhollinson@wakefield.gov.uk
Selby	Yes - Recreational Open Space Strategy	2006	Up to now there has not really been any co-ordinated effort to update the 2006 ROS Strategy. However, in recent weeks an initial meeting has been held to begin drawing together information on new and improved sporting and play facilities for the district - this is in response to the newly adopted Play Strategy and a forthcoming Area Action Plan. The level of detail used to assess different areas will vary according to need, as resources are not available to comprehensively cover the district so soon after the last audit.	Yes - Quality, type, amount of open space (GIS).	Caroline Sampson Paver	csampson@selby.gov.uk
Craven	Yes - Open Spaces, Sport and Recreation Assessment	2004	Currently trying to identify resources to update the 2004 work.	Yes - as part of the assessment mapping work was undertaken.	Laura Kennedy	LKennedy@cravenc.gov.uk
Harrogate	No - have not conducted Greenspace	2006	Have a Woodlands Strategy, Parks and Open Space Strategy and also monitor greenspace for recreational	Yes - Quality, type, amount of open space	Dave Allenby	dave.allenby@harrogate.gov.uk

	Strategy but have conducted an open space audit		purposes.	(GIS).		
South Yorkshire						
Barnsley	Yes - Greenspace Audit	2006-7	They have conducted part one of the audit, which looked at the size, amount, type of greenspace, but they are now underway with part two, which is more focussed on community consultation. This will take place in summer, with a view to producing a Greenspace Strategy towards the end of the year.	Yes - Quality, type, amount of open space (GIS).	Stacey Heppinstall	StaceyHeppinstall@barnsley.gov.uk
Doncaster	Yes - Greenspace Audit and Greenspace Strategy	2001-02	The audit led to a strategy being produced in 2002, however, the greenspace team has since been disbanded.	In progress	Ann Sims	01302 737 361
Rotherham	Yes - Greenspace Audit	2005	A Green Space audit was completed in 2005, focusing mainly, but not exclusively, on accessible green space in and on the margins of Rotherham's built up areas. RMBC are currently developing a draft strategy for consultation later this year.	Yes - Quality, type, amount of open space (GIS).	Phil Gill	phil.gill@rotherham.gov.uk
Sheffield	Currently conducting an Open Space Audit	2008	Currently in the process of developing a suite of PPG17 compliant audits to assess green and open space in the city. The council already has a complete playing pitch strategy (2005), that	In progress	Michael Glasgow	Michael.Glasgow@sheffield.gov.uk

			assesses provision for 7 pitch based sports. The council are also awaiting the final draft report of an audit of Indoor recreation provision, which considers the built facilities that are detailed in the PPG17 annex (part 5). The final element is an audit of Parks, Countryside and Open Space. This is underway, with a draft report hopefully being ready towards the end of April. This is the largest of the audits and uses the typology devised by the Urban Green Space Taskforce, again referred to in the annex to PPG17 (part2). Together these audits will give the council a comprehensive overview regarding the quantity, quality and accessibility of our open spaces, and form a key component of the evidence base for the production of a Green Space Strategy.			
Humber						
Kingston upon Hull	Currently conducting an open space audit	2008	Regional Development service have recently contracted a firm to undertake an open space survey, which will also look at residents views on open spaces and their particular priorities. The council has recently commissioned PMP to undertake a PPG17 assessment of the city. This will involve an audit of open space as well as an assessment of need. The work is programmed to be completed by June. The aim is to build a Green Space Strategy onto the findings of	Yes - Quality, type, amount of open space (GIS).	Philip Reese	Philip.Reese@hullcc.gov.uk

			this work, but there are no definite plans for doing that yet.			
East Riding of Yorkshire	No - have not conducted Green Space Strategy but have conducted an Open Space Audit	2005-06	Conducted a open space audit of recreational ground a few years ago, which will be used to inform the LDF, which will have a section on green infrastructure. However, because there are no major urban areas in ERY they have no specific plans for the green areas. They are doing some work with Hull CC to develop a Joint Structure Plan, which has a section on green routes but does not encompass all GI types.	Yes - Quality, type, amount of open space (GIS).	John Craig	john.craig@eastriding.gov.uk
North East Lincolnshire	Yes - Greenspace Strategy and Action Plan	2005-09	Have conducted a GS audit, which looked at the size, amount, type of greenspace. It is suggested in the strategy that the council will measure progress against key objectives in the action plan, although it is not clear whether this includes qualitative or quantitative indicators or both.	Yes - Quality, type, amount of greenspace for recreational purposes (GIS). Have also conducted open space survey and park pride survey, although are now quite old.	Nathan Vear	nathan.vear@nelincs.gov.uk
North Lincolnshire	Yes - draft Green Space Strategy also conducting an Open Space Audit	2008	The council consulted with the public on the strategy in January 2008.	Yes - Quality, type, amount of open space (GIS).	Tim Allen	tim.allen@northlinks.gov.uk
North Yorkshire/York						
Hambleton	Yes - Open Space, Sport and Recreation	2006	The council has conducted some work in this area for our LDF, however, the main body of work is the Open Space, Sport and	Yes - Quality, type, amount of open space (GIS).	Mick Jewitt or Graham Banks	graham.banks@hambleton.gov.uk; Mick.Jewitt@hambleton.gov.

	Strategy and Audit		Recreation Study, which was undertaken by PMP in 2006 and this contains an audit of sites (in the Appendices).			uk
Richmondshire	No		GI type issues were previously covered in The District Plan, in terms of biodiversity but not covered in any way as a separate issue. This is not a priority in Richmondshire now or likely to be in the near future due to lack of resources.	No	Dave Elliot	
Ryedale	Yes - Open Space Audit	2007	An Open Space Audit to meet the requirements of PPG17 was completed last year. The council has no other green space strategies to date.	Yes - Quality, type, amount of open space (GIS).	Daniel Wheelwright	daniel.wheelwright@ryedale.gov.uk
Scarborough	Yes - Parks and Greenspace Strategy	2007		Yes - Strategy includes greenspace audit of type, size, location of greenspace area. Although have a number of objectives, against which indicators could be used to measure progress, these have not been suggested.	David Walker	david.walker@scarborough.gov.uk
York	Yes - currently conducting an Open Space Audit and developing a Green Infrastructure	2008	Have completed a PPG17 study (phase one) and are starting on a green infrastructure strategy.	Yes - Quality, type, amount of open space (GIS).	Rebecca Marcus	Rebecca.marcus@york.gov.uk

	Strategy					
North Yorkshire County Council	Currently conducting an Open Space Audit	2008	<p>The county council are currently working up a North Yorkshire Countryside Strategy which has three key objectives:</p> <ul style="list-style-type: none"> -improving our evidence base; -increasing our understanding, based around landscape partnership frameworks; -improving community delivery. <p>An integral part of the first objective is green infrastructure mapping. The county council is beginning to capture data at a sub-regional scale through two pilots centred on the Vale of Pickering and the Swale and Ure Washlands.</p>	In progress	Bob Sydes	bob.sydes@northyorks.gov.uk

Annex Three: City of York case study

Green Infrastructure in the City of York

Introduction

Green Infrastructure is recognised as being valuable to York as it can provide an overarching framework for all green assets. This was particularly important for York as there is a vast array of green assets including parks, open space, cycleways, green wedges etc but no single framework, document or policy that draws them together. The proposed Green Infrastructure Strategy and associated LDF policies will provide an audit of the city's green assets which will be mapped using GIS; it will be possible to identify green corridors using these maps. These corridors/assets will then be assessed to identify where there is a need to protect, maintain, enhance and create green infrastructure in York.

The proposed approach to Green Infrastructure was approved by our Members in March 2008.

The Evidence base

Several studies have been completed and more are underway which will feed into the Green Infrastructure work, these are outlined below:

- Open space, sport and recreation study (PPG17 study)
- Biodiversity Audit
- Biodiversity Action Plan
- Landscape Appraisal
- Green Belt Appraisal
- Historic Landscape Characterisation
- Strategic Flood Risk Assessment
- Cycle network review
- PROW definitive mapping

Some of these studies have already been used to map the green assets in York. The attached PDF map has layers showing:

- York Boundary
- Settlement limits
- Settlement within the green belt
- Flood Risk
 - ▶ Flood Zone 3b

- Historic Environment
 - ▶ Conservation areas
 - ▶ Areas of archaeological importance
 - ▶ Historic parks and gardens
- Nature conservation
 - ▶ SSSIs
 - ▶ Special protection areas
 - ▶ Special areas of conservation
 - ▶ RAMSAR sites
 - ▶ Non statutory conservation areas
 - ▶ Green belt
 - ▶ Recreational opportunity areas
- Openspace
- Green Belt Character Appraisal
 - ▶ Village setting
 - ▶ Strays
 - ▶ Areas preventing coalescence
 - ▶ River corridor
 - ▶ Green wedge
 - ▶ Extension to green wedge
 - ▶ Areas retaining the rural setting
- Cycle routes
 - ▶ Existing cycle routes
 - ▶ Proposed cycle routes

Progress to date

York has now completed Phase 1 of its PPG17 study. Phase 2 is near completion and will identify the areas of open space deficiency (areas falling below the local standards identified in Phase 1) and will develop a strategy.

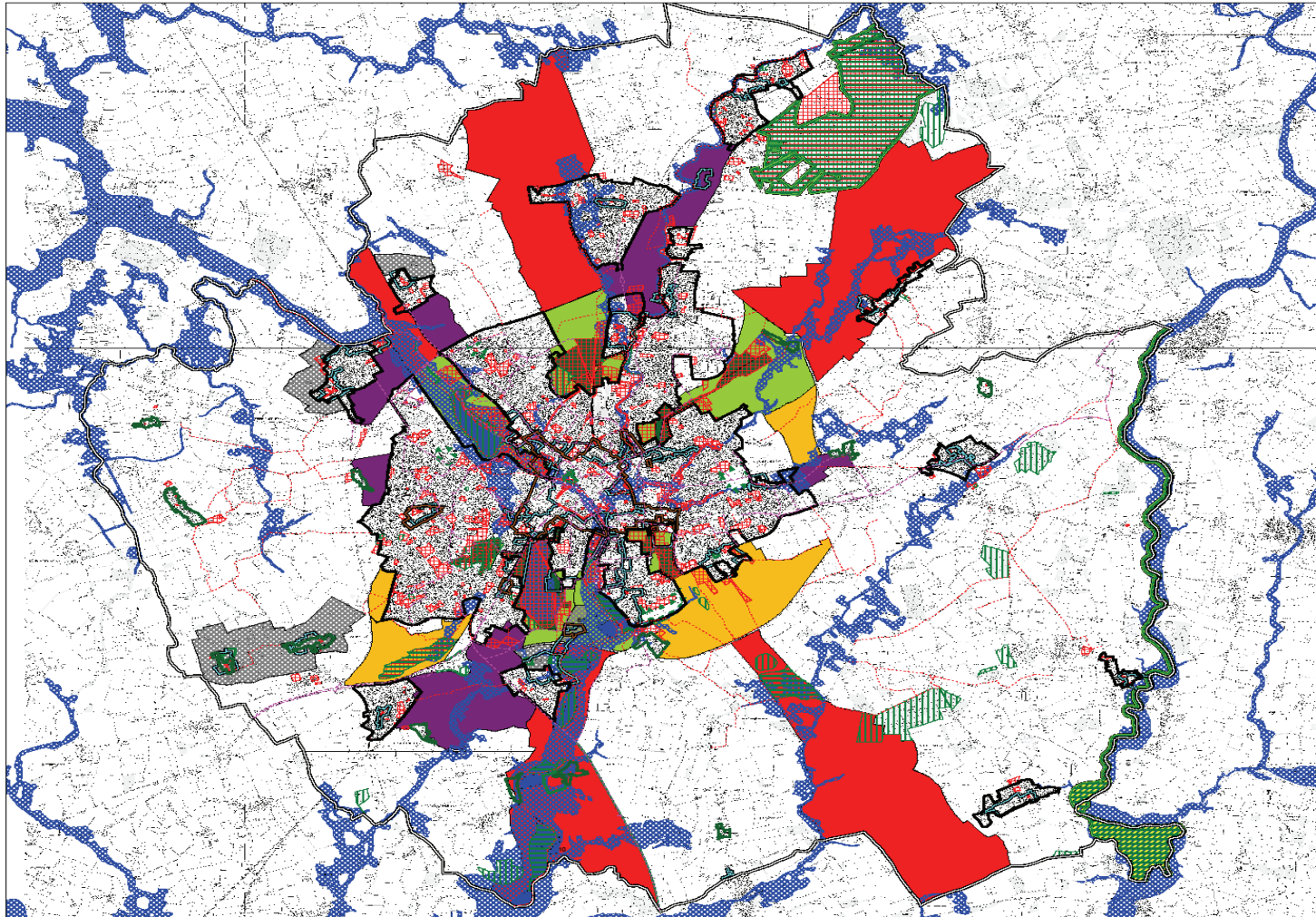
York is also in the early stages of producing a Green Infrastructure Strategy. At this stage, (using GIS) the existing evidence base has been mapped – illustrated below. The "green assets" shown include open space (as identified through the PPG17 work), all nature conservation sites (international, national, regional and local), greenways (cycle and PROW network), functional flood plains, Green Belt appraisal character areas (these are very important to the Green Infrastructure of York as they form "green wedges" which effectively link the city centre to the open countryside).

The next stage is to identify green corridors, as Natural England has done for their Green Infrastructure pilot area (Bradford, Kirklees and Calderdale). An internal workshop will be undertaken, facilitated by Natural England, on 26th June 2008. This will involve colleagues with various specialties from across the Council (planning, ecology, parks and open spaces, public rights of way, transport, conservation etc) whose work is related to Green Infrastructure. The purpose of this workshop is to identify the green corridors in York using the green assets maps and “on the ground” knowledge.

It is intended to incorporate the Green Infrastructure work into the Local Development Framework in order to increase its weight in policy terms. Preferred options are currently being drafted for the core strategy and this has a whole section dedicated to Green Infrastructure. This section will include a general Green Infrastructure strategic policy as well as policies on the green belt, the natural environment, sport and recreation. It is envisaged that the Green Infrastructure Strategy will be adopted as a Supplementary Planning Document that will link to the Core Strategy policy.

The production of a Green Infrastructure Strategy will take place in three key stages highlighted below.

- **Stage 1:** This will begin with a general collation of all the existing information which will be mapped using a Geographical Information System (GIS). The purpose of electronically mapping the data is to allow for the information to be updated, manipulated and used for various pieces of work.
- **Stage 2:** The next step will be to identify where there are gaps in the existing network and to identify where the quality of assets is in need of enhancement. This would include the consideration of access for certain types of green space. In terms of biodiversity, ‘gaps’ would be identified where the lack of wildlife corridors/’stepping stones’ mean that wildlife are unable to travel between areas.
- **Stage 3:** The final action plan stage will identify the Council’s objectives for the natural environment and will set out how they will be delivered in the future. These objectives will be derived from the evidence base, such as the recommendations set out in the Open Space Study and the targets identified in the Biodiversity Action Plan.



Green Infrastructure

- Legend**
- York Boundary
 - Settlement Limits
 - Settlement with within the greenbelt
- Flood Risk**
- Zone 3
- Historic Environment**
- Conservation Areas
 - Areas of Archaeological Importance
 - Historical Parks and Gardens
- Nature Conservation**
- Sites of Special Scientific Interest (SSSIs)
 - Special Protection Areas
 - Special Areas of Conservation
 - RAMSAR Sites
 - Non Statutory Conservation Areas
 - Greenbelt
 - Recreational Opportunity Areas
- Openspace**
- Openspace
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- Village setting
 - Strays
 - Areas preventing coalescence
 - River Corridor
 - Green Wedge
 - Extension to Green Wedge
 - Areas retaining the rural setting of the Ci
- Cycle Routes**
- Existing cycle routes
 - Proposed cycle / pedestrian routes

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