

EAST SUSSEX GREEN INFRASTRUCTURE STUDY

June 2014

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23. Multifunctionality: Total number of functions each asset contributes to.
24. Cumulative Function: a) Current cumulative scores, b) Potential cumulative scores.

1.0 Introduction

1.1 Environment Strategy for East Sussex (2011)

The [East Sussex Environment Strategy](#), adopted by the East Sussex Strategic Partnership in 2011, Appendix 5, highlighted that our local environment is both an essential asset to protect and a resource to utilise and develop. With respect to Green Infrastructure (GI), the partner organisations that developed the Environment Strategy agreed to the following objectives:

- To protect and enhance key biodiversity sites, halt and reverse the decline in biodiversity, and further develop and restore large scale habitats;
- To create well planned green infrastructure that supports the landscape, habitats and wildlife;
- To ensure that 90% of the population of the county has access to a natural greenspace within 5 minutes of their home, to provide the opportunity to be active outdoors on a regular basis.

Achieving these objectives will be an important contribution to the future economic prosperity of the county and the health and wellbeing of our residents.

1.2 Objectives of the study:

- (a) To provide guidance on the production of GI strategies which will build on GI related studies carried out by local authorities and other organisations to date. This should inform the district (development plan) and site based GI strategies and enable local planning authorities to meet their planning policy requirements with regard to GI.
- (b) To create baseline mapping for East Sussex at strategic (county) level. This will provide a standardised approach to baseline mapping of GI assets to ensure consistency across the county.
- (c) Identify the key functions of these GI assets and maximise opportunities for creating and enhancing multifunctional landscapes and GI networks, to increase the environmental, social and economic benefits that can be gained from GI in East Sussex.
- (d) Identify discrepancies and gaps in the data currently available, to enable partners to base policy and projects on a robust evidence base.
- (e) To identify opportunities for measurable improvements to the functionality of GI assets across East Sussex including improvements to meeting the [Accessible Natural Greenspace Standards](#) (ANGSt) as defined by Natural England.
- (f) To build on existing national guidance and local studies by producing a practical guide for other organisations on how to develop a GI strategy at county, district and site scale, taking account of the particular landscape, biodiversity and heritage characteristics of East Sussex.

1.3 The value and importance of GI

The benefits of Green Infrastructure are outlined in the [National Ecosystem Assessment \(NEA\)](#) 2011 which provides evidence that the natural environment contributes to the health and wellbeing of society and economic prosperity.

The NEA found that health, wellbeing and economic productivity depend on the range of services provided by ecosystem services and their constituent parts, such as water, nutrients and organisms.

For example, according to the NEA the benefits that inland waterways bring to water quality are agriculture. The amenity benefits of living close to rivers, coasts and other wetlands are worth up to £1.3bn per year.

Natural England's recently published report, [Microeconomic Evidence for the Benefits of Investment in the Environment \(MEBIE 2\)](#) "assesses the evidence across a wide range of themes, including economic growth, health, social cohesion and resilience to climate change", evidence that meets national government standards for decision making.

According to Natural England, its report demonstrates that the natural environment provides physical health benefits, improves air quality, regulates noise and temperature and reduces the impact of extreme weather.

A recent publication from the Landscape Institute [Public Health and Landscape - Creating healthy places](#), (The Landscape Institute, 2013) provides evidence and case studies regarding the financial and welfare benefits of creating healthy external spaces and it is aimed primarily at public health teams and at policy makers. The document makes the point that with rising health costs (the NHS's share of GDP has risen in the past 50 years from 3.4 per cent to 8.2 per cent), investing in landscape in ways that can influence public health is cost effective. It quotes a 2012 study by the Canadian Public Health Association which shows that it is 27 times more expensive to achieve a given reduction in cardiovascular mortality through clinical interventions than through public health measures, including access to GI.

The health benefits of GI have been extensively researched and documented and there is much evidence to outline the importance of access to natural greenspace to a population's wellbeing.

For example, research has shown that natural areas and open spaces can bring relief from stress within a few minutes of access to these areas; this indicates that people need easy access to such areas on their doorstep, especially in busy urban areas ([The Landscape Institute, 2013](#)).

There are many studies and publications which have attempted to evaluate the contribution that Green Infrastructure makes to the economy generally and more specifically to the value of property. These are summarised and evaluated in [Green Infrastructure – Valuation Tools Assessment](#) (Natural England, Sept. 2013).

2.0 Environmental Context for GI

2.1 Environmental Context of East Sussex

East Sussex is a predominantly rural county with the largest urban settlements concentrated on the coast at Newhaven, Seaford, Eastbourne, Bexhill and Hastings. These towns have grown from small fishing villages into popular seaside resorts and in the case of Newhaven as a port. The Hastings Bexhill conurbation is the largest urban population in East Sussex. The inland towns of Crowborough, Uckfield, Heathfield, Lewes and Hailsham were established as market towns serving an agricultural landscape.

The settlement pattern between towns is typically larger nodal villages with many scattered smaller villages and hamlets. Villages have evolved at a variety of locations, such as spring lines, river crossings, dry places above a waterline, meetings of ridgeways, along common land and, most often, at the junctions of roads. They often take their shape from the road junctions that attracted settlement.

Landscape

East Sussex has a varied and distinctive landscape with 14% designated as South Downs National Park and 51% as High Weald Area of Outstanding Natural Beauty. The remaining East Sussex landscape is the clay vale of the Low Weald, the wetland levels extending from Pevensey south to Eastbourne and the extension of the Romney Marsh levels around Winchelsea and Rye. The distinctive characteristics and sense of place contribute to the value placed on these landscapes as defined in the [European Landscape Convention \(Natural England\)](#).

The [National Character Areas](#) and the [East Sussex Landscape Character Assessment](#) provide detailed descriptions of the landscape of East Sussex.

Biodiversity

The diverse landscape of the county supports a rich variety of habitats and species. Sussex as a whole is home to 472 species which are either globally threatened or in rapid decline. At least half of the county's farmland is under an environmental stewardship scheme. East Sussex has seven internationally important nature conservation sites, nine National Nature Reserves (NNRs), 65 Sites of Special Scientific Interest (SSSIs) and 287 Local Wildlife Sites (Sites of Nature Conservation Importance/SNCIs). All of the beaches in East Sussex met EU mandatory bathing water quality standards in 2012. East Sussex established the first marine SNCIs in the UK, and Beachy Head West Marine Conservation Zone was designated in 2013 under the Marine and Coastal Access Act.

Twenty-eight Biodiversity Opportunity Areas (BOAs) have been identified in East Sussex by the Sussex Biodiversity Partnership (Map 9); these represent the targeted landscape-scale approach to conserving biodiversity and the basis for an ecological network. BOAs do not represent a statutory designation or a constraint upon activities; they indicate where there are substantial opportunities to make positive changes for biodiversity, and should be used to inform conservation strategies and place planning.

Cultural Heritage

English Heritage identified 33 heritage assets at risk in East Sussex in 2010. The historic environment of East Sussex includes archaeological sites stretching over 250,000 years, Iron Age hillforts, Roman villas, Saxon burial grounds, medieval castles and ship wrecks.

The county has 40 Registered Historic Parks which are noted for their special historic interest. Some of these were designed as public parks, such as, Southover Grange in Lewes, Alexandra Park and Burton St Leonards in Hastings.

Others are private estates owned by the National Trust or other organisations which open them to the public, usually with a charge, for example Sheffield Park. Some are completely private and not usually accessible to the public unless crossed by footpaths, for example Heathfield Park.

Development

The growth of the East Sussex economy is essential to support the existing population's housing and employment needs. It is recognized that this growth must be supported by the appropriate infrastructure. This is not restricted to the provision of transport, roads, schools and hospitals as it is recognised that the landscape also provides essential ecosystem services. Multifunctional green infrastructure can provide for these services which include supporting (e.g. soil formation, photosynthesis, nutrient and soil cycling) provisioning (e.g. farmland), regulating (e.g. flood relief, soil conservation, water and air quality) and cultural (tranquillity, heritage and recreation).

The greatest pressure for development will be in the larger towns to serve the growing population and the need for new business opportunities to support employment. The smaller towns and larger villages will also be under pressure as demand for local housing increases. Smaller settlements will need to provide affordable housing and in particular to ensure key workers can afford to live in the rural communities that they serve.

There is pressure in the rural agricultural landscape for agricultural diversification and change as farming practices and European legislation such as the Common Agricultural Policy forces changing land management.

Access & Informal Recreation

The County of East Sussex is well served by a wide range of outdoor informal recreation assets. This includes a very comprehensive network of rights of way in the form of bridle paths and footpaths. The historic legacy of the Drove routes which were used to drive stock from the High Weald across the low Weald to the Downs has left a network of rural lanes and byways which join with bostals giving access to the top of the Downs. Many of these are traffic free and provide for excellent recreational routes.

There are several long distance routes which cross the county including the South Downs Way, The Vanguard Way, The Ouse Valley Way, the Sussex Border Path, the High Weald Trail, the Weald Way, the Saxon Shoreway and the 1066 Country Walk. Many villages, especially in the High Weald, have mapped circular walks around the settlements.

The National Cycle Network (NCN) provides off road routes along the South Downs Way, on the disused railway lines of the Cuckoo Trail from Eastbourne to Heathfield and Forest Way Country Park from Groombridge to Forest Row.

[The Countryside and Rights of Way Act 2000 \(CROW\)](#) formalised open access to areas of farmland, woodland and Common land in the County. Under the Countryside and Rights of Way Act 2000 (CROW) the public can walk freely on mapped areas of mountain, moor, heath, downland and registered common land without having to stick to paths. The most extensive of these areas in East Sussex are areas on the South Downs and Ashdown Forest. Ditchling Country Park and Chailey Common are local areas which provide open access for recreation, Seven Sisters Country Park between Eastbourne and Seaford gives access to the Heritage Coast and open downland. Hastings Country Park provides for the large urban population on the east side of the town and Combe Valley Countryside Park (CVCP) serves the west of the town and Bexhill. Eastbourne Park has a network of multifunctional spaces which serve the population of Eastbourne and include Shinewater Park, West Langley and Southbourne lakes. There are some extensive woodland areas which have open access scattered across the county including Friston Forest near Seaford, Abbots Wood near Hailsham, Great Wood near Battle and Beckley woods near Rye.

The East Sussex County Council Strategic Open Spaces Study (SOSS 2011) was based on the ANGSt work by Natural England. This study provided an analysis of all accessible open space in the county and identified that, at a strategic county wide scale, the county is generally well served with open space. There is a deficiency of larger accessible spaces, namely 500ha sites within 10km of homes, in the rural area serving the populations in a wide band from Hastings to Bexhill running northwest through Battle and up to Heathfield.

An area of deficit for the population in Bexhill and Hastings was identified which will be largely addressed by delivery of the CVCP. An area of deficit around Rye and the more deprived rural communities in the east of the county would be served by continued improvements to facilities at the Rye Harbour Nature Reserve.

The reservoirs in the county provide for informal recreation as well as fishing and bird watching opportunities, the more accessible of these being of Bewl Water, Weir Wood and Arlington.

There are two large areas of accessible woodland in the county at Friston Forest and Abbots Wood, Hailsham. The latter has an access trail for all users, which is significant as many areas of the countryside are inaccessible for the less mobile. The surfaced paths on the Cuckoo Trail and Forest Way Country Park also provide access for all abilities and types of users.

Whilst the county is well served with open space at the strategic level, as defined in the SOSS, there may be areas of deficit for smaller locally available open space close to homes in both the urban and rural areas. Access to countryside by the Rights of Way network is not always available to less able people and parents with small children. The NPPF paragraph 73 requires that needs assessments for a range of recreational facilities serving all age groups for formal sports, play and informal exercise are based on robust and up to date evidence. There is a need for tranquil spaces where people can relax and de-stress and it is well documented that access to natural green space is beneficial for recuperation from illness and stress ([The Landscape Institute, 2013](#)).

Sustainable Transport

The ease of access for East Sussex residents to areas of multifunctional green infrastructure for both formal and informal recreation opportunities needs to be a consideration of Green Infrastructure strategies in the county. Where it is feasible access to GI would ideally be by available public transport (including bus, rail or community transport), walking or cycling. This may not be achievable in some more remote rural areas of the county where the travel distances to access GI are greater and for some residents who are unable to use public transport. The GI network therefore needs to provide areas which are easily accessible to encourage all potential users, including the less able in wheelchairs, all terrain mobility scooters and families with young children, to choose sustainable transport. Consideration also needs to be given for parking provision at key sites for ease of access for those users where sustainable transport is not a feasible option and who are required to travel greater distances to access GI.

[The East Sussex Local Transport Plan](#) (ESCC 2011) identifies amongst others the following as issues, challenges and opportunities which are relevant to GI strategies:

- *The urban areas of the county are generally well served by commercial bus operators; however the needs of the rural areas and small market towns are less well served. Maintaining, managing and improving our extensive rights of way network remains a challenge but are important to the local economy and for residents and visitors wanting to access open space and the natural environment.*

[The Local Transport Plan](#) (ESCC 2011) identifies issues and opportunities for each local area in the County and outlines approaches to non-vehicular travel and the promotion of walking and cycling. The plan undertakes to maximise the opportunities offered by the comprehensive rights of way network in the county.

2.2 Best Practice & Case Studies

The [Green Infrastructure Partnership](#) was established by the Government to support the development of GI in England and to help implement the vision set out in the [Natural Environment White Paper](#) (NEWP). The South East Green Infrastructure Partnership produced the [South East Green Infrastructure Framework](#) in June 2009.

Many of the case studies to date have been at the district level as it is a requirement of the Local Plan process to provide for GI to support development plans.

Examples at a county level are therefore few and far between. The most relevant examples at county level are the strategic studies which tend to be in areas which have large conurbations surrounded by sensitive countryside. These areas are under pressure for considerable growth for housing and economic development. These examples are useful for demonstrating how several organisations can work together to contribute to the strategy including districts, boroughs, county councils and other agencies such as the Forestry Commission, Natural England, the Environment Agency and the National Trust.

Examples:

- [The Cambridgeshire Horizons GI Strategy](#)
- [The North West Green Infrastructure Strategy](#) (accompanied by [mapping guidance](#))

In addition to the above a very useful guide to mapping methodology was produced to support this and has been superseded by the method in the [Liverpool Green Infrastructure Strategy](#). This guide has provided an important checklist for the mapping and functionality methodology used in this report.

Box 1: The Essential Principles of GI delivery Natural England Briefing Note, 2008

G GI across the South East should:

- Be planned strategically;
- Be spatially distributed according to its function, and not restricted to a development site or administrative boundary;
- Be planned with recognition of locally distinctive sense of place and landscape, to contribute to preservation and enhancement of the natural and built heritage of the local area;
- Be planned to include provision made for its long term management and maintenance;
- Be fit for purpose within spatial planning; and
- Be recognised as an essential component of wider infrastructure requirements.

2.3 Relevant Local studies

The district and borough councils in East Sussex have produced various evidence documents related to recreational need and Green Infrastructure and these are referenced in Table 1 below. Other evidence studies which have been prepared to support the Local Plans such as

strategic housing land assessments, rural settlement studies, ecological surveys and landscape capacity studies will also help to inform GI strategies.

Table 1: Summary of current evidence base

Rother District Council	Green Infrastructure Background Paper PPG 17 Recreational Study
Wealden District Council	<u>NB</u> As the pilot partner for this report examples and links are provided in Appendix 4 Green Infrastructure Background Paper (document A9)
Lewes District Council	Lewes District Informal Recreational Space Study Lewes District Outdoor Playing Space Review The provision of outdoor playing space as part of new residential development SPG
Hastings Borough Council	Hastings Borough Council GI study 2012
Eastbourne Borough Council	Eastbourne Park SPD
South Downs National Park	Access Network and Accessible Natural Green Space Study (October 2013)
East Sussex County Council	East Sussex Landscape Character Assessment Strategic Open Spaces Study 2011 The strategy for cycling is set out in Active Travel – Walking and Cycling, in Chapter 4 of our Local Transport Plan . In addition cycle strategies are being prepared on an area basis.

3.0 Legislative and policy context

There are a number of statutory and policy drivers for local authorities, as land owners, developers, local planning authorities and community leaders, to assess, manage and improve GI. The main drivers are set out below.

3.1 Key Statutory Drivers

[Countryside and Rights of Way Act 2000](#)

The Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of National Parks and Areas of Outstanding Natural Beauty (AONB). The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.

[Natural Environment & Rural Communities Act 2006](#)

There is a general legal duty on public bodies to have regard to the purpose of conserving biodiversity (s40 NERC 2006):

- *“Every public authority must in exercising its functions [i.e. it must be applied to everything, powers & duties] have regard... to the purpose of conserving [includes restoring/enhancing] biodiversity.”*

[Conservation of Habitats and Species Regulations 2010](#) (as amended)

Regulation 9(3):

- *“A competent authority, in exercising any of their functions, must have regard to the requirements of the Habitats Directive and Birds Directive so far as they may be affected by the exercise of those functions.”*

Regulation 9A(2) & (3):

- *“Local Authorities/National Park Authorities (and others) must take such steps in the exercise of their functions as they consider appropriate to contribute to... the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...”*

[The Marine and Coastal Access Act 2009](#)

The Marine and Coastal Access Act seeks to improve management and increase protection of the marine environment and improve recreational access to England’s coasts. In order to achieve improved access the act has introduced new powers to extend recreational [access to the English coast](#) and enable the creation of a continuous access route around the English coast.

[The Water Framework Directive](#)

The EU Water Framework Directive (WFD) was adopted in 2000. The purpose of the Directive is to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters (to one nautical mile) and groundwater.

To meet the objectives of the WFD Member States have established River Basin Districts and developed Plans and Programmes of Measures that detail the actions that need to be taken within each District. East Sussex lies within the South East River Basin District. The overall aim is for the ‘water bodies’ and ‘protected areas’ within each River Basin District to achieve ‘good ecological status’ by 2015.

3.2 Natural Environment White Paper (2011)

The Government’s [Natural Environment White Paper](#), *The Natural Choice: Securing the Value of Nature* (June 2011), refers to the roles of planning in protecting and improving the natural environment and facilitating coherent and resilient ecological networks that reflect the value of natural systems ([TCPA/WT, 2012](#)).

The aims of the White Paper include halting biodiversity loss by 2020, supporting ‘healthy functioning ecosystems’ and establishing ‘coherent ecological networks’. The White Paper is informed by the findings of the [National Ecosystem Assessment](#), which showed that over 30% of the services provided by the natural environment are in decline, and by [Making Space for Nature](#) (the ‘Lawton Review’) which concluded that “*England’s collection of wildlife sites, diverse as it is, does not comprise a coherent and resilient ecological network even today, let alone one that is capable of coping with the challenge of climate change and other pressure.*” Making our network of sites bigger, better and more joined up means:

- protecting what we have got and improving the quality of sites by better habitat management;
- increasing the size of wildlife sites;
- enhancing connections by creating new wildlife corridors and stepping stones;
- creating new sites; and
- reducing the pressures on wildlife by improving the wider environment, e.g. through buffering of wildlife sites.

This means building on work already done to improve our most important sites, as well as improving protection and management of those that do not have statutory protection. It also means planning ecological networks, including areas for restoration, and becoming better at deriving multiple benefits from land-use, e.g. by natural solutions to flood threats through habitat creation, restoration and management.

Biodiversity offsets are conservation activities that are designed to give biodiversity benefits to compensate for losses, ensuring that when a development damages nature (and this damage cannot be avoided) new, bigger or better nature sites will be created. They are different from other types of ecological compensation as they need to show measurable outcomes that are sustained over time.

3.3 National Planning Policy Framework

The [National Planning Policy Framework](#) (NPPF 2012) states that local planning authorities should set out a strategic approach in their local plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure. The following table summarises the key NPPF GI policies.

Table 2: Summary of NPPF policy relevant to GI

NPPF Paragraph	Summary
73	<p><i>Planning policies should be based on robust and up-to-date assessments of the needs for open space, sports and recreation facilities and opportunities for new provision. The assessments should identify specific needs and quantitative and qualitative deficits or surpluses of open space, sports and recreational facilities in the local area.</i></p>

	<i>Information gained from the assessments should be used to determine what open space, sports and recreational provision is required.</i>
76	<i>Local communities through local and neighbourhood plans should be able to identify for special protection green areas of particular importance to them. By designating land as Local Green Space local communities will be able to rule out new development other than in very special circumstances.</i>
109	<i>The planning system should contribute to and enhance the natural and local environment by:</i> <ul style="list-style-type: none"> • <i>protecting and enhancing valued landscapes,</i> • <i>recognising the wider benefits of ecosystem services;</i> • <i>minimising impacts on biodiversity and providing net gains in biodiversity where possible</i> • <i>establishing coherent ecological networks that are more resilient to current and future pressures;</i>
113	<i>Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity site or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.</i>
114	<i>Local planning authorities should:</i> <ul style="list-style-type: none"> • <i><u>set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure;</u> and</i> • <i>maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast, and improve public access to and enjoyment of the coast.</i>
117	<i>To minimise impacts on biodiversity and geodiversity, planning policies should:</i> <ul style="list-style-type: none"> • <i>plan for biodiversity at a landscape-scale across local authority boundaries;</i> • <i><u>identify and map components of the local ecological networks, including wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration and creation;</u></i> • <i>promote the preservation, restoration and re-creation of priority habitats, ecological networks</i>

The districts and boroughs in the county have incorporated green infrastructure into their Core Strategy documents and are bringing these forward into Local Plans and Development Management Policies. East Sussex County Council has worked with Wealden District Council as a pilot for Green Infrastructure studies and mapping at the district and development site scales. An example from Wealden Core Strategy is provided in Appendix 4 of this document.

At the parish level the town and parish councils can incorporate Green Infrastructure policy into their Neighbourhood Plans and particularly in relation to NPPF Policy 76 outlined above.

4.0 Process & Methodology

4.1 The Steering Group

The Landscape and Biodiversity Working Group was established to take forward the actions from the Environment Strategy for East Sussex.

Representatives were invited from:

- (a) Environmental agencies including [Natural England](#) and the [Environment Agency](#).
- (b) Organisations which own and manage GI assets in the county, [Sussex Wildlife Trust](#), [The Woodland Trust](#), [Forestry Commission](#) and [The National Trust](#).
- (c) Local Authorities in East Sussex and [West Sussex County Council](#).
- (d) [The High Weald AONB](#).
- (e) [South Downs National Park](#).

This mix of representation ensured that a common approach to the production of green infrastructure strategies could be achieved across the county of East Sussex and with West Sussex as our closest neighbouring county authority in terms of landscape character and habitat continuity.

4.2 Defining Green Infrastructure

As identified above, the term ‘green infrastructure’ can mean different things to different people and there are various published definitions. However, whatever the definition, GI is about bringing together the natural and built environments using landscape as infrastructure.

For the purpose of defining GI for this project the definition provided by [The South East Green Infrastructure Partnership](#) has been selected by the Landscape and Biodiversity Working Group as the most relevant definition to the East Sussex context. This definition has an urban spatial planning focus and lists the types of assets that can form part of the green network. It considers both biodiversity and quality of life functions and can be applied to GI projects at all scales (Box 2) including county, district and borough scales.

Box 2: South East GI Partnership (SEGIP) Definition

For the purposes of spatial planning the term green infrastructure (GI) relates to the active planning and management of sub-regional networks of multi-functional open space. These networks should be managed and designed to support biodiversity and wider quality of life, particularly in areas undergoing large scale change.

The following areas can form part of networks of GI:

- parks and gardens – including urban parks, country parks and formal gardens;
- natural and semi-natural urban greenspaces – including woodlands, urban forestry, scrub, grasslands (e.g. downlands, commons and meadows), wetlands, open and running water, wastelands and derelict open land and rock areas (e.g. cliffs, quarries and pits);
- green corridors – including river and canal banks, cycleways, and rights of way;
- outdoor sports facilities (with natural or artificial surfaces, either publicly or privately owned) including tennis courts, bowling greens, sports pitches, golf courses, athletics tracks, school and other institutional playing fields, and other outdoor sports areas;
- amenity greenspace (most commonly, but not exclusively, in housing areas) – including informal recreation spaces, greenspaces in and around housing, domestic gardens and village greens;
- provision for children and teenagers – including play areas, skateboard parks, outdoor basketball hoops, and other informal areas (e.g. ‘hanging out’ areas, teenager shelters);
- allotments, community gardens, and city (urban) farms;
- accessible countryside in urban fringe areas;
- river and canal corridors;
- green roofs and walls.

A further definition which is more representative of the rural character of the county of East Sussex is provided by [The Natural Environment White Paper](#), *The Natural Choice: Securing the Value of Nature* (Box 3). This definition provides both an urban and rural focus and identifies that GI can provide environmental services.

Box 3: Natural Environment White Paper Definition

Green Infrastructure is a term used to refer to the living network of green spaces, water and other environmental features in both urban and rural areas. It is often used in an urban context to cover benefits provided by trees, parks, gardens, road verges, allotments, cemeteries, woodlands, rivers and wetlands.

Green infrastructure is also relevant in a rural context where it might refer to the use of farmland, woodland, wetlands or other natural features to provide services such as flood protection, carbon storage or water purification. Green infrastructure maintains critical ecological links between town and country.

4.3 GI Terminology and Definitions

Green Infrastructure Assets

GI assets range from country parks lakes and woodlands to urban interventions such as green roofs and street trees. They can be specific sites at the local level or broader environmental features at the landscape scale within and between rural and urban areas such as wetlands, moors and mountain

ranges (Box 4 provides a summary from the [Landscape Institute](#) describing the relationship of GI assets and functions).

Box 4: GI assets as defined by The Landscape Institute

GI is a network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect by villages towns and cities. Individually these elements are GI assets, and the roles that these assets play are GI functions. When appropriately planned, designed and managed, the assets and functions have the potential to deliver a wide range of benefits - from providing sustainable transport links to mitigating and adapting the effects of climate change.
[Landscape Institute Position Statement](#) (March 2013)

Green Infrastructure Functions

GI functions are the roles that assets can play if planned, designed and managed in a way that is sensitive to, and includes provision for, natural features and ecosystem services. They may have obvious primary functions, but each asset can perform different functions simultaneously – a concept known as multifunctionality. For example, woodland contributes to climate change mitigation by absorbing and storing carbon dioxide as well as providing aesthetic, recreational and wildlife functions. Public open spaces have the potential to be multifunctional if opportunities for providing natural areas as well as formal play/sports facilities are maximised. Public spaces could areas provide temporary flood relief, where they have streams running through or adjacent to them or designed in to the space as Sustainable Urban Drainage Schemes (SUDS).

4.4 Data Collation & Mapping

Identification of GI assets as relevant to GI mapping in East Sussex

The [Sussex Biodiversity Record Centre](#) (SxBRC) was selected to collate the data sets required for the project as they had the skills and the capacity to co-ordinate and analyse complex data sets and produce the required maps. The districts and boroughs and other organisations have established agreements with the SxBRC.

The datasets listed in Table 3, Appendix 1, and shown on the maps were identified as contributing towards GI. The list built on the broad assets identified in national guidance and the SEGIP definition, and was expanded to include all assets which were believed to make some contribution to GI in East Sussex, including some locally derived datasets (e.g. High Weald historic field boundaries). The list also includes some datasets which, whilst they are useful in helping to define opportunities for the creation of GI, and/or provide contextual information about the county, they are not in themselves identified as GI assets and therefore have not been mapped at this stage. However, all the datasets listed below (unless stated otherwise) have been collated by the Sussex Biodiversity Record Centre and are available for use by the Boroughs and Districts. The identified datasets were grouped into broad categories.

Other datasets were considered but rejected from the asset mapping and functionality scoring process for the following reasons:

- (a) Landscape scale areas such as the South Downs National Park, the High Weald AONB, county landscape character areas and biodiversity opportunity areas have been mapped separately from the other assets as these would mask the finer grained mapping of other GI assets.

- (b) Railway corridors (active) – whilst it is recognised that railway sidings can provide important wildlife habitats, this is not always the case and there was concern that if mapped, these could get confused with opportunities for new green corridors.
- (c) Publically inaccessible green space (private gardens/parks) – unless included within the Registered Parks and Gardens dataset, this category has been excluded on the grounds that an existing dataset is not available, and also because there is no control over future management/protection.
- (d) Street trees – dataset not available, although it might be possible to produce datasets in urban areas using aerial photography.

4.5 Spatial scales of Green Infrastructure Strategies

The following sections provide an outline summary to identify how green infrastructure mapping and its associated analysis can be applied at different geographic scales across the county. Information is also provided detailing examples where further work, identification of GI assets or analysis may be required. Table 4, Appendix 2, defines different levels of GI strategy with suggested mapping.

County scale

Strategic green infrastructure at the landscape scale provides the wider framework and context to support green infrastructure at the more local levels. At the strategic scale all GI assets across the area can be mapped under the categories outlined in Table 4, Appendix 2.

Analysis of the mapping can be used to:

- a) Identify key existing strategic networks and spaces supporting and sustaining a range of natural or ecosystem services.
- b) Identify opportunities for creating new GI to address deficit and links across administrative boundaries and cross boundary working.
- c) Identify key strategic projects that can be prioritised to optimise strategic GI provision.

District Scale

A district wide GI strategy could use the data as collated for the county wide study and further refine it as relevant to the particular district.

In addition the district scale strategy would ideally:

- a) Identify strategic development sites.
- b) Identify smaller settlements where there will be development growth.
- c) Identify opportunities for creating new GI and enhancing existing where associated with development, as well as addressing the existing settlement needs. Assessment of need would be guided by existing studies and standards as well as site based assessment.
- d) Identify the network of existing non-motorised access corridors to identify opportunities for new linkages. The opportunities for linking new development to existing facilities and to the wider countryside can then be explored.

The following areas of further detailed data analysis could be included as part of further work:

- a) The designated sites provide a comprehensive map set, however the current condition of these areas and the multifunctional benefits that they can provide are not always known.
- b) Where existing GI assets are likely to be affected by new development opportunities to enhance these for their multifunctional benefits should be explored.

- c) Recreation grounds and village greens could potentially be enhanced for their wildlife value, food production and flood relief opportunities.
- d) Open space areas within built up areas need to be considered for the potential to retrofit Sustainable Urban Drainage and flood relief schemes.

At the district scale further research and analysis may be required into the mapped data for recreational assets as there are discrepancies in how data has been recorded between different local authorities. For some districts formal facilities such as bowling greens and play areas have been mapped, however the surrounding recreation grounds may not be included or may be mapped as part of a different GIS layer. In addition, where Planning Policy Guidance 17 (Sport and Recreation) assessments were undertaken some time ago the information / mapping data may be out of date where new facilities have been built or old facilities removed.

Much of this work has been picked up by local planning authorities in their evidence based work such as SHLAAs and rural settlement studies.

Strategic site or settlement scale

At the development site scale baseline data would be collected at an appropriate scale to assess the existing GI in the surrounding area and identify how a large development site would need to contribute to GI within the particular settlement or town.

At more local and site specific level identification of the finer grained green space and green assets would be required to ensure conservation and enhancement of GI for local communities and environments.

Case Study

The GI work carried out to date by [Wealden District Council](#) is used as an example (Appendix 4) of how the existing GI resource can be identified and analysed at the strategic site scale.

Table 1 provides a summary of GI related studies carried out to date by Local Planning Authorities across East Sussex.

There are also a number of different green infrastructure studies that have been completed across the country at varying geographic scales. Table 4 (Appendix 2) provides a summary of these examples.

4.6 Potential Functions of GI

The list of functions which GI provides could be very long, for example, the [North West Mapping Guidance](#) has a long list of 29. This can be simplified by grouping the functions which are similar and provide broadly the same benefits. At development site level the assessment of functions provided by GI needs to be more specific. If an area provides a variety of recreational facilities it would be necessary to identify what these are and what the future needs of the local population will be for play, sport and informal activities.

[The South East Green Infrastructure Partnership](#) identifies the key functions of GI in the South East as follows:

- (a) Conservation and enhancement of biodiversity
- (b) Creating a sense of place
- (c) Increasing recreational opportunities, and supporting healthy living
- (d) Improved water resource and flood management and sustainable design

- (e) Making a positive contribution to combating climate change through adaptation and mitigation of impacts
- (f) Sustainable transport, education and crime reduction
- (g) Production of food, fibre and fuel.

Functions used for the East Sussex Study

The six key functions which have been identified for the purposes of the East Sussex study were agreed by the working group as overarching functions which incorporate the wider range of potential functions.

Table 5: List of over-arching functions for East Sussex chosen in the analysis of GI assets along with an explanation of what those functions include.

Function	Description
Access, Recreation & Health	These areas have been grouped for simplicity in the overall mapping and functionality assessment. All areas of open space which provide access for recreation including natural green space, amenity areas and formal sports have been grouped under this function. A more detailed analysis will be required at the district scale to identify the exact resource available and the needs of the existing and future populations.
Agriculture or Commercial Forestry	This includes all areas managed as farmland or for timber production.
Biodiversity	Includes sites that are specifically notified for their nature conservation value, but most “green” assets are assumed to provide at least some biodiversity interest. Some GI assets will be identified primarily for conservation, but may still be multifunctional in terms of landscape and heritage conservation. They may provide climate change mitigation and adaptation benefits, e.g. flood plains. As most habitats require management to conserve biodiversity they may also provide grazing or products such as hay and timber.
Climate Change	Taken as assets that combat climate change and mitigate impacts. Assets which would contribute to this are those which could reduce future impacts on climate change, e.g. sustainable transport through a reduction in CO ₂ emissions.
Cultural	Includes contribution to sense of place, local distinctiveness and landscape character. Includes aesthetic quality, public perception, and literary or artistic associations.
Water Resource & Flood Management	River valleys and natural flood plains. River catchment areas and aquifers including nitrate protection zones. Water resources have been taken to mean supply of water to the environment rather than for human use. . Most “green” assets are assumed to make at least some contribution to this function, e.g. vegetated areas are better able to absorb water than hard surfaces and therefore provide some degree of flood relief. <u>NB</u> Consideration was given to subdividing this into two separate functions, especially if flood management is taken to include coastal defences.

Transport Functions

Many routeways in East Sussex provide multifunctional benefits such as rural lanes, byways and bridleways. These are often bounded by trees, hedges and flower rich grass verges and are of significant historical interest. Most river corridors provide recreation and access both in and beside water. As such Accessible Transport Corridor was initially also identified as a function. However, a decision was taken to exclude it as all transport corridors are effectively accessible. What other functions a corridor could provide would be identified through what it covers, i.e. rail, cycling or walking. Consideration was given to combining this with Access, Recreation and Health, however, this was rejected as open space does not necessarily provide a link to a key designation point. Where possible datasets for transport corridors have been collated (see Table 3, Appendix 1) and for the

purposes of this document have been mapped to show opportunities for linkages (Maps: 5 county scale, 16 district scale).

Accessibility

The accessibility of sites such as woodland and local wildlife sites is not always known. This is one area where further research is necessary. Wealden District Council addressed this in part by sending out questionnaires to all parish and town councils and landowner trusts such as Sussex Wildlife Trust, National Trust, Woodlands Trust to identify the public accessibility and current, management regimes on their sites. The feedback from these will be used to inform the district wide GI strategy.

Function scoring

Each of the mapped assets was then scored in terms of the contribution it makes to each of the functions identified in Table 5. The functionality scoring sheet is included as Appendix 6. The scoring was done in two stages: a) actual scores, i.e. what each asset currently provides in its existing state/condition, and b) potential scores, i.e. what assets could provide if managed positively. Scoring takes into account current condition of assets where known and identifies opportunities for improvement. The scoring was undertaken by a small panel from the Landscape and Biodiversity Working Group, and reviewed by the wider group. It is recognised that this system is subjective, particularly at the County scale where assets necessarily have to be grouped together, but it gives a good grounding to which greater detail can be added at the district and site levels.

The following scores were used:

- 3 – high contribution to the function
- 2 – medium contribution to the function
- 1 – low/unquantifiable contribution to the function
- 0 – does not contribute to the function

In assigning scores to the contribution each mapped asset makes to the above over-arching functions, a number of assumptions have been made as follows (Assumptions made for individual datasets are included within the scoring sheet at Appendix 6):

- (a) A score of 1 was given if an asset/group of assets makes some contribution to a function but this cannot be quantified, e.g. SSSIs are likely to make a contribution to the Access, Recreation and Health function. However, whilst some individual sites within that dataset may have open access, access at others may be limited due to ownership or wildlife sensitivities. Such differences cannot be picked up at the County scale, but it should be possible to individually score sites at the local scale.
- (b) Anything which is vegetated has been assumed to score something for flood management as it is better than a hard surface.
- (c) Coastal defence has been included in flood management.

SSSIs were scored as follows for their contribution to the Biodiversity function:

- (a) favourable condition = 3
- (b) unfavourable recovering/unfavourable no change = 2
- (c) unfavourable declining = 1

SNCIs/LWS were scored as follows for their contribution to the Biodiversity function:

- (a) positive conservation management = 3
- (b) insufficient information = 2

(c) not positive conservation management = 1

In relation to their contribution to biodiversity all BAP habitats were scored as 2 (actual) with a potential score of 3, because even if current condition is unknown, their inherent value should make more than a low contribution given that they have already been identified as BAP habitats.

Mapping

Maps have been produced for each of the functions showing:

- 1) The baseline actual contribution the existing assets make in their current condition
 - (a) County scale: Maps 6a to 10a
 - (b) District Scale: Maps 17a – 22a

- 2) The potential contribution they could make through enhancements/improved management
 - (a) County scale: Maps 6b to 10b
 - (b) District Scale: Maps 17b – 22b

Multifunctionality

Multifunctionality refers to the potential for GI to have a range of functions, to deliver a broad range of ecosystem services. Multifunctionality can apply to individual sites and routes, but it is when the sites and links are taken together that a fully multifunctional GI network is achieved ([Natural England, 2011](#)).

The integration and interaction of different functions within a single site is sought where appropriate – and across a GI network as a whole. Within the network some spaces may have primary functions, such as biodiversity within nature reserves or amenity within local parks, but this does not necessarily exclude other functions. e.g. flood management or climate change mitigation. However, in some cases, it may not be appropriate for an individual asset to be fully multifunctional, for example a wildlife site that is designated for its ground nesting birds should not necessarily be fully accessible as that is likely to be detrimental to its primary function.

Multifunctional GI can also be viewed as the application of an ‘ecosystem approach’ (TCPA/WT, 2012).

Two sets of maps have been produced to illustrate multifunctionality:

- 1) These represent the actual number of functions being provided by each asset (regardless of score) at any location. This provides a broad scale view of multifunctionality across the GI network. This map demonstrates that almost all of the GI assets in the county contribute to some extent to all six of the key functions. Some scattered areas score against five functions and this is because there are some functions which clearly could not be delivered in certain types of GI. For example golf courses public parks and gardens will be unlikely to deliver against agriculture or forestry. Some types of habitat will not contribute to forestry or agriculture, for example reed beds and vegetated shingle. The lowest score for scattered GI assets across the county is three, these are areas such as scheduled ancient monuments and sandstone outcrops where the contribution to certain functions is unknown and is unlikely to be significant.
 - (a) County Scale: Map 12
 - (b) District Scale: Map 23

- 2) Represents the cumulative function scores across all six functions at any location. This provides a more detailed view of multifunctionality across the network and is likely to be

more useful at the district/local scale where the network area is reduced. It provides an illustration of not only how many functions each asset contributes to, but also the degree to which those functions are met.

(a) County Scale: Map 13 a) Current cumulative score, b) Potential cumulative score.

(b) District Scale Map 24 a) Current cumulative score, b) Potential cumulative score.

5.0 Analysis

5.1 Green Infrastructure Assets

The overview of existing GI assets (Map 4 County and Map 15 Wealden District scale) shows that the East Sussex has a good network, with reasonably even coverage across the County. Care should be taken in interpretation of this map, as it is also important to consider functionality and condition, hence the need for the following maps. Whilst there are some notably large assets (e.g. Pevensey Levels, Ashdown Forest, Rye Harbour and the South Downs) and these are evenly distributed across the County, the majority of the County is served by a large number of small assets. There are some notable gaps in coverage, e.g. around Ripe and in the larger conurbations. It should be noted that a lack of coverage on the map may not fully reflect the situation on the ground as the datasets for some assets are either not comprehensive (e.g. BAP habitats) or not available (e.g. hedgerows).

5.2 Opportunities for GI Enhancement

Table 6, Appendix 3, is an analysis of the strategic mapping (NB County scale Maps are listed first and the second map number refers to the identical maps reproduced at Wealden district scale).

Multifunctionality

The mapping of potential represents the potential to enhance the multifunctional benefit offered by the existing assets in the county. As explained in the analysis much of this is based on assumptions and a best guess about the functions and the current state of these areas. More detailed study at the district/borough scale is required to make a detailed assessment of the real potential and constraints on the ecosystem services that each area can provide.

At the strategic scale these opportunities will be realised through landscape scale projects which will be delivered through multi-agency partnership initiatives such as the the Eastern Rother and Upper River Medway River catchment project, [Living Landscapes](#) and the [Brighton and Hove and Lewes Downs Biosphere Project](#).

Opportunities

Opportunities to create new areas of GI and a network of linkages for the benefit of wildlife and for informal recreation will be dependent on forces for change and in particular new development. Opportunity mapping would therefore be at a district scale as this would be more legible and can focus on the need created by new development. These opportunities will be provide by the following:

- (a) The creation of new areas of multifunctional spaces for recreation to serve the new populations.
- (b) New multifunctional green corridors as sustainable transport links between developments.
- (c) Sustainable urban drainage schemes (SuDs) which can provide multifunctional benefits.
- (d) The conservation and enhancement of existing GI features within and adjacent to new developments to create multifunctional assets and linkages.

6.0 Conclusions

6.1 Table 8: Outputs against the objectives of this study.

Objective	Outputs	Lessons Learnt and suggested further work
<p>(a) To provide guidance on the production of GI strategies which will build on GI related studies carried out by local authorities and other organisations to date. This should inform the district (development plan) and site based GI strategies and enable local planning authorities to meet their planning policy requirements with regard to GI.</p> <p>(b) To create baseline mapping for East Sussex at strategic (county) level. This will provide a standardised approach to baseline mapping of GI assets to ensure consistency across the county.</p>	<p>Guidance has been put together drawing on research of GI strategies at various spatial scales.</p> <p>This has been cross referenced to work compiled in the county to date.</p> <p>A comprehensive set of maps has been produced bringing together all of the available map datasets.</p> <p>These include all potential GI assets in East Sussex.</p> <p>Other datasets have been mapped which will inform more detailed analysis of current management, condition and status of these GI assets.</p>	<p>1) This report and associated mapping forms the basis for GI strategies in East Sussex.</p> <p>2) The county wide mapping will ensure that a set of common and consistent data is available for GI studies at all scales.</p> <p>3) The Sussex Biodiversity Record centre is an ideal 'One Stop Shop' source for the mapping.</p> <p>4) The relevant organisations in Sussex have agreements with the record centre and can use them to provide more detailed maps or analysis.</p>
<p>(c) Identify the key functions of these GI assets and maximise opportunities for creating and enhancing multifunctional landscapes and GI networks.</p>	<p>Six key functions were identified and it was considered appropriate at the strategic scale to group a potentially very long list of different functions.</p> <p>Scoring of the baseline data was based on assumptions of the current likely contribution that the GI assets make to the key functions.</p> <p>Scoring of the potential contribution that GI assets could make to the key functions was mapped.</p> <p><u>NB</u> Identification and mapping of GI opportunities</p>	<p>1) The analysis of multifunctionality should not include datasets which do not represent the true baseline i.e. identified assets or designations.</p> <p>2) Other datasets are useful as background information about current land management or opportunities, which can inform the current status or condition of GI assets. E.g. landscape stewardship or woodland grant schemes.</p> <p>3) Some data sets are background and relevant to inform further study and projects at the strategic landscape scale, but cannot inform the analysis of</p>

Objective	Outputs	Lessons Learnt and suggested further work
	<p>will depend on the pressures for change and particularly growth at a district and parish scale. The maps produced for this study can be used at a range of spatial scales to inform more detailed assessment of opportunity.</p>	<p>functions e.g. Landscape Character areas and BOAs.</p> <p>4) Similarly, some data sets were excluded to avoid duplication of scoring. E.g. RAMSAR, SPAs,SACs and Local Nature Reserves as they are all mapped as SSSIs.</p>
<p>(d) Identify discrepancies and gaps in the data currently available.</p>	<p>Most data sets are consistent as they are recognised designations with clearly defined boundaries.</p> <p>The greatest inconsistency was in the datasets from districts and boroughs for various types of public open space and sports facilities.</p> <p>The Wealden District case study addressed this by producing questionnaires which went to all parish councils and other organisation owning and managing sites such as the Woodland Trust, Sussex Wildlife and National Trust.</p> <p>The responses were used to fill in the gaps regarding current condition and accessibility of GI assets.</p>	<p>1) This inconsistency would mainly affect the scoring for access and recreation.</p> <p>2) Consideration needs to be given as to whether private sites which charge for entry qualify as accessible natural green space or public recreation. E.g. golf courses and gardens.</p> <p>3) At the strategic scale all of these assets were mapped and scored according to the data provided.</p> <p>4) More detailed analysis is required at the district scale and/or strategic site scale to identify the contribution that these GI assets make at the settlement and site level.</p>
<p>(e) To identify opportunities for measurable improvements to GI in East Sussex including improvements to meeting the Accessible Natural Greenspace Standards (ANGSt) as defined by Natural England.</p> <p><u>NB</u></p> <p>1)The Strategic Open Spaces Study for East Sussex (2009) identifies the provision and deficits in</p>	<p>The opportunities to enhance multifunctionality of existing GI assets is demonstrated by the comparison of the baseline and potential mapping.</p> <p>The Wealden Case Study :-</p> <p>Appendix 4 sets out examples of Local Plan policies as adopted by Wealden District Council</p>	<p>1) The scoring for accessible open space made certain assumptions due to the discrepancies in data outlined above. More detailed analysis is required at the district scale for accurate scoring.</p> <p>2) More detailed analysis may be required at the district scale to identify the contribution that GI assets make to ANGSt at the settlement and site level.</p>

Objective	Outputs	Lessons Learnt and suggested further work
<p>provision of ANGSt for facilities of 20ha and above.</p> <p>2) Opportunity mapping will depend on the pressures for change and particularly growth at a district and parish scale. The maps produced for this study can be used at any scale to inform more detailed studies of opportunity.</p>	<p>for the protection and enhancement of GI assets.</p> <p>The Strategic Site case study demonstrates how this can be achieved at the development site scale.</p>	<p>3) The data and the Wealden Case study methodology can be used to inform Strategic Housing Land Availability Assessments, particularly for the strategic sites.</p>
<p>(f) To build on existing national guidance by producing a practical guide for other organisations on how to develop a GI strategy at county, district and site scale, taking account of the particular landscape, biodiversity and heritage characteristics of East Sussex.</p>	<p>The mapping exercise has provided guidance on:</p> <ul style="list-style-type: none"> • Key datasets for mapping GI assets. • Key strategic functions for GI assets. • A methodology for mapping and scoring multifunctionality. <p>This mapping can be used to inform GI work at all scales.</p>	<p>1) Further more detailed work is required on identifying opportunities for creation and enhancement of GI at all scales.</p> <p>2) This will require condition and needs assessments of existing GI assets at all scales.</p>

6.2 East Sussex GI Priorities

East Sussex as a county supports a wide range of GI assets, many of which provide more than one function or are truly multifunctional, and which underpin a number of social, economic and environmental benefits. There are also opportunities across these assets to enhance their multifunctional benefits. These assets can be drawn upon to provide opportunities for mitigating and compensating for new development and loss of Greenfield sites. The GI assets are essential to buffer the natural environment against new development and growing populations and protect the ecosystem services which this supports. The wide range of GI assets should also help to ensure that key priority functions can be protected and enhanced where it may not be desirable for an area to provide for all functions. For example sensitive wildlife sites where public access would not be desirable.

The study has helped to identify that the GI priorities for East Sussex are to:

- (a) Consider opportunities for enhancing the condition of GI assets at a landscape scale which works across statutory boundaries (e.g. Biodiversity Opportunity Areas and County Landscape Character areas);
- (b) Conserve and enhance the character of the East Sussex landscape and reinforce a sense of place and opportunities for greater appreciation of valued landscapes and cultural heritage;
- (c) Identify opportunities for enhanced sustainable transport building on existing GI assets for example:
 - a. Green Lanes and historic routeways
 - b. River corridors
 - c. The extensive rights of way network
 - d. Disused railway corridors
 - e. Existing cycle routes;
- (d) Facilitate the districts and boroughs to build up an evidence base to ensure that the required multifunctional GI can be provided in relation to new development.

6.3 Recommended Next Steps

- a) Analysis of the county wide GI assets to identify where the greatest potential is to enhance the condition, quality and multifunctional benefits.
- b) Identify key strategic projects that can be prioritised to optimise strategic GI provision and which link across administrative boundaries and encourage cross boundary working.
- c) The guidance along with supplementary advice will be developed to inform local and neighbourhood plan policies.
- d) Local authorities produce appropriate scale GI strategies and identify the opportunities for enhancing existing and creating new multifunctional GI to fill gaps and maximise linkages.
- e) The guidance along with supplementary advice can be used to inform district wide, strategic site and local development site masterplanning and related GI strategies.
- f) Identify, from the district and borough development plans the key settlements where there is likely to be significant growth and investigate the benefits of settlement wide GI strategies.
- g) Ensure that detailed site analysis and design briefs take into account the conservation and enhancement of existing GI assets and the need for new ones.

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8.0 Appendices

Appendix 1

Table 3: List of GI assets and informative datasets for East Sussex.

Category	Asset	Description	Comments
Landscape	National Character Areas	Natural England dataset – 159 national areas defined by a unique combination of landscape, biodiversity, geodiversity & cultural & economic activity. Boundaries follow natural lines in landscape rather than administrative boundaries.	Contextual information. Landscape provides a backdrop for GI and as our landscape is a result of natural and cultural features over thousands of years, it is usually multifunctional and valued at regional, district or local levels. GI should recognise the value of landscapes for supporting all functions and for their local distinctiveness.
	ESCC County Landscape Character Areas (Map 3)	Compliments national assessment as a natural progression to a more detailed study.	
	ESCC Remoteness Data	Remoteness implies an ability to experience a degree of solitude as well as separation from noise, visual disturbance & urban associated activity.	
	CPRE Tranquillity Map	Made up of layers of information based on what people say adds to and detracts from tranquillity, weighted according to how important those factors are and taking into account the country's topography.	
	South Downs National Park	National designation with two purposes: 1) conserve & enhance the natural beauty, wildlife & cultural heritage; 2) promote opportunities for the understanding & enjoyment of the special qualities.	
	High Weald Area of Outstanding Beauty	National designation with primary purpose to conserve & enhance the natural beauty of the landscape (includes landform, geology, plants, animals, landscape features & history of human settlement).	
Biodiversity	Ramsar sites	Wetlands of international importance designated under the Ramsar Convention.	Not mapped because all also designated as SSSIs. However available as layers and can be used in the future to identify hotspots for biodiversity.
	Special Protection Areas (SPA)	Areas of international importance for the breeding, feeding, wintering or migration of rare & vulnerable species of birds found in the EU.	
	Special Areas of Conservation (SAC)	Designated under the EU's Habitats Directive, SACs provide increased protection to a variety of wild animals, plants and habitats.	

Category	Asset	Description	Comments
	National Nature Reserves (NNR)	A selection of the best of England's SSSIs, established to protect sensitive features, to provide 'outdoor laboratories', and to offer opportunities to the public, schools and others to experience natural heritage.	
	Local Nature Reserves (LNR)	Statutory designation made by local authorities for people and wildlife. Main aim is to care for the natural features which make the site special. LNRs offer people special opportunities to study or learn about nature or simply to enjoy it.	
	Sites of Special Scientific Interest (SSSI)	Give legal protection to the best sites for wildlife & geology in England. Divided into units for monitoring purposes.	Mapped as units to aid functionality mapping (allows quantification of condition).
	Ancient woodland	Land that has had a continuous woodland over since at least 1600 AD. Important because rich in wildlife, are an integral part of historic landscape & act as reservoirs from which wildlife can spread. Protected through planning policy.	Includes ancient semi-natural woodland (ASNW) and plantations on ancient woodland sites (PAWS)
	Sussex Wildlife Trust reserves	Reserves managed for nature conservation.	
	RSPB reserves	Reserves managed for nature conservation.	
	Woodland Trust sites	Reserves managed for nature conservation.	
	Forestry Commission sites	Sustainably managed woodlands.	
	Wildlife verges	Non-statutory designation of roadside verges of importance for supporting rare & unusual species, important wildlife communities, attractive floral displays, and/or valued by the local community.	
	Local Wildlife Sites (LWS) (formerly Sites of Nature Conservation Importance (SNCI))	Non-statutory designation, selected within a local authority area. Support both locally & nationally threatened wildlife, and often contain priority habitats and species under the UK Biodiversity Action Plan. Protected through the local planning system.	Reporting on the management of Local Sites contributes to the Single Data List 160-00 <i>Local nature conservation / biodiversity</i> . Mapped according to SDL 160-00 category to aid functionality mapping (allows quantification of condition).
	Local Geological Sites (LGS) (formerly Regionally - Important Geological and Geomorphological Sites (RIGGS))	Non-statutory designation, selected by voluntary geoconservation groups and selected on a local basis according to nationally agreed criteria.	
	Tree Preservation Orders (TPOs)	An Order made by a local authority because the tree is considered to bring amenity value to the surrounding area. Can apply to a single tree, a group of trees or a woodland.	Not available for all districts. Point data.
	Tree Register of the British Isles (TROBI)	Database of notable trees throughout Britain & Ireland. Records details of rare, unusual & historically significant trees.	Point data.
	Ancient Tree Hunt records	Database of ancient trees in the UK.	Point data.

Category	Asset	Description	Comments	
	High Weald historic field boundaries	Inventory of surviving historic field boundaries (type of boundary not identified).	Only available for HWAONB. Useful at site level	
	BAP Habitats	Ancient meadows	Priority habitats are those identified as being the most threatened & requiring conservation action under the UK BAP. For definition of individual habitats, see: http://jncc.defra.gov.uk/page-5706	No dataset available.
		Chalk streams		Linear data so not included as asset but shown on linkages map.
		Reedbeds		
		Lowland fens		
		Lowland meadows		
		Lowland calcareous grassland		
		Coastal & floodplain grazing marsh		
		Lowland heathland		
		Ghyll woodland		
		Traditional orchard		
		Coastal vegetated shingle		
		Coastal sand dunes		
		Maritime cliff and slope		
		Intertidal chalk		
		Coastal saltmarsh		
	Intertidal mudflat			
Saline lagoon				
Sandstone outcrops		Point data		
Hedgerows		No dataset available		
Chalk and greensand quarries & clay pits		No dataset available		
Accessible Open Space	Public Parks and Gardens	Parks and gardens open to the public. Some districts included private parks with public access by payment and Registered sites some of which are accessible by charging.	The data sets for these assets were not consistent across the District and Boroughs. For example some mapped school sports fields and golf courses where others did not. Many have not comprehensively mapped all informal open space assets They have therefore been grouped together for the functionality assessment as	
	Registered Common Land	There may be duplication with Country Park, e.g. Ditchling Common and Access land.		
	Amenity Green space including village greens, recreation grounds, play areas, civic spaces, sports pitches, public golf courses	These have been grouped and may need to be broken down in more detailed District wide and site based GI strategies.		
	Cemeteries and graveyards	These are usually publically owned and freely accessible and possibly locked at night as may be public parks		
	CRoW Open Access Land			
	Millennium Greens	There may be duplication with amenity green space but there		

Category	Asset	Description	Comments
		are only a handful in the county.	recreational areas with public access even if limited to certain groups in some cases.
	Country Parks	There will be duplication with Access Land	
	Heritage Coast	There will be duplication with Access land, Seven Sisters Country Park and Eastbourne Borough downland open space	
Cultural	Scheduled Ancient Monuments	Legally protected nationally important sites and monuments. Schedule maintained by English Heritage.	These datasets are available on the Historic Environment Record as held by ESCC.
	Registered Parks and Gardens of Special Historic Interest	English Heritage register of nationally important sites. Emphasis is on gardens, grounds and other planned open spaces such as town squares. Registered sites are not necessarily open to the public.	There may be some duplication with accessible open space as some public parks are registered.
	Registered battlefields	English Heritage register of important English battlefield: purpose is to offer them protection & promote a better understanding of their significance.	
Agriculture & Productive Forests	Countryside Stewardship Scheme agreements	Payments made to farmers & land managers to enhance & conserve English landscapes, their wildlife & history & to help people enjoy them. Scheme now closed but some existing agreements continue until 2014.	Not mapped as an asset but used to define function contribution
	Environmental Stewardship agreements	Agri-environment scheme that provides funding to farmers & other land managers to deliver effective environmental management. Includes Entry Level, Organic Entry Level & Higher Level Stewardships.	
	Environmentally Sensitive Area agreements	Offered incentives to encourage farmers to adopt agricultural practices which would safeguard & enhance parts of the country of particularly high landscape, wildlife or historic value. Scheme now closed but some existing agreements continue until 2014.	
	English Woodland Grant Schemes	Grants for woodland provided by Forestry Commission. Includes Woodfuel Woodland Improvement Grant (WIG), Woodland Improvement WIG, Woodland Management Grant, Woodland Creation Grant, Woodland Planning Grant, Woodland Assessment Grant & Woodland Regeneration Grant.	
	Allotments	An area of land, leased either from a private landlord or local authority, for the use of growing fruit & vegetables. If on land owned by a local authority, it will either be classed as statutory or temporary. Statutory sites are protected by law.	
	Agricultural Land Classification	Provides a framework for classifying land according to the extent to whilst its physical & chemical characteristics impose	Not mapped as an asset but used to define function

Category	Asset	Description	Comments
		long-term limitations on agricultural use.	contribution
Water resource & flood management	Running & standing open water	OS MasterMap layer – includes no information on quality or use. Includes rivers, streams, ditches, canals, ponds, lakes & reservoirs.	Dataset split into two separate layers for mapping because of file size.
	Flood Zone 3 (= floodplain)	High risk zone identified by the Environment Agency, Covers all land where there is a 1 in 100 years or greater chance of flooding from rivers in any one year or a 1 in 200 years or greater chance of flooding from tidal/coastal sources in any one year.	Contextual information. Opportunity mapping.
Accessible Transport Corridors	Public Rights of Way (PRoW)	Open to everyone. They can be roads, paths or tracks & can run through towns, countryside or private property. Includes footpaths (by foot only), bridleways (by foot, horse or bike), restricted byways (by any form of transport that does not have a motor) & byways open to all traffic (by any form of transport including cars).	As PRoW don't necessarily confer access to more than the footpath etc itself & that access should be picked up by the CRoW open access land data, not mapped as an asset, but used to help identify linkages & opportunities.
	Long distance cycleways	Part of the National Cycle Network promoted by Sustrans.	Linear dataset therefore shown on linkages map.
	Historic routeways	HWAONB database that uses modern roads to identify those present on historic maps.	Only available for HWAONB. Not mapped as an asset as could introduce geographical bias but kept as a dataset that could be used to identify opportunities for linkage.
	Disused railway corridors	Dataset digitised by SxBRC.	Not mapped as an asset but used to identify linkages & opportunities.
Climate Change Mitigation	OSMM Open Water over 2 ha (= large water bodies)		No dataset available, although could be extracted from OS MasterMap water layer. Not done at this stage as it was considered most large water bodies will be picked up through other datasets.
	National Forest Inventory (NFI) (= all woodland areas)	Forestry Commission dataset of accurate, up-to-date information about the size, distribution, composition and	At this stage, all East Sussex data was mapped regardless of

Category	Asset	Description	Comments
		condition of GB forests and woodlands. Includes various types of woodland including broadleaved, coniferous, mixed, coppiced, so either all can be mapped, or certain categories can be selected.	woodland type.
	Biodiversity Opportunity Areas (BOAs) (Map 1)	BOAs represent the targeted landscape-scale approach to conserving biodiversity and the basis for an ecological network. They identify the greatest opportunities for habitat creation and restoration.	Not mapped as an asset but can be used to identify opportunities.
	Adur and Ouse habitat potential model (HPM) outputs (Map 2)	Habitat potential map for Adur and Ouse catchment.	
	Lowland calcareous grassland habitat potential model (HPM) (Map 2)	Habitat potential map for South Downs based on distribution of habitats suitable for the Adonis Blue butterfly.	
Other	National Trust Lease and Freehold Land		Data not used at this stage because considered too broad to provide meaningful information. However, dataset is available and can be used to identify opportunities in terms of land management.

Appendix 2

Table 4: Levels of GI strategy suggested mapping and key examples.

Scale	Mapping	Examples
County	<p>Baseline All assets in table 1 above as baseline. Assessment of existing multifunctionality.</p> <p>Analysis Assessment of potential multifunctionality. Current condition of sites. Identify current strategic projects. Consider potential linkages for sustainable transport corridors and wildlife connectivity. Identify opportunities to enhance the GI assets consider:</p> <ul style="list-style-type: none"> • Biodiversity Opportunity Areas • Landscape Scale Projects • Landscape Character Assessment • Ecosystem services assessment 	<p>The Cambridgeshire Horizons GI Strategy 6Cs Green Infrastructure Strategy</p>
District	<p>Baseline All assets in table 1 above as baseline. Assessment of existing multifunctionality. Strategic development sites.</p> <p>Analysis Assessment of potential Multifunctionality. Assessment of the current condition and multifunctionality of local wildlife sites including LNRs. Analysis of all public open space and recreational facilities for quality, condition and potential multifunctionality. Consider potential linkages for sustainable transport corridors and wildlife at a district wide scale.</p>	<p>Bath and North Somerset GI strategy</p> <p>Note: Some of this work will be picked up in via other evidence studies which are produced by District and Borough Authorities such as rural or urban settlement and strategic housing land assessments studies.</p>
Main	<p>Baseline</p>	<p>Burgess Hill Green Circle</p>

<p>Settlements:</p> <p>Market towns</p> <p>Service villages</p>	<p>All GI assets in and around settlement up to radius to reflect local circumstances and sensitivities e.g. topography, settlement pattern habitats and designations.</p> <p>Proposed development areas.</p> <p>Multifunctional values of the assets.</p> <p>Wildlife assets and existing habitats.</p> <p>Analysis</p> <p>Existing and potential stepping stones for wildlife.</p> <p>Analysis of the current condition and of local sites of nature conservation importance including LNRs.</p> <p>Analysis of all public open space and recreational facilities for quality, condition and potential multifunctionality.</p> <p>Existing and potential recreational route linkages or greenways.</p> <p>Consider potential linkages for sustainable transport corridors and wildlife connectivity at a settlement wide scale.</p>	<p>Note: Some of this work will be picked up in via other evidence studies which are produced by District and Borough Authorities such as rural or urban settlement studies and strategic housing land assessments.</p>
<p>Strategic Sites/ Development Sites/ Smaller sites</p>	<p>Baseline</p> <p>All designations within or adjacent to the site .</p> <p>For example Wealden DC looked at 2km surrounding the site for the purpose of contributing to the ecological network and for connectivity i.e. hedges, woods, trees, meadow and other habitats, rivers, streams, ditches, ponds and flood plains.</p> <p>Public rights of way/permissive paths.</p> <p>Habitats and species surveys.</p> <p>Archaeological and historic features.</p> <p>Public open space.</p> <p>Analysis</p> <p>GI features on site which must be retained.</p> <p>GI features on the site which can usefully be retained as part of site masterplan.</p> <p>Green transport networks.</p> <p>Optimum areas for built development.</p> <p>Sustainable urban drainage schemes.</p>	<p>Wealden District Council Green Infrastructure Background Paper (June 2013)</p> <p>Refer to Appendix 4</p>

Appendix 3

Table 5: Analysis of Mapping

Function	General Mapping requirements	Baseline map and scores	Potential map and scores
<p style="text-align: center;">Ac Access, Recreation and Health</p>	<ul style="list-style-type: none"> • Identify opportunities for formal sports, play and recreation. • Identify opportunities for easy access to the countryside from all types and size of settlement. • Define built up edges and future development limits of settlements. • Create green necklaces of multifunctional GI around towns and larger villages. • Consider enhancements of multifunctional benefits of all open space by incorporating natural areas into formal spaces and creating networks linked by green corridors for sustainable transport and wildlife connectivity. • Emphasise the health benefits of access to open space and exercise for all types of residents and abilities. 	<p>Map 6a and Map 17a</p> <ul style="list-style-type: none"> • Sites which score high for access are spread evenly across the county. • Many are relatively small representing local open spaces. • The concentrations of larger areas represent Access Land on the South Downs and Ashdown Forest, Country Parks and Woodland Trust woodlands and reservoirs. (NB the latter may be misleading, e.g. Powdermill Reservoir is only accessible for fishing by permit.) • Areas with medium access (yellow) include SWT (Sussex Wildlife Trust) and WT (Woodland Trust) Reserves, FC (Forestry Commission) land as well as some coastal habitats (e.g. vegetated shingle or sand dunes) where accessibility is likely but not definite. • Areas with low access (green) are extensive. • Generally these are designated wildlife or heritage sites where accessibility is unknown. • More detailed research at the District level would reveal the actual accessibility of some areas. • This map does not reflect the access to areas which is provided by the comprehensive public rights of way network in the County. 	<p>Map 6b and Map 17b</p> <ul style="list-style-type: none"> • More consultation with landowners is required to identify actual and potential functionality. • To provide full access to all the GI sites which have been mapped would not be desirable or indeed necessary to provide for the recreational needs of the County's population. • As there need to be some areas of undisturbed and relatively remote countryside for wildlife and to conserve the character of the landscape. • The Strategic Open Spaces Study (ESCC 2010) concluded that there are no areas of deficiency for Natural Green Space in East Sussex at the strategic level.

Function	General Mapping requirements	Baseline map and scores	Potential map and scores
Agriculture and Commercial Forestry	<p>Whilst these may be primary functions, agricultural land can offer biodiversity and access opportunities through stewardship agreements. These can ensure the protection and conservation of cultural heritage by conserving archaeological interests. Existing public footpaths, byways and bridleways give access over farmland and permissive routes are provided through stewardship. Woodland management should maximise opportunities to use timber produced and where appropriate for public access. Environmental Stewardship Agreements have not been mapped as they are not GI assets, however they can be used as an indicator of the condition of the GI asset in more detailed analysis.</p>	<p>Map 7a and Map 18a</p> <ul style="list-style-type: none"> • The maps only include agricultural holdings which are mapped GI assets. • The scoring allows for all levels of potential land management including light grazing and coppicing. • The scoring indicates that the current grazing regime for many designated sites is not known for example, grazing marsh, Common Land, heathland and nature reserves. • Larger woodlands and those managed by the Forestry Commission or Woodland Trust are scored as Medium as the assumption is that they have some productivity. • Orchards are scored as 3 i.e. high. 	<p>Map 7b and Map 18b</p> <ul style="list-style-type: none"> • The score increases for habitats where grazing is the optimum management from 1 unquantified, to 2 medium. • This identifies that more research would be needed to accurately assess the current management regime for either under or overgrazing. • All woodland is scored as high potential apart from ghyll woodland which is often inaccessible and not commercially viable. • Scoring remains as 1 for areas where productivity is unlikely to increase e.g. reed beds and salt marsh.

Function	General Mapping requirements	Baseline map and scores	Potential map and scores
Biodiversity	<p>The majority of GI assets across the County network have been assessed as making at least a minor contribution towards the biodiversity function, as even if the habitat is not inherently rich, it is likely to provide some value, e.g. as badger foraging habitat or as a nectar source for invertebrates.</p>	<p>Map 8a and Map 19a</p> <ul style="list-style-type: none"> • Relatively few sites scored low/unquantified for biodiversity, and this is more likely to be a reflection of a lack of information on condition than of low biodiversity value. • GI assets that scored low for biodiversity were generally small and were largely concentrated around urban areas. • Relatively few assets scored highly for biodiversity. Whilst this may reflect in part that some areas could be better managed for biodiversity, it is also an indication that the condition of many sites is not known due to a lack of resources for monitoring (e.g. SNCIs where there was insufficient information to assess whether the site is in positive conservation management were scored as 2/medium). • It should be noted that SSSIs were scored as medium for biodiversity if they had been assessed as being in unfavourable recovering condition. Natural England takes this condition assessment as meaning that a site is in positive conservation management as it shows that the site is being positively managed. 	<p>Map 8b and Map 19b</p> <ul style="list-style-type: none"> • The majority of sites that are currently assessed as being of medium value to biodiversity could be enhanced to high value under appropriate management. • There is a small number of sites that are unlikely to make more than a low contribution to biodiversity and therefore remain green. These are likely to be sports facilities/playing fields/recreation grounds or allotments, whose primary function is not compatible with nature conservation management. On a District or local scale, these assets could potentially score higher as some enhancements may be possible depending on site characteristics. • The contribution that each asset makes to biodiversity on a District or local scale will be much clearer as it will be possible to analyse assets on a site by site basis. At a County scale, some broad generalisations had to be made.

Function	General Mapping requirements	Baseline map and scores	Potential map and scores
Climate Change	<p>Green Infrastructure can contribute to climate change mitigation by:</p> <ul style="list-style-type: none"> • Protecting existing carbon sinks and creating new ones, e.g. peat soils and woodlands. • Considering the benefits that GI can bring to larger settlements by reducing heat island effects and pollution. • Recognise that there are pollution filter benefits associated with extensive vegetated areas. 	<p>Map 9a and Map 20a</p> <ul style="list-style-type: none"> • Most GI assets are considered to make some contribution to climate change mitigation. • All significant natural areas were scored as 2 in this context, including woodland which has the highest potential for climate change mitigation. Arguably woodland could be scored High in the baseline. 	<p>Map 9b and Map 20b</p> <ul style="list-style-type: none"> • Many areas, most notably, the extensive scatter of woodland areas in the County can provide high potential if managed in ways that can maximise this potential. • The other significant natural areas which make a medium contribution include river valleys, downland, Pevensey and Rye Levels and the lowland heaths of Ashdown Forest and Chailey Common. The potential score for these areas is the same as the baseline as it was not considered that this could change significantly with varied management. • The wildlife and landscape character sensitivity of many areas make it undesirable to drastically change the current management and land cover.

Function	General Mapping requirements	Baseline map and scores	Potential map and scores
Cultural Landscapes	<p>Most landscapes in East Sussex are steeped in history which contributes to unique sense of place. This will be evidenced in landscape character assessments, historic landscape characterisation and extensive urban surveys. Historic landscape and built features should be considered in the assessments at county, district and site levels. Particular assets will be more significant in site specific GI survey and analysis.</p> <p>As the archaeology of much of the landscape is buried underground it is important that where GI assets remain relatively unchanged and the ground undisturbed any potential archaeology is protected into the future and properly recorded if discovered.</p> <p>On development sites developers would be responsible for detailed assessment and the need for further investigation would depend on the results of geophysical surveys.</p>	<p>Map 10a and 21a</p> <ul style="list-style-type: none"> • Many of the GI assets in the county have a high cultural value and significance as historic landscapes. • The spread of sites with a High score for this category across much of the Low and High Weald represents Ancient Semi-Natural Woodland. • The largest single area with High value is the Heritage Coast and other significant areas are historic parks and battlefields. 	<p>Map 10b and Map 21b</p> <ul style="list-style-type: none"> • The scoring does not indicate much, if any, changes to these assets as the cultural contribution to the category cannot be changed by management • At the local scale areas would need to be considered on a site by site basis.
Water resource and flood management	<p>These areas may also offer public access and informal recreational opportunities and biodiversity opportunities should be maximised. At the site scale creation of new sustainable urban drainage schemes (SuDs) associated with development could provide biodiversity and recreational opportunities. Coastal defence is included within flood management. The river networks across the county have also been mapped as a linear map, as outlined below.</p>	<p>Map 11a and Map 22a</p> <ul style="list-style-type: none"> • Water bodies such as lakes and reservoirs score 3, other areas where the contribution is known are also scored high e.g. saline lagoons, intertidal assets and saltmarsh. • The majority of assets are likely to make a medium contribution. 	<p>Map 11b and Map 22b</p> <ul style="list-style-type: none"> • Indicates that many of these areas would not increase in potential with enhanced management as they already have cultural significance. • A high score is given to significant areas where the potential is currently unknown but should be high including the main river valleys, marshes and levels.

Table 7: Linkages mapping

<p><i>Rights of Way (5b and 16b)</i></p>	<p>There are two key linkages maps one showing all public rights of way and the Sustrans cycle networks. The map indicates that the County is very well served by Public Rights of Way which includes footpaths and bridleways in both urban and rural areas.</p> <p>The disused railways have been mapped as these provide future opportunities for multifunctional sustainable transport or linear recreational routes as has already been provide at Forest Way Country Park and the Cuckoo Trail. These assets need to be protected against potential development or loss due to other land use activity.</p>
<p><i>Historic Routeways (5b and 16b)</i></p>	<p>This map also has a layer for the High Weald AONB which indicates historic routeways. Many of these are green lanes and byways these are of cultural and recreational significance. The Low Weald and the South Downs landscapes also have historic routeways many of which connect across the County to the High Weald. This demonstrates that it would be really beneficial to have these mapped for the entire County. These linkages not only provide for recreation, but also as potential corridors for wildlife movement and habitat continuity. They will also provide opportunities to link GI assets across the County.</p>
<p><i>Linear waterways. (5a and 16a)</i></p>	<p>The river network and catchment mapping again indicates a comprehensive linear GI resource across the county with massive potential for recreational access and water resource protection and enhancement. There are already catchment wide projects in the County such as Trees for the River Uck and an analysis of the Ouse Catchment for reed bed and other habitat potential. The river catchments are truly multifunctional in providing opportunities for water resource management, flood relief, recreation, climate change mitigation, food/timber production and wildlife.</p>
<p><i>All linkages (5c and 16c)</i></p>	<p>Combined the linkages mapping is very busy, but it does indicated that these linear GI assets should be considered in GI strategies at all scales. This type of mapping will be particularly important at the individual settlement and site scale of GI mapping to ensure the protection and creation of new linear GI.</p>

Appendix 4: Wealden District Council Case Study

Case Study: Wealden District Council and planning for Green Infrastructure

In planning for green infrastructure Wealden District Council made the decision that the stages of GI planning will take place alongside the production of its Local Plans. As relevant to GI, the reports and plans produced by WDC to date include:

1. [Wealden District Council and South Downs National Park Core Strategy Local Plan \(Feb 2013\)](#).
2. [Wealden District \(Incorporating Part of the South Downs National Park\) Local Development Framework: Background Paper 6: Green Infrastructure, Core Strategy Submission Document, \(August 2011\)](#). (Document A22)
3. [Wealden District \(Incorporating Part of the South Downs National Park\) Local Development Framework: Background Paper 5: Biodiversity, Core Strategy Submission Document, \(August 2011\)](#). (Document A21).
4. [Wealden District Council Strategic Sites Local Plan Consultation \(May 2013\)](#).
5. [Ecological Assessment of the Strategic Sites Development Plan Document \(The Ecology Consultancy\)](#).
6. [Wealden District Council Strategic Sites Local Plan Pre-Modifications Consultation \(December 2013\)](#).
7. [Green Infrastructure Background Paper: Pre-Modification Strategic Sites Local Plan \(December 2013\)](#).

The sections below describe the process of GI planning for WDC as relevant to the different GI scales identified in this report.

District wide green infrastructure

In February 2011 Wealden District Council (WDC) produced a District wide Green Infrastructure and separate biodiversity Background Paper to support and provide evidence for its Core Strategy and its green infrastructure and biodiversity related policies. The Core Strategy was adopted in February 2013. The purpose of the GI Background Paper was to identify GI assets and identify and explore the issues surrounding green infrastructure at a district scale to provide evidence to assist in the production of and support the overarching Core Strategy green infrastructure and biodiversity policies. Whilst WDC identify that GI and biodiversity are inextricably linked a decision was taken to separate GI and biodiversity policy to ensure a strong and supporting policy standing for both elements in considering WDC's high quality rural and biodiversity rich environment.

The first stage of the work involved collecting, mapping and analysing existing data. This was achieved by a map based audit and characterising Wealden's local environment into a number of different themes, for example, landscape character, cultural heritage, open space and recreation, biodiversity etc. This broke down the multifaceted concept of GI into workable and manageable components and differing functions to establish the green infrastructure baseline at a district scale.

For each theme a number of different data sets were used to establish the baseline for each GI asset as briefly identified below:

- For open space analysis WDC's PPG17 Assessment was used to identify the amount, quality and value of open space and recreation assets and also accessibility issues. This enabled open space deficiencies to be identified across the district.
- Green corridors and access links were identified by collecting data/information in relation to National Trails, way marked routes, rights of way / bridleways and Sustrans routes. This data was used to assess public access to the countryside within and surrounding the district.
- Landscape character datasets were collected and analysed to build a picture and provide an understanding of Wealden's landscape. This included National character areas, East Sussex character areas as relevant to Wealden and its main towns where development is due to take place.
- Data and information was collected to identify Wealden's biodiversity assets including nature conservation sites, BAP habitats, district wide information on protected species and veteran trees and woodlands.
- With regards to ecosystems, hydrology and climate change a number of different issues were looked at such as air quality within the district, the role of tree's and woodland, rivers and their catchment areas and floodrisk. This included looking at data from Strategic Flood Risk Assessments. A general approach was taken to this in considering the district wide nature of the document.
- A number of data sets were used to build a picture of Wealden's cultural heritage. This included identifying Listed Buildings, conservation areas, historic parks and gardens, historic landscapes etc. The purpose of this was to ensure links between GI and WDC's cultural heritage.

For each theme a number of broad key issues and district wide opportunities were able to be identified from the base line data and information. In considering each of the issues and opportunities it was then possible to identify a number of green infrastructure objectives. In turn these objectives informed the overarching GI and biodiversity policies within Wealden District Council's Core Strategy.

Wealden District Council Core Strategy Local Plan (February 2013)

WCS13 Green Infrastructure

The District's existing network of green infrastructure will be protected, improved and enhanced by the implementation of a Green Infrastructure Strategy, ensuring a multifunctional, accessible network which maintains and improves biodiversity and landscape character, increases opportunities for healthy living and contributes to healthy ecosystems and climate change objectives.

Development proposals will not be permitted which would result in the loss of existing open space or harm to Wealden's network of green spaces unless measures are incorporated within the development that will either mitigate the effects of development or alternative and suitable provision is made that is accessible, of good quality and value to its users, in an appropriate location, at an appropriate scale and nature and would positively contribute to the overall network of green space.

All new residential development will be required to contribute to the green infrastructure network and where appropriate to make provision for new or enhancement of existing open space. Where the scale of development would be too small to make on-site provision, the Council will seek developer contributions either towards the improvement of existing open spaces or towards the provision of open space elsewhere.

WCS12 Biodiversity

In order to contribute to the biodiversity targets provided in the Sussex Biodiversity Action Plan the Council will prevent a net loss of biodiversity, ensure a comprehensive network of habitats, and work with

partners to maximise opportunities to ensure habitats, biodiversity features and ecological networks are maintained, restored, enhanced and where possible created to achieve a net gain in biodiversity and sustain wildlife in both rural and urban areas. This will be achieved through the development and implementation of an integrated green network strategy.

In accordance with Planning Policy Statement 9, please see page 49 'Working with the South Downs National Park Authority' and the reference to publication of the NPPF and cancellation of a number of Planning Policy Statements and Guidance Notes, there may be exceptional circumstances when compensatory measures for a net loss of biodiversity is required. Appropriate compensatory measures will be required to contribute to Wealden's overall biodiversity resource, and may include enhancement of Wealden's Biodiversity Opportunity Areas and other relevant Biodiversity Action Plan habitats, so that there is, overall, no net loss of biodiversity.

Strategic Site or settlement scale

Following the production and adoption of WDC's Core Strategy, in which green infrastructure is formally embedded in the District's vision; WDC began work on their Strategic Sites Local Plan (SSLP). The aim of the document is to allocate the exact location for strategic growth in the district, ensure that it is delivered in the most sustainable way and provide specific detailed policies relating to the delivery and design of each allocated site.

In considering that WDC has a lack of previously developed land the majority of WDC's strategic growth is identified to take place on greenfield sites. With this comes the potential to lose spaces that are precious to both wildlife and people. It can also mean that the use of existing green spaces become intensified or more intensely used as a result of an increase in population in those areas where growth is due to take place. Improving the green network and delivering new green infrastructure to mitigate the impact of and support new development was therefore considered by WDC as vital to the delivery of strategic housing growth.

WDC's Strategic Sites GI Background Document sets out the evidence and information used to inform the strategic site GI related policies. The document builds on previous GI work undertaken for WDC's Core Strategy taking forward identified key issues, objectives and opportunities and identifying how these can be taken forward at a local scale as relevant to each strategic site.

In considering the nature of the SSLP there was a requirement to identify and assess GI in detail to ensure that information is relevant and locally specific at a more local scale and to forward plan for the protection of existing green infrastructure and as well as plan for new provision in a specific area / town. In line with the Core Strategy, the green infrastructure work was split into two main categories, The Natural Environment and Open Space.

With regards to the Natural Environment WDC commissioned consultants to undertake Phase 1 ecological assessments within each of the identified strategic development areas, as identified in the Core Strategy. The ecological assessments included a desk top survey of the land and surrounding area (2km), a protected species assessment, a nature conservation valuation, a green infrastructure appraisal, recommendations for habitat retention and protection, mitigation, compensation and enhancement. Building on this baseline data, recommendations were made for the enhancement, protection and retention of certain on site habitats. In addition, to this, these core habitats were identified as part of the green infrastructure green infrastructure appraisal mapping to show how the strategic sites can contribute to the overall green network in each town if the core areas are enhanced, retained and / or protected as part of the development. The information contained in the surveys relating to each strategic site and its surrounding area was used to inform the natural environment, biodiversity and green infrastructure related policies for each strategic site.

With regards to the open space and recreation element of GI, WDC carried out a survey with their Town and Parish Council's (as relevant to the strategic sites locations) to ensure that the GI information held as part of their PPG17 Assessment (that was undertaken in 2008) was correct and up-to-date. The purpose of this was to identify the amount and type of GI in each of the identified Parish areas due to receive development. A list of different assets was provided and each Parish Council was asked to check the information and up date the information where necessary. The survey also asked each Parish Council to comment on the condition / quality of each recreational asset. The purpose of this was to identify whether existing recreational assets required improvement works to enhance the quality and/or value of the existing provision. The information gathered was used to either up date information held about each recreational asset and / or up date the mapping GIS layers where new sites were identified.

Once the information and GIS mapping had been updated WDC reviewed each asset in each Parish and relevant surrounding areas using the locally devised standards for the provision of open space as provided in the PPG17 Assessment. This allowed a surplus and deficit assessment to be undertaken to identify whether additional open space, sports and recreation facilities would be required to be delivered to support the allocated housing growth. In addition, the recommended distance thresholds provided by the PPG17 Assessment were used to determine whether the allocated housing would be within an acceptable distance from certain facilities. This assessment was also used to identify opportunities where strategic development sites could potentially contribute to the overall green network.

Overall, information relating to deficits, accessibility to facilities, quality and value of the existing open space provision was used to identify a number of opportunities and priorities for the delivery of new and / or enhanced open space provision. This information was used to inform the open space related policies for each of WDC's strategic sites.

Strategic Sites Local Plan: Core Principles relevant to green infrastructure

Appendix 1 – Policy SCP 1 Core Principles relevant to green infrastructure

- The siting, layout, density, orientation and landscape treatment takes full account of the characteristics of the development site, its relationship with its surrounding's and views into, over and out of the site. The size, shape, height, massing, scale and proportions are compatible with the character of the surroundings;
- A landscape assessment to be undertaken and a scheme implemented which: protects features of landscape importance; mitigates any adverse landscape impact created by new development; and protects the amenities of new and existing development. All landscaping must relate to the design of development;
- The architectural detailing, building materials, floorscape and boundary treatments are suitable in the context of the surrounding area and promotes and reinforces local distinctiveness;
- The layout and design, including the provision of car parking and public spaces, will maximise surveillance and reduce opportunities for criminal behaviour;
- Ensure that development does not have an unacceptable impact upon air quality in conformity with the objectives set out in the latest Air Quality Strategy for England.
- Sustainable modes of transport are promoted including through the provision of a green travel plan. If viable and appropriate, charging points for electric vehicles should be incorporated into new residential and employment provision;
- Open space, green space, leisure and recreational provision must be provided to support

new development and meet the needs of its future occupants. Preferably, additional provision must be provided and suitably located on site. However, in exceptional circumstances where there is inadequate space on site or where there are existing facilities adjacent to the site, additional provision or the enhancement or improvement of existing provision may be sought off site to meet the needs of the development. The siting of open space, leisure and recreation provision must provide inclusive access for both future and existing residents and must also provide good connectivity with ability, to be re-established. Should it not be possible to achieve a net gain in biodiversity on site then Section 106 Planning Obligations will be required to ensure a net gain through the provision of off-site enhancement and management;

- Development must be sited in a way that allows for the protection, retention, enhancement and where appropriate the restoration, creation and management of habitats of biodiversity value. This must be informed by appropriate ecological and specific studies and protected species surveys;
- Existing wildlife corridors and stepping stones should be protected, retained and where appropriate suitably buffered, enhanced, restored and strengthened to enhance and protect the green network and improve their wildlife corridor, connectivity and ecological functions;
- Any trees or groups of trees subject to Tree Preservation Orders are retained wherever practicable. Other trees on site should be subject to an arboricultural assessment to determine whether they are also worthy of retention;
- An ancient woodland survey to be undertaken, where relevant, to ensure there will be no loss or deterioration of habitat and the provision of at least a 15 metre buffer between development and Ancient Woodland whether the Ancient Woodland is within or outside the development area.

**Strategic Sites Local Plan: Green infrastructure policy case study
Land at South Polegate and East Willingdon**

As identified in Wealden District Council’s Strategic Sites Local Plan (submission document) Land at South Polegate and East Willingdon has been allocated to deliver 700 dwellings, education, employment and other community facilities. Taking into account all of the key issues and opportunities identified as part of the Strategic sites GI work the following policies were identified and recommended to help achieve sustainable development..

Theme	Recommended policy
Landscape	<p>Policy SPW 2 m)</p> <p>The layout and design of development shall have regard to the setting of the South Downs National Park and views to and from Landscape the South Downs National Park to the site, determined through a landscape and visual impact assessment. The assessment shall inform the layout, architectural and landscape design of the development. The layout and design of development shall also have regard to the setting of The Grade II listed flint and brick built Tower Windmill at Park Farm to the south west of the site.</p>
Biodiversity	<p>Policy SPW 2 h)</p> <p>The woodland/hedgerow belt that runs north-east to south-west</p>

	(adjacent to footpath 5) should be retained, protected and enhanced. Where practicable, mature trees, species rich native hedgerows, woodland and semi-improved marshy grassland should be protected and retained. Particular regard should be given to the woodland/ hedgerow belt that runs along the sites south western boundary, the semi-improved marshy grassland located in the southern part of the site, the woodland strip located to the north of the site along the south western boundary and native hedgerows, especially species rich hedgerows;
Green corridors	<p>Policy SPW 2 i)</p> <p>The green corridor along Eastbourne Road shall be protected, retained, enhanced and strengthened to serve as both a wildlife corridor and landscape mitigation, reflecting the green frontage along the A2270. The wildlife corridor that runs parallel with Footpath 5 and the stream shall be protected, retained and enhanced. Where possible hedgerows, especially boundary hedgerows should also be protected, retained, enhanced, restored and strengthened to improve connectivity for wildlife. The creation of new wildlife corridors and stepping stones should also be considered and implemented to assist in achieving a net gain in biodiversity and to strengthen the existing green network. This could include the protection of existing wet areas/ ponds as well as maximising opportunities to enhance suitable sections of semi-improved grassland, especially where this could improve its biodiversity value and provide a grassland buffer to existing wildlife corridors and stepping stone features.</p>
Hydrology	<p>Policy SPW 2 b)</p> <p>The provision of a suitable sustainable drainage scheme shall meet the needs of the whole site identified on the Proposals Map. In addition to this, where practicable, opportunities should be sought to contribute to Eastbourne Marshes Biodiversity Opportunity Area targets which includes wetland biodiversity enhancement;</p> <p>Policy SPW 2 j)</p> <p>Protection, retention and reinstatement of existing watercourse corridors and important wetland habitats on site, and in the immediate vicinity are required, including the Langney Sewer (Main River No 23), ditches, streams, ponds and marshy grassland. In relation to all watercourses on site, a minimum of a 5 metre grassland buffer zone from development is recommended;</p>
Access	<p>Policy SPW 2 k)</p> <p>Protection of access from Eastbourne Road onto Willingdon and Jevington Footpath No. 6 'The1066 Way'. In addition, footpath 5 must be retained and incorporated into the layout and design of the development.</p>
Open space	Open space, green space and leisure and recreation provision must be provided and suitably located on site to improve access, increase

	<p>recreational opportunities and meet the needs of the development. Subject to the final proposal of the size and type of dwellings the provision of around 0.06 hectares of children’s play space, 2.5 hectares of youth and adult leisure and recreation provision, 2.5 hectares of amenity green space and/ or a park like space and 0.3 hectares of allotment provision should be appropriately located to improve access, increase recreational opportunities and meet the needs of development. Youth and adult leisure and recreation provision should be shown to meet the needs of development and could include, but not limited to, one or more of the following: grass pitches, tennis courts, and a Multi Use Games Area (MUGA). Opportunities to locate the MUGA and tennis court provision adjacent to Brightling Road Leisure Ground could be investigated to extend the range of facilities at this location. Should it not be possible to fully meet the needs of the development through on site provision, and where it is appropriate then Section 106 Planning Obligations will be required to provide new facilities and/ or improve and enhance existing open space, green space and leisure and recreation provision in the local area to meet the needs of the development. This could include but is not limited to the provision of new and/ or the enhancement of facilities at the Brightling Road Leisure Ground, the improvement and enhancement of sports pitches and facilities in the Willingdon and Polegate area, the provision of an adult gym and the provision or enhancement of green spaces in the local area.</p>
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The next stage in GI planning will work alongside the development of WDC’s Delivery and Site Allocations Local Plan. It is likely that this document will be looking to provide planning policies covering the whole of the District and will include topic areas such as landscape, green infrastructure, natural environment and biodiversity. Alongside this document WDC will be working towards producing a District wide Green Infrastructure Strategy. This work will begin in early 2014 and will involve close working with the relevant Parish Councils.

Appendix 5: Environmental Principle 4 from the East Sussex Environment Strategy

Respect and care for the built heritage of East Sussex, develop high quality environments in our towns and villages and protect and enhance the distinctive character of the county's landscapes

Our environment in facts and figures:

51% of East Sussex is part of the High Weald Area of Outstanding Natural Beauty and 14% is part of the South Downs National Park Ashdown Forest is the largest area of heathland vegetation and largest public access site in South East England English Heritage identified 33 heritage assets at risk in East Sussex in 2010.

The historic environment of East Sussex includes archaeological sites stretching over 250,000 years, Iron Age hillforts, Roman villas, Saxon burial grounds, medieval castles and ship wrecks.

The population of the county is estimated to increase by 23,400 between 2010 and 2026.

Three key issues for East Sussex:

1. The deterioration, fragmentation and loss of the distinctive character of the East Sussex landscape and the habitats it supports, through creeping suburbanisation in rural areas, loss of significant landscape features, trees and hedgerows, decline in quality and fragmentation of woodlands, and heritage assets at risk.
2. The need to regenerate urban areas, and reduce environmental crime, anti-social behaviour and the dominance of vehicles.
3. The need to manage the impacts of new development and infrastructure on the local identity of our built environment, landscape and habitats.

What needs to happen:

1. Conserve the landscape and built heritage of East Sussex in a manner appropriate to its significance and protect the distinctive character of towns, villages and wider landscape of the county.
2. Develop high quality environments in our towns and villages and improve streets and other public open spaces so that people feel safer in, and make more use of, them.
3. Reduce the environmental impact of new and existing developments and create well planned environmental and green infrastructure that supports the landscape, habitats and wildlife.

What we will do

Action

We will develop a countywide approach to green infrastructure that supports the management and restoration of the county's landscape and the habitats its supports by March 2013.

(Lead: Sussex Wildlife Trust. Partners: South Downs National Park Authority; High Weald AONB Joint Advisory Committee; Borough and District Councils; Natural England)

Action

We will develop Area Action Plans, Master Plans and other plans which improve towns and villages across East Sussex and strengthen their local character by March 2013.

(Lead: Borough and District Councils. Partners: East Sussex County Council)

Action

We will ensure that the appropriate environmental infrastructure associated with new development is planned for and that environmental objectives are represented in Local Development Frameworks by March 2012.

(Lead: Borough and District Councils. Partners: East Sussex County Council)