



GREEN INFRASTRUCTURE MAKING THE CONNECTION



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0.1 MAKING THE CONNECTION

AN INTRODUCTION TO THE NORTHAMPTONSHIRE GREEN INFRASTRUCTURE STRATEGY

The Northamptonshire Green Infrastructure Strategy represents a significant shift in environmental planning in the county. It provides a positive long-term vision by defining an environmental infrastructure that promotes a functioning landscape of high quality and character that sustains urban and rural populations and gives an environmental context for development and regeneration, and increases opportunities for access, leisure and recreation.

This document introduces Green Infrastructure (GI) in Northamptonshire and presents a fully integrated GI Strategy for the county, building upon previous studies that have been undertaken for North Northamptonshire and West Northamptonshire. The Strategy presents GI as an Overarching Concept encompassing a set of goals that establish a framework for delivering a sustainable future.



The Strategy's overarching message is that GI lies at the heart of planning in Northamptonshire and underpins decision making at all scales and across all disciplines, not just those that are directly related to the environment. It is an approach that can effectively draw together the skills, experiences and resources of a range of agencies, public bodies and the private sector by enacting a shared commitment to deliver GI in the county and through this make a positive contribution to the delivery of sustainable development, economic prosperity and quality of life.

Whilst the fundamental message is that GI can occur anywhere and at any scale, the GI Strategy also presents a strategic map of the county that identifies the areas where GI Investment is most likely to be able to deliver benefits over a wide range of agendas. It is therefore a powerful mechanism to target funding and delivery initiatives. The final output is a Strategic Framework Plan which illustrates the location of Sub-Regional and Local GI corridors. These are at the strategic sub regional scale, and as such are capable of informing wider national or regional GI strategies, although they are also refined enough to guide local scale delivery, and future GI studies for individual villages and towns or particular areas of countryside. It also identifies two connective networks, comprising the Biodiversity and Sustainable Movement Networks.

0.1

0.2 WHAT IS GREEN INFRASTRUCTURE?

GI planning in Northamptonshire is a strategic and collaborative approach to regeneration, conservation and land management that addresses the environmental, social and economic aspects of growth and development, changes within both urban and rural landscapes, and the fragmentation of habitats.

At the strategic level, GI is an environmental system that supports the health, well-being, and aesthetic values of communities and the maintenance of functional ecosystems. It provides a process that makes the most of existing and future assets, enables the environment to support and maintain natural and ecological processes, and sustains land, air and water resources.

GI is integral to the health and quality of life of sustainable communities within Northamptonshire and throughout the Milton Keynes and South Midlands Growth Area.

THE NORTHAMPTONSHIRE APPROACH

Prior to the Northamptonshire assessment Green Infrastructure was traditionally applied to urban contexts, with GI strategies developed for particular built up areas of London to present strategies for linking areas of urban green space. However, Northamptonshire required a new and pioneering approach in recognition of the rural character of the county. In this respect, the Northamptonshire GI Strategy represents an important step forward in GI planning in the U.K. as it is the first to define GI networks for both urban and rural areas at a sub regional scale of assessment.

The approach evolved over the course of two independent but sequential studies. Phase 1 examined GI planning within North Northamptonshire and developed a Strategic Framework for this part of the county. Following on from this, in the Phase 2 study for West Northamptonshire, the approach underwent further consultation and the methodology was reviewed and refined to guide the development of a GI Strategy for the west of the county. This refined methodology and approach developed in the Phase 2 study was then applied to a re-evaluation of the North Northamptonshire study findings in order to bring it up to date and ensure full compatibility with the West Northamptonshire GI Strategy. The results of the two studies were then amalgamated to present a fully integrated GI model for the entire county.



0.3 THE OVERARCHING CONCEPT

AN OVERARCHING CONCEPT

The Strategic GI Framework study for Northamptonshire places Green Infrastructure at the heart of planning and decision making at all scales and across all disciplines. Through this overarching concept, agencies are encouraged to bring together their skills, experiences and importantly, funding streams and opportunities. Through this collaborative working, projects can be delivered that not only place an emphasis upon delivering environmental enhancement and sustainable development, but also represent gains across a broad range of social, and economic agendas.

GREEN INFRASTRUCTURE GOALS

GI Goals represent the core aspirations for a sustainable future and range from a commitment to the most prudent use of available resources, to the development of a sustainable transportation network within the county, and the delivery of a healthy environment. The aspiration is that all development in the future would be required to deliver on a number of these goals.

The goals are broad in scope, and meet many of the objectives set out by Government Departments. At this top tier of decision making in the UK, there is therefore an inherent commitment for cross discipline policy making and guidance. The following key goals have been identified together with the links to Government Departments.

GREEN INFRASTRUCTURE GOALS	KEY GOVERNMENT DEPARTMENTS
Rich and Diverse Landscape	Department of Environment, Food and Rural Affairs (Defra)
Prudent Use of Resources	Defra & Department of Trade and Industry
Vibrant Rural Economy	Defra & Department of Trade and Industry
Sustainable Transport Network	Department for Transport
Healthy Environment	Department of Health and Defra
Cultural Canvas	Department of Culture Media and Sport (DCMS)
Outdoor Classroom	Department for Education
Sustainable Communities	Department for Communities and Local Government (DCLG)



'Landmarks and Signs' Doddington Photo-construction 8' x 4'
John Harper 2005

Below this national tier, regional and local planning authorities have made a commitment to enact policies and strategies that will aid the delivery of GI goals. The incorporation of the GI approach and goals within the statutory planning system provides the means by which local planning officers can insist that new development delivers the maximum number of relevant GI goals for a given project anywhere in the county, and regardless of whether the project is located. So, for example, this could comprise a major development such as new housing, a bypass or flood alleviation scheme, or a small community renewables or open space initiative in a rural village.

How individual projects will deliver GI goals will depend on local aspirations and demonstrable need. It will also depend upon the scale of development, with larger projects necessitating a greater number of goals to be addressed. Whatever the scale of the project, however, and the goals that it seeks to address, it is the requirement for a collaborative approach to project planning, design and delivery that is important.

0.3 THE OVERARCHING CONCEPT



COLLABORATIVE WORKING

Under the banner of GI, rather than simply commenting upon a proposal, or offering specific advice, individual organisations will need to come together in order to take an holistic view of the opportunities that the project represents, and identify the mechanisms, tools, skills and funding for their delivery. The process of drawing relevant organisations together will be a key role for a GI Executive.

As an example, as part of a new housing development, developers may be required to work closely with the Environment Agency and English Nature to deliver water course and bankside enhancement that functions as a new recreational area, access route, habitat reservoir and also contributes to a wider flood alleviation scheme. Specific design requirements would also be made that ensure that all part of the development reinforces and enhances local landscape character. Other partnership organisations may also be drawn in to exploit opportunities for educational or cultural projects, or to integrate renewable energy initiatives or community based projects such as a neighbourhood allotment.

FUNDING AND DELIVERY

Through the collaborative approach that is inherent in the identification and delivery of GI, a range of funding streams would be drawn together to deliver the multi-functional aspirations, with a number of budget sources made available. Local delivery from the 'bottom up' is also important to the success of GI. Communities will be encouraged to demand a higher quality of development and become involved in small scale projects that contribute to more significant GI gains.

Projects and developments would need to demonstrate their contribution to delivering a multi-functional green infrastructure network. Priority and targeting of resources would therefore be given to those projects that lie within the strategic level of Sub Regional and Local GI Corridors as it here that the multiplicity of networks and resources combine to maximise multi-functional gains. This 'backbone' of Strategic Corridors is examined later. As a minimum, however, delivery of the relevant part of the **Biodiversity** and **Sustainable Movement Networks** would be required as these are the fundamental components of the strategic GI backbone. Prior to a review of the Strategic Framework, these two networks are examined in Sections 4 and 5.

REFER TO:
FIGURE 1 - THE ORGANISATIONAL FRAMEWORK

0.3

0.4 THE BIODIVERSITY NETWORK

ACHIEVING A FUNCTIONING BIODIVERSITY NETWORK

A landscape of fragmented habitats is evident across much of Northamptonshire. As a consequence, connectivity has become a key factor in species persistence and habitat function. For many species the current highly fragmented habitat resource leaves many of them vulnerable to extinction by virtue of the small size and isolated nature of the remaining populations. This will lead to a continuation of the loss of biodiversity that has been experienced across the UK over the last 60 years.

If a vibrant and robust biodiversity resource is to be achieved in Northamptonshire, just maintaining the status quo will not be sufficient. This is reflected in one of the overarching principles at a sub-regional level that states that Green Infrastructure should maintain and enhance biodiversity to ensure that development and implementation results in the net gain of Biodiversity Action Plan habitats. The Biodiversity Network element of Green Infrastructure therefore plays an important role in the maintenance and enhancement of biodiversity into the future. By expanding the area of habitat, improving connectivity and enhancing the quality of the Biodiversity Network, the chances of species becoming extinct within Northamptonshire will be reduced and there will be a resource more capable of adapting to future changes in climate.

In addition, a functioning and coherent biodiversity resource will provide opportunities for significant landscape restoration, improved access to areas of high quality countryside and a framework for environmental education, active and passive recreation and a fitting setting for historic sites and monuments. In particular, the biodiversity resource has strong connections with the cultural and historic landscape since the biodiversity of an area is strongly linked to man's management of area over long periods. So, for example, ancient woodlands are of historic as well as biodiversity importance.

The importance of 'Networks of Natural Habitats', and the role they have to play in biodiversity conservation, is recognised in the latest government guidance: Planning Policy Statement 9 Biodiversity and Geological Conservation. Key sections of PPS9 illustrating this principle are set out below.

PPS9 BIODIVERSITY AND GEOLOGICAL CONSERVATION

Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas.

NETWORKS OF NATURAL HABITATS

Natural England also recognises the importance of landscape scale habitat creation and restoration as a key part of the overall strategy for maintaining biodiversity in England (Refer to English Nature's research report on 'Landscape Scale Biodiversity Scale Opportunity Maps and habitat restoration').

0.4 THE BIODIVERSITY NETWORK

IDENTIFYING AND MAPPING THE BIODIVERSITY NETWORK

The method and approach developed in the Phase 1 Strategic GI Study for the identification of the Strategic Biodiversity Green Infrastructure Network in North Northamptonshire was applied for the identification of the network within West Northamptonshire. Full details of this process are included in Part 2, Appendix 7.1 of the Phase 1 North Northamptonshire Strategic Framework Study. A short summary of the process is included below, together with the further development of the process in respect of mapping of species distribution.

The starting point of the Biodiversity Network assessment with regard to biodiversity was to identify and map the existing ecological resources, using existing spatial data on designated sites including Sites of Special Scientific Interest, Nature Reserves and County Wildlife Sites. In addition, the Ancient Woodland and Grassland Inventories were used to create a map of the existing biodiversity resource, resulting in a patchwork of largely fragmented sites. These included the following key habitat types:

- Woodland;
- Wetland and open water;
- Calcareous grassland;
- Heathland and Acid grassland; and
- Neutral grassland.

Once the mapping of existing habitats was completed, the next stage involved the identification of habitat clusters or reservoirs which contained the main resource areas for woodland, wetland / open water, calcareous grassland, and neutral grassland. The principle behind this approach was that habitat creation or enhancement within these resource areas would seek to improve habitat connectivity for that broad habitat type, creating a larger and more interconnected habitat resource within that reservoir.

The Biodiversity Network therefore comprises a series of reservoirs and links, which have been identified for the habitats that were mapped. Large habitat blocks and groupings of smaller blocks of habitat in close proximity to each other are referred to as reservoirs. Linear habitats or a series of unconnected habitat patches in close proximity to each other that actually, or have the potential to link the reservoirs, are referred to as links. It is important to note that any proposals for habitat creation would emerge through positive land management and working in co-operation with landowners, and not through land acquisition.



'Landmarks and Signs' Cogenhoe Photo-construction 8' x 4' John Harper 2005

0.4 THE BIODIVERSITY NETWORK

OPPORTUNITIES FOR LANDSCAPE SCALE HABITAT ENHANCEMENT

In recent years attention has been given to the potential for the restoration of semi-wilderness areas in the UK (Taylor, 2005). This is more than an aspiration. Both the theory and practice of landscape scale habitat enhancement is growing, and significant projects are already underway throughout Europe and the UK. For example, the Cambridgeshire Fenland Project, focused on the Wicket Fen National Nature Reserve, proposes the re-creation of wet fen, open water, wet pasture, scrub and carr. In Holland the establishment of the Oostvaardersplassen reserve of over approximately 5000 hectares is also allowing the natural development of wildland with minimal human interference. English Nature, in their research paper 'Opportunity Maps for Landscape Scale Conservation of Biodiversity: A Good Practice Guide', endorses this approach.

As a consequence of intensive agriculture and land management for many hundreds of years, and the subsequent fragmentation of semi natural habitat Northamptonshire, re-wilding is not as viable as elsewhere in the UK. However, the Biodiversity Network component of Green Infrastructure is a significant opportunity to explore the landscape scale habitat enhancement concept, and its potential as part of a holistic and long term environmental planning tool.

Landscape scale habitat enhancement of extensive areas of land is a significant step forward in nature conservation thinking. It takes advantage of existing resources and maximizes the extent and functionality of significant areas of landscape for biodiversity gain. If successful in the future these areas would represent heartlands of habitat resource and the ideal locations in which to explore measures for the re-introduction of species that have long been lost to the area, or provide stepping stones for species responding to future changes in climate.

However, given the nature of settlement and land-use in lowland England and in particular the agricultural character of Northamptonshire, such areas are not devoid of settlement and productive land-uses and in this respect, landscape scale habitat enhancement needs to respond to the requirement to maintain the productivity, aesthetic quality and functionality of the landscape, in addition to addressing the needs of biodiversity.

The extent to which such landscape scale habitat enhancement in Northamptonshire is possible, given the complex land ownership and productive land uses, is uncertain and would present a significant challenge. Nevertheless, the promotion of extensive areas of land with a high proportion of natural and semi-natural habitat cover, both terrestrial and wetland, could be feasible in the future given emerging changes in the agricultural environment, and should be considered further. It is important to stress that any changes of this nature would only be through close dialogue and collaborative working with farmers and landowners and not through land acquisition. In this way positive land management opportunities and solutions could be achieved.

These large areas would continue to support productive land uses, but also provide a larger forest or wetland environment at a landscape scale, and managed with an emphasis on the needs of biodiversity. Such areas would act not only as major reservoirs for biodiversity conservation from south west to north east Northamptonshire but also provide a major environmental resource for people living in or close to Northamptonshire.

The findings of the Biodiversity Network Habitat Reservoirs and Links Assessment identify a significant opportunity for such an approach in Northamptonshire. The areas identified include an already rich and ecologically diverse system of woodland, grassland and wetland habitat that extends from the Whittlewood Forest through Yardley and Salcey Forest and into the Middle and Upper Nene Valley wetland mosaic onto Rockingham Forest, and as such are making the most of the available resource.

REFER TO:

FIGURE 2 - THE NORTHAMPTONSHIRE STRATEGIC BIODIVERSITY NETWORK

FIGURE 5 - THE SUSTAINABLE MOVEMENT NETWORK

0.5 THE SUSTAINABLE MOVEMENT NETWORK

INTRODUCTION TO THE SUSTAINABLE MOVEMENT NETWORK



The Sustainable Movement Network is people focused and derived from patterns of human activity and sustainable movement through the landscape. It is principally concerned with connectivity and identifies the principal networks and opportunities for sustainable people movement from settlements to countryside, but importantly links key assets and destinations.

It encompasses connections from centres of population and linkages with key environmental resources and destinations including Strategic Green Space, Heritage and Culture assets, Leisure, Recreation and Tourism destinations, integrated with the Access and Movement and the Transport, Services and Infrastructure Networks. Although not defined by the biodiversity resource and potential habitat reservoirs, it will also include links to key biodiversity resources such as Local Nature Reserves and accessible woodlands. Within the complex multiplicity of connections and journeys there are principal movement networks and hubs of activity, particularly where there are clusters of key assets and destinations.

The hierarchy of routes recognises the multitude of journeys that might be made within the county, and to some extent beyond the county boundary into neighbouring local authority areas. It takes advantage of existing public rights of way whenever and wherever possible, provides physical connectivity between known assets. Where feasible, routes have been designed to take advantage of areas of green space, and this is particularly the case within the urban areas. However, in rural areas too, specific attention has been paid to providing routes that are direct and yet take advantage of areas of accessible green space such as country parks, local nature reserves and parklands. This is in order to maximise the attractiveness of the network, and encourage exploration of Northamptonshire's fine landscapes and open space facilities.

AN INTERCONNECTED SYSTEM FOR SUSTAINABLE MOVEMENT

Connectivity is a key objective of Green Infrastructure, and in particular connecting people within urban and rural areas and also to the landscape and the multitude of potential destinations. The aspiration is for everyone to have immediate access to attractive, safe and clean streets, exciting urban spaces, public realm and green place within towns, and countryside routeways that link assets throughout the wider rural landscape. In addition it is proposed that these routes form part of a coherent network that is legible and easily navigable, and capable of adapting to changing circumstances.

To meet this aspiration, a Sustainable Movement Network for Northamptonshire has been developed with the purpose of setting out a clearly defined hierarchy of sustainable movement. The overarching aim is to provide both urban and rural communities across the county with the confidence and incentive to undertake the miscellany of journeys.

A number of principal functions and characteristics have been identified for the Sustainable Movement Network. It should be:

- An interlinked, continuous and seamless network;
- Linked to wider sustainable of transport modes such as bus, rail or cycle hire;
- Clearly defined and well sign posted;
- Safe to use at all levels, with lighting where appropriate;
- Attractive and inspiring; and
- Clearly coded to give confidence of use, and identity

0.5 THE SUSTAINABLE MOVEMENT NETWORK

A HIERARCHY OF USE



The Sustainable Movement Network presents a hierarchy of routes that provide a means by which journeys can be planned and executed with confidence. The network is described as operating from doorstep to countryside, but in reality it offers a framework for a multitude of route options providing connectivity to a wide diversity of destinations ranging from parks and green spaces, areas of ecological or historical interest, and also to places of work, local shops and community and education facilities.

Within the urban environment the network takes advantage of existing parks and areas of green space, and in the countryside, much of the network links centres of population with key assets and points of interest in the landscape.

In order to provide clarity to the structure and function of the Sustainable Movement Network a clear hierarchy of routes and ways has been developed comprising three connected tiers (Local, Secondary and Primary). These tiers are described in more detail and illustrated below. The distribution of these routes is illustrated in the countywide Strategic Sustainable Movement Network plan. Primary Networks for Northampton and Daventry that operate at the settlement scale have been prepared. These are illustrated in the West Northamptonshire Green Infrastructure Strategy.

The three tiers of the sustainable movement network have been defined using existing public rights way, cycle tours or established routes. Notwithstanding the comprehensive nature of this network, however, other routeways exist, ranging from the definitive rights of way network comprising footpaths, bridleways and byways to county paths such as the Nene Way. These routes remain as an important and complementary part of the sustainable movement network.

SUSTAINABLE TRANSPORT SOLUTIONS

The provision of sustainable transport solutions that increase the opportunities for pedestrian and cycle journeys, is fundamental to the successful functioning of the Sustainable Movement Network. The network would be supported by a revitalised and fully integrated public transport system, as well as a number of other exciting initiatives that have already proven to be successful on the continent. This might include, for example, cycle hire facilities at bus and train stations, cycle 'pick up and drop off' initiatives in major towns, and public transport that enables return or part journeys to be made by train, bus or mini-bus under a single ticket. In doing so the Sustainable Movement Network begins to offer an attractive alternative to car usage, and encourages healthier and more environmentally friendly journeys to be made within the county.

The Northamptonshire Accessibility Strategy provides the statutory framework to support these initiatives and aspirations in respect of improving accessibility across the county. In working towards a long term strategy, the importance of the role of walking and cycling is identified including the need to achieve a modal shift in key congested routes, and improving accessibility to key destinations. Details of the strategy to encourage cycling and walking are also covered in the Local Transport Plan (2006-2011). The role of the public rights of way system is also examined in the Accessibility Strategy including the importance of building on the wide ranging opportunities and initiatives set out in the draft Rights of Way Improvement Plan (2005). In addition to an examination of the public transport system, the role of community and voluntary transport systems is also considered, as these are likely to make an important contribution to sustainable transport solutions in the future linked to the needs and aspirations of both urban and rural communities.

0.5 THE SUSTAINABLE MOVEMENT NETWORK

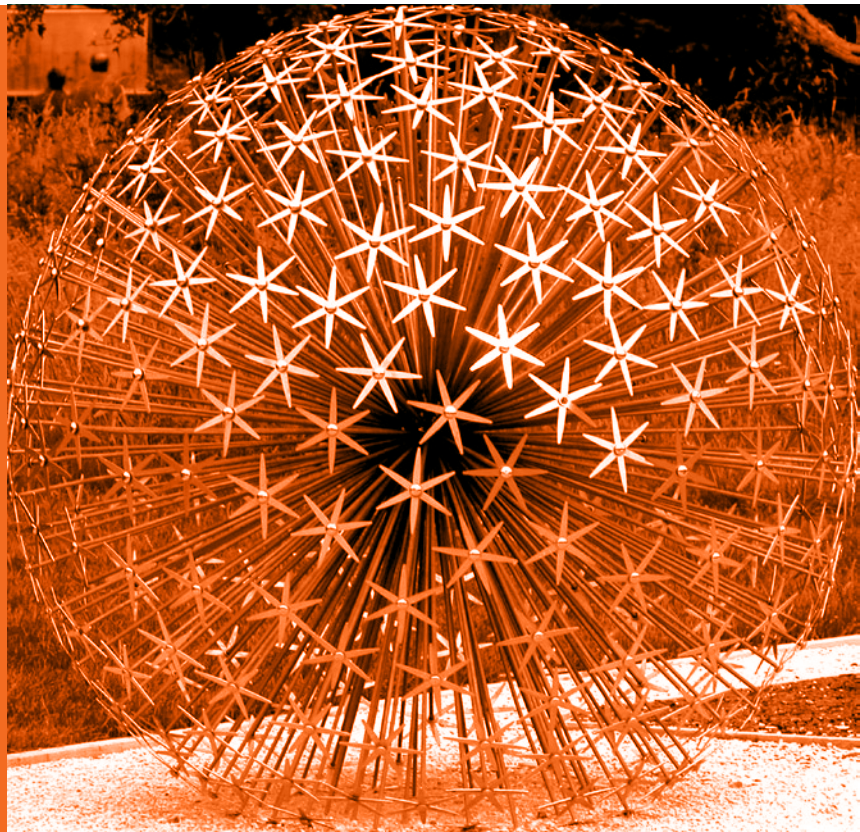
THE NEED FOR INVESTMENT

For the Sustainable Movement Network to function, significant investment will be required to deliver routes that are of a suitable quality for foot and cycle traffic. This will be essential in giving users of the network the confidence that their chosen journey will be achievable. Attention would be paid to ensuring that the primary and secondary networks (comprising Green Ways, Blue Ways, Inter Urban Neighbourhood Connectors and Countryside Connectors) are constructed to a particular specification, with gentle gradients, standard widths and adequate signage, although special attention will be paid to design and materials specification to ensure compatibility with local landscape characteristics. Within urban areas the Inter Urban Neighbourhood Connectors will benefit from similar standardised and high quality construction, and again, particular attention will be made to ensuring that whilst legible as part of the overall network, design and detailing will ensure compatibility with locally distinctive characteristics.

Although the Local Network that lies below the Primary and Secondary routes is not illustrated in this countywide summary or the strategic studies, it is nevertheless important as it is the means by which access to the wider network is provided. At the most local scale, the yellow routes offer access to an individual's home or place of work, with orange routes providing access to local shops and community facilities, as well as the wider network.

THE SUSTAINABLE MOVEMENT NETWORK HIERARCHY

The Sustainable Movement Network is composed of a hierarchy of interconnected route ways. Each level of the hierarchy performs a separate function, but also contributes to the whole network. To clarify the structure and function of the hierarchy, a colour coded system has been introduced. It is suggested that this classification could be utilised to identify routes to aid legibility and navigability. The hierarchy and colour references are summarised below, and described in more detail in the following section.



0.5 THE SUSTAINABLE MOVEMENT NETWORK

Network Level	Type	Function	Composition
Local	Suburban Roads (Yellow Route)	Link individual residences together and to local assets Connect private to public space	<ul style="list-style-type: none"> Private drives and gardens Suburban roads Homezones
	Urban Green Streets (Orange Route)	Provide Access to neighbourhood facilities and links into the wider network	<ul style="list-style-type: none"> Shopping Streets Market Squares Arterial routes
Secondary	Inter Urban Neighbourhood Connectors (Pink Route)	Link Neighbourhoods through parks and open spaces	<ul style="list-style-type: none"> Footpaths and cycle routes, through open spaces and parks where possible
	Countryside Connectors (Red Route)	Link villages and hamlets together and to assets in the wider countryside	<ul style="list-style-type: none"> PROW network Cycle routes
Primary	Green Way	Strategic links between major settlements through open countryside	<ul style="list-style-type: none"> PROW network Cycle routes
	Blue Way	Strategic links between major settlements through open countryside along rivers, canals or navigations	<ul style="list-style-type: none"> PROW network Canal towpaths Canals and navigations

A JOURNEY FROM DOORSTEP TO COUNTRYSIDE

THE LOCAL NETWORK: DOORSTEP AND NEIGHBOURHOOD

At the most local scale of the network hierarchy, an intricate network of Yellow Routes and Orange Routes exist. This local network provides access from the doorstep to a multitude of destinations via the wider secondary and primary networks that exist at a more strategic level. These are the routes that will carry the majority of journeys made close to home, perhaps between home and the local park, shop or school. Essentially these represent the link between public and private space, between the individual resident and the wider community which they inhabit.

Yellow Routes: Connecting from the Doorstep

Yellow Ways are the most local and intimate component of the Sustainable Movement Network, and comprises suburban roads, homezones and local routes within neighbourhood areas in towns, villages or hamlets. These are the most often used routes and encompass the greatest number of route options. Initiatives to improve the appearance of streets and public areas within community neighbourhoods should be encouraged whenever possible to enhance the appearance and sense of security of the network, for example through the planting of street trees or the creation of pocket or neighbourhood parks.

Orange Routes: Neighbourhood Links

Orange Routes are the main arteries within a community neighbourhood of a town or village. They might constitute a local shopping street, area of public realm or a major arterial route linking separate centres of population or activity. Orange Routes are an important link between the wider network and the more private community spaces associated with yellow routes. Initiatives to enhance Orange Routes are therefore important, and might include the creation of tree lined boulevards or public realm enhancement.

THE SECONDARY NETWORK

The Secondary Network provides a series of connective routes for both towns and rural areas within Northamptonshire and form the link between the local and strategic networks. At this next level of the movement hierarchy, the network is designed to carry significant numbers of people between neighbourhoods and their destination, which might range from a major market, place of employment or education, or a notable district scale or rural recreational facility.

The Secondary Network functions within both urban and rural areas, so Pink and Red Connectors have been defined in order to differentiate between inter urban neighbourhood connectors (Pink), and countryside connectors (Red).

0.5 THE SUSTAINABLE MOVEMENT NETWORK

The Pink Connectors: Connecting Urban Neighbourhoods

Inter Urban Neighbourhood Connectors build upon the local network of Yellow and Orange Routes to provide connectivity between different neighbourhoods within urban areas, and connections into the strategic primary network of Green and Blue Ways. Pink Ways are routed to take advantage of major parks and green space assets within the urban envelope, as well as other notable features such as areas of civic or historic character, to encourage wider use and enjoyment. They would be well lit and clearly demarcated pedestrian and cycle routes, and designed to respect local distinctiveness through the choice of paving materials and design details such as street furniture and associated railings. In connecting areas of urban green space, long term possibilities exist for urban greening of these routes to provide a network of green corridors throughout the urban envelope.

The Red Routes: Countryside Connectors

In rural areas, Countryside Connectors build on the local movement networks, linking rural communities together, and to assets within the wider countryside. They also provide connections to the primary network of Green and Blue Ways. The proposed network comprises an intricate web of routes that provide direct connections between neighbouring villages, often via areas of publicly accessible greenspace, historic parks, country parks or woodlands. Much of the network is located within open countryside, and as a result, significant sections have been designed to take advantage of existing public rights of way.

Red Connectors would comprise footpath tracks, and cycle lanes and bridleways where appropriate. They would be constructed in durable materials that are in keeping with their immediate rural context, and level and type of usage. In order to avoid visual clutter in the open countryside, signage and other furniture would be low key and constructed from materials sympathetic to the surrounding area and context.

THE PRIMARY NETWORK

The Primary Network is a Sub Regional strategic movement network providing links between major areas of population and key assets within Northamptonshire and beyond into neighbouring counties. Whilst the network is composed of long, continuous sections, the proposed network has been designed to also operate at a local level, with major sections being made up of a number of interlinked shorter connectors similar to the Countryside Connectors within the Secondary Network.

The Primary Network forms the backbone of sustainable movement in the Sub Region and is composed of two parallel and complementary networks – the Green Ways and the Blue Ways. They are of equal status, but differentiated because of their different character and movement opportunities.

In view of the strategic and Sub Regional importance of the Primary Network, this part of the overall Sustainable Movement Network has been explored in more detail. As a consequence, an overview of the network is examined below followed by descriptions of the various route sections for both the Green Ways and Blue Ways.

The Green Ways: Land Focused Strategic Network

The Green Way network would provide a continuous network of safe, attractive, and well sign-posted system of footpaths, cyclepaths and bridleways forming overland routes through open countryside. They would be well promoted and accessible and connect attractive, culturally and visually diverse towns, villages, open spaces and identified important assets. They would connect major urban areas and settlements to their rural hinterland and settlements and to key assets and destinations in the wider area.

The design of the proposed network has utilised existing public rights of way, although in some instances sections of roadway are required to complete the network. In these instances, particular attention would need to be given to providing traffic calming measures, or adjacent footpaths/ cycleways. Over much of the landscape Green Ways would comprise surfaced tracks, footpaths and cycle lanes and be constructed of durable materials appropriate to their immediate rural context. In order to avoid visual clutter in the open countryside, signage and other furniture should be low key and constructed from appropriate materials. In many respects the appearance and function of Green Ways would be similar to Red Ways. However, their strategic importance may be reflected in differentiations in signage, furniture and materials. It may be necessary to articulate the difference through a more detailed and sensitive approach to route design and specification, although this would need to be reconciled against the requirement to respect and enhance local landscape characteristics.

Such treatment of Green Ways would provide variation in the traveller's experiences and offer significant opportunities to enhance local character. Where possible, local landowners might be encouraged through targeted Environmental Stewardship grants to undertake landscape enhancement works in proximity to the routeways, such as through appropriate hedgerow restoration or tree planting.

0.5 THE SUSTAINABLE MOVEMENT NETWORK

The Blue Ways: Water Focused Strategic Network

The proposed Blue Ways network would operate and function in a similar way as the Green Ways. However, their route is dictated by river courses, including sections with formal navigation, and extant stretches of canal. Towpaths and riverside footpaths would therefore offer the same opportunities for pedestrian and cycle traffic as Green Ways, although these will have the additional benefit of travelling close to water, and through some significant areas of wetland and water habitat.

Blue Ways would also offer additional travel options, with potential for 'boat taxis' to service popular stretches of the network, operating a similar service to minibuses or other forms of public transport on the Green Ways network.

Canals and navigations are also a popular recreational resource in themselves, offering opportunities for active sports such as canoeing and more passive recreation such as fishing. It would be hoped, therefore, that the inclusion of the Blue Ways at the upper level of the sustainable movement network in Northamptonshire would encourage additional exploration of this significant resource.

Blue Ways would also be important to holiday makers, and the many visitors to Northamptonshire, and indeed residents of the county take holidays on the many miles of canal or navigation. By incorporating canals and navigations into the sustainable movement network, visitors would be encouraged to explore the wider Northamptonshire landscape from moorings or marinas via the network of Green Ways and Red Routes.

REFER TO:

FIGURE 3 - A JOURNEY FROM DOORSTEP TO COUNTRYSIDE

FIGURE 4 - THE NORTHAMPTONSHIRE STRATEGIC SUSTAINABLE MOVEMENT NETWORK

0.6 STRATEGIC AREAS FOR GREEN INFRASTRUCTURE INVESTMENT

PRIORITY AREAS FOR STRATEGIC GI INVESTMENT

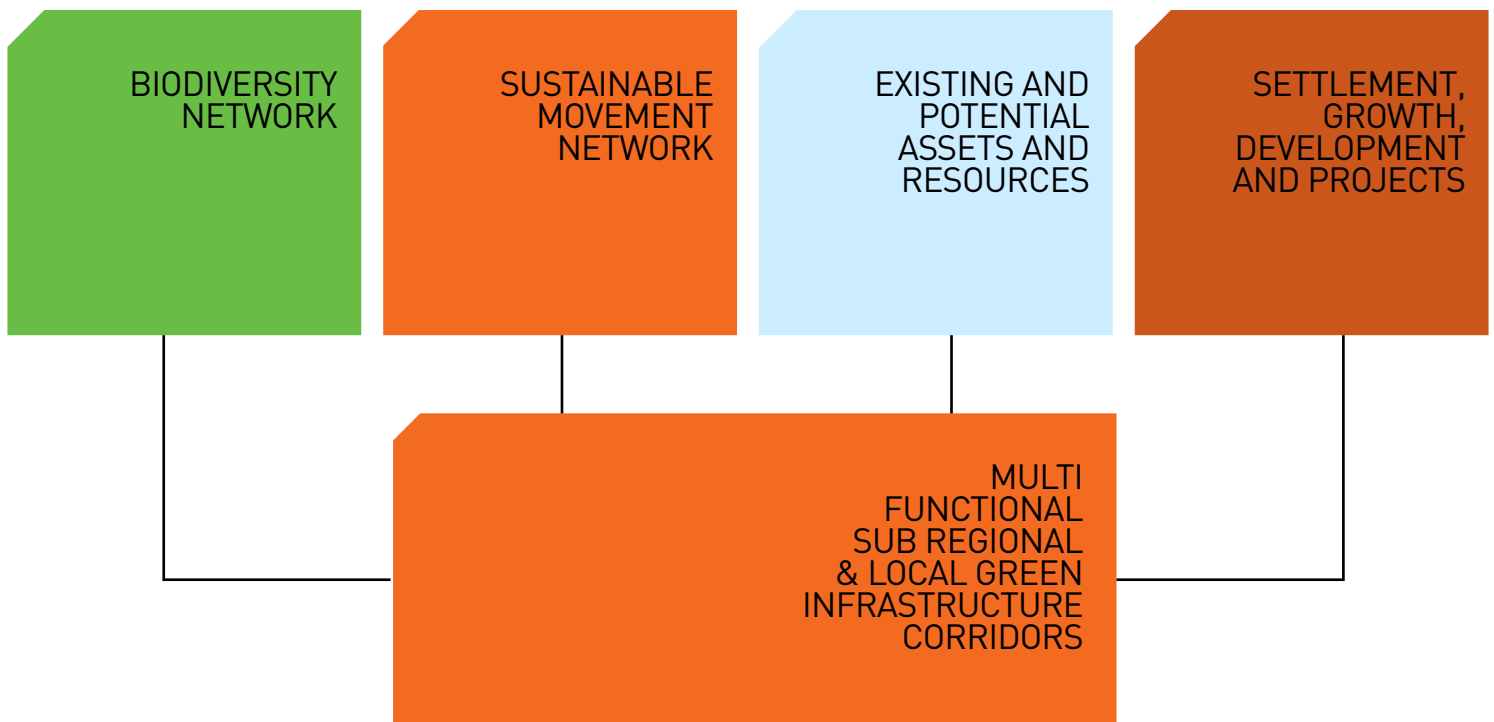


GI embraces a network of opportunities and delivery processes that is applicable across the whole of Northamptonshire. However, at a strategic and county level of analysis, there are areas within the county where demonstrable concentrations of GI opportunities and benefits occur. It is here that the multi-functional nature of GI is particularly evident and where the interface of multiple benefits and stakeholder interests can provide a focus for prioritising areas for investment.

IDENTIFYING A STRATEGIC FRAMEWORK: THE SUB REGIONAL GI CORRIDORS

The determination of a strategic framework of areas for GI investment is developed through analysis of the existing and potential assets and resources within the study area, and the principal GI networks. Thus, through a synthesis and overlay of the Biodiversity Network of habitat reservoirs and linkages, the Sustainable Movement Network patterns and connections, and the multiplicity of key assets and destinations, broad strategic patterns can be identified. In addition, areas identified for settlement growth, and locations of key developments and projects provide further sources of activity that contribute to the identification of key patterns and locations of GI activity.

The interplay of these different forces and opportunities defines the strategic network of Sub Regional GI Corridors across Northamptonshire, and where both existing assets and potential GI opportunities can deliver multi-functional benefits. These Sub Regional GI Corridors define a 'top tier' for priority areas for GI investment.



0.6 STRATEGIC AREAS FOR GREEN INFRASTRUCTURE INVESTMENT

IDENTIFYING A LOCAL FRAMEWORK: THE LOCAL GI CORRIDORS

Below the Sub Regional level, a further network of corridors provides connectivity at a more local level. Here, the evidence of multi-functional activity and benefits may be less pronounced or only be driven by one particular network or resource. These define the Local GI corridors. This next tier, although of lower priority for investment at a county or strategic level, may nevertheless provide valuable local benefits and will become a focus of investment where local actions and developments drive projects and opportunities forward.

A STRATEGIC GI FRAMEWORK PLAN

The Strategic Green Infrastructure Framework Plan for Northamptonshire illustrates the interconnected network of Sub Regional and Local GI Corridors across the county. They are not intended to indicate rigid corridors for Green Infrastructure provision but instead identify broad landscape zones within which Green Infrastructure related proposals should be focused. These multi-functional zones will encompass a range of objectives.

It should be regarded as a conceptual framework to aid the decision making process with regards to GI delivery on the ground. It is not intended to be prescriptive or inflexible, and as a consequence the network delivered in the longer- term may vary depending on a multitude of strategic and local issues, not least those relating to the aspirations of local communities, land ownership and a changing development context.

THE SUB-REGIONAL GREEN INFRASTRUCTURE CORRIDORS

The Sub-Regional corridors within Northamptonshire broadly follow strategic waterways and valleys such as the Nene. Other strategic corridors follow notable concentrations of biodiverse areas or well defined movement patterns and opportunities, including linkages between major settlements. The strategic level corridors are noteworthy for their mosaic of land uses, natural and built resources and settlements. They often function as transportation routeways, support flood storage areas, or are rich heritage resources, and offer recreation and leisure opportunities. These corridors already function as Green Infrastructure resources, and provide GI related benefits. They therefore form a 'backbone' of sub-regional significance for the GI resource within the county.

0.6 STRATEGIC AREAS FOR GREEN INFRASTRUCTURE INVESTMENT

These Sub Regional Corridors are intended to become fully multi-functional zones with the ability or potential to deliver the following functions:

- Access and Movement – linking settlements to their hinterland, destinations and the wider strategic Green Infrastructure Sustainable Movement Network; corridors provide sustainable links through attractive green routes with clear way marking and other relevant facilities;
- Biodiversity – providing a focus for the enhancement and linkage of the biodiversity resource;
- Enhancement of flood risk, water management and other natural process roles;
- Enhancement and promotion of environmental character to celebrate the distinctiveness of these different corridors;
- Enhancement and promotion of heritage and cultural assets; and
- Enhancement and promotion of recreation and leisure, providing the context for the county's Sub-Regional Greenspace and other destinations.

Green Infrastructure related proposals are therefore likely to focus on the enhancement and restoration of the existing resource and assets in these corridors, as well as the creation of new resources.

LOCAL GREEN INFRASTRUCTURE CORRIDORS

These corridors 'link up' the Sub-Regional Strategic Corridors to complete the comprehensive Green Infrastructure network. They are zones within which a mosaic of land uses, natural and built resources and settlements occur although the extent of 'multi-functionality' is less developed.

They are essential for providing the network linkage between two Sub-Regional GI corridors, or between a Sub-Regional Corridor and settlements thus providing the doorstep to countryside 'connections'.

These corridors will require substantially more resources to improve their functionality than the Sub-Regional corridors. Asset and resource creation will be at the centre of the GI related proposals. These local corridors have the potential to become truly multifunctional, and therefore with the existing or potential functions as detailed above, are essential to delivering Green Infrastructure related benefits at the local level.

URBAN AREA CONNECTIVITY

Sub Regional and Local Green Infrastructure Corridors extend through urban areas. While these routes are indicative at the Sub-Regional level, they demonstrate the importance of connectivity within settlements and the links that extend across the wider landscape. As an example of the local resolution of the process, a potential network has been developed for Northampton and Daventry. Although this was developed as an integral part of the development of the Sustainable Movement Network, at this level of resolution it links to key assets and destinations within the urban area and also takes account of Biodiversity resource.

0.6 STRATEGIC AREAS FOR GREEN INFRASTRUCTURE INVESTMENT

GI Delivery Principles

To ensure the vision of a multi-functional GI network is achieved in the long term, delivery should be guided by the following key principles:

- The delivery of multi-functional green infrastructure is fundamental, and proposals should be formulated to secure this wherever possible;
- The delivery of a connected network is also important to ensure strategic objectives are achieved with regard to multi-functionality;
- Both Sub-Regional and Local Corridors identified on the framework plan are intended as broad areas of opportunity only, and are open to adjustment/refinement as long as proposals adhere to the other related principles;
- Preference should be given to GI proposals which complement other GI assets and resources in the locality;
- The principle of 'net gain' should be secured where there is to be a loss in a GI resource;
- Ensuring the quality of the GI resource is retained or delivered is essential;
- Opportunities to consider socio-economic as well as environmental gains should be sought during the delivery of GI at all times;
- Long term monitoring of GI delivery and management is important, through stage reviews of both existing and proposed resource, to ensure delivery opportunities are not missed;
- Options for partnering and funding of GI delivery should be proactive and flexible including potential competition for delivery; and
- Opportunities for GI delivery should be taken as and when they arise; both flagship and small scale projects will therefore be important in delivering change in the long term.

These principles should be adopted by GI delivery partners to assist with the consideration of GI proposals during the development of the local network in the long term.

0.6 STRATEGIC AREAS FOR GREEN INFRASTRUCTURE INVESTMENT

A Strategic Green Infrastructure Framework for the County

The overall Strategic Green Infrastructure Framework Plan applies to the whole of Northamptonshire and combines the findings of the Phase 1 strategy for North Northamptonshire and the Phase 2 strategy for West Northamptonshire. Its overall aims are to:

- provide a framework for the co-ordinated delivery of Green Infrastructure related proposals in the long term at a strategic level;
- provide a strong environmental infrastructure framework within which planned settlement growth and associated landscape change can be positively managed (ie a plan-led approach) to assist with the delivery of sustainable communities and natural systems which can respond to changing global context; and
- connect communities to spaces and places, people to nature, and thus contribute to improved environmental quality, quality of life and well being, as well as link to wider agendas regarding social inclusion/regeneration and economic prosperity.

In further detail it aims to:

- deliver improved environmental quality, and thus 'liveability';
- celebrate the unique experience, image and visual qualities of Northamptonshire's landscape;
- radically improve connectivity between urban and rural landscapes and thus connect spaces and places, and to and through urban areas, the countryside, the Nene river floodplain, its tributaries and other destinations;
- create multi-functional 'working' landscapes which deliver a wide range of interlinked environmental, social and environmental benefits;
- in particular, work with (rather than against) environmental processes to improve flood-risk and water management systems, biodiversity, and air quality; and
- provide the landscape/townscape context for appropriate urban development.

REFER TO:

FIGURE 5 – THE STRATEGIC GREEN INFRASTRUCTURE FRAMEWORK FOR NORTHAMPTONSHIRE

0.7 MAKING IT HAPPEN

POLICY AND PRIORITIES FOR ACTION

Strategic policies and guidelines have been prepared to facilitate Green Infrastructure delivery in the county.

Green Infrastructure policy places a requirement on developers and other agents of environmental change to consider collaborative approaches to problem solving and find solutions that present multiple benefits across a number of agendas. It also encourages agencies that are not traditionally concerned with the environment to provide support and guidance to help ensure that new development contributes to their specific agenda, such as health, education and antisocial behaviour. For example, a new housing development may have a particular requirement for a specified amount of recreation or green space. By adopting the GI approach and thus complying with GI policy, the layout of the scheme may be adapted or designed especially to provide improved connectivity through the provision of footpaths and cycle routes that are part of a strategic network; space for nature that contributes to a larger sub regional pattern of connected habitat; and the provision of imaginative recreational facilities that give educational and physical health benefit to local people. Additional benefit might be drawn from configuring the scheme to allow grey water recycling and sustainable flood water defences, with guidance from the police on designing out crime. Agencies would be invited to contribute specific advice and perhaps funding to help deliver relevant parts of the overall scheme, and through this, help deliver their own targets and commitments. The adoption of such practices would secure a higher quality of development that enhances the environment and makes a significant contribution to the quality of life of current and future residents.



Forestry Commission

SUB-REGIONAL CORRIDORS

The Sub Regional GI Corridors that have been identified for the county are intended to become fully multifunctional zones with the ability or potential to deliver a range of functions. They are the focus for Green Infrastructure funding and delivery in the short and middle term and as such represent areas for priority investment within the wider and longer- term delivery of GI across the whole of the county.

Priorities for Action are presented for each of the Sub Regional Corridors that have been identified in the county. Their purpose is to focus delivery on the enhancement and restoration of the resource and assets in these corridors, as well as the creation of new resources and opportunities.



**GREEN
INFRASTRUCTURE
MAKING THE CONNECTION**

PARTS 1-3



PART 1 AN INTRODUCTION TO GREEN INFRASTRUCTURE

1.0 SETTING THE SCENE

FIGURE 1 – REGIONAL GREEN INFRASTRUCTURE PLANNING

1.1 BACKGROUND TO THE STUDY

1.1.1 COMMISSIONING THE STUDY

This report presents the Northamptonshire Green Infrastructure Strategy. It was commissioned by the River Nene Regional Park (RNRP) Project Team, supported by the former ODPM, now renamed the Department for Communities and Local Government (DCLG). It presents introductory text outlining the purpose and objectives of the Strategy and the vision that will drive Green Infrastructure in the county. It also draws together and presents the findings of two independent but interrelated studies for West and North Northamptonshire as well as combined these studies to present a single GI strategy for the county.

In addition to the RNRP, the strategy has been developed in partnership with Interreg / SPARC, English Nature, the Countryside Agency, English Heritage, the Environment Agency, Sport England, Northamptonshire County Council and the local authorities within Northamptonshire.

LDA Design was responsible for project design, development and delivery, with support from Alison Millward Associates in respect of a Stakeholder Workshop that was held during the consultation phase of the West Northamptonshire phase of the project. Thanks are extended to the RNRP team and all stakeholders and consultees involved in the development of the Northamptonshire Green Infrastructure Strategy.

1.1.2 SCOPE OF THE REPORT

This report first of all outlines the national and regional context for GI provision and then presents a Vision for Green Infrastructure (GI) in Northamptonshire. Following on from this is a summary of the methodology adopted and a series of maps that present a combined GI masterplan for Northamptonshire as well as guidance on GI delivery in the county. The final two sections present GI strategies for West and North Northamptonshire. These detailed studies present the baseline analysis and research that informed the county GI plans.

1.1.3 TAKING FORWARD THE COMMITMENT TO GI IN NORTHAMPTONSHIRE

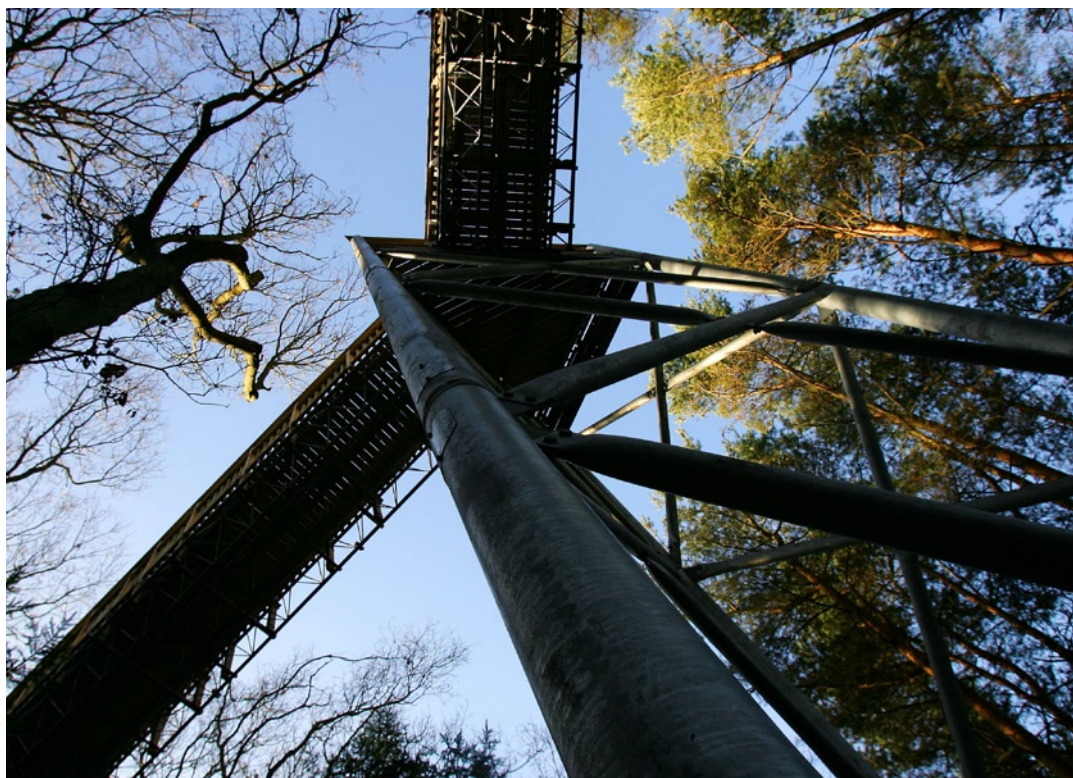
This GI Strategy is part of an ongoing commitment to GI development and delivery across the MKSM Sub Region and the wider East Midlands Region that seeks to take a proactive approach to environmental protection and enhancement whilst embracing economic regeneration and growth.

This commitment is set within broader Government initiatives to deliver a bold and exciting environment for existing and planned communities that in the long term will include enhanced biodiversity assets and environmental character, improved access to sustainable modes of transport, enhanced leisure and recreational opportunities, and more sustainable modes of managing land and water resources. Central to this is the Government's drive towards sustainable development, One Planet Living and regeneration within both rural and urban locations. These multiple and often interrelated activities will benefit from an environmentally led and coordinated approach that is inherent in the principles that underpin GI. The process will help to deliver a better quality of life for sustainable communities (Box 1).

1.0 SETTING THE SCENE

Sustainable Communities are places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all.

ODPM March 2005



1.2 WHAT IS GREEN INFRASTRUCTURE?

The concept of Green Infrastructure (GI) has been developing for some time as an important environment led planning tool. GI is now being increasingly and successfully integrated into UK regional and local policies and actions, although the impetus has been largely focused within the urban areas of the South East of England, notably the Thames Gateway. Through the commitment and co-ordinating role of the RNRP in particular, Northamptonshire is now playing an important part in taking the concept of GI forward within the MKSM Sub Region and demonstrating a pioneering approach that is applicable at a county and sub-regional level, and to extensive rural areas.

Figure 1 illustrates the extents of the Thames Gateway, Milton Keynes and South Midlands and London-Standed-Cambridge-Peterborough Growth Areas. Existing and proposed GI studies are also illustrated.

GI means many things to many people. To clarify the understanding, and the nature and scope of GI within the Milton Keynes and South Midlands (MKSM) Growth Area, the MK & SM Environment & Quality of Life (EQOL) Sub Group produced '*Planning for Sustainable Communities, A Green Infrastructure Guide for Milton Keynes and the South Midlands*'. This advisory document included a definition of GI. (Box 2)

Green Infrastructure "is a network of multi-functional greenspace, provided across the Sub-Region. It is set within and contributes to a high quality natural and built environment and is required to deliver 'liveability' for new communities".

Planning for Sustainable Communities, A Green Infrastructure Guide for Milton Keynes and the South Midlands

1.0 SETTING THE SCENE

In the context of the Northamptonshire GI Project, and in consultation with a wide range of stakeholders, this definition has been expanded to provide a more comprehensive understanding of the nature, scope and potential of GI. (Box 3).

GI planning in Northamptonshire is a strategic and collaborative approach to regeneration, conservation and land management that addresses the environmental, social and economic aspects of growth and development, changes within both urban and rural landscapes, and the fragmentation of habitats.

At the strategic level, GI is an environmental system that supports the health, wellbeing, and aesthetic values of communities and to the maintenance of functional ecosystems. It provides a process that makes the most of existing and future assets, enables the environment to support and maintain natural and ecological processes, and sustains land, air and water resources.

GI is integral to the health and quality of life of sustainable communities within Northamptonshire and throughout the Milton Keynes and South Midlands Growth Area.

At the broadest level GI planning is an holistic approach that seeks to maximise the contribution that the environment can make to the principles of sustainable development through the conservation, enhancement and creation of landscapes and townscapes. The multifunctional nature of GI extends to its planning and delivery. Importantly, it encourages different organisations to work together, and to design, fund and deliver sustainable development that makes a positive contribution to the natural and human environment. Multifunctional GI and associated developments can only truly succeed through this shared commitment to the process of collaborative working and the pooling of resources and expertise.

1.3 WHY IS GREEN INFRASTRUCTURE IMPORTANT?

Many land and water conservation initiatives, including flood alleviation schemes are reactive and often focus on specific areas of land rather than the wider environment. Green Infrastructure is an alternative approach to planning that is proactive, multi-scale and multi-functional. It provides a framework for holistic conservation, planning and regeneration **and is key to positive environmental planning**.

Major built infrastructure developments such as roads or power distribution schemes succeed because of the long established process of careful planning, design and investment between a number of different disciplines, well in advance of implementation. Green Infrastructure represents a similar co-ordinated interdisciplinary approach to environmental planning and regeneration, comparable to that used in built or 'Grey' infrastructure planning. For Green Infrastructure to succeed, the same degree of co-ordination, forward planning and investment is required.

GI is beginning to be applied to strategic environmental planning and design throughout the country, and has been successfully launched as a key process within the major growth areas in London and the southeast of England. (Ref: *Creating Sustainable Communities: Greening the Gateway Implementation Plan, ODPM 2005*). In Northamptonshire a large and growing partnership of public and private stakeholders is advancing the concept of Green Infrastructure through their commitment to address a number of social, environmental and economic challenges associated with the Growth Agenda. The challenge is to apply the principles of GI that have been successful in urban areas and at a smaller scale, and within a mainly urban context, to the wider context of Northamptonshire, a largely rural county extending to 2,360km² (235,900 hectares). Building from this countywide approach, the aspiration is to link to adjacent authorities within the sub region to provide a seamless and interrelated regional network.

GI is a significant opportunity. Notwithstanding the benefits to the environment, GI will contribute to the development of better places in which to live, work and invest. It will help create places with a discernible and attractive character that function well, are well connected and appealing. It will help forge a closer relationship between urban and rural areas, with the countryside functioning more successfully as a place that feeds and sustains urban populations; provides sustainable and renewable energy, provides an outdoor classroom for learning and is an attractive and characterful environment for exploration and recreation. It will do so by combining the efforts, skills and funding of a wide range of organisations in the public and private sector.

1.0 SETTING THE SCENE

GI is challenging. GI places the landscape, and more broadly, the environment at the heart of the development process, and environmental processes at the heart of sustainable development and the economy. It requires investment and a collective desire to see it developed and implemented. To succeed, GI will need coordination, sustained investment and a long-term commitment between a wide range of public and private bodies. This commitment must be embedded at every level from national to local and by national, regional and local government authorities, agencies and organisations; land owners and land managers; businesses; developers; the voluntary sector; and the communities that make up the population of Northamptonshire. It requires a new and positive way of thinking and working that involves close collaboration between these partners. The long-term benefits cannot be overestimated. GI provides the opportunity for Northamptonshire to demonstrate and take the GI process forward at a county level and establish a benchmark for environmental planning.

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The long-term benefits cannot be overestimated. GI provides the opportunity for Northamptonshire to demonstrate and take the GI process forward at a county level and establish a benchmark for environmental planning.



2.0 THE BIGGER PICTURE

FIGURE 2 – THE ORGANISATIONAL FRAMEWORK

2.1 A GLOBAL INITIATIVE



For many generations there has been widespread exploitation of the earth's resources to fuel industrial and social progress, but with little regard to long-term impacts on society and the environment. At a global scale we are seeing the consequences of these activities, such as in the increasing evidence for climate change. In this country, the effects are evident in the erosion of our diverse and attractive landscapes, through agricultural intensification, the expansion of urban areas which often pay little respect to their surroundings, and the fragmentation and degradation of semi natural habitats.

In the late 20th century, the emergence of human and environmental rights marked a shift towards a more intuitive relationship with the environment. The Earth Summit in Rio, and the signing up by many nations to the principles of sustainable development, was an important milestone. The establishment of a new political economy based on the principles of ecology and informed by environmental ethics is likely to be the centre ground of political debate through the early decades of the 21st century. In the UK, the recently published Stern Report on the economics of climate change, and the Government's commitment to leading the world on the issue of CO₂ emissions is testimony to this.

Green Infrastructure (GI) is a mechanism by which a positive shift can be made towards placing the environment at the heart of planning, economics and decision making. GI is being actively promoted in the USA, where the concept and process began. It is now beginning to succeed in the growth areas of the southeast of England, with GI projects emerging in the Thames Gateway, such as within the South Essex, East London and Kent Thameside Green Grids. Northamptonshire's Strategic GI Framework study is pioneering the process of taking forward a strategic approach at a county level, which includes extensive rural areas.

In parallel with the holistic approach to GI planning is a move towards landscape scale conservation and enhancement of the biodiversity resource. English Nature (now Natural England) has recently published a research paper setting out a model for landscape scale conservation of biodiversity, and a series of opportunity maps illustrating where habitats could be created. This is set within the context of global initiatives for more ambitious 'wilderness' restoration that seeks to address the long standing approach to ecology that has generally been to protect and conserve nature perceived as being under threat. The new move sees conservationists becoming more proactive and creative in the face of habitat fragmentation and loss, agricultural intensification and climate change. A revolutionary new agenda for managing existing semi-natural landscapes in Britain, and for expanding and connecting these areas, is emerging. Central to this strategy is the imperative to restore and repair damaged habitat and ecosystems, promote the existing biodiversity resource, and reintroduce lost or declining plant and animal species, while working to reconcile human needs and livelihoods in balance and harmony with the needs of nature.

This new approach is particularly pertinent in the context of the changing agricultural economics following the introduction of the Single Farm Payment and decoupling, which breaks the link between subsidy and production. Cross compliance now requires farmers and landowners to maintain their land in good agricultural and environmental conditions. In the long term, as they critically appraise the economics of the management of farmland, there may be opportunities, subject to radical reappraisal of Environmental Stewardship grants and incentives, to place greater emphasis on the expansion of biodiversity rich areas, and potentially convert and manage parts of the land as 'semi-wilderness'.

2.0 THE BIGGER PICTURE



2.2 A NATIONAL REGENERATION PRIORITY

The former ODPM's Sustainable Communities Plan sets out a long-term programme of action for delivering sustainable communities in both urban and rural areas. It aims to tackle housing supply issues in the South East, low demand in other parts of the country, and the quality of our public spaces.

The Plan includes a significant increase in resources and major reforms of housing and planning, but also signals a new approach to how and what we build, and delivering a better quality of life or 'liveability' for communities. The £22 billion programme of action focuses on the need to co-ordinate the efforts of all levels of Government and stakeholders in bringing about development that meets the economic, social and environmental needs of future generations. The Plan consists of several key elements, two of which are directly relevant to Green Infrastructure:

- **Liveability.** The Plan sets out how the Government intends to intensify efforts to improve the local environment of all communities. This includes cleaner streets, improved parks and better public spaces.
- **Protecting the countryside.** The Plan outlines how land will be used more effectively.

This focus on 'liveability' and the environment has provided a platform for the wider promotion and understanding of the principles that underpin Green Infrastructure and its importance in the delivery of a healthy and enhanced environment for everyone.

The Green Infrastructure Strategy for Northamptonshire forms an integral part of delivering the Government's aspirations and objectives specifically within the county, but also for the wider growth area and beyond.

2.3 GREEN INFRASTRUCTURE IN THE NATIONAL PLANNING POLICY FRAMEWORK

The inclusion of GI in Government planning policy is a significant landmark in strategic and collaborative environmental planning and delivery and represents an essential part of the Government's commitment to meeting sustainable development objectives.

Planning Policy Statement (PPS) 1 - Delivering Sustainable Development is a fundamental driver through which the implicit requirement to take due regard to environmental issues in meeting sustainable development objectives is set out. PPS7 - Sustainable Rural Development defines the basis for Sustainable Development in Rural Areas. Planning Policy Guidance (PPG) 17 - Sport and Recreation is also of relevance. It highlights the requirement to undertake open space audits and strategies, which can inform GI strategies at both the strategic and local scale. PPS9 - Biological and Geological Conservation is also of significance, as it clearly recognises the role that functioning ecosystems can have in promoting sustainable development, and contributing to rural renewal and urban renaissance.

With GI forming a fundamental component of environmental infrastructure and processes, it is an essential part of meeting Government objectives and policy and the overarching mission to provide a better quality of life for sustainable communities.



2.0 THE BIGGER PICTURE



2.4 PARTNERSHIP WORKING AT GOVERNMENT LEVEL

The principles and benefits that underpin GI extend across all Government Departments and Agencies. Partnership working and collaboration is fundamental to the promotion and delivery of GI. Within Northamptonshire, the key Government Agencies concerned with the environment have supported the evolution of the Strategic Green Infrastructure Framework for the county and played an important part in the development of the methodology and process. They have pledged their continued support, and provided statements of their respective roles and ongoing commitment to GI. The statements from Natural England (incorporating the Countryside Agency, English Nature and the environmental activities of the Rural Development Service), the Environment Agency, and English Heritage are set out below. In addition, CABE and CABE Space, who fulfil a vital role in the urban and built environment, have also been included. This is an important endorsement of the commitment to continued collaborative working.

Natural England's Statement

Natural England was created in October 2006. This single new organisation integrates the Landscape, Access and Recreation division of the Countryside Agency with English Nature and the environmental activities of Defra's Rural Development Service. Natural England will work for people, places and nature, with responsibility for enhancing biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas; promoting access, recreation and public well-being, and contributing to the way natural resources are managed, so that they can be enjoyed now and by future generations.

Natural England's functions include:

- promoting nature conservation and protecting biodiversity;
- conserving and enhancing the English landscape;
- securing the provision and improvement of facilities for the study;
- understanding and enjoyment of nature;
- promoting access to the countryside and open spaces and encouraging open-air recreation; and
- contributing in other ways to social and economic well-being through management of the natural environment

Natural England will work in partnership with the Environment Agency, who will continue to lead on environmental protection and improvement of soil, air and water, the Forestry Commission, who will continue to lead on sustainable forest management, and with English Heritage in respect of the historic environment.

Natural England is committed to helping deliver high quality, locally distinctive and environmentally sustainable development, including the provision of multi-functional green infrastructure. Indeed, Natural England has set a target of establishing green infrastructure strategies in all of England's growth areas by 2007.

2.0 THE BIGGER PICTURE

English Heritage's Statement

English Heritage (EH) is the Government's statutory adviser on the historic environment. Although sponsored by the Department for Culture, Media and Sport (DCMS), English Heritage works with a range of Government Departments, notably the DCLG and Defra, to help realise the potential of the historic environment. EH works in partnership with the central government departments, local authorities, voluntary bodies and the private sector to:

- Conserve and enhance the historic environment;
- broaden public access to the heritage; and
- increase people's understanding of the past.

and meets those responsibilities by:

- acting as a national and international champion for the heritage;
- giving grants for the conservation of historic buildings, monuments and landscapes;
- maintaining registers of England's most significant historic buildings, monuments and landscapes;
- advising on the preservation of the historic environment;
- encouraging broader public involvement with the heritage;
- promoting education and research;
- caring for over 400 other historic properties on behalf of the nation;
- maintaining the National Monuments Record as the public archive of the heritage; and
- generating income for the benefit of the historic environment.

Green Infrastructure offers significant opportunities for the protection and enhancement of the historic environment through site specific projects and integrated landscape conservation initiatives. Green Infrastructure facilitates the use of historic and cultural elements of the landscape for education and for promoting tourism. Sites and landscapes of historical and archaeological interest can also be managed for wider ecological gains, as well as providing opportunities for the retention of traditional land management skills.

The Environment Agency's Statement

'We are the Environment Agency. It's our job to look after your environment and make it a better place – for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, government and society as a whole, we are making your environment cleaner and healthier.

We are concerned with a wide range of environmental issues, ranging from effective flood management, environmental management systems, and renewable energy through to sustainable development, local environmental quality and 'liveability'. All aspects of our activities have a relevance to the development and integration of Green Infrastructure and the provision of a healthy and functioning environment. For example, the implementation of creative solutions arising from flood risk assessment and management schemes, and water resource planning and conservation, can generate the provision of Green Infrastructure links and wider benefits.

We support the Northamptonshire Green Infrastructure strategy and Green Infrastructure in the wider sub-region. Green Infrastructure should be promoted within the regional and sub-regional agendas so it can be explicitly recognised within the context of wider environmental priorities. The Northamptonshire Green Infrastructure Strategy identifies mechanisms for delivery, governance and long term management, which are essential for the successful implementation of strategic Green Infrastructure within the MKSM growth area.'

2.0 THE BIGGER PICTURE

CABE and CABE Space's Statement

CABE (the Government Commission for Architecture and the Built Environment) has the role of inspiring people to demand more from their buildings and spaces. It works towards delivering a higher quality of life for people and communities across England, with particular concern for those living in deprived areas. CABE make the case for change, gathering hard evidence, providing educational opportunities and through direct help on individual programmes and projects.

Green Infrastructure is an integral process that will support CABE towards meeting many of its aims, in particular:

- Public Space - To give people the opportunity to get more involved in the design and management of public space, including parks, streets and play areas, and to drive up local authority management standards.
- Environment - To communicate clearly to the outside world, based on hard empirical evidence, the ways in which a better designed built environment can deliver greater long term value to society.
- Planning - To ensure that the revised statutory planning system emphasises the importance of securing quality outcomes, and is delivered by better trained, more committed planners and committee members who recognise regeneration and neighbourhood renewal as their principal strategic goals.

CABE Space is the Government's advisor on parks and green space, and aims to bring excellence to the design, management and maintenance of parks and public spaces in towns and cities. Its role and aspirations is particularly relevant to the establishment of Green Infrastructure within the built environment.

The support from these key Government Agencies and organisations is vital. If the wide ranging benefits of GI are to be fully realised, and supported by funding at a national level, it is essential that Government Departments also give their commitment and work in collaboration.

The interrelationships are numerous, as are the potential combinations of partnership working. GI lies at the hub of a wide range of processes with the potential to deliver a broad range of environmental, social and economic benefits via interdepartmental links at a Government level and collaboration between numerous organisations. This key role of GI lying at the hub of processes and partnerships, and as an overarching concept, is illustrated on Figure 2 and developed in more detail in Section 5.0.

The future development and delivery of GI, and establishment of multi-functional benefits, would profit from the setting up of an organisation to guide and co-ordinate the numerous stakeholders and their wide ranging interests, as well as funding streams. The nature and role of such an organisation is explored in more detail in Section 11.0, and in the supporting report on Governance. In summary, this report concludes that the RNRP, through its current links and understanding of GI, would be particularly appropriate and effective to take up this co-ordinating role and champion and manage the GI delivery process.

2.5 A FUTURE NATIONAL GI STRATEGY?

In addition to the EMRA GI study (see below), other Government Office Regions are addressing GI. In support of the principles of regional spatial planning, there is now an exciting opportunity to integrate adjacent GI studies to ensure seamless links and connectivity at every level, leading to the future development of regional, inter-regional, and in the longer term, a national GI Strategy and Network.

3.0 A REGIONAL PRIORITY

3.1 EAST MIDLANDS REGION



The Regional Spatial Strategy for the East Midlands (RSS8), 2005, sets out the regional priorities for a clear, long-term spatial vision and development strategy for the East Midlands up to 2021.

The main priorities areas that the strategy aims to address are:

- **Housing:** affordable housing on brownfield land;
- **Economy and Regeneration:** policies on employment land and town centres;
- **Natural and Cultural Resources:** new targets on biodiversity, waste reduction and management and flood risk; and
- **Regional Transport Strategy:** aims to reduce the need to travel, reduce traffic growth and improve public transport.

Green Infrastructure has the potential to help deliver the sustainable development priorities identified in RSS8 for the coming years. In recognition of its importance, the East Midlands Regional Assembly's (EMRA) Integrated Regional Strategy identified the provision of Environmental Infrastructure as a priority for action to encourage the sustainable use of environmental resources within the region. In recognition of this, EMRA and its partners appointed consultants to undertake a scoping study for the region (Box 4).

Environmental Infrastructure - Phase 1, Green Infrastructure Scoping Study for the East Midlands, completed in 2005, is a scoping study funded by the Regional Assembly, English Nature, Countryside Agency, Sport England, Environment Agency and EMRA to define the priority areas for provision of Green Infrastructure in the region. It is the first phase in the delivery of wider Environmental Infrastructure. The study focused on a series of pilot study areas as a demonstration of the process rather than a comprehensive evaluation of the entire region. The Regional Spatial Strategy for the East Midlands (RSS8), 2005

Although located within the East Midlands region, Northamptonshire was not included in the Phase 1 EMRA GI study, as the Strategic Green Infrastructure Framework for the county had already commenced. Furthermore, at a sub-regional level, the Northamptonshire study was focused towards its inclusion within the MKSM Growth Area and the agenda for growth for a number of the settlements within the county. However, both the EMRA and Northamptonshire studies are indicative of the growing recognition of the strategic importance of GI in delivering the region's vision, objectives and priorities. Through Northamptonshire's more advanced position in the development of a county level GI Strategic Framework and 'masterplan', it is in a strong position to act as demonstrator for extending this process across the region.

3.0 A REGIONAL PRIORITY



3.2 INTER-REGIONAL CONNECTIVITY

A number of Green Infrastructure studies and projects are in progress in the MKSM Sub-Region and the East of England Region. These share common boundaries or are located in close proximity to the county, so are particularly relevant to the Northamptonshire study as a result of the opportunities for connectivity (Box 5).

The Bedfordshire and Luton Strategic Green Infrastructure Plan:

In response to the growth agenda planned for the MKSM Growth Area, the Bedfordshire Green Infrastructure Consortium has been established. It identifies Green Infrastructure as the network of multi-functional greenspace consisting of public and private assets in urban and rural locations, and it seeks to create a coherent linked network. Consultants are currently developing the Green Infrastructure Network.

The Buckinghamshire Strategic Green Infrastructure Plan:

Buckinghamshire County Council has commissioned a study to prepare a Green Infrastructure Plan for the county that articulates a clear vision and spatial strategy for Green Infrastructure that promotes and enhances the special character of Buckinghamshire. The plan will comprise a map and supporting text that will illustrate existing assets and the potential for new Green Infrastructure related to growth pressures allocated to the area by the MKSM Sub-regional Strategy and the South East Plan (Consultation Draft).

The Greater Peterborough Green Grid:

Peterborough lies within the London – Stansted – Cambridge – Peterborough Growth Area. A partnership of agencies, local authorities and other organisations have steered a scoping study to examine the case for an ambitious environmental initiative for the Greater Peterborough area. A broad scale concept plan has been developed illustrating Green Grid Opportunity Areas and Strategic Green Links for the town and its urban fringe landscape.

Strategic Open Space Strategy for the Cambridge Sub Region

Cambridgeshire Horizons have commissioned a study of GI in the Cambridge sub-region looking at existing Green Infrastructure and the potential for new. The purpose of the study is to draw up a bold and imaginative strategy for the provision of large scale Green Infrastructure for the Cambridge Sub Region over the next 20 years to complement and support the significant housing growth that is planned over this period. The study has used the TCPA's definition in Biodiversity by Design to describe Green Infrastructure as the Sub-regional network of protected sites, nature reserves, greenspaces and greenway linkages.

Cambridge East

At a more local scale Cambridge East is a proposed urban extension to the east of Cambridge. It will provide new open space and Green Infrastructure in the form of a new country park, linked to the centre of Cambridge by a new green corridor running through the heart of the development along the River Cam. The development will deliver access to the countryside east of the city that is currently hindered by Cambridge Airport. It will also provide opportunities to link to Wilbraham and potentially form part of the Wicken Fen Vision, comprising the reclamation of 6000 hectares of farmland to fen habitat by the National Trust, reached via the proposed Bridge of Reeds over the A14. The Bridge of Reeds project is supported by the East of England Development Agency and would form a new landmark feature of national significance

3.0 A REGIONAL PRIORITY

Beyond the East Midlands and East of England projects are a number of other more advanced GI assessments and projects, primarily located in the South East of England and focused on the Thames Gateway Growth Area. Here, the Green Infrastructure movement has been encapsulated in the 'Greening the Gateway' greenspace strategy, and its promotion and framework for delivery through the Implementation Plan that was launched in 2005.

With these developing GI projects, Northamptonshire is strategically located at the bridging point to influence existing and potential future studies, and advance GI development in the Midlands region and beyond. The emerging regional GI network, with Northamptonshire occupying a focal position, is illustrated in Figure 1.



3.3 GREEN INFRASTRUCTURE IN THE REGIONAL POLICY FRAMEWORK

At a regional level the commitment to Green Infrastructure is embedded in the Regional Spatial Strategy for the East Midlands (RSS8), which incorporates the 'MKSM Sub-Regional Strategy'. The Strategy has six principal objectives, one of which is:

'To ensure that development contributes to an improved environment... protecting and enhancing environmental assets (including landscape and biodiversity) and providing green space and related infrastructure (Green Infrastructure)';

3.4 GREEN INFRASTRUCTURE IN THE NORTHAMPTONSHIRE PLANNING FRAMEWORK

Tiering down from the regional level, the commitment to incorporate and deliver GI within the planning framework is now in progress. The North Northamptonshire Joint Planning Unit incorporated GI in the 'Preferred Options for North Northamptonshire' public consultation document. The GI network developed in Phase 1 of the project in North Northamptonshire is included on The Preferred Strategy plan in the document, together with supporting text setting out the principles and benefits of GI. This is an important first phase in ensuring that GI forms an integral part of the emerging joint North Northamptonshire Local Development Framework and Core Spatial Strategy shared by the local authorities.

Within West Northamptonshire, the District and Borough Councils will be producing a Joint Core Strategy as part of their emerging LDFs. It is anticipated that there will be an integrated approach to GI, with each authority drawing from the findings of the wider Northamptonshire GI Strategy to ensure that a seamless and integrated approach is incorporated in the Core Strategy.

In addition to integrating GI within the statutory Core Spatial Strategies and Proposals Maps, GI can also guide and form an essential component of Area Action Plans, Site Specific Documents and Design and Access Statements. This underpins the principle that it is relevant at every level, from doorstep to the wider countryside.

3.0 A REGIONAL PRIORITY

3.5 NORTHAMPTONSHIRE STRATEGY DOCUMENTS



Within Northamptonshire, a number of key strategy documents are important drivers for the integration of GI objectives within the wider planning framework.

3.5.1 COMMUNITY STRATEGIES

Local Authorities have a statutory duty to prepare Community Strategies that inform and are linked to Development Plans. In view of the strategic and countywide level of the GI Framework, reference is confined to Northamptonshire's Community Strategy. However, the Community Strategies for each of the local authorities within the county will each articulate the specific aims and objectives that are appropriate to their area including the aspiration to deliver an enhanced environment that is embodied in the provision of green infrastructure.

Community Strategy for Northamptonshire 2004-2013

The overriding ambition of the Community Strategy is about 'helping to shape and develop a place':

- where people enjoy a high quality of life;
- where everyone can contribute to and benefit from sustained economic performance and success; and
- where the strong physical, social and **Green Infrastructures** we need are well planned, secure, sustainable and well maintained.'

The purpose of the strategy is to establish a framework for the collective efforts that the providers of public services and commercial, community and voluntary bodies need to make to improve the lives of people who live and work in Northamptonshire, and those who visit the county.

3.5.2 A BIODIVERSITY ACTION PLAN FOR NORTHAMPTONSHIRE, 2002

Biodiversity is the variety of life on earth. A *Biodiversity Action Plan for Northamptonshire* (BAP) is Northamptonshire's response to the UK Biodiversity Action Plan. It sets out a framework through which the people of Northamptonshire can ensure that the county's threatened natural heritage is conserved and enhanced for future generations.

The Northamptonshire BAP identifies the habitats and species that are priorities for conservation and enhancement and comprises two main sections consisting of Habitat and Species Action Plans. Each plan details what needs to be done to halt and reverse the decline for its respective species or habitat, outlines how this will be done, and by whom and by what date, in the form of a series of actions and targets.

The plan and outlines four key **Themes for Action**:

- **Keeping Track of Wildlife:** the need to have a good, current knowledge about Northamptonshire's biodiversity, in particular the need for co-ordinated biological recording and for the establishment of a Northamptonshire Biodiversity Records Centre to hold and disseminate biological information. This will ensure that development plan policies and planning decisions are based upon up-to-date information (PPS9: Principle 1) and that biodiversity targets and the effectiveness of planning policies can be accurately and effectively monitored.
- **Keeping Wildlife on the Map:** the need to protect existing wildlife sites and species populations.
- **Putting Wildlife Back on the Map:** the need to restore degraded wildlife habitats, create new areas for wildlife and, if habitat requirements can be met, re-introduce certain scarce or locally extinct species.
- **People and Wildlife:** the need to work in partnership to achieve the plan objectives and realise the important contribution that biodiversity makes to people's quality of life.

3.0 A REGIONAL PRIORITY

3.5.3 THE NORTHAMPTONSHIRE DRAFT RIGHTS OF WAY IMPROVEMENT PLAN (ROWIP)

The Countryside and Rights of Way (CROW) Act 2000 required every local highway authority to publish a draft ROWIP by July 2005, and in particular to assess:

- *The extent to which local rights of way meet the present and likely future needs of the public;*
- *The opportunities provided by rights of way for exercise and other forms of open-air recreation and the enjoyment of the area; and*
- *The accessibility of rights of way to the blind or partially sighted and those with mobility problems.*

In response to this statutory requirement, the Northamptonshire Draft ROWIP was prepared and following public consultation in Autumn 2005, received positive feedback. The document explains how improvements to local rights of way and access to the countryside will be identified, managed and delivered over the next 5 years. The Plan states:

'Rights of way and the corridors in which they sit make a significant contribution to, and provide new opportunities for supporting the current agendas for improving the quality of people's lives and enhancing access to local places of heritage, recreational, and cultural interest. These links also provide a framework for improved outdoor recreation, for more sustainable transport and alternatives to car use, improved health through more active lifestyles, areas for environmental education and raising awareness, and through tourism and employment they support the local economy.'

The ROWIP looked at how routes can be planned and enhanced in order that such access can:

- Meet the present and likely needs of the public;
- Provide attractive routes that support tourism and economic regeneration or community led initiatives;
- Link centres of population in conjunction with public transport to allow easy access to the countryside where people live;
- Provide routes for local journeys such as walking to work, shops, doctors and other local amenities; and
- Provide the infrastructure for people to walk and cycle as part of Green Travel Plans and School Travel Plans.

The strategy that underpins the Plan and the wider considerations are highly relevant to the Northamptonshire GI study.

3.5.4 NORTHAMPTONSHIRE LOCAL TRANSPORT PLAN 2006 - 2011 (CONSULTATION DRAFT)

Northamptonshire's Local Transport Plan (LTP) covers the period 2006 – 2011 and follows on from the earlier LTP prepared in 2000. The LTP is a set of integrated transport strategies that serve two main purposes:

- To act as a strategic plan for transport in the authority's area embracing all types of transport; and
- To set out the authority's plans for spending transport capital investment which they hope to secure from the Department for Transport.



3.0 A REGIONAL PRIORITY

3.5.5 FINAL DRAFT ACCESSIBILITY STRATEGY, FEBRUARY 2006



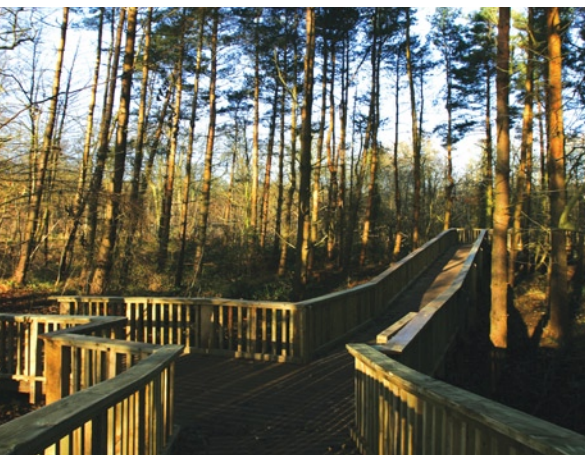
Accessibility is one of central and local government's four shared priorities and is therefore a fundamental theme of the LTP. The Northamptonshire Accessibility Strategy has been developed as part of the LTP submission. The development and delivery of the Accessibility Strategy and the principles and the processes of accessibility planning should be mainstreamed within authorities' day to day planning and delivery of local transport through public transport services and infrastructure for walking, cycling and public transport.

The long term Accessibility Strategy set out in the report identifies a number of issues and opportunities that are relevant to Green Infrastructure and highlight the benefit of linked working, particularly in conjunction with the Rights of Way Improvement Plan. The following are of particular note:

- The role of Walking and Cycling and the potential for achieving a modal shift to improve accessibility to key destinations;
- The need for implementation of improvements and opportunities identified in the ROWIP; and
- The identification of Geographic Action Plans to examine key areas of rural isolation that have low levels of transport provision. Two of these areas are located within West Northamptonshire, comprising the South Northamptonshire area, and the Welford, Clipston and Welland Rural Priority Area.

4.0 A VISION FOR GREEN INFRASTRUCTURE IN NORTHAMPTONSHIRE

The Vision for Green Infrastructure in Northamptonshire has been developed from the findings of the Methodology Review, through discussion and guidance from key stakeholders, and particularly from the findings and feedback of the Stakeholder Workshop held during the course of the Phase 2 study for West Northamptonshire. The importance of an holistic approach to GI has been a principal driver in the development of this Vision, which provides the basis for a refreshed methodology and approach, and greater clarity on the function and purpose of GI at every level from sub-regional to local.



4.1 STRATEGIC AIMS FOR GREEN INFRASTRUCTURE

The Strategic Aims of Green Infrastructure in the county are to:

- Form an essential component in the provision of an holistic and long term vision for a sustainable future;
- Define a green infrastructure approach that promotes a functioning landscape of high quality and character that sustains urban and rural populations; and
- Provide the environmental context for development and regeneration.

4.2 STRATEGIC OBJECTIVES FOR GREEN INFRASTRUCTURE.

The Strategic Objectives for Green Infrastructure in the county are to:

Embrace

- varied habitats and land uses across rural and urban areas

Connect

- new and proposed communities
- people to the landscape, and the opportunities and assets it contains
- areas of fragmented habitat

Conserve and Enhance

- existing sites and assets, and the features that link them
- biodiversity, and reverse species decline and habitat fragmentation and degradation
- cultural resources
- the character and intrinsic qualities of landscape, historic and biodiversity character

Create

- distinctive places through a celebration of landscape, historic and biodiversity character

Engage

- with communities and stakeholders to ensure that GI principles are understood, developed and delivered at all scales from local to strategic

Promote

- environmental planning as part of a broader sustainable agenda including transport, minerals and waste planning
- healthy living, recreation, tourism and education
- employment creation, learning and skills through use of the environment
- Northamptonshire as an exemplar in environmental planning and an attractive place to live, work and invest

Establish

- Northamptonshire at the forefront of strategic GI delivery and the GI assessment process as a benchmark for environmental planning in the UK



4.0 A VISION FOR GREEN INFRASTRUCTURE IN NORTHAMPTONSHIRE



4.3 A SHARED VISION FOR GREEN INFRASTRUCTURE

The Vision for Green Infrastructure in Northamptonshire has been shaped in consultation with stakeholders that ultimately have responsibility for the future development and delivery of GI. It is a long-term vision that places the environment at the heart of sustainable planning, development, the economy, and communities across the county. (Box 6)

The Vision for Green Infrastructure in Northamptonshire

The vision is to achieve a sustainable environmental system that supports a network of green infrastructure within Northamptonshire's towns, villages and the wider countryside. Delivery partners will work together and with the community towards achieving a living and working landscape that performs a multitude of functions and benefits.

The vision is for the green infrastructure network to provide attractive and functional places that are a setting for day-to-day lives. It will enhance the character and diversity of landscapes and townscapes within the county, and enrich its wildlife value, and cultural and built heritage. It will also promote healthy living by providing wide opportunities for sport and recreation, and act as a stimulus for education.

The green infrastructure networks will connect people to places, linking residents to leisure and work destinations along a safe and legible sustainable movement network. It will establish a framework for biodiversity restoration and creation to reverse decades of habitat and species fragmentation. It will also provide a setting for exciting signature and landmark projects that will, in themselves, express the principles of green infrastructure through multi functionality and partnership working.

The countryside will develop new functions beyond traditional food production, and provide sustainable sources of energy, clean air, food and water either through community based projects or the commercial sector. It will also support flood risk and water resources management in environmentally friendly ways that also offer opportunities for active and passive recreation, education and environmental enhancement to achieve truly multi-functional benefits.

5.0 THE OVERARCHING GI CONCEPT

FIGURE 2 – THE ORGANISATIONAL FRAMEWORK

5.1 GREEN INFRASTRUCTURE STRATEGY

The Strategic GI Framework study for Northamptonshire places Green Infrastructure at the heart of planning and decision making at all scales and across all disciplines. Through this overarching concept, agencies are encouraged to bring together their skills, experiences and importantly, funding streams and opportunities to facilitate delivery. Through this collaborative working, projects can be delivered that not only place an emphasis upon environmental enhancement and sustainable development, but also represent gains across a broad range of social, and economic agendas.

5.2 GREEN INFRASTRUCTURE GOALS

GI Goals represent the core aspirations for a sustainable future and range from a commitment to the most prudent use of available resources, to the development of a sustainable transportation network within the county, and the delivery of a healthy environment. The aspiration is that all development in the future would be required to deliver on a number of these goals.

The goals are broad in scope, and meet many of the objectives set out by Government Departments. At this top tier of decision making in the UK, there is therefore an inherent commitment for cross discipline policy making and guidance. In summary, the following key goals may be identified together with the key links to the Government Departments.

Green Infrastructure Goals	Key Government Departments
Rich and Diverse Landscape	Department of Environment, Food and Rural Affairs (Defra)
Prudent Use of Resources	Defra & Department of Trade and Industry
Vibrant Rural Economy	Defra & Department of Trade and Industry
Sustainable Transport Network	Department for Transport
Healthy Environment	Department of Health and Defra
Cultural Canvas	Department of Culture Media and Sport (DCMS)
Outdoor Classroom	Department for Education
Sustainable Communities	Department for Communities and Local Government (DCLG)

Below this national tier, regional and local planning authorities are making a commitment to develop policies and strategies that will aid the delivery of GI goals. The incorporation of the GI process and goals within the statutory planning system will provide the means by which local planning officers can insist that new development delivers the maximum number of relevant GI goals for a given project anywhere in the county, regardless of whether the project is a major development, such as new housing, bypass or flood alleviation scheme, or a small community renewables or open space initiative in a rural village.

5.0 THE OVERARCHING GI CONCEPT

How individual projects will deliver GI goals will depend on local aspirations and demonstrable need. It will also depend upon the scale of development, with larger projects necessitating a greater number of goals to be addressed. Whatever the scale of the project, however, and the goals that it seeks to address, it is the requirement for a collaborative approach to project planning, design and delivery that is important.

5.3 COLLABORATIVE WORKING

Under the banner of GI, rather than simply commenting upon a proposal, or offering specific advice, individual organisations will need to come together in order to take an holistic view of the opportunities that the project represents, and identify the mechanisms, tools, skills and funding for their delivery. The process of drawing relevant organisations together will be a key role for a GI Executive. This is explored further in Section 11.0.

AS AN EXAMPLE, AS PART OF A NEW HOUSING DEVELOPMENT, DEVELOPERS MAY BE REQUIRED TO WORK CLOSELY WITH THE ENVIRONMENT AGENCY AND NATURAL ENGLAND TO DELIVER WATER COURSE AND BANKSIDE ENHANCEMENT THAT FUNCTIONS AS A NEW RECREATIONAL AREA, ACCESS ROUTE, HABITAT RESERVOIR AND ALSO CONTRIBUTES TO A WIDER FLOOD ALLEVIATION SCHEME. SPECIFIC DESIGN REQUIREMENTS WOULD ALSO BE MADE THAT ENSURE THAT ALL PART OF THE DEVELOPMENT REINFORCES AND ENHANCES LOCAL LANDSCAPE CHARACTER. OTHER PARTNERSHIP ORGANISATIONS MAY ALSO BE DRAWN IN TO EXPLOIT OPPORTUNITIES FOR EDUCATIONAL OR CULTURAL PROJECTS, OR TO INTEGRATE RENEWABLE ENERGY INITIATIVES OR COMMUNITY BASED PROJECTS SUCH AS A NEIGHBOURHOOD ALLOTMENT.

5.4 FUNDING AND DELIVERY

Through the collaborative approach that is inherent in the identification and delivery of GI, a range of funding streams would be drawn together to deliver the multi-functional aspirations, with a number of budget sources made available. Local delivery from the 'bottom up' is also important to the success of GI. Communities will be encouraged to demand a higher quality of development and become involved in small-scale projects that contribute to more significant GI gains.

Projects and developments would need to demonstrate their contribution to delivering a multi-functional green infrastructure network. Priority and targeting of resources would therefore be given to those projects that lie at the strategic level of Sub-Regional GI Corridors as it here that the multiplicity of networks and resources combine to maximise multi-functional gains. This 'backbone' of Strategic Corridors is examined in Section 7.5, and examined further in Section 10.. As a minimum, however, delivery of the relevant part of the Biodiversity and Sustainable Movement Networks would be required, as these are the fundamental components of the strategic GI backbone. The methodology and approach for developing these two networks are examined in Sections 8 and 9.



6.0 DEVELOPING THE APPROACH AND METHODOLOGY

6.1 DEVELOPING THE NORTHAMPTONSHIRE APPROACH

In September 2005 the RNRP and its partners launched the first phase of the Northamptonshire GI Project for wider consultation. The Strategic Framework study for North Northamptonshire, together with a Local Framework pilot study for Corby, set out a methodology and proposals for a GI Framework at a county level. A study of this scale, which also included a substantial proportion of rural landscapes, had not been undertaken before so the process and findings were of particular interest. In addition to the examination of extensive rural areas, the study also took into account the influences of the growth agenda in North Northamptonshire, and the settlements identified for proposed expansion.

In recognition of the pioneering and innovative nature of the study, the Phase 2 study for West Northamptonshire provided the opportunity to learn from the experience gained from the earlier process. This included a review of consultee responses and an examination of the Phase 1 methods and study findings. This would then inform the refinement of the process for subsequent phases, and the establishment of a transferable process that could be applied by other authorities and organisations from a district and borough level through to regional bodies.

Phase 2 therefore commenced with a comprehensive review of the Phase 1 methodology and findings of the study. This is presented in a supplementary report: *'Northamptonshire Green Infrastructure: Methodology Review'*. The principal findings, which are summarised below, informed the Phase 2 study and guided the re-evaluation of the North Northamptonshire findings in order to develop of a fully integrated GI Strategy and framework for the county.

6.2 KEY FINDINGS OF THE PHASE 1 METHODOLOGY REVIEW

- A need for a simplification of the determination of GI, set within an overarching concept of GI at the core of environmental processes and systems;
- Requirement for a more holistic approach to GI development and planning;
- GI is principally about making connections, both physically in terms of natural and human resources and also strategically, linking partnerships and processes that will engender a commitment to and support for the GI concept, and its funding and delivery;
- The term 'corridors' was considered by a number of stakeholders to be inappropriate. It implied that GI opportunities and priorities would be confined to linear 'zones' that detracted from the overarching nature of GI and its applicability everywhere as a process. Nevertheless, it was widely acknowledged that there are primary 'zones' where a range of GI opportunities and activities coincide. These could form the multi-functional sub-regional networks or 'corridors' that would form the basis of a strategic network and priority areas for investment.
- The use of Strategic Themes as a Framework for separating out and reviewing the substantial amount of baseline data was considered to be sound; this process was also applicable at subsequent stages, as a basis for analysis and interpretation;
- The Biodiversity Resource and Network is of considerable importance and must not be 'lost' within an imperative to define GI corridors;
- The Sustainable Movement Network is also an important part of GI as it relates to people and place, but it should be developed in accordance with real links and opportunities rather than adjusted to fit a theoretical model; and
- Establishing connections between environmental disciplines, organisations, developers and communities was seen as a vitally important process.

6.0 DEVELOPING THE APPROACH AND METHODOLOGY

6.3 GREEN INFRASTRUCTURE PHASE 2 AND THE DEVELOPMENT OF A COUNTYWIDE FRAMEWORK

The methodology review guided the Phase 2 study for the West Northamptonshire Strategic GI Framework, and subsequently to the re-evaluation of North Northamptonshire in order to present a fully integrated and consistent GI Strategy for the county.

In summary, the development of the approach and methodology for Phase 1 resulted in a structure that addresses the wider principle of GI as an overarching concept, and a framework for collaboration between partners and other delivery agencies at all scales. It also acknowledged the significance of connectivity and networks as fundamental components of GI, the importance of people and place, the need for linkage and enrichment of the environmental resource and a mechanism for targeting funding and delivery projects at the strategic scale.

In common with the Phase 1 approach, the Phase 2 study identified two parallel but interdependent GI networks. These comprise: the Biodiversity Network, which is founded principally on the biodiversity resource and opportunities, and the Sustainable Movement Network which is focused on people and place and offering enhanced opportunities and routes to key assets and destinations.

As in the Phase 1 study, these two networks were brought together to identify areas of the landscape where the greatest opportunities and synergies exist for investment, and the delivery of strategically important GI projects and components. As a consequence of the linear nature of the underlying movement and biodiversity networks, these areas of priority investment form indicative 'corridors'. These define a multi-functional green infrastructure network at a sub-regional level.

The following Sections 7-10 provides details of the methodology that has emerged as the Northamptonshire Approach to GI planning



7.0 A STRATEGIC APPROACH

7.1 DEVELOPING THE STRATEGIC GI APPROACH FOR NORTHAMPTONSHIRE

The Phase 1 GI study developed a strategic approach to GI design and planning across rural and urban areas. Phase 2 provided the opportunity to review the methodology and approach, and refine it where appropriate, to enable a transferable process and reference model to be developed that can be adopted by other local authorities.

This Northamptonshire Approach that emerged has been guided by:

- The findings of peer group and stakeholder comments for the work undertaken in Phase 1;
- A comprehensive review of the environmental resource for West and North Northamptonshire set within the structure of the Strategic Themes;
- Consultation with stakeholders within the study area, including a workshop and review of the proceedings and feedback;

The outcome has been the development of a countywide Strategic Framework that can be connected into neighbouring counties and regions.

7.2 THE NORTHAMPTONSHIRE MODEL

The Northamptonshire model comprises a hierarchy of interrelated components. As an overarching concept, GI forms an organisational framework for environmental decision making and delivery. Set within this wider concept, two interdependent physical networks have been identified, comprising the Biodiversity and Sustainable Movement Networks. Synthesis of these two key networks, together with a detailed review and incorporation of key assets, destinations and resources, and projected settlement growth and development, have together informed the identification of a strategic network of Sub-Regional and Local Corridors. These represent the priority areas for targeting future investment and the delivery of GI goals.

7.3 THE OVERARCHING CONCEPT

GI's primary role is to provide an overarching concept that places the environment at the centre of environmental planning and decision making. The GI model proposes an **Organisational Framework** to facilitate the delivery of a series of core goals and aspirations. It applies to the entire landscape, both rural and urban, to all places and functions, and at every level from national and regional down to local. It requires long-term commitment from partners working across the public and private sectors, and from Government Departments down to parish council and individual residents.

Above all, the concept places the environment at the heart of the development process, and environmental processes at the heart of sustainable development and the economy. It represents a significant opportunity to form collaborations between organisations, and to benefit from the combined experience, knowledge, skills and funding from otherwise disparate organisations.

THE ORGANISATIONAL FRAMEWORK IS ILLUSTRATED IN FIGURE 2 page 00

7.0 A STRATEGIC APPROACH

7.4 CONNECTIVE NETWORKS: BIODIVERSITY AND SUSTAINABLE MOVEMENT

The GI model acknowledges the significance of connectivity and networks as fundamental components of GI, the need for linkage of people and place, and the enrichment of the environmental resource. In recognition of this two principal 'Networks' have been identified that acknowledge the importance of the physical connectivity of both the biodiversity and human resources. These comprise:

- **The Biodiversity Network**, founded principally on the biodiversity resource and opportunities; and
- **The Sustainable Movement Network**, which is focused on people and place and offering enhanced opportunities for sustainable movement to destinations and assets.

Building on the Phase 1 GI outputs, the approach to identifying these networks has been refined and enhanced to provide a more robust, transparent and transferable method. These two networks, and the methodologies for their determination, are examined below.

Both the Biodiversity and the Sustainable Movement Networks are tangible proposals, designed to attract funding for their design and delivery. They represent the core of GI delivery in the study area for these two specific Strategic Themes, although additional projects and proposals can be developed that will provide multifunctional gains. Both networks have been developed in some detail, based on known assets and opportunities. However, significant refinement and development will be required at the local delivery scale, through the need to address local priorities and issues and reconcile physical obstacles and barriers.

In some instances highly innovative solutions will be required to deliver specific parts of these two networks, particularly where major obstacles exist. Over much of the study area, however, delivery relies upon a combination of political will, the securing of adequate funding, effective coordination and local action.



7.5 A SUB-REGIONAL STRATEGIC GI FRAMEWORK

The two networks form the core component of a robust evidence base for the determination of a Strategic Framework of corridors in Northamptonshire, which represent the backbone and focus for investment and strategic projects.

Although the Biodiversity and Sustainable Movement Networks are physically separate, there is a high degree of overlap and interdependence between them and numerous situations where they co-exist in mutual harmony. Where this synergy occurs, and in combination with the key assets and resources across the study area, a strategic system of Sub-Regional and Local GI Corridors can be identified. It is here that exciting opportunities exist for the creation of exceptionally rich and varied landscape experiences and opportunities and the delivery of multi-functional green infrastructure. This Sub-Regional network also defines the areas within which priority for investment can be focused in order to achieve maximum gains and multi-functional solutions.

The Strategic Framework and Sub-Regional Corridors are described in more detail in Study A, Sections 15.0 and 16.0 (for West Northamptonshire) and Study B, Sections 20.0 and 21.0 (for North Northamptonshire) and include a summary of Priorities for Action.

8.0 THE BIODIVERSITY NETWORK

FIGURE 3 – THE NORTHAMPTONSHIRE STRATEGIC BIODIVERSITY NETWORK

8.1 INTRODUCTION

A range of Policy Drivers in respect of Biodiversity have been considered in the development of the Northamptonshire Approach to GI planning. In addition to EU Directives / Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, (92/43/EEC) and Council Directive on the Conservation of Wild Birds (79/409/EEC), PPS9 (Biodiversity and Geological Conservation) is the recently published principal government policy guidance, and at a county level, the Biodiversity Action Plan (BAP) for Northamptonshire, 1992. In addition, 'Countdown 2010' comprises a wide range of organisations working at a pan European level with the aim of implementing through its partnership all the necessary measures to halt biodiversity loss by 2010.

'Planning for Sustainable Communities' A Green Infrastructure Guide for Milton Keynes and the South Midlands' sets out the following GI planning and delivery principles relating specifically to biodiversity.



At a sub-regional level Green Infrastructure should:

- Maintain and enhance biodiversity of the Sub-Region to ensure that development and implementation results in a net gain of BAP habitats; and
- Be delivered through the enhancement of existing woodlands and also by the creation of new woodlands and forest areas.

Other key 'biodiversity' planning and delivery principles confirmed in the document:

- Ensure all new development avoids damage to existing designated sites and enhances them where possible;
- Seek to halt and reverse habitat fragmentation and species isolation of existing biodiversity assets by buffering existing sites and creating new wildlife corridors between them;
- Identify areas for habitat restoration and re-establish them at a landscape scale;
- Integrate existing habitats into new development, ensuring development provides a green transition between existing and new habitats and landscape; and
- Consider the appropriate management of wildlife corridors that are important for the migration and dispersal of wildlife and for the linking of habitats.

The following key targets and standards in respect of Biodiversity and Woodland Targets are confirmed in 'Planning Sustainable Communities, a GI Guide for MK & SM'.

Biodiversity Targets: In creating new assets the following range of biodiversity assets must be sought:

- Heathland and acid grassland restoration and creation;
- Calcareous grassland restoration and creation;
- Wetland restoration/creation; and
- Woodland recreation and restoration.

Woodland Targets: The provision of new woodland and improvements to existing woods must be focused on:

- Individual sub areas, where significant new woodland areas must be created close to each community;
- Forest of Marston Vale, Rockingham Forest, Yardley-Whittlewood Ridge;
- Principal transport corridors;
- Addressing local BAP targets e.g. by expanding, buffering and linking areas of native woodland and the creation of new wet woodland for which the East of England is a priority;

8.0 THE BIODIVERSITY NETWORK

- Expanding the area of woodland-grassland matrix; and
- Bringing existing woodland into positive management and increasing public access.

Within the sub-region, specific biodiversity habitat targets and biodiversity conservation and enhancement zones have been defined for Northampton and Bedfordshire. Similar work is underway for the other areas.

8.2 ACHIEVING A FUNCTIONING BIODIVERSITY NETWORK

A landscape of fragmented habitats is displayed across much of Northamptonshire. As a consequence, connectivity becomes a key element in species persistence and habitat function. For many species the current highly fragmented habitat resource leaves many of them vulnerable to extinction by virtue of the small size and isolated nature of the remaining populations.

This will lead to a continuation of the loss of biodiversity that has been experienced across the UK over the last 60 years If a vibrant and robust biodiversity resource is to be maintained in Northamptonshire, just maintaining the status quo will not be sufficient. This is reflected in one of the overarching principles at a sub-regional level that states that Green Infrastructure should maintain and enhance biodiversity to ensure that development and implementation results in the net gain of Biodiversity Action Plan habitats. The Biodiversity Network element of Green infrastructure therefore plays an important role in the maintenance of biodiversity into the future. By expanding the area of habitat, improving connectivity and enhancing the quality of the Biodiversity Network, the chances of species becoming extinct within Northamptonshire will be reduced and there will be a resource more capable of adapting to future changes in climate and other pressures.



In addition, a functioning and coherent biodiversity resource will provide opportunities for significant landscape restoration, improved access to areas of high quality countryside and a framework for environmental education, active and passive recreation and a fitting setting for historic sites and monuments. In particular, the biodiversity resource has strong connections with the cultural and historic landscape since the biodiversity of an area is strongly linked to man's management of area over long periods. So, for example, ancient woodlands are of historic/cultural as well as biodiversity importance.

The importance of networks of natural habitats, and the role they have to play in biodiversity conservation, is recognised in the latest government guidance: Planning Policy Statement 9 (Biodiversity and Geological Conservation). Key sections of PPS9 illustrating this principle are set out below.

Networks of Natural Habitats

Networks of natural habitats provide a valuable resource. They can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment. Local authorities should aim to maintain networks by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development, and, where possible, strengthened by or integrated within it. This may be done as part of a wider strategy for the protection and extension of open space and access routes such as canals and rivers, including those within urban areas.

PPS9 - Biodiversity and Geological Conservation

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English Nature (now Natural England) also recognises the importance of landscape scale habitat creation and restoration as a key part of the overall strategy for maintaining biodiversity in England (Refer to English Nature's research report on '*Landscape Scale Biodiversity Scale Opportunity Maps and habitat restoration*').

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8.3 APPROACH TO IDENTIFYING AND CHARACTERISING THE BIODIVERSITY NETWORK

8.3.1 IDENTIFYING AND MAPPING THE BIODIVERSITY NETWORK

A short summary of the process used in the identification of the Strategic Biodiversity Green Infrastructure Network is included below, together with the further development of the process in respect of mapping of species distribution. The Northamptonshire Strategic Biodiversity Network is presented in Figure 3. Appendices 2 and 3 describe in detail the resource and biodiversity networks developed for West and North Northamptonshire.

Methodology Summary

The starting point of the Biodiversity Network assessment was to identify and map the existing ecological resources, using spatial data on designated sites including Sites of Special Scientific Interest, Nature Reserves and County Wildlife Sites. In addition, the Ancient Woodland and Grassland Inventories were used to create a map of the existing biodiversity resource, resulting in a patchwork of largely fragmented sites. These included the following key habitat types:

- Woodland
- Wetland and open water
- Calcareous grassland
- Neutral grassland
- Heathland and Acid grassland

Once the mapping of existing habitats was completed, the next stage involved the identification of habitat clusters or reservoirs which contained the main resource areas for woodland, wetland / open water, calcareous grassland, neutral grassland, acid grassland and heathland. The principle behind this approach was that habitat creation or enhancement within these resource areas would seek to improve habitat connectivity for that broad habitat type, creating a larger and more interconnected habitat resource within that reservoir. Buffer analysis was undertaken to facilitate the identification of clusters and potential habitat reservoirs and links.

8.3.2 MAPPING SPECIES DISTRIBUTION

When addressing habitat enhancement and creation, certain species considerations may need to be taken into account when directing the extent and nature of any proposed measures to expand or enhance the existing Biodiversity Network. In order to add a more refined level of analysis of the Biodiversity Network, and in particular of how species considerations may affect biodiversity infrastructure and its function, species data, (courtesy of the Wildlife Trust), has been used for a selection of plants and animals to overlay onto the habitat resource map.

The method of identifying and mapping the Biodiversity Networks for Northamptonshire was therefore developed in order to consider how individual species distribution may affect:

- the identification of the existing Natural Network;
- the assessment of the functionality of the identified Natural Network in terms of the species; and,
- guidance on future habitat creation in terms of location, habitat quality and function.

The distribution of the following species was mapped, along with the major broad habitat types that survive in the county:

Species	Broad Habitat Type
Wood anemone	Woodland
Broad-leaved helleborine	Woodland
Wood sorrel	Woodland
Common dormouse	Woodland and hedgerow
Great crested newt	Wetland, grassland and woodland
Otter	Wetland
Kidney vetch	Calcareous grassland
Adders-tongue fern	Neutral Grassland
Cowslip	Neutral and calcareous grassland

As a consequence of its limited survival and extent, species were not identified and mapped for Acid Grassland and Heathland habitat.

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8.3.3 ASSESSING THE FUNCTIONALITY OF THE BIODIVERSITY NETWORK THROUGH CONSIDERATION OF SPECIES DISTRIBUTION

An analysis of species distributions and how this might affect the approach to habitat management and expansion was undertaken. The purpose of this approach was to better understand how species requirements may affect the general concept of the Biodiversity Network. It is clear from a variety of studies into metapopulation dynamics, that certain species will influence the design of habitat connections and the priority given to habitat creation sites. For example, some butterfly species have good powers of dispersal and are able to move from habitat patch to habitat patch over sub-optimal habitats, whilst others are very sedentary and may only rarely stray from their habitat. In the latter case, in order to enable these species to disperse and colonise new sites, or to interact with other isolated populations, the priority in terms of the Biodiversity Network would be the expansion of habitats that are physically connected rather than ones that are separated from each other by sub-optimal habitat conditions. In the latter approach, this would be more likely to fail to provide a Biodiversity Network that benefited the target species.

The species chosen for this preliminary analysis were considered to be indicators of one or more of the broad habitat types, such as woodland, grassland or wetland. These selected species also tend to be those associated with the higher quality examples of the habitats they are normally associated with. For example, wood anemone is a strong indicator of ancient woodland sites, which are considered to support more valuable or 'higher quality' woodland stands than recent secondary woodland plantations. The consideration of how the Biodiversity Network may support particular species provides an insight into the functionality of the identified reservoirs and habitat linkages at the species rather than the broad habitat level. The species chosen for this initial assessment of functionality differ in their habitat requirements and means of dispersal and colonization, and so the identified habitat networks and connections may appear to function for one species, but not for another.

Certain species show a close association with the identified habitat reservoirs and habitat networks. In particular broad-leaved helleborine *Epipactis helleborine*, wood anemone *Anemone nemorosa*, kidney vetch *Anthyllis vulneraria*, common dormouse and otter show close relationships with the identified Biodiversity Network. Superficially, therefore, the identified Biodiversity Network would be expected to improve the situation for these species through creation and enhancement of the habitats within the reservoirs. Other species, in particular great crested newt, wood sorrel, cowslip and adders-tongue fern do not show a close association with the network of habitats they are associated with. This would suggest that for these species the enhancement of the reservoirs and links in the Biodiversity Network would not alone provide benefits for these species.



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Wood anemone and broad-leaved helleborine

These two species are to varying degrees associated with ancient woodland sites and it is not surprising, therefore, that such species are well represented within the woodland network, which is built around groupings of ancient woodland sites in particular. In terms of the Biodiversity Network it could also be argued that in the short to medium term the expansion of woodland is unlikely to provide benefits for these species and that the protection and management of existing ancient woodlands or the restoration of ancient woodlands currently planted with conifers will provide greater benefits to these species. However, in the longer term the expansion of physically well connected woodlands will provide new opportunities for these plant species to increase their distribution and population sizes. Kidney vetch, like wood anemone and broad-leaved helleborine, is a species closely associated with a particular habitat quality, in this case calcareous soils with low nutrient status. Therefore, it is not surprising to find a close association between calcareous grassland habitat and this species. However, unlike the plants of ancient woodland, the expansion of calcareous grassland habitat is likely to provide significant benefits for this species in the short to medium term as calcareous grassland plant communities can be established over a shorter time frame than ancient woodland communities.

Otter

Otter (*Lutra lutra*) distribution follows the distribution of the wetland habitat networks/reservoirs quite closely. The habitat of this species is closely linked to the habitats within the reservoirs, in particular stream and river corridors. It is interesting to see that several records of otter come from the upper reaches of the river catchments and maybe this gives emphasis to more focus on upper valley wetland habitats than given by the current wetland networks, which is centred on the lower floodplain areas. The presence of otter within the habitat reservoirs could be used to direct suitable management towards this species. This would not necessarily include the creation of specific habitats such as wet woodland, marsh or reedbed, but could include relatively simple measures to ameliorate the riverine habitats that exist, and measures, which could be adopted within the wetland habitat reservoirs and corridors without significant land take or detailed habitat creation proposals. This could include the use of buffer zones along waterways, which could be allowed to develop scrubby areas and taller grassland vegetation. This would provide cover for otters and lessen the chances of disturbance of these species. Appropriate management of specific features such as old willow pollards and river banks to maintain possible locations for holts could also be part of the targeted management for this species.



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Taking Hazelborough Wood as an example, in addition to ensuring that there is appropriate habitat management of the site, new infrastructure objectives for this species could include increasing the area of Hazelborough Wood, providing buffering of the woodland, and creating a larger habitat area. It could also include the provision of suitably designed woodland linkages to nearby woodlands with suitable habitat for dormouse colonisation. Priorities for habitat connectivity within this reservoir could therefore include wide, continuous hedgerows, linear woodlands of high species and structural diversity. Elsewhere in the county, continuous woodland or hedgerow connection between woodland patches may not be a priority since these measures would not benefit the common dormouse. In such areas, other species considerations could therefore become a priority.

Cowslip and Adder's-Tongue Fern

A number of species mapped do not show a close relationship with the identified Biodiversity Network. Two of these comprising cowslip *Primula veris* and adder's-tongue fern *Ophioglossum vulgatum*, are species of unimproved neutral grasslands. These two species tend to occur outside the identified neutral grassland habitat networks/reservoirs. This is likely to be due to the highly fragmented nature of unimproved neutral grassland within Northamptonshire resulting in widely scattered isolated neutral grassland sites of high quality. In addition, the neutral grassland habitat network is based on grassland inventory data and the Northamptonshire habitat/land use survey, which does not necessarily reflect grassland quality. As such, groupings of grassland do not necessarily include high quality examples and may more reflect land use. In terms of conservation for these species, habitat enhancement within reservoirs may not provide significant gains and therefore priority may need to be given to protecting and expanding existing sites of species-rich neutral grassland where these species occur. Creating new grasslands adjacent to or close to existing species-rich sites will provide buffering to core areas and new opportunities for the establishment of larger populations of target species. Creation of links for target grassland species may need to be a lower priority.

Wood Sorrel

Wood sorrel is another species that does not show a strong association with habitat reservoirs. This is likely to be due to it being less strongly associated with ancient woodland sites compared to wood anemone or broad-leaved helleborine. Wood sorrel therefore has a wider distribution than the other species considered, suggesting that for this species connectivity and woodland area may not be such significant factors in determining the species survival.

Overview of Species Analysis

The species analysis, whilst relatively general, does indicate that consideration of the Biodiversity Network at the species level is important as it is clear that for a number of species, concentrating on just the reservoirs and links may not bring significant benefits for some species, and species focused strategies for those of prime importance for biodiversity conservation may be required. This also emphasizes the need to seek habitat expansion and improved connectivity in the wider countryside as well as in core reservoir areas and links.

8.4 A REVIEW OF THE BIODIVERSITY NETWORK:

The Biodiversity Network identified for Northamptonshire comprises a series of reservoirs and links, which have been identified for the habitats that were mapped. Large habitat blocks and groupings of smaller blocks of habitat in close proximity to each other are referred to as reservoirs. Linear habitats or a series of unconnected habitat patches in close proximity to each other that actually, or have the potential to link the reservoirs, are referred to as links. It is important to note that any proposals for habitat creation would emerge through positive land management and working in co-operation with landowners, and not through land acquisition.

8.5 THE BIODIVERSITY NETWORK AND POTENTIAL FOR LANDSCAPE SCALE HABITAT ENHANCEMENT

In recent years attention has been given to the potential for the restoration of semi-wilderness areas in the UK (Taylor, 2005). This is more than an aspiration. Re-wilding theory and practice is growing, and significant projects are already underway throughout Europe and the UK. For example, the Cambridgeshire Fenland Project, which is focused on the Wicken Fen National Nature Reserve, proposes the re-creation of wet fen, open water, wet pasture, scrub and carr. This established project is already acquiring land to enable the re-creation of extensive wetland habitats to be undertaken and grazing animals in the form of Konik ponies are being used to manage the existing and new fen habitats.

In Holland the establishment of the Oostvaardersplassen reserve, over approximately 5000 hectares, is also allowing the natural development of wildland with minimal human interference. English Nature (now Natural England), in their research paper 'Opportunity Maps for Landscape Scale Conservation of Biodiversity: A Good Practice Guide', endorse this approach.

As a consequence of intensive agriculture and land management for many hundreds of years, and the subsequent fragmentation of semi natural habitat Northamptonshire, re-wilding is not as viable as elsewhere in the UK. However, the Biodiversity Network component of Green Infrastructure is a significant opportunity to explore the landscape scale habitat enhancement concept, and its potential as part of a holistic environmental planning tool.

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Landscape scale habitat enhancement of extensive areas of land is a significant step forward in nature conservation thinking. It takes advantage of existing resources and maximizes the extent and functionality of significant areas of landscape for biodiversity gain. If successful in the future these areas would represent heartlands of habitat resource and the ideal locations in which to explore measures for the re-introduction of species that have long been lost to the area, or provide stepping stones for species responding to future changes in climate or other pressures.

However, given the nature of settlement and land-use in lowland England and in particular the agricultural character of West Northamptonshire, such areas are not devoid of settlement and productive land-uses and in this respect, landscape scale habitat enhancement needs to respond to the requirement to maintain the productivity, aesthetic quality and functionality of the landscape, in addition to addressing the needs of biodiversity. -

The extent to which such landscape scale habitat enhancement in Northamptonshire is possible, given the complex land ownership and productive land uses, is uncertain and would present a significant challenge. However, the promotion of extensive areas of land with a high proportion of natural and semi-natural habitat cover, both terrestrial and wetland, could be feasible in the future given emerging changes in the agricultural environment, and should be considered further. It is important to stress that any changes of this nature would only be through close dialogue and collaborative working with farmers and landowners and not through land acquisition. In this way positive land management opportunities and solutions could be achieved.

These large areas would continue to support productive land uses, but also provide a larger forest or wetland environment at a landscape scale, and managed with an emphasis on the needs of biodiversity. Such areas would act not only as major reservoirs for biodiversity conservation but would also provide a major environmental resource for people living in or close to the county. A number of similar projects are already underway or in the planning stage that are not dissimilar in circumstances to that of Northamptonshire. The Cambridgeshire Fenland Project, which has been mentioned above, is planned to extend down to the edge of Cambridge and is fringed by a number of small villages with much of the land currently in agricultural production. The Great Fen Project located between Peterborough and Huntingdon, is linking the two existing National Nature Reserves of Woodwalton and Holme Fens. Extending over 37 sq km, it will create new corridors and larger habitats allowing wildlife to spread as well as attracting new species. As well as benefiting wildlife, the Project is developing as a valued recreational and educational resource for local and wider communities, and also becoming a tourism focus. Another example is the Sussex Wildwoods Project, which is in the planning stage and seeking to raise funding for land purchase and re-planting to create a woodland network in the Sussex Weald (Taylor, 2005).

The findings of the Biodiversity Network Habitat Reservoirs and Links Assessment identify a significant opportunity for such an approach in Northamptonshire that partly overlaps with the River Nene Regional Park. This is illustrated in Figure 3. The area identified includes an already rich and ecologically diverse system of woodland, grassland and wetland habitat that extends from the Whittlewood Forest through Yardley and Salcey Forest, into the Middle Nene Valley Wetland Mosaic and on into Rockingham Forest.



8.6 CHANGING ECONOMICS OF FARMING AND POTENTIAL EFFECTS ON LAND MANAGEMENT

8.6.1 THE EFFECTS OF THE SINGLE FARM PAYMENT SCHEME

Farming is facing significant change following the introduction of the Single Payment Scheme (SPS) and Decoupling, which breaks the link between subsidy and production. Farmers now have to focus even more sharply on the economics of production and marketing. Where farmers are unable to achieve a margin on production at current levels, they may need to make some radical decisions regarding their land, including the need to consider either alternative enterprises or find ways of adding value through production for specific niche markets. This may include the potential release of areas of land from production, so this has important implications and long-term effects on the appearance and character of the rural landscape.

8.6.2 ENVIRONMENTAL BENEFITS OF THE SPS

To qualify for the SPS farmers now have to meet cross compliance standards and requirements. In addition to compliance with specific articles in the EU Regulations and Directives, farmers must also adhere to Good Agricultural and Environmental Condition (GAEC). This compliance requires farmers maintain their land in good environmental condition. This is a positive message for agricultural land management and the condition of the landscape, although many farmers will argue that these are standards which they already adhere to.

8.0 THE BIODIVERSITY NETWORK

8.6.3 ENVIRONMENTAL STEWARDSHIP

In parallel with but completely separate from the SPS, Defra's Environmental Stewardship is providing positive and wide ranging opportunities for environmentally beneficial land management. The Entry Level Stewardship (ELS), equivalent to the former Countryside Stewardship Scheme, is widely available to farmers and land managers, together with the Organic Entry Level Scheme (OELS) which now replaces the former Organic Farming Scheme. Grants for ELS are payable on a points threshold basis, which farmers can achieve through opting for a wide range of environmental commitments. Both the ELS and the OELS go beyond what is required under the SPS cross compliance, although they are nevertheless complementary.

The Higher Level Stewardship (HLS) delivers more significant environmental benefits in specific high priority areas and situations. As a prerequisite of an HLS application, farmers must undertake a comprehensive environmental audit of the whole farm, termed a Farm Environment Plan (FEP), the cost of which is also grant aided. Schemes will be expected to be responsive to landscape character, so farmers are advised to work within the key opportunities and targets that have been identified for the national Joint Character Area within which the farm is located.

8.6.4 THE FUTURE

As farmers critically review the economics of the management of their farm holdings, they are likely to be making some very radical decisions about future land management. Linked to Environmental Stewardship opportunities, some farmers and land managers may consider whether some areas of agricultural land could be permanently withdrawn from production. This could have a significant effect on landscape character but there are potential and exciting opportunities and links to be made with the opportunity to develop landscape scale reservoirs for biodiversity enhancement.

8.6.5 HOW COULD THIS LINK WITH NORTHAMPTONSHIRE'S GREEN INFRASTRUCTURE?

The Northamptonshire Strategic Biodiversity Network (Figure 3) identifies a long-term framework for biodiversity enhancement at a landscape scale. In addition to this is the aspiration for landscape scale biodiversity enhancement of national significance. Drawing on the research and analysis of the biodiversity resource, a network of landscape scale reservoirs for enhancement and connectivity has been identified, as well as a specific 'zone' within which greater emphasis is placed upon habitat enhancement. This 'zone' provides an exciting opportunity for farmers and landowners to contribute to delivery of a significantly enhanced biodiversity resource in the long term. However, this can only be achieved through a government led commitment and co-operation between Defra and Natural England, and the provision of significantly enhanced levels of agri-environment grants, in addition to other government and non governmental agencies, farmers, landowners and communities working towards the same goal.

8.6.6 SUMMARY

A landscape and biodiversity strategy is required that not only responds to national and regional landscape character but also responds to opportunities for the creation of landscape scale conservation of biodiversity and the creation of biodiversity reservoirs. In appropriate locations, farmers could release land from productive food management and manage the land for biodiversity benefit. This would require enhanced financial support within the Environmental Stewardship grant system, or perhaps through the Single Farm Payment, in order to achieve this radical change in land management.

Support at a national / government level would be essential, driven by Defra and Natural England working in partnership. Both the ELS, and particularly the HLS, will need to have a structure in place to deliver these long-term targets. In addition, opportunities for linked schemes between farms would help to achieve solutions that meet a landscape scale output. Fostering a strong co-operation between linked farm units where surplus unproductive land could be dedicated to form areas of biodiversity enhancement would be particularly beneficial. To achieve these long term aspirations and such a radical shift in farming practices would require sensitive and supportive negotiations with farmers and land managers, and support by the National Farmers Union, (NFU), Country Land and Business Association (CLA) and organisations such as Farming and Wildlife Advisory Group (FWAG) and Linking Environment and Farming (LEAF), in conjunction with guidance and financial support from Defra. There would also be a need to lobby Defra and regional Government that strategic green infrastructure networks and corridors should qualify for HLS and be identified as priority areas for enhanced grants.

9.0 THE SUSTAINABLE MOVEMENT NETWORK

FIGURE 4 - A JOURNEY FROM DOORSTEP TO COUNTRYSIDE

FIGURE 5 - THE NORTHAMPTONSHIRE STRATEGIC SUSTAINABLE MOVEMENT NETWORK

9.1 AN INTRODUCTION TO THE SUSTAINABLE MOVEMENT NETWORK

The Sustainable Movement Network is people focused and derived from patterns of human activity and sustainable movement through the landscape. It is principally concerned with connectivity and identifies the principal networks and opportunities for sustainable people movement from settlements to countryside, but importantly links key assets and destinations.

It encompasses connections from centres of population and linkages with key environmental resources and destinations including Strategic Green Space, Heritage and Culture assets, Leisure, Recreation and Tourism destinations, integrated with the Access and Movement and the Transport, Services and Infrastructure Networks. Although not defined by the biodiversity resource and potential habitat reservoirs, it will also include links to key biodiversity resources such as Local Nature Reserves and accessible woodlands. Within the complex multiplicity of connections and journeys there are principal movement networks and hubs of activity, particularly where there are clusters of key assets and destinations.

The hierarchy of routes is designed specifically for Northamptonshire, and recognises the multitude of journeys that might be made. It takes advantage of existing public rights of way whenever and wherever possible, provides physical connectivity between known assets. Where feasible, routes have been designed to take advantage of areas of green space, and this is particularly the case within the urban areas. However, in rural areas too, specific attention has been paid to providing routes that are direct and yet take advantage of areas of accessible green space such as country parks, local nature reserves and parklands. This is in order to maximise the attractiveness of the network, and encourage exploration of Northamptonshire's fine landscapes and open space facilities.



9.2 AN INTERCONNECTED SYSTEM FOR SUSTAINABLE MOVEMENT

Connectivity is a key objective of Green Infrastructure, and in particular connecting people within urban and rural areas and also to the landscape and the multitude of potential destinations. The aspiration is for everyone to have immediate access to attractive, safe and clean streets, exciting urban spaces, public realm and green place within towns, and countryside routeways that link assets throughout the wider rural landscape. In addition it is proposed that these routes form part of a coherent network that is legible and easily navigable, and capable of adapting to changing circumstances.

To meet this aspiration, a Sustainable Movement Network for Northamptonshire has been developed with the purpose of setting out a clearly defined hierarchy of sustainable movement. The overarching aim is to provide both urban and rural communities across the county with the confidence and incentive to undertake the miscellany of journeys.

A number of principal functions and characteristics have been identified for the Sustainable Movement Network. It should be:

- An interlinked, continuous and seamless network;
- Linked to wider sustainable modes of transport such as bus, rail or cycle hire;
- Clearly defined and well sign posted;
- Safe to use.
- Attractive and inspiring; and
- Clearly coded to give confidence of use, and identity

9.0 THE SUSTAINABLE MOVEMENT NETWORK

9.3 A HIERARCHY OF USE

The Sustainable Movement Network presents a hierarchy of routes that provide a means by which journeys can be planned and executed with confidence. The network is described as operating from doorstep to countryside, but in reality it offers a framework for a multitude of route options providing connectivity to a wide diversity of destinations ranging from parks and green spaces, areas of ecological or historical interest, and also to places of work, local shops and community and education facilities.

Within the urban environment the network takes advantage of existing parks and areas of green space, and in the countryside, much of the network links centres of population with key assets and points of interest in the landscape.

In order to provide clarity to the structure and function of the Sustainable Movement Network a clear hierarchy of routes and ways has been developed comprising three connected tiers (Local, Secondary and Primary). These tiers are described in more detail in Table 1, and Sections 9.7 - 9.9 and also illustrated in Figure 4. The distribution of these routes is illustrated in Figure 5 (The Northamptonshire Strategic Sustainable Movement Network). The West Northamptonshire Assessment provided an opportunity to develop examples of more refined networks within urban areas. These are illustrated in Figures 26 and 27 (Primary and Secondary Movement Networks for Northampton and Daventry).

The three tiers of the sustainable movement network have been defined using existing public rights way, cycle routes or established routes. Notwithstanding the comprehensive nature of this network, however, other routeways exist, ranging from the definitive rights of way network comprising footpaths, bridleways and byways to county paths such as the Nene Way. These routes remain as an important and complementary part of the sustainable movement network.

9.4 SUSTAINABLE TRANSPORT SOLUTIONS

The provision of sustainable transport solutions that reduce car use, and increase the opportunities for pedestrian and cycle journeys, is fundamental to the successful functioning of the Sustainable Movement Network. The network would be supported by a revitalised and fully integrated public transport system, as well as a number of other exciting initiatives that have already proven to be successful on the continent and elsewhere in the UK. This might include, for example, cycle hire facilities at bus and train stations, cycle 'pick up and drop off' initiatives in major towns, and public transport that enables return or part journeys to be made by train, bus or mini-bus under a single ticket. In doing so the Sustainable Movement Network begins to offer an attractive alternative to car usage, and encourages healthier and more environmentally friendly journeys to be made within the county.

The Northamptonshire Accessibility Strategy provides the statutory framework to support these initiatives and aspirations in respect of improving accessibility across the county. In working towards a Long Term Strategy, the importance of the role of walking and cycling is identified including the need to achieve a modal shift in key congested routes, and improving accessibility to key destinations. Details of the strategy to encourage cycling and walking are also covered in the Local Transport Plan (2006-2011). The role of the public rights of way system is also examined in the Accessibility Strategy, including the importance of building on the wide ranging opportunities and initiatives set out in the draft Rights of Way Improvement Plan (2005). In addition to an examination of the public transport system, the role of community and voluntary transport systems is also considered, as these are likely to make an important contribution to sustainable transport solutions in the future linked to the needs and aspirations of both urban and rural communities.

9.5 THE NEED FOR INVESTMENT

For the Sustainable Movement Network to function, significant investment will be required to deliver routes that are of a suitable quality for foot and cycle traffic. This will be essential in giving users of the network the confidence that their chosen journey will be achievable. Attention would be paid to ensuring that the primary and secondary networks (comprising Green Ways, Blue Ways, Inter Urban Neighbourhood Connectors and Countryside Connectors) are constructed to a particular specification, with gentle gradients, standard widths and adequate signage, although special attention will be paid to design and materials specification to ensure compatibility with local landscape characteristics. Within urban areas the Inter Urban Neighbourhood Connectors will benefit from similar standardised and high quality construction, and again, particular attention will be made to ensuring that whilst legible as part of the overall network, design and detailing will ensure compatibility with locally distinctive characteristics.

Although the Local Network that lies below the Primary and Secondary routes is not illustrated in this Strategic study, it is nevertheless important as it is the means by which access to the wider network is provided. At the most local scale, the yellow routes offer access to an individual's home or place of work, with orange routes providing access to local shops and community facilities, as well as the wider network.

9.0 THE SUSTAINABLE MOVEMENT NETWORK

9.6 THE SUSTAINABLE MOVEMENT NETWORK HIERARCHY

The Sustainable Movement Network is composed of a hierarchy of interconnected route ways. Each level of the hierarchy performs a separate function, but also contributes to the whole network. To clarify the structure and function of the hierarchy, a colour coded system has been introduced. It is suggested that this classification could be utilised to identify routes to aid legibility and navigability. The hierarchy and colour references are summarised below, and described in more detail in the following section.

The Northamptonshire Strategic Sustainable Movement Network of Primary and Secondary Countryside Connectors are illustrated in Figure 5. Figures 26 and 27 illustrate the Primary and Secondary Network of Inter Urban Neighbourhood Connectors for the main towns of Northampton and Daventry to illustrate how this will provide linkage for the Primary Network down to the local networks operating within neighbourhoods.

Inset Table1 – The Sustainable Movement Network Hierarchy

Network Level	Type	Function	Composition
Local	Suburban Road (Yellow)	Link individual residences together and to local assets and connect private to public space	<ul style="list-style-type: none"> Private drives and gardens Suburban roads Homezones
	Urban Green Street (Orange)	Provide Access to neighbourhood facilities and links into the wider network	<ul style="list-style-type: none"> Shopping Streets Market Squares Arterial routes
Secondary	Inter Urban Neighbourhood Connectors (Pink)	Link Neighbourhoods through parks and open spaces	<ul style="list-style-type: none"> Footpaths and cycle routes, through open spaces and parks where possible
	Countryside Connectors (Red)	Link villages and hamlets together and to assets in the wider countryside	<ul style="list-style-type: none"> ROW network Cycle routes
Primary	Green Way	Strategic links between major settlements through open countryside	<ul style="list-style-type: none"> ROW network Cycle routes
	Blue Way	Strategic links between major settlements through open countryside along rivers, canals or navigations	<ul style="list-style-type: none"> ROW network Canal towpaths Canals and navigations

9.7 THE LOCAL NETWORK: DOORSTEP AND NEIGHBOURHOOD CONNECTORS

At the most local scale of the network hierarchy, an intricate network of Yellow Routes and Orange Routes exist. This local network provides access from the doorstep to a multitude of destinations via the wider secondary and primary networks that exist at a more strategic level. These are the routes that will carry the majority of journeys made close to home, perhaps between home and the local park, shop or school. Essentially these represent the link between public and private space, between the individual resident and the wider community that they inhabit.

Whilst these are illustrated in Figure 4 for an urban context, Yellow and Orange Routes are just as applicable to rural villages and towns.

9.0 THE SUSTAINABLE MOVEMENT NETWORK

Yellow Routes: Connecting from the Doorstep

Yellow Ways are the most local and intimate component of the Sustainable Movement Network, and comprises suburban roads, homezones and local routes within neighbourhood areas in towns, villages or hamlets. These are the most often used routes and encompass the greatest number of route options. Initiatives to improve the appearance of streets and public areas within community neighbourhoods should be encouraged whenever possible to enhance the appearance and sense of security of the network, for example through the planting of street trees or the creation of pocket or neighbourhood parks.

Orange Routes: Neighbourhood Links

Orange Routes are the main arteries within a community neighbourhood of a town or village. They might constitute a local shopping street, area of public realm or a major arterial route linking separate centres of population or activity. Orange Routes are an important link between the wider network and the more private community spaces associated with yellow routes. Initiatives to enhance Orange Routes are therefore important, and might include the creation of tree lined boulevards or public realm enhancement.

9.8 THE SECONDARY NETWORK

The Secondary Network provides a series of connective routes for both towns and rural areas within West Northamptonshire and form the link between the local and strategic networks. At this next level of the movement hierarchy, the network is designed to carry significant numbers of people between neighbourhoods and their destination, which might range from a major market, place of employment or education, or a notable district scale or rural recreational facility.

The Secondary Network functions within both urban and rural areas, so Pink and Red Connectors have been defined in order to differentiate between inter urban neighbourhood connectors (Pink), and countryside connectors (Red).

The Pink Connectors: Connecting Urban Neighbourhoods

Inter Urban Neighbourhood Connectors build upon the local network of Yellow and Orange Routes to provide connectivity between different neighbourhoods within urban areas, and connections into the strategic primary network of Green and Blue Ways. Pink Ways are routed to take advantage of major parks and green space assets within the urban envelope, as well as other notable features such as areas of civic or historic character, to encourage wider use and enjoyment. They would be well lit and clearly demarcated pedestrian and cycle routes, and designed to respect local distinctiveness through the choice of paving materials and design details such as street furniture and associated railings. In connecting areas of urban green space, long-term possibilities exist for urban greening of these routes to provide a network of green corridors throughout the urban envelope.

The Red Routes: Countryside Connectors

In rural areas, Countryside Connectors build on the local movement networks, linking rural communities together, and to assets within the wider countryside. They also provide connections to the primary network of Green and Blue Ways. The proposed network comprises an intricate web of routes that provide direct connections between neighbouring villages, often via areas of publicly accessible greenspace, historic parks, country parks or woodlands. Much of the network is located within open countryside and, as a result, significant sections have been designed to take advantage of existing public rights of way.

Red Connectors would comprise footpath tracks, and cycle lanes and bridleways where appropriate. They would be constructed in durable materials that are in keeping with their immediate rural context, and level and type of usage. In order to avoid visual clutter in the open countryside, signage and other furniture would be low key and constructed from materials sympathetic to the surrounding area and context.

9.9 THE PRIMARY NETWORK

The Primary Network is a Sub-Regional strategic movement network providing links between major areas of population and key assets within Northamptonshire and beyond into neighbouring counties. Whilst the network is composed of long, continuous sections, the proposed network has been designed to also operate at a local level, with major sections being made up of a number of interlinked shorter connectors similar to the Countryside Connectors within the Secondary Network.

The Primary Network forms the backbone of sustainable movement in the Sub Region and is composed of two parallel and complementary networks – the Green Ways and the Blue Ways. They are of equal status, but differentiated because of their very different character and movement opportunities.

In view of the strategic and sub-regional importance of the Primary Network, this part of the overall Sustainable Movement Network has been explored in more detail. As a consequence, an overview of the network is examined below followed by descriptions of the various route sections for both the Green Ways and Blue Ways.

9.0 THE SUSTAINABLE MOVEMENT NETWORK

The Green Ways: Land Focused Strategic Network

The Green Way network would provide a continuous network of safe, attractive, and well sign-posted system of footpaths, cyclepaths and bridleways forming overland routes through open countryside. They would be well promoted and accessible and connect attractive, culturally and visually diverse towns, villages, open spaces and identified important assets. They would connect major urban areas and settlements to their rural hinterland and settlements and to key assets and destinations in the wider area.

The design of the proposed network has utilised existing public rights of way, although in some instances sections of roadway are required to complete the network. In these instances, particular attention would need to be given to providing traffic calming measures, or adjacent footpaths/ cycleways. Over much of the landscape Green Ways would comprise surfaced tracks, footpaths and cycle lanes and be constructed of durable materials appropriate to their immediate rural context. In order to avoid visual clutter in the open countryside, signage and other furniture should be low key and constructed from appropriate materials. In many respects the appearance and function of Green Ways would be similar to Red Ways. However, their strategic importance may be reflected in differentiations in signage, furniture and materials. It may be necessary to articulate the difference through a more detailed and sensitive approach to route design and specification, although this would need to be reconciled against the requirement to respect and enhance local landscape characteristics.



By way of example, the proposed Brampton Green Way in West Northamptonshire would display marked differences along its route in response to variations in the character of the landscapes it passes through. Within Northampton, the route originates in the historic core of the town, and as such paving and design would seek to respect local townscape character. To the north of the mainline train station the route proceeds into the Brampton Valley, passing through formal parklands and the Kingsthorpe Local Nature Reserve, both areas of which would require subtly different route design. Further north, the Green Way traverses open countryside along the line of the disused railway, offering exciting opportunities to reflect the area's transport heritage in the design of the footpath and associated signage and furniture.

Such treatment of Green Ways would provide variation in the traveller's experiences and offer significant opportunities to enhance local character. Where possible, local landowners might be encouraged through targeted Environmental Stewardship grants to undertake landscape enhancement works in proximity to the routeways, such as through appropriate hedgerow restoration or tree planting.

The Blue Ways: Water Focused Strategic Network

The proposed Blue Ways network would operate and function in a similar way as the Green Ways. However, their route is dictated by river courses, including sections with formal navigation, and extant stretches of canal. Towpaths and riverside footpaths would therefore offer the same opportunities for pedestrian and cycle traffic as Green Ways, although these will have the additional benefit of travelling close to water, and through some significant areas of wetland and water habitat.

Blue Ways would also offer additional travel options, with potential for 'boat taxis' to service popular stretches of the network, operating a similar service to minibuses or other forms of public transport on the Green Ways network.

Canals and navigations are also a popular recreational resource in themselves, offering opportunities for active sports such as canoeing and more passive recreation such as fishing. It would be hoped, therefore, that the inclusion of the Blue Ways at the upper level of the sustainable movement network in Northamptonshire would encourage additional exploration of this significant resource.

Blue Ways would also be important to holiday makers, and the many visitors to Northamptonshire, and indeed residents of the county take holidays on the many miles of canal or navigation. By incorporating canals and navigations into the sustainable movement network, visitors would be encouraged to explore the wider Northamptonshire landscape from moorings or marinas via the network of Green Ways and Red Routes.

10.0 STRATEGIC AREAS FOR GREEN INFRASTRUCTURE INVESTMENT

FIGURE 6 – THE NORTHAMPTONSHIRE STRATEGIC GREEN INFRASTRUCTURE FRAMEWORK

10.1 PRIORITY AREAS FOR STRATEGIC GI INVESTMENT

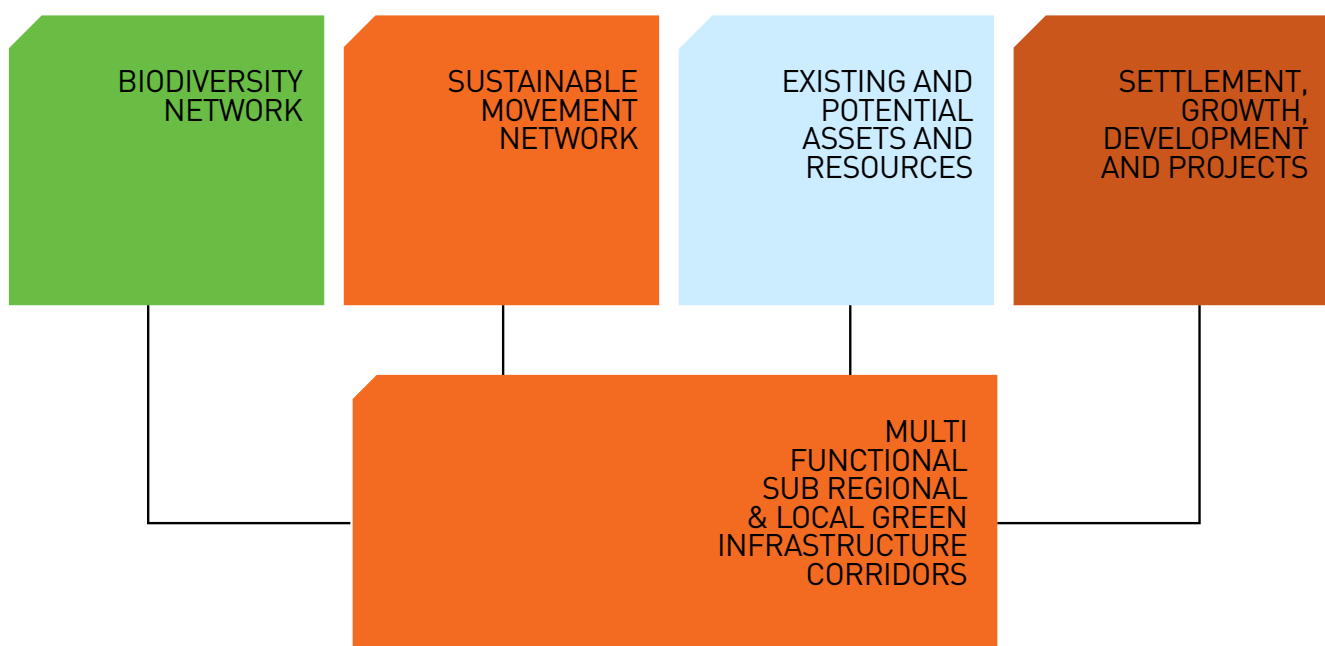
GI embraces a network of opportunities and delivery processes that is applicable across the whole of Northamptonshire. At a strategic level of analysis there are areas within Northamptonshire where demonstrable concentrations of GI opportunities and benefits occur. It is here that the multi-functional nature of GI is particularly evident and where the interface of multiple benefits and stakeholder interests can provide a focus for prioritising areas for investment.

10.2 IDENTIFYING A STRATEGIC FRAMEWORK: THE SUB-REGIONAL GI CORRIDORS

The determination of a strategic framework of areas for GI investment is developed through analysis of the existing and potential assets and resources within the study area, and the principal GI networks. Thus, through a synthesis and overlay of the Biodiversity Network of habitat reservoirs and linkages, the Sustainable Movement Network patterns and connections, and the multiplicity of key assets and destinations, broad strategic patterns can be identified. In addition, areas identified for settlement growth, and locations of key developments and projects, provide further sources of activity that contribute to the identification of key patterns and locations of GI activity.

This interplay of these different forces and opportunities defines the strategic network of Sub-Regional GI Corridors across Northamptonshire, and where both existing assets and potential GI opportunities can deliver multi-functional benefits. These Sub-Regional GI Corridors define a 'top tier' for priority areas for GI investment.

Process of Identifying Sub-Regional GI Corridors



10.3 IDENTIFYING A LOCAL FRAMEWORK: THE LOCAL GI CORRIDORS

Below the sub-regional level, a further network of corridors provides opportunities for multi-functional projects at a more local level. Here, the evidence of multi-functional activity and benefits may be less pronounced or only be driven by one particular network or resource. These define the Local GI corridors. This next tier, although of lower priority for investment at a county or strategic level, may nevertheless provide valuable local benefits and will become a focus of investment where local actions and developments drive projects and opportunities forward.

10.4 A STRATEGIC GI FRAMEWORK PLAN

The Northamptonshire Strategic Green Infrastructure Framework Plan (Figure 6) illustrates the interconnected network of Sub-Regional and Local GI Corridors. They are not intended to indicate rigid corridors for Green Infrastructure provision but instead identify broad landscape zones within which Green Infrastructure related proposals should be focused. These multi-functional zones will encompass a range of objectives.

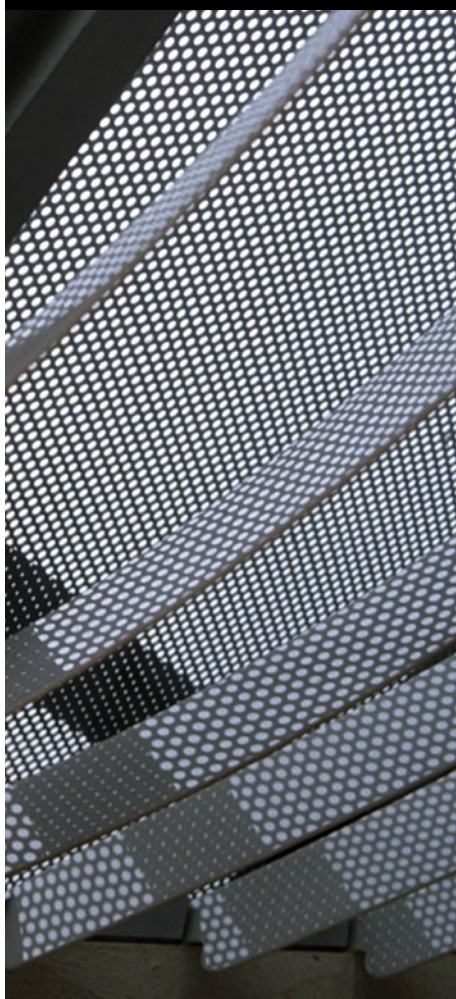
It should be regarded as a conceptual framework to aid the decision making process with regards to GI delivery on the ground. It is not intended to be prescriptive or inflexible, and as a consequence the network delivered in the longer term may vary depending on a multitude of strategic and local issues, not least those relating to the aspirations of local communities, land ownership and a changing development context.

10.5 GI PRINCIPLES

To ensure the vision of a multi-functional GI network is achieved in the long term, delivery should be guided by the following key principles:

- The delivery of multi-functional green infrastructure is fundamental, and proposals should be formulated to secure this wherever possible;
- The delivery of a connected network is also important to ensure strategic objectives are achieved with regard to multi-functionality;
- Both Sub-Regional and Local Corridors identified on the framework plan are intended as broad areas of opportunity only, and are open to adjustment/refinement as long as proposals adhere to the other related principles;
- Preference should be given to GI proposals which complement other GI assets and resources in the locality;
- The principle of 'net gain' should be secured where there is to be a loss in a GI resource;
- Ensuring the quality of the GI resource is retained or delivered is essential;
- Opportunities to consider socio-economic as well as environmental gains should be sought during the delivery of GI at all times;
- Long term monitoring of GI delivery and management is important, through stage reviews of both existing and proposed resource, to ensure delivery opportunities are not missed;
- Options for partnering and funding of GI delivery should be proactive and flexible including potential competition for delivery; and
- Opportunities for GI delivery should be taken as and when they arise; both flagship and small scale projects will therefore be important in delivering change in the long term.

These principles should be adopted by GI delivery partners to assist with the consideration of GI proposals during the development of the local network in the long-term.



10.6 A STRATEGIC GREEN INFRASTRUCTURE FRAMEWORK FOR THE COUNTY

The overall Strategic Green Infrastructure Framework Plan applies to the whole of the West Northamptonshire and linked to the earlier output for North Northamptonshire, provides the context for a countywide Green Infrastructure Framework. It seeks to:

- provide a framework for the co-ordinated delivery of Green Infrastructure related proposals in the long term at a strategic level;
- provide a strong environmental infrastructure framework within which planned settlement growth and associated landscape change can be positively managed (ie a plan-led approach) to assist with the delivery of sustainable communities and natural systems which can respond to changing global context; and
- connect communities to spaces and places, people to nature, and thus contribute to improved environmental quality, quality of life and well being, as well as link to wider agendas regarding social inclusion/regeneration and economic prosperity.

In further detail it aims to:

- deliver improved environmental quality, and thus 'liveability';
- celebrate the unique experience, image and visual qualities of Northamptonshire's landscape;
- radically improve connectivity between urban and rural landscapes and thus connect spaces and places, and to and through urban areas, the countryside, the Nene river floodplain, its tributaries and other destinations;
- create multi-functional 'working' landscapes which deliver a wide range of interlinked environmental, social and environmental benefits;
- in particular, work with (rather than against) environmental processes to improve flood-risk and water management systems, biodiversity, and air quality; and
- provide the landscape/townscape context for appropriate urban development.



11.0 MAKING IT HAPPEN

In tandem with the Methodology Review and the development of this document, a separate study has been undertaken to explore Governance Issues and Mechanisms for Delivery and Funding for a GI Network. Achieving a consensus view and agreement on establishing a Green Infrastructure Governance organisation and champion is a vital step in 'Making it Happen'. The scope of the study, its principal findings, and the report recommendations are summarised below.

11.1 AIMS OF THE GOVERNANCE STUDY

The principal aims of the Governance study were to:

- provide reasoned recommendations for GI governance arrangements;
- develop GI governance models that would deliver at every scale from the local to sub-regional, regional and national;
- clarify the delivery of GI through the planning system;
- provide a reference base to aid integration of GI into emerging Local Development Documents; and
- examine and report on potential mechanisms for funding and delivery of a GI Network.

11.2 CASE STUDY FINDINGS

The study examined a number of case studies within the UK, and also in the USA which has a strong track record of developing green infrastructure models and delivery. This research identified that the following are key recurring elements of GI Governance:

- An independent organisation;
- A single-focus / dedicated organisation;
- A democratically accountable organisation;
- An organisation which is, as far as possible, self-financing; and
- High standards of leadership and staff calibre.

11.3 A GOVERNANCE FRAMEWORK FOR GI

The study developed a conceptual model for a Governance Framework that would provide a focus and champion for promoting and co-ordinating GI across the county. The proposed model is based on the following governance structure:

- A Non-Executive GI Board
Its role would be to steer the development of a business plan for an executive body and monitor the delivery of the GI Strategy. It would be made up of the key stakeholders and contributors to the Strategic GI Framework Study in Northamptonshire, and include representatives of the local authorities and LDVs, government agencies, national and local environment organisations, and the voluntary and private sectors, including representatives of developers and house builders, and land owners and managers.

These bodies include organisations that may variably fund, deliver, and ultimately own or manage Green Infrastructure.

- A GI Executive
A principal role of an Executive Body would be to promote the understanding and importance of GI and co-ordinate, and bring together partnerships for its delivery. It would work with all of the agencies active in Northamptonshire, and **champion** the GI Strategy and Business Plan.

The tasks of the Executive Body would include **negotiation**; the **enabling** of GI Delivery; **marketing**; **influencing** the development of GI projects; **facilitating** delivery through helping to form partnerships to fund, deliver, manage and own projects; and the **disseminating** of information and best practice at every level.

The Executive's remit would not be to physically implement Green Infrastructure itself, but to **see it implemented**, through **forming partnerships** of all the various agents active in Northamptonshire, and through **influencing and enabling**.

11.0 MAKING IT HAPPEN

11.4 THE GI EXECUTIVE - A NEW ORGANISATION

Through its current role and activities, the River Nene Regional Park has demonstrated its commitment to the GI Strategic Framework and delivery. It is actively promoting environmental infrastructure and sustainable processes over a wide part of the county and is familiar with the co-ordination of partnerships and the setting up of investment structures.

Based on this proven track record, a conclusion of the Governance study was that the RNRP is well placed to fulfill all, or the large majority, of the GI coordinated functions and transform itself into a formally constituted GI Executive for the whole of Northamptonshire, functioning as a single focus 'Green Infrastructure Delivery Vehicle' for the county. To ensure a fully integrated approach, which is at the heart of GI, it is desirable that the GI Executive would also operate within the Sub Region through cross boundary working in order to promote and champion the integration with other GI projects beyond but linking into the county.

Initially, a comprehensive business case that sets out the process and framework for such a transition would be required. This would be based on the examination of the following potential business models for a GI Executive. Fundamental aspects to be considered in the choice of model to be adopted include: financial and democratic empowerment; singularity of focus; independence; and business-mindedness.

11.5 MECHANISMS FOR FUNDING AND DELIVERY

The Governance study examined a wide range of existing, emerging and potential future mechanisms for the delivery and funding of GI. In summary the principal mechanisms that are currently available comprise:

- Integration into the statutory planning system – this is a fundamental requirement to ensure that GI is embedded into LDFs, and the local and regional planning policy framework;
- Planning obligations – Section 106 agreements;
- Landfill Tax;
- Aggregates Levy Sustainability Fund;
- Business Improvement Districts;
- Roof Tax;
- Planning Gain Supplement arising from the uplift value of land sold for development;
- Private Sector funding through direct developer funding or the potential for property and financial endowments; and
- Environmental Stewardship with focused and enhanced grant support that will deliver GI objectives;

The Stakeholder Workshop also identified some further mechanism and opportunities for developing funding streams that may be available, which are listed below. Although these were not reviewed in detail in the Governance report, it confirmed the multiplicity of potential mechanisms that may be available or are emerging.

- Ring-fenced funding for long term management;
- Bending of existing funding mechanisms;
- Anything sourced locally because nationally sourced funds were likely to remain low and hidden, bound by constraints such as time, variation and justification;
- Endowments;
- Common holdings, e.g. as at Upton in West Northamptonshire;
- Revenue charges for leisure and recreational services, education and training, etc;
- Environmental services, e.g. flood risk management, carbon sequestration, biomass;
- Importance of Partnership working because more sustainable in the long term.

These wide ranging mechanisms are indicative of the multi-faceted nature of GI and its potential delivery, and the need to explore the many options that are likely to be available both now and in the future in order to achieve the Vision for GI as an overarching concept.

11.6 PRIVATE SECTOR AND PARTNERSHIP WORKING

The role of the private sector is seen as a key area in the future for the delivery of GI in association with development opportunities. A GI Executive Body would play an important role in this process, by identifying opportunities and assisting in the forging of partnerships. The promotion of the economic benefits of an enhanced environment and better quality of life for residents, employees and visitors to the county would provide a compelling incentive for appropriate levels of investment and the delivery of solutions that would achieve GI objectives.

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11.7 THE GI BUSINESS PLAN AND ITS ROLE IN DELIVERY

Following the identification of the specific business model to be adopted for the GI Executive, the development of the Business Plan will be an important stage. The Plan is a vital aspect of steering and empowering the Executive and would sit alongside the GI Strategy in identifying the Executive's remit.

11.8 PROJECT SELECTION CRITERIA FOR DELIVERING MULTI-FUNCTIONAL BENEFITS

The Business Plan has the potential to provide a framework and tool to aid project selection and delivery. In particular it could specify or prioritise projects, and also set the context for generic projects under different themes. This would provide the framework for guiding partners in the development of project proposals and funding applications.

It is proposed that the Business Plan would include Appendices that set out the criteria for identifying the level of multi-functional benefits, and hence the prioritising of funding, as well as illustrating best practice projects and case studies. It is anticipated that many of these would correlate with the Sub-Regional GI corridors that have been identified in the Strategic Framework Study for West Northamptonshire, and previously for North Northamptonshire. These define the priority areas for GI investment where a high level of multi-functional activities and benefits would arise from the delivery of GI projects.

By way of example Table 1 (at the end of this report) sets out a potential Proforma for a Green Infrastructure Multi-functionality Checklist Criteria. It is based on a notional scoring system to assist in identifying and selecting projects that are suitable to go forward for GI Funding. The scoring is related to the range of criteria that a project would deliver in relation to GI Strategic Themes and Goals, and achieving the multi-functionality requirement of Green Infrastructure Delivery Projects.

Priority is given to projects that are located within the Strategic Sub-Regional Corridors. However, the process ensures that other projects that fall within Local GI corridors, or indeed beyond the principal GI Framework, can also be selected where multiple benefits can be identified. While the multi-functional benefits of many of these projects is identified, there will nevertheless be some projects of a specialist nature where only a few, or in extreme circumstances, a single benefit can be delivered. More limited benefits should not preclude eligibility for funding, however, and each project must be evaluated on its own merits.

Following on from this, Table 2 has identified potential projects within West Northamptonshire that deliver multi-functional Green Infrastructure benefits. These benefits are briefly reviewed and cross-referenced with the Strategic GI Themes. Many of these potential or emerging projects are located within the Sub-Regional GI Corridors where the priority for investment will be focused.

11.9 THE NEXT STEPS

The next stage of the GI process needs to be focused on comprehensive consultation in order to promote a wider understanding of its importance, and the benefits and principles that underpin it. GI can only be achieved through a commitment and engagement by everyone, and at every scale from national and statutory organisations down to local communities, and across the private sector. The delivery of GI will meet the vision of achieving a living environmental system in towns, villages and in the wider countryside that sets in place the bedrock of a sustainable environment, and a framework for landscape scale habitat restoration and creation. It will support thriving communities across Northamptonshire and ensure a better quality of life for all.



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11.10 PROFORMA FOR GREEN INFRASTRUCTURE MULTI-FUNCTIONALITY CHECKLIST CRITERIA

This Proforma is designed to assist in identifying and selecting projects that are suitable to go forward for GI Funding. Projects scoring above fifty represent wins over a range of criteria linked to specific GI Strategic Themes and Goals, and achieving the multi-functionality requirement of Green Infrastructure Delivery Projects.

The scoring system gives priority to projects that are located within the Strategic Sub-regional Corridors. However, the multi-functionality criteria scoring allows other projects that lie outside of Sub-Regional or Local Green Infrastructure Corridors to still go forward for funding where these can demonstrate significant multi-functional benefits within a wide range of GI themes and goals.

The GI Delivery Themes and Goals criteria identify a diverse range of potential GI wins. Reference should be made to Figure 2, The Organisational Framework which identifies the appropriate range of GI Delivery Partners that would provide sources of advice or additional funding for each GI Goal.

Housekeeping	
Project Name:	
Project Location:	
Short Description of the Project Proposal:	
Capital Cost:	
Funding Required:	
Projected Annual Revenue:	

Strategic GI Delivery Criteria		Score
1.	Does the proposed project lie within or immediately adjacent to a Strategic Sub-Regional Green Infrastructure Corridor (score 20 for yes)	
2.	Does the proposed project lie within or immediately adjacent to a Strategic Local Green Infrastructure Corridor (score 15 for yes)	
Strategic GI Criteria Sub Total		

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Strategic Movement Network Delivery Criteria		Score
3.	Does the proposed project deliver a portion of the Primary Movement Network (score 20 for yes)	
4.	Does the proposed project deliver a portion of the Secondary Movement Network (score 15 for yes)	
5.	Does the proposed project deliver a portion of the Local Movement Network (score 10 for yes)	
Movement Network Delivery Criteria Sub Total		

Biodiversity Network Delivery Criteria		Score
6.	Does the proposed project deliver a significant portion of the Landscape Scale Biodiversity Enhancement Area (score 20 for yes)	
7.	Does the proposed project deliver a portion of the Biodiversity Network Habitat Reservoirs (score 15 for yes)	
8.	Does the proposed project deliver a portion of the Biodiversity Network Habitat Links (score 15 for yes)	
Biodiversity Network Delivery Criteria Sub Total		

Criteria for Delivery of GI Themes and Goals		Score
Rich and Diverse Landscape Strategic Themes: Environmental Character; Geology; Heritage and Culture; Biodiversity		
9.	Does the proposed project enhance local landscape character in accordance with the Current Landscape Character Assessment, Policy and Guidance? (score 10 for yes)	
10.	Does the proposed project enhance local Historic landscape character in accordance with the Historic Landscape Character Assessment, Policy and Guidance? (score 10 for yes)	

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11.	Does the proposed project enhance local Biodiversity character in accordance with the Biodiversity Character Assessment, Policy and Guidance? (score 10 for yes)	
12.	Does the proposed project protect and enhance the fabric and setting of historic or archaeological monuments, buildings or structures? (score 10 for yes)	
13.	Does the proposed project enhance the local biodiversity and habitat resource? (score 10 for yes)	
Prudent Use of Resources Strategic Themes: Landform; Hydrology and Flood Information;		
14.	Does the proposed project address sustainable water management and flood alleviation that is appropriate for local context and EA requirements? (score 10 for yes)	
15.	Does the project provide a community renewable energy scheme? (score 10 for yes)	
16.	Does the project provide community allotments or provision for the production of food and materials for use in the immediate area (score 10 for yes)	
Vibrant Rural Economy Strategic Theme: Planned Growth; Proposed and Potential Development; Environmental Character;		
17.	Does the proposed project generate jobs or contribute to the local rural economy? (score 10 for yes)	
Sustainable Transport Network Strategic Themes: Access and Movement; Transport / Service Infrastructure and Connections;		
18.	Does the proposed project enhance the local public rights of way network or cycle routes by upgrading surfaces or facilities or extending the network with new routes? (score 10 for yes)	
19.	Does the proposed project deliver sustainable transport solutions such as park and ride schemes, cycle hire facilities, minibuss shuttles (score 10 for yes)	
Healthy Environment Strategic Themes: Green Space; Leisure, Recreation and Tourism Destinations;		
20.	Does the proposed project enhance existing accessible green space provision or provide new accessible green space? (score 10 for yes)	

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21.	Does the proposed project provide opportunities and facilities for active recreation capable of contributing to health and wellbeing of users (score 10 for yes)	
Cultural Canvas		
Strategic Theme: Heritage and Culture; Environmental Character;		
22.	Does the proposed project provide opportunities and inspiration for community based arts projects such as painting, sculpture, creative writing, poetry? (score 10 for yes)	
Outdoor Classroom		
Strategic Themes: Geology; Landform; Hydrology; Biodiversity; Environmental Character; Heritage and Culture;		
23.	Does the proposed project provide opportunities and facilities for outdoor learning and education opportunities? (score 10 for yes)	
Sustainable Communities		
Strategic Theme: Planned Growth; Proposes and Potential Development		
24.	Does the proposed project represent an exemplar of sustainable development in planning, design, specification and procurement of materials (score 10 for yes)	
GI Themes Delivery Criteria Sub Total		

Summary	Score
Strategic Green Infrastructure Criteria Sub Total	
Sustainable Movement Network Delivery Criteria Sub Total	
Biodiversity Network Delivery Criteria Sub Total	
GI Themes Delivery Criteria Sub Total	
Total GI Multi-functionality Checklist Score	

FIGURES

PLEASE REFER TO THE DOCUMENT '**GI_PARTS 1-3 - FIGURES**'.