



# NORTHAMPTON GREEN INFRASTRUCTURE PLAN

*A Green Infrastructure Toolkit  
for Northampton*

May 2016

Prepared for  
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with **Countryside**  
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## **ACKNOWLEDGEMENTS**

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All photographs in the report are by Fiona Fyfe unless credited otherwise.

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## Executive Summary

The National Planning Policy Framework (NPPF) defines Green Infrastructure (GI) as ***A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.*** Paragraph 114 of the NPPF requires that local planning authorities (LPA) should set out a strategic approach in their Local Plans for the creation, protection, enhancement and management of networks of biodiversity and GI. Planning Practice Guidance provides more detail on what this might mean in practice for LPAs.

Examples of GI assets within Northampton include Parks and Gardens (e.g. Becketts Park); Amenity Greenspace (e.g. Millers Meadow); Natural and Semi-natural Urban Greenspace (e.g. Kingsthorpe Local Nature Reserve); Green Corridors (e.g. the River Nene) and other sites (e.g. allotments). Improvements to GI can benefit biodiversity; access and movement; the local economy; flood mitigation; water quality; climate change mitigation; enhancements to cultural heritage assets; landscapes and local communities (through education and improved public health).

The *GIP* was commissioned by Northampton Borough Council in February 2014 and was prepared by Fiona Fyfe Associates, with Countryscape and Dr Janet Jackson (University of Northampton), between March 2014 and May 2016. The *Green Infrastructure Plan (GIP)* represents a new, innovative and committed approach to the future delivery and maintenance of GI in Northampton. Although it is intended as a planning tool, its broad remit means that it will be of value to a wide range of partners working to develop and implement GI at a local level. The purposes of the *GIP* are:

- To present the framework and tools to develop Green Infrastructure (GI) locally and in association with neighbouring authorities.
- To prioritise the planning, development of, and investment in, GI for the Northampton Related Development Area until 2029.
- To provide an evidence base for Local Plan development.
- To highlight the means by which organisations, communities and partnerships can work to create and sustain a fit-for-purpose GI Network across the area.

The *GIP* is specific to the Northampton Related Development Area (NRDA); it forms the basis of a co-ordinated approach to the creation and sustained management of GI across the NRDA while establishing links for neighbouring local authorities. It is intended for use by planners, developers, project managers, community groups and other organisations. The *GIP* enables national thinking and sub-regional GI strategies to be put into practice at the local level. In doing so, it enables Northampton Borough Council to act on their obligations with regard to creation and enhancement of GI as set out in European, national and local planning policy.

Six aims have been identified to ensure successful implementation of the *GIP*. Achieving these aims will result in multi-functional GI which conforms to the best-practice principles.

- 1) **Improve access to and quality of GI assets and links to the hinterland.**
- 2) **Increase the level and diversity of partner and community participation in the planning, development and enjoyment of the GI within the NRDA.**
- 3) **Enhance the quality of Northampton's natural environment, increase biodiversity and strengthen the network of habitats across the NRDA.**
- 4) **Ensure GI plays a central role in Northampton's sustainable and economic growth while enhancing the landscape character and sense of place.**

**5) Improve the integration of GI into the NRDA's local transport priorities.**

**6) Improve the Integration of GI into Northampton's strategic priorities.**

The *GIP* is split into four Parts; Part 1: GI Strategy; Part 2: GI Implementation Plan, Part 3: Evidence Base and Part 4: Monitoring Strategy. Accompanying maps, glossary and Appendices provide supplementary information. The *GIP* is also intended to be used in conjunction with Northampton Borough Council's Interactive Map where GI-specific layers have been developed. Extensive stakeholder engagement (online & through workshops) has taken place throughout its development.

**Part 1 (Strategy)** describes the nine Components which form Northampton's Local Level GI Network. By splitting the Local Level GI Network into Components it is possible to understand how the Network functions at a local level, and what needs to be done to enhance it. A series of Profiles put each of the Components into their GI context, and describe their existing and potential functions in terms of biodiversity, connectivity and access, community and public health, landscape, heritage, flooding, water management and ecosystem services. The Profiles also identify projects and opportunities which, if delivered, will enhance the overall function and quality of the Component.

**Part 2 (Implementation Plan)** sets out the tools and direction with which to implement the Strategy. It starts by establishing the key aims and objectives which will be achieved through successful implementation of the *GIP*. It includes a series of exemplar project plans which provide 'blueprints' for the development of future projects, including project descriptions, delivery timescales, indicative costings, GI context, project benefits and potential sources of funding. Guidance is provided to assist community groups and other organisations in the development of their own future project plans.

The current economic climate means that finding funding for projects can be a challenge. The funding strategy element of the *GIP* identifies Northampton's specific needs (for example in terms of population statistics, public health, and access to recreation facilities) and suggests potential funding sources for addressing these needs through improved GI provision.

This is a time of considerable change in Northampton. Proposed major developments include eight Sustainable Urban Extensions (SUEs) on the peripheries of the town, and the regeneration of town centre sites including the Northampton Waterside Enterprise Zone. These proposals provide exciting opportunities to enhance and create GI (including linkages with the existing GI Network) and to integrate GI into their designs. They are described in the context of the local level GI network.

**Part 3** sets out the **Context and Evidence Base** for the Strategy and Implementation Plan. It provides background on Northampton's planning and regeneration context, and summaries the strengths and weaknesses in the existing GI network. It describes the Strategic GI Framework for the County considering the Sub-Regional and Local GI Corridors as well as the biodiversity and movement networks. These are then defined in terms of the Local Level GI Components.

The multifunctional nature of GI means that the *GIP* has a synergy with the delivery of a number of other local and national objectives. A summary of background information is provided on a range of relevant topics, including Open Space, Sport and Recreation; Cultural Heritage Assess; Health and Wellbeing; Climate Change; the Water Framework Directive and Ecosystems Services. A summary of key national and local planning legislation and policy is also provided.

**Part 4 (Monitoring framework)** provides an approach for monitoring the effectiveness of the *GIP*, based on activity in the website and Interactive Map, along with information on project delivery and expenditure on GI-related projects.

# **INTRODUCTION TO THE *GREEN INFRASTRUCTURE PLAN***



# 1.0 Background to the *Green Infrastructure Plan*

## 1.1 Commissioning

- 1.1.1 The *Green Infrastructure Plan (GIP)* was commissioned by Northampton Borough Council (NBC) in February 2014. It was undertaken by Fiona Fyfe Associates, with Countryscape and Dr Janet Jackson of the University of Northampton, between March 2014 and May 2016.

## 1.2 Purposes of the *GIP*

- 1.2.1 The *GIP* provides the most important step towards Northampton's planning and delivery of Green Infrastructure (GI) for the future. The purposes of the *GIP* are to:
- Present the framework and tools to develop GI locally and in association with neighbouring authorities.
  - Prioritise the planning, development of and investment in GI for the Northampton Related Development Area until 2029.
  - Provide an evidence base for Local Plan development.
  - Highlight the means by which organisations, communities and partnerships can work to create and sustain a fit for purpose GI network across the area.
- 1.2.2 The *GIP* is specific for the Northampton Related Development Area (NRDA), enhancing the town's distinctive environment, and addressing its particular issues. Through the *GIP*, National and Sub-Regional Green Infrastructure thinking is being put into practice at the local level. The *GIP* forms a natural progression from the more strategic GI guidance set out in *Making the Connection* (River Nene Regional Park, 2006) and the *Northampton Landscape Sensitivity and Green Infrastructure Study* (Living Landscapes Consultancy, 2009).

## 1.3 Format of the *GIP*

- 1.3.1 *Part 1* provides a **GI Strategy** establishing the Local Level Green Infrastructure Network for the Northampton Related Development Area (NRDA); *Part 2* provides a **GI Implementation Plan** setting out mechanisms to facilitate delivery and *Part 3* establishes the **Evidence Base** which presents a robust basis for policy development. The following *Maps*, *Glossary* and *Appendices* provide supplementary information. In addition, the *GIP* is intended to be used with the GI layers on the NBC Interactive Map.

## 1.4 Geographical Scope

- 1.4.1 The study area encompasses the NRDA as shown on *Map 1*. The NRDA boundary is shown on the Policies Map for the West Northamptonshire Joint Core Strategy Local Plan (Part 1) Adopted Dec 2014 (JCS). The NRDA includes the whole of Northampton Borough plus the areas allocated for eight Sustainable Urban Extensions (SUEs) which cross administrative boundaries into Daventry and South Northamptonshire.



## **1.5 Who will use the *GIP* and how**

1.5.1 The *GIP* (and its accompanying layers on the NBC Interactive Map) will be used to provide the basis for a coordinated approach to the creation and sustained management of GI across the NRDA and its neighbouring Local Authorities. It is intended for use by planners, developers, project managers, community groups and other organisations in the following ways:

### **1.5.2 Planners**

- a) Supporting and guiding the development of Local Plans and associated planning documents.
- b) Supporting planning responses when advising on GI expectations within development proposals (including S106 and Community Infrastructure Levy (when enacted) requirements).
- c) Forming a resource of potential projects when funding becomes available.
- d) Acting as a reference document to other key strategies such as the *Corporate Plan*, *Local Transport Plans* and *Local Authority Carbon Management Programme*.

### **1.5.3 Developers**

- a) Supporting and guiding the production of masterplans and other documents associated with major development areas.
- b) Identifying on-site / off-site opportunities to enhance existing GI and create new GI as part of a development brief.

### **1.5.4 Project Managers**

- a) Supporting and guiding the targeting of resources to enhance GI through management of existing projects.
- b) Helping in the selection of new GI projects to be brought forward as and when funding becomes available.

### **1.5.5 Partnership Organisations, e.g. Local Nature Partnership, Local Enterprise Partnership and Catchment Partnership**

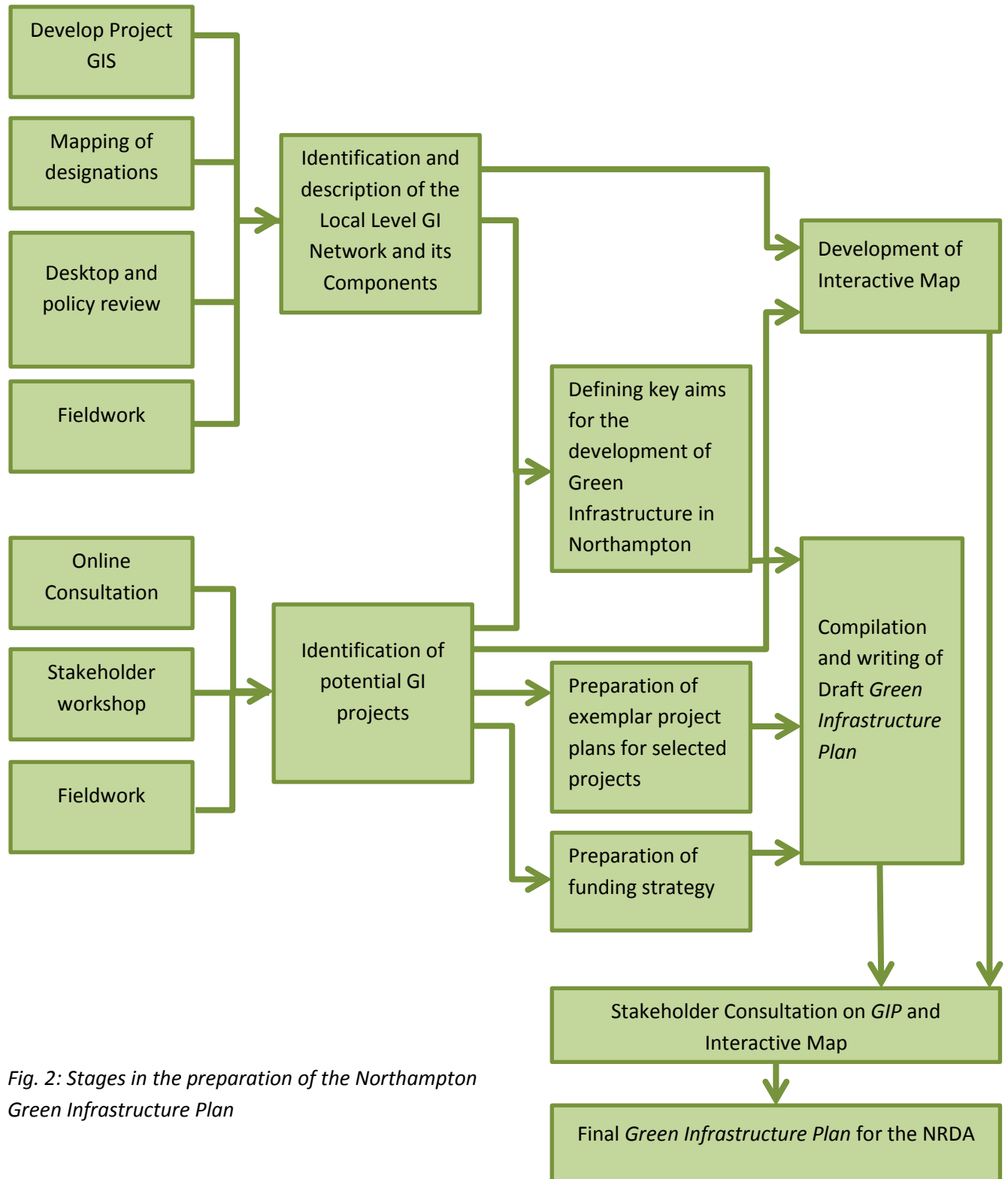
- a) Increasing awareness of potential projects which could be supported and/ or taken forward by Partnership Organisations.
- b) Understanding the broader GI context in which projects are undertaken, in order to facilitate GI links between projects.

### **1.5.6 Community groups and other organisations (e.g. 'friends groups' and charities)**

- a) Providing guidance for making GI improvements happen on the ground through the development of new and existing projects.
- b) Providing 'blue prints' for creating plans for new projects.
- c) Providing information on potential sources of funding.
- d) Providing evidence to support the development of Neighbourhood Plans.

## 2.0 Methodology, Stakeholder Engagement, Next Steps and using the *Green Infrastructure Plan* to evidence and develop planning policy

## 2.1 Project Stages



*Fig. 2: Stages in the preparation of the Northampton Green Infrastructure Plan*

- 2.1.1 Fig. 2 above shows the stages in the preparation of the *GIP*. **Desk Studies** included establishing the project GIS; research of planning policy and other relevant documents; reviewing consultation responses and identifying the initial GI projects and Local GI Network Components. **Fieldwork** included checking the initial list of potential GI projects and identifying suitable projects for inclusion; visiting each Local GI Network Component to check its accuracy and get a 'feel' for it on the ground; taking photographs for inclusion in the *GIP*; identifying new potential projects and (where possible) identifying gaps in movement and biodiversity networks. The majority of the fieldwork took place over three days in early June 2014. **Writing up** included compiling all the information gathered during the desk and field studies into the draft report, editing the report following consultation, and preparing the final document for issue.

## 2.2 Stakeholder Engagement

- 2.2.1 A range of professionals and stakeholders are involved in the design, development and delivery of GI, and in related investment. Therefore the consultation element of this study has been carefully designed and implemented to reach as wide a range as possible of the *GIP*'s potential users. This has in turn helped to shape the coordinated approach proposed for progressing GI across the NRDA. The consultation informed the development of the Strategy and the Implementation Plan sections of the *GIP*, as well as the Local Level GI Components, the Exemplar Project Plans and the Interactive Map. A full list of people consulted is included in Appendix A. The key stages of stakeholder engagement are described below.

### 2.2.2 ***Stage 1: Identification of potential GI projects (March-April 2014)***

A wide range of organisations were contacted and invited to provide information on their prospective GI projects through an online survey. The survey was designed to enable a coherent and consistent approach to gathering information relating to a wide range of potential schemes. Key data recorded included: the project proposal; project location and size; indicative delivery time scales; potential benefits, etc. The results were fed into a spreadsheet and the approximate locations of projects recorded and mapped using GIS. All suitable projects have been plotted on the Interactive Map to identify GI opportunities which can be taken forward as part of new development or by other means. The results have also been used to inform the development of case study Exemplar Project Plans

### 2.2.3 ***Stage 2: Stakeholder workshop (April 2014)***

The workshop took place at the Guildhall, Northampton on 24<sup>th</sup> April 2014. Delegates represented a range of professionals with a remit for GI including planners, public health professionals, historic environment experts, natural environment custodians and neighbouring Local Authorities. The workshop began with group-based sessions which included:

- Discussion related to the issues and potential for GI in Northampton, including discussion on what could be practically done to improve it.
  - A review of projects submitted through the online database adding detail where known.
  - Removing projects not pertinent to NRDA GI delivery (e.g. Projects outside the NRDA boundary; maintenance-related projects; source-pollution-related projects (a remit of the Environment Agency), etc.).
  - Identifying known projects not recorded through the on-line survey, and considering aspirational new GI projects based on local knowledge.
- 2.2.4 A key purpose of the workshop was to identify a range of projects which could be ‘worked-up’ as live case studies for the Exemplar Project Plans. Groups agreed to exclude projects directly associated with Sustainable Urban Extensions as these were likely to be delivered as part of the existing development proposals. The remaining projects were ranked on their ability to provide multiple benefits, their links with the Strategic GI Framework and potential practical delivery. The results were used to develop a short-list of projects, comprising a range of ‘case studies’ that would be useful if developed into Exemplar Project Plans.
- 2.2.5 As an additional exercise, delegates were encouraged to identify groups of projects on the basis of their geographic location and / or project type. These groupings subsequently informed the development of the GI Components. Lastly, outputs from the workshop were used to update the project database and to guide fieldwork.
- 2.2.6 ***Stage 3: Development of Exemplar Project Plans (May-July 2014)***  
Once developed, the Exemplar Project Plans were subjected to a round of consultation with those organisations who originally submitted them, and with the Borough Council internal GI Team. This exercise enabled the testing of the Exemplar Project Plan Template and ensured accuracy of detail in relation to the case studies being used to showcase the Project Plan approach.
- 2.2.7 ***Stage 4: Internal Consultation on First Draft GIP (July 2014)***  
An internal technical consultation on the First Draft *GIP* took place in July 2014. Comments were requested and received from Northampton Borough Council’s Development Management Team, Planning Policy and Heritage Team and Regeneration team, as well as the West Northamptonshire Joint Planning Unit. These comments were incorporated into the Second Draft *GIP*.
- 2.2.8 ***Stage 5: Testing the Interactive Mapping Tool (October 2015)***  
Two sessions were held with Technical Officers to test the Interactive Mapping Tool. The testing helped establish the usability and usefulness of the map. It provided an opportunity

for Officers to identify potential improvements and record other mapping information that could be useful. Feedback from the sessions was used to refine the tool in preparation for its launch as part of the consultation process for the *GIP*. The feedback write up can be found in Appendix B.

#### 2.2.9 **Stage 6: Consultation on Second Draft GIP (August-October 2015)**

The final round of the extensive technical and stakeholder consultation on the draft *GIP* took place between August and October 2015. A list of consultees is provided in Appendix A. The purpose of this consultation was to determine:

- What improvements could be made to the *Green Infrastructure Plan* or Interactive Map?
- Is there anything left out that you would like to see in the *Green Infrastructure Plan* or on the Interactive Map?
- Do you agree that the Plan together with the Interactive Map will help us achieve our aim to deliver a Local Level GI Network?

The results of this final round of consultation have been used to inform the final drafting of the *GIP*.

### 2.3 **Next Steps**

2.3.1 This document is the final version of the *Green Infrastructure Plan* for Northampton. It is part of the evidence base informing policy development for the Northampton Local Plan Part 2. The Local Plan, in association with the tools provided by this Green Infrastructure Plan, will help the council:

- Determine planning applications.
- Decide on future provision (e.g. protection, enhancement and surpluses).
- Guide the management and maintenance of green infrastructure in response to identified pressures, including growth.
- Prioritise local authority capital and revenue investment, including S106 and Community Infrastructure Levy receipts where appropriate.

The *GIP* has been developed with an appreciation to the Best Practice Principles for Green Infrastructure as set out in Section 4. It therefore offers partners and stakeholders a structured approach to prioritise, guide and coordinate activities as well as to refine the existing and create new green infrastructure. The Council will work with their partners and stakeholders to ensure GI plays a central role in Northampton's sustainable and economic growth while enhancing the landscape character and sense of place.

## 2.4 How the *GIP* should be used to evidence and develop planning policy

The *GIP* will inform a wide range of policies within the Northampton Local Plan (Part 2) which is currently in development. The Aims and Objectives presented in Section 7.0 of the *GIP* should be incorporated into planning policy, along with the following recommendations:

- A requirement for development to take into account the Local Level GI Network Components, as set out in Appendix D.
- A requirement for development to enhance the GI Networks for biodiversity and sustainable movement, as described in Section 14.0.
- A requirement for development to aspire to incorporate multi-functional GI, delivering multiple benefits to people, wildlife and the wider environment.
- A requirement for Northampton Borough Council to monitor the success of the implementation of the *GIP*, using the monitoring framework set out in Section 18.0.
- Proposals being brought forward for the Northampton Waterside Enterprise Zone should be planned and designed with reference to the Local Level GI Network and in accordance with the JCS policies which support GI.
- The Local Plan Part 2 should seek to protect and enhance ecosystems and increase the provision of ecosystem services where possible. There needs to be recognition of the flow of ecosystem services across the NRDA boundary and of the importance of partnership working with neighbouring authorities to ensure that opportunities to enhance ecosystem services are maximised. It would be appropriate for major development to be required to assess the effect of the proposal on ecosystem services with a view to enhancing the provision and / or mitigating any negative effects.

**PART 1**

***THE STRATEGY***

***For Northampton's Green  
Infrastructure***



## 3.0 Defining Green Infrastructure

- 3.0.1 The Government's National Planning Policy Framework (2012) defines Green Infrastructure (GI) as:

***A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.***

- 3.0.2 GI is made up of different types of open space and watercourses, such as rivers and lakes. Fig. 1 below shows the different types of open spaces that will be considered within this Plan and provides some examples of existing GI assets within them.

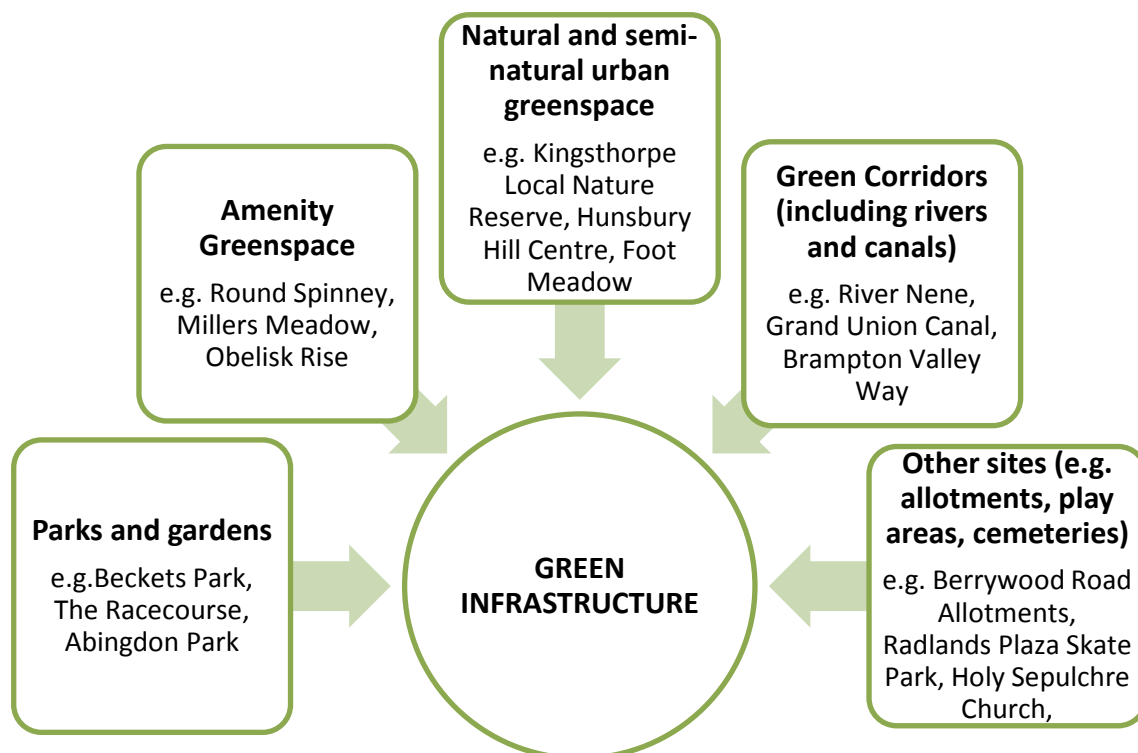


Fig.1 Green Infrastructure Typology, and examples of Northampton's associated GI assets. Based on Natural England's Green Infrastructure Guidance (2009) Document NE176.

Enhancements to Green Infrastructure lead to multiple benefits, including benefits to:

- **Biodiversity**
- **Access and movement networks**
- **Local economy**
- **Flood reduction and climate change mitigation**
- **Water quality**
- **Reducing pollution**
- **Cultural heritage assets**
- **Landscape**
- **Local communities and education**
- **Public health**

## 4.0 Best Practice Principles for Green Infrastructure

### 4.1 Principles for the planning and delivery of Green Infrastructure

4.1.1 The Best Practice Principles for planning and creating a climate change-resilient GI for biodiversity and people are set out fully in *Planning for a Healthy Environment – Good Practice Guidance for Green Infrastructure and Biodiversity*<sup>1</sup>. These Principles (set out in *table 1* below) set the direction towards positive planning for and delivery of GI for the future. They provide a positive approach for Planners, Developers, Project Managers, Community Groups and other organisations to apply during project planning for GI at a local level. Appendix C contains a table which illustrates how the *GIP* puts each of the Principles into practice.

*Table 1: Best Practice Principles for Green Infrastructure*<sup>2</sup>

Principle	
<b>1</b>	<b><i>GI needs to be strategically planned to provide a comprehensive and integrated network.</i></b>
<b>2</b>	<b><i>GI requires wide partnership buy-in.</i></b>
<b>3</b>	<b><i>GI needs to be planned using sound evidence.</i></b>
<b>4</b>	<b><i>GI needs to demonstrate ‘multi-functionality’.</i></b>
<b>5</b>	<b><i>GI creation and maintenance need to be properly resourced (particularly where it plays a flood reduction role).</i></b>
<b>6</b>	<b><i>GI needs to be central to the development’s design and must reflect and enhance the area’s locally distinctive character.</i></b>
<b>7</b>	<b><i>GI should contribute to biodiversity gain by safeguarding, enhancing, restoring, and creating wildlife habitat, and by integrating biodiversity into the built environment.</i></b>
<b>8</b>	<b><i>GI should achieve physical and functional connectivity between sites at strategic and local levels.</i></b>
<b>9</b>	<b><i>GI needs to include accessible spaces and facilitate physically active travel.</i></b>
<b>10</b>	<b><i>GI needs to be integrated with other policy initiatives.</i></b>

<sup>1</sup> The full text can be found in *Planning for a Healthy Environment – Good Practice Guidance for Green Infrastructure and Biodiversity* (TCPA and the Wildlife Trusts, 2012)

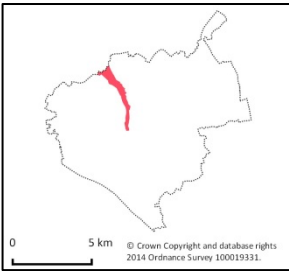

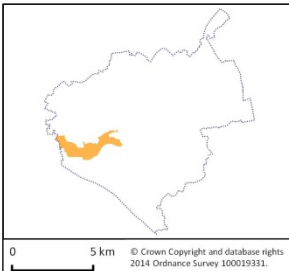

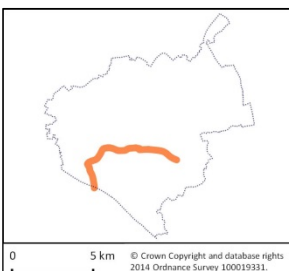

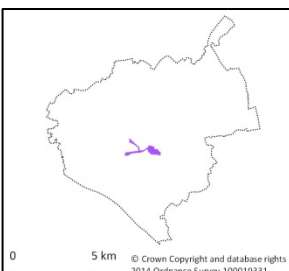

<sup>2</sup> As above

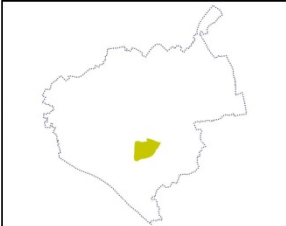

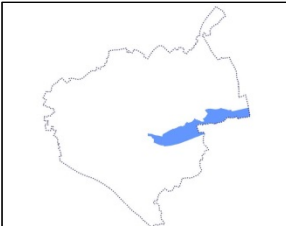

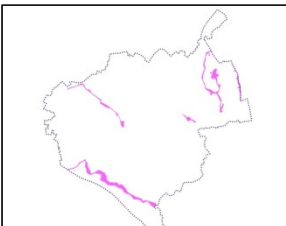

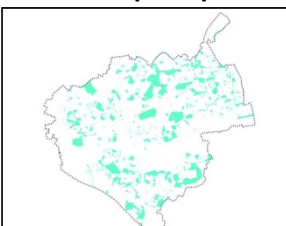

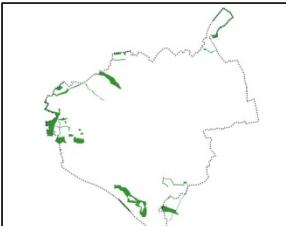

## 5.0 Defining the Local Level Green Infrastructure Network

### 5.1 Northampton's Green Infrastructure Components

- 5.1.1 A Local Level Green Infrastructure Network has been identified through desk studies, fieldwork and consultation. It is shown on *Map 1*. The network has been divided into nine GI Components, these are shown on *Map 2* and have been summarised in Table 2 below.

*Table 2: Green Infrastructure Components* (for full Component Profiles see Appendix D)

<p><b>A: Brampton Arm of the River Nene</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component A comprises the floor of the Brampton Valley from the town centre (near the railway station) northwards to the NRDA boundary near King's Heath.</p>
<p><b>B: Western Nene, Upton and Duston Mill</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component B comprises the floor of the Nene Valley. It extends from the Northampton-London railway line in the town centre westwards to the NRDA boundary near Kislingbury.</p>
<p><b>C: East-West Pedestrian and Cycle Link</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component C follows the historic transport routes (canal and former railway line) from the M1 (J15a) to Brackmills.</p>
<p><b>D: Town Centre Waterside</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component D is focussed on the river Nene (and the lower part of the Brampton Arm) where they flow through the town centre. It also includes the site of the new University Campus on the south side of the river Nene.</p>

<p><b>E: Delapre</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component E is focussed on the Delapre Estate and the site of Northampton Battlefield.</p>
<p><b>F: Washlands and Eastern Nene</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component F comprises the floor of the Nene Valley from the town centre at Midsummer Meadow eastwards to the NRDA boundary.</p>
<p><b>G: Urban Brook Corridors</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component G comprises the urban brook valleys which are characteristic of Northampton.</p>
<p><b>H: Urban Open Spaces</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component H includes the Urban Open Spaces within Northampton which are not already included within another Component. This Component includes (for example) public parks, playing fields, allotments, cemeteries and local wildlife sites.</p>
<p><b>I: Proposed Structural Greenspace Associated with SUEs</b></p>  <p>0 5 km © Crown Copyright and database rights 2014 Ordnance Survey 100019331.</p>		<p>Component I includes the proposed Structural Greenspace associated with the Sustainable Urban Extensions (SUEs) which are proposed on the periphery of Northampton.</p>

- 5.1.2 Splitting the Local Level GI Network into Components makes it possible to understand how elements of the wider GI Network are connected, and how they function at a local level. It also makes it easier to identify what needs to be done to enhance the Local Level GI Network. The Components are either based on geographical location (e.g. Component F: Washlands and Eastern Nene), or on the type of GI which they represent (e.g. Component H: Urban Open Spaces). Each Component has a detailed Profile (Appendix D) which sets out its location, strategic GI context, the assets within it and its characteristics. In addition the Profiles identify projects and opportunities that, if delivered, will enhance the overall function and quality of the Component.
- 5.1.3 The West Northamptonshire Infrastructure Delivery Plan (IDP) recognises that the Local Level Green Infrastructure Network, through the nine GI Components, provides the framework to deliver the Green Infrastructure for the NRDA. Where projects are sufficiently detailed in terms of costs, timescales and benefits they will be considered for inclusion in the IDP project schedule which will help secure funding for the future delivery. This will support the delivery of the JCS<sup>3</sup> policy for GI and prioritise the planning, development of and investment in GI for the NRDA until 2029.

## 5.2 Identifying Green Infrastructure Components

- 5.2.1 The identification of the Local Level GI Components included an analysis of local designation boundaries e.g. wildlife sites, open spaces, historic landscapes etc. to ensure that the Component boundaries did not split designated sites (unless these fell outside the NRDA boundary where the Council has no administrative control). It is important for the future management of individual assets, and for the holistic development of the GI Components within the wider network, that the GI Components are drawn with accuracy.
- 5.2.2 The Components have also been informed by an examination of Landscape and Biodiversity Character Assessments<sup>4</sup>. This process ensured that the Components reflect the local variations in landscape and biodiversity character and their contribution to local sense of place and existing GI networks. The Component boundaries were tested through fieldwork. This important process enabled further refinement to reflect the actual situation on the ground in terms of boundary transitions and landscape / townscape character.

## 6.0 Conclusion for Part 1

- 6.0.1 *Part 1: Strategy* sets out the way forward for creating Green Infrastructure for the NRDA. It establishes that the *GIP* is set within the context of the national definition and best practice principles for GI, and uses commonly-accepted open space typologies to underpin Northampton's GI assets. It then defines the nine GI Components which are to provide the focus for the planning, development and investment in GI for the NRDA until 2029. *Part 2: The Implementation Plan* will continue by setting out the tools with which to deliver the Strategy.

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<sup>3</sup> West Northamptonshire Joint Core Strategy Local Plan (Part 1) Adopted Dec. 2014 (JCS).

<sup>4</sup> Northamptonshire's Environmental Character and Green Infrastructure Suite ([Version 2.2, 2006](#))

## PART 2

### *THE IMPLEMENTATION PLAN*

*Setting out the tools and direction  
with which to implement the Strategy*



## 7.0 Aims and Objectives

### 7.1 Implementing the Green Infrastructure Plan

7.1.1 The successful implementation of the *GIP* will achieve the following aims and objectives. This will result in multi-functional GI which conforms to the Principles set out in Section 4.0.

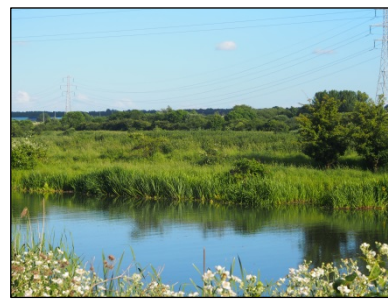
- 1) Improve access to and quality of GI assets and links to the hinterland.**
  - a. Improve the quality of GI assets across the NRDA to meet local communities' needs more effectively.
  - b. Protect and manage to enhance cultural heritage assets and their settings within the NRDA's GI network, enabling appropriate levels of access and interpretation.
  - c. Improve access routes and connectivity across the NRDA Local Level GI Network.
- 2) Increase the level and diversity of partner and community participation in the planning, development and enjoyment of the GI within the NRDA.**
  - a. Work with the Local Nature Partnership, Planners, Developers and Project Managers to facilitate planning for and delivery of GI for the future.
  - b. Increase community and Partnership participation in the development and management of GI.
  - c. Develop community based programmes focussed on particular needs e.g. public and individual health; community cohesion.
  - d. Increase use of outdoor spaces for formal and informal education.
- 3) Enhance the quality of Northampton's natural environment, increase biodiversity and strengthen the network of habitats across the NRDA.**
  - a. Improve semi-natural habitats and habitat connectivity within the NRDA's Local Level GI Network.
  - b. Create an improved network of semi-natural habitats, particularly with respect to the Nene Valley Nature Improvement Area.
  - c. Link to the wider ecological networks outside the NRDA.
  - d. Reduce levels of pollution (including for example air, water and soil pollution).
  - e. Improve water quality in streams, rivers, lakes and groundwater in accordance with the requirements of the Water Framework Directive.



*Fig. 1: GI integrated into development design at Upton.*



*Fig. 2: The green wedge of the Bampton Valley forms the setting to Kingsthorpe church and village conservation area.*



*Fig. 3: Barnes Meadow Local Nature Reserve and the River Nene near Midsummer Meadow.*



**4) Ensure GI plays a central role in Northampton's sustainable and economic growth while enhancing the landscape character and sense of place.**

- a. Create high quality and integrated GI networks in new development schemes and regeneration areas, ensuring connectivity to the existing network and using positive GI approaches on the street scene.
- b. Accelerate the rate of tree planting and extent of woodland management across the NRDA.
- c. Increase green space cover across the Borough.
- d. Manage flood risk through the effective integration, location, layout and design of flood management and drainage infrastructure. Where possible, integrate multi-functional GI into SUDS (now a statutory requirement in new major developments).
- e. Improve the recreation and tourism offer of Northampton's GI to enhance funding.
- f. Protect (through appropriate policy) historic features, trees, woodlands, other biodiversity habitats, watercourses and species from destruction, damage and neglect.
- g. Ensure that designs for new GI reflect the distinctive local landscape character.

**5) Improve the integration of GI into the NRDA's local transport priorities.**

- a. Ensure GI within development and regeneration areas is an integral part of the transport networks and travel plans.
- b. Develop and promote greener, more attractive and better connected walking and cycling routes as an alternative to driving.

**6) Improve the Integration of GI into Northampton's strategic priorities.**

- a. Establish a working group who can progress GI through the policy and practice of the Borough Council.
- b. Improve communications between those with roles in development, management and the use of GI.
- c. Develop additional guidance in the form of a Supplementary Planning Document.
- d. Develop an effective monitoring and evaluation framework to ensure the successful implementation of the *GIP*.

7.1.2 Development proposals will set out which Aims / Objectives are being delivered as a result of the proposal. This will ensure GI is planned according to the Council's ambition and vision for delivering GI across the NRDA.



*Fig. 4: Earthworks of the Iron-age hillfort at Hunsbury Hill.*



*Fig. 5: Eastfield Park, formerly the grounds of a private house.*



*Fig. 6: Floodwater storage area on the river Nene upstream of Northampton town centre.*

## 8.0 The Interactive Mapping Tool

### 8.1 Compatibility with NBC's Interactive Mapping Service

8.1.1 An Interactive Mapping Tool has been developed to support Planners, Developers, Project Managers, Community Groups and other organisations. Located on the Council's Interactive Mapping service (MyMap) it provides information alongside Ordnance Survey mapping. The range of information has been specially developed in support of the *GIP* and includes:

- Northampton Related Development Area Boundary.
- Nene Valley Nature Improvement Area (NIA).
- Upper Nene Valley Gravel Pits Special Protection Area.
- Local Level Green Infrastructure Network Components.
- Potential Green Infrastructure Projects.
- Sub-Regional Green Infrastructure Corridors.
- Strategic Biodiversity Network.
- Strategic Sustainable Movement Network.

The Interactive Map also links to Exemplar GI Project Plans, and to the Local Level GI Component Profiles.

8.1.2 Planners, Developers, Project Managers, Community Groups and other organisations have free use of the map, which brings a number of benefits, including:

- Supporting integration of the Local Level GI Network into development proposals and masterplans.
- Identifying GI projects and opportunities that can be taken forward as part of new development.
- Promoting community involvement by increasing knowledge of designated areas, GI and green spaces.
- Publicising GI projects and opportunities to encourage community participation in the development and management of GI.
- Increasing awareness of projects and opportunities to secure support and funding.
- Avoiding duplication of effort between Partners and Stakeholders.

8.1.3 Organisations will also be able to add their own suitable GI projects into the Interactive Map. This will raise the profile of these projects, and enable them to be seen alongside other GI projects, creating a fuller picture of the current GI opportunities within the NRDA area. Increasing awareness of projects using the Interactive Map may also help in securing project funding and support.

8.1.4 The Interactive Map will be managed by the Council. It will be updated to reflect changes when new projects are added, completed projects are archived and / or where new GI information becomes available. It can be accessed at the following address:

<http://mapping.northampton.gov.uk/>.

## 9.0 Green Infrastructure Projects and Exemplar Project Plans

### 9.1 Green Infrastructure Projects

9.1.1 A number of GI projects were identified during the development of this Plan. They represent a wide range of GI enhancements, many of which deliver multi-functional benefits to people and wildlife. These GI enhancements include:

- Habitat creation and enhancement
- Improving public access to nature conservation sites
- Improving the sustainable transport network
- Improving connections and linkages between GI sites
- Enhancing the visual quality of the rural and urban landscape
- Improving outdoor sport and recreation facilities, and providing opportunities to improve people's health and wellbeing
- Improving management and interpretation of cultural heritage assets, and enhancing their settings
- Improving local community facilities such as parks and open spaces, to encourage community interaction
- Surface water management, flood reduction and improvements to water quality
- Helping communities to address and adapt to climate change.

9.1.2 Each project has been included on the Interactive Mapping tool and is summarised in *table 3* below. See *Map 3* for locations, and Appendix E for further details about each project.

*Table 3: Identified Green Infrastructure Projects (Code letter indicates its GI Network Component)*

Map Code	Project Title	Map Code	Project Title
A1	<i>Kingsthorpe Nature Reserve Improvements</i>	E1	<i>Northampton Battlefield</i>
A2	<i>Linking Kingsthorpe Nature Reserve to Kingsthorpe North Meadow</i>	E2	<i>Delapre Lake Local Wildlife Site</i>
A3	<i>Kingsthorpe Lake Restoration</i>	F1	<i>Barnes Meadow Local Nature Reserve</i>
A4	<i>Cycle Path extension into the Town Centre</i>	F2	<i>Northampton Washlands</i>
B1	<i>Upton Country Park, Phases 1 and 2</i>	F3	<i>Abingdon Meadow Improvements</i>
B2	<i>Duston Wetland Creation</i>	G1	<i>Aberdare Road Park</i>
B3	<i>Storton's Pits Nature Reserve</i>	G2	<i>Lings Wood Nature Reserve</i>
C1	<i>East-West cycle and Footpath Links</i>	G3	<i>Shelfleys Lake, Wootton Brook</i>
C2	<i>Northampton London Road to Brackmills Railway Line Redevelopment</i>	H1	<i>Northampton Racecourse</i>
D1	<i>River Nene Meander Reconnection</i>	H2	<i>Bradlaugh Fields Nature Reserve</i>
D2	<i>Habitat creation South of Nene Valley Retail Park</i>	H3	<i>Eastfield Park</i>
D3	<i>Foot Meadow Project</i>	H4	<i>Hunsbury Hill Country Park Project</i>

- 9.1.3 The Interactive Mapping tool provides, for the first time, a place where GI projects can be visually plotted into a single place for easy reference. This enables Planners, Developers, Project Managers, Community Groups and other organisations to proactively engage with the development and delivery of GI for the NRDA by connecting them to existing or planned activities. Potential GI projects such as those identified in *table 3* will be more useful to Planners, Developers and funders if they are ‘worked-up’ into GI Project Plans (see below).

## 9.2 Exemplar GI Project Plans

- 9.2.1 The *GIP* seeks to provide a coherent and consistent approach to the planning and delivery of GI for the NRDA. Projects supported by a well-researched and thought-out project plan with appropriate costings are more likely to attract funding and promote delivery.
- 9.2.2 To foster this approach, Exemplar Project Plans have been created using real projects to demonstrate an appropriate methodology (Appendix F). The Interactive Mapping tool links the project on the map to the project plan. This enables those seeking project opportunities to find out more about a project with respect to:
- proposal and context
  - location and size
  - status and timescales
  - indicative costings (where possible) and benefits
  - linked projects and potential additional funding sources
- 9.2.3 The Exemplar Project Plans provide common ‘blueprints’ for the development of future GI projects. They provide a template to assist project owners in the development and promotion of their projects to Planners, Developers and funders. When project owners complete the template plan and submit it to the Council, it will be entered onto the Interactive Map as a live project seeking funding and project delivery support.
- 9.2.4 Further guidance for community groups and other organisations interested in developing a GI idea into a project plan can be found in Appendix G.

## 9.3 Notes on the Exemplar Project Plans

- 9.3.1 The Exemplar Project Plans have been prepared in consultation with the organisations who originally submitted the projects into the initial *GIP* consultation process. They have not been subject to any further consultation (for example with all the potential delivery partners listed). Many of the projects are aspirational or in their very early stages, and it is therefore likely that in practice these projects may not develop exactly how they appear in the Exemplar Project Plans. Because they are ‘living documents’ they can be updated, for example to show additional high-level benefits which are recognised.
- 9.3.2 Costings on the Exemplar Project Plans are indicative only, and do not include any potential costs for flood-risk modelling. The Exemplar Project Plans are summaries and therefore do not contain the level of detail required for worked-up project proposals.

## 10.0 Funding Strategy

### 10.1 Guidance on potential sources of funding

- 10.1.1 A Funding Strategy (Appendix H) has been developed for users of this document. It provides background information on Northampton's population and health, the town's economic circumstances and its landscape and townscape character. The Funding Strategy illustrates the positive contribution GI makes to the natural environment as well as to the health and wealth of the Borough. Using this broad approach opens up a wider spectrum of funding opportunities. The Strategy provides a brief explanation of available funding types / options, with accompanying tables containing examples of where these options are available. The list of potential funding sources within the Funding Strategy is not exhaustive, but it is a good starting point.
- 10.1.2 The Funding Strategy is a useful and practical document which will help users to identify which funding approach could be most suitable for their project, and contains signposting to some potential funding opportunities. Reference to the Exemplar Project Plans (Appendix F) will illustrate how it can be used in practice to inform the development of a GI Project Plan.

## 11.0 Opportunities through new development

### 11.1 Introduction

- 11.1.1 So far, Part 2 has considered the specific GI project opportunities identified on the Interactive Map. This section provides guidance on the enhancement of GI through new development. This is a time of considerable change in Northampton, with Sustainable Urban Extensions (SUEs) planned on the periphery of the town, and proposed redevelopment of previously-used land in the town centre. These new developments offer exciting opportunities to create high quality and integrated GI networks through the integration of planning and design. GI opportunities include the extension of movement networks (for people and wildlife); improving sustainable transport opportunities; extending existing habitats (e.g. woodlands or wetlands) and creating entirely new areas of habitat.

### 11.2 Sustainable Urban Extensions (SUEs)

- 11.2.1 The Local Level GI Network established in Part 1 includes GI Component Profile I: Structural Greenspace for the Sustainable Urban Extensions (See Appendix D). The SUEs (shown on *Map 1*), are 8 major developments planned on the periphery of the town. These areas are allocated in the JCS and are required by policy to deliver structural greenspace as part of the development proposals. The requirements range from flood attenuation and SUDS provision to playing fields and open recreational space. They also include buffers separating new

development from existing villages. In addition there is a need to protect and enhance wildlife sites, cultural heritage sites, and movement routes. Emerging development proposals are translating these strategic requirements into masterplans. A summary of the proposed structural greenspace provision derived from these evolving proposals can be found in Appendix I.

11.2.2 The JCS policy requirements initiate the approach for enhancing GI linkages locally. Other opportunities have been identified through this study, detailed on *Map 4*. This map shows that connectivity could be further improved towards and across the town centre which would provide sustainable travel options. Connectivity could also be expanded beyond the town boundaries improving connectivity with the countryside and enhancing recreational opportunities

11.2.3 It will be important when planning GI for the SUEs that careful consideration is given to connectivity with the Local Level GI Network for the NRDA. *Table 4* below provides a guide to illustrate which of the GI Component Profiles should be read when developing GI strategies for each SUE. Reference should also be made to Appendix D (Components profiles) and *Map 4* to support the masterplanning process. This approach will ensure that SUE structural greenspace will have coherent links to the Local Level GI Network and exploit all opportunities to enhance existing and create new GI in accordance with the JCS.



*Fig. 7: View across the Brompton Valley towards the site of the proposed Kings Heath SUE.*



*Fig. 8: The new University campus site in the Waterside Enterprise Zone.*



Table 4: SUEs and related Local Level GI Network Components

Sustainable Urban Extensions	Local Level GI Network Components								
	A Brampton Arm of River Nene	B Western Nene, Upton & Duston Mill	C East-West Pedestrian and Cycle Link	D Town Centre Waterside	E Delapre	F Washlands and Eastern Nene	G Urban Brook Corridors	H Urban Open Spaces	I Proposed Structural Greenspace
Northampton Upton Park		✓	✓					✓	✓
Norwood Farm / Upton Lodge		✓	✓					✓	✓
Northampton West		✓					✓	✓	✓
Northampton North							✓	✓	✓
Northampton King's Heath	✓						✓	✓	✓
Northampton North of Whitehills								✓	✓
Northampton South of Brackmills			✓		✓		✓	✓	✓
Northampton South			✓				✓	✓	✓

### 11.3 Northampton Waterside Enterprise Zone (NWEZ)

11.3.1 The Northampton Waterside Enterprise Zone is an area composed of more than 20 sites along the River Nene, stretching from Sixfields in the west right across the town centre, as shown on *Map 5*. NWEZ's central location and diverse economy will ensure the town's riverside can be transformed into a national centre of excellence for advanced technologies and performance engineering, whilst protecting and improving the river environment. The office and industrial space will be delivered alongside new homes, leisure, retail and recreational facilities as set out in the Northampton Central Area Action Plan (2013).

11.3.2 The NWEZ is located within two GI Components (see Appendix D):

- B: Western Nene, Upton and Duston Mill
- D: Town Centre Waterside



Connectivity exists between the NWEZ and four other GI Components (See Appendix D):

- A: Brampton Arm of the River Nene
- F: Washlands and Eastern Nene
- C: East-West Pedestrian and Cycle Link
- E: Delapre

11.3.4 *Map 4* shows where connectivity and GI links could be enhanced in association with new development. The NWEZ is at the heart of the Local Level GI Network and offers the potential to develop an overall GI Strategy for the NWEZ area. The opportunity exists for the zone to be an exemplar in appropriate and sustainable land development, and to increase the prominence of the River Nene as a recreational, environmental and visual asset. It would be an asset for the businesses that establish within the zone and for local residents and visitors. It could be planned to consider the nature, aesthetics, access and water management (flood risk mitigation) of the location, as well as connectivity to the wider Local Level GI Network.

11.3.5 To achieve this integrated approach to GI development, proposals being brought forward for the NWEZ should be planned and designed with reference to the Local Level GI Network and in accordance with the JCS policies which support GI. There should be clear and positive connections with the GI Components and their project opportunities. Development proposals should positively address their relationship with existing GI assets and enhance these assets as part of the developers' obligation to open space contributions where appropriate. They should also be in accordance with Policy *BN1 Green Infrastructure* in the JCS. Taking this approach will avoid disjointed development and will provide a consistent approach to enhancing the existing GI. It will prevent any further compromise to the functioning of the river as a green/blue corridor (see Section 14.7.3 and *table 6*).

## 12.0 Conclusion for Part 2

The Aims and Objectives set out at the start of Part 2 will help to ensure that development proposals are prepared with a view to achieving the Council's goal for delivering GI throughout the NRDA. The Interactive Mapping tool is a multipurpose instrument which provides geographical information to support GI planning and development, as well as plotting GI projects to publicise and guide investment opportunities. The Exemplar Project Plans provide 'blueprints' for the development of future GI projects. Linked to the Interactive Mapping tool they will help project owners in the development and promotion of their projects to planners, developers and funders. The Funding Strategy will help users identify funding opportunities to support their project development.

The eight Sustainable Urban Extensions and the Northampton Waterside Enterprise Zone provide exciting opportunities to enhance existing GI and to create new GI and connections. Guidance is given to support the masterplanning process, and to ensure that the GI potential of new developments is realised.

Part 3 sets out the justification for the *Strategy (Part 1)* and *Implementation Plan (Part 2)* and presents a robust basis for policy development.

**PART 3**

***CONTEXT AND EVIDENCE BASE***

***For the Strategy and the  
Implementation Plan***

## 13.0 Northampton's Planning and Regeneration Context

### 13.1 Growth and Regeneration

13.1.1 Northampton has a population of over 210,500<sup>5</sup> which is set to grow to over 267,500 by 2029<sup>6</sup>. The *West Northamptonshire Joint Core Strategy Local Plan (Part 1) Adopted Dec. 2014* (JCS) allocates eight Sustainable Urban Extensions (SUEs) to meet these growth needs, alongside further growth to be set out in the Northampton Local Plan Part 2. The SUEs will be accommodated in a defined Northampton Related Development Area (NRDA) as identified on the JCS Fig. 4 (See Appendix I). Regeneration is to be accelerated in Northampton's Town Centre through the implementation of the Northampton Central Area Action Plan (CAAP) which identifies development sites to accommodate offices, retail, leisure and new homes. The Northampton Waterside Enterprise Zone (NWEZ) (*Map 5*) provides 120ha of land, mostly along the River Nene, which will act as a catalyst to accelerate growth and redevelopment opportunities.

### 13.2 Existing Green Infrastructure

13.2.1 The unique geography and historic development of Northampton has provided a legacy of over 1,670ha of parks, open spaces and other green areas within the Borough<sup>7</sup>. The natural and man-made corridors following the River Nene are valuable natural and historic assets of great importance for biodiversity, along with the town's legacy of historic private and civic landscapes (e.g. Abington Park, Delapre Park, Hunsbury Hill Country Park and the Racecourse). Part of the River Nene is also designated as a Special Protection Area / Ramsar site for important populations of birds. Collectively, these spaces provide a diverse assembly of excellent green assets which contribute to the character of Northampton and its unique sense of place.



*Fig. 9: Nene valley looking east towards the washlands*



*Fig. 10: River Nene running through Becket's Park in the town centre*



*Fig. 11: Urban Brook corridor incorporated into New Town design, Weston Favell*

*Good Practice in Northampton's Existing Green Infrastructure*

<sup>5</sup> Office of national Statistics 2009 mid-year estimate

<sup>6</sup> Cambridge Centre for Housing and Planning Research '2008 Tracking Variant Migration Model Scenario (2011-based)

<sup>7</sup> Northampton Parks and Open Spaces Strategy – Refresh 2013, p. 4

### 13.3 Green Infrastructure Opportunities

13.3.1 There is significant variation in the distribution, quality and accessibility of the Borough's open spaces, with significant opportunities to improve connections and linkages between them.



*Fig. 12: Unimaginative and poorly used urban park (and floodwater storage facility) with canalised stream, Aberdare Road*



*Fig. 13: Disused railway line with potential to be used as a pedestrian/ cycle link between the town centre and Brackmills*



*Fig. 14: Defaced interpretation panels on the Nene Valley Way near Barnes Meadow Nature Reserve*

#### *Areas for Improvement in Northampton's Green Infrastructure*

13.3.2 The planned regeneration and new development provides a unique opportunity to embed the principles of GI into the vision for Northampton. Northampton therefore has an opportunity to become an exemplar in the planning, development, delivery and investment of GI ensuring a positive response to:

- Protecting and enhancing biodiversity by increasing and enriching levels of species diversity and reducing fragmentation.
- Adapting to climate change by reducing the impact of higher temperatures, flooding, drier summers and counteracting the heat island effect.
- Linking natural assets and improving connectivity and access.
- Promoting sustainable transport and modal shift by encouraging walking and cycling.
- Providing health benefits by improving access to greenspace recreational provision.

13.3.3 It is therefore timely that the Borough Council has commissioned this *Green Infrastructure Plan* to develop a Local Level GI Network that underpins the existing strategic framework with a local approach. The Plan provides practical tools to make delivery work on the ground at a local level, in partnership with different bodies. To understand how this has been achieved, it is first necessary to appreciate Northampton's GI in its current strategic to local context, as explained in the following sections.

## 14.0 Strategic and Local GI Networks

### 14.1 Introduction

14.1.1 This section sets out the factors which have been used to inform the development of the Local Level GI Network.

14.1.2 *Making the Connection: A Strategic Green Infrastructure Framework Study* was published in 2006 as the result of a countywide partnership led by the River Nene Regional Park. The Study represented a significant shift in strategic environmental planning for Northamptonshire as it identified, for the first time, a Strategic Green Infrastructure Framework for the County area (see *Map 6*). The Strategic GI Framework illustrates the location of the Sub Regional and Local Green Infrastructure Corridors across Northamptonshire. These are intended to become fully multifunctional zones delivering:

- **Access and movement** by providing sustainable links between settlements and destinations, through corridors comprising attractive green routes with clear way finding.
- **Biodiversity** by enhancing and linking the biodiversity resource.
- Sustainable responses to **flood risk, water management** and other natural processes.
- Enhancement and promotion of **heritage and cultural assets, recreation and leisure provision** and **environmental character**.

The strategic GI framework of Sub-Regional and Local GI Corridors are recognised in the WNJCS (Policy BN1- GI Connections) which sets out measures to enhance existing and create new GI.



*Fig. 15: The Brampton Arm Sub-Regional GI Corridor, looking north.*



*Fig. 16: The Northampton Grand Union Canal Spur Local GI Corridor, looking towards Northampton.*

*Examples of GI Corridors*



## 14.2 Sub-Regional Green Infrastructure Corridors

14.2.1 The Sub Regional Green Infrastructure Corridors significant to this study are shown in on Map 7. They are described as:

*...noteworthy for their **mosaic of land uses, natural and built resources and settlement**. They often function as **transportation routeways, support flood storage areas, or are rich in biodiversity and heritage resources, and offer recreation and leisure opportunities**. These corridors already **function as GI resources, and provide GI-related benefits**. They therefore form a '**backbone**' of sub-regional significance for the GI resource within West Northamptonshire.*

From *Making the Connection* (p. 101) emphasis added.

14.2.2 The Sub-regional GI corridors shown on Map 7 broadly follow major waterways and valleys, including the Nene as far west as Newnham, the Brampton Arm and the Oxford Canal / Cherwell Valley. Northampton Town is located in the 'cross roads' of four Sub-Regional Corridors namely:

- (1) The Nene (Newnham – Northampton)
- (2) Nene Valley (Northampton – Wansford)
- (7) Northampton to Salcey (Milton Keynes Link)
- (8) The Brampton Arm (Northampton to Market Harborough)

14.2.3 The **Nene Corridor** follows the course of the River Nene on a broadly east-west alignment from Northampton to the village of Newnham, close to the source of the River Nene. To the east it links into the **Nene Valley Corridor** that extends through North Northamptonshire to the county boundary near Wansford, Cambridgeshire.

14.2.4 The **Northampton to Salcey Corridor** is a short but strategically important link between the **Nene** and the **Yardley, Salcey and Whittlewood Corridors** as well as making the connection between Northampton and Milton Keynes. It runs from the centre of Northampton southwards across Delapre Park to the districts of Hardingstone and Wootton on the south-east edge of the Town.

14.2.5 The **Brampton Arm Corridor** is a major tributary of the River Nene and follows a north-south course from its confluence with the Nene in the Heart of Northampton. The Brampton Arm Sub Regional Corridor follows the valley of the Brampton Arm and also the route of the disused Northampton to Market Harborough railway line. The association of the Sub Regional Corridor with the former railway line re-establishes this strategic link through the county. It strengthens its potential to improve access and to enhance the range of resources and assets which are present.

14.2.6 The Sub-Regional Corridors are not intended to indicate rigid corridors for GI provision, but instead identify broad landscape zones within which GI related proposals should be focused.

The GI Network Components described in Part 1 and Appendix D are a local level refinement of the Sub-Regional Corridors for the NRDA. *Table 5* below shows how each Component relates to the Sub-Regional Framework in the locality.

*Table 5: The relationship between Strategic GI Corridors and Local Level GI Components*

Strategic GI Corridors	Local Level GI Components								
	A	B	C	D	E	F	G	H	I
	Brampton Arm of River Nene	Western Nene, Upton & Duston Mill	East-West Pedestrian and Cycle Link	Town Centre Waterside	Delapre	Washlands and Eastern Nene	Urban Brook Corridors	Urban Open Spaces	Proposed Structural Greenspace
(1) The Nene (Newnham – Northampton)		✓	✓	✓				✓	✓
(2) Nene Valley (Northampton – Wansford)			✓	✓	✓	✓		✓	
(7) Northampton to Salcey (Milton Keynes Link)			✓	✓	✓		✓	✓	✓
(8) Brampton Arm (Northampton to Market Harborough)	✓			✓			✓	✓	✓

### 14.3 Local Green Infrastructure Corridors

14.3.1 The lower tier Local GI Corridors connect the Strategic GI corridors, as described below:

*These corridors ‘link up’ the Sub-Regional Strategic Corridors to **complete the comprehensive GI network**. They are zones within which there is a **mosaic of land uses, natural and built resources and settlements, although the extent of ‘multi-functionality’ is less developed**. They are essential for **providing the network linkage** between two Sub-Regional GI Corridors, to between a Sub-Regional GI Corridor and settlements, thus providing the doorstep to countryside ‘connections’.*

From *Making the Connection*, (p. 102) emphasis added.



14.3.2 These Corridors are based on the geographic locations or the assets they connect, and have a local relevance to the communities they serve or connect with. There are three Local GI Corridors of relevance to this study (shown on *Map 6* and *Map 7*), as follows:

- (6) Northampton to Daventry
- (10) Nether Heyford to Milton Keynes and Northampton Grand Union Canal Spur
- (12) Wellingborough to Northampton

14.3.3 In order to develop local corridors further, asset and resource creation will need to be at the centre of GI related proposals. It would be desirable for the Local Level GI Network to reflect the detail of these Local Corridors but at this time the Country is still recovering from the economic downturn and austerity measures are continuing to be applied. Therefore, the approach to the development and delivery of GI at this time is to concentrate on delivering the key Strategic Sub Regional Corridors and the Primary Network i.e. the Blue and Green Ways (described below). This will ensure funds can be directed and used to maximum efficiency.

14.3.4 Underpinning the Strategic and Local Green Infrastructure Corridors are two other connective networks- the Biodiversity and Sustainable Movement Networks, which are described in the following sections.

#### 14.4 Networks within the Northamptonshire Strategic GI Frameworks

14.4.1 Connectivity and networks are fundamental components of GI, linking people and places, and enriching environmental resources. *Making the Connection (2006)* p.49 identifies two principal networks which reflect the importance of the physical connectivity:

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

These networks are described in the following sections.

#### 14.5 The Strategic Biodiversity Network

14.5.1 The **Biodiversity Network** is defined as follows:

*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...**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.***

From *Making the Connection* (p. 51) emphasis added.

14.5.2 The Strategic Biodiversity Network seeks to connect fragmented habitats displayed across much of the county to assist in species persistence and habitat function. The Strategic Network presented in the *Making the Connection Study* identified a range of habitat reservoirs and habitat links around and within Northampton. This plan was reviewed and refined through the *Northampton Landscape Sensitivity and Green Infrastructure Study (2009)*.

14.5.3 The refinement led to a map identifying habitat corridors (see *Map 8*). The corridors form a distinct network through the landscape and link the habitat reservoirs. It is not intended that habitat creation should be restricted to these corridors as identifying habitat networks is not an exact science. However the corridors do help to target habitat protection, enhancement and the attainment of connectivity.

## 14.6 Local Provision in the Biodiversity Network

14.6.1 Despite the urban character of Northampton, the town contains a range of habitat types, including woodland, grassland, wetland, open water and meadows. All of these habitats host a variety of valuable assets. Of particular interest with respect to the *GIP* are the Sites 'designated' for their wildlife value (shown on *Map 9*) and listed below. In addition to these designated sites, there are many other sites (e.g. private gardens, allotments, cemeteries and orchards) which are not designated specifically for their wildlife value, but still make an important contribution to the Biodiversity Network. Designated sites include:

- Upper Nene Valley Gravel Pits Special Protection Area, Ramsar Site and Site of Special Scientific Interest.
- Nene Valley Nature Improvement Area.
- 6 Local Nature Reserves:
  - Kingsthorpe Meadow
  - Bradlaugh Fields
    - Hills and Hollows
    - Scrub Fields
  - Barnes Meadow
  - Lings Wood
  - Storton's Pit and Duston Mill
- 50 Local Wildlife Sites (within or adjacent to the NRDA boundary)
- 73 Potential Wildlife Sites (within or adjacent to the NRDA boundary)
- 8 Local Geological Sites
  - Bradlaugh Fields
  - Bunting Road Outcrop
  - Cherry Orchard School Playing Field
  - Duston Quarry and Duston Wildes
  - Hunsbury Hill Cutting
  - Kingsthorpe Hall
  - Kingswell Road Outcrop
  - Northampton General Hospital

14.6.2 The Biodiversity Network was used to inform the development of the Local Level GI Network Components for the NRDA. For example, habitat corridors present within each of the Components are described within the Component profiles (Appendix D) and the associated recommendations for enhancement. The Biodiversity Network also plays an important role in directing investment in the maintenance and enhancement of biodiversity for the future. By expanding the areas of habitat, improving connectivity and enhancing the quality of the Biodiversity Network, the chances of species extinction are reduced and the resource will be more capable of adapting to future changes in climate. A functioning and coherent biodiversity resource will provide opportunities for landscape restoration, improved access, a framework for environmental education, active and passive recreation and be a fitting setting for historic sites and monuments.

## 14.7 The Strategic Sustainable Movement Network

14.7.1 The **Sustainable Movement Network** is defined as follows:

*A **heirarchy 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**.*

From *Making the Connection* (p. 58) emphasis added

14.7.2 The second connective network underpinning the Strategic and Local GI Corridors as set out in the *Making the Connection Study* is the Sustainable Movement Network. This identifies the principle networks and opportunities for sustainable people movement from settlements to countryside. It includes provision for sustainable patterns of walking, cycling and where appropriate, horse riding.

14.7.3 To provide clarity to the structure and function of the Sustainable Movement Network, the *Making the Connection Study* presented a hierarchy of routes. This comprises three connected tiers as illustrated in *Table 6* below.



Fig. 17: Connecting cycle routes at Duston Mill.



Fig. 18: Local children use a path through Kingsthorpe Local Nature Reserve as a route home from school.

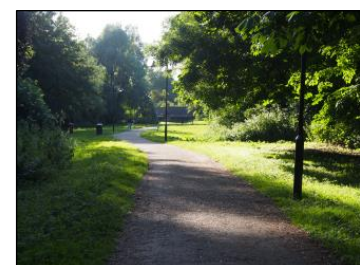


Fig. 19: Town Centre footpath through Foot Meadow.

*Table 6: Hierarchy of routes within the Sustainable Movement Network From Making the Connection (2006) p. 60*

Network Level	Type	Function	Composition
<b>Local</b>	Suburban Road	Link individual residences together and to local assets, and connect private to public space	<ul style="list-style-type: none"> <li>• Private drives and gardens</li> <li>• Suburban roads</li> <li>• Homezones</li> </ul>
	Urban Green Street	Provide access to neighbourhood facilities and links into the wider network	<ul style="list-style-type: none"> <li>• Shopping Streets</li> <li>• Market squares</li> <li>• Arterial routes</li> </ul>
<b>Secondary</b>	Inter-urban Neighbourhood connectors	Link Neighbourhoods through parks and open spaces	<ul style="list-style-type: none"> <li>• Footpaths and cycle routes, through open spaces and parks where possible</li> </ul>
	Countryside Connectors	Link villages and hamlets together, and to assets in the wider countryside	<ul style="list-style-type: none"> <li>• Rights of Way network</li> <li>• Cycle Routes</li> </ul>
<b>Primary</b>	Green Way	Strategic links between major settlements through open countryside	<ul style="list-style-type: none"> <li>• Rights of Way Network</li> <li>• Cycle Routes</li> </ul>
	Blue Way	Strategic links between major settlements through open countryside along rivers, canals or navigations	<ul style="list-style-type: none"> <li>• Rights of Way Network</li> <li>• Canal Towpaths</li> <li>• Canals and Navigations</li> </ul>

14.7.4 *Map 10* shows the distribution of the Primary and Secondary routes around Northampton. The focal routes for the *GIP* are the Primary Blue and Green Ways (described in *table 6* above). The Local Level GI Components have been developed so that they are contiguous with these. It would be desirable for the Local Level GI Network to reflect the detail of the Secondary routes i.e. the Inter-Urban Neighbourhood Connectors and the Countryside Connectors. It should be noted that the Inter-Urban Neighbourhood Connectors and the Countryside Connectors were originally defined purely using desk studies. Ideally these should be double-checked on the ground, either through a specially-commissioned study, or incrementally as local opportunities arise.

14.7.5 As noted above, it must be recognised that the Country is recovering from the economic downturn and austerity measures are still being applied. Therefore, the approach to the development and delivery of GI at this time is to concentrate on delivering the key Strategic Sub Regional Corridors and Primary Network (i.e. the Blue and Green Ways). This will ensure funds can be directed and used to maximum efficiency. However, should opportunities arise to enhance other parts of the Sustainable Movement Network, they will not be ruled out.

## 14.8 Local Provision in the Sustainable Movement Network

14.8.1 Northamptonshire has a number of notable local walking and cycling routes which support sustainable movement of people from home to work and leisure purposes. These are shown on *Map 11*.

- **Nene Way Walk** is a long distance recreational route which follows the River Nene for some 70 miles through Northamptonshire. The section of particular relevance to the NRDA is from Kislingbury to Cogenhoe.
- **Queen Eleanor Crosses Way** is a 220 mile Long Distance Footpath that joins Harby in Nottingham with Westminster Abbey. It passes and links the sites of the 12 crosses erected following the funeral procession of Queen Eleanor in December 1290.
- **Brampton Valley Way** is a fourteen mile linear park based on the former railway line between Northampton and Market Harborough (also forms part of Sustrans Route 6).
- **Norbital Cycle Route** (Route 539) an 18 mile (29 km) circular cycle route around Northampton, which connects residential areas with areas of employment and education such as the University, Brackmills and Moulton Park.
- **Connect 2** (route 536) is a National Lottery funded project, developed with Sustrans. The Northampton section runs on 3 miles of brand new off-road cycle-way along a picturesque area of the River Nene, joining up Becketts Park to Upton, with links off to:
  - Nene Valley Retail Park
  - St James Mill Road
  - Sixfields
  - Briar Hill
  - Norbital

14.8.2 In order to encourage more cycling Northamptonshire County Council have launched the **Cycle CoNNect** scheme. This is a self-service bike hire scheme for getting around Northampton quickly and cheaply. Cycle CoNNect could be a catalyst for encouraging people to cycle to work more frequently. This would be beneficial from a health perspective as currently Northamptonshire is the 5<sup>th</sup> fattest county based on 'Percentage of adults classified as overweight or obese with a body mass index of 25 or over' (Public Health England 2014). It will also be beneficial from a travel to work perspective, as over 50% of Northampton's working population travel less than 5km to work, yet 61% of those come by car. To

encourage the modal shift from car to walking and cycling there needs to be a safe, pleasant, connected, user friendly and well signposted Sustainable Movement Network.

- 14.8.3 In addition to Cycle CoNNect, NCC also currently encourages and promotes cycling in a variety of ways, including production of cycle maps, campaigns, publicity and cycle-based events.

## 15.0 Multi-functionality of Green Infrastructure

### 15.1 Introduction

- 15.1.1 The multifunctional nature of GI means that the *GIP* has a synergy with the delivery of a number of other local and national objectives. This section provides an outline of some key issues and how the *GIP* helps to address them.

### 15.2 Open Space, Sport and Recreation

- 15.2.1 In 2005 Northampton Borough Council commissioned an Open Space, Sport and Recreation Audit and Assessment<sup>8</sup>. The results of this audit are shown on *Map 12* which also illustrates the Proposed Structural Greenspace proposed by the JCS for the Sustainable Urban Extensions. The Audit revealed that Northampton has 20 designated Parks; 496 Amenity Green Spaces (of which over 50 are larger than 1 hectare); 111 Natural or Semi Natural areas; over 100 children or young people's equipped play spaces; 178 Outdoor Sports Facilities; 23 Allotment Sites and 45 cemeteries and churchyards. These make up 1,670 hectares of open space distributed along the Primary Blue and Green Ways, and dispersed across the Borough. There is however a significant variation in the distribution, quality, accessibility and connectivity of these spaces.
- 15.2.2 Despite this, the open spaces and waterways are valuable GI assets. Many spaces are multifunctional and provide a range of services, including health and recreation opportunities; wildlife habitats; food production; heritage assets and their settings; economic benefits through tourism; flood mitigation and carbon reduction. These Open Space assets are so important that they have been identified as a Local Level GI Component within the Local Level GI Network. This will enable the Council to direct spending and investment to enhance these assets and improve connectivity within the GI Network.
- 15.2.3 It should be noted that the audit and assessment is currently being updated and will be completed in 2016. The findings will be updated on the Interactive Mapping tool, at which point *Map 12* will be updated.

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<sup>8</sup> Open Space, Sport and Recreation Needs Assessment and Audit (PMP 2005, updated in 2009)

### 15.3 Cultural Heritage Assets

- 15.3.1 Cultural heritage assets are important elements of the GI network. GI should contribute to the protection, conservation and management of historic landscapes, archaeological and built heritage assets and their settings. Within Northampton there are a range of designated and non-designated heritage assets as shown on *Map 13*, as well as historic transport routes such as roads, canals and railway lines. Heritage assets include:
  - Northampton Battlefield
  - 7 Scheduled Monuments
  - 21 Conservation Areas
  - Over 500 locally and statutorily Listed Buildings
- 15.3.2 Wherever possible, the Local Level GI Network has been developed to positively address the historic landscapes, archaeological and built heritage assets, and their associated settings within the NRDA. Where assets are not contained within a GI Component, opportunities should be taken to make positive connections to the nearest Component.
- 15.3.3 Northampton Battlefield is of particular significance, and as such has been identified as a GI Component in its own right to ensure enhancements can be directed to this area.

### 15.4 ***EU Water Framework Directive Integrated Catchment-Based Approach: Improving the quality of our water environment***

- 15.4.1 In March 2011, the Government announced that it would fundamentally review its river basin planning strategy in the context of the *European Water Framework Directive (WFD)*. The WFD sought a new focus on institutional arrangements and processes. In response to this new thinking the River Nene Regional Park produced the *River Nene Integrated Catchment Management Plan (CMP)* (2014) covering the River Nene from Northamptonshire through to Peterborough. Whilst this arises from the implementation of the WFD, it actually provides a means of addressing the many opportunities and challenges facing the Nene in a co-ordinated, strategic way.
- 15.4.2 In tandem with the publication of the CMP has been the establishment of the Nene Catchment Partnership, one of 108 Partnerships set up to cover all of the British River Catchments. The Nene Catchment Partnership aims to initiate practical project implementation through the collaboration of the Partnership.
- 15.4.3 One of the requirements of the Nene Integrated Catchment Pilot was for ‘walk-overs’ of all the WFD watercourses within Northampton. The resulting ‘Northampton Urban Study’ looked at pressures and opportunities for improvements to the River Nene (physical, chemical and ecological). The potential enhancements identified can provide either an immediate direct effect on water quality, or longer-term and indirect positive outcomes for WFD objectives. The findings of the Northampton Urban Study have informed the *CMP*. A



map showing the locations of potential projects identified through the Northampton Urban Study can be downloaded from the River Nene Regional Park website<sup>9</sup>.

- 15.4.4 There will be a synergy between the delivery element of the *GIP* and the *CMP*. For example, suitable projects identified through the Northampton Urban Study can be added to the Interactive Map using the project plan template provided in the *GIP*. This will avoid duplication and enable a coordinated and strategic approach to project delivery. It will also assist in the direction of funding to support delivery.

## 15.5 Health and well-being

- 15.5.1 It is widely recognised that people's connection with nature can increase their health and well-being. The positive impacts of well-developed GI are amply documented. For example improvements to air quality and surroundings encourage outdoor activity, which in turn improves both mental and physical health and well-being, and lowers stress levels. GI provides opportunities for physical exercise, and is therefore an important resource for reaching the Government's recommended targets for exercise:

- An adult should take part in some form of exercise for 30 minutes per day, 5 days a week. This totals 2.5 hours per adult per week. Multiplying this requirement by the adult population of Northampton (143,307) amounts to 18.6million hours of exercise per year.
- Children should take part 1 hour per day, 5 days a week. This totals 5hrs per week. Multiplying this requirement by the 0-14 population of Northampton (40,547) amounts to 10.5m hours per year.

- 15.5.2 Green Infrastructure can provide a free and easily accessible resource to help accommodate this recommended annual 18.7million hours of adult physical activity and 10.5million hours of children's physical activity to help maintain the health of Northampton's population.

- 15.5.3 At their best, green spaces (and wider GI) can help reduce health inequalities between different sections of the population. In recognition of these health benefits, the Northamptonshire Local Nature Partnership has been working with Northamptonshire's Director of Public Health. Together they have identified approaches to be made to the Northamptonshire Health and Wellbeing Board to influence future commissioning plans.

- 15.5.4 The **Northamptonshire Health and Wellbeing Strategy (2012-2015)** reveals Northampton's relatively low numbers of people undertaking physical activity, and the town's relatively low male life expectancy. The aim is to use GI assets to help deliver its recommendations. Initiatives include targeting dementia using woodland, targeting adult and children's eating using community allotments and targeting children's education using health rangers and conservation volunteers. These initiatives are endorsed by NHS / Public Health England's

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<sup>9</sup> <http://www.riverneneregionalpark.org/publications/brochures-downloads/nene-catchment-partnership-ncp-downloads/northampton-water-framework-directive.pdf> (Hyperlink available through Appendix L).

Sustainable Development Unit and currently utilised in their Local Implementation Framework. The *GIP* will provide project opportunities for local groups to actively engage in the enhancement and practical use of GI assets. They can thereby help to deliver the Strategy while benefitting from the outputs.

## 15.6 Climate Change

15.6.1 Green Infrastructure has a significant role to play in helping combat climate change, which is now considered to be one of the greatest threats to our social well-being and economic future. GI provides a range of climate change services that can make both a substantial contribution towards adapting to climate change and also a limited yet important contribution towards mitigating climate change.

15.6.2 The process of adaptation recognises that there is now some inevitable climate change locked into the system. It seeks to build capacity and take action to respond to the likely impacts. The UK Climate Projections<sup>10</sup> suggest warmer wetter winters and hotter drier summers, with more extreme events such as heatwaves, droughts and heavy rainfall. The adaptation services provided by GI in the NRDA include:

- **Managing high temperatures** - particularly in urban areas, where evaporative cooling and shading provided by green infrastructure can ensure that towns and cities continue to be attractive and comfortable places to live, work, visit and invest.
- **Managing water resources** - GI can provide places to store water for re-use; allow water to infiltrate into the ground to sustain aquifers and river flows; catch sediment and remove pollutants from water thereby helping to ensure that water supply and quality is maintained.
- **Managing river flooding** - GI can provide water storage and retention areas, reducing and slowing down peak flows, and thereby helping to reduce river flooding at times of high rainfall.
- **Managing surface water** – GI can help to manage surface water by reducing the rate and volume of water runoff; it intercepts water, allows it to infiltrate into the ground, and provides permanent or temporary storage areas.
- **Managing sewer flooding** – by reducing the amount of surface water entering sewer systems, GI increases the capacity of sewer systems and also reduces the amount of clean water which is treated unnecessarily. This increases sustainability.
- **Reducing soil erosion** - using vegetation to stabilise soils that may be vulnerable to increasing erosion following more intense winter rains or summer droughts.
- **Helping other species to adapt** - providing a more vegetated and permeable landscape through which species can move to new 'climate spaces'.

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<sup>10</sup> Adapting to Climate Change: UK Climate Projections (DEFRA, June 2009)

- **Managing visitor pressure** - providing a recreation and visitor resource for a more 'outdoors lifestyle', and helping to divert visitor pressure away from landscapes which are sensitive to climate change.
- 15.6.3 Climate change mitigation is the reduction of greenhouse gas emissions in order to limit the severity of future climate change. The mitigation services provided by GI in the NRDA include:
- **Carbon storage and sequestration** - storing carbon in soils and vegetation, and slowing its release into the atmosphere.
  - **Providing low carbon fuels** - replacing fossil fuels with alternative fuel sources with lower greenhouse gas emissions, including bioenergy, wind and hydro.
  - **Material substitution** - replacing materials such as concrete and steel (which involve high fossil fuel consumption in their production) with sustainably managed wood and other natural materials.
  - **Food production** - providing environmentally sustainable food production that delivers food security and reduces the amount of fuel used for transporting food.
  - **Reducing the need to travel by car** - providing local recreation areas and green travel routes to encourage walking and cycling, reducing exhaust emissions.
- 15.6.4 Such natural interventions are increasingly being recognised as a desirable 'win-win' approach to combating climate change, as they also help to deliver multiple other social, economic and environmental benefits. Through this document the NRDA has a strategic approach to the planning of GI and the tools with which to deliver, manage and maintain it. This will allow the NRDA to respond positively to the climate change challenge.

## 15.7 Ecosystems Services

- 15.7.1 Ecosystem services can be described as ***the multiple benefits gained by people from the natural environment***. The 'ecosystems approach', has been developing as a branch of science and policy since the late 1980s. In 2005 the UN's *Millennium Ecosystem Assessment (MA)* was published. This assessed the consequences of ecosystem change on human well-being. The findings provide a state-of-the-art scientific appraisal and basis for action to conserve and use ecosystems and their services sustainably. The *MA* classified ecosystem services into four categories:
- **Provisioning services:** products obtained from ecosystems, including food, fibre, fuel, medicines and fresh water.
  - **Regulatory services:** benefits obtained from the regulation of ecosystem processes, including air quality regulation, climate regulation, water regulation, erosion regulation, water purification, disease regulation, pest regulation, pollination, natural hazard regulation.
  - **Cultural services:** non-material benefits people obtain from ecosystems through recreation, reflection, cognitive development, aesthetic experiences and spiritual enrichment.

- **Supporting services:** The services that are necessary for the production of all other ecosystem services including soil formation, photosynthesis, primary production, nutrient cycling and water cycling.
- 15.7.2 The MA findings strongly advocated the ecosystem approach as a basis for more sustainable policy formulation. Although it is early days for policy makers when it comes to adopting an ecosystems approach, the emerging body of evidence suggests that ecosystem services demonstrate the value of biodiversity as a source for multiple societal benefits. Therefore the maintenance or enhancement of ecosystems is a vital component in the future wellbeing of society.
- 15.7.3 Given the multi-functional attributes of GI there is clearly an alignment between the development and delivery of GI and the provision of ecosystem services. This is an important point. It means GI is not simply an ‘environmental issue’ anymore; it has become an economic driver and therefore has an economic value attached. The ecosystems approach is compatible with economic valuation methods, helping to bring ecosystems into decision-making processes. Ecosystem valuation will provide a constructive aid to decision-making in the future, and could inform viability assessments undertaken for new development proposals.
- 15.7.4 In order for the NRDA to have a strategic approach to the development and delivery of GI, and to the identification of priority investment areas, there is an opportunity in the future to apply an ecosystems methodology. This would enable planners and developers to recognise the economic value and impact of GI, which would in turn help in the determination of funds to support the development, management and maintenance of GI over the short, medium and long term.
- 15.7.5 The GIP has considered the proximity of the Nature Improvement Area in terms of landscape connectivity and habitat availability in the Local GI Network Components (Appendix D). There are recommendations that individual projects should also contribute to enhancing biodiversity and consider ecosystem services. There is potential to add monetary, natural and cultural values to GI assets and further values of ecosystem services e.g. flood risk management and carbon capture could be calculated for each component and project. Value assessments were not included in the remit of this project.

## 15.8 Biodiversity Off-setting

- 15.8.1 The idea of a biodiversity off-setting system in England was announced in the Government’s *Natural Environment White Paper* published in 2011. Biodiversity off-setting is a proposed approach to compensate for habitats and species lost to development in one area with the creation, enhancement or restoration of habitat in another. Under this system any negative impacts on the natural environment would be compensated for, or ‘off-set’ by developers. Biodiversity offsetting is a complicated process, and the approach is controversial.

15.8.3 The *GIP* has not been designed to link with any biodiversity off-setting scheme. Currently there is a lack of clarity on how a future programme for off-setting will be implemented. Results from current government pilot projects established in 2012 were not publically available at the time of publishing this document. However, there needs to be a watching brief with respect to emerging or future Government guidance on biodiversity off-setting as the Interactive Map could be a valuable tool that illustrates where opportunities for biodiversity exist through habitat creation, restoration or enhancements.



*Fig. 20: Woodland glade at Hunsbury Hill Country Park, to the east of the prehistoric hillfort earthworks (Urban Open Spaces Component)*



## 16.0 Policy Context

### 16.1 Introduction

- 16.1.1 Local Planning Authorities' duties and obligations regarding GI are set out in European conventions, national legislation and in national and local policy. Recent years have seen significant changes to these duties and obligations in recognition - from every level - that future local planning and economic development needs to be sustainable.
- 16.1.2 The following section provides a précis of the key planning legislation and policy relevant to the delivery of GI across the NRDA through the role of planning. A more detailed review of each document and the associated policy direction can be found in *Appendix J*. *Appendix K* provides a quick reference table showing how the *GIP* supports the delivery of local planning policy.
- 16.1.3 Because GI and the assets within it are multifunctional resources, there is a wide range of relevant legislation and policies. The list is broad and includes (but is not limited to) topics relating to transport, health, climate change, water, heritage and local communities. A detailed reference list is provided in *Appendix L*. The relevant European Directives<sup>11</sup> are not included in the documents summarised below because they have already informed the preparation of the *National Planning Policy Framework* and the JCS.

### 16.2 The Natural Choice: Securing the Value of Nature *The Natural Environment White Paper (2011)*

- 16.2.1 This White Paper sets out how HM Government intends to take forward the Biodiversity Challenge to halt the loss of UK and International species and habitats. It details how to *mainstream the value of nature across our society; promote an ambitious, integrated approach, creating a resilient ecological network across England and move from net biodiversity loss to net gain*. This will be enacted through a new direction for policy over the next decade. The Government proposals for enacting these changes are set out in the White Paper, the implications of which affect all council functions.

### 16.3 *Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (2011)*

- 16.3.1 The Biodiversity Strategy for England builds on the Natural Environment White Paper and sets out how international and European Union (EU) commitments are to be implemented and achieved. The reform of the planning system is identified as key to reducing environmental pressure from planning and development, by taking a *strategic approach to planning for nature* and by retaining *the protection and improvement of the natural environment as core objectives of the planning system*.

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<sup>11</sup> Including *the European Landscape Convention* (signed by the UK in 2006); The *European Convention on Biological Diversity* (adopted 2002); *EU Biodiversity Strategy to 2020* (2012); the *European Network of Protected Natura* (2000); *EU Water Framework Directive* (2000); *EU Directive 2007/60/EC – Assessment and Management of Flood Risks* (2007) .

## **16.4 The Localism Act (2011)**

- 16.4.1 The Localism Act 2011 represents one of the most far-reaching reforms of the planning system since 1947, by *taking power away from officials and putting it into the hands of those who know most about their neighbourhood – local people themselves*. The reform has brought changes to planning at all levels from the strategic level through to the neighbourhood.
- 16.4.2 The aim of the Act is to devolve more decision-making powers from central government back into the hands of individuals, communities and councils. It covers a wide range of issues related to local public services, with a particular focus on the general powers of competence, community rights, neighbourhood planning and housing.
- 16.4.3 A Local Green Space designation, a Community Right to Build Order, and a Community Right to Bid Order have been introduced under the Localism Act, providing greater opportunities for communities to plan and deliver locally-important GI and associated assets.

## **16.5 The National Planning Policy Framework (2012)**

- 16.5.1 Together the National Planning Policy Framework and the Planning Practice Guidance set out the Government's national planning policies and guidance for new development. They aim to create the homes and jobs that the country needs while protecting and enhancing the natural and historic environment. Para 114 establishes the need for local planning authorities to set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of biodiversity and GI networks.

## **16.6 West Northamptonshire Joint Core Strategy Local Plan (Part 1) Adopted Dec. 2014 (JCS)**

- 16.6.1 The JCS sets out the long-term vision and objectives for the whole of the area covered by Daventry District, Northampton Borough and South Northamptonshire Councils for the plan period up to 2029, including strategic policies for steering and shaping development. It identifies specific locations for strategic new housing and employment, changes to transport infrastructure and other supporting community facilities. It recognises the role of the natural environment, providing strategic policies to protect and enhance existing provision and where appropriate create new provision.

## **16.7 The Northampton Local Plan (Part 2)**

- 16.7.1 The local policies within The *Northampton Local Plan (Part 2)* will complement the strategic policies contained within the JCS. The Northampton Local Plan (Part 2) will cover Northampton and will have the following scope:
- Site-specific development allocations including residential and employment uses.
  - Detailed development management policies against which planning applications will be determined.



- Identification, phasing and implementation of local infrastructure (for example the Northampton Northern Orbital Road).
- Boundaries of retail centres.
- Historic conservation, open space and nature conservation policies and designations.
- Policies map.

## **16.8 Central Area Action Plan (Adopted 2013)**

16.8.1 The *Central Area Action Plan (CAAP)* provides specific planning policy and guidance for the Central Area of Northampton where significant regeneration or investment is proposed. It recognises the importance of GI by providing local level policies to protect and enhance existing provision, and where appropriate create new provision.

## **16.9 Northampton Local Plan (Adopted 1997)**

16.9.1 The Northampton Local Plan (NLP) sets out the policies and proposals adopted by the Borough Council for development and use of land in Northampton. The Plan establishes the quality of Northampton's landscape and open space, determining the need to maintain and enhance it.

## **16.10 Planning Obligations Strategy Supplementary Planning Document (2013)**

16.10.1 The Planning Obligations Supplementary Planning Document outlines the Council's strategy for securing relevant developer contributions in relation to mitigating the impacts of new development. It makes specific provision for the enhancement of existing and creation of new open space, sport and recreation facilities.

## **16.11 Nene Meadows Supplementary Planning Document**

16.11.1 Adopted by Northampton Borough Council's Cabinet on 19th February 2014, this SPD provides guidance for future proposals, and informs developers and investors of appropriate land use proposals, for the Nene Meadows Area of the town, which comprises Becket's Park, Nene Meadows and Barnes Meadow.

## **16.12 Northampton Corporate Plan (2016 – 2020)**

16.12.1 Northampton Borough Council's Corporate Plan sets out the Council's key priorities and explains what it wants to achieve over the next 4 years. The need for open space provision is set out under the Priority relating to housing. The import of having well maintained green spaces is set out under the Priority on protecting the environment.

### 16.13 The Northamptonshire Local Flood Risk Management Strategy (LFRMS)

16.13.1 Northamptonshire County Council needs to 'develop, maintain, apply and monitor' a LFRMS. The strategy focuses on local flood risk resulting from surface water, groundwater and ordinary watercourses flooding. The interaction with main river flooding has also been assessed. The LFRMS promotes GI for flood reduction purposes.

### 16.14 Neighbourhood Plans and Neighbourhood Development Orders

16.14.1 Neighbourhood Planning is a new option for communities to decide the future of the places where they live. It is a community right introduced by the Localism Act 2011. It is intended to complement other plans produced by the Council, either through the production of a Neighbourhood Development Plan, or a Neighbourhood Development Order (NDO). All three Local Authorities within the NRDA have Neighbourhood Forums and/ or Parish Councils progressing Neighbourhood Plans at varying stages.

16.14.2 Neighbourhood Plans or NDOs can be used to add more detail to the policies in the Council's plans, or cover other aspects of planning which reflect the community's aspirations for its local area. Once adopted by the Council, the Neighbourhood Plan or NDO will form part of the Local Plan for the relevant administrative area. It will then be used in making decisions on planning applications in that area.

16.14.3 Neighbourhood Plans and NDOs are relevant in a GI context, because they enable local communities to designate Local Green Spaces. These will be protected from development other than in very special circumstances. In addition to this, Neighbourhood Plans may contain policies which relate to indoor or outdoor sporting provision, and / or playing pitches.

16.14.4 In Northampton two Neighbourhood Plans have been prepared, namely *Duston Neighbourhood Plan* (2015) and *Spring Boroughs Neighbourhood Plan* (2016). A third, the *Growing Together Neighbourhood Plan* for the Lumbertubs, Blackthorn, Goldings and Lings area, is being prepared for Submission to the Borough Council with Examination proposed for later in 2016.

## 17.0 Conclusion for Part 3

17.0.1 Part 3 has presented the strategic context for the delivery of GI, together with the associated biodiversity and movement networks. It has provided evidence on the multi-functionality and planning context of GI which justifies the need for development of the *GIP*. Part 4 adds further weight to the *GIP* through the provision of a monitoring framework to ensure its effective delivery.

# **PART 4**

## ***MONITORING***

## 18.0 Monitoring Framework for the *Green Infrastructure Plan*

### 18.1 Introduction

- 18.1.1 The *GIP* provides the evidence base for the Northampton Local Plan Part 2, a strategy for the delivery of GI and the tools to support its implementation.
- 18.1.2 At this stage, monitoring of the *GIP* is about ensuring that the planning policy resulting from the evidence presented in the *GIP* is being delivered. However, for the *GIP* to be truly successful it will also need to be taken forward as a strategy to implement the programme of Aims and Objectives set out in *Part 2: Implementation*. This will be achieved through a mixture of delivery mechanisms with a range of partners.

### 18.2 Monitoring of the Implementation Strategy

- 18.2.2 It is necessary to note that no baseline figures upon which to monitor GI implementation currently exist. Baseline figures will be established over the next year through a database which records target data. It will then be possible to monitor the indicators year on year.
- 18.2.3 The monitoring approach shown in *table 7* sets out triggers which will identify when the *GIP's* indicators are not being met. These are supported by examples of contingency actions which can be taken to address the issues identified.
- 18.2.4 It is worth stating why the indicators in *table 7* do not seek to measure areas of net gain. It is difficult to measure a net gain in GI, as shown in the following examples. 1) A project makes improvements to an existing linear corridor, but without increasing its overall size. Would this be considered a 'net gain'? 2) A number of projects take place within a single site, delivering multiple benefits, but using an area-based measurement for each project would amount to double counting of the site.
- 18.2.5 To avoid these pitfalls, the approach to monitoring policy will be to look at activity on the web-site and Interactive Map, along with information on project delivery and expenditure on GI-related projects (both enhancement of existing GI and creation of new GI). The information recorded could be used to develop an annual statement that will be used to inform the Annual Monitoring Report on progress towards the GI policies.

Table 7: Monitoring of the Implementation Strategy

Indicator	Target	Main agency for delivery and source of data	Trigger	Contingency
<b>Number of hits on the Interactive Map.</b>  <b>Number of hits on the Project Plans.</b>  <b>Number of hits on the Component Profiles.</b>	Increase in no. of hits.	NBC	Reduction in usage.	Increase publicity and public awareness.  Improve signposting.  Review and update website content.
<b>Number of 'ready-to-go' project plans added to the website / Interactive Map</b>	Annual increase in submission of complete Project Plans.	NBC	Drop in the number of projects plans being submitted in a given year.	Increase publicity and public awareness with partners and community groups.
<b>Number of registered projects completed</b>	Annual increase in number of projects completed and case study information added to website.	NBC	Drop in the number of projects being completed in a given year.	
<b>Amount of funding secured through S106 / CIL towards the delivery of GI projects</b>	Annual increase in funding secured towards the delivery of GI projects.	NBC	Drop in funding secured towards the delivery of GI projects in a given year.	Work with developers to raise awareness of the need to make provision for GI in development proposals of 15 dwellings or more.

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# ***GLOSSARY***

## ***Of abbreviations and technical terms***



## Abbreviations

**BAP** Biodiversity Action Plan

**CAAP** Central Area Action Plan

**CIC** Community Interest Company

**GI** Green Infrastructure

**GIP** Green Infrastructure Plan

**GIS** Geographical Information Systems

**LGS** Local Geological Site

**LNR** Local Nature Reserve

**LWS** Local Wildlife Site (formerly known as County Wildlife Site)

**NIA** Nature Improvement Area

**NPPF** National Planning Policy Framework

**NRDA** Northampton Related Development Area

**PWS** Potential Wildlife Site

**RIGS** Regionally Important Geological/ Geomorphological Sites

**RNRP** River Nene Regional Park

**SM** Scheduled Ancient Monument

**SPA** Special Protection Area

**SSSI** Site of Special Scientific Interest

**SUDS** Sustainable Urban Drainage Systems

**SUE** Sustainable Urban Extension

**WN JPU** West Northamptonshire Joint Planning Unit

**WTR** Wildlife Trust Reserve

## Technical Terms

**Biodiversity:** Biological diversity includes all living organisms, their interactions and genetic variability.

**Biodiversity Network:** A means of connecting fragmented habitats in order to assist species persistence and habitat function.

**Biodiversity Character Type:** Based on Natural England's Natural Areas, in Northamptonshire the Biodiversity Character Types are determined by underlying geology, distribution of biodiversity hot spots and designated sites.

**Countryside Connectors:** Part of the Sustainable Movement Network, they link towns, villages and hamlets to assets in the wider countryside. They are composed of the Public Rights of Way network and cycle routes.

**Country Parks:** Established from Countryside Act 1968, to allow urban residents access to local countryside areas, to enjoy the scenic beauty and for recreational use.

**Environment Agency Flood zone 2:** Medium probability of flooding; having annual risk between 1 in 100 or 1 in 200 and 1 in 1,000

**Environment Agency Flood zone 3a:** Land with high probability of annual flood risk, between 1 in 100 and 1 in 200 years.

**Environment Agency Flood Zone 3b:** Identifies floodplains where water will flow or be stored in times of flood.

**Ecosystem Services:** The benefits gained by people from the natural environment. They can be put into four categories, as follows: Provisioning Services; Regulating Services; Cultural Services, and Supporting Services.

**Green Infrastructure (Network):** A planned network of multifunctional Green Spaces and interconnecting links.

**Green Infrastructure Assets:** GI Assets range from Country Parks, lakes and woodlands to urban interventions such as green roofs and street trees. They can be specific sites at the local level or broader environmental features at the landscape scale within and between rural and urban areas.

**Green Infrastructure Functions:** GI functions are the roles that GI assets play if planned, designed and managed in a way that is sensitive to, and includes provision for, natural features and ecosystem services. They may have obvious primary functions, but each asset can perform different functions simultaneously – a concept known as **multifunctionality**. For example, street trees add aesthetic quality to an urban area, but will also reduce airborne pollution, provide shade, reduce urban heat island effects, mitigate wind chill and turbulence and increase biodiversity.

**Habitat corridor:** Where existing **habitat reservoirs** of the same or similar Biodiversity Action Plan habitats form a distinct network through the landscape, enabling wildlife to move between sites.

**Habitat network:** Linked habitat sites, including **habitat corridors** and **habitat reservoirs**.

**Habitat reservoir:** An existing site which provides a habitat for species to live, e.g. a woodland or an area of grassland.

**Hinterland:** The land surrounding a settlement which is connected to it visually or in terms of its function.

**Historic Landscape Character Types/ Areas:** Distinct types of landscapes that are relatively homogenous in historic character. They are generic in nature in that they may occur in different parts of the County, but wherever they occur, they share broadly similar combinations of historical land use and settlement pattern. Historic Landscape Character Areas are unique in that they are geographically discrete, sharing characteristics of the broader Historic Landscape Types to which they belong.

**Inter-Urban Neighbourhood Connectors:** This local level of the **Sustainable Movement Network** links different areas of Northampton.

**Interactive map:** An online mapping facility hosted by Northampton Borough Council. It displays a variety of relevant maps (including the GI Components and identified GI projects) and also links to relevant documents such as project plans.

**Ironstone:** A type of limestone with a golden-brown colour which is distinctive to Northamptonshire.

**Landscape character area:** The unique individual geographical areas in which **landscape types** occur. They share generic characteristics with other areas of the same type but also have their own particular identity and a unique 'sense of place'.

**Landscape character type:** Generic types of landscape which possess broadly similar patterns of geology, landform, soils, vegetation, land use, settlement and field pattern in every area where they occur.

**Landscape Sensitivity (to a specific type of change):** The extent to which a landscape can accept change of a particular type and scale without unacceptable adverse effects on its character.

**Local Geological Sites** A network of sites designated for their local importance for geological conservation.

**Local GI Network Component:** A geographic area of Green Infrastructure which can be defined by its landscape character, or the type of Green Infrastructure within it.

**Local Nature Reserve:** Area of land of local significance for biodiversity identified by Local Authorities under the National Parks and Access to the Countryside Act 1949.

**Local Wildlife Sites:** areas of land identified by the Wildlife Trust, Local Authorities and other conservation partners where habitats and species are locally distinct or are rare and declining locally.

**Movement Network:** includes all physical structures that provide access and connect people to GI, including entrances, footpaths and cycle routes.

**Multifunctionality:** The ability of a Green Infrastructure site to perform different functions simultaneously.

**Nature Improvement Area (NIA):** Land, identified by the UK government in 2011 (White Paper: Natural Environment) , as strategic areas to focus actions that will improve the management of wildlife, increase the area and number of wildlife sites and improve connectivity between wildlife sites.

**Offsite mitigation:** After avoidance and reduction of anticipated loss in biodiversity through development, unavoidable impacts should be mitigated, for example replacement of lost ponds, wetlands, bat roosts etc. However, a residual loss should be compensated for, offsite of the development, so that overall there is a net biodiversity gain.

**Potential Wildlife Sites:** areas of land identified by local experts and satellite imagery as potential wildlife sites but have not been fully assessed or have not reached the status of a wildlife site. These sites do contain a higher biodiversity than average and could be enhanced.

**Primary Network:** Strategic routes within the **Sustainable Movement Network**. They are composed of strategic links between major settlements, using the Public Rights of Way network and cycle routes. Green Ways are through open countryside while Blue Ways follow water courses including rivers, navigations and canals.

**Registered Battlefield:** Historic Battlefield recorded on the National Register of Battlefields.

**Ridge and Furrow:** Earthworks comprising parallel ridges, formed by medieval ploughing.

**S106 Agreement:** A legal agreement made pursuant to section 106 of the Town and Country Planning Act 1990, entered into by a local Planning Authority and persons interested in land (usually developers) which imposes planning obligations. These planning obligations are used to mitigate the negative impacts of a development and make it acceptable in planning terms.

**Scheduled Monuments:** Nationally-important heritage sites which are given legal protection by being placed on a list or 'schedule'.

**Semi-natural:** Areas of vegetation that are managed or have had management in the past. These areas are not planted, are longstanding components of a landscape and contain a number of species that are indicative of a semi-natural habitat.

**Setting:** The area of landscape around a settlement which forms the approach to the settlement, and/or the backdrop to views from within it.

**Site of Special Scientific Interest:** Protected under the Wildlife and Countryside Act (1981) and Countryside and Rights of Way Act 2000, these areas are deemed exceptional examples of habitat type, geology or wildlife.

**Special Protection Area:** Conservation sites that link to the European Network of protected Natura 2000, meaning that these sites have not only significant wildlife value nationally but are also significantly and strategically important across Europe. These are protected under Article 4 of the Conservation of Wild Birds Directive (79/409/EEC), the Birds Directive.

**Structural Green Space:** Green space provision associated with large scale development that defines the structure and layout of the development as a whole

**Sustainable Movement Network:** Principal networks and opportunities for sustainable people movement from centres of settlement to the countryside.

**Sustainable Urban Drainage Systems (SUDS):** This term represents a 'roof to river' system that may use a wide variety of hard and soft engineering options to retain the surface drainage from peak rainfall events on the landscape for as long as possible. Water may evaporate or infiltrate. The speed (velocity) and amount (discharge) of urban runoff can be achieved with a range of SUDS mechanisms which can include: green roofs, rain gardens, filter strips, porous paving, swales and retention ponds and wetlands. SUDS are also expected to provide pollution control, amenity and ecological benefits.

**Sustrans:** UK-based charity dedicated to sustainable transport. Co-ordinates the National Cycle Network.

**Townscape character type:** Generic types of townscape which contain similar street patterns and age/ style of buildings in each area where they occur.

**West Northamptonshire Joint Planning Unit:** Strategic planning unit established jointly by Daventry District Council, Northampton Borough Council and South Northamptonshire District Council.



***MAPS***

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