

# Hertfordshire Strategic Green Infrastructure Plan (Incorporating the GreenArc area)

Final Report

Prepared for Hertfordshire County Council

by

Land Use Consultants

March 2011



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**43 Chalton Street**  
**London NW1 1JD**  
**Tel: 020 7383 5784**  
**Fax: 020 7383 4798**  
**[london@landuse.co.uk](mailto:london@landuse.co.uk)**

14 Great George Street  
Bristol BS1 5RH  
Tel: 0117 929 1997  
Fax: 0117 929 1998  
[bristol@landuse.co.uk](mailto:bristol@landuse.co.uk)

37 Otago Street  
Glasgow G12 8JJ  
Tel: 0141 334 9595  
Fax: 0141 334 7789  
[glasgow@landuse.co.uk](mailto:glasgow@landuse.co.uk)

28 Stafford Street  
Edinburgh EH3 7BD  
Tel: 0131 202 1616  
[edinburgh@landuse.co.uk](mailto:edinburgh@landuse.co.uk)



# DOCUMENT CONTROL SHEET

Version	Issued by:	Approved by:
<b>FINAL</b>	Andrew Tempany	Kate Ahern
	<b>Senior Landscape Architect</b>	<b>Principal-in-Charge</b>
	31 <sup>st</sup> March 2011	31 <sup>st</sup> March 2011



# CONTENTS

<b>I</b>	<b>INTRODUCTION .....</b>	<b>1</b>
	What is green infrastructure?.....	2
	Benefits and relevance of the green infrastructure approach to Hertfordshire.....	3
	The green infrastructure of the county.....	3
	Varied landscapes and habitats .....	4
	Woodlands.....	4
	Historic legacy .....	4
	A 20 <sup>th</sup> Century greenspace legacy.....	4
	Existing Strategic GI initiatives.....	4
	What this Strategic GI Plan will do .....	5
	The strategic green infrastructure planning process – a summary .....	6
	Structure of this Strategic Highlights Green Infrastructure Plan .....	8
<b>2</b>	<b>GREEN INFRASTRUCTURE DEMAND AND OPPORTUNITY IN HERTFORDSHIRE COUNTY BY FUNCTION .....</b>	<b>9</b>
	Green infrastructure functions.....	9
	The functions – summary of need, supply and opportunity in Hertfordshire.....	13
	Access to recreation .....	14
	Prestige on settlement approach corridors .....	17
	Health.....	18
	Sound ecosystems.....	20
	Productive green environments .....	22
	Conserving historic landscape character .....	24
	Sustainability and responding to climate change.....	26
	Land remediation .....	27
	Nature conservation .....	28
	Experience .....	30
	Flood attenuation and water management .....	31
<b>3</b>	<b>PROPOSED GREEN INFRASTRUCTURE NETWORK AND PROJECTS .....</b>	<b>33</b>
	Green infrastructure vision.....	33

Delivering the vision – the network.....	34
Rationale, key messages.....	34
Green infrastructure types in Hertfordshire .....	36
Proposed green infrastructure projects .....	36
GI projects and cross county connections .....	61

**4 LINKING THE STRATEGIC GREEN INFRASTRUCTURE PROPOSALS TO LOCAL SPATIAL PLANNING AND DEVELOPMENT MANAGEMENT ..... 63**

Evidence Base .....	64
Core strategy .....	64
Development Management .....	65
Next steps.....	68
Potential future work .....	70



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Land Use Consultants team comprised: Kate Ahern (Principal), Andrew Tempany (Project Manager), Alex Massey, Emma Deen, Fearghus Foyle, Graham Savage, Sofie Swindlehurst, Matthew Parkhill and Diana Manson.

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# 1 Introduction

- I.1 Green infrastructure (GI) is increasingly recognised as a cornerstone of sustainable development and communities. It is a ‘must have’, and offers many social and environmental benefits.
- I.2 Green infrastructure planning and delivery completes Hertfordshire’s consideration of sustainable land use and landscape planning, expressed in **Green Infrastructure in Hertfordshire: A Framework**<sup>i</sup>. It helps bridge the gap between strategic planning and site design and management, providing messages to inform spatial land planning and development management decisions.
- I.3 Working on behalf of a network of stakeholders, in particular members of the Hertfordshire Technical Chief Officers Association (HTCOA), Natural England, Lee Valley Regional Park Authority, Environment Agency, Forestry Commission and the Herts & Middlesex Wildlife Trust, Land Use Consultants was commissioned by Hertfordshire County Council in September 2010 to develop the Hertfordshire GI Plans. This encompassed a two tier approach with Strategic Highlights Green Infrastructure Plans (SHiPS) for Hertfordshire/the GreenArc and ‘local level’ district Green Infrastructure Plans for seven Hertfordshire districts. The Hertfordshire Strategic Highlights Green Infrastructure Plan has been developed in parallel with the GreenArc Strategic Highlights Green Infrastructure Plan and also the district

wide plans for St Albans, Watford, Dacorum, Three Rivers, Hertsmere, Welwyn Hatfield and East Herts. Account has also been taken of existing GI plans to ensure links across both district and county boundaries, with this strategic GI Plan also considering existing GI work in Hertfordshire. These include the North Hertfordshire District and Harlow Green Infrastructure Plans and the All London and East London Green Grids. Reference has also been made to ongoing strategic GI initiatives such as the Community Forest at Watling Chase, and the Regional Parks at the Lee Valley and Colne Valley.

- I.4 This is a strategic level Green Infrastructure Plan, which identifies further work which will be needed in future to deliver green infrastructure, and makes appropriate cross references to the district level GI Plans. Where further, more detailed green infrastructure planning work will be required, this is also referenced.
- I.5 The Hertfordshire Strategic Highlights Green Infrastructure Plan:
  - Provides an overview of existing strategic green infrastructure assets within the County, including consideration of assets and proposals which are significant for national and sub national/regional green infrastructure planning;

- Sets out an assessment, at the strategic level, of the ability of green infrastructure to provide multiple environmental and social and, in some cases economic, functions;
- Considers opportunities for enhancement and creation of green infrastructure;
- Outlines a series of potential projects to deliver multiple functions and benefits, and
- Provides advice on taking green infrastructure proposals forward through spatial planning and practical delivery.

I.6 The Strategic Highlights Green Infrastructure Plan for Hertfordshire relates to GI assets and proposals which concern more than one district. Strategic sites considered include those such as Ashridge and the Broxbourne Woods Complex, as well as the two Regional Parks.

### What is green infrastructure?

I.7 Green infrastructure is described in **Planning Policy Statement 12: Local Spatial Planning**, as:

*a network of multi-functional greenspace...both new and existing...both rural and urban...which supports the natural and ecological processes...and is integral to the health and quality of life of sustainable communities...”*

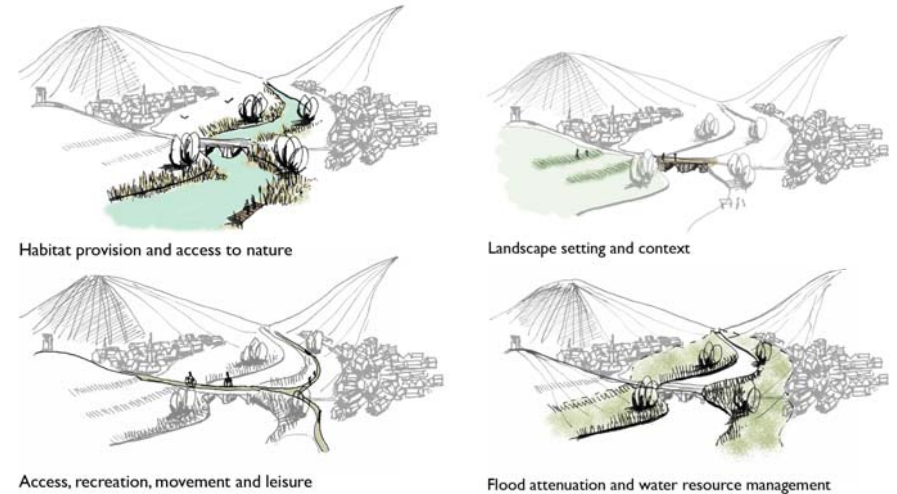
I.8 This definition is reinforced and expanded in **Green Infrastructure in Hertfordshire: A Framework** and in Natural England’s **Green Infrastructure Guidance**<sup>ii</sup>.



**Aspects of multi functional green infrastructure – links and spaces for people and wildlife**

**Benefits and relevance of the green infrastructure approach to Hertfordshire**

1.9 In the face of competition for resources and environmental change, now more than ever we must look to our landscape and to sites to perform the widest range of functions for people, communities and quality of life, wildlife and ecosystems. This concept of ‘multi functionality’ is shown in the illustration on the right, from Natural England’s Green Infrastructure Guidance.



**The green infrastructure approach: One site performing multiple functions (source: Natural England, Green Infrastructure Guidance)<sup>iii</sup>**

**The green infrastructure of the county**

1.10 Hertfordshire has a rich green infrastructure resource encompassing parts of the Chilterns Area of Outstanding Natural Beauty (AONB), river valleys, chalk grasslands, farmlands, ancient woodlands, designed landscapes and parklands, in addition to an extensive 20<sup>th</sup> century urban green infrastructure heritage. River valleys form a natural spine for green infrastructure and Hertfordshire is particularly well provided for in relation to these. A number of the river valleys in the county are chalk streams, which are nationally important and a Biodiversity Action Plan priority habitat. The rivers and their

tributaries flow through a rural landscape with rolling hills and wide, flat river floodplains. The rivers often encompass extensive areas of rich floodplain habitat throughout the rural areas across the County. The majority of Hertfordshire lies within the Thames Catchment Area, while the north east of the County (North Herts) lies within the Anglian Catchment Area.

### Varied landscapes and habitats

- 1.11 The landscape of Hertfordshire includes several Landscape Character Regions, including the Chilterns, The North Hertfordshire (chalk) ridge, The East Hertfordshire Plateau, the Central River Valleys and South Hertfordshire Plateau. (*A Landscape Strategy for Hertfordshire*, Vol I, HCC 1997). Within these are a variety of landscape types, some of which are relatively rare ([www.landscape-east.org.uk](http://www.landscape-east.org.uk)).

### Woodlands

- 1.12 The County includes a network of strategic assets such as Ashridge, the Whippendell and Broxbourne Woods Complexes adding to the many more locally significant individual ancient semi-natural woodlands. A number of Districts, notably Welwyn Hatfield, East Herts and Hertsmere also include a network of parklands and ancient woodlands which contribute to the substantial existing GI resource. Woodlands are an important landscape and green infrastructure theme in the county.

### Historic legacy

- 1.13 The County has a notable historic legacy relevant to green infrastructure, most particularly in the legacy of historic

landscapes and ancient landscape elements. It is also evident in pre Roman settlements such as Prae Wood, the network of Roman routes which cross the County (e.g. Ermine St, Watling St and Icknield Way) and in one of the highest concentrations of historic parks and gardens in the country.

### A 20<sup>th</sup> Century greenspace legacy

- 1.14 Hertfordshire has a particularly high concentration of planned and designed 20<sup>th</sup> Century urban greenspace assets, due primarily to the presence of the world's first Garden City at Letchworth, the later Welwyn Garden City, and a number of New Towns. New Towns in Hertfordshire are Hemel Hempstead, Stevenage and Hatfield. All are important to green infrastructure as they included greenspace provision as an integral part of the settlement layout and development configuration. Some, such as Hemel Hempstead, include notable examples of formal landscape design which form part of the urban green infrastructure network (such as the Water Gardens and green wedges, forming part of the original Geoffrey Jellicoe masterplan for the town).

### Existing Strategic GI initiatives

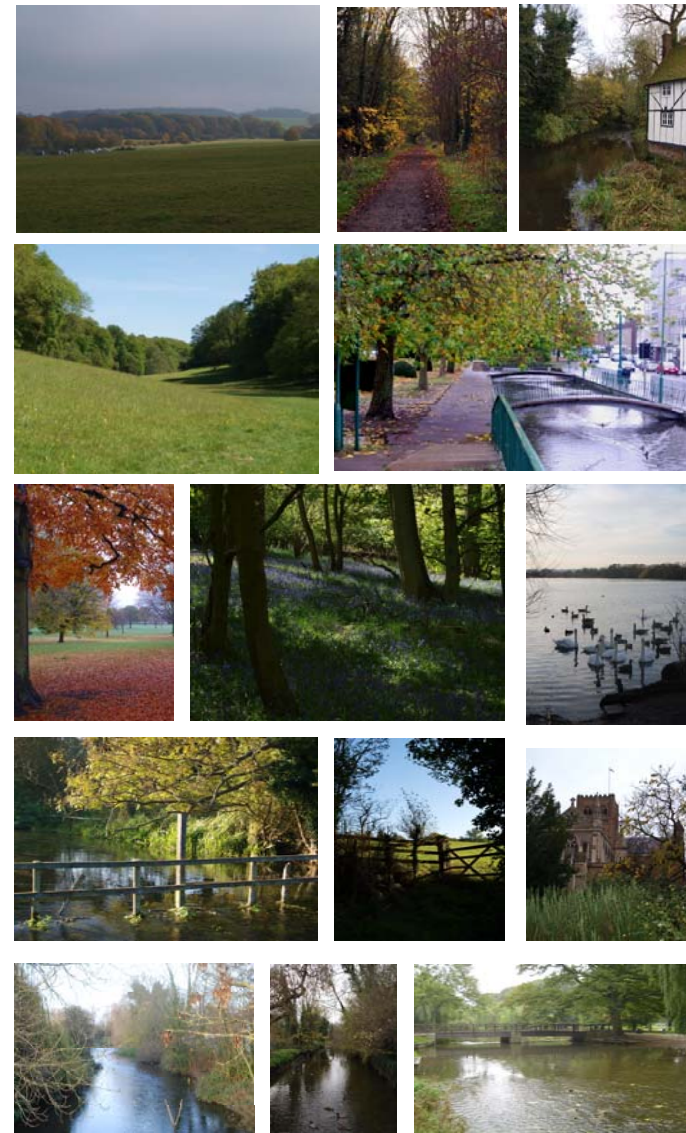
- 1.15 There is also a wide array of existing strategic green infrastructure assets and initiatives in the County, such as promoted greenway routes, cycle routes such as Sustrans National Route 6, the Chilterns Area of Outstanding Natural Beauty (AONB), the restoration of sites such as Panshanger Park, the community forestry aspirations of the Watling Chase Community Forest and the ongoing



implementation of Heartwood Forest (by the Woodland Trust). Against this must be considered issues of green infrastructure need and demand at the strategic level, how existing green infrastructure is performing, and the potential for green infrastructure to contribute to landscape and environmental enhancement in more fragmented parts of the County (presence of major transport corridors and associated barriers, areas of high deprivation and proposed growth locations).

### What this Strategic GI Plan will do

- I.16 In some cases, existing GI assets are delivering the necessary functionality, in others not. This pattern of demand and supply forms the basis for the analyses undertaken and proposals made in this plan. For example, issues relate to access and links, and the variable ability to reach assets as part of a green travel network.
- I.17 This Strategic Highlights Green Infrastructure Plan seeks to address the need for links and connections, alternative greenspace provision and low cost, maximum benefit interventions such as improved landscape management to deliver a wider array of functions. It also looks at ways to influence sustainable living modes and transport choices through non spatial and educational projects to support spatial proposals. It has also harvested proposals from the Hertfordshire District GI Plans (which have been undertaken in parallel), where will require action involving more than one District or Borough.



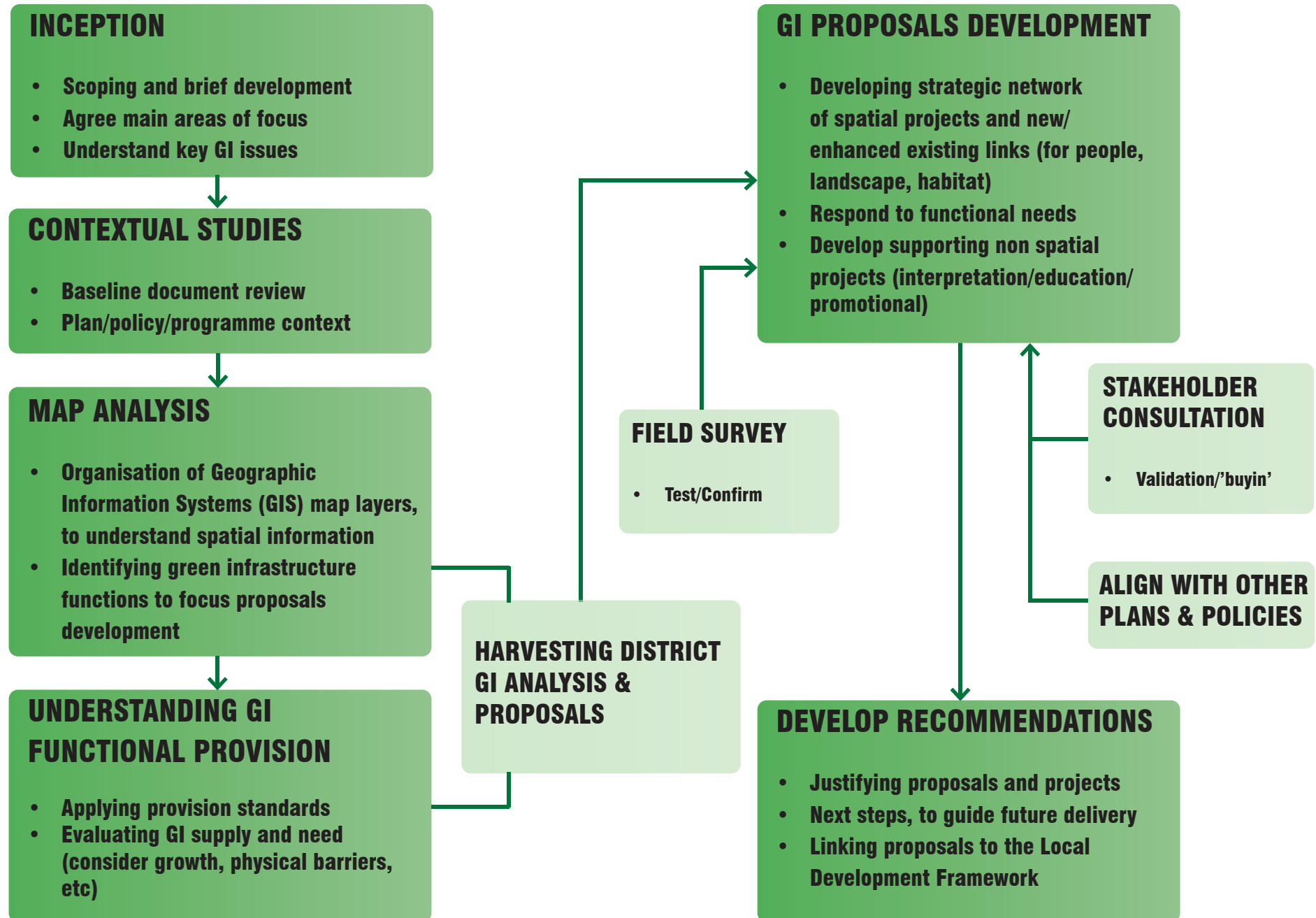
The varied green infrastructure of Hertfordshire

### **The strategic green infrastructure planning process – a summary**

- I.18 For the purposes of this study, the green infrastructure planning process can be summarised in the diagram overleaf.



# Developing the Strategic Green Infrastructure Plan: Summary of Process



## STRUCTURE OF THIS STRATEGIC HIGHLIGHTS GREEN INFRASTRUCTURE PLAN

- I.19 The remainder of this Strategic Highlights Green Infrastructure Plan is set out as follows:
- Section 2: Green infrastructure demand and opportunity in Hertfordshire by function
  - Section 3: Proposed strategic green infrastructure network and projects
  - Section 4: Linking the green infrastructure proposals to local spatial planning
- I.20 Appendices are presented in a separate volume. **Appendix 1** sets out the record of stakeholder consultation undertaken as part of the study. **Appendix 2** shows the summary findings from a thematic document review undertaken to set the GI Plan in context. **Appendix 3** sets out the methodology for the functional analysis.



**Aspects of the green infrastructure of Hertfordshire Top – (l) The Nickey Line, St Albans, (r) Lee Valley;  
Bottom – Golden Valley, Ashridge**

## 2 Green infrastructure demand and opportunity in Hertfordshire County by function

- 2.1 To evaluate existing strategic green infrastructure opportunities, a rapid thematic document review was undertaken to understand the environmental and social context. The themes for the document review are different from but are linked to and have informed the separate analysis of GI functional provision
- 2.2 Themes for the literature review were:
- Access and recreation
  - Landscape character and experience; settlement setting
  - The historic environment
  - Health and deprivation
  - Functional ecosystems and flood risk
  - Productive landscapes (orchards and allotments) and land in Higher Level Stewardship
  - Land remediation (issues concerning mineral sites and restoration, derelict and previously developed land)
  - Nature conservation
- 2.3 Documents reviewed and key messages from each theme are set out in **Appendix 2**.

## GREEN INFRASTRUCTURE FUNCTIONS

- 2.4 Key to understanding green infrastructure and to justifying the proposals is consideration of the functions green infrastructure can and needs to perform.
- 2.5 The eleven functions which have been identified for this strategic Green Infrastructure Plan are shown overleaf.
- 2.6 These functions have been defined and mapped to understand geographical/spatial provision of green infrastructure assets in Hertfordshire. Consideration has been given to shortfalls and potential need and supply. The functions have also been used to develop strategic proposals in response to identified need and to evaluate proposals, for prioritisation and future implementation by others.



## Green infrastructure functions

access



approach



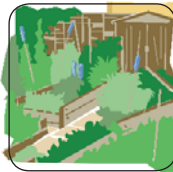
health



ecosystems



productive



historic



sustainability



remediation



nature



experience



flood



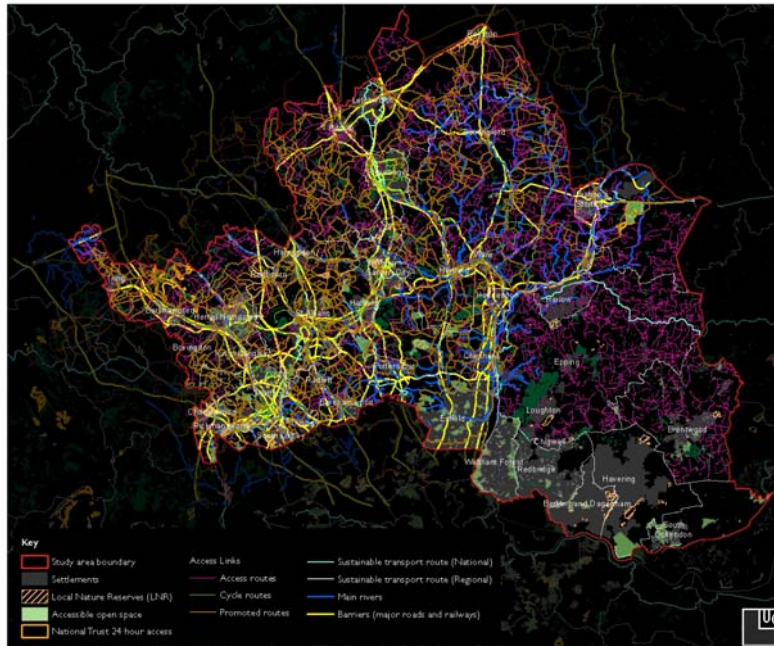


- 2.7 The analysis methodology for each function, including provision standards applied, is set out at **Appendix 3**. Supporting mapping has been used to generate visual and statistical analysis, and to understand nature of provision and shortfalls. This is shown below, in relation to each function.

### **THE FUNCTIONS – SUMMARY OF NEED, SUPPLY AND OPPORTUNITY IN HERTFORDSHIRE**

- 2.8 The findings from each functional analysis are summarised below. Note that mapping shows both Hertfordshire and the GreenArc, as part of the integrated approach taken to developing the two Strategic GI Plans. This has also been reflected on the proposals map at **Figure 3.1**, which shows both areas.

## Access to recreation



- 2.9 Accessible open space forms a key part of the quality of life of communities, although it is recognised that functionality varies according to the type and size of spaces. Areas may not always be well served due to settlement evolution and the presence of barriers to access, such as motorways, trunk roads and railways. These issues are particularly relevant to many parts of Hertfordshire.

- 2.10 The Natural England Accessible Natural Greenspace (ANGSt) identify four thresholds for semi natural greenspace provision:
- 500ha and above;
  - 100ha and above but below 500ha;
  - 20ha and above but below 100ha;
  - 2ha and above but below 20ha
- 2.11 These sites can be identified in terms of their strategic importance with the larger sites (500ha) representing regional provision, the smaller sites (100ha) representing county provision while sites up to 20ha represent district/local provision.
- 2.12 Applying the Natural England ANG standards, main areas of deficiencies are in East Herts, North Herts, Hertsmere and Welwyn Hatfield where much of these areas do not meet all of the ANGSt standards. The analysis identified large gaps in ANG provision in East Herts in particular and this has informed strategic projects and proposals for enhanced strategic links, shown on **Figure 3.1**. Both Watford and Stevenage have below average provision of ANG, while Broxbourne has a proportionally higher than average provision of ANG.
- 2.13 There is a relatively high proportion of ANG at County level within St Albans District, although at a sub-regional level, Ashridge, within Dacorum Borough, is the closest 500ha site. Stevenage performs below the average at both



county and sub-regional levels and improvements in this area could be linked with North Herts, where potential growth areas north of Stevenage could link with greens links/lungs in this area (see **Figure 3.1**). North Herts has a proportionally lower level of provision of both county and sub-regional sites with areas such as Hitchin and Royston deficient in the level of provision of strategic open space.

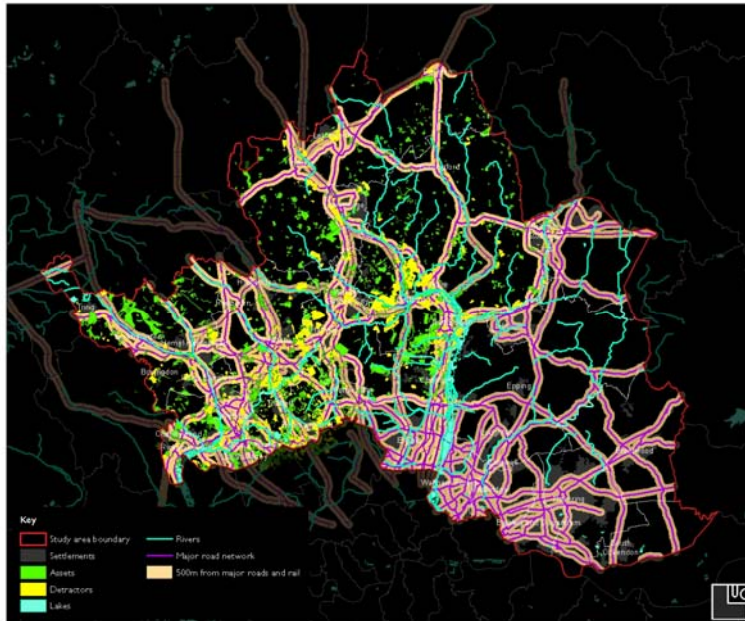
- 2.14 Dacorum and Three Rivers have the largest proportion of ANG provision throughout the County where lateral links to the west of the County could help alleviate problems elsewhere. Linking many of the existing recreational routes (e.g. Hertfordshire Way and Chilterns Way) could serve to create an integrated network of green corridors providing easy access to many of the County's GI assets. As identified in the analysis, improving access to key strategic sites such as Ashridge and creating enhanced car free links to settlements and other sites in the vicinity could greatly reduce pressures on this site.
- 2.15 Key opportunities are to deliver strategic links alongside side or part of existing proposals to ensure county wide links are provided e.g. Bishop's Stortford, Lee and Stort Valleys, Watling Chase Community Forest and Heartwood Forest.
- 2.16 Additional opportunities include enhancing and promoting 'walkable' routes where secondary level connections with strategic routes such as with the Icknield Way and Chiltern Way could be provided. An improvement in the number

of long distance routes to more remote and interesting areas of the county that allow communities to be connected by 'walkable' routes has been developed as part of the Strategic GI Plan (see **Figure 3.1**).

- 2.17 With reference to the Woodland Trust's Accessible Woodland Standard mapping shown overleaf, the northern half of St Albans and the north east of East Herts is deficient and these deficiencies have informed proposals development on the GI network map (see **Figure 3.1**-Woodland Arc project).



## Prestige on settlement approach corridors



- 2.18 The concept of prestige, that is, the experience and perception of settlement approaches, is a key part of the green infrastructure approach and for positive planning of settlement fringes. Within the context of the principal transport corridors on Hertfordshire's main settlement approaches, this functional analysis has referred to spatial mapping of assets and detractors produced for Hertfordshire<sup>v</sup>, as well as consideration of landscape condition and quality in the Hertfordshire Landscape

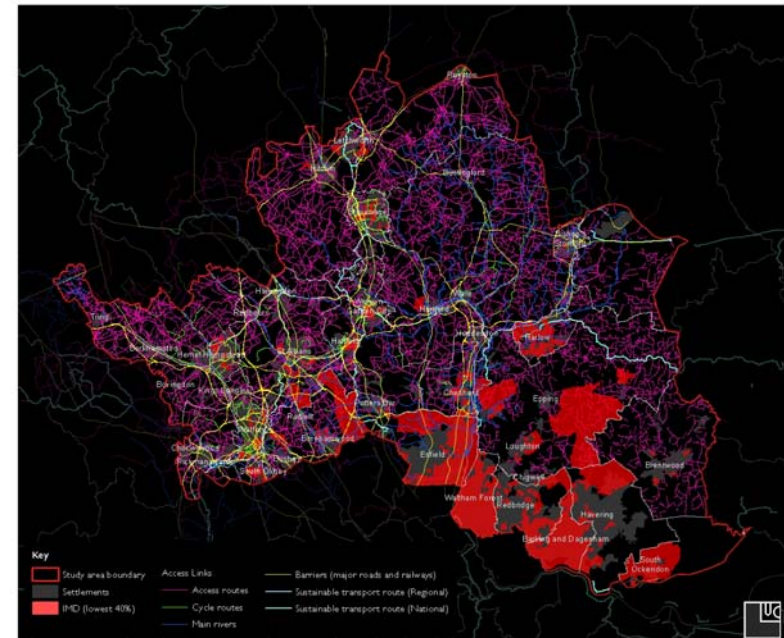
Character Assessment<sup>vi</sup>. Given the time at which assets and detractors baseline data was prepared by Hertfordshire County Council, this does not reflect ongoing positive land management and conservation, and which has been considered in developing the proposed GI network, as at Panshanger Park for example. As such that data represents a 'point in time' not necessarily now reflected at site level, but the data nonetheless provides a guide to help focus GI proposals development.

- 2.19 Within the main settlements, the experience of most of the GI assets is impaired to a degree by intrusion of transport corridors. For example, Hemel Hempstead's western approach is affected by the West Coast Mainline Railway and A41. Existing woodlands in the transport corridor buffers should be used as a template for re linking woodland sites, such as improving and increasing buffering to the MI corridor through the Watling Chase Community Forest (WCCF) planting targets<sup>vii</sup>. Industrial estates within the corridor could also be buffered through increased woodland planting.
- 2.20 As part of the future delivery of the WCCF, new woodland could enhance current areas of deficit, and help achieve new woodland extents and transport corridor buffering as part of the WCCF scheme. New links through woodland planting and diversified open space could create areas and green transport routes between current key assets and potential new landscapes. The WCCF initiative could be encouraged further, to link key assets such as Nyn Park and Northaw Great Wood In Welwyn Hatfield

and Hertsmere Boroughs to improve settlement approaches, where Welwyn Hatfield and Hertsmere could contribute to enhancement of the South Hertfordshire Woodlands and Community Forestry through improved prestige (part of the focus for a Woodland Arc project on **Figure 3.1**).

- 2.21 There is a key opportunity is to link woodland features and reconnect these where severed by transport corridors, to provide attenuation and connectivity. Also to provide a foil to detracting sites and to enhance the setting of areas such Symondshyde Wood, as well as the setting and perception of assets such as Prae Wood and Verulamium Park. Opportunities exist to connect woodlands as part of existing and ongoing mineral sites restoration schemes, for example at Panshanger Park and to buffer/foil detracting features to Welwyn Garden City, Hertford and Ware, creating enhanced settlement approaches in these locations. Restoration of valley floor features where eroded by detracting features (e.g. mineral sites), to provide more positive sense of arrival e.g. River Beane and Rib at Hertford.

## Health



- 2.22 In this analysis, access links and proximity to areas of deprivation were mapped. Main road corridors were also considered to understand where there were linked issues of ‘unhealthy environments’ (air quality and pollution), or need to target tree planting as described in relation to the ‘prestige’ function above.
- 2.23 With reference to the Indices of Multiple Deprivation (IMD), areas of high deprivation are evident in southern

parts of the County such as Hemel Hempstead east, Borehamwood, Cowley Hill and South Oxhey which could be attributed to severance from infrastructure corridors and density of development in locations that are in close proximity to the suburbs of Greater London.

Opportunities in the south of Hertfordshire, therefore relate to improved links through initiatives such as the WCCF or through enhanced connection to the All London Green Grid.

- 2.24 Settlements assessed in the analysis as having poor access connections include the Dacorum towns of Berkhamsted and Tring, while other settlements which are poorly connected with the wider landscape and GI network e.g. St Albans which has a very sparse coverage of rights of way to the north and north west of the city, and Potters Bar.
- 2.25 Potential growth within Three Rivers, Watford, Harlow, East Herts and Broxbourne will create a need for enhanced links to areas such as the Colne and Lee Valleys. Improved links in the wider riverine GI network of Hertfordshire, as well as to and from the GreenArc and North London green infrastructure network, will also be key in the context of the Olympic 'legacy' in the Lower Lee Valley.
- 2.26 Other potential growth which may put a strategic dimension upon consideration of enhanced access links is the growth at Hemel Hempstead, at the interface of Dacorum Borough and St Albans District – this would mean that enhanced links to strategic GI such as the

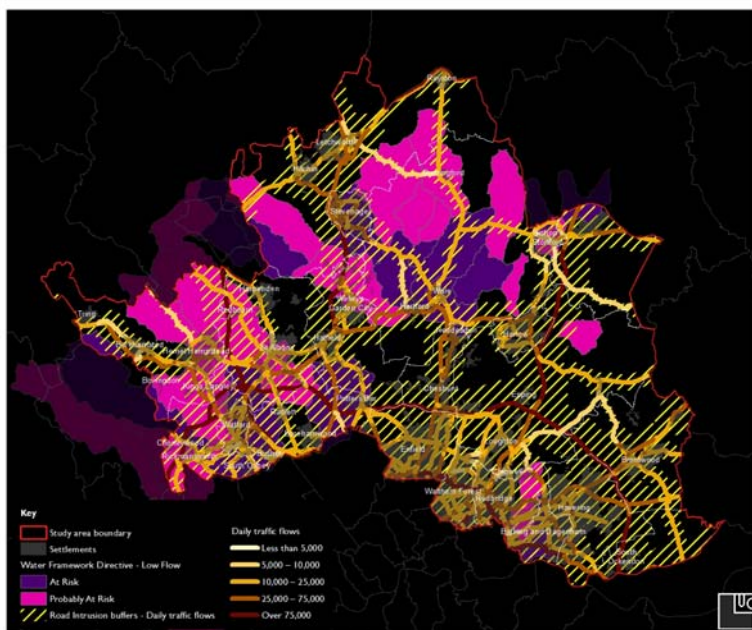
Nickey Line are key considerations (see 'Re connect' project proposal at **section 3**).

- 2.27 Deprivation issues in Hertfordshire often appear to relate to built development density as much as severance by transport barriers. Some key GI assets such as the Lee Valley and Colne Valley, and to an extent, the Grand Union Canal, provide potential opportunities to enhance and improve access. This analysis has informed proposals (see **Figure 3.1**) to link these strategic routes with the GI network of the London Green Grid. Settlements which substantially lack route provision form a key focus for improvements, e.g. Rickmansworth (potential link to Chess Valley and wider cycle network from the town centre and the Metropolitan Line tube station, creating improved car free access to the Chess Valley, a significant greater London GI resource). Similarly other primary, strategic GI assets such as the Grand Union Canal and the two Regional Parks need improved lateral connections and entry points. The Colne Valley Regional Park in particular suffers from being poorly served by links and as such enhancement is a key opportunity (see **section 3, Figure 3.1**).
- 2.28 In terms of enhancing the quality and 'healthiness' of the environment, existing large scale tree planting initiatives such as the Trees Against Pollution (TAP), pioneered by St Albans District, could be adopted to cover many of the main road and rail corridors in the County. Strategic road corridors such as the M25/M1 and A1(M) and A414 may form key opportunity areas for woodland and tree planting



to provide an attenuation function in relation to air quality and particulate filtration, and therefore linked to provision of enhanced, healthier environments (these issues form part of the basis for a Woodland Arc project proposal on **Figure 3.1**).

### Sound ecosystems



2.29 Sound ecosystems are a key part of a green infrastructure network, and proposals should seek to contribute to positive and proactive management of these for community

benefit. The focus for this analysis has been the key services of water and air quality.

2.30 Hertfordshire is located within part of two river catchment areas – Thames (majority of the county) and Anglian (covering parts of North Herts). Interpreting the Water Framework Directive (WFD) data produced by the Environment Agency for river catchments, the riverine environment of the River Thames (north west of Tring), the River Ver and the River Gade (from the confluence with Bulbourne to Chess) are identified as being of poor ecological status and vulnerable to abstraction and low flow pressures. Other main rivers identified as having poor status in terms of ecological quality include the Colne (from confluence with Ver to Gade), the Mimram (from Welwyn to confluence with Lee and from St Pauls Walden to Welwyn – the Mimram is vulnerable to abstraction), Stort (Stanstead Brook to Farnham Brook and at Caving), Rib (from confluence with Quin to Lee Navigation), Quin and Lee (from Luton Hoo lakes to Hertford). Low flows in both the Mimram and Beane Rivers as a result of modification and abstraction pressures tend to affect the diversity of plants and invertebrates found in the rivers.

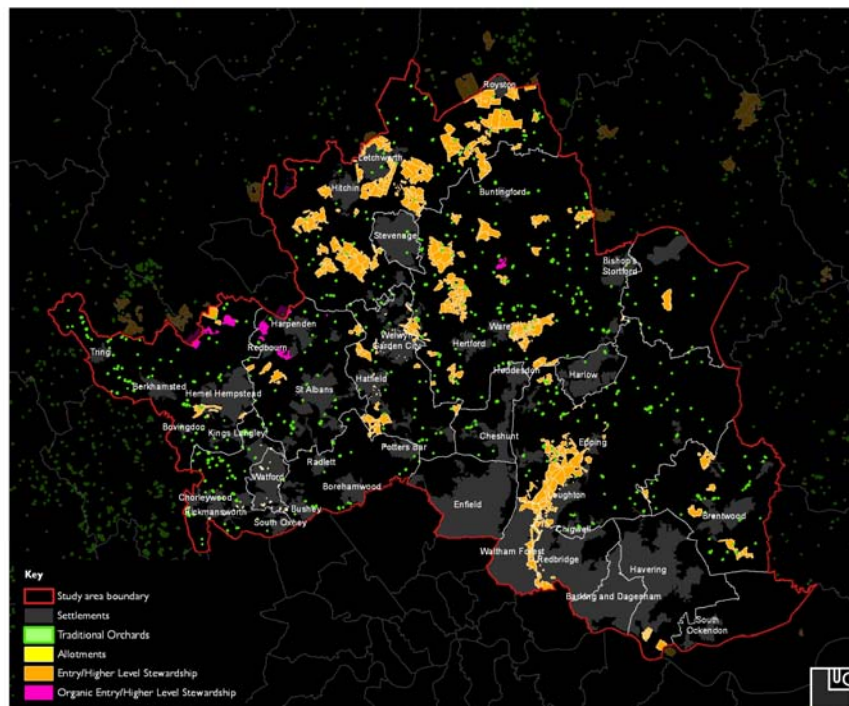
2.31 Many of the county's watercourses including the Bulbourne, Gade and Colne have also been heavily modified (widening, flood embankments etc.) over time, while pressures relating to climate change will inevitably place further stress on the riverine environment. Land uses throughout the County also have implications on

water courses and environmental contaminants and planning for future land use will be a key consideration in relation to water use and potential pressures such as quality and flow.

- 2.32 The analysis indicates a need for positive management of the Lee, Ver, Mimram, Quin, Rib, Ash and the upper stretches of the Colne and its various brooks within the County. Also reinstatement of native wetland and riparian river corridors, and making space for water should form part of GI proposals. A strategic project for the positive management of all the rivers within the Thames and Tributaries area (and complementary to the aspirations of the Thames River Basin Management Plan, the Water Framework Directive and the Thames and Tributaries Integrated Biodiversity Delivery Area), has been devised at **section 3**. This proposed wetland project is also complementary to other linked and positive cross district initiatives such as the Management Plan for the Colne River Park<sup>viii</sup>).
- 2.33 Whilst large parts of the principal transport corridors are partly wooded (M25, M1, A414 and A1[M]), there is a need for additional woodland and hedgerow belts to reconnect existing woodland blocks and improve air. Cross referencing to the relevant Hertfordshire district Green Infrastructure Plans, primary locations are the M25 (to deliver linked benefits for woodland buffering) and the A414, focussing on links between existing large scale woodlands such as Prae Wood, Birch Wood and Park Wood. These could also link to delivery of strategic

woodland and community forestry objectives such as those embedded in the Watling Chase Community Forest Plan. Areas of potential woodland creation and enhancement which could deliver this are shown in the Woodland Arc project on **Figure 3.1**.

## Productive green environments



- 2.34 Consideration of the wider farmland landscape in Hertfordshire County reveals that only a relatively small proportion of the landscape of the county is managed through Higher Level Stewardship. These areas are notably in the eastern half of the County, primarily in North Hertfordshire and East Herts districts and to a lesser extent in Welwyn Hatfield Borough. In addition there are small clusters in the west but notably, this half of

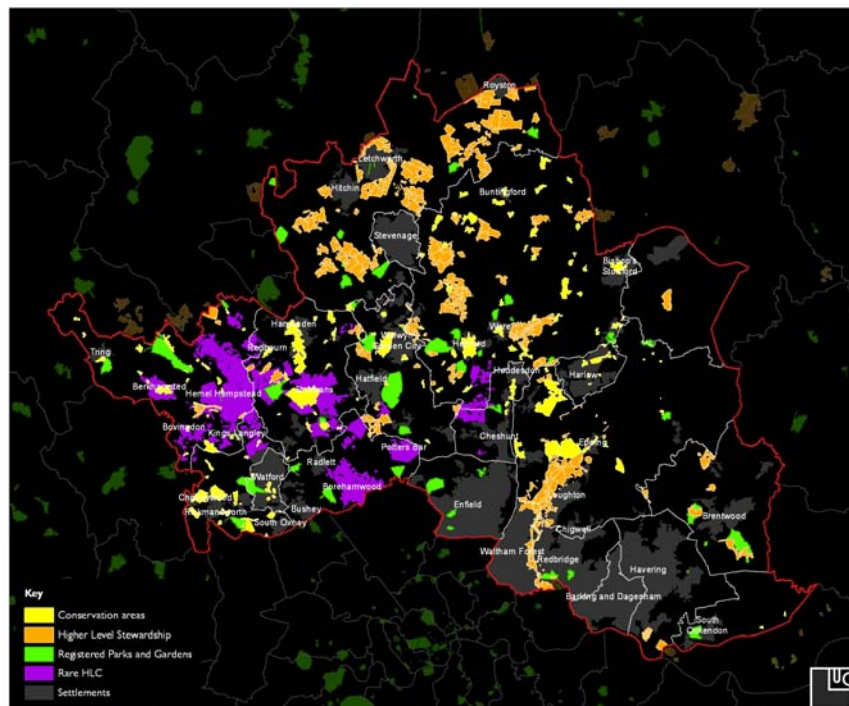
the County provides an opportunity to increase the level of HLS (Dacorum, St Albans, Three Rivers and Hertsmere). East Herts, Dacorum and St Albans Districts have land under organic stewardship but this is only a very small proportion of the county's rural landscape. HLS and organic stewardship uptake are therefore key opportunities to enhance productivity and functionality of farmland landscapes in Hertfordshire. HLS schemes which will also be supported outside the Natural England target area include those which seek to maintain, restore or create wet woodland or ancient semi-natural woodland. An opportunity therefore exists to benefit both biodiversity and production of timber and/ or biofuel by tree planting, support for natural woodland expansion or the bringing of existing woodland under management such as coppicing. This links also to the Woodland Arc project at **section 3** and **Figure 3.1**. The Woodland Arc project helps deliver on the Forestry Commission's aspirations for enhanced woodland creation and take up of Woodland Grant Schemes through the 'Quality of Place' project. Under this project, priority areas for woodland creation are along primary transport corridors such as the M1 and A1(M), much of the more highly developed land in the south of the county within the Watling Chase Community Forest area bordering London, and the Lee and Stort Valleys (links to GreenArc) and associated M11 corridor. Such areas could all contribute to enhanced landscape productivity with positive woodland management.



2.35 Throughout the County, rural areas such as in St Albans and East Herts and areas with low housing density have poor access to allotments. Allotments are thinly scattered across the County with no particular areas of concentration, with demand often in higher density urban areas. There is an opportunity to improve the quality and value of many of these allotment sites throughout the settlements, but also to provide enhanced urban greening and locally productive landscapes as part of GI proposals. This should occur not just in the 'New Towns' which are so important to the urban morphology of Hertfordshire, but also high density environments with long standing greenspace deficits, where quality of life could be enhanced by such provision (e.g. Watford). Identification of opportunities for community gardens and orchards could contribute to this objective. This has formed the focus for an Urban GI Heritage Conservation Project, dealing with issues of urban greening, at **section 3**, which highlights potential for local food production and community gardens/orchards, to contribute to this aim. Opportunities include incorporating allotments/community gardens into new publicly accessible open space and developing links with interested community groups including existing GI initiative such as the WCCF, and, at a more local level, the many Transition Towns groups operating across the county. At the wider landscape scale an opportunity is to promote opportunities to develop an organic farm network similar to the Field-to-Fork project to support a range of community food enterprises including farmers'

markets, community-owned shops, community supported agriculture, country markets, food co-operatives and many others.

## Conserving historic landscape character



- 2.36 The historic environment and historic legacy provides a rich resource for conservation and interpretation as part of a multi functional green infrastructure network. It also clearly links to other functions such as prestige, experience and the potential for recreation. This analysis considered the distribution of designated heritage assets in addition to rare historic landscape character types, as a basis for

identifying aspects of historic legacy to be conserved as part of the GI network.

- 2.37 Rare historic landscape types in Hertfordshire are Co Axial Enclosures which are of strategic importance in Hertsmere, Dacorum and St Albans occupying about 23% of each District area. Also a very small distribution of Watercress Beds in the river valleys occurs within North Herts, Dacorum and Three Rivers (less than 0.1% of each District).
- 2.38 With the exception of the Registered Parks and Gardens and areas of Conservation Area designation, little of the heritage resource is otherwise protected. Of the relatively large ancient woodland resource, most of this is not formally protected. A small area is covered by Conservation Areas (Childwickbury) or by agri environment schemes (Walsingham Wood/Mymmshall Wood complex) or enjoys other protection e.g. through SSSI designation (Bricket Wood, Redwell Wood).
- 2.39 Some of the heritage assets such as registered parks and gardens enjoy additional protection through positive management as part of Higher Level Stewardship (HLS) schemes (Panshanger Park, Tewin, Bayfordsbury). Large tracts of ancient woodland in particular primary GI assets such as Hatfield Forest are not protected through HLS, and this also applies to a large number of smaller concentrations across the county.
- 2.40 Across the County there are opportunities to secure protection and enhancement of ancient woodlands and

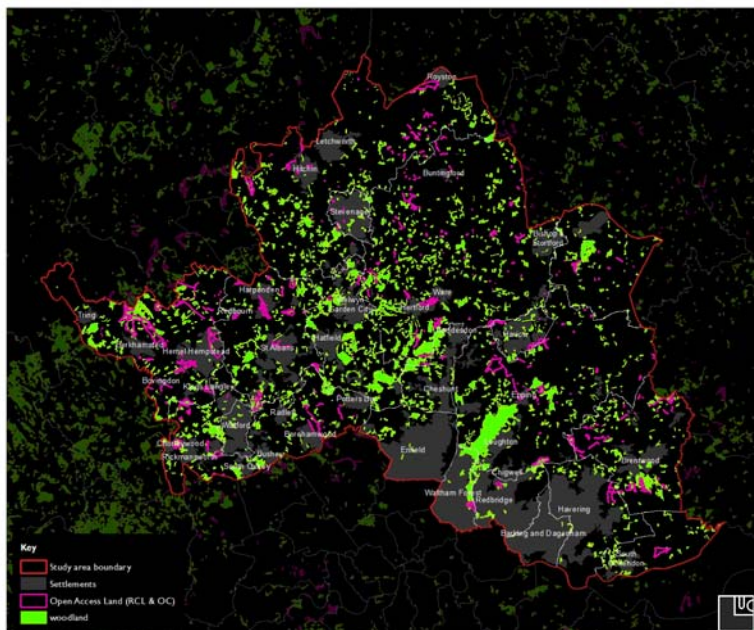
strengthen connection between adjacent sites (e.g. from Tring Park cross county to Wendover Woods, both through Higher Level Stewardship or HLS and Woodland Grant Schemes or WGS). Many historic assets are in higher priority areas for enhanced WGS take up as identified in the Forestry Commission's Quality of Place project, which covers large parts of St Albans District, Welwyn Hatfield and Hertsmere Boroughs, and the Upper Lee and Stort Valleys. This could form an opportunity for enhanced woodland creation in relation to the setting of heritage assets, where appropriate to historic character and to other considerations such as landscape character and biodiversity.

- 2.41 Key opportunities are therefore to secure protection and enhancement of ancient woodland through HLS and Woodland Grant Schemes, and also through additional broadleaf native woodland planting to reconnect sites. This could be concentrated around registered parklands in particular Cassiobury, Panshanger Park, Bayfordsbury and also the South Herts Woodlands cluster in Welwyn Hatfield and Hertsmere, which could also help enhance their setting and context. Another opportunity may be more sympathetic/appropriate management of replanted ancient woodland sites e.g. Prae Wood, given its historic significance (pre Roman settlement, setting to Gorhambury estate). Re linking of ancient woodland sites through HLS could also create physical connections to the Heartwood Project, as well as contributing to woodland planting targets set out in Watling Chase Community Forest

(WCCF) Plan and other GI assets such as the Lee Valley Regional Park (via the Woodland Arc project proposal shown on **Figure 3.1**).

- 2.42 Aspects of the rich urban green infrastructure heritage are protected through Conservation Area designations e.g. much of the Garden City at Welwyn Garden City, registered landscapes at Letchworth Garden City. The Welwyn Garden City Conservation Area has a formal estate management arrangement although there is no formal tree planting and replacement strategy. Given the age of the tree stock (1920s), this may be need in future conservation terms. Hatfield New Town and Stevenage and their greenspaces do not enjoy protection, although some of the landscapes of Hemel Hempstead New Town do (e.g. the Jellicoe Water Gardens, which is a registered landscape). Important urban greenspaces and towns which have had a green infrastructure focus to their masterplanning, such as the Garden Cities and the New Towns, feature in an Urban GI Heritage project at **section 3, Figure 3.1**.

## Sustainability and responding to climate change

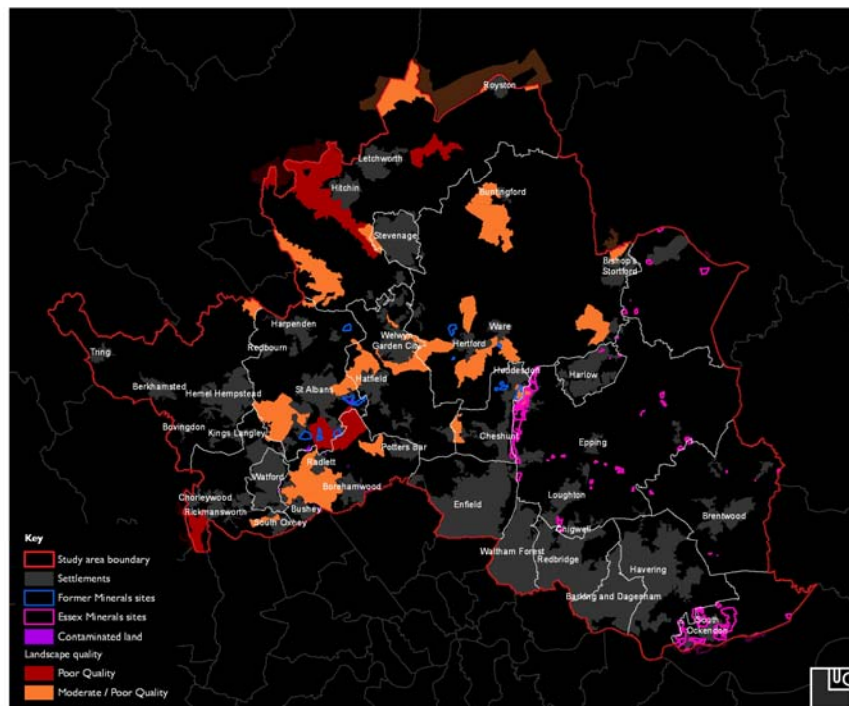


- 2.43 Urban greening, shading and cooling is a key part of community focussed green infrastructure. This analysis has considered only tree cover. There are however clear links with other functions such as flood attenuation and water management, as part of a climate change adapted response to spatial planning. This is particularly relevant to higher density settlements within the County, such as Watford or higher density 'Greater London' type suburbs in

Hertsmere Borough and the southern part of Three Rivers District (see Urban GI Heritage Project at **section 3**).

- 2.44 Many of the older towns in the county are of a traditional morphology, that is, historic market towns of high development density. As such, tree cover within the public realm in such towns is relatively limited. It covers occasional areas of street tree planting except in lower density leafy suburbs, such as in parts of St Albans and Harpenden or Rickmansworth, or where mature woodland have become absorbed within later settlement growth. Settlements developed as New Towns such as Hemel Hempstead display a relative density of tree cover while other planned settlements such as Letchworth and Welwyn Garden Cities, designed using Garden City principles have also well defined tree cover along principal streets and green spaces as an integral part of their masterplan.
- 2.45 Issues and opportunities relate mainly to conserving what exists and managing this appropriately/planning for succession planting and ensuring new tree planting in relation to redevelopment sites – use of the TCPA standards for enhanced urban tree planting of 80 street trees, of appropriately robust grade, per linear km.
- 2.46 Any future growth and redevelopment should plan for street tree planting as an integral part of the masterplan to ensure climate change adaptation, seeking to apply the above TCPA standard, where possible.

## Land remediation



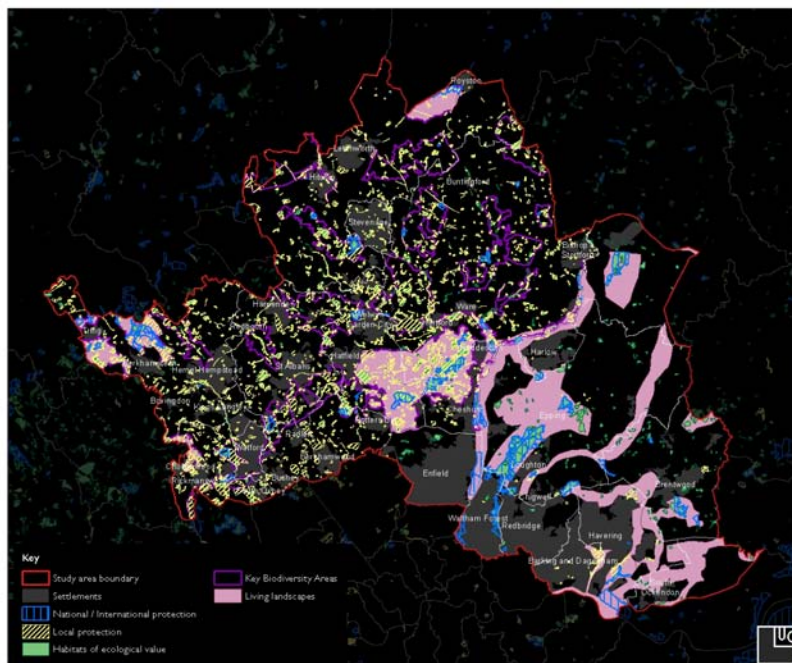
- 2.47 Green infrastructure planning and design can play a key part in delivering enhancement and restoration of landscape character and quality, and in enhancing areas of degraded landscape, such as mineral workings and former minerals sites – ‘re restoration’ sites.
- 2.48 In Hertfordshire, there are a number of former mineral sites which could be considered for re restoration<sup>ix</sup> and

which provide opportunities for GI planning. Key opportunities relate to the sites within St Albans with many bordering the M25 and within the Watling Chase Community Forest area. Other strategic sites such as the ongoing positive restoration work at Panshanger Park provide a template for additional projects of a similar nature at previously worked sites. Future proposals for such sites could also integrate initiatives such as the Trees Against Pollution project, pioneered by St Albans District Council.

- 2.49 Many of the re restoration sites are clustered in areas of lower landscape quality (e.g. more fragmented landscapes in poorer condition) as identified in the Landscape Character Assessment (e.g. around Harperbury and London Colney). As such they form part of the focus for landscape conservation, enhancement through the Woodland Arc and Thames Tributaries River Valleys and corridors projects described in **section 3**.
- 2.50 In some areas of more degraded landscape character, as identified in the Hertfordshire Landscape Character Assessment, and where landscape strategies are directed towards restoration, woodland initiatives such as the Watling Chase Community Forest are in operation. In certain locations within these areas there may be opportunities for landscape proposals such as short rotation coppice, where this does not detract from landscape character. This could partly contribute to the Woodland Arc project in **section 3, Figure 3.1**.



## Nature conservation



2.51 Conservation and enhancement of habitats, together with planning for sustainable communities, is a key consideration of multi functional green infrastructure planning. This plan has taken a landscape scale approach, considering Hertfordshire Biodiversity Action Plan Key Biodiversity Areas (KBAs), in addition to statutorily and locally designated nature conservation sites and areas of local protection (Local Wildlife Sites).

2.52 Primary issues relate to the connectivity of habitats in light of future landscape change and climate change, and barriers to habitat connectivity created by the transport network. Main barriers to habitat links are the M1, M11, M25 and A1 (M) and primary rail corridors running through the County.

2.53 The analysis has identified a need to create connectivity between Key Biodiversity Areas fringing the major settlements and locally designated wildlife sites, as part of a landscape scale approach connecting to initiatives such as Heartwood Forest and Watling Chase. Also Living Landscapes, such as the South Herts Woodlands.

2.54 Key opportunities for habitat improvements, restoration and enhancements in Hertfordshire, drawing from the analysis, as follows: Promotion of community forestry, expressing the aspirations of the WCCF Plan, such as at Watling Chase, Oaklands Smallford Campus and Ellenbrook Country Park and also through links to the Heartwood Forest Project. See the Woodland Arc Project at **section 3** and on **Figure 3.1**. Additional areas for woodland expansion could include south east Hertfordshire, Chilterns dip slope (Dacorum), west of Stevenage (Knebworth Woods) and at locations adjacent to existing ancient semi-natural woodlands, particularly where accessible from urban areas.

2.55 Also expansion of existing wetland features to create a varied wetland mosaic, including wet grassland, carr woodland and open water. This could include river

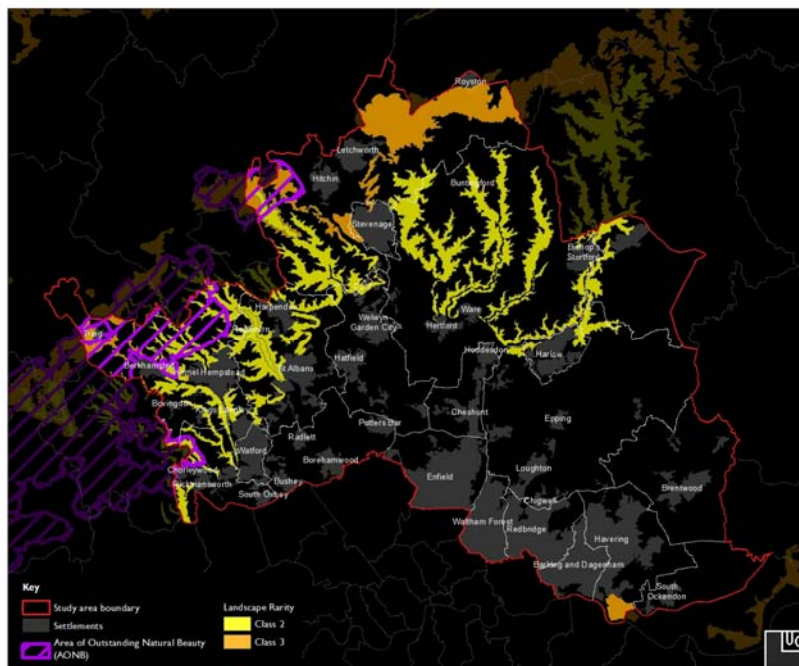
confluences, expanded into large wetland habitat mosaics, e.g. Stort Valley, Lee and Stort confluence – Rye Meads, the Lee between Hertford and Ware (including the Rib and Beane confluences), Mimram Valley, Colne Valley, and Tring Reservoirs and Grand Union Canal. See the Thames and Tributaries River Valleys and Corridors project and the Grand Union, Colne Valley and Regional Park enhancement project at **section 3**.

- 2.56 Heathland and grasslands are other key habitats within the County. The Heathland BAP identifies core areas for restoration as the Berkhamsted and Tring Commons complex, Harpenden-Wheathampstead complex, Upper Colne Valley, Broxbourne-Northaw-Hatfield Park complex. The Wheathampstead complex contains the Heartwood project where there is a need to ensure that Heartwood and its landscape and habitat context fit together and to facilitate car free access to such sites to avoid further pressures on the habitat resource.
- 2.57 Calcareous heath and chalk grassland are key habitats both in the Chilterns AONB and across the northern parts of the county, in North Hertfordshire District, with important sites including the herb rich grassland at Therfield Heath SSSI, near Royston, which also forms part of a grassland Key Biodiversity Area and Living Landscape. Areas of opportunity for enhanced chalk grassland linkage also relate to issues of landscape quality and strategic objectives for some of the North Hertfordshire District landscape character areas. As such this has formed part of

the focus for a Chalk Arc project which aims to secure linkage of existing chalk grassland sites, at **section 3**.

- 2.58 Agriculture forms the predominant land use across the north and east of the county, although urban areas become increasingly frequent with close proximity to London. Semi natural habitats are present largely as relatively small fragments in this wider matrix of built up areas and intensive agricultural land use. Opportunities therefore relate to enhancing farmland zones across the north, north west and east of the County, particularly in Dacorum Borough, North Hertfordshire District and East Herts District.

## Experience



- 2.59 Experiential and perceptual aspects of landscape are integral parts of place led green infrastructure planning. For this analysis, the three rarest classes of regional landscape types were identified and their distribution in the county mapped. Hertfordshire has a wide distribution of landscape types in both rarity classes 2 and 3.
- 2.60 Mapping the distribution of regionally rare landscape types in the County, the main regionally rare landscape types in Hertfordshire are the Settled Chalk Valleys, Wooded

Chalk Valleys and Chalk Hills and Scarps. The Settled Chalk Valleys represent 4.65% of the County area (significantly this also represents 59.68 % of the total regional distribution of the landscape type, indicating that that in terms of place and character, the Settled Chalk Valleys form a key part of the strategic GI network). In East Herts this landscape type is found in the valleys of the river Rib, Quin, Ash, Stort and the Lee Navigation flood plain. Towards the centre and west of the county at St Albans, and to a small extent Dacorum, settled chalk valleys are evident to the upper reaches of the Ver Valley between Flamstead and St Albans city.

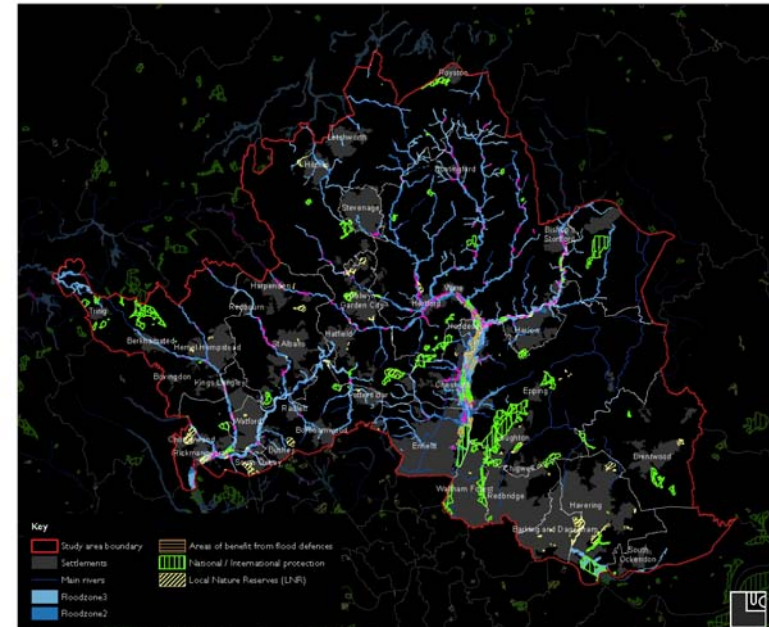
- 2.61 More widespread in distribution are the Wooded Chalk Valleys, which cover 6.02 % of the County (importantly, the Wooded Chalk Valleys within Hertfordshire represents some 82.11 % of the total regional distribution of this landscape type. As for the Settled Chalk Valleys with which they are closely associated and physically linked, these also therefore form key aspects of the strategic GI network). This rare landscape type is concentrated around the watercourses running throughout the county (typically from North to South), including associated dry valleys and winterbournes (e.g. the Bourne Gutter, south of Berkhamsted). Significant river valleys across the county representing this rare landscape type are the: River Bulbourne, River Gade, River Ver, River Beane, and parts of the River Colne.
- 2.62 The Chalk Hill and Scarps represent 4.26 % of the County area (this also represents 26.04 % of the regional



distribution of the landscape type), Chalk Hills and Scarps are found in the North West corner of Dacorum (north of Tring), and more prominently across the Northern half of North Herts (especially East of Letchworth and West of Stevenage).

- 2.63 The Settled Chalk Valleys, Wooded Chalk Valleys and Chalk Hill and Scarps represent key parts of the green infrastructure network in Hertfordshire County (due to accessibility, landscape and visual character, biodiversity value). These landscape types should be conserved as integral parts of the GI network for these reasons and for the contribution they often make to settlement setting (e.g. the Settled Chalk Valleys are important to the setting of the Cathedral city of St Albans and to most of the main settlements in Dacorum Borough).
- 2.64 The regionally rare landscape types have formed foci for individual project proposals at **section 3**. For example, the Settled Chalk Valleys form part of the Thames Tributaries River Valleys and Corridors project, whilst the Chalk Arc project embodies conservation and enhancement of the Chalk Scarps landscape type.

## Flood attenuation and water management



- 2.65 Planning for and making space for water forms a key part of considering future landscapes in the face of climate change, particularly through sound flood risk management..
- 2.66 A review by the Environment Agency has identified particular rivers (Ver and Gade - from confluence with Bulbourne to Chess) as having poor ecological status and the objective is to improve the quality of these river courses by 2015. Also identified are rivers of poor ecological status which also require improvement; these

are the Colne - from confluence with Ver to Gade; the Mimram from Welwyn to confluence with Lee; the Stort Navigation near Sawbridgeworth and through Bishop's Stortford; the Rib from confluence with Quin to Lee Navigation; the Quin and the Lee from Luton Hoo lakes to Hertford.

- 2.67 Flood management within Hertfordshire requires careful consideration where rivers pass through settlements and are heavily modified (e.g. Watford, Hertford and Ware and in settlements in Hertsmere such as Radlett and Borehamwood). Settlements which have a history of flooding will need to consider alternative measures when dealing with flood risk by creating additional 'space for water' in urban areas which could also form part of proposals for informal recreational areas. Proposals for additional flood storage could improve biodiversity with the creation of additional habitats, ensuring multifunctional spaces. See the Thames and Tributaries River Valleys and Corridors project at **section 3**, which also addresses the need to 'make space for water' outside of settlement pinch points. The Grand Union Canal, Colne Valley and Regional Park Enhancements project at **section 3** also recognises the strategic importance of feature which provide a water balancing function, such as the Wilstone Reservoirs, north of Tring.
- 2.68 Future development in close proximity to the rivers within Hertfordshire could exacerbate existing pressures, so identifying areas for wetland enhancement and expansion may help alleviate this pressure. Any future settlement

growth is likely to increase pressures during periods of high flows and could inevitably lead to flooding of developed land.

### 3 Proposed green infrastructure network and projects

#### GREEN INFRASTRUCTURE VISION

3.1 The green infrastructure vision for Hertfordshire is:

##### To conserve and enhance

- The varied landscapes of the county – farmland, ancient woodland, wooded valley crests, heathlands and commons and the intricate network of river valleys;
- The functionality of the riverine environments, in terms of landscape character, ecology and flows, as well as man made water elements of strategic importance such as the Grand Union Canal and the Wilstone Reservoirs;
- The strong sense of place created by aspects of historic legacy, such as Roman and medieval settlement, as well as historic parklands and estates such as Ashridge, Hatfield and the network of parklands in south Hertfordshire.

##### To improve and create

- Enhanced landscape and habitat connectivity between river valleys, heathlands and woodlands including access to the Chilterns AONB;
- Accessibility and connections to and along the river valleys;

- Links for a variety of users – walkers, cyclists and riders;
- ‘Space for water’ - naturalising river courses to reduce the potential for flooding in the County and aid creation of additional recreational water spaces;
- Enhanced links to greenspace, particularly in the larger and higher density settlements such as St Albans and Watford, and outlying/rural settlements, as well as opportunities for urban greening for community benefit and value, such as orchards;

##### To recognise and value

- The County’s rich heritage and diverse cultural pattern, in particular assets such as the Roman settlement legacy, the Cathedral city at St Albans and more modern aspects of planned GI heritage – the Garden Cities at Letchworth and Welwyn and the New Towns of Hemel Hempstead, Hatfield and Stevenage;
- The significance of Community Forestry, the aspirations of Watling Chase Community Forest, and the importance of strategic initiatives such as Heartwood Forest;
- GI for people – the importance of provision for low key and informal recreation to enhance the value of existing green infrastructure, and creating/promoting an improved series of links between settlements, commons and the wider countryside;

- The importance of the green infrastructure network for health and quality of life, seeking to promote awareness and appreciation of the network;
- The need for an appropriate balance between community, access, recreation and biodiversity interests, ensuring that these co exist rather than conflict;
- The need for joined up working with key partners, strategic stakeholders and landowners, to deliver sustainable proposals. Also for links with green groups such as the Transition Towns Movement which operates in a number of Hertfordshire towns (Hemel Hempstead, Berkhamsted and Tring, Hertford, Letchworth Garden City and St Albans, with Welwyn Garden City also having aspirations for Transition Town status);
- The educational potential of GI - the need to raise awareness of and promote linked agendas such as local food, including recognition of the importance of historic orchards throughout the County.

3.2 The vision is necessarily aspirational and long term, since it will need to consider GI significantly beyond the plan periods for the Local Development Frameworks in Hertfordshire. Proposals to begin achieving the vision and initial consideration of delivery are set out in the remainder of this section.

## DELIVERING THE VISION – THE NETWORK

### Rationale, key messages

- 3.3 The proposed green infrastructure network has been developed in response to the key messages from the document review and the functional need and supply analysis in **section 2**, and to deliver the points of the vision above. It has been proofed against the adjoining counties' green infrastructure context and other relevant spatial plans, policies, programmes and projects. The proposals have also been validated through stakeholder consultation (the main messages from the stakeholder workshop are in **Appendix I**).
- 3.4 The proposed Green Infrastructure Network is shown on **Figure 3.1** and the component green infrastructure types which make up the GI network are described below. Spatial projects and non spatial proposals which deliver the GI network are explained in the sheets at the end of this section, with spatial projects cross referenced to **Figure 3.1**. This includes high level consideration of cost, phasing and delivery and management mechanisms. Recommendations to link the green infrastructure proposals to delivery through spatial planning are set out in **section 4**.
- 3.5 The project sheets have been produced to describe new proposals being made as part of the suite of Green Infrastructure plans being produced for Hertfordshire and the GreenArc area. The intention is to draw together

similar sheets for existing strategic projects and initiatives referred to on the maps. In the meantime for information about existing projects and initiatives please refer to the relevant project lead or in absence of an obvious preferred point of contact, to Simon Odell ([Simon.Odell@hertscc.gov.uk](mailto:Simon.Odell@hertscc.gov.uk)).

- 3.6 The existing strategic initiatives identified by this plan are:
- Colne Valley Regional Park
  - Lee and Stort Valley, including Lee Valley Regional Park
  - Harlow Green Infrastructure Plan (GreenArc area)
  - Trees Against Pollution project
  - Watling Chase Community Forest, and also the Thames Chase Community Forest in the GreenArc
  - Chalk Arc in Bedfordshire and Buckinghamshire

### Green infrastructure types in Hertfordshire

3.7 A series of green infrastructure types have been defined to organise proposed green infrastructure projects in Hertfordshire, these are:



**Urban greenways**



**Urban blue links**



**Urban wildspace**



**Peri urban wildspace**



**Rural wildspace**



**Rural blue links**

### Proposed green infrastructure projects

3.8 Working with Hertfordshire County Council and key professional and community stakeholders, a series of potential projects have been identified to take forward the GI network and to deliver the functions identified and analysed in **section 2**. These are described at the end of this section, which also identifies supporting non spatial GI projects. **Section 4** identifies potential future work for Hertfordshire County Council to consider in delivering green infrastructure. Due to the high level nature of this

study, more detailed work will be needed to test and develop proposals (e.g. further ecological work and advice to determine requirements for suitable habitat creation and enhancement at a local level).

- 3.9 The strategic GI projects (shown on **Figure 3.1**), are as follows (Hertfordshire specific GI projects are highlighted in bold):
- **1. Grand Union Canal, Colne Valley and Regional Park Enhancements**
  - **2. Woodland Arc**
  - 3. Mardyke Valley Greenway (GreenArc project only)
  - **4. Urban GI Heritage**
  - **5. Mimram Valley Greenspace**
  - **6. Thames Tributaries, River Valleys and Corridors**
  - **7. Lee Valley Regional Park Lateral Links**
  - **8. Chalk Arc**
  - **9. Reconnect**
- 3.10 These are described in the sheets at the end of this section. A further, non spatial (thematic or interpretative) project (**Project 10: 'Green Hertfordshire'**) is identified at the end of this section.
- 3.11 Also identified at the end of this section are GI links with adjacent Counties, to signpost where 'joined up', cross

authority working will be required, as are situations where cross reference needs to be made to Hertfordshire district GI Plans.

- 3.12 Projects are prioritised according to the functions and benefits they offer, with an indication of steps likely to be required to deliver. Broad consideration is also given to costings, to give a guide as to future levels of investment in delivering capital works, using the following indicative rates/bands:

**£** = Up to £50,000

**££** = £50,000-100,000

**£££** = £100,000 – 500,000

**££££** = £500,000 – 2million

**£££££** = £2million +

- 3.13 Note that costs are indicative/guidelines only. Where a project is a series of component sub projects, this will have an effect on costs. They represent a reasonable best estimate of investment costs to deliver the required green infrastructure functionality. It is also recognised that further, more detailed green infrastructure planning and cost planning will be required. Where a project is a series of component sub projects, this will have an effect on costs. As such, proposals are a 'palette' of projects which Hertfordshire County Council and partners can pick from

as appropriate funding streams become available, but which will still help deliver the overall green infrastructure vision. In considering cost ranges, account has also been taken of match funding and grant aid in broad terms e.g. that where this applies, the net effect is to reduce costs of schemes in real terms. Potential funding sources are identified as appropriate in the project sheets at the end of this section.

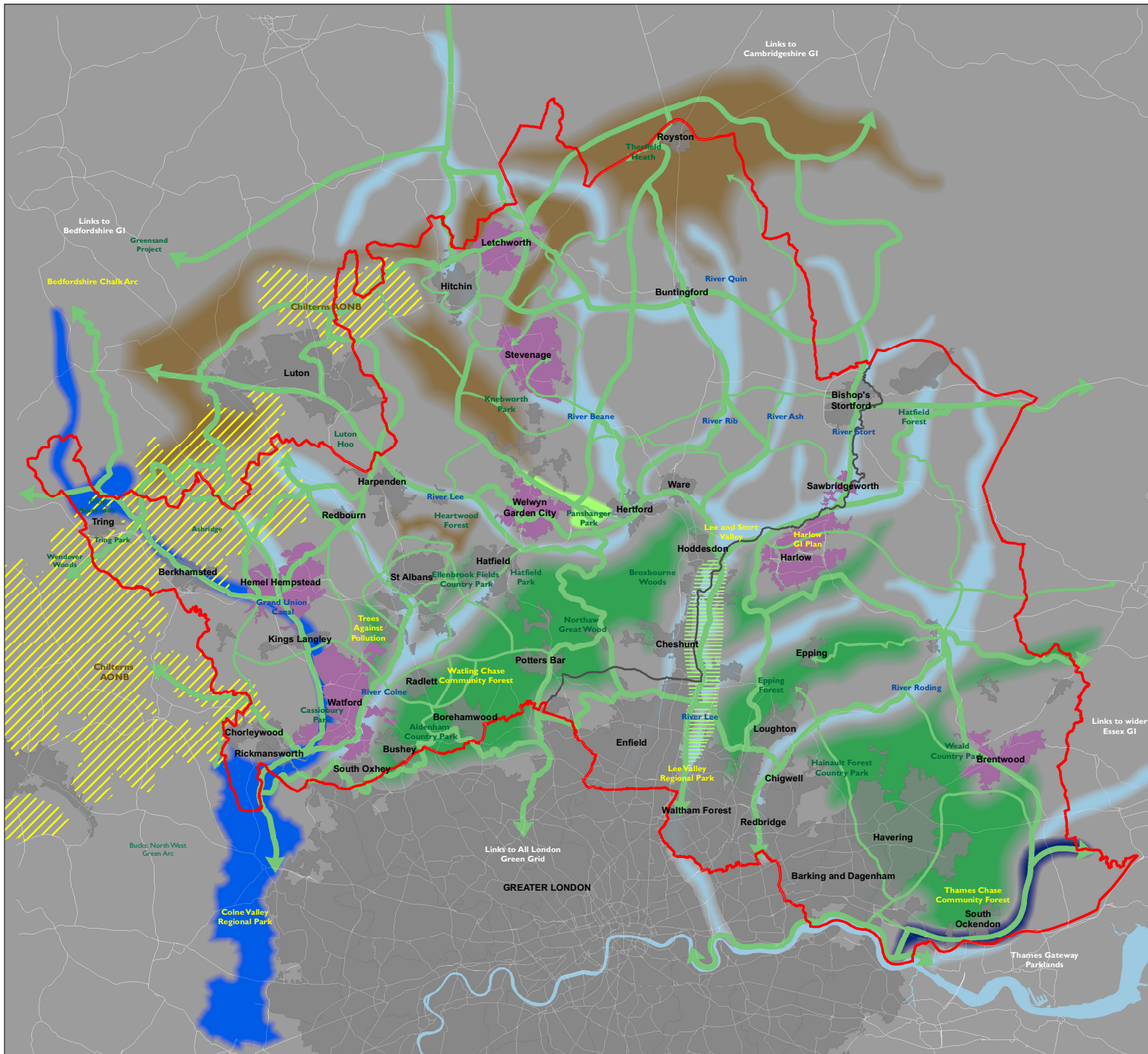
3.14 The following conservative capital cost rates are given in relation to delivery of aspects of strategic green infrastructure, for information. The rates cover implementation only and not other additional associated costs such as land purchase or professional fees. Costs are based on LUC's knowledge of comparable elements in other schemes:

- Native woodland creation (per hectare): £30,000
- Grassland creation (per hectare): £16,000
- Footpath creation, not shared use, assume 1.2m width, MOT type 1 or self binding gravel or similar wearing course (per linear kilometre): £36,000
- Shared use paths/cyclepaths, hard surfaced, 2.4m width macadam with tar spray and chip surface or similar (per linear kilometre): £72,000

3.15 Consideration is given in broad terms to further work needed to deliver projects in the following project sheets. As a general rule, in addition to the liaison, consultation and negotiations identified, each capital project will also require further survey work – land, ecological and

archaeological surveys, in addition to impact assessment of proposals and projects in ecologically sensitive areas.




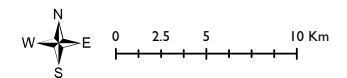


## Hertfordshire & GreenArc Green Infrastructure Strategic Highlights Plan (SHiP)

Figure 3.1: Proposed Green Infrastructure Network

### Key

-  SHiP study area
-  Hertfordshire County boundary
-  Settlements
- SHiP Green Infrastructure Proposals / Projects
  -  1. Grand Union Canal, Colne Valley and Regional Park Enhancements
  -  2. Woodland Arc
  -  3. Mardyke Valley Greenway
  -  4. Urban GI Heritage (and Urban Greening)
  -  5. Mimram Valley Greenspace
  -  6. Thames Tributaries, River Valleys and Corridors
  -  7. Lee Valley Regional Park Lateral Links
  -  8. Chalk Arc
  -  9. Reconnect
- Existing
  -  AONB
  -  Lee Valley Existing GI initiatives

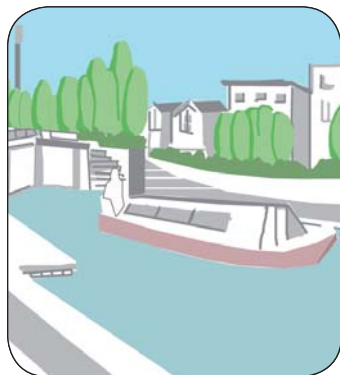


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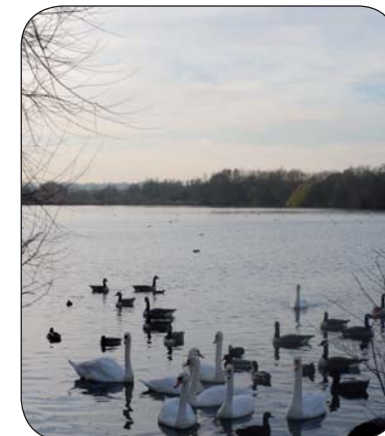


**PROJECT : 1. Grand Union Canal & Colne Valley Regional Park enhancement**



**URBAN BLUE LINK** - Brief description / snapshot of the project  
**Recognition of the importance of the Grand Union Canal as cross county GI (links into Bucks GI network) & of Colne Valley as strategic GI asset**

- Address barriers to access within the Colne Valley & to the Colne Valley Regional Park (CVRP), providing new lateral links & ways to access from the tube & rail networks - space for healthy recreation/movement, address strategic deprivation issues in some Greater London/South Herts suburbs. Enhanced profile for the valley & promote CVRP as strategic GI asset
- Greater space for water through additional wetland creation around settlement pinch points, e.g. Watford (for prestige, flood management & biodiversity)
- Providing a continuous & usable green transport link & connections to North West London greenspace network (link to All London Green Grid), through restoration & upgrading of the canal towpath, to deliver parts of National Cycle Network Route 6



**FUNCTIONS MET :**



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Contribute to the Herts ROWIP & Sustrans objectives for NCN Route 6 – a true multi functional strategic corridor, connecting the missing pieces in the green transport link to London providing a continuous transport link along the Grand Union Canal & encourage lateral links from the main GI spine. Key part of GI Plans for Watford & Three Rivers. Landscape enhancement & restoration can deliver LCA objectives/restoring fragmented landscapes west of Colne Valley. Wetland creation providing enhanced wildlife habitats linking to & contributing to the work of the Herts & Middlesex Wildlife Trust (HMWT), such as at the Rickmansworth Aquadrome. Address issues of ecological & river quality in Colne Catchment, through ‘making space for water’. Complementary to objectives of the Thames River Basin Management Plan (TRBMP), AONB Chalk Streams Project, Colne Valley Park Management Plan, Water Framework Directive & with links to Thames & Tributaries IBDA & the All London Green Grid.

**ISSUES ASSOCIATED WITH DELIVERY :** Very significant capital costs associated with enhancing & upgrading the national cycle route to a usable standard throughout. Low revenue currently attracted by CVRP Partnership/relatively little ‘buy in’. Need for enhanced profile & awareness raising activity (potentially linked to ‘Green Hertfordshire’ : project 10) & education programme promoting the Colne Valley to the adjacent communities. Given the extent of the land holdings of British Waterways, Lafarge & Veolia in the project area, early liaison with these groups & other key landowners is essential (delivery of corporate responsibilities as part of the project). A valley wide approach to enhancing the landscape character through low key changes in landscape management could be delivered as capital projects through Higher Level Stewardship & environmental stewardship.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** Environment Agency for wetland environment restoration & riverine environment regulation & monitoring, British Waterways (for canal path capital works & interpretation project), Groundwork & HMWT for smaller scale delivery & monitoring of wetl& habitat creation. Sustrans, Veolia & Lafarge (restoration of workings, to deliver wider park objectives). Colne Valley Park Partnership & London Boroughs. Monitoring at early & post delivery stages through user & visitor group surveys, & through discharge of relevant consents/site inspections.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** Negotiation with major land owners is a key stage, to identify opportunities, funding opportunities & deliverability. Any future development in proximity to canal corridor should contribute to upgrade of the route & seek to make links. With these potential sources of capital funding, the project becomes high priority, albeit to be implemented on a phased basis. Smaller scale quick gains & funding can be achieved in partnership with bodies such as British Waterways, the HMWT, CMS & Groundwork, along with project promotion to relevant communities, Friends groups & local user groups (e.g. Anglers clubs).





PROJECT : 2. Woodland arc



**RURAL WILDSpace** - Brief description / snapshot of the project  
**Recognition of the value of woodlands as a multi functional & strategic GI asset, & to deliver aims & aspirations of related partners**

- Enhanced resilience to climate change & provision of linked landscape/habitat mosaics (copse, grassland, heathland & wet woodland/wetland), plus sustainable management
- Linking & buffering strategic woodland sites, to provide alternative semi natural greenspace (e.g. Epping Forest, Hainault Forest & Hatfield Forest)
- Delivering 'Living Landscapes': Providing landscape links e.g. Broxbourne Woods & Epping Forest/Hatfield Forest, contributing to original GreenArc aims, as well as creating better woodland links to the urban fringe. Targeted woodland creation to deliver enhanced landscape experience/setting (links to S Herts Woodlands) & deliver Community Forestry
- Using woodland creation to contribute to HLS & EWGS to protect, enhance & manage historic assets & to help deliver Forestry Commission aspirations (Quality of Place), as well as re-restoration of mineral workings (Lee Valley). Also sustainable woodland management
- Provision of appropriately designed & sited access links



FUNCTIONS MET :



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Can contribute to Forestry Commission's Quality of Place project. Contributes to delivery of Hertfordshire BAP habitats & HMWT & EWT's aspirations for Living Landscapes, to extend & link these & Key Biodiversity Areas. Contribution to broad objectives of Regional Woodland Strategy. Opportunities for sustainable woodland management can help meet wood fuel objectives, & to provide commercial/economic incentive for woodland creation. Potential enhancement of regionally significant strategic woodland clusters. Contributes to the All London Green Grid (woodland links between Hertfordshire, Essex & London). Can potentially contribute to tree strategies at local level & (for urban locations) Forestry Commission Street Tree Initiatives. Access links complementary to ROWIP objectives.

**ISSUES ASSOCIATED WITH DELIVERY :** Land ownership/land prices. Take up of HLS & Woodland Grant Schemes - need to incentivise woodland planting for landowners. Land ownership negotiation & promotion of relevant grant aid schemes are key. Proposals should reflect landscape/ historic character & biodiversity sensitivities. Need for landscape, ecological & archaeological surveys in relation to planting locations. Climate change adapted species should respect landscape character where possible. Larger woodland creation schemes may be subject to Environmental Impact Assessment (EIA). Appropriate management, for woodland creation to contribute to wood fuel. A key issue is to revive the Watling Chase Community Forest as a delivery mechanism.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** Forestry Commission, Groundwork, Natural England, landowners, local authorities. Also CMS (Herts) & Countrycare (Epping Forest District). HMWT/EWT, Woodland Trust. Thames Chase Community Forest (& potentially Watling Chase if revived). Potential funding through HLF. Landowners such as Lafarge & other mineral site operators. Developers through scheme mitigation - factor into s.106 agreements & CIL. Delivery could occur at small scale by voluntary means (BTCV, School Groups, Epping Forest Conservators), & local green groups/ Transition Towns. Potential funding (urban locations) through National Tree Planting Campaign. Monitoring mainly through grant agreements/species surveys.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** Uptake of grant agreements should be encouraged in landowner discussions. High priority as woodland creation could deliver many linked benefits at relatively low cost. Need for appropriate links with key strategic delivery partners at county & local level & to prioritise appropriate areas for woodland creation. Link to existing initiatives (e.g. Heartwood Forest). Need for joined up working at local authority level to incorporate into policy & CIL tariffs.



PROJECT : 3. Mardyke Valley Greenway extension



**RURAL GREEN LINK** - Brief description / snapshot of the project :  
**Extension of green strategic links as well as connections to the Thames Path & further points for access. Wetland, wet woodland & habitat creation opportunity in the valley**

- Provide a strategic link from existing Mardyke Valley Greenway & Thames Path, through to Basildon & eastern suburbs via Bulphan
- Programme of wetland & wet woodland extending habitat creation in earlier Mardyke schemes
- Contribute to extending & delivering aspirations of East London Green Grid, with potential for improved links to London GI
- Links to Thames Path & enhanced environment/quality of life in Thames Gateway
- Links to delivery of Thames Gateway Parklands, connect gateway as to the wider countryside
- Complementary to the delivery of the Thames Chase Community Forest Plan & the promoted greenway network (within the Thames Chase Community Forest)



FUNCTIONS MET :



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER** : Extension of the Greenway along the Mardyke corridor will deliver further access as part of the East London Green grid, connecting into the wider Sustrans network. Expansion of the existing route between Stifford Bridge & Purfleet (Sustrans route 137) will provide stronger links to the Thames Estuary Path & National Cycle Route 13, leading Eastwards through Essex into Basildon (via Bulphan), Billericay & ultimately to Chelmsford. Building on access projects such as the Veolia Mardyke Bridge linking Purfleet to the Rainham Marshes Nature Reserve, greenway extension projects contribute to the aims of the Thames Chase Community Forest through new wet woodland & habitat creation & implementing parts of the promoted greenway network. Potential to contribute to & link with the Thames Gateway Parklands.

**ISSUES ASSOCIATED WITH DELIVERY** : Access projects & link extensions for a green transport corridor (e.g. National Cycle Routes) have a significant capital cost with regards to physical delivery. Delivery of the access & ecological packages may need to be phased & assessed in order of priority (e.g. costs against greatest benefit for community & wider users), with appropriate delivery bodies working together within a coherent masterplan (i.e. under plans such as those set out by The Thames Chase Community Forest). Major funding priorities within the area of East London & Essex may currently favour higher profile projects & delivery within the Thames Estuary, meaning that securing significant funding for the Mardyke Valley would need to be a long term aspiration. Liaison & promotion with key landowners (e.g. Veolia) will be important. Small scale delivery by local bodies & interested parties (e.g. the Wildlife Trust, Groundwork, Countrycare & friends groups) could help to achieve the first links within a longer term plan.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS** : Potential private & developer contributions through funding (e.g. Veolia) & off-site CIL/s.106 & grant aid funding. Essex Wildlife Trust & the Environment Agency for wetland, flood plan & habitat creation. Thames Chase Community Forest are already key drivers in delivering initiatives within the Mardyke, & their input would be vital. Along the Mardyke Valley there are already precedent projects for funded schemes (e.g. through HLF) which delivered improved access & habitat creation, & this template could be repeated to help deliver links to the wider network. Sustrans monitoring & funding would assist in the delivery of significant access sections within their scheme network (e.g. extension of route 137, & links to National Cycle Route 13).

**WHAT HAPPENS NEXT? PRIORITY / RANKING** : Priority for a coherent masterplan identifying a breakdown of sub projects which can achieve the overall objectives. Delivery of project components to be categorised into potential funding/delivery brackets & order of importance, as well as identifying what can be delivered at a local scale through local bodies & relevant parties (monitored by bodies such Thames Chase) - for quick wins.





PROJECT : 4. Urban GI Heritage conservation & enhancement

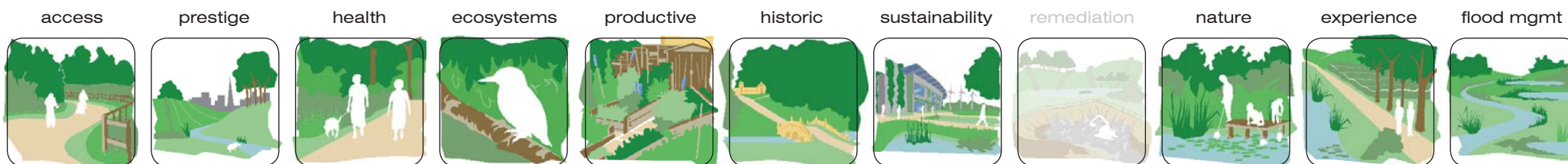


**URBAN WILDSpace** - Brief description / snapshot of the project  
**Recognising & conserving the significant planned urban green infrastructure heritage asset, seeking to enhance functionality & improve quality of life in densely developed urban environments**

- Project celebrates & promotes the unique urban GI heritage of Hertfordshire/GreenArc (Garden Cities & New Towns), as well as providing enhanced functionality of urban greenspace, through appropriate management & new tree planting. Enhancement of urban biodiversity & recognition of the value of urban greening for climate change adaptation
- Sustainable living options, local food production/allotments, community gardens & orchards
- Securing positive green urban interfaces - enhancement of peri urban greenspace & through landscape mitigation of future urban extensions/settlement growth, as well as linking to orbital greenway projects such as the Letchworth Greenway in Hertfordshire
- Addressing long standing & strategic 'green' (& greenspace quality) deficits through small scale interventions in higher density urban environments such as Watford (street orchards, pocket greenspaces), also enhancing experience/ecosystems/climate change adaptation



FUNCTIONS MET :



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Contribute to enhancement opportunities in relevant open space studies at local authority level. Conserve & enhance historic urban/planned landscape legacy, in relation to registered & less 'tangible' GI heritage assets. Sensitive consideration of landscape pattern & integration as part of urban green network for future growth can respond to Historic Landscape Character & contribute to BAP objectives. Tree planting can contribute to FC Quality of Place aspirations. Multi functional & enhanced quality greenspaces such as street orchards/community orchards can contribute to the East of England Apples & Orchards Project (use of heritage varieties).

**ISSUES ASSOCIATED WITH DELIVERY :** Engagement with LPAs & greenspace management programmes. Management & revenue costs & need to educate/change perceptions regarding changes to greenspace management. Urban greening aspirations may be constrained by presence of physical infrastructure in higher density urban environments & as such are aspirational/linked to redevelopment opportunity. Potential need for establishment of local volunteer green groups, linked to existing groups such as the Transition Towns movements in Hertfordshire, or through school groups/youth groups/voluntary organisations such as the BTCV. Need for a co ordinated approach across the relevant local authorities e.g. joined up delivery, sharing good practice.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** Local authorities through delivering urban regeneration visions. Also through parks & greenspace groups, as well as volunteer groups such as BTCV/school/youth groups described above. Potential funding stream is HLF for large scale urban GI heritage restoration projects (e.g. Jellicoe Water Gardens, Hemel Hempstead). Voluntary delivery could potentially also be linked to rehabilitation & probation service. Groundwork could be a potential partner for projects with a community focus, working with Transition Towns & local green groups. Also Countryside Management Service. Potentially involvement from Primary Care Trusts re: health benefits of enhanced greenspace & also from Hertfordshire & Essex County Councils & Highways Authority/Highways Agency in relation to any urban greening within Highways owned land. Potential funding through HLF for restoration of urban greenspace heritage to deliver projects (e.g. restoration of Jellicoe Water Gardens in DBC, as part of Hemel Hempstead urban greening project). Also National Tree Planting Campaign & FC through EWGS.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** Priority is high as many interventions could be delivered at relatively low cost e.g. beneficial changes in greenspace management. Others long term & occur through funding bid (HLF) or through link to policy (development briefs for regeneration sites & opportunities).



**PROJECT : 5. Mimram Valley greenspace**

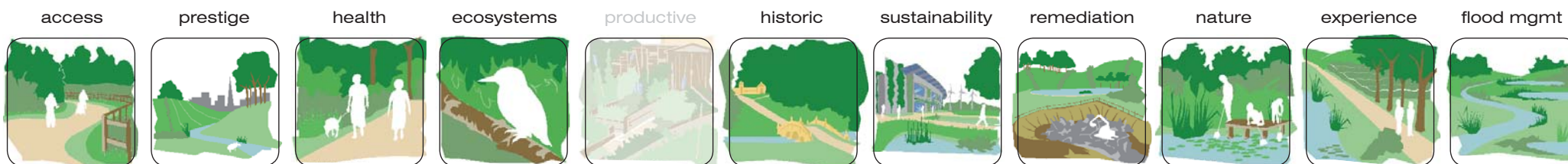


**RURAL BLUE LINKS** - Brief description / snapshot of the project :  
**Green infrastructure for landscape, habitats & people through enhancement of the Mimram river corridor, & links to multifunctional greenspace at Panshanger Park as part of the long term future of the site**

- Enhancement of the Mimram Valley chalk river corridor, making greater space for water & improving landscape character & biodiversity through active management to ease pressures
- Providing physical access to the water course (e.g. greenways/green corridors) & greenspace opportunities (e.g. for recreation) for Welwyn Garden City & outlying communities (e.g. Digswell)
- Wetland conservation (enhanced riverine habitat to improve ecological quality, e.g. wet Alder woodland) & enhanced links to wider network, connecting to Thames Tributaries River Valleys & Corridors Project
- Linked to restoration/after use of historic, biodiversity rich designed landscape of Panshanger Park post mineral extraction & providing settlement buffering
- Enhance settlement setting through positive site restoration (new wetland landscape character)



**FUNCTIONS MET :**



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Aims of EA's Thames River Basin Management Plan & Natural England's Thames & Tributaries Integrated Biodiversity Delivery Area plan (IBDA) will be implemented through delivery of wetland restoration & creation (e.g. at Panshanger Park & enhanced wetland environment in the Mimram). Enhancing the valley corridor & chalk river landscape to create space for wetlands & increased biodiversity will contribute to objectives of WHBC GI plan, Chilterns Chalk Streams Project & Herts & Middlesex Wildlife Trust, linking to existing projects such as the Archers Green, Hertingfordbury & Tewin Bury Nature Reserve. Prestige & experience, at both Welwyn in the West & Hertford in the East, will be enhanced with a multifunctional Mimram valley improving settlement buffering, & improved access will help address strategic ANG deficiencies & contribute to the Hertfordshire ROWIP. Through woodland creation (selective), the project will contribute to BAP/Living Landscape Key Biodiversity Areas.

**ISSUES ASSOCIATED WITH DELIVERY :** The project would span several districts, requiring a partnership between them to ensure successful delivery & application for funds. Multiple landownership along the valley could require the project to be split up into sub projects in order to successfully deliver, the projects would all need to work under the unifying scope of an overall masterplan & vision (e.g. by HCC, HMWT & landowners). Panshanger Park's immediate future as a mineral extraction site with ongoing positive restoration works means that the delivery of the project as a whole will need to be staged over a substantial period of time, need for continued liaison between LaFarge, HCC & HMWT.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** Landowners & the mineral operators (e.g. LaFarge through restoration agreement & the aggregates levy sustainable fund) at Panshanger Park will be key partners & Natural England through the HLS scheme in delivering the project, & possible developer contributions through off-site CIL/s.106. The relevant district councils (e.g. Welwyn & Hatfield & also East Herts) through the Herts Rights of Way & the Local Access Forum, as well as the Environment Agency, (& liaison with Veolia), in enabling/facilitation role, & implementation of grant agreements / minerals restoration scheme & species surveys post implementation. Also potentially through HLF & Natural England initiatives such as Access to Nature. Monitoring will occur as part of audit trail needed to satisfy grant aid conditions.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** County level approach to work with the relevant districts to deliver co-ordinated funding bids to Natural England (Aggregates Levy Sustainability Fund, HLS & HLF). Promotion to key landowners & relevant bodies (e.g. Environment Agency), to identify short term gains & prioritise time scales & sub projects to deliver (i.e. create targets for the valley, using the London Rivers Action Plan as a potential model). Access & wetland restoration to be divided into separate projects to achieve appropriate funding to maximise delivery of both elements.





PROJECT : 6. Thames tributaries river valleys & corridors



**RURAL (& URBAN) BLUE LINKS** - Brief description / snapshot of the project  
**Living Landscapes: Seeking to enhance/contribute to ecological quality, responding to water management, flood risk & abstraction pressures (making space for water), enhancing landscape & habitat connectivity**

- Respond to issues identified in SFRAs re: river pinch points. Creation of enhanced wetlands at settlement gateways (Dacorum valley towns, Watford, St Albans & Welwyn Hatfield, & Hertford)
- Environmental enhancement in vulnerable river valleys & catchments, seeking to restore & enhance/reinforce wetland habitat & conserve clay rivers & nationally important chalk rivers.
- Enhancing riverine ecological quality, to contribute to objectives of Thames River Basin Management Plan, Integrated Biodiversity Delivery Area & Water Framework Directive
- Striking the correct balance between biodiversity interest & access - rivers as people access/experience/wildlife corridors (appropriate zoning), recognising the importance of rivers as key parts of the multi functional GI network/their connecting function as 'Living Landscapes'
- Contribute to restoration of former mineral sites in river valleys/remediation of contaminated land through enhancement & positive wetland habitat management



FUNCTIONS MET :



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Links to Chilterns AONB Chalk Streams Project & is also complementary to objectives in 'local level' river strategies such as those in Dacorum Borough. Complements landscape framework & LCAs. Conservation & enhancement of chalk rivers & associated wetland environment in Hertfordshire helps protect a BAP Priority Habitat. Project is complementary to EA objectives in terms of the Thames River Basin Management Plan (TRBMP) & associated aims to secure good riverine ecological quality as in the Water Framework Directive (WFD). Can also contribute to strategic Natural England objectives in relation to the Thames & Tributaries Integrated Biodiversity Delivery Area (IBDA). Complementary to guidelines & recommendations in relevant SFRAs. Project can deliver HMWT/EWT aspirations for Living Landscapes & landscape linkages in the river valleys & help deliver the Regional Park Authority's proposals for improved water quality throughout the Regional Park.

**ISSUES ASSOCIATED WITH DELIVERY :** Engagement with landowners (stewardship agreements). Need for consultation with EA throughout process & planning & design/delivery, to ensure that any works complement the TRBMP. Engagement with Hertfordshire districts & GreenArc, particularly Hertfordshire GIP districts, to ensure joined up cross boundary working. Importance of river valleys & functionality needs writing into LDF policies re: protection & management. Need for liaison with the Wildlife Trusts. Need for effective policy for protection, enhancement & management of the riverine environment in the respective Local Development Frameworks. Need for liaison with landowners (inc. Veolia & minerals operators such as Lafarge), & British Waterways (navigable rivers).

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** LPAs through expressing aspirations in policy, EA, HMWT & EWT, British Waterways, landowners, Countryside Management Service & Countrycare. Natural England through HLS (although revenue payments for access have ceased from 2010). Also relevant community groups/local societies at local level. Monitoring through uptake & implementation of stewardship agreements, through planning conditions in response to discharge of s106 & planning conditions (urban/peri urban areas -linked to development projects).

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** Priority is high as many interventions could be delivered at relatively low cost e.g. through stewardship agreements or through relatively low key changes in management. Reference should be made to other examples of good practice e.g. London's Rivers Action Plan. A comparable study should be a future piece of work for Hertfordshire & the GreenArc.



PROJECT : 7. Lee Valley Regional Park - lateral links



**RURAL & URBAN BLUE LINKS** - Brief description / snapshot of the project  
**Seeking to enhance accessibility to the strategic GI asset from the green transport network & at points on the park boundary, & helping to address greenspace & health deprivation in urban areas in the valley/adjoining the park area**

- Creation of enhanced lateral links to/around the park, to address deprivation. Enhanced links should be made from public transport nodes & from within the urban area of Hoddesdon, & enhanced signage & from settlements within Broxbourne Borough, as well as addressing disjointed links across land in multiple ownerships e.g. in East Herts District, & creating safe links to & from Epping Forest, as well as to wider open space network in general
- Enhanced signage, promotion & legibility of existing connections for people across the park
- Project includes woodland & habitat creation in delivering Living Landscapes, e.g. creation of habitat as well as people connectivity to link Lee Valley to wider landscape
- Enhanced public transport network links, seeking to overcome access barriers (e.g. to reservoirs)
- Creation of enhanced connections to other strategic GI assets such as Epping Forest & the Stort Valley, plus enhanced connections to All London Green Grid including London Loop
- Project links closely to Project 9: Reconnect, & also gives expression to local GI links in the Harlow Green Infrastructure Plan
- Links to Project 10: Green Hertfordshire/Greening the GreenArc: promotion of the GI asset & links in the Lee Valley & helping secure links to the Olympic Legacy



FUNCTIONS MET :



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Can help deliver aspirations in the Lee Valley Park Plan, to increase public transport connections & approaches to the park. Also contributes to resolving issues identified in the Hoddesdon Borough Open Space Study - e.g. addressing greenspace deprivation in Hoddesdon town & suburbs to the south, through improved connections to strategic assets. Potential to help address social & health deprivation issues in southern GreenArc authorities. Linked habitat creation could deliver BAP & Living Landscapes Aspirations. Enhanced lateral access links are also complementary to the objectives of the Epping Forest Transport Strategy.

**ISSUES ASSOCIATED WITH DELIVERY :** Engagement with landowners & in dedicating routes & access (issue of way leaves & also potentially of 'hope value' associated with land which can restrict delivery of links, as well as long standing severance due to level crossings). LVRPA to continue to liaise with these groups. Potential significant capital costs associated with new access links, especially if shared use - need for feasibility studies & land/archaeology & ecology surveys. Potential for access to be delivered through environmental stewardship, noting that revenue payments for access schemes as part of this are no longer available. Need for liaison & consultation with EA to develop proposals & feasible routes in the valley, also for work with both HMWT & EWT in delivering linked package of habitat creation. Engagement with Hertfordshire districts & GreenArc partners to ensure joined up cross boundary approach.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** LVRPA, Natural England, EA, HMWT & EWT, Countryside Management Service & Countrycare. Also County Councils, local planning authorities & Highways Agency. Need for ongoing liaison between LVRPA & LPAs to embed aspirations in policy & in setting CIL tariffs, as well as creating framework for local level planning. Monitoring is likely to be through uptake & implementation of stewardship agreements & also through delivery of works by Countryside Management Service/Countrycare.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** Priority will be dependent on multi partner & landowner agreement & consultation.





**PROJECT : 8. Chalk arc**



**RURAL WILDSpace** - Brief description / snapshot of the project :

**Restore, enhance & conserve chalk scarp & grassland landscape character to the north of the County, with additional landscape linkages to adjacent sites cross county & within the AONB**

- Enhance landscape quality & restore areas of fragmented landscape character within the A505 corridor (issues of prestige)
- Protect rare landscape character & aspects contributing to experience (chalk scarps & knolls)
- Create & protect better landscape & habitat linkages between strategically significant sites such as Therfield Heath to the wider landscape & connecting the two parts of the AONB
- Re-connect/& enhance chalk grassland landscapes & also conserve farming traditions (e.g. livestock grazing, where appropriate), balanced with existing productive uses (& habitats), complementary to projects in Bedfordshire (making cross county links to Beds Chalk Arc)
- Conserve & enhance chalk 'mosaic' habitats, (e.g. Aldbury Nowers, upper Mimram & Lilley Bottom Valley west of Stevenage - potential to tie into future urban planning at Stevenage North)



**FUNCTIONS MET :**



**COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER :** Enhanced connectivity of chalk scarps/grassland can link with the Dacorum GI proposals, North Herts GI Plan & Bedfordshire GI (Chalk Arc), the Herts & Middlesex Wildlife Trust (HMWT) & AONB objectives, as well as the aspirations for the protection & enhancement of this rare landscape character type. The project will help increase the biodiversity to the north of Hertfordshire feeding into Living Landscape aspirations within the Biodiversity Action Plans, enhancing key biodiversity areas & protecting important existing habitats (e.g. for farmland birds in North Herts). Enhanced landscape quality & new landscape/habitat links will help contribute to the protection of landscape character & delivery of the Herts LCA strategic objectives.

**ISSUES ASSOCIATED WITH DELIVERY :** The project will encompass liaison with many landowners, stakeholders & involve adjacent Counties (e.g. Bedfordshire), meaning the project will require clear partnership working (especially with HCC), as well as a project driving body & overall vision to work from to ensure a successful delivery (e.g. working with bodies such as Natural England, HMWT, CMS & FWAG to encourage & facilitate HLS uptake & landowner liaison, smaller projects & schemes contributing to an overall vision). Due to multiple landownership & existing arable land uses within the project work area, the project could be split up into sub projects in order to successfully encourage take up of environmental stewardship schemes & to obtain funding to deliver a network of links/wildlife corridors & areas which contribute to the projects aims. Project could link with existing projects (e.g. the Ridgeway National Trail) for joint promotion.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** Key delivery partners in terms of the different landowners would be Chilterns AONB partnership & Natural England (through HLS agreements, to encourage habitat restoration & capital payments for access). Also potential off-site developer contributions through CIL/s.106 (e.g. from future town development, such as Stevenage). HMWT, FWAG, adjacent County Councils & bodies (e.g. Bedfordshire & Cambridgeshire County Council), District/Borough Councils (e.g. Dacorum, St Albans & East Herts), government funded initiatives such as through implementation of HLS schemes. Monitoring mechanisms through species surveys & implementation of work by bodies such as CMS, RSPB & BTCV & take up of HLS grants.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** Commitment to the Natural England HLS scheme by associated landowners within the project area is a priority to deliver landscape character enhancements. Project awareness & engaging with relevant parties (e.g. HMWT, Natural England, CMS & FWAG) will be required to agree an achievable vision for project elements of enhancement, conservation & habitat creation, as well as on-going management & monitoring.



PROJECT : 9. 'Reconnect'



**RURAL GREEN LINK** - Brief description / snapshot of the project :  
**Reconnection of Rights of Way that have been severed by major barriers to the movement of people & wildlife (e.g. by rivers, canals & dual carriageways.)**

- Replace lost strategic links between existing local Rights of Way networks to provide a step-change in connectivity, reinforcing Rights of Way as a spine of Strategic GI
- Wherever possible each location to have an associated programme of PROW corridor improvements (e.g. verges) to enhance multifunctionality of link
- Opportunities to be taken in line with priorities informed by level of potential non-motorised usage (benefit) as advised by the Local Access Forum



FUNCTIONS MET :



COMPLEMENTARY PLANS & PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Contribute to Greenways & All London Green Grid (including Mardyke Valley Greenway Extension), Watling Chase Community Forest strategy, & complement Grand Union Canal enhancements & lateral links across Lee Valley. Delivery of Hertfordshire RoWIP & LTP accessibility targets to link people to place. Contribute to delivering & enhancing regionally significant strategic routes, e.g. Ridgeway & Icknield Way. Assist all strategies & plans where access is important (e.g. for site management) or promoting animal crossings.

ISSUES ASSOCIATED WITH DELIVERY : Repair of severance has a significant capital cost & delivery will need to be phased & prioritised in consultation with the Local Access Forum. Associated land acquisition & wayleaves may be required. Some projects may require identification & funding strategically in the context of local collection of developer contributions & an accumulator mechanism for this will need to be agreed. Need for appropriate & sensitive design & management so that structures contribute to sites & landscapes.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : HCC (Rights of Way & Highway Authority), landowners, local authorities. Highways Agency, Environment Agency, British Waterways Board. Developers through mitigation of potential housing & industrial sites - factor into planning agreements.

WHAT HAPPENS NEXT? PRIORITY / RANKING : A coherent programme to be prepared identifying main areas of search & priority. Development of mechanism to accumulate local & windfall contributions towards strategic projects.





**PROJECT : 10. 'Green Hertfordshire/Greening the GreenArc' interactive map project**



Brief description / snapshot of the project :

**Development of interactive mapping to promote the GI resource**

- Accessible electronic GI map based/navigator resource
- Web based & Smartphone app (application) based outputs for easy access & to reach the widest audience, including schools & colleges
- Translate information on the GI network & new green links for people, to users
- Provide information on GI assets (landscape, habitat, historic etc) to users, to aid understanding & appreciation of the natural environment - educational resource
- Development of a series of themed walking/cycling & riding trails & routes from pubs etc & promotion of these to offer low key, 'low environmental impact' fun/recreation for all ages
- Link to other relevant programmes e.g. Transition Towns web presence - use of the interactive mapping for people to identify 'green' ways of living life - green transport routes for commuting to work & school as well as recreation, places to buy local produce etc, community events in a greenspace setting



**FUNCTIONS MET :**



**COMPLEMENTARY PLANS & PROGRAMMES THE PROJECT CAN HELP DELIVER :** Contribute to objectives of Local Transport Plans & ROWIP, in promoting routes for people to use for green travel. Embed most of the aims of much of the spatial planning at county & local authority level (landscape conservation in the Landscape Character Assessments for example) in the wider sub conscious of the communities who use & enjoy these environments. Recognises the full functional potential of green infrastructure (interpretation/education/skills development - 'soft' skills) as expressed in the Green Infrastructure Guidance.

**ISSUES ASSOCIATED WITH DELIVERY :** The main issue is with hosting, managing & updating a comprehensive, but relevant, usable & above all visually engaging & appealing on line resource, as well as marketing & promoting the use of the Green Hertfordshire/GreenArc brand/app to the widest possible audience. Need for specialist ICT, GIS & graphic design skills to help develop the package. Link to a potential GI marketing & communications strategy to launch the GI work & embed the concept. A communications strategy & user groups market research (e.g. school & youth groups) should be undertaken prior to & during development of the App. Map licensing protocols & restrictions on use of Ordnance Survey data would need to be worked around (lead in times associated with delivery of project are likely to be an issue). Need for compatibility with main Smartphone platforms. Could be compatible with traditional leaflet media using Smartphone scannable 'QR' codes with links to interactive material.

**POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS :** GreenArc Partnership, the Hertfordshire Districts, Hertfordshire County Council, Hertfordshire Technical Chief Officers Association (HTCOA) landscape group, & Countryside Management Service, as well as key agencies & organisations with an interest in promoting GI (e.g. Natural England, Herts & Middlesex Wildlife Trust, British Waterways) & landowners of key sites within the Hertfordshire districts (e.g. National Trust, landed estates etc) - potential for funding/'in kind' contributions & sponsorship. Liaison with local green groups e.g. Transition Towns. Possible private sector involvement.

**WHAT HAPPENS NEXT? PRIORITY / RANKING :** This is a key project to translating GI to a wider audience beyond planners & decision makers. The initial skeleton of the interactive map (which could be added to & developed as & when new information & funding became available), should be developed as a high priority project across the districts, with liaison between HCC, GreenArc, the Countryside Management Service/Countrycare & HTCOA representatives.



### GI projects and cross county connections

3.16 An essential part of effective GI delivery is a strategic, co-ordinated approach, to ensure that projects are resourced appropriately in terms of capital works and ongoing revenue activity. This section notes potential connections with adjacent authorities in terms of GI links and projects:

- **1. Grand Union Canal, Colne Valley and Regional Park Enhancements:** Need for liaison with Bedfordshire, Buckinghamshire and Great London Authorities; also with Chilterns AONB Partnership to deliver large scale, cross county projects.
- **2. Woodland Arc:** Links with Greater London, Essex Authorities and Watling Chase Community Forest to ensure projects are brought forward.
- **5. Mimram Valley Greenspace:** Hertfordshire only project, so cross county links are not applicable
- **6. Thames Tributaries, River Valleys and Corridors:** Need to liaise with Bedfordshire, Buckinghamshire and Cambridgeshire, as well as the London Boroughs/All London Green Grid
- **7. Lee Valley Regional Park Lateral Links:** Need to liaise with Essex and the London Boroughs
- **8. Chalk Arc:** Need to liaise with Buckinghamshire and Bedfordshire
- **9. Reconnect:** Need to liaise with Buckinghamshire, Bedfordshire, Cambridgeshire, Essex and London

- **10. Green Hertfordshire:** Need for liaison with the GreenArc Partnership

3.17 In addition, the strategic projects should be read in conjunction with and cross referenced to local level projects in the Hertfordshire Districts GI Plans, as listed below:

- **Project 1:** See also Dacorum, Three Rivers and Watford GI Plans
- **Project 2:** See all district GI Plans drawn up in parallel under this contract
- **Project 5:** See Welwyn Hatfield and East Herts GI Plans
- **Project 6:** See all district GI Plans drawn up in parallel under this contract
- **Project 7:** See East Herts GI Plan and GreenArc Strategic GI Plan
- **Project 8:** See also Dacorum and North Herts GI Plans
- **Project 9:** See also GreenArc Strategic GI Plan
- **Project 10:** See all district GI Plans drawn up in parallel under this contract





## 4 Linking the strategic green infrastructure proposals to local spatial planning and development management

- 4.1 It is intended that this Strategic Highlights Green Infrastructure Plan will help inform the evidence base for Development Plan Documents (DPDs) in the Local Development Frameworks and for green infrastructure issues to be included and addressed in the Development Plan Documents. The plan will also provide an evidence baseline for consideration and planning in relation to protection of, national and sub national GI assets and proposals.
- 4.2 In order for any **future** policies that deal with green infrastructure to be found to be ‘sound’ when going through public examination they will have to comply with the three tests:
- To be consistent with National Policy; a green infrastructure approach is clearly advocated by national policy.
  - To be justified; evidence needs to be provided to prove why it is justified for there to be a green infrastructure policy (why something is being proposed and that there is a problem or a need)<sup>x</sup> (see **sections 2 and 3**).

- To be effective; where a policy proposes tackling a green infrastructure issue there is a need to ensure that the mechanism for tackling the issue will be effective and that there is some basis for taking this course of action.

- 4.3 The tests of soundness point to the need for a clear link between policy formulation and the evidence that has been gathered.
- 4.4 PPS12, the Planning Inspectorate<sup>xi</sup> and the Planning Advisory Service (PAS) all give more detail on what is meant by effectiveness and the Green Infrastructure Plan has sought to ensure that all these aspects have been addressed through the development of the Plan. The proposals developed in this Plan have been proofed against other relevant plans, policies and programmes at the strategic level. The Green Infrastructure Strategies and Plans of neighbouring authorities have been reviewed to ensure consistency between this Plan and those of neighbouring counties. A robust and transparent methodology has been used to ensure that proposed solutions are clearly linked to addressing issues and needs identified in the evidence base. A workshop and consultation with delivery partners has ensured that proposed solutions (**section 3**) are deliverable, flexible and that potential delivery partners are identified. Suggestions for monitoring have also been included in the Plan.
- 4.5 The key findings of the Strategic Highlights Green Infrastructure Plan that are relevant to planning policy, are

set out here. This will aid plan makers, those assessing the plan (SA/SEA practitioners) and consultees in successfully embedding green infrastructure into the DPD process in relation to the respective Local Development Frameworks.

### Evidence Base

4.6 The Strategic Highlights Green Infrastructure Plan is to form part of the evidence base for the LDFs and to inform future iterations of strategic scale spatial plans and proposals such as Minerals Plans and the Rights of Way Improvement Plan. There may be benefits to including or referring to parts of the evidence gathering and analysis undertaken for this Plan in other LDF supporting documents such as Sustainability Appraisal baselines. The following may be useful:

- An overall justification for following a green infrastructure approach is provided in **section 1**.
- Background information on environmental character can be found in **Appendix 2**.
- Key green infrastructure issues are set out by function in **section 2**. These issues should be used by plan makers, SA practitioners and consultees to identify what the broad green infrastructure (and environmental) issues are in the county.
- The assessment of need for green infrastructure is given by function in **section 2**.

- **Section 3** sets out the proposed green infrastructure vision, network and supporting projects. This may be useful for plan makers when they are developing policies, and for SA practitioners and Consultees when reviewing policies to help ensure options have been presented that take full advantage of potential opportunities and are most likely to help solve current and future problems.

### Core strategy

4.7 Key GI points for the Core Strategies to take into consideration are:

- Recognising the strategic importance of the Chilterns AONB and enhancing recreational links and promoted routes through the area;
- Woodland expansion and creation which seeks to enhance this existing GI resource allowing for improved landscape, biodiversity and habitat linkages;
- Wetland enhancement and sustainable water management in the main river valleys - enhanced management of rivers such as the Ver, Ash, Mimram, Gade and Quin - making 'space for water' up and downstream of settlement pinch points;
- Increased green links to the countryside from higher density settlements, seeking enhanced links along the river valleys network, where these do not conflict with nature conservation interests;

- Enhancement of strategic links to GI assets and points of focus such as Heartwood Forest, facilitating greater levels of car free access;
- Improved strategic links with adjacent county GI (such as via the Grand Union Canal and the two Regional Parks), particularly in light of potential future growth;
- Using green infrastructure to contribute positively to landscape character enhancement, restoration and linkage (e.g. Chalk Arc and Woodland Arc projects described in **section 3** and shown on **Figure 3.1**);
- Green infrastructure to interpret and appreciate significant cultural heritage assets (e.g. Roman legacy, ancient woodlands, parklands, designed landscapes and 20<sup>th</sup> Century urban GI heritage – Garden Cities and New Towns);
- Context, sense of place and local distinctiveness: Recognition, conservation and enhancement of the key assets of river valleys, woodlands, heathland and commons.

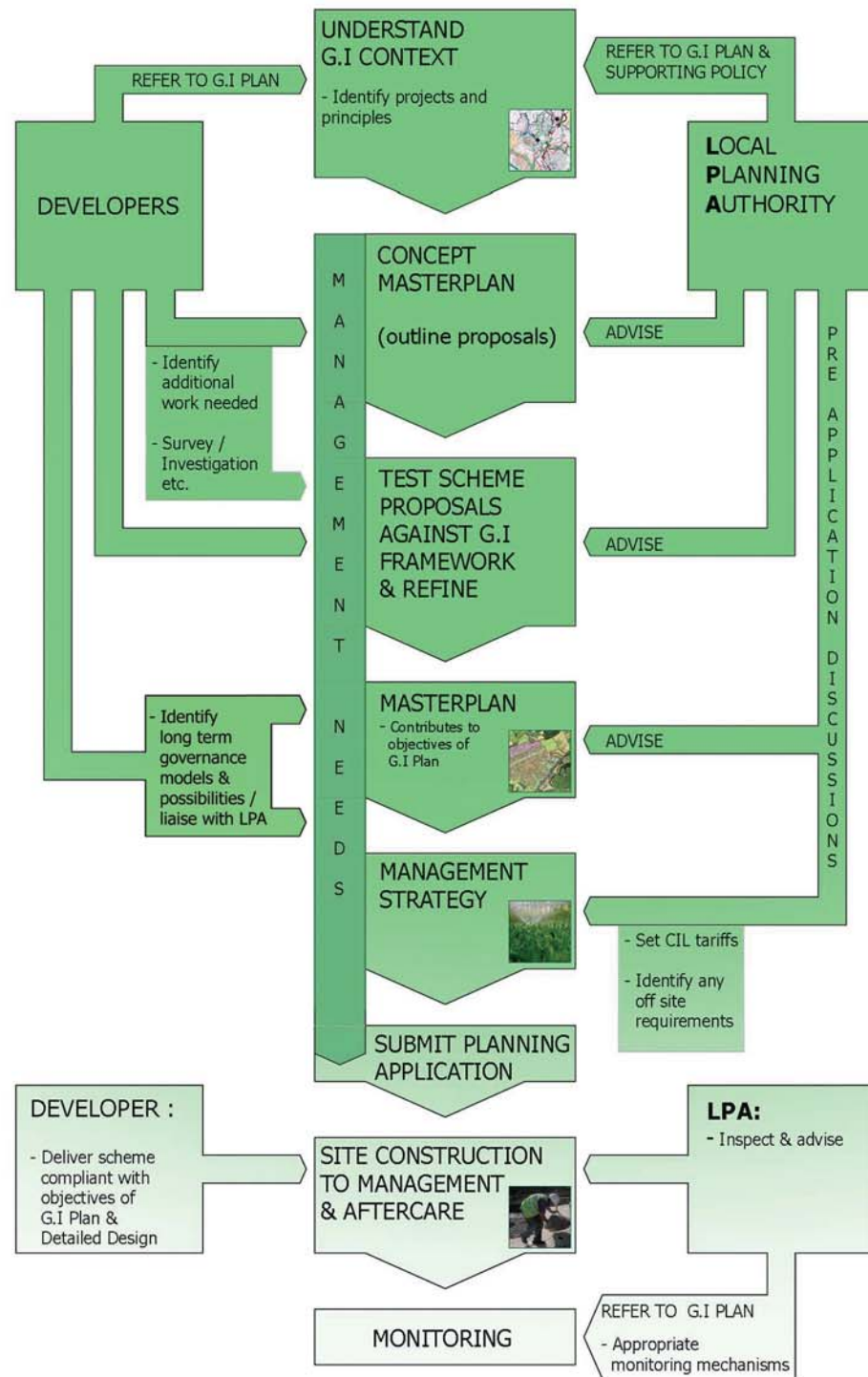
## DEVELOPMENT MANAGEMENT

- 4.8 The green infrastructure projects identified in **section 3** form a basis for evaluating future development proposals against the proposed green infrastructure network, and to ensure that they contribute to the desired environmental outcomes and functions. A model process for ensuring that green infrastructure is embedded in development

management, and that appropriate account is taken of green infrastructure recommendations, is set out in **Figure 4.1** overleaf. A standardised approach to the design and implementation of a generic green infrastructure development project is shown in the central column of this Figure, with respective responsibilities of the applicant and the local authorities, as they relate to GI, shown to the left and right hand sides respectively.

- 4.9 **Figure 4.1** is designed to assist Development Management officers and planning applicants ensure that green infrastructure is embedded in the scheme design from the outset, as part of the development process. The diagram can be applicable to any scale of proposed development. The starting point is to identify the green infrastructure proposal area or assets/elements in which a specific site lies and whether it relates to, can contribute to or affects any proposed projects in this Strategic GI Plan. Reference should be made to the key messages for the relevant projects e.g. the important green infrastructure assets and links to conserve and enhance, and this should be used as a starting point for site planning and design – a ‘greenprint’ or a green infrastructure led basis for masterplanning, to ensure that green infrastructure assets are considered and protected from the first.





**Figure 4.1: Embedding GI in Development Management**

## NEXT STEPS

4.10 The following steps/alternatives are recommended in order to take forward green infrastructure delivery within the County:

- Creation of a dedicated **Green Infrastructure Delivery Officer** role at County level. This is subject to resources and may be a desirable long term aspiration;
- **Taking the GI Plan forward in each District through existing mechanisms** (Hertfordshire Environmental Forum) and with assistance and advice from the Countryside Management Service, and noting links with district level GI projects which can contribute to delivery of strategic GI objectives in this plan – effective cross district working;
- Attendance at and participation in a potential new Hertfordshire wide/cross district **GI Delivery Panel** (linked to one for GreenArc and potentially linked to HTCOA's landscape group and other stakeholders such as the Herts and Middlesex Wildlife Trust). Management of this panel could be commissioned from a relevant commercial organisation such as Groundwork or other GI implementation consultancy. This should have a practical focus in securing on the ground delivery.

4.11 Whichever approaches are selected, clearly there will be a need for close partnership working with other organisations with parallel interests and objectives

(Hertfordshire County Council in an enabling/facilitating role, liaising as appropriate with Districts and Boroughs and adjacent Counties). By doing this and through intelligent use of existing mechanisms and processes, a SMART approach to GI delivery could be achieved in the County, as described below. Possible future responsibilities in relation to green infrastructure delivery, whether through a Delivery Officer or through participation in a Delivery Panel, at District/County level, are as follows:

- **Actively promote green infrastructure**, liaising with relevant members of the Local Strategic Partnership, to ensure that green infrastructure contributes to the objectives of spatial planning;
- Preparation and implementation of a **Communications Strategy for green infrastructure** in the County (working with the Hertfordshire districts) to raise public awareness of the concept. This should link to the interactive GI mapping/web/app based project described in **section 3** ('Green Hertfordshire' project proposal). Focus on projects with a community emphasis, to engender greater public support and ownership, as well as embedding positive informal management/stewardship, in addition to any more formal management structures identified;
- **Advise and assist a nominated green infrastructure 'champion'**, ideally a Council member

at county level, to ensure greater potential for 'buy in' from members;

- Provide constructive advice to the Council on GI delivery, considering the points below:
- **A checklist** for evaluating development proposals in terms of GI and against the components of the strategic GI network in this GI Plan. Possible components of such a checklist are set out under 'Potential future work', at the end of this section. Such a checklist could also link to existing ones or to work such as Hertfordshire Building Futures<sup>xii</sup>, in particular the Landscape and Biodiversity module produced as part of that work;
- **Consider potential for further work** and additional studies to bring GI forward, including more detailed GI planning work, as highlighted at the end of this section;
- Identification of constraints, challenges and potential conflicts of interest in relation to practical delivery, making early links with appropriate bodies (e.g. in relation to ecological advice, surveys and flood risk etc). **Land ownership liaison and negotiation** (this is a key stage). Also liaison with the districts in ensuring that implementation of the two tiers of GI planning in Hertfordshire is 'joined up';
- Where appropriate, as part of liaison with landowners **seek to encourage take up of grant schemes** which could contribute to the aims of the Strategic GI Plan e.g. agri environment and woodland grant schemes;
- As a consultee, comment on relevant planning applications through the pre application and application processes, using the proposed strategic GI Network;
- Ensure that developers, partners and others bringing forward strategic green infrastructure not only take account of the key messages in this GI Plan, but that they also identify sustainable, resourced mechanisms and models for long term governance to deliver design intentions and desired environmental outcomes;
- **Make appropriate links with future delivery and funding partners** identified in the projects in **section 3** of this strategic GI Plan, in relation to **co ordination of funding bids**. Also **make links with adjacent counties** for projects on authority boundaries/in considering adjacent county GI projects which could impact on/benefit Hertfordshire's green infrastructure;
- **'Grass roots' delivery:** This is considered in the district level GI Plans. At the strategic level, there is a need to work in a joined up way with the respective Transition Towns Movements in the Hertfordshire towns (strategic representation of local green groups and grass roots delivery);
- Liaise with the relevant Local Strategic Partners, **noting and using where appropriate existing processes** that may be of relevance to GI delivery, for reasons of efficiency and avoiding duplication of work;

- Develop appropriate consultancy briefs for masterplanning and detailed design services in relation to key strategic GI projects, making appropriate reference to key messages in the GI network and projects at **section 3**;
- Create an audit trail of appropriate monitoring mechanisms in relation to green infrastructure delivery, making use of existing tools such as site inspections to adoption, and visitor surveys. This will help monitor performance of the green infrastructure proposals in relation to the environmental functions, to inform and refine future iterations of the spatial plans for Hertfordshire and the districts, whether strategic plans such as mineral plans, or the Local Development Frameworks;
- With the District and Borough Councils and strategic stakeholders/partners, convene regular updates, meetings and opportunities for progress reporting during the life of the Strategic GI Plan, to disseminate results, good practice and lessons learned (e.g. with reference to good practice case studies).

## POTENTIAL FUTURE WORK

### GI checklist for development management decisions

- 4.12 In addition to the general pointers shown on **Figure 4.1**, this could cover the following subject areas:

- Sense of place: Including historic character and landscape management;
- Nature conservation enhancement and management;
- Sustainable resource management and climate change adaptation;
- Healthy and cohesive communities including access for all;
- Choices for responsible travel;
- Sustainable design and construction techniques and specifications.

### GI Design and Delivery Guide

- 4.13 This could take the form of accessible, concise, written and illustrated high level design principles aimed at developers and to inform Development Management Officers in evaluating planning applications in terms of green infrastructure. The aim with such a document should be to ensure that the most positive consideration is given to GI planning, design and management, from the outset of the development process.

### GI Supplementary Planning Document (SPD)

- 4.14 It may be desirable for the County (possibly jointly with the local authorities) to consider production of a green infrastructure SPD, although this must not detract from the wider need to embed green infrastructure more generally within the LDFs, the Core Strategies and relevant



policies. It may be more useful to include aspects of the Strategic Highlights Green Infrastructure Plan and potential future work within other SPDs (e.g. Planning Obligations/Developer Contributions, or Design SPDs) at local authority level.

### **More detailed and local level GI planning work**

- 4.15 This is a strategic level GI Plan and more detailed and 'site specific' GI planning work, drawing on this plan, will be required to bring projects forward and within the districts, particularly as growth locations and areas of change become more fixed. As such the strategic GI Plan sets a framework in which future GI planning and design can fit.

### **Outward facing projects to 'launch' the GI concept**

### **Interactive/web/app based mapping project – GI for people**

- 4.16 This is described in the 'Green Hertfordshire' project at **section 3**. It will require cross district working to secure successful implementation, since this is also identified as project in the seven Hertfordshire district GI plans developed as part of this work.



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<sup>i</sup> <http://www.hertsdirect.org/infobase/docs/pdfstore/gifframework.pdf>

<sup>ii</sup> <http://naturalengland.etraderstores.com/NaturalEnglandShop/NE176>

<sup>iii</sup> NE176, **Op Cit**

<sup>iv</sup> Natural England/The Landscape Partnership **Analysis of Accessible Natural Greenspace Provision in Hertfordshire**

<sup>v</sup> Source: V4C Project. Study produced for Hertfordshire County Council

<sup>vi</sup> <http://www.hertsdirect.org/libisleisure/heritage/landscape/hlca/>

<sup>vii</sup> Watling Chase Community Forest 1995 **Forest Plan**, and **Watling Chase Community Forest: Forest Plan Review 2001**

<sup>viii</sup> Colne River Park Management Plan

<sup>ix</sup> Liz Lake Associates 2009 **Landscape and Visual Impact Assessment: Re Restoration Sites - Hertfordshire**

<sup>x</sup> Planning Advisory Service 2008 **Local Development Frameworks: Evidence Base**

<sup>xi</sup> The Planning Inspectorate 2008 **Local Development Frameworks: Examining Development Plan Documents – Soundness Guidance**

<sup>xii</sup> <http://www.hertslink.org/buildingfutures>







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