

WELWYN HATFIELD BOROUGH GREEN INFRASTRUCTURE PLAN - FINAL REPORT

Prepared for Welwyn Hatfield Borough Council
by
Land Use Consultants
March 2011



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Acknowledgements:

The production of this Green Infrastructure Plan represents an important milestone in work developed over several years by a wider partnership of Hertfordshire stakeholders, guided throughout by Rob Rees, Hertfordshire County Council. This Green Infrastructure Plan was developed by Land Use Consultants with a steering group comprising of Anne Day, Ann MacDonald and Chris James (Welwyn Hatfield Borough Council), supported by Simon Odell (Hertfordshire GI Plans Contract Manager, based at Hertfordshire County Council/ Hertfordshire Biological Records Centre). In addition consultation was undertaken with a range of stakeholders as the plan developed, and their contribution is gratefully acknowledged. The views in this GI Plan are those of Land Use Consultants.

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', due to the many social and environmental benefits it offers.
- 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 Frameworkⁱ**. 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, 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 county wide strategic Green Infrastructure Plan for Hertfordshire/the Green Arc and 'local level' district Green Infrastructure Plans for seven Hertfordshire districts. The Welwyn Hatfield Borough Green Infrastructure Plan has been developed in parallel with the strategic county wide plan and with those for Watford, Dacorum, Three Rivers, Hertsmere, St Albans and East Herts. Account has also been taken of existing GI plans to ensure links across boundaries, with the strategic GI Plan also considering existing GI work in Hertfordshire, such as the North Hertfordshire District Green Infrastructure Plan.
- I.4 This is a high level Green Infrastructure Plan, which identifies further work which will be needed in future to deliver green infrastructure. Where further, more detailed green infrastructure planning work will be required, this is also referenced.
- I.5 The Green Infrastructure Plan for Welwyn Hatfield Borough:
- Provides an overview of existing green infrastructure assets within the Borough;
 - Sets out an assessment 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.

What is green infrastructure?

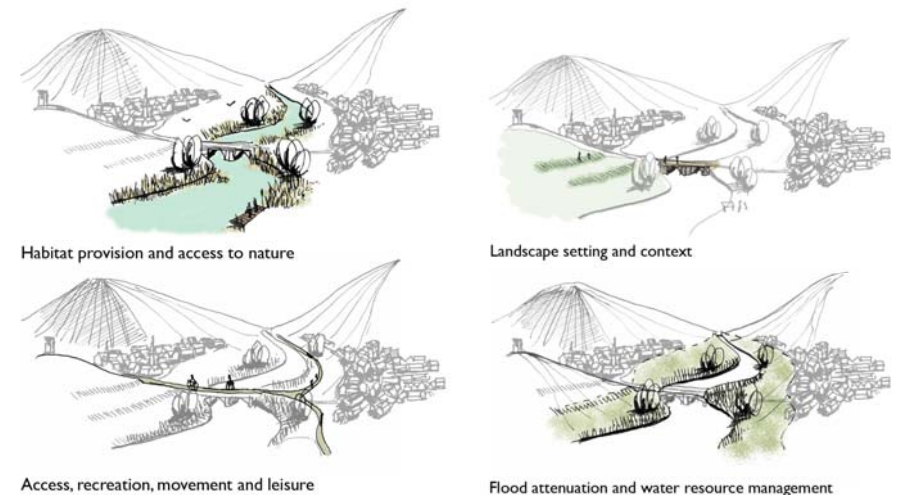
- I.6 Green infrastructure is described in **Planning Policy Statement 12: Local Spatial Planning**, as:
- a network of multi-functional greenspace...both new and existing...both rural and urban...which supports the natural and ecological processes...and is integral to the health and quality of life of sustainable communities...”*
- I.7 This definition is reinforced and expanded in **Green Infrastructure in Hertfordshire: A Framework** and in Natural England’s **Green Infrastructure Guidance**ⁱⁱ.



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

Benefits and relevance of the green infrastructure approach to Welwyn Hatfield Borough

- 1.8 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)ⁱⁱⁱ

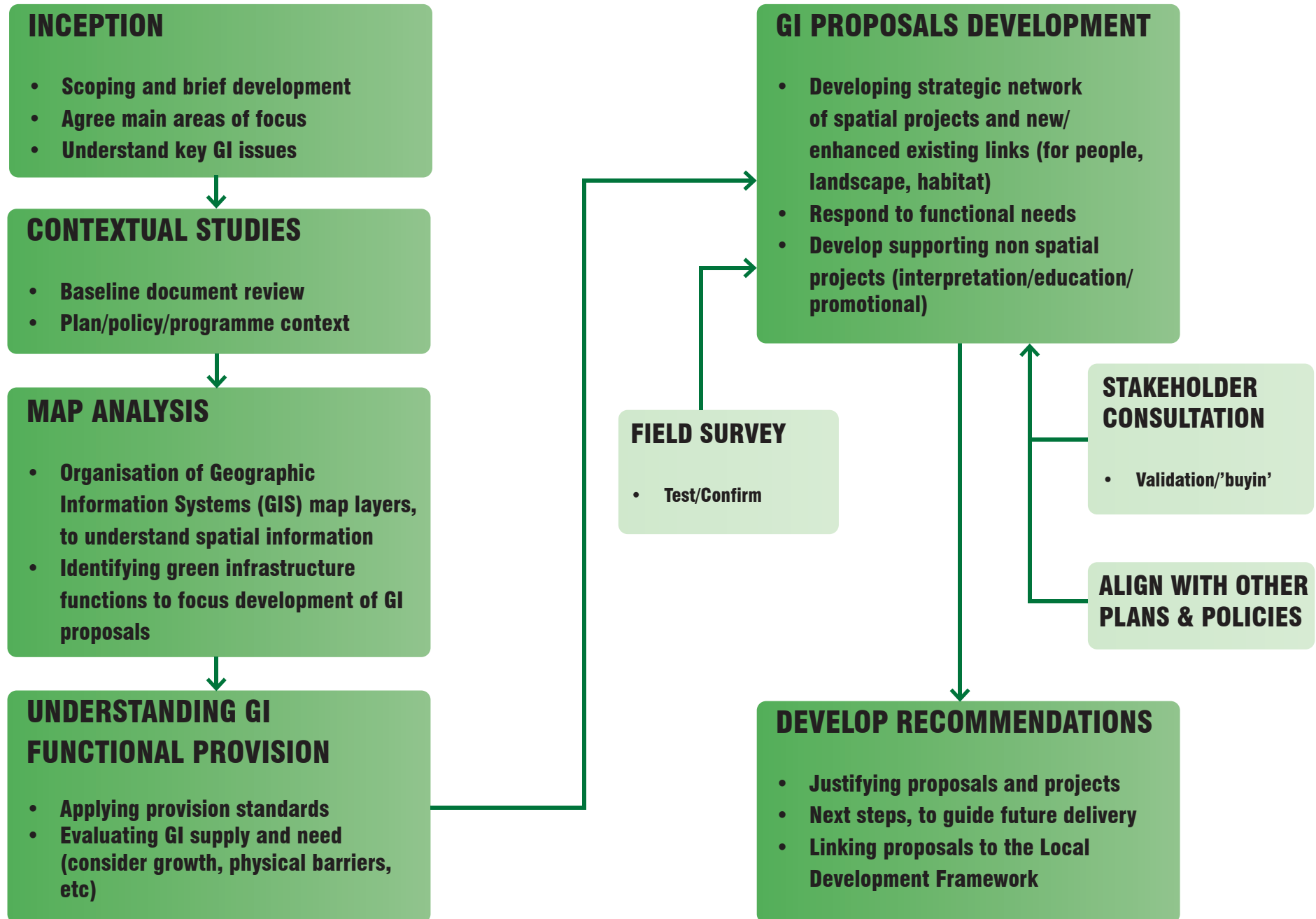
- 1.9 Welwyn Hatfield Borough has a rich green infrastructure resource centred on the principal river valleys of the Mimram, Lee and upper tributaries of the Colne, in addition to a varied mosaic of landscape and habitat types, such as heathland, ancient and plantation woodland and farmland. The Borough has a notable historic legacy relevant to green infrastructure, evident in ancient woodlands and historic parklands such as Hatfield Park, heathlands, a network of river valleys and disused rail lines. A significant urban GI heritage also exists with the Garden City at Welwyn Garden City and the New Town settlement at Hatfield, and the associated networks of planned and designed formal greenspaces.

- I.10 There is also a wide array of existing green infrastructure assets and initiatives in the Borough, such as promoted greenway routes on disused railway lines, Heartwood Forest (Woodland Trust, partly in St Albans District), and Ellenbrook Fields Country Park. In addition the southern part of the Borough is also washed over by the Watling Chase Community Forest.
- I.11 Against this must be considered issues of green infrastructure need and demand, how existing green infrastructure is performing, and the potential for green infrastructure to contribute to landscape and environmental enhancement in more fragmented, southern parts of the Borough (presence of major transport corridors and associated barriers).
- I.12 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.13 This Green Infrastructure Plan seeks to address 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.

The green infrastructure planning process – a summary

- I.14 For the purposes of this study, the green infrastructure planning process can be summarised in the diagram overleaf.

Developing the Green Infrastructure Plan: Summary of Process



STRUCTURE OF THIS GREEN INFRASTRUCTURE PLAN

I.15 The remainder of this Green Infrastructure Plan is set out as follows:

- Section 2: Green infrastructure demand and opportunity in Welwyn Hatfield Borough by function
- Section 3: Proposed green infrastructure network and projects
- Section 4: Linking the green infrastructure proposals to local spatial planning

I.16 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 summary findings from the functional analysis.



Aspects of the green infrastructure of Welwyn Hatfield: Left to right: Hatfield New Town, Alban Way and Parkway, Welwyn Garden City

2 Green infrastructure demand and opportunity in Welwyn Hatfield Borough by function

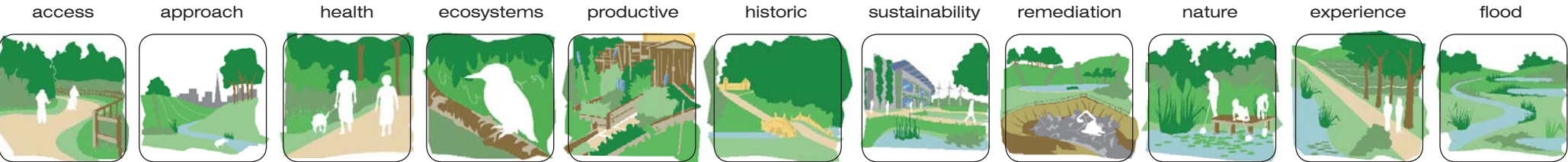
- 2.1 To evaluate existing green infrastructure opportunities, a rapid thematic document review was undertaken to understand the environmental and social context. The themes for the document review are different from but are linked to and have informed the separate analysis of GI functional provision (the 11 functions of green infrastructure defined for this study are set out and mapped at the end of this section).
- 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 (including local food production – orchards and allotments) and larger scale agriculture – land in Higher Level Stewardship
 - Land remediation (issues concerning mineral sites and restoration, derelict and previously developed land)
 - Nature conservation

- 2.3 Key messages from each theme which have informed the planning of the GI network are shown in **Appendix 2**, as are documents reviewed for each theme.

GREEN INFRASTRUCTURE FUNCTIONS

- 2.4 Key to understanding green infrastructure and to justifying green infrastructure proposals is consideration of the functions green infrastructure can and needs to perform (that is, attributes of green infrastructure), whether for people and communities, wildlife or ecosystems in general.
- 2.5 The eleven functions which have been identified for this 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 Welwyn Hatfield Borough. When considered alongside main settlements, an indication of GI demand is also provided. Consideration has been given to shortfalls and potential need in the context of future growth as identified in the emerging Core Strategy, where these areas are known. The functions have also been used to develop proposals in response to identified need and to evaluate proposals, for prioritisation and future implementation by others.

Green infrastructure functions

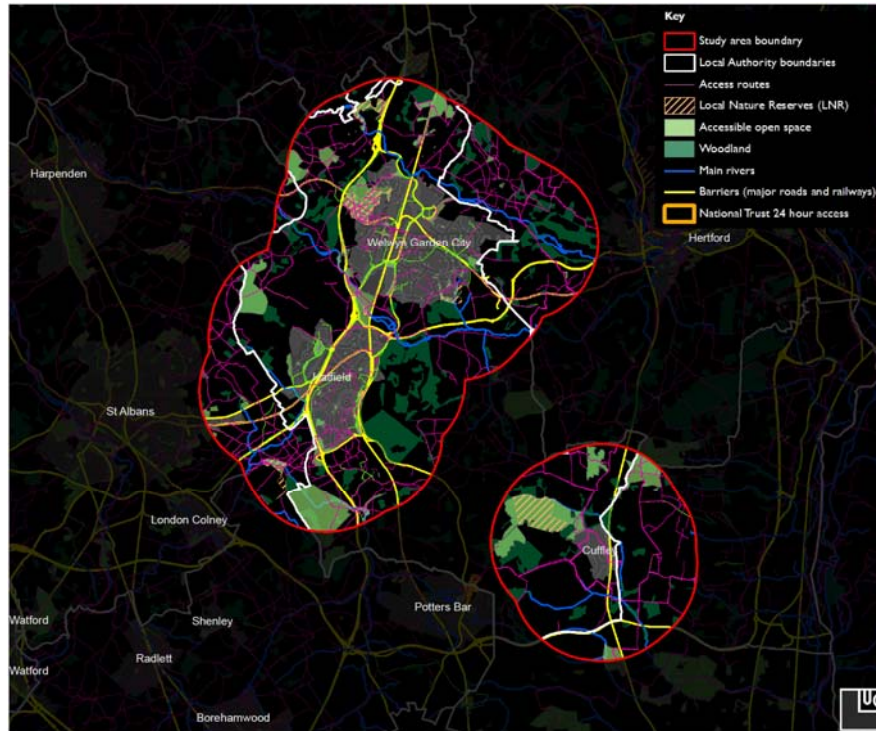


- 2.7 The analysis methodology for each function (including provision standards applied) is set out at **Appendix 3**, together with a summary of the main issues with regard to deficits of provision and potential need and opportunity. Supporting mapping showing asset distribution and which has been used to generate visual and statistical analysis, and to understand nature of provision and shortfalls, is shown in relation to each function, below.

THE FUNCTIONS – SUMMARY OF NEED, SUPPLY AND OPPORTUNITY IN WELWYN HATFIELD BOROUGH

- 2.8 The findings from each functional analysis are summarised below. The Geographic Information Systems (GIS) datasets used in the mapping for each function are presented in the maps in the remainder of this section.

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. These issues are both relevant to some degree in parts of Welwyn Hatfield Borough.

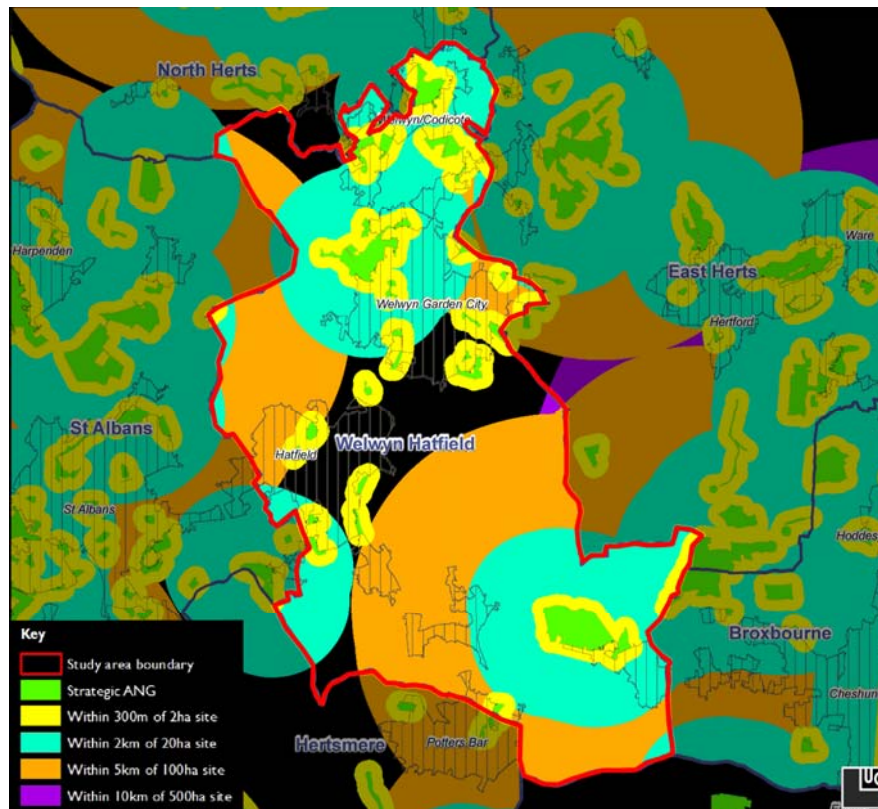
2.10 Applying the Natural England Accessible Natural Greenspace (ANGSt) standards shows that whilst there are 2200ha of accessible open space in the Borough, accessible natural greenspace (ANG) covers only 468 ha or 3.6% of the Borough. In 25% of the Borough, none of the ANGSt standards are met, while only 0.8% of the Borough meets all ANGSt standards. There is a network of cycle routes but no national (Sustrans) routes running through the Borough. The A1 (M) is a barrier to sustainable access to the countryside from Welwyn Garden City and Hatfield, and the railway line acts as a barrier to the east of Cuffley. A key opportunity is therefore to enhance links to the countryside from Welwyn Garden City and Hatfield to potential strategic GI sites such as Panshanger Park (when restoration is complete), providing ANG provision for both Welwyn Hatfield Borough and East Herts District Council. There is also potential to enhance path and cycle access to the natural assets around the Garden City, particularly by addressing barriers to movement such as the A1 (M1) and the A414, or through provision of alternative access links as shown on **Figure 3.1** at page 35.

2.11 Key natural assets include the River Mimram, and registered Parks and Gardens including Tewin Water to the north east, the Lee Valley to the west and south, and Sherrards Park Wood and Bocket Park to the west. Panshanger Park, within East Herts District, abuts the eastern boundary of the Borough. Panshanger Park and associated mineral workings are currently being restored.

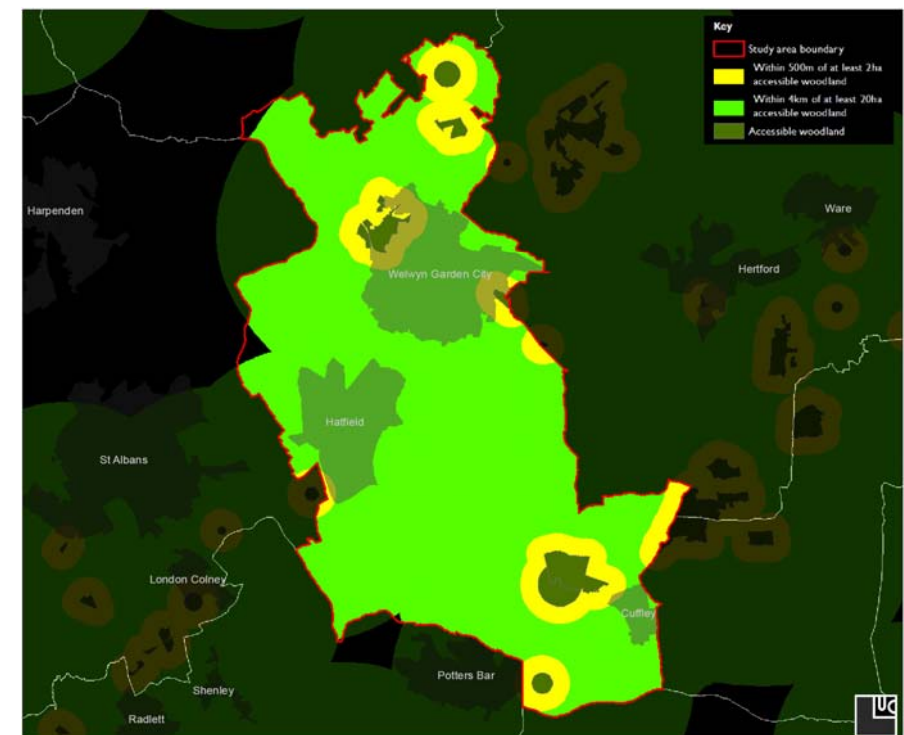
The site will provide a future greenspace opportunity for residents of the Borough (see also East Herts GI Plan).

- 2.12 Access to freely available natural and semi-natural space is more restricted in Hatfield than in other parts of the Borough. There is also significant deficiency in lateral links and access routes. Whilst there are notable semi natural assets such as Hatfield Park, this is in private hands, with generally limited (paid) access to the majority of visitors. There is therefore a need for enhanced links to the wider countryside and to primary GI assets such as Heartwood, Ellenbrook Fields Country Park and the Lee Valley, as well as to the countryside within the Watling Chase Community Forest (WCCF) area. Potential links are shown on **Figure 3.1**.
- 2.13 Sufficient measures to overcome barriers and improve accessibility to parks and gardens (Assessment of Open Space, Outdoor Sport and Recreation; Page 79) will need to be implemented to provide access for the increased population that would result from new development.
- 2.14 Woolmer Green, Oaklands and Mardley Heath, south Cuffley, west Brookmans Park and west Little Heath do not have access to an amenity green space within 400m (Assessment of Open Space, Outdoor Sport and Recreation; Page 84). Any new development in these locations would need to ensure that there is adequate green infrastructure to meet the needs of the new population.

- 2.15 Application of the Woodland Trust Accessible Woodland Standards shows that the Borough performs well in terms of accessible woodland provision. The great majority of the Borough lies within 4km of a 20 hectare woodland site, as shown on page 14.

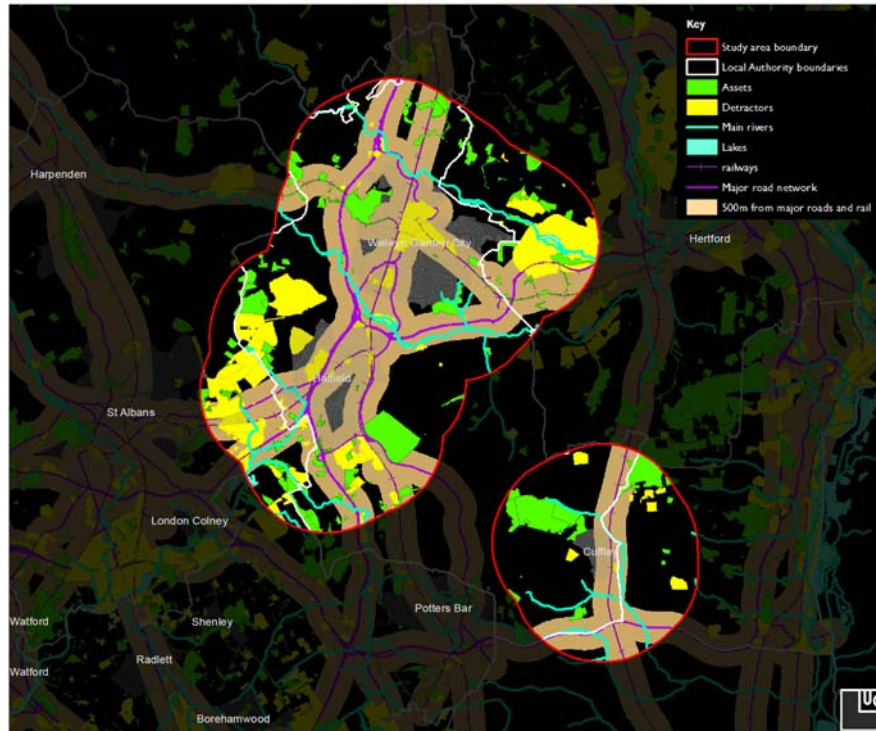


Accessible Natural Greenspace (ANG) provision, applying the Natural England ANGSt standards (source: Natural England^{iv})



Accessible Woodland Provision (Woodland Trust standard)

Prestige on settlement approach corridors



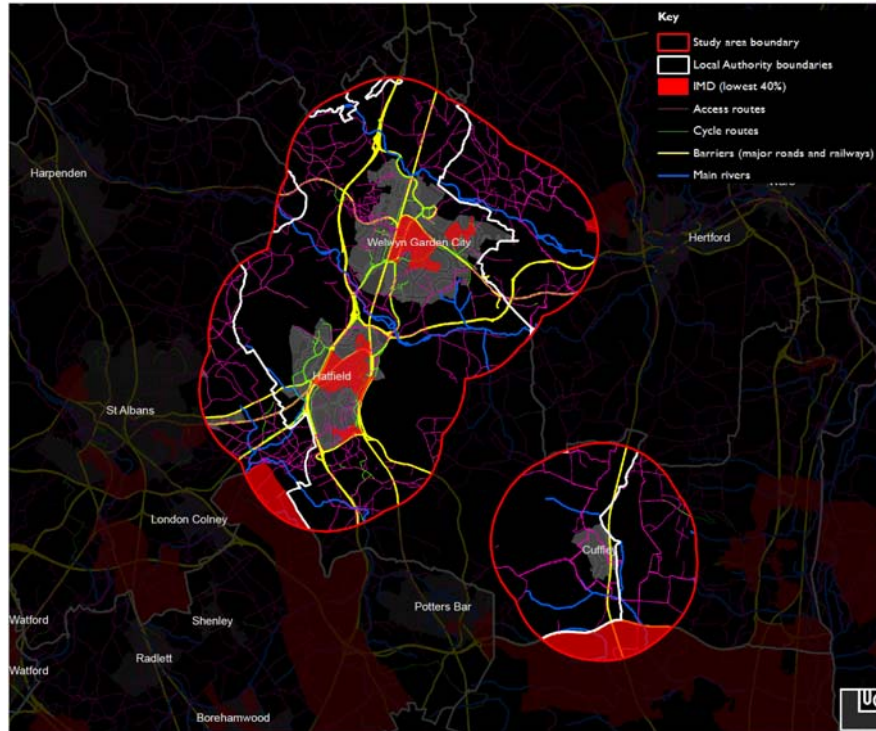
- 2.16 The concept of prestige, that is, the experience and perception of settlement approaches, is a key part of the green infrastructure approach and for positive planning of settlement fringes. Within the context of the principal transport corridors on the Welwyn Hatfield main settlement approaches, this functional analysis has referred

to spatial mapping of assets and detractors produced for Hertfordshire^v, as well as consideration of landscape condition and quality in the Hertfordshire Landscape Character Assessment^{vi}. Given the time at which baseline data was drawn up (e.g. assets and detractors mapping), 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.

- 2.17 Within the main settlement approaches, key issues revealed by the analysis are the need for more sensitive integration of road corridors (attenuation) in relation to GI assets along the A1(M) such as Sherrardspark Wood, Mardley Heath Nature Reserve and Bocket Park. On the south eastern edge of Welwyn Garden City and the A414 corridor, there are notable opportunities to restore and enhance aspects of historic landscape character to improve settlement approach. For example the ongoing high quality restoration work at Panshanger Park could form a key node on a 'green necklace' of landscape and habitat elements on the A414, as well as opportunities for associated woodland linkage along the A414, to improve the eastern approach to the Garden City, and help maintain the sense of separation with Hertford.
- 2.18 At Hatfield, key issues again relate to severance resulting from the A1 (M) and the need to enhance assets which are

often located in close proximity to detracting features e.g. at Coopers Green/Symondshyde, to create landscape and habitat connectivity and resilience. Native woodland planting in this area could also create physical links to Heartwood Forest and assist with delivering planting targets for the DeHavilland Plain character area as set out in the Watling Chase Community Forest (WCCF) Plan^{vii}. Also to enhance the relatively poor settlement gateway to South Hatfield (screen planting to transport corridors/business parks and campus buildings between Hatfield and Welham Green). The woodland assets around and to the south of Hatfield Park could be linked and enhanced to tie these in to the South Hertfordshire Woodlands network. This could also link to woodland connectivity around Cuffley and to provide attenuation in relation to the M25 corridor. Greater levels of woodland planting to the A1 (M) could provide attenuation and connectivity and enhance the perceptual settlement setting of Hatfield. These principles are shown in the proposed Woodland Enhancement Zone on **Figure 3.1**.

Health

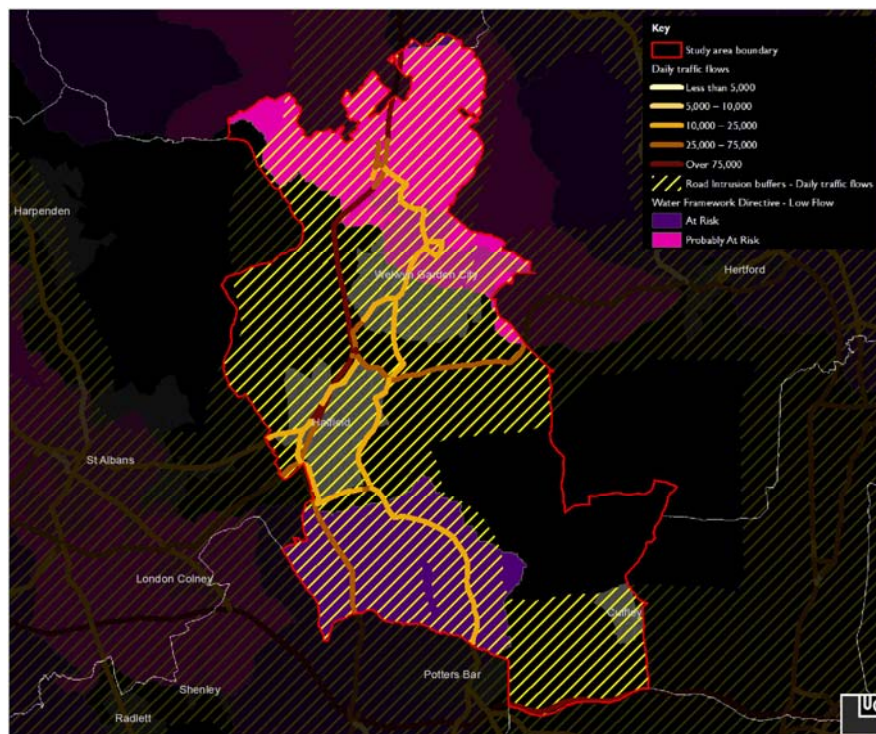


- 2.19 Green infrastructure provision is linked to the health agenda, in terms of providing healthy transport and access networks with the potential to address deprivation issues. In this analysis, access links and proximity to areas of deprivation were mapped. Main road corridors were also considered to understand where there were linked issues

- 2.20 Key issues in terms of health deprivation are in the central parts of Welwyn Garden City and Hatfield (town centre and South Hatfield). In Welwyn Garden City, open space deficiencies have been identified in Haldens ward, and this area should be a priority for improving quality and access to open space, and access to healthy transport and rights of way. The IMD also highlights significant more general social deprivation issues at Peartree and Panshanger Wards, indicating a need for enhanced green access links in these locations (see **Figure 3.1**).
- 2.21 With reference to the IMD, Hatfield experiences significant health deprivation in Central Ward, with moderate health deprivation in immediately adjoining wards. There is therefore a need for enhanced and more legible links out from the town centre, including to strategic routes such as the Alban Way, providing improved wider countryside access.
- 2.22 In addition, areas to target for tree planting in relation to main road corridors (air quality enhancement, and considering potential future settlement edge growth) are shown on **Figure 3.1**.
- 2.23 A number of growth locations identified in Welwyn Hatfield Council's Core Strategy Issues and Options Consultation document are located near main transport corridors. If selected for development, mitigation through

structural tree planting/woodland buffer creation will be required to address issues of air quality and noise.

Sound ecosystems



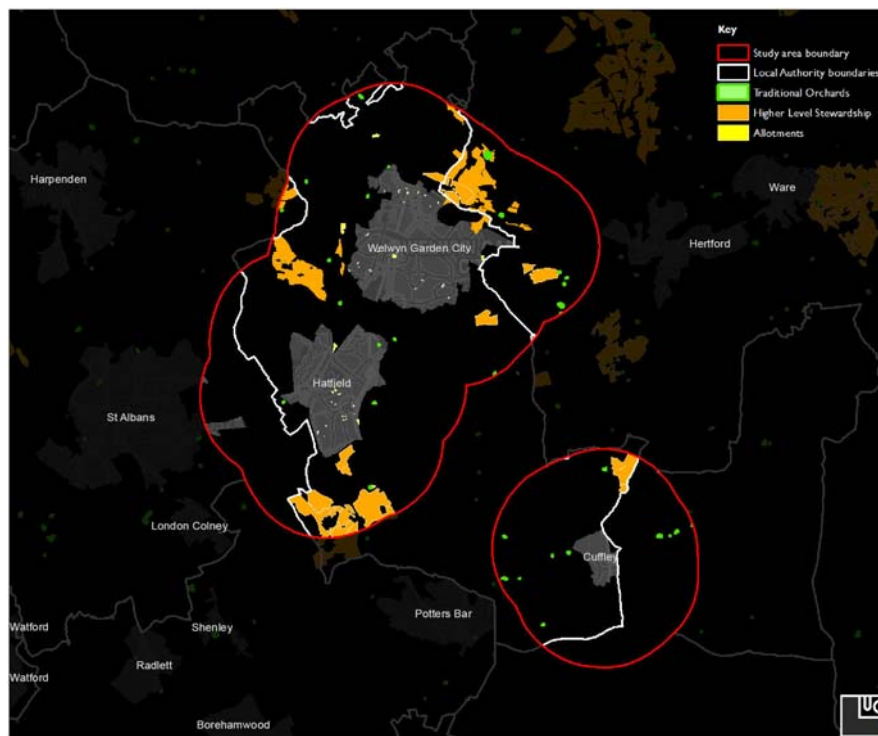
- 2.24 Sound ecosystems are a key part of a green infrastructure network, and proposals should seek to contribute to positive and proactive management of these for community benefit. The focus for this analysis has been the key services of water and air quality.

- 2.25 Interpreting the Water Framework Directive (WFD) data produced by the Environment Agency for river catchments, the riverine environment of the Mimram and the Colne (some of the associated brooks and tributaries of the Colne fall within the Borough) are identified as being of poor ecological status and vulnerable to abstraction and low flow pressures. The Lee however is not identified as such, although both the Mimram and the Colne also have issues in relation to spread of invasive species, indicating a need for positive landscape management. In the case of the Mimram, this issue is extensive, although invasive species only have very localised occurrence in the Lee. In addition, other minor brooks such as the Cuffley Brook and Turkey Brook are affected by low flow and abstraction pressures.

- 2.26 Reinstatement of native wetland and riparian river corridors would help restore the ecological quality of the rivers (focus for a river valleys project – **project 3** at section 3).
- 2.27 In terms of air quality and principal road corridors, whilst large parts of the main transport corridors are partly wooded (A1 [M], A414 & M25), there is a need for additional woodland and hedgerow belts to reconnect existing woodland blocks and improve air quality. Considered in parallel with the ‘prestige’ analysis, key areas of foci are at South Hatfield (A1[M]), and also re linking of existing woodlands in transport corridors such the woodland sites along the A1(M) to the north west of the

Garden City and the eastern approach to Welwyn Garden City on the A414. These are shown on **Figure 3.1**.

Productive green environments



- 2.28 Consideration of the wider farmland landscape in Welwyn Hatfield Borough reveals that only a relatively small proportion (289.94 ha) of the Borough's landscape is managed through environmental stewardship. These areas

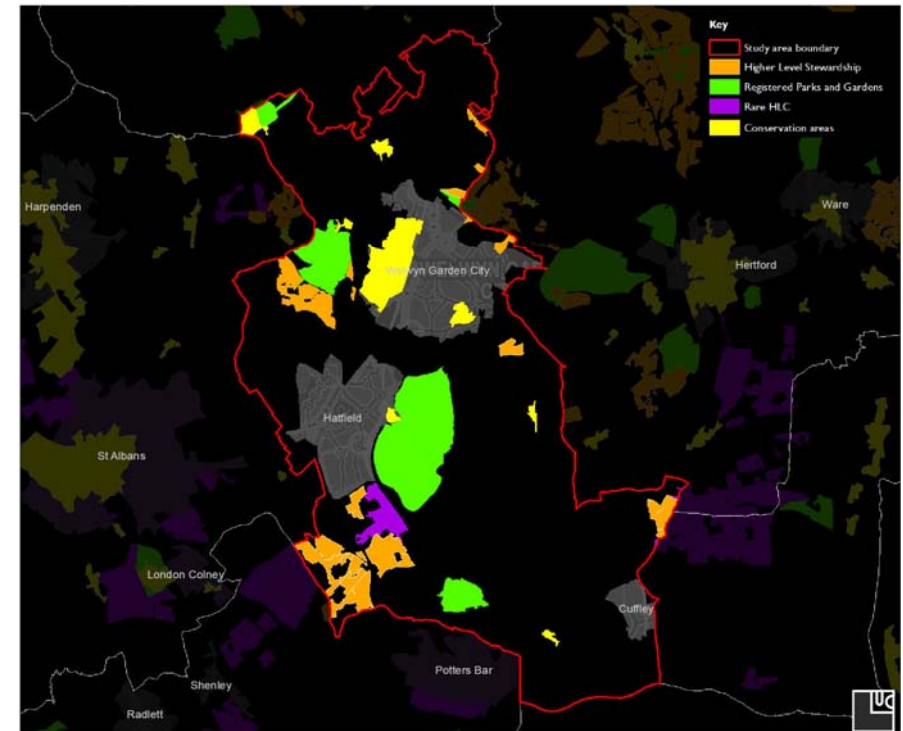
are notably parts of the estate at Tewin Water and associated farmland in the Mimram Valley north of the Garden City, the Mimmshall Woods and Walsingham Woods Complex to the south of Hatfield, and land at Lemsford around Brocket Park. As such, there is an opportunity to enhance HLS uptake to improve functionality of farmland, particularly where this could deliver enhanced landscape connectivity or interpretation of historic landscape assets (linked to 'Conserving historic landscape character' analysis).

- 2.29 Considering productive landscapes in the urban/local context, there is uneven allotment distribution across the Borough with Welwyn North, Northaw and Brookmans Park wards having no provision. Accessibility, in terms of residents living within 1 km of an allotment, is restricted in the south of the Borough, with no residents of Cuffley, Northaw, Brookmans Park and Little Heath wards having an allotment within 1 km. Accessibility is also low in Oaklands and Mardley Heath wards. Many sites had waiting lists based on the Open Space Strategy, 2009, although three additional allotment sites have been provided since the 2009 audit in order to meet demand. These are Hawbush Road, Welwyn, Marley Road, Welwyn Garden City (Haldens Ward) and St Audreys Green, Welwyn Garden City (Peartree Ward). The need for locally productive landscapes revealed by the analysis e.g. allotments, community gardens/orchards, forms the focus for an urban greening project at section 3 (**Project 1** – this project focuses on the larger settlements, although the

principles within it could be equally applicable to all the Borough's settlements).

- 2.30 The significant woodland resource in the Borough presents an opportunity to provide new woodfuel resources, to meet the energy needs of existing high density heat demand areas identified in the Low and Zero Carbon Study and areas targeted for high density new development. Also as a linked benefit to enhance woodland management for landscape character and biodiversity benefit.

Conserving historic landscape character



- 2.31 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

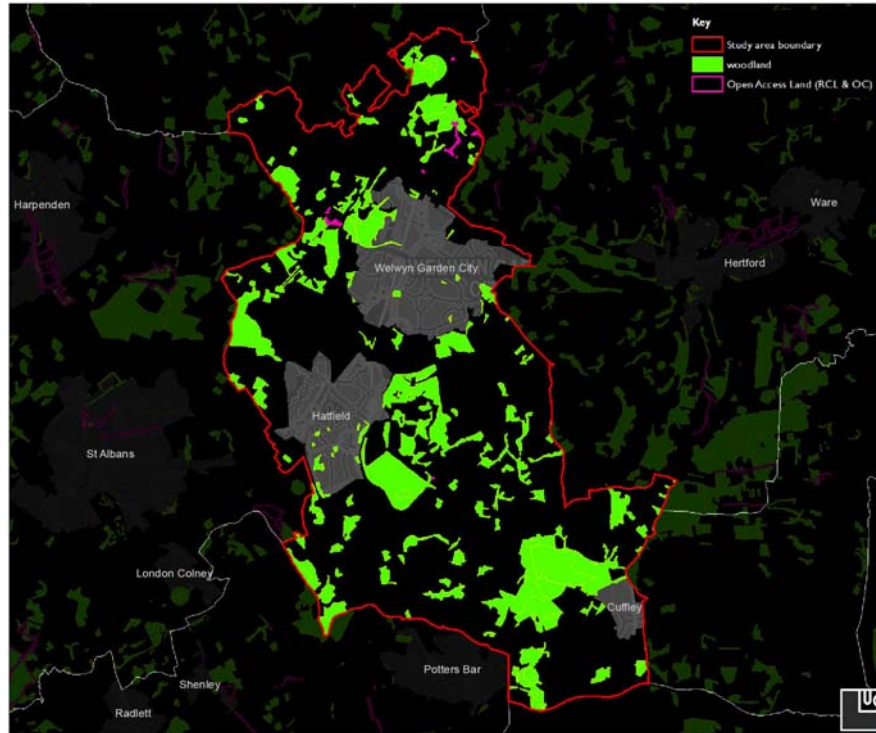
identifying aspects of historic legacy to be conserved as part of the GI network.

- 2.32 Interpreting the Hertfordshire Historic Landscape Characterisation (HLC) reveals a relatively small distribution of rare historic landscape types in the Borough. These are areas of co axial enclosures (early, sinuous field boundary enclosures), located south of Hatfield and south west of Hatfield Park. They represent around 0.87% of the Borough area.
- 2.33 In addition the Borough is characterised by a rich designated and non designated heritage GI resource. Key designated GI assets are the registered parks and gardens at Hatfield Park, Gobions, Tewin Water, Brocket Hall and Ayot. This often accords protection to other heritage features within the boundaries e.g. a notable distribution of ancient woodland within the various historic deer parks which make up Hatfield Park. In addition there is an extensive concentration of smaller, unregistered parklands in the wooded southern and eastern parts of the Borough.
- 2.34 However few of these designated landscapes enjoy other formalised management arrangements for conservation such as agri environment schemes. Only Tewin Water benefits from Higher Level Stewardship (HLS), although the farmland fringing Brocket Park is in stewardship. There may be a case for HLS agreements on registered landscapes to enhance accessibility, conservation and interpretation of historic resources. This could also apply to sites where management and resourcing has historically

been an issue (e.g. Gobions Open Space, now looked after by Herts and Middlesex Wildlife Trust).

- 2.35 Few ancient woodland sites are formally protected through HLS, statutory nature conservation designation or by forming part of registered landscape boundaries. They are likely to be vulnerable to fragmentation. A key opportunity is to link wooded parklands in the south of the Borough to key wooded sites wooded sites such as Northaw Great Wood and the Mymmshall Wood complex, creating woodland features of comparable association to link historic features and better set the parklands in context (opportunity for enhanced uptake of HLS and also Woodland Grant Schemes.
- 2.36 Aspects of the rich urban green infrastructure heritage are protected through Conservation Area designations e.g. parts of the Garden City. In Hatfield, greenspaces are identified on the Proposals Map and are protected by policies in the Welwyn Hatfield District Plan (2005). The Welwyn Garden City Conservation Area has a formal estate management arrangement although there is no formal tree planting and replacement strategy. This arrangement does not protect the open spaces in the Garden City, which are subject to the same District Plan policy protection as those in Hatfield. Whilst the greenspaces within Hatfield New Town are not protected through heritage designation they are nonetheless important aspects of urban GI heritage in the Borough (they form foci for **project I** in section 3).

Sustainability and responding to climate change



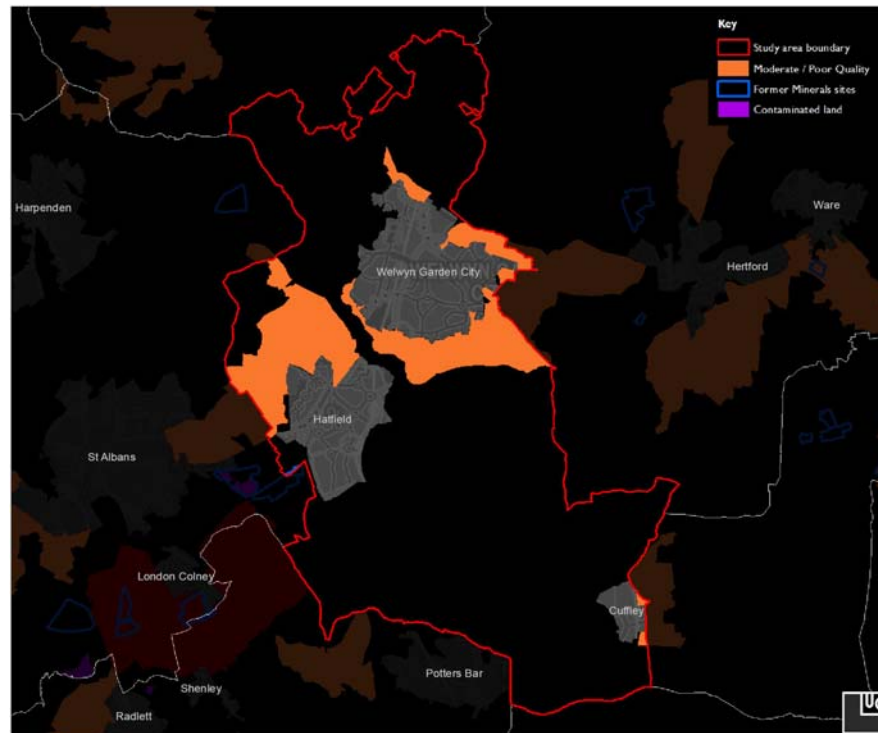
- 2.37 Urban greening, shading and cooling is a key part of community focussed green infrastructure. This analysis has therefore considered only tree cover. There are however clear links with other functions such as flood attenuation and water management, as part of a climate change adapted response to spatial planning.

- 2.38 Given the character and origin of the largest settlements (Welwyn Garden City and Hatfield New Town), relatively widespread tree cover is a characteristic of settlement form. This is less the case with smaller traditional settlements, of higher density, traditional layout e.g. Welwyn, Disgwell and Old Hatfield. In the Garden City, principal areas with a relative absence of tree cover are around the industrial estate at Peartree Ward, and along the A1 (M). Tree coverage in private land (residential properties and private gardens) is potentially one of the most significant GI assets in Welwyn Hatfield. Tree cover in the public realm is limited to the boundaries of recreational spaces and street trees, although in the case of Welwyn Garden City and given the extent of the principal open spaces, tree stock is substantial. The same applies to a degree in Hatfield with mature field trees retained within subsequent 1940s and 1950s open spaces and streetscape. Tree stock in the two towns is often mature/over mature, without a formalised plan for replacement.

- 2.39 Issues and opportunities relate mainly to conserving what exists and managing this appropriately and ensuring new tree planting in relation to redevelopment sites – use of the Town and Country Planning Association (TCPA) standards for enhanced urban tree planting of 80 street trees (of appropriately robust grade) per linear km. See also urban greening project – GI Plan **project 1** – in section 3. Areas of potential large scale tree and woodland linkage beyond the settlements, which could also

contribute to the objectives of the Watling Chase Community Forest Partnership, which operates in parts of the Borough, are also shown on **Figure 3.1**.

Land remediation

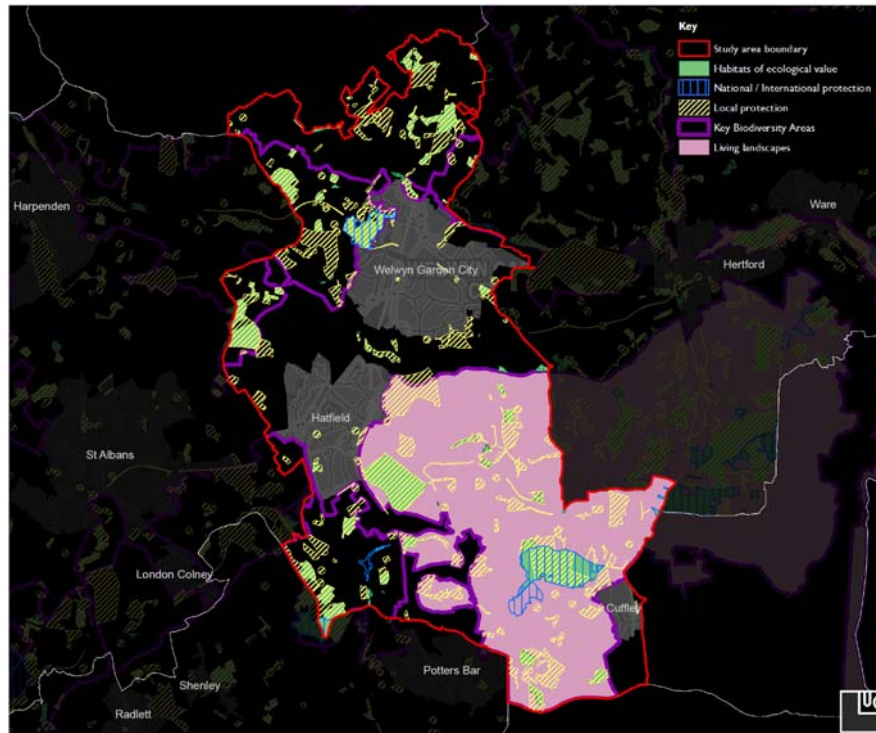


2.40 Green infrastructure planning and design can play a key part in delivering enhancement and restoration of

landscape character and quality, and in enhancing areas of degraded landscape (e.g. mineral and re restoration sites).

2.41 Only a small part of a re restoration site lies within the Borough, straddling the boundary with St Albans District. As such, the primary focus has been landscape character areas identified as being of lower quality in the Hertfordshire LCA. These are the DeHavilland Plain and the Welwyn Fringes landscape character areas, which have formed the focus for a number of GI action zones targeted towards landscape enhancement, as shown on **Figure 3.1** (primarily concerned with improving connectivity – Farmland Conservation and Enhancement Zone, Woodland Enhancement Zone for example). The objective of these is to contribute to enhancing landscape character and quality, and they could also be complementary to other initiatives such as the WCCF (linking Symondshyde to Ellenbrook Fields Country Park and Heartwood Forest).

Nature conservation



- 2.42 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) and Living Landscapes, in

- 2.43 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 A1(M) and the A414. Other important issues identified by the analysis are that habitats are fragmented in distribution and isolated in nature, corresponding mainly to the two larger urban areas of Welwyn Garden City and Hatfield themselves. With reference to the map on the left, there is a notable distribution of habitat, primarily in the form of ancient and broadleaf woodlands (part of the South Herts Woodlands Key Biodiversity Area and Living Landscape) and the river valleys (including the Mimram Valley KBA), as well as heathland remnants. However the habitat network is often fragmented (lack of linear corridors and of 'stepping stones' for nature). These issues have formed foci for a number of action zones whose aim is to secure landscape and biodiversity connectivity, at **Figure 3.1** (these include zones for woodland, farmland and heathland/grassland creation).

- 2.44 Chalk streams and rivers are identified as a priority habitat in the EU Habitats Directive. Whilst the Borough includes notable examples of chalk streams, with the Mimram one of the county's most important unspoilt (if vulnerable) chalk streams, loss of chalk river characteristic quality is also a key issue relevant to biodiversity. This results from

low water levels in the main rivers due to rainfall fluctuation, over abstraction (particularly in the Mimram), drainage and flood defence.

- 2.45 This is likely to be exacerbated depending on future direction of growth e.g. if considered around Welwyn Garden City, this could create increased riverine pinch points in the Mimram.
- 2.46 Visitor pressure, in terms of accessing main sites of interest by car (Northaw Great Wood, and in future, Heartwood Forest) is also a key issue in terms of protecting the wider nature conservation resource, and as part of the focus of efforts to create a green travel network to relieve such pressures (see the network on **Figure 3.1**).
- 2.47 The Biodiversity Action Plan identifies opportunities in relation to heathland and grassland creation e.g. Broxbourne-Northaw-Hatfield Park complex, the historic commons at Northaw and Cuffley, and acid grassland restoration and enhancement to other isolated sites such as Mardley Heath and Panshanger Park. In light of recent initiatives such as Heartwood Forest and in proximity to other heathland sites in the adjacent St Albans District (Nomansland Common), heathland connectivity here/at Symondshyde and in relation to eventual restoration of mineral workings at Coopers Green, also presents an opportunity (**Figure 3.1**).

Experience

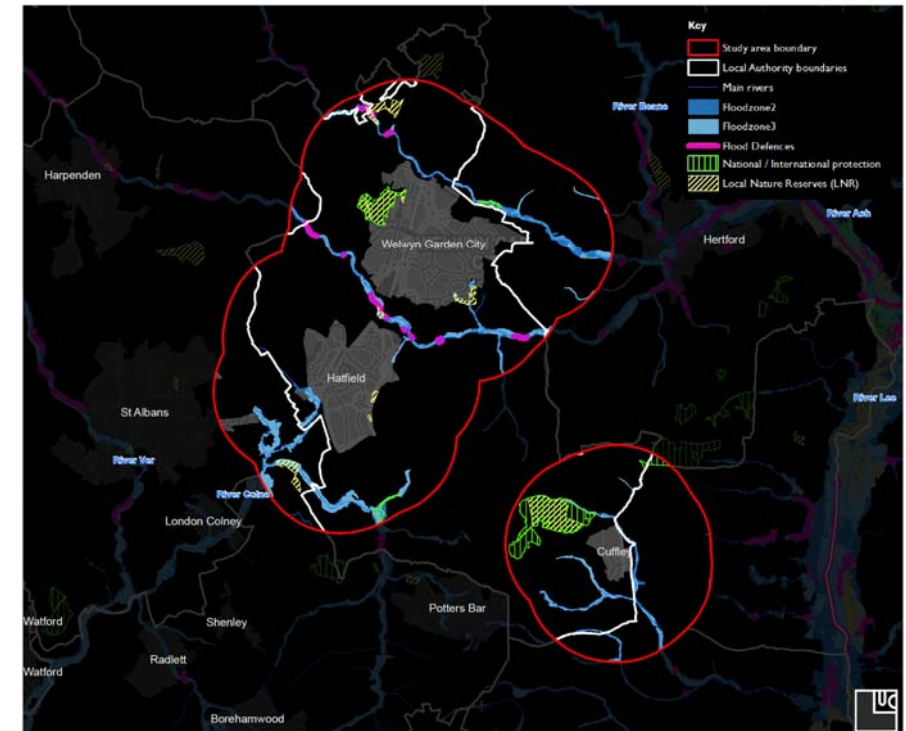


- 2.48 Experiential and perceptual aspects of landscape are integral parts of place led green infrastructure planning. For this analysis, the three rarest regional landscape types were identified and their distribution in the Borough mapped. Regional landscape types within the second rarity class appear in the Borough.

2.49 Mapping the distribution of regionally rare landscape types in Welwyn Hatfield shows a small distribution of regionally rare landscape types in the Borough, with around 3.46% of the Borough covered by the Wooded Chalk Valleys landscape type. This represents some 2.25% of the total regional distribution of the landscape type. Whilst the regional landscape type is linked to the distinctive valley environment of the Mimram Valley system, its occurrence within the Borough is something of an anomaly compared to the character of its other occurrences in the region. For example, the regional landscape type where it appears in the Borough is fragmented and divided by large scale transport corridors such as the A1(M), with the experience of the landscape type (as distinct from other parts of the valley system, such as the Mimram) impaired by intrusion and severance. Essentially the landscape type is a relic, and of largely settled character, albeit associated in part with the fine chalk stream environment of the Mimram.

2.50 Efforts should therefore be directed towards conserving and enhancing what remains as part of the local green infrastructure network, as well as seeking to enhance linkages to the Mimram Valley, which has variable accessibility (see **project 3** at section 3).

Flood attenuation and water management



2.51 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.

2.52 By main settlement, the analysis has identified the following issues. The River Lee is heavily modified north of Hatfield, where numerous flood defences are in place. This large

flood zone is a prime GI asset which runs between both Hatfield and Welwyn Garden City (including key assets such as Stanborough Lakes and the Broadwater at Hatfield Park), as is Hatfield Park which is utilised as an amenity area that forms part of the flood zone. Capturing run off from the A1(M) and future development surface water could help alleviate pressures relating to urban extensions and could aid in enhancing biodiversity in the area (e.g. an enhanced wetland environment, avoiding creation of pinch points due to any future growth).

- 2.53 At Welwyn Garden City, the flood zone on the northern boundary of the town along the River Mimram is defined by large areas of semi natural open space including Digswell Lake. As with the Lee at Hatfield above, main issues relate to avoidance of settlement pinch points, conserving and enhancing space for water. Water and flood storage in times of drought is therefore a key GI priority for potential growth locations in Welwyn Hatfield.
- 2.54 Utilisation of the flood zones between Hatfield and Welwyn Garden City and smaller outlying villages to the north as multifunctional greenspace should be a priority for the settlements. Expansion of wetland habitat and features within the river catchments and flood zones to create more flexible and adaptive response to managing flood risk. Also the creation of soft and flexible solutions to flood defences ('spaces for water') and around pinch points reflecting landscape character of the valley landscapes, is often more appropriate than engineered

solutions. See Wetland Habitat Zone at **Figure 3.1** and **project 3** at section 3.

- 2.55 At Cuffley, two tributaries which flow into the River Lee are located on either side of the settlement. As such, key issues relate to conservation of the functionality of the flood zone in the settlement envelope and retaining space for water.

3 Proposed green infrastructure network and projects

GREEN INFRASTRUCTURE VISION

- 3.1 The green infrastructure vision for Welwyn Hatfield Borough is:

To conserve and enhance

- The rich network of biodiversity and landscape assets including the river valleys, heathlands and grassland, ancient woodlands and parkland estates, conserving associated habit corridors for species movement;
- The wetland network associated with the river valleys – Lee and Mimram, Colne tributaries;
- The sense of separation and settlement setting created by the river valley network – Hatfield and Welwyn Garden City, as well as outlying villages such as Welwyn and Digswell;
- The promoted greenway network (disused railway line routes) through carefully designed, improved signage, promotion, awareness raising and interpretation of these as key connectors for destinations in the GI network;
- The rich designed landscape heritage, not only Hatfield Park, but also smaller sites. Enhancing setting, context and landscape links – connecting ancient woodlands, and

seeking to provide enhanced interpretation of sites such as Gobions.

To improve and create

- Enhanced functionality and legibility of greenspaces whilst respecting historic character, creating improved accessibility to greenspace in Hatfield in particular;
- ‘Space for water’ – maximising the riverine environments, ensuring that they are robust and sustainable for the future;
- Better access to wetland networks such as the Mimram, recognising the value of such sites as part of wider, cross boundary GI network;
- Managed access – an appropriate balance between recreational and nature conservation interests;
- Better links for people, linking to assets such as the Ayot Greenway, Sherrardspark Woods, Heartwood Forest and Ellenbrook Fields Country Park;
- Enhanced settlement setting and landscape edges in relation to future development, using historic landscape features as a template for this;

To recognise and value

- 20th Century urban green infrastructure in Welwyn Garden City and Hatfield New Town;
- Urban greening and the possibilities it provides for enhancement of functionality of community greenspace;

- Community involvement in and ownership of local greenspaces (linked to Transition Towns aspirations in Welwyn Garden City, educating and raising awareness among the community of the value of their green infrastructure at all scales, and communicating benefits of positive management changes effectively;
- The role of local groups and organisations including the Parish councils, in bringing GI forward;
- ‘Soft’, low cost approaches to delivering GI, such as changes in management (with appropriate communication to community groups).

3.2 The vision is necessarily aspirational and long term, since it will need to consider GI significantly beyond the Local Development Framework’s lifespan. 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 authorities’ 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 action zones and 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 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**.

Green infrastructure action zones

3.5 Several ‘action zones’ have been defined for the wider green infrastructure network. Shown on **Figure 3.1**, these are:

- **Wetland Habitat Zone:** Restoring and enhancing the quality of the river valley network and associated wetland habitats, to create landscape links to adjacent and nearby authorities (e.g. St Albans, Hertsmere, and East Herts). The zone and component projects can also contribute to delivery of Natural England’s Thames and Tributaries Integrated Biodiversity Delivery Area (IBDA).
- **Woodland Enhancement Zone:** linking woodland habitats and restoring landscapes/defining the network of

valleys including regionally rare Wooded Chalk Valleys. This includes enhancement to the setting of historic GI assets such as Symondshyde Wood – buffering and protecting such sites, through creating woodland linkages.

- **Chalk Valleys Conservation Zone:** conserving key GI assets as part of the movement, habitat and physical landscape network, also securing links to the river valley network and associated Wetland Habitat Zone.
- **Farmland Conservation and Enhancement Zone:** Conserving and reinforcing the rural green infrastructure network, securing landscape and habitat connectivity. Also encouragement of agri environment schemes take up (at both entry and higher level) to deliver landscape and GI improvements across the farmland landscapes of the Borough.
- **Heathland and Grassland Creation Zone:** Farmland is an intrinsic part of the landscape of Welwyn Hatfield Borough and is woven into its fabric. Whilst it is important that it is recognised and retained, projects should also be identified for heathland and grassland restoration to enhance landscape character and interpret aspects of historic character. The zone seeks to identify areas where enhanced heathland linkage/corridors could be considered, to reduce fragmentation of existing assets.
- **Landscape restoration zone:** Similar in intention to the Farmland Conservation and Enhancement Zone

described above, but with greater emphasis on securing and restoring greater landscape connectivity where this has become fragmented and eroded (responding to landscape condition and quality issues identified in the Landscape Character Assessment). To the west of Hatfield in particular, this is linked to ongoing and future mineral workings and consideration of new landscape character e.g. wetlands (in the longer term and subject to phasing).

- 3.6 These zones are colour coded on **Figure 3.1**. They indicate broad areas in which future small scale projects could contribute to the objectives of the zone. They do not relate to large scale or 'blanket' proposals. For example, the Woodland Enhancement Zone does not indicate mass woodland planting, rather an area where woodland enhancement and linkage, of even small scale, is desirable/meets a range of functional criteria, and should therefore be supported.

Green infrastructure types in Welwyn Hatfield Borough

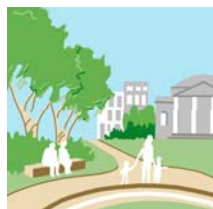
- 3.7 A series of green infrastructure types have been defined to organise proposed green infrastructure projects in Welwyn Hatfield Borough, these are:



Urban greenways



Urban blue links



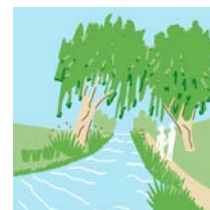
Urban wildspace



Peri urban wildspace



Rural wildspace



Rural blue links

Proposed green infrastructure projects

- 3.8 Working with Welwyn Hatfield Borough 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 Welwyn Hatfield Borough 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 GI projects (shown on **Figure 3.1**), are as follows:
- **1. Urban Greening in Welwyn Garden City and Hatfield**
 - **2. Post industrial heritage: Promoting the former rail routes**
 - **3. River Valleys Project – Mimram and Lee**
 - **4. Woodland and Heathland/Grassland landscape links**
- 3.10 These are described in the tables at the end of this section. A further, non spatial (thematic or interpretative) project (**project 5: 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 Hertfordshire authorities, to signpost where 'joined up', cross authority working will be required.
- 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 and are based LUC's knowledge and experience of delivering comparable schemes. 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 Welwyn Hatfield Borough 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 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 Green Infrastructure Plans - Welwyn Hatfield

Figure 3.1: Proposed Green Infrastructure Network

Key

Proposals

↔ Strategic link

↔ Local link

1

Green infrastructure projects

Strategic GI

Farmland conservation & enhancement zone

Wetland habitat zone

Woodland enhancement/creation zone

Chalk valleys conservation zone

Landscape restoration zone

Heathland/grassland creation zone

Existing

Long distance and promoted routes

Rivers

Disused Railway

Accessible open space

Woodland

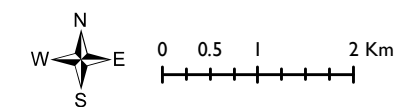
Main settlements

Watling Chase Community Forest

Barriers

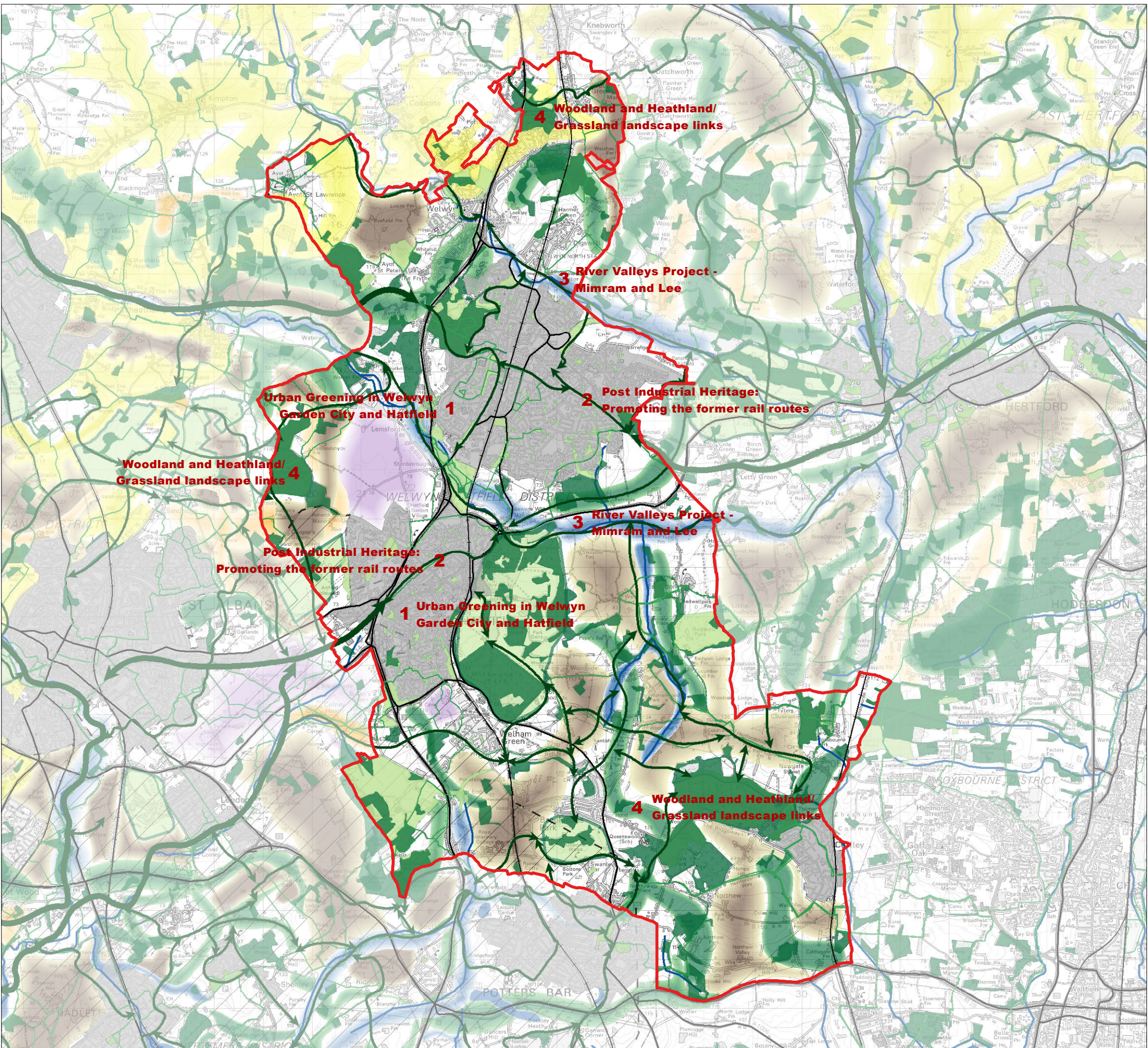
Major road network

Railway



Date: 09/03/2011

Revision:



PROJECT : 1. Urban greening in Welwyn Garden City & Hatfield



URBAN GREEN LINKS/SPACE - Brief description / snapshot of the project :

- Conserve the best parts of current greenspace network (mature trees, town approaches & formal landscapes), in the two towns & improve climate change adaptation, quality & functionality of incidental greenspaces in the new town of Hatfield, mainly through low key management interventions enhancing local biodiversity
- Improved signage in Welwyn Garden City greenspace, to enhance links out to countryside
- Opportunities for local food production & community gardens, to address issues of deprivation with creation of small scale community led greenspace initiatives, enhancing multi-functionality in everyday landscapes within the urban environment (e.g. street orchards & green gyms)
- Create improved, legible links/loops to Alban/Ayot Greenways from Sherrardspark Woods, Heartwood & Ellenbrook Fields Country Park, as well as from urban green space networks within Hatfield & Welwyn Garden City respectively, (links to GI project : 2)
- Identify opportunities for tree planting, enhancing public realm, urban legibility & connections
- Project principles to be applied to all settlements within the Borough



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Address quality & functionality issues associated with open spaces & ANG deficiencies. Contribute to & enhance work already being undertaken by Welwyn Hatfield Borough Council (WHBC) with regards to orchards & allotments, as well as feed into the core strategy vision for regeneration of Hatfield. Improvements to the multifunctionality of greenspaces within the urban environment will improve biodiversity contributing to aims of the Herts & Middlesex Wildlife Trust. Urban greening will further contribute to legibility & identity of the Borough (e.g. build on the profile of green assets like Howardsgate at Welwyn Garden City), as well as encourage more sustainable living within the urban communities. Opportunities for local food production, community gardens & enhanced green links/spaces could help contribute to aspirations of local friends groups (e.g. Friends of Moneyhole Park) & active allotment groups. Also complementary to local green initiatives & the Welwyn Garden City transition town aspirations.

ISSUES ASSOCIATED WITH DELIVERY : The project comprises a set of small scale initiatives which will create the bigger picture contributing to a wholistic improvement of the urban greenspace network. Many of the changes & spatial improvements can be achieved through low key management interventions to incidental greenspaces (e.g. WHBC Park dept. within the town centre residential areas of Hatfield). Targeted promotion of the project aims would need to be communicated to existing residents & relevant community groups, raising awareness of reasons for changes in management & linked benefits. Scope for widespread community involvement through local Friends groups, businesses & educational facilities (e.g. 'plant a tree day'), as well as establishment of Local Green Groups to improve local greenspaces partnering. Other component projects such as improved green links to green assets such as Ellenbrook Fields Country Park (links to GI Project : 2) could require larger economic input (e.g. through developer contributions or public funding).

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Developers & businesses (for significant initiatives/funding associated with access upgrades, & large scale tree planting), WHBC, BTCV & local green/community groups (e.g. Welwyn Garden City Transition Town) for on-going greenspace management. Herts Highways & Sustrans could provide funding opportunities for enhanced green transport network, surface upgrades & signage. Groundwork may be able to assist with securing funding & delivery of community projects. HMWT, Friends groups & allotment groups to be encouraged to participate & educate the local community, establishing food production & wildlife/community gardens & identifying possible resources to implement low key changes.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Low key management changes by the Borough Council could provide quick gains in functionality of greenspaces. Need for promotion, education/awareness raising of the project aims to interested parties & local communities, ideally under the guidance of a 'Green Champion' to mobilise activity, identifying quick gains, small scale funding & delivery of locally led results & improvements.

PROJECT : 2. Post industrial heritage: Promoting the former rail routes



RURAL / PERI URBAN GREEN LINK - Brief description / snapshot of the project :

- Awareness raising/interpretative project & appropriate signage in relation to aspects of 'post industrial heritage', (links to GI project : 5), to greenways & promoted routes on former rail lines such as the Alban Way & Ayot Greenway, so that these can be used more fully for access & multiple green functions (e.g. health)
- Enhance & promote the Alban Way as a car free transport route into Hatfield Town centre from outlying housing estates, with improved & appropriate signage. Deliver proposed connections from this route to strategic GI proposals such as Ellenbrook Fields Country Park & out into the wider countryside & green network, such as to the proposed Heartwood Forest
- Creation of safe, well lit cycle routes in urban areas, to promote green travel alternatives
- Enhance, improve & expand the Ayot Greenway within it's urban context (e.g. at Welwyn Garden City), provide better connecting links with the town centre greenspaces, such as Howardsgate & outlying residential areas & further linking into the wider GI network (links to GI project : 3 & 5)



FUNCTIONS MET :



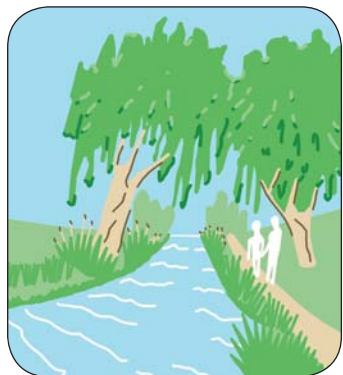
PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Promotion & enhancement of former rail routes to assist delivery of multiple GI projects at district & county level (e.g. GI project : 1, 3 & HCC GI project : 5), whilst addressing ANG/link deficiencies & contributing to future green transport needs within Welwyn Hatfield Borough Council (WHBC). Enhanced links to key green assets (e.g. Ellenbrook Fields Country Park, Heartwood & Howardsgate) within the Borough, increased signage & accessibility will complement Herts ROWIP & aspirations of the Welwyn Hatfield Cycling Forum.

ISSUES ASSOCIATED WITH DELIVERY : Project encompasses a range of small & large scale sub projects (such as awareness raising & promotion at a small scale, & larger scale expansion & overcoming physical barriers to links), which will need a staged masterplan & vision, in partnership with the neighbouring district of St Albans for a coherent approach, to prioritise delivery which can be tied into any planned redevelopment of the main urban destination points in WHBC (e.g. Hatfield Town). Associated costs of delivery, for small scale initiatives could be achieved through local funding, WHBC input & community led change through locally interested friends groups & benefiting communities. Larger scale expansion & access improvement works will require significant capital costs to achieve a consistent standard throughout the greenway routes, with delivery input from funding bodies such as Sustrans & partnerships with Herts Highways & developers (off-site contributions through CIL / s.106). Need for ecological surveys in relation to lighting of parts of the greenway route.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : WHBC (in partnership with St Albans District Council) to create a coherent project vision & staged masterplan. Liaison to secure project buy in with potential stakeholders such as future developers in WHBC, funding bodies (e.g. Sustrans) & departmental bodies such as Herts Highways, promoting the aims & long term aspirations for improved green transports links within the Borough. Larger scale funding to be achieved through possible developer contributions (through s:106, CIL & off-site contributions), Sustrans funding, potential HLF joint funding with WHBC. For the smaller scale urban links & rural enhancements (between settlements & green assets), Groundwork/Sustrans to secure funding for local level community group led schemes (e.g. Welwyn Hatfield Cycling Forum : legible road crossing & signage), along with the BTCV & CMS. Monitoring for developer led components to occur through planning conditions & site inspections.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Promotion of the project aims to relevant parties (e.g. St Albans District Council & stakeholders) & interested local parties such as the Welwyn Hatfield Cycling Forum, (local promotion through WH Times, Life Magazine & WH website). Identify & prioritise areas for enhancement/expansion (e.g. Ayot Greenway to the east of Welwyn Garden City town centre), & feasibility studies developed, & funding options explored (e.g. HLF & Sustrans). Need for partnering with developers linked to future regeneration in Hatfield.

PROJECT : 3. River valleys project - Mimram & Lee



RURAL BLUE LINKS - Brief description / snapshot of the project :

- Conservation & enhancement of the fine wetland environment of the Mimram – a more resilient wetland landscape, to mirror the quality of the river landscape on the western approach to Panshanger Park. Also enhancement of the wetland environment of the Lee
- Enhanced landscape & habitat connectivity & opportunities for traditional management (grazing) - need for balance with access
- ‘Making space for water’- enhanced wetland environments outside settlements
- Maintaining the river valleys as integral part of settlement setting, maintaining separation between main towns & smaller outlying villages such as Welwyn Garden City & Digswell
- Providing enhanced access to the Mimram - access to nature & usable greenspace (as appropriate & balanced with nature conservation interests) & also cross district links with East Herts (connections to strategic semi natural greenspace linked to ongoing restoration of Panshanger Park by Lafarge & its potential future use as community parkland)



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Can address landscape quality & enhancement issues (contribute to landscape character assessment guidelines & identified issues of landscape condition & quality to Welwyn Garden City Fringes at Lee Valley). Contribute to enhanced ANG provision through better links (a need revealed in Access functional analysis), also in securing better connectivity across the Borough & to the cross county GI network & to enhanced green links from the main settlements through more effective signage & way marked trails /routes (linked to Ayot Greenway). Deliver BAP objectives in relation to priority habitat & can also respond to issues in sound ecosystems functional analysis (quality of the riverine environment & flows especially for the Mimram, as identified in the Water Framework Directive (WFD) data). Also contributes to sound flood risk management as identified in the Flood Attenuation & Water Management functional analysis.

ISSUES ASSOCIATED WITH DELIVERY : Landowner liaison is key (including links with Lafarge as part of their work at Panshanger Park). Also cross boundary links with East Herts District Council. Project encompasses several sub projects & spatial interventions, most of which are low key & associated with changes in landscape management (e.g. landscape enhancement & improved connectivity delivered as capital projects through Higher Level Stewardship). As of 2010 note restrictions on HLS revenue payments (access). Need to consider balance between access & nature conservation interests. Other issues relate to provision of enhanced signage & interpretation, both through Herts Rights of Way & Herts Highways, as well as the need to liaise & consult with the Environment Agency (key part of the project). Another focus of the project is the link to the interactive green infrastructure web based map proposals (Green Hertfordshire: Project 5), which could potentially be developed & hosted, as part of a wider, multi-district project & subject to resources, with HCC & CMS.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Landowners & Natural England (through HLS agreements to deliver landscape capital improvement). Environment Agency & Herts & Middlesex Wildlife Trust. Herts Rights of Way & the Local Access Forum. Also Lafarge/HCC/HTCOA/CMS for interactive & interpretative project (Green Hertfordshire - Project 5). Monitoring mechanisms are likely to be through the ROWIP e.g. developing & implementing priority projects & monitoring progress against these. Take up of HLS agreements is the key mechanism for landscape capital projects.

WHAT HAPPENS NEXT? PRIORITY / RANKING : HLS take up should be encouraged as this could deliver many aspects of the work (excluding revenue payments for access as part of these schemes). As such priority is high. Need for early liaison with landowners, East Herts District & the Environment Agency.

PROJECT : 4. Woodland & heathland/grassland landscape links

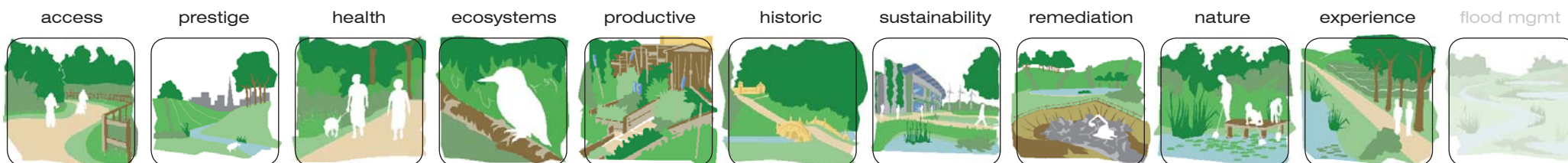


RURAL WILDSPACE - Brief description / snapshot of the project :

- Enhanced woodland connectivity & linking of ancient woodlands, extending from Hatfield Park to smaller parkland landscapes & designed landscapes such as Gobions & on to Northaw Great Wood
- Secure landscape & habitat connectivity & link to the South Herts Woods Living Landscape
- Enhanced human/physical linkages e.g. from adjacent settlements
- Sustainable woodland management (landscape & biodiversity objectives/contribute to wood fuel production)
- Strategic woodland to provide attenuation e.g. to A1(M)/A414 & link to Mardley Woods
- Heathland & acid grassland restoration (linked parts of the habitat mosaic), to create improved landscape links e.g. from Symondshyde via Heartwood margins to Nomansland & Harpenden Commons in St Albans District



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Can address landscape quality & enhancement issues (contribute to landscape character assessment guidelines & identified issues of landscape condition & quality e.g. around DeHavilland Plain LCA). Contribute to BAP targets for heathland & grassland creation as identified in the Nature Conservation functional analysis. Also responds to issues raised in prestige & climate change functional analyses. Is complementary to recent & in progress strategic GI initiatives such as Heartwood Forest. Project can also contribute to planting targets in the Watling Chase Community Forest (WCCF) Plan. Woodland creation & linkage around Hatfield Park & towards Northaw Great Wood is complementary to the objectives for the South Herts Woodlands Living Landscape/Key Biodiversity Area.

ISSUES ASSOCIATED WITH DELIVERY : Landowner liaison is key (including links with the Hatfield Estate & with Crown Estate to the boundary with St Albans District, as well as with tenant farmers/graziers). Need for cross boundary liaison with adjacent authorities (St Albans, Hertsmere, Broxbourne, East Herts). Other key issues & opportunities relate to Higher Level Stewardship (HLS) & Woodland Grant Scheme (WGS) uptake, since these are the primary means by which 'landscape scale' habitat creation will be delivered. Need to consider balance between access & nature conservation interests, as well as those of farmers (farming viability). Areas for new woodland planting should be directed in terms of where linkages are best achieved/where it responds to historic & landscape character, & recommended landscape strategies in the relevant Hertfordshire landscape character areas. Need for liaison with/advice from Farming & Wildlife Advisory Group (FWAG). Need for liaison with Herts Highways re: Mardley Heath/Woods.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Landowners & Natural England (through HLS agreements to deliver landscape capital improvement). Environment Agency & Herts & Middlesex Wildlife Trust. Herts Highways. Also Forestry Commission in relation to WGS. FWAG. Potentially also Countryside Management Service (CMS). Primary monitoring mechanisms are likely to be through the uptake of grant schemes such as HLS & WGS. Also through species surveys after habitat creation is implemented (linked to LPAs statutory duties to monitor biodiversity under the NERC Act).

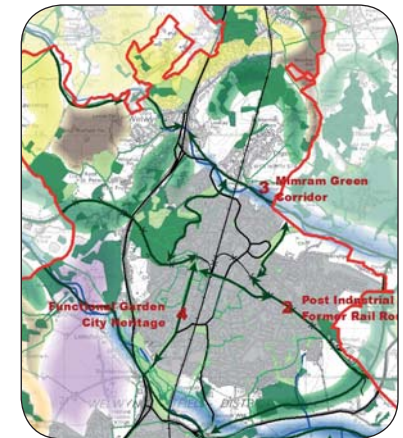
WHAT HAPPENS NEXT? PRIORITY / RANKING : HLS take up should be encouraged as this could deliver many aspects of the work (excluding revenue payments for access as part of these schemes). WGS also for areas of large scale woodland creation a priority. As such project priority is high. Need for early liaison with landowners.

PROJECT : 5. 'Green Hertfordshire' interactive map project (non spatial/interpretative)



Brief description / snapshot of the project :

- Accessible electronic GI map based/navigator resource, also providing the opportunity to link to/ bring all existing GI promotional/leaflet information together in one place
- 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 :



PLANS / POLICIES / PROGRAMMES WHICH 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 Natural England 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 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 on the web.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : 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 - 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 Herts County Council, the Countryside Management Service & HTCOA representatives.

GI projects and cross authority connections

3.15 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. Urban Greening in Welwyn Garden City and Hatfield:** None as is a Borough specific project, although specific need for future liaison with Welwyn Garden City's Transition Towns movement and with local green groups (allotments etc) as well as the parish councils (links with Parish councils apply to all projects).
- **2. Post industrial heritage: Promoting the former rail routes:** Need for links with St Albans and East Herts Districts.
- **3. River Valleys Project – Mimram and Lee:** Need for links with North Hertfordshire District, St Albans and East Herts Districts, and Hertsmere Borough.
- **4. Woodland and Heathland/Grassland landscape links:** Need for links with St Albans, North Hertfordshire and East Herts Districts, as well as Hertsmere Borough.

3.16 In addition, delivery of the objectives of a number of the action zones described earlier in this section, will require cross authority and cross county links. For example the Wetland Habitat Zone links to Bedfordshire, whilst the

Woodland Enhancement Zone requires links with Dacorum Borough, St Albans District, East Herts District and Hertsmere Boroughs (and with St Albans and Hertsmere in particular to help deliver aspirations set out in the Watling Chase Community Forest Plan).

3.17 Account should also be taken of parallel GI projects in adjoining Hertfordshire authorities, e.g. the heathland restoration project proposed in the St Albans GI Plan and the Potters Bar green links in Hertsmere (which includes connections to greenspace sites within Welwyn Hatfield, such as Gobions Open Space and Northaw Great Wood. A joined up approach with East Herts District should be considered specifically in relation to the Mimram and Panshanger Park (focus for a potential future greenspace proposal in the East Herts GI Plan, when restoration of the Panshanger landscape is complete – see companion project in the East Herts District Green Infrastructure Plan).

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

- 4.1 It is intended that this Green Infrastructure Plan will form part of the evidence base for Development Plan Documents (DPDs) in the Local Development Framework and for green infrastructure issues to be included and addressed in the Development Plan Documents. 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)^{viii} (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.
- 4.2 The tests of soundness point to the need for a clear link between policy formulation and the evidence that has been gathered.

4.3 PPS12, the Planning Inspectorate^{ix} 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. The Green Infrastructure Strategies and Plans of neighbouring authorities have been reviewed to ensure consistency between this Plan and those of neighbouring authorities. 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.

4.4 The key findings of the 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.

Evidence Base

4.5 The Green Infrastructure Plan is to be included as part of the evidence base for the LDF. 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** and **Appendix 3**. 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 Borough.
- The assessment of need for green infrastructure is given by function in **section 2** and **Appendix 3**.
- **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

4.6 Key GI points for the Core Strategy to take into consideration are:

- Wetland enhancement and sustainable water management in the Mimram and Lee Valleys, making

‘space for water’ up and downstream of the main settlement pinch points;

- Increased green access links to the countryside from the main settlements, including better lateral links in Hatfield, and in relation to all valley 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, Ellenbrook Fields Country Park, the promoted historic greenway routes and the river valleys;
- Improved strategic links with adjacent district GI (such as via the Alban Way and the Mimram – links to Panshanger Park), particularly in light of potential future growth;
- Using green infrastructure to contribute positively to landscape character enhancement, restoration and linkage (e.g. areas for heathland and grassland restoration and woodland enhancement as shown on **Figure 3.1**);
- Green infrastructure to interpret and appreciate significant cultural heritage assets (e.g. parklands, ancient woodlands);
- Context, sense of place and local distinctiveness: Recognition, conservation and enhancement of the key assets of river valleys, woodlands, heathland and commons;

- Appreciation of aspects of 20th Century urban design GI heritage, in addition to the Garden City. For example, of the importance of the greenspace network in Hatfield, whilst seeking to enhance functionality of greenspaces for community benefit (local food, productive landscapes). This will be particularly important in the context of future urban regeneration planned for Hatfield.

DEVELOPMENT MANAGEMENT

- 4.7 The green infrastructure zones and component 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**. 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 Borough Council, as they relate to GI, shown to the left and right hand sides respectively.
- 4.8 **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 zone or elements in which a specific site lies and whether it relates to, can contribute to or affects any proposed projects in this 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.

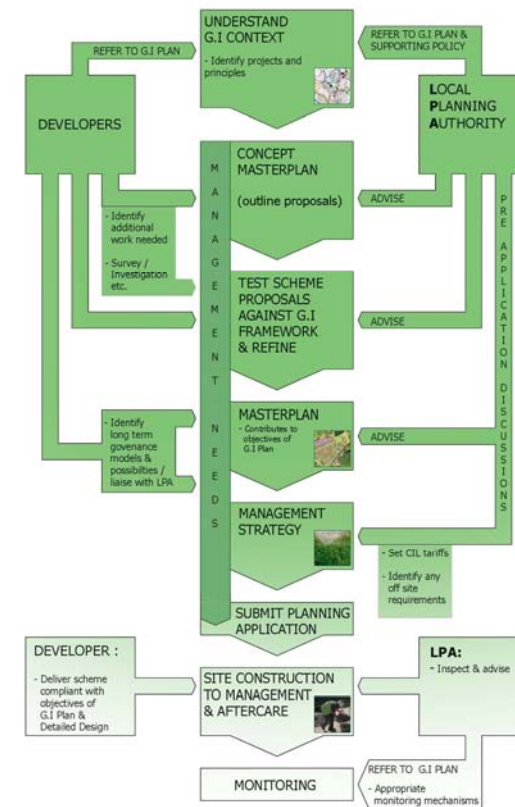


Figure 4.1: Embedding GI in Development Management

NEXT STEPS

- 4.9 The following steps/alternatives are recommended in order to take forward green infrastructure delivery within the Borough:
- Creation of a dedicated **Green Infrastructure Delivery Officer** role at County level (subject to resources – this may be a desirable long term aspiration);
 - **Taking the GI Plan forward in the Borough through existing mechanisms** (Hertfordshire Environmental Forum) and with assistance and advice from the Countryside Management Service;
 - Attendance at and participation in a potential new Hertfordshire wide/cross district **GI Delivery Panel** (potentially linked to HTCOA's landscape group and other stakeholders such as the Herts and Middlesex Wildlife Trust, as well as the Parish Councils, and relevant consultees identified in the potential projects at section 3). 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.
- 4.10 Whichever approaches are selected, clearly there will be a need for close partnership working with other organisations with parallel interests and objectives (Welwyn Hatfield Borough in an enabling/facilitating role,

liaising as appropriate with adjacent Districts and Boroughs). By doing this and through intelligent use of existing mechanisms and processes, a SMART approach to GI delivery could be achieved in the Borough, 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 Borough 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 Borough, to raise public awareness of the concept. This should link to the interactive GI mapping/web/app based project described in **section 3** (Project 5: Green Hertfordshire). 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, 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 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;
- **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);
- Where appropriate, as part of liaison with landowners **seek to encourage take up of grant schemes** which could contribute to the aims of the 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 GI Network;
- **Liaise with developers early in pre application stage**, ideally at site acquisition, so that GI is factored into schemes from the start, and as part of section 106 contributions (identification of the proportion of GI to be met through the Community Infrastructure Levy - CIL, section 106 and through the local authority New

Homes Bonus). Cross refer to the work of Sustainability East for embedding sustainable development considerations in relation to business development*;

- Ensure that developers and others bringing forward 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 GI Plan, in relation to **co ordination of funding bids**, and also in **making links with adjacent authorities** for projects on authority boundaries/in considering adjacent District GI projects which could impact on/benefit Welwyn Hatfield Borough;
- **'Grass roots' delivery:** Continue to develop links with Parish councils and relevant community and volunteer groups such as the British Trust for Conservation Volunteers (BTCV), allotment societies/associations, local schools (tree planting activities) and existing societies such as Digswell Lake Society and Friends Groups such as at the Mimram Valley and Moneyhole Lane Park, and formation of new Friends Groups, where appropriate. Also potential for formation of **local green groups** working with a Delivery Officer/panel (links to the Transition Towns aspirations in Welwyn

Garden City). As part of this grass roots approach, ensure that reasons for changes to greenspace management (e.g. to enhance urban biodiversity) are translated to the community (perception and awareness raising);

- 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 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 plan for Welwyn Hatfield Borough;
- With the Council, convene regular updates, meetings and opportunities for progress reporting during the life of the GI Plan and wider spatial plan, to disseminate results, good practice and lessons learned (e.g. with reference to good practice case studies, such as Heartwood Forest).

POTENTIAL FUTURE WORK

GI checklist for development management decisions

- 4.11 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

- 4.12 This could take the form of accessible, concise, written and illustrated 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)

- 4.13 It may be desirable for the Borough (possibly with adjacent 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 LDF, the Core Strategy and relevant policies. It may be more useful to include aspects of the Green Infrastructure Plan and potential future work within other SPD (e.g. Planning Obligations/Developer Contributions, or a Design SPD).

More detailed and local level GI planning work

- 4.14 This is a strategic level GI Plan and more detailed and 'site specific' GI planning work, drawing on this plan, is likely to be required within the Borough, particularly as growth locations and areas of change become more fixed. This may also relate to parish level consideration of GI in time, linked to Parish Plans and Parish Environment Action Plans (PEAPs).

Outward facing projects to 'launch' the GI concept

Interactive/web/app based mapping project – GI for people – 'Green Hertfordshire'

- 4.15 This is described in the 'Green Hertfordshire' project (Project 5) at **section 3** of this GI Plan (note that this is a proposed cross district project, in partnership with the County Council).

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

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

ⁱⁱⁱ NE176, **Op Cit**

^{iv} Natural England/The Landscape Partnership **Analysis of Accessible Natural Greenspace Provision in Hertfordshire**

^v Source: V4C Project. Study produced for Hertfordshire County Council

^{vi} <http://www.hertsdirect.org/libisleisure/heritage/landscape/hlca/>

^{vii} Watling Chase Community Forest 1995 **Forest Plan** (and Landscape Supplement), also **Forest Plan Review**, 2001

^{viii} Planning Advisory Service 2008 **Local Development Frameworks: Evidence Base**

^{ix} The Planning Inspectorate 2008 **Local Development Frameworks: Examining Development Plan Documents – Soundness Guidance**

^x http://www.sustainabilityeast.org.uk/index.php?option=com_content&view=article&id=17&Itemid=22



www.landuse.co.uk

