

DACORUM BOROUGH GREEN INFRASTRUCTURE PLAN - FINAL REPORT

Prepared for Dacorum Borough Council
by
Land Use Consultants
March 2011



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43 Chalton Street
London NW1 1JD
Tel: 020 7383 5784
Fax: 020 7383 4798
london@landuse.co.uk

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

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

28 Stafford Street
Edinburgh EH3 7BD
Tel: 0131 202 1616
edinburgh@landuse.co.uk

DOCUMENT CONTROL SHEET

Version	Issued by:	Approved by:
FINAL	Andrew Tempany	Kate Ahern
	Senior Landscape Architect	Principal-in-Charge
	24 th March 2011	24 th March 2011

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

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1 Introduction

- I.1 Green infrastructure (GI) is increasingly recognised as a cornerstone of sustainable development and communities. It is a ‘must have’, due to the many social and environmental benefits it offers.
- I.2 Green infrastructure planning and delivery is part of Hertfordshire’s consideration of sustainable land use and landscape planning, expressed in **Green Infrastructure in Hertfordshire: A Framework**ⁱ. It bridges 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 Dacorum Borough Green Infrastructure Plan has been developed in parallel with the strategic county wide plan and with those for Three Rivers, Watford, St Albans, Hertsmere, Welwyn Hatfield 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 Dacorum:
- 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?

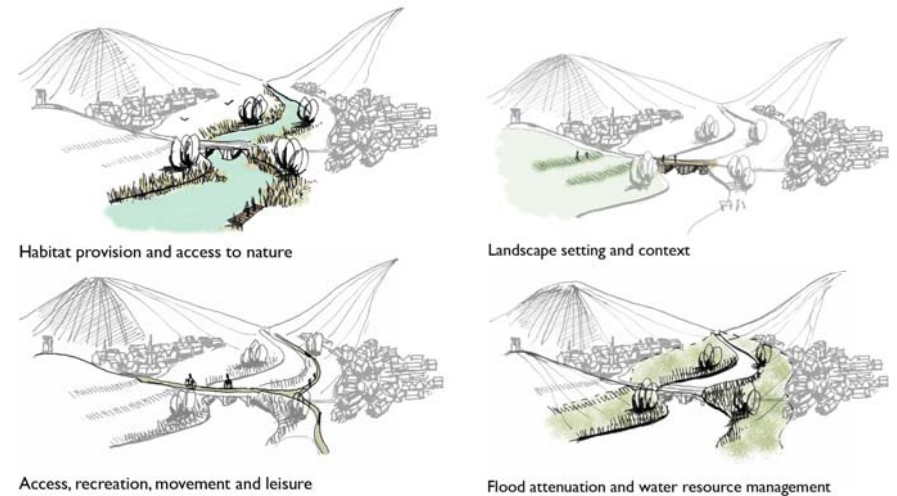
- I.6 Green infrastructure is described in **Planning Policy Statement 12: Local Spatial Planning**, as:
- a network of multi-functional greenspace...both new and existing...both rural and urban...which supports the natural and ecological processes...and is integral to the health and quality of life 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 Dacorum

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, and is particularly applicable to the natural environment of Dacorum:



The multi functional green infrastructure approach (source: Natural England, Green Infrastructure Guidance)ⁱⁱⁱ

1.9 Dacorum Borough enjoys a rich, diverse and often high quality natural environment. Key elements are chalk streams and river valleys, wetland and grazed pastures, dry chalk valleys and chalk landforms, woodlands and ancient woodlands, historic parklands and designed landscapes and farmland. It has a number of strategically significant and historic green infrastructure assets, such as the Ashridge Estate, Tring Park, the Marsworth Reservoirs complex and the Grand Union Canal. It also has a historically important mid 20th century urban green infrastructure legacy in the designed landscapes by Geoffrey Jellicoe at Hemel Hempstead New Town.

- I.10 In some cases, existing 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. This is likely to become more critical in light of future growth within Dacorum settlements such as Hemel Hempstead. This is recognised in the adoption of the Transition Towns Approach in the three main Dacorum towns (Tring, Berkhamsted and Hemel Hempstead)^{iv}, which seeks to embody low impact, low carbon and sustainable modes of living at a very local level.
- I.11 In addition, sites such as Ashridge are historically and ecologically sensitive and vulnerable to visitor pressures, whilst the chalk landscapes of the Borough face long term challenges such as climate change.
- I.12 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.

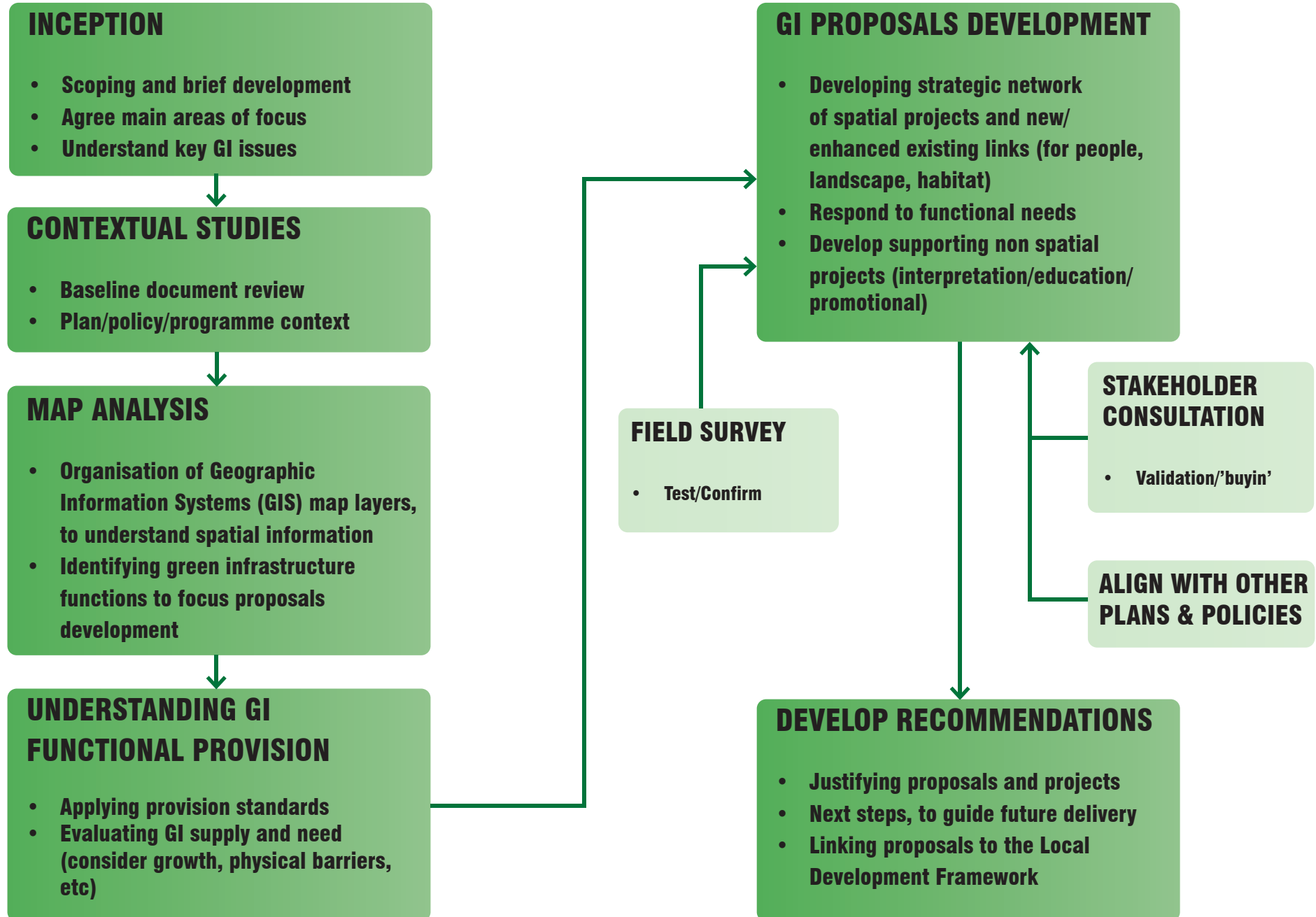


The varied green infrastructure of Dacorum

The green infrastructure planning process – a summary

- I.13 For the purposes of this Plan, 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.14 The remainder of this Green Infrastructure Plan is set out as follows:
- Section 2: Green infrastructure demand and opportunity in Dacorum by function
 - Section 3: Proposed green infrastructure network and projects
 - Section 4: Linking the green infrastructure proposals to local spatial planning, development management and delivery.
- I.15 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 Dacorum: Top – Golden Valley, Ashridge; Bottom: The Jellicoe Water Gardens, Hemel Hempstead

2 Green infrastructure demand and opportunity in Dacorum 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 in **section 3**).
- 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, 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 and issues in Dacorum. When considered alongside main settlements, an indication of GI demand is also provided. The analysis identifies shortfalls and potential need in the context of future growth as identified in the emerging Core Strategy, where these areas are known. The findings 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

access



approach



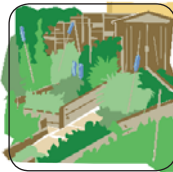
health



ecosystems



productive



historic



sustainability



remediation



nature



experience



flood

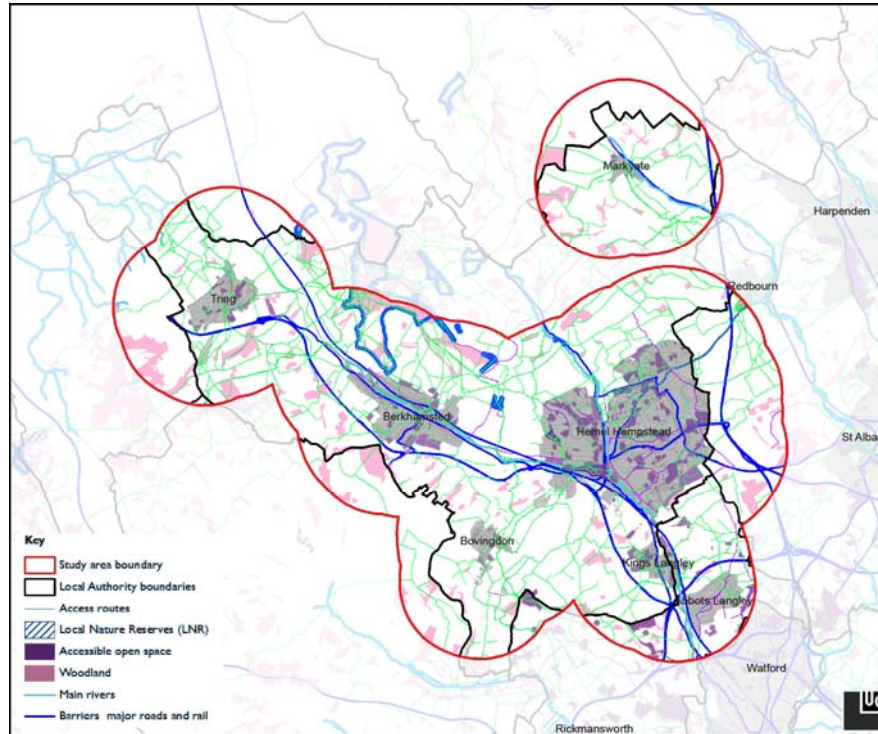


- 2.7 The analysis methodology for each function (including provision standards applied) is set out at **Appendix 3**, together with a summary of the main issues with regard to deficits of provision and potential need and opportunity. Supporting mapping showing the distribution of GI assets and their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

THE FUNCTIONS – SUMMARY OF NEED, SUPPLY AND OPPORTUNITY IN DACORUM

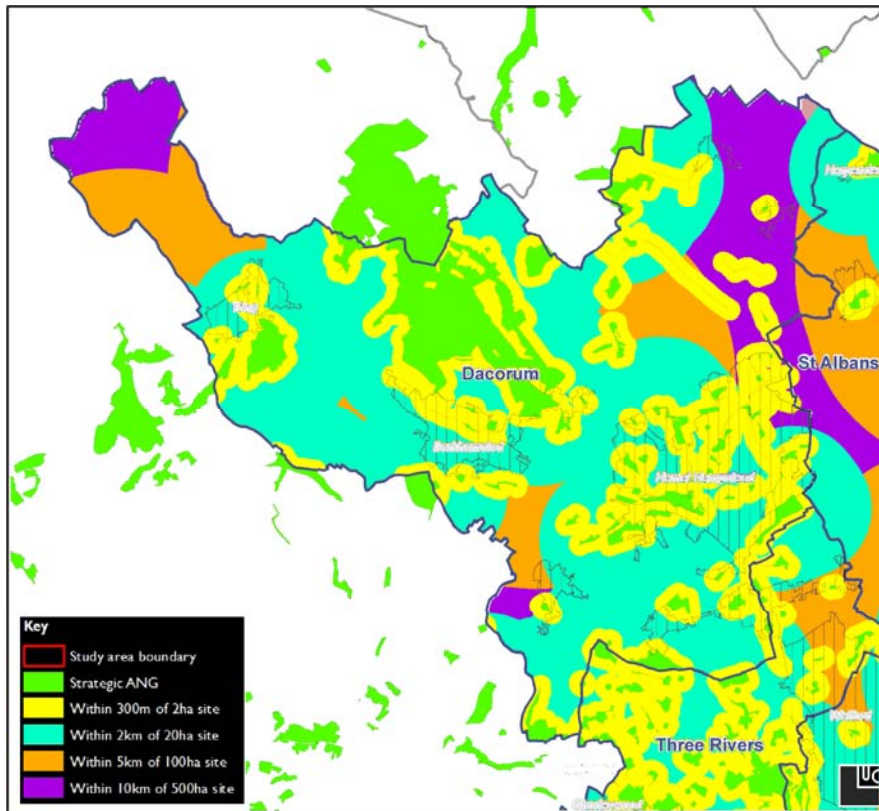
- 2.8 The findings from each functional analysis are summarised overleaf.

Access to recreation

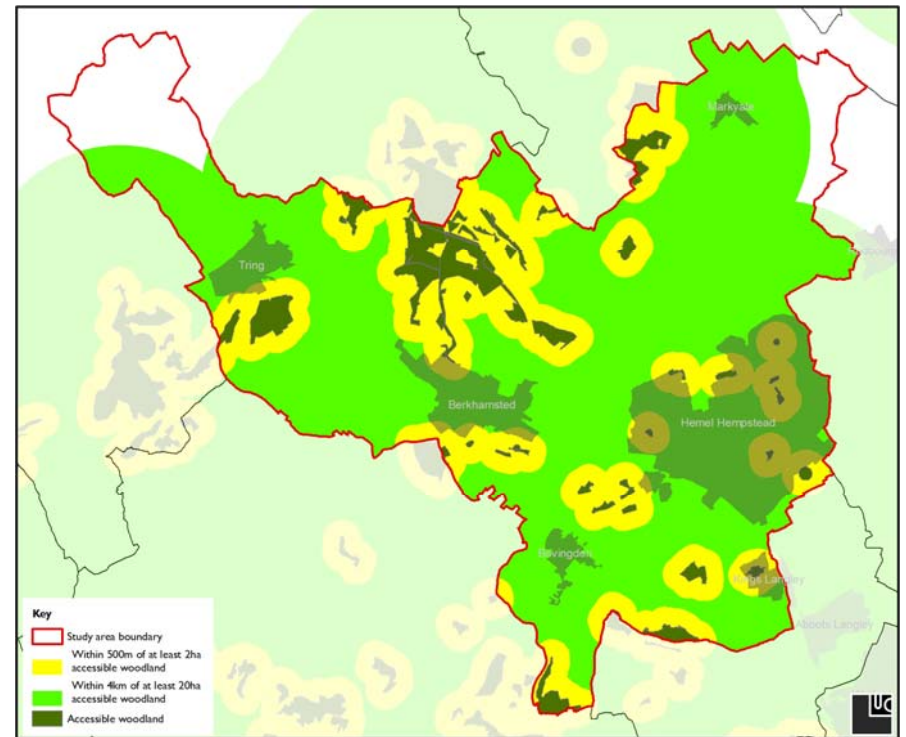


- 2.9 Accessible open space forms a key part of the quality of life of communities, although it is recognised that functionality varies according to the type and size of spaces. Neighbourhoods may not always be well served due to settlement evolution and the presence of barriers to access.

- 2.10 With reference to the Dacorum Open Space Study^v, open space functionality in Dacorum is variable in places, especially in Berkhamsted and Hemel Hempstead (for example in Hemel Hempstead, the green wedges which form part of the town's layout sometimes have limited functionality, although they present opportunities for enhanced functionality through positive landscape management). Some residential areas in Hemel Hempstead (east and south) do not meet the 300m Accessible Natural Greenspace (ANG) standard. The railway and A41 form key barriers to access links, making parts of the Paths and Rights of Way network disjointed, e.g. links across the Bulbourne. Within the wider landscape although larger parts of the area do not reach the Woodland Trust's 300m accessible woodland standard, the Borough performs well in terms of the 4km standard, due to Ashridge and Tring Park, with main areas of deficiency in the northern and eastern most extremities of the Borough.

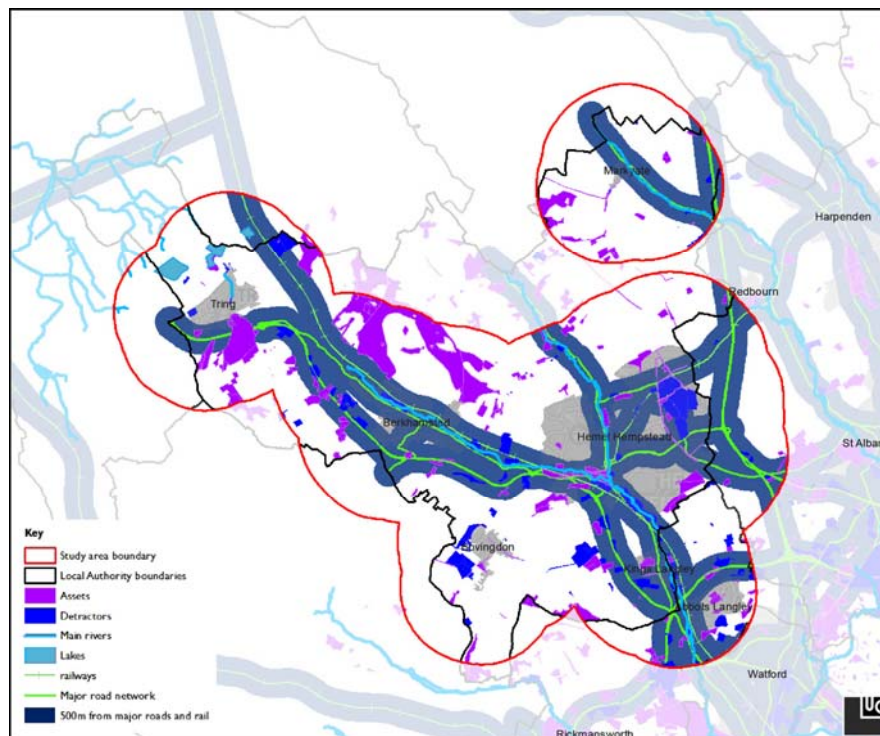


Accessible Natural Greenspace (ANG) provision, applying the Natural England ANGSt standards (source: Natural England^{vi})



Accessible Woodland Provision (Woodland Trust standard)

Prestige on settlement approach corridors



2.11 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 main transport corridors on the Dacorum settlement approaches, this functional analysis has referred to spatial mapping of assets and detractors produced for

Hertfordshire^{vii}, as well as consideration of landscape condition and quality in the Hertfordshire Landscape Character Assessment^{viii}.

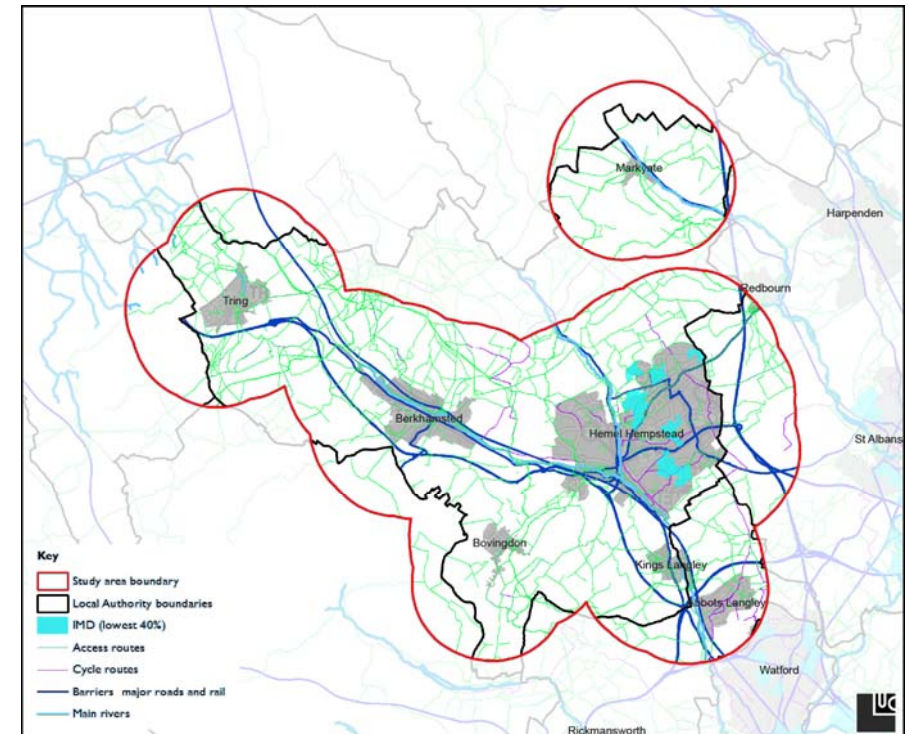
2.12 Within the main settlements of Dacorum, some key assets have poor approaches or are disturbed by intrusions which impair the experience of them. For example, whilst Tring Park is a notable asset and a potentially positive approach to Tring, it is severed by the A41 (see **project 1** at **section 3**). Arterial transport corridors present particular issues in relation to perception of settlement approaches (main valley towns and villages) e.g. the A4251 and A41 in relation to Berkhamsted and Hemel Hempstead and the A5 at Markyate. Such corridors also affect the perception of assets such as the Bulbourne river valley at Berkhamsted and Hemel Hempstead, with the A41, A4251 and West Coast Mainline Railway all impacting on experience in this location, notably the approach to Hemel Hempstead at Boxmoor. The M25 is also an issue in this respect in relation to the southern approach to Kings Langley. Main roads (A41, A4251) also present barriers to accessing the wider green infrastructure network to the west of Hemel Hempstead (e.g. at Roughdown) and Berkhamsted.

2.13 Opportunities for attenuation of such transport corridors have focussed aspects of GI proposals development in this Plan. For example woodland creation around Tring and south of Berkhamsted, to link to existing woodland sites and to deliver not only attenuation and an enhanced settlement approach/sense of prestige but also a range of

other benefits (landscape character enhancement, habitat linkage etc) – see **Figure 3.1**.

- 2.14 In terms of the quality of the environment and the approach at Hemel Hempstead from the A41, this has been addressed by project 5 (river valleys) and project 7 (urban greening) at section 3. These seek to further enhance the riverine environment at Boxmoor and the green wedges of Hemel Hempstead, respectively.

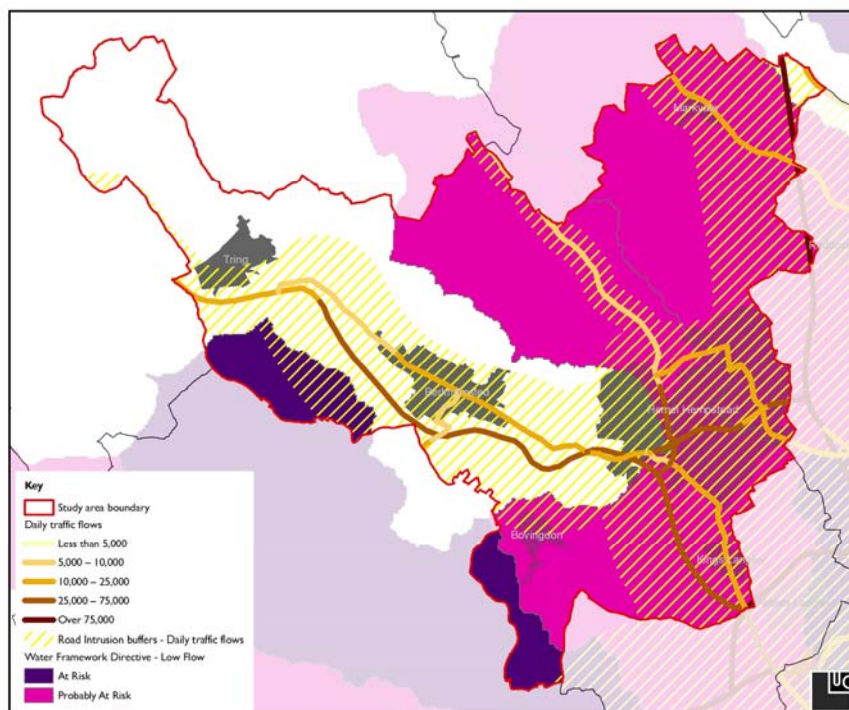
Health



- 2.15 In this analysis, access links and proximity to areas of deprivation were mapped. Main road corridors were also considered to understand where there were linked issues of ‘unhealthy environments’ (air quality and pollution), or need to target tree planting as described in relation to the ‘prestige’ function above.

- 2.16 Whilst there is a comprehensive access network across Dacorum, this is disjointed in places. Gaps in the access network, allied to development density and layout, often correspond to areas of deprivation. With reference to the Indices of Multiple Deprivation, key areas of social deprivation in Dacorum are the following eastern Hemel Hempstead wards: Grove Hill, Woodhall, Highfield and St Pauls, Adeyfield East and Bennett's End. Of these, the following also fall within the 40% most deprived threshold in respect of health deprivation: Grove Hill, Highfield and St Pauls and Adeyfield East. Deprivation issues in these wards are due primarily to a combination of settlement layout and access barriers (need for enhanced links to the wider countryside via the Nickey Line, particularly if growth was considered to the east of Hemel Hempstead).
- 2.17 Reference to intrusion mapping has revealed large parts of the main settlement envelopes to be affected in terms of tranquillity and experience. Whilst there is a limit to what can be done due to existing settlement density, this has formed the focus for an urban greening project for Hemel Hempstead to deliver a healthier, more positive environment.

Sound ecosystems

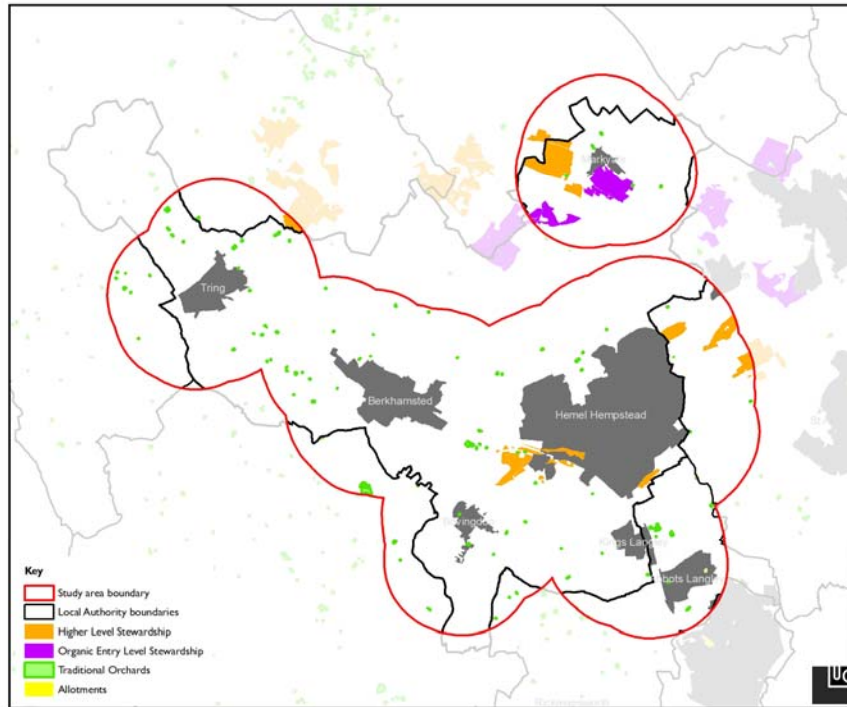


2.18 Sound ecosystems are a key part of a green infrastructure network, and proposals should seek to contribute to positive and proactive management of these for community benefit. The focus for this analysis has been the key services of water and air quality.

2.19 Interpreting the Water Framework Directive (WFD) data produced by the Environment Agency for river catchments, the riverine environment of the Gade is of poor quality in terms of ecological status, and is also subject to abstraction/low flow pressures, as with the Ver. Low flows are also common place in the upper Bulbourne due to abstraction, although the lower river is stable due to being fed by the canal rather than by groundwater. Invasive species are also an issue in all the rivers and there is therefore a need for positive management of the river valleys and watercourses as key GI assets. These issues have formed the focus for a river valleys project in the GI Plan (see **section 3**).

2.20 In relation to principal road corridors such as the M25 and A41, large parts of these are either in cutting or partly wooded, limiting areas to target for new tree planting. Similarly, appropriateness in terms of landscape character also restricts areas of focus for new tree planting. Main green infrastructure areas of foci are the western arc of the M25 (widening scheme) at Kings Langley (in parallel with the Three Rivers District GI Plan), where there is an opportunity to link existing woodland blocks to provide more continuous amelioration and mitigation (also enhanced settlement approach to Kings Langley). In relation to the A41 corridor, principal opportunity areas are south east of Tring and west of Berkhamsted near Rossway, where tree planting could ameliorate air quality, whilst delivering other linked benefits in terms of character and biodiversity.

Productive green environments



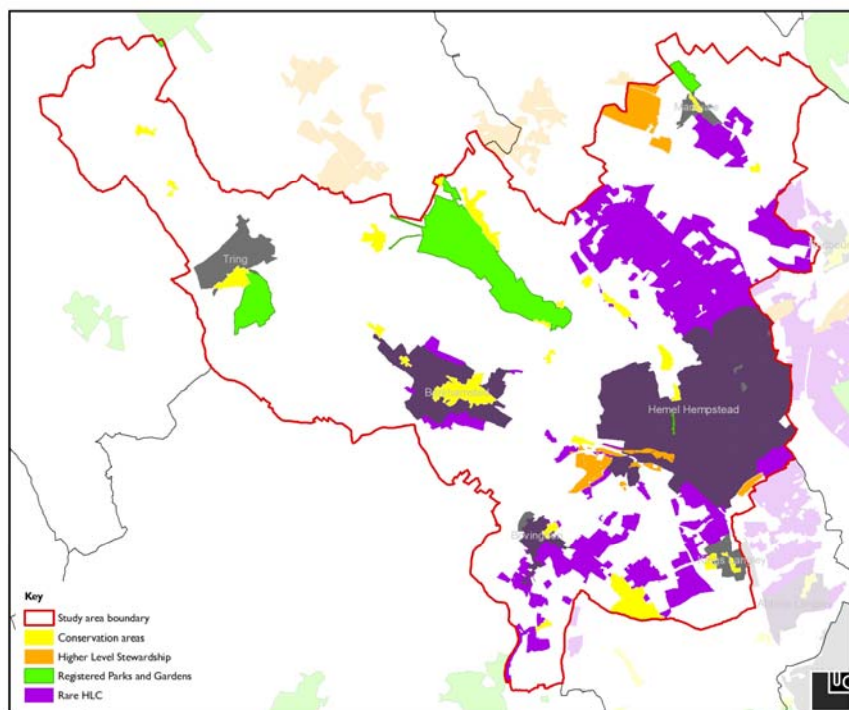
2.21 Consideration of the wider farmland landscape in Dacorum reveals some 264.49 hectares of farmland to be in Organic Stewardship agreements, with land under Higher Level Stewardship covering 292.38ha. This indicates potential

for increased HLS uptake across the Borough, to enhance functionality of farmland landscapes.

2.22 Considering productive landscapes at a more local, 'site specific' level, existing areas of allotment deficiency are at Hemel Hempstead, Bovingdon, Flaunden, Ashridge and Little Gaddesden, although the Borough Council considers that provision is unlikely to increase substantially. Orchards are distributed relatively widely across the Borough, approximately half of these are actively managed. A key opportunity may be to bring such productive environments in to more urban environments e.g. to enhance the green wedges and wider verges in Hemel Hempstead through community orchards and street orchards. This opportunity has formed part of the focus for an urban greening project for Hemel Hempstead at **section 3**.

2.23 Main areas of opportunity for local food production relate to enhancing the quality and functionality of urban greenspaces as in Hemel Hempstead to accommodate local food production and community gardens. The Transition Towns movement in Dacorum presents a key opportunity in this context, and for use and promotion of local food producers, linked to a potential enhanced urban greening project for Hemel Hempstead, proposed by this plan (see **section 3**).

Conserving historic landscape character



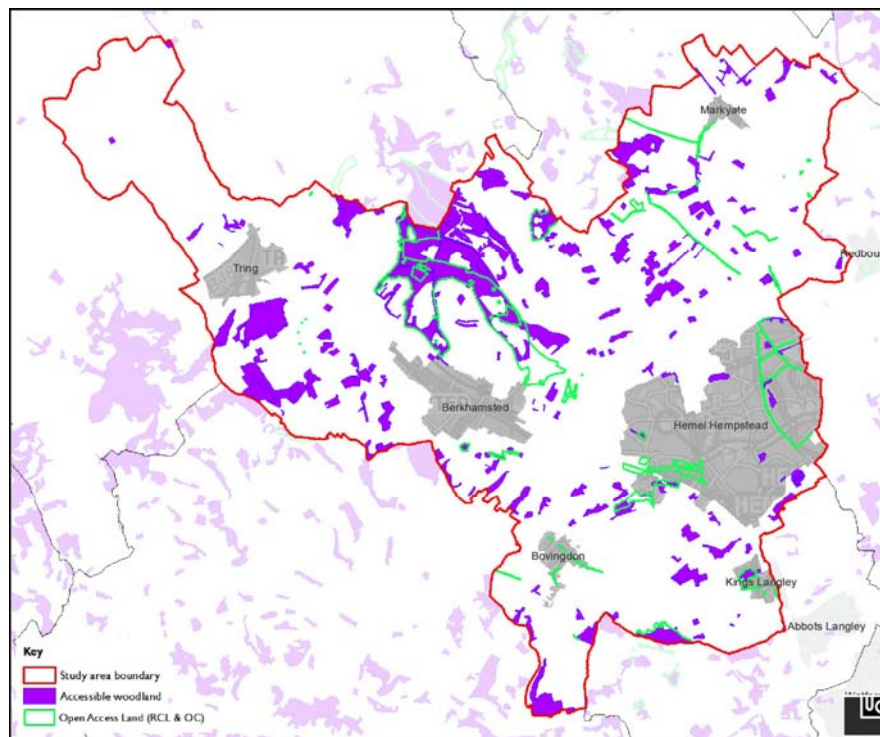
2.24 The historic environment and historic legacy provides a rich resource for conservation and interpretation as part of a multi functional green infrastructure network. It also clearly links to other functions such as prestige, experience and the potential for recreation. This analysis considered the 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.

2.25 Significant parts of the heritage GI resource are protected through Conservation Area and Registered Parks and Gardens designations. Registered parks and gardens include the significant late 1950s New Town Landscape of the Jellicoe Water Gardens, Hemel Hempstead, although these are currently in poor condition. Few historic assets are protected through agri environment schemes. Ancient woodland forms another key part of the heritage GI resource (e.g. at Ashridge), as do watercress beds within the river valleys, which are identified as a rare historic landscape character (HLC) type. Another rare HLC type, co axial field systems around Hemel Hempstead and Kings Langley are also significant aspects of the rare historic landscape resource.

2.26 The Jellicoe landscapes of Hemel Hempstead have formed part of the focus for an urban greening project at section 3, whilst the rare HLC types are referenced in the Farmland Conservation and Enhancement Zone in the proposed GI network (**Figure 3.1**).

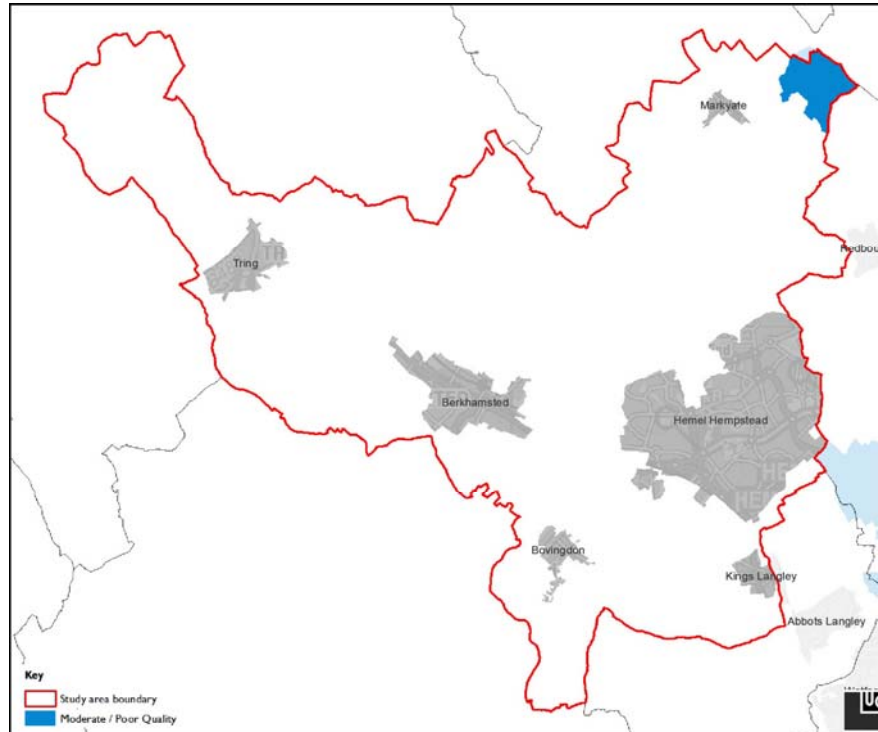
Sustainability and responding to climate change



2.27 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.

2.28 Most of the settlements in Dacorum display a relative density of tree cover outside of historic town and village cores (where tree cover is far more limited, due to development density) and in leafier suburbs. Visual analysis shows that a comparatively high density of tree cover is concentrated in the New Town at Hemel Hempstead, although the green wedges in the town have enhancement potential in this respect. Primary efforts in addressing provision for this function in future relate mainly to conserving what exists and managing this appropriately/planning for succession planting. Also 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 an appropriately robust grade) per linear km, as well as embedding such principles within the masterplanning and design of new development.

Land remediation

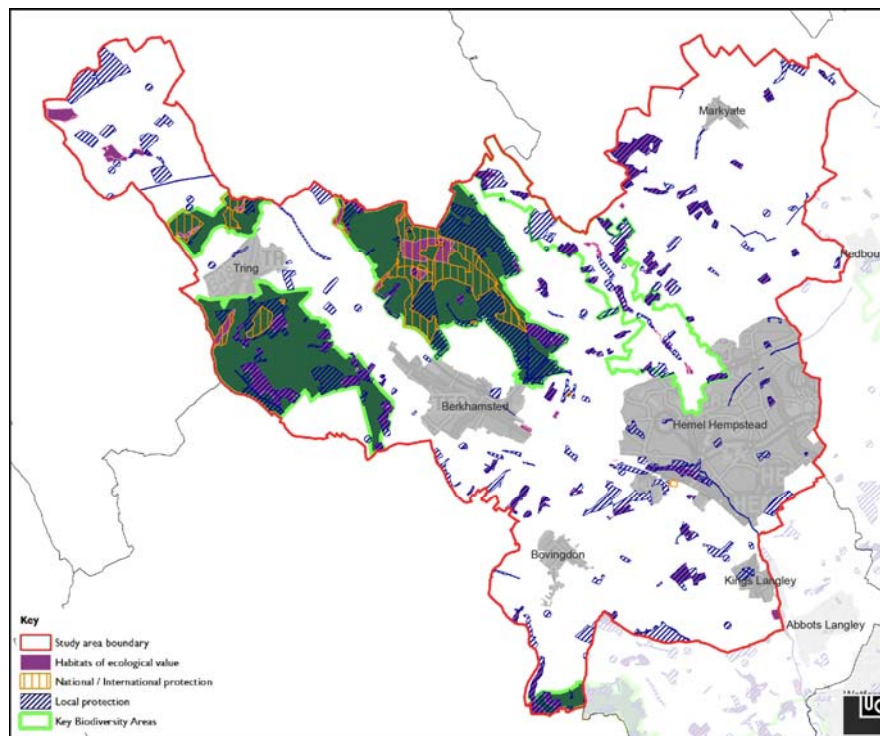


- 2.29 Green infrastructure planning and design can play a key part in delivering enhancement and restoration of landscape character and quality, and in enhancing areas of degraded landscape (e.g. mineral and re restoration sites).
- 2.30 Whilst no former or 're restoration' mineral sites have been identified in Dacorum, existing sites, such as the

former brick clay pits at Bovingdon (now in the ownership of the Box Moor Trust), present clear opportunities to provide enhanced green infrastructure. Other former sites which may present green infrastructure opportunities are Pitstone Quarry 2 and the old HCC Playing Field site at Tollpit End, to the northern edge of Hemel Hempstead.

2.31 Areas of 'lower' landscape quality or more fragmented landscape character, as identified in the Landscape Character Assessment, have also been identified, to form a focus for GI proposals which seek to re-connect and enhance landscape (in this Borough, an area of land east of Markyate has been identified, and this forms part of the focus of the Farmland Conservation and Enhancement Zone at **Figure 3.1**).

Nature conservation



2.32 Conservation and enhancement of habitats, with planning for sustainable communities, is a key consideration of planning for multi functional green infrastructure. This plan has taken a landscape scale approach, considering Living Landscapes in addition to statutory and locally designated nature conservation sites.

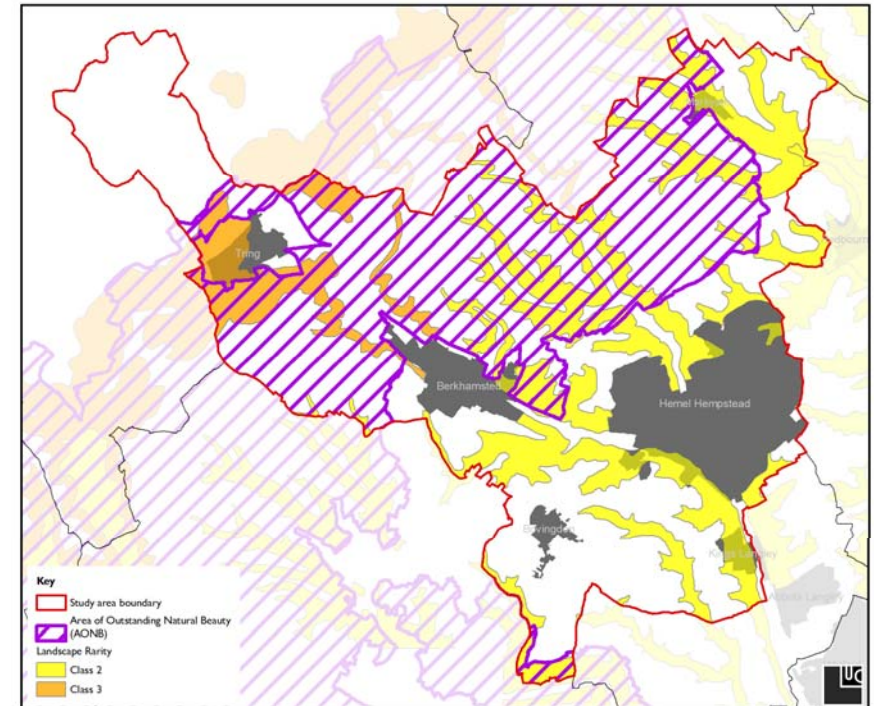
2.33 Regional Key Biodiversity Areas (KBA/Living Landscapes) include Ashridge / Berkhamsted Common / Aldbury, Tring Scarp and Dip Slope and Tring Reservoirs, and the Chess Valley (bordering with Three Rivers district). These areas also include clusters of Local Wildlife Sites, indicating their importance at a range of levels.

2.34 In relation to key nature conservation sites, visitor pressure is particularly associated with car use, such as at Ashridge Special Area of Conservation (SAC)/Site of Special Scientific Interest (SSSI), Tring Park, Tring Reservoirs and the Grand Union Canal. Whilst Ashridge is promoted in Accessible Natural Greenspace Assessments (ANGSt) as a highly valued site, accordingly, this faces absorption of high visitor numbers. Key GI opportunities are to link the 'Living Landscape' areas of the Gade Valley and Berkhamsted Common, as well as to provide an appropriate landscape/ecological buffer to Ashridge in the face of planned growth of Hemel Hempstead. Transport corridors such as the A41 often represent key wildlife corridors and opportunities to provide enhanced habitat linkages.

2.35 In addition the Urban Nature Conservation Study^{ix} identifies areas of wildspace (that is, areas of general biodiversity interest in addition to wildlife corridors and designated sites). These areas are principally in relation to the main settlements and form a focus for positive green infrastructure planning to achieve a multifunctional GI network. Key areas include Gadebridge Park, Hemel Hempstead, and land around Longdean Meadows Nature

Reserve, as well as land in the Bulbourne Valley, south of Chaulden. Also land to the northern and southern settlement fringes of Bovingdon, the northern part of Tring Park around the mansion and southern edge of Tring inside of the A41. Other areas include the Wendover Arm of the Grand Union Canal and the gravel lakes and Priory site allotments at Kings Langley. At Berkhamsted, the woodlands to the southern edge of the town are identified as important, although the severance created by the A41 is an issue. In addition, the Urban Nature Conservation Study identifies areas of wildspace deficiency, including part of the green wedge north of Hammerfield, Hemel Hempstead. The proposed urban greening project for Hemel Hempstead at **section 3**, which seeks to enhance the functionality of principal greenspaces such as the green wedges, responds to this issue. Many of the other proposals shown on **Figure 3.1** seek to conserve and enhance areas of wildspace in Dacorum, and this is cross referenced as appropriate in the proposed projects at **section 3**.

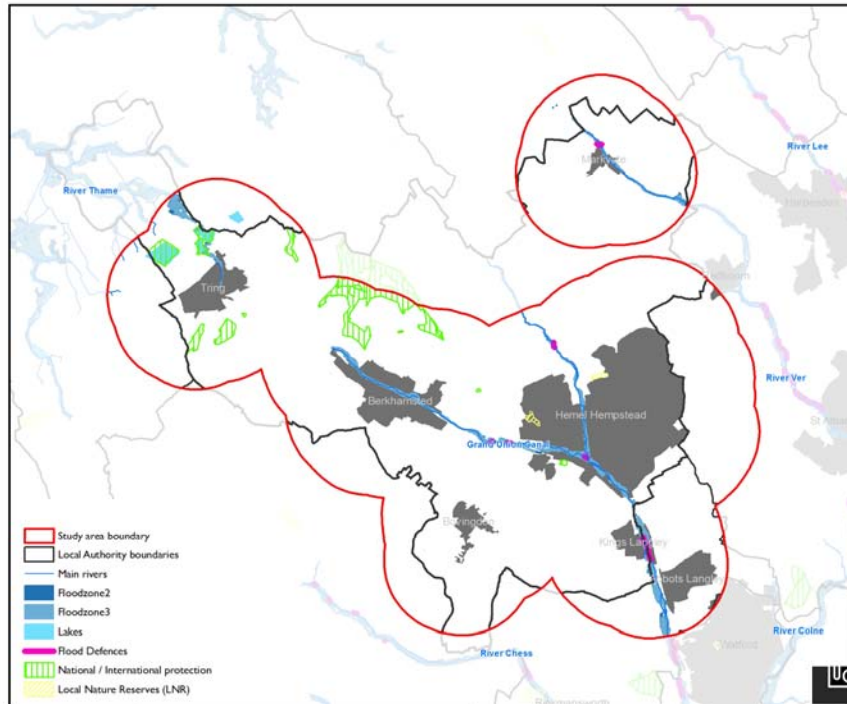
Experience



- 2.36 Experiential and perceptual aspects of landscape are integral parts of place led green infrastructure planning. For this analysis, the rarest three classes of regional landscape types were identified and their distribution in the Borough mapped (rarity classes 2 and 3 both appear in the Borough).

- 2.37 The main regionally rare landscape type in Dacorum is the Wooded Chalk Valleys, mainly related to the dry valleys and seasonal winterbournes (such as the Bourne Gutter), associated with Gade, Bulbourne and Ver Valley systems. This landscape type covers 22.37% of the Borough (significantly this also represents 23.92% of the total regional distribution of the landscape type, which covers some 19,900 hectares in total). This landscape type also falls within the Chilterns Area of Outstanding Natural Beauty, and will therefore be key for conservation, enhancement and understanding as part of the green infrastructure network within the area, as well as providing enhanced links to deflect pressures on the AONB.
- 2.38 The wetland and riverine environment is a key part of the experiential landscape of the Borough, witnessed not only in the distinctive lowland vale landscapes north of Tring, but also in historic man made and engineered elements such as the various arms of the Grand Union Canal and the associated balancing reservoirs north of Tring. The lowland vale landscape has formed the focus for a specific conservation zone shown on **Figure 3.1**, whilst the canal and reservoirs are referenced in a specific project at **section 3**.

Flood attenuation and water management



- 2.39 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.
- 2.40 Key water management issues relate to the density of development in flood zones within main towns such as Tring. In the wider landscape around Tring, the Wilstone

Reservoirs, built to provide water balancing for the Grand Union Canal, provide a notable water management function. The Gade and Bulbourne floodplain within Hemel Hempstead are key to the town's flood defences. Spaces which alleviate flood pressures are the Watercress Beds at Berkhamsted and Gadebridge Park within Hemel Hempstead, should be conserved and enhanced as key GI assets. The same applies to the Bulbourne and canal on the approaches to Berkhamsted to the east and west of the town. These have formed the foci for a Wetland Conservation zone at **Figure 3.1** and a River Valleys project at **section 3**.

3 Proposed green infrastructure network and projects

GREEN INFRASTRUCTURE VISION

3.1 The green infrastructure vision for Dacorum Borough is:

To conserve and enhance

- The network of tranquil chalk valleys and river valleys (Gade, Bulbourne and Ver) and the Grand Union Canal—these are fundamental to sense of place, and key components of the GI network for landscape, experience, biodiversity and flood risk management;
- Parklands and estates (such as Tring and Ashridge), for their historic interest, recreation, education and nature conservation value, seeking to enhance settings and approaches in proximity to settlements;
- The sense of separation and individual identity of towns and villages (Tring, Berkhamsted, Hemel Hempstead, Kings Langley, Bovingdon and Markyate);
- The significant 20th century planned and designed green infrastructure heritage associated with Geoffrey Jellicoe and Hemel Hempstead New Town.

To improve and create

- Green travel (people) links between greenspaces;

- Connectivity for landscapes, habitats and wildlife, assisting in avoiding habitat fragmentation;
- Places for people - Urban greening and the value of greenspace in towns such as Hemel Hempstead – a 'town of trees'; improved approaches to the town;
- Joined up networks, joining the gaps in the Path and Rights of Way Network, and routes for walkers, cyclists and riders;
- Water and floodrisk management – 'soft' and flexible, adaptive solutions, creating 'space for water'.

To recognise and value

- Positive use of green infrastructure as outdoor classroom and for life long learning/skills development;
- Conservation management in developing multi functional GI;
- Farmland and productive rural landscapes, including the value of landscape elements such as woodland for wood fuel (sustainable woodland management);
- Green infrastructure for both people and wildlife – an integrated approach;
- The wildlife corridors that exist along physical access barriers such as the West Coast Railway and the A41.

DELIVERING THE VISION – THE NETWORK

Rationale, key messages

- 3.2 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, and to deliver the points of the vision above.
 - Proofed against the adjoining Buckinghamshire green infrastructure context and other relevant spatial plans, policies, programmes and projects, as well as the GI plans being developed for the other Hertfordshire districts.
 - Validated through stakeholder consultation (the main messages from the stakeholder workshop are in **Appendix I**.)
- 3.3 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 cross referenced in the proposals map, and explained at the end of this section. This includes high level consideration of cost, phasing delivery and management mechanisms. Recommendations to link the green infrastructure proposals to delivery through spatial planning and ‘on the ground’ are set out in **section 4**.

Green infrastructure action zones

3.4 Shown on **Figure 3.1**, these are:

- **Farmland Conservation and Enhancement Zone:** Conserving and reinforcing the rural green infrastructure network, securing landscape and habitat connectivity. Note that this also has links to the Chilterns AONB Commons and Grazing project as it falls partly within the AONB area. Also encouragement of agri environment schemes take up (at both entry and higher level) to deliver landscape and GI improvements within and beyond the Higher Level Stewardship target area north of Hemel Hempstead. There is potential to enhance landscape quality east of Markyate, as identified in the LCA, and to conserve and enhance rare historic landscape types (co axial field systems), as part of the rural GI network. Also potential to link Key Biodiversity Areas around Ashridge and the Gade Valley.
- **Lowland Vale Farmland Zone:** Conserving unique vale landscapes as a key part of the local green infrastructure network, including the network of tributaries and minor watercourses, and nationally rare landscape features such as the Black Poplars which are a prominent feature of the vale.
- **Wetland Habitat Zone:** Restoring and enhancing the quality of the river valley network and associated wetland habitat network, including wetland habitats associated with the canal network such as the Tring Reservoirs complex. Also links to Chilterns AONB

River Valleys Project, as this zone falls partly within that area. The zone also includes connections to the strategic Grand Union Corridor/project in the Buckinghamshire GI Strategy. The zone and component projects can also contribute to delivery of the Thames and Tributaries Integrated Biodiversity Delivery Area (IBDA) and at a local level are complementary to the aims and objectives of the Two Waters Open Space Project.

- **Woodland Enhancement Zone:** linking woodland habitats and restoring landscapes/defining the network of valleys. This includes enhancement to the setting of historic GI assets – parklands such as Ashridge and Tring. Also making links to Buckinghamshire GI zones and projects (Wendover Woods). There is potential for delivery through higher level stewardship in the HLS target area, and through Woodland Grant Schemes through liaison with the Forestry Commission. Potential to link Key Biodiversity Areas around Ashridge and Gade Valley, as part of this zone.
- **Chalk Valleys Conservation Zone:** conserving key GI assets as part of the movement, habitat and physical landscape network. This also links to the Chilterns AONB Chalk Streams Project, as this zone falls partly within that area, and is complementary to the aims and objectives of the Dacorum Chalk Rivers Restoration Strategy^x.

3.5 These zones are colour coded on **Figure 3.1**. These zones 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 Dacorum

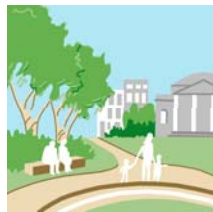
3.6 A series of green infrastructure types have been defined to organise proposed green infrastructure projects in Dacorum Borough, these are:



Urban greenways



Urban blue links



Urban wildspace



Peri urban wildspace



Rural wildspace



Rural blue links

Proposed green infrastructure projects

3.7 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 have been developed in association with officers from Dacorum Borough Council and key stakeholders. Further, more detailed work will be needed in relation to green infrastructure in Dacorum in future – other, more local scale projects. This is described at the end of this section, which identifies supporting non spatial GI projects, and in

section 4, which identifies potential future work for Dacorum 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).

- 3.8 The GI projects (shown on **Figure 3.1**), are:
- **1. Tring Park Enhancement**
 - **2. Aldbury Nowers Habitat Restoration**
 - **3. Grand Union Canal Enhancement**
 - **4. Ashridge Improved Green Access**
 - **5. River Valleys Project (Gade, Bulbourne and Ver)**
 - **6. Rural Commons and Villages Links**
 - **7. Urban Greening for Hemel Hempstead**
- 3.9 Non spatial (thematic or interpretative) projects are identified at the end of this section (project 8: Green Hertfordshire). This promotion and awareness raising project is of equal importance to the spatial projects, in translating the GI message to the widest audience – the communities in Dacorum.
- 3.10 Also identified at this section are GI links with adjacent Hertfordshire authorities and with adjoining counties, to

signpost where ‘joined up’, cross authority working will be required.

- 3.11 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 +

- 3.12 Note that costs are indicative/guidelines only and are based on 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, implementation of part of projects will have an effect on costs. For example whilst low key/local management changes identified in project 7 fall within the **£-££** cost band, consideration of the Jellicoe

Water Gardens project as part of this would significantly increase capital costs to **£££+**. 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 (e.g. projects 6 and 7).

- 3.13 Consideration is given in broad terms to further work needed to deliver projects in the sheets at the end of this section. 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 - Dacorum

Figure 3.1: Proposed Green Infrastructure Network

Key

Proposals

↔ Strategic link

↔ Local link

1 Green infrastructure projects

Strategic GI assets

Farmland conservation & enhancement zone

Lowland vale farmland zone

Wetland habitat zone

Woodland enhancement zone

Chalk valleys conservation zone

Chalk grassland & woodland enhancement

Parkland restoration

Existing

Long distance and promoted routes

Rivers

Area of Outstanding Natural Beauty (Strategic / regional & sub-regional GI asset)

Accessible open space

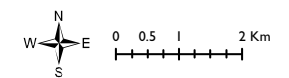
Woodland

Main settlements

Barriers

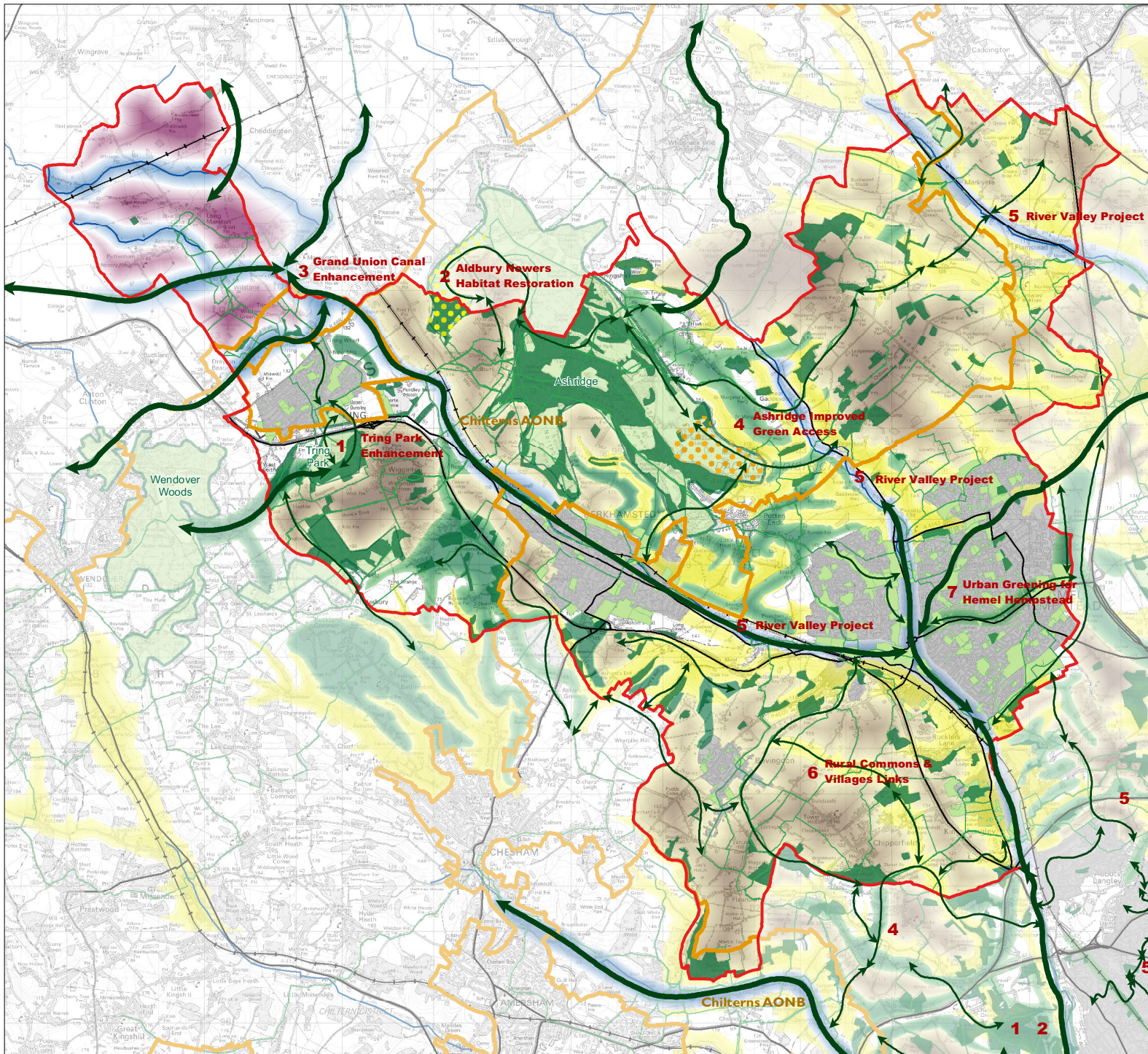
Major road network

Railways



Date: 24/03/2011

Revision:



PROJECT : 1. Tring Park enhancements



RURAL WILDSpace - Brief description / snapshot of the project :

- Enhance the clarity & green linkages between Tring Park & Tring town centre
- Improve the main approach to the park for a heightened sense of arrival (across the A41)
- Enhance links between the park & the wider green infrastructure network, both Borough & county wide, such as the Grand Union Canal
- Create & strengthen connections between the park & neighbouring Wendover Woods in Bucks
- Promote the park district wide, as an alternative to heavily used greenspaces, like Ashridge, taking into account sensitive & appropriate management of the future park resources
- Recognise the historic context of the site as a parkland & protect, conserve & enhance



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Enhancements will deliver improved access, connecting to the wider cross county GI network & to strategic routes (e.g. Grand Union Canal). Green link enhancements will contribute to the Hertfordshire Rights of Way Improvement Plan. GI cross-county links to assets such as Wendover Woods, the Ridgeway & College Lakes will help deliver a co-ordinated approach to the infrastructure network regionally. Enhancing the functionality of the park & routes to it will help improve the available provision of natural greenspace to the area, contributing to Accessible Natural Greenspace (ANG). Project can also conserve & enhance areas of 'wildspace' identified in Urban Nature Conservation Study, securing greater countryside connectivity.

ISSUES ASSOCIATED WITH DELIVERY : Creating enhanced significance for Tring Park through promotion, restoration, enhancement & physical green linkages identifies a range of sub projects which need to work coherently together. Funding & delivery of the different facets may need to be phased & assessed on merit within the wider scheme, with a clear delivery method stating key elements for a successful project, (e.g. it maybe a question of improved park promotion & signage rather than large scale infrastructure). Appropriate management & resource capabilities will need to be assessed should promotion of the site draw in new users, & with it new pressures on existing resources. Large scale funding through government bodies (i.e. HLF) might come up against competition from other projects within the county. Appropriate consideration of zoning to avoid user conflicts (e.g. pressures regarding ecology with grassland management/grazing).

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Liaison with Highways for potential future crossing improvements over A41. Potential developer contributions through off-site CIL/s.106. Herts & Middlesex Wildlife Trust & Borough Council, including government funded schemes (e.g. HLF). As part of the wider strategic plan, this could involve key bodies such as Sustrans, Woodland Trust, Natural England (through Access to Nature) & joint funding initiatives between counties (e.g. Hertfordshire & Buckinghamshire for a Wendover to Tring Park green link). Contact to be made locally (& Borough wide) with the relevant parties (e.g. Groundwork) who could deliver smaller projects like promotion & interpretation. Monitoring for components is likely to be through visitor schemes.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Priority for promotion of the site & signage from Tring town centre & wider landscape assets, to assess potential for relieving other key green assets (e.g. Ashridge). Determine the on-going priorities for delivery of the enhancements as a whole project, through discussion with relevant parties.

PROJECT : 2. Aldbury Nowers habitat restoration & enhancement

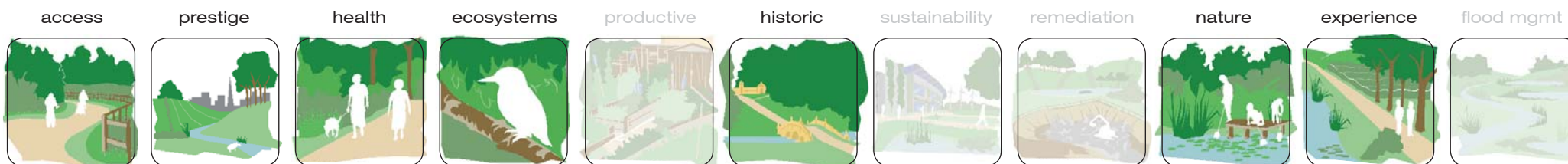


RURAL WILDSPACE - Brief description / snapshot of the project :

- Chalk grassland, habitat restoration & landscape enhancement, reflecting the works already undertaken on the North scarp slopes of the Nowers
- Conservation of existing ancient woodlands
- Enhancement of green access (people) links to Ashridge
- Create stronger loop walks & sites of interest, such as heritage routes, to alleviate pressure on key sites within the surrounding area (e.g. Bridgewater Monument at Ashridge)
- Promotion of the Nowers as an alternative destination & greenspace within the Borough & immediate area



FUNCTIONS MET :



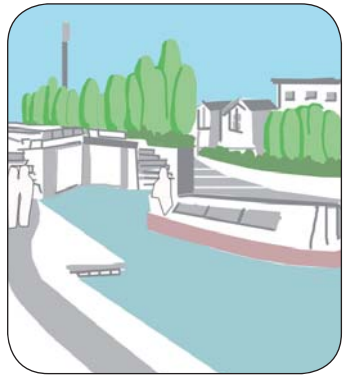
PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : The project can help to alleviate pressures on the Ashridge parkland by being presented as an alternative greenspace. Chalk grassland restoration & enhancement can link with Buckinghamshire GI & AONB aspirations for the protection of this rare landscape character type. Improved access & the creation of new routes, with circular walks & heritage trails will contribute to functionality of the Nowers making it more available to local & visiting users, contributing to the aims of the Hertfordshire Rights of Way Improvement Plan. Habitat restoration & enhancement across the chalk landscape will enhance & expand the works undertaken by the Herts & Middlesex Wildlife Trust.

ISSUES ASSOCIATED WITH DELIVERY : The project encompasses access initiatives & landscape/habitat restoration, meaning a sensitive approach to both will need to be achieved to ensure they work harmoniously together & not compromise one other. The site is sensitive to visitor pressure, so proposals for appropriate access link enhancement will need to be zoned to avoid uses conflict, & monitored. A co-ordinated approach to the access, habitat creation & landscape enhancement projects will be important requiring the delivery bodies to work together with landowners & Herts County Council.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Natural England (through HLS agreements, to encourage habitat restoration & capital payment for access). National Trust (Ashridge), Herts & Middlesex Wildlife Trust, local Parishes (Aldbury), Dacorum Borough Council including government funded schemes (e.g. HLF & Access to Nature), Sustrans, the Herts Rights of Way & the Local Access Forum. Monitoring mechanisms could be through both species & visitor/user surveys to ensure that balance of users/interests is correct. District & local scale promotion & signage projects to be delivered through BTCV & CMS (potentially in the future) & bodies such as Groundwork (who could assist community led schemes) in order to raise awareness of the Nowers as an alternative destination in the area.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Local project initiatives should be encouraged to deliver the smaller scale restoration & access initiatives. Smaller projects & those which could be delivered through HLS are high priority. Larger schemes & enhancements will require working with Herts & Middlesex Wildlife Trust, Natural England & landowners under a coherent plan to deliver through initiatives such as the HLS & HLF.

PROJECT : 3. Grand Union canal enhancement



URBAN BLUE LINK - Brief description / snapshot of the project :

- Upgrade stretches of the canal towpath, & National Cycle route, to improve quality & wider use accessibility
- Enhancement & creation of greater usable standard surfaces along the canal route
- Create a continuous linking strategic route throughout the Borough, & to neighbouring districts & counties
- Recognise other canal links, e.g. Wendover & Aylesbury arms
- Further wetland habitat creation around Pitstone & the canal corridor as a whole
- Create enhanced connectivity & signage between Pitstone & the Tring (Wilstone) Reservoir network
- Physical areas of significant focus: links to College Lakes / canal route south of Kings Langley & links to Three Rivers & Watford / Two Waters Open Space Project
- Also enhanced links to wider, cross district GI network - Three Rivers & the All London Green Grid



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Enhancements will deliver improved & continuous access along the canal towpaths throughout Dacorum linking up to the adjacent districts & counties, such as Watford Borough to the south & Bedfordshire to the north. An upgraded strategic route will contribute to improved functionality, making it more available to a larger range of user groups (e.g. wheelchair users & bicycles), satisfying Hertfordshire Rights of Way Improvement Plan & the National Cycle Route 6 initiative. Stronger access links along the canal corridor will enhance the usability & function of other key Dacorum projects, such as Two Waters Open Space Project, (links to Box Moor Trust), to secure improved links into Hemel Hempstead. Improved links between the canal & adjacent sites throughout the Borough will help alleviate some pressures on the existing primary sites which need protection from visitor numbers (e.g. Chilterns AONB). Contribute to conservation & enhancement of 'wildspace' (e.g. to the west of Hemel Hempstead & potentially the Wendover Arm of the canal) identified in Urban Nature Conservation Study, securing greater countryside connectivity.

ISSUES ASSOCIATED WITH DELIVERY : The project is primarily focused on improved access along & connections from/to the Grand Union canal, as part of a wider strategic county wide project. Access upgrades, enhancements & creation can require significant funding to achieve a continuous standard which will satisfy fully a range of existing & new users. Where large scale funding is not available such as developer contributions (CIL/s.106), canal enhancements could be more locally based initiatives under a series of guidelines or a practical 'how to' for local friends groups, parishes & trusts (e.g. Groundwork & BTCV) to take forward (e.g. repairing potholes as surface upgrades / removal of invasive species as voluntary work).

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Developers (Hemel East & Two Waters Open Space Project), Dacorum Borough Council, including Sustrans, British Waterways & EA. Contact should be made with relevant local scale partners who can offer small scale delivery through their voluntary activity, minimal funding, labour/clean up days & events, such as Hemel in Transition (Transition Towns Movement), local trusts & friends groups (e.g. Friends of Tring Reservoirs & the Box Moor Trust). Groundwork may also be able to assist with securing funding for/delivering local community projects. Monitoring for developer led components is likely to occur through planning conditions & site inspections.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Pre-application negotiations to get the improvements written into relevant schemes as part of s.106/ factor in as part of CIL charge. Priority for promotion to locally interested groups, approaching Hemel in Transition, liaison with Groundwork, BTCV, friends groups & user groups (e.g. Anglers). Large scale work will be determined through funding channels known & available.

PROJECT : 4. Ashridge: Improved green access



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

- Create improved green access links from Hemel Hempstead to Ashridge
- Primary green link to be via the Gade Valley river corridor from the Water Gardens in the town centre - North to Water End & onto Frithsden/Nettleden along reinstated aspects of the historic landscape, via the dry valley along Nettleden Road
- Reinstated historic link via Devil's Bridge & approach to the Ashridge parkland & alternative greenspace south of Golden Valley
- Enhanced green link to Ashridge from Berkhamsted via the Castle & associated farmland, via town centre & railway station
- Maintain, reinforce & manage the separation between Hemel Hempstead (North) boundaries & outlying villages/hamlets, through landscape conservation & enhancement
- Promotion of improved green access links to Ashridge, as an alternative to private car use



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Can contribute to alleviating access barriers from town to countryside around the district, especially at Hemel, (ROWIP). Reduce dependency on transport as means of arrival to Ashridge, with the 'journey' becoming part of the experience (using green transport, to take in rediscovered historic parkland elements & relieving pressures on key sites within Ashridge - such as Bridgewater Monument). Enhancing the chalk valley landscape & landscape experience, to ensure separation between settlements, will strengthen the character of the Chilterns AONB. Restoring landscape structure will contribute to LCA objectives & to climate change responsiveness. Landscape enhancement has potential to link Key Biodiversity Areas.

ISSUES ASSOCIATED WITH DELIVERY : The project covers both green access links & historic restoration spanning several small settlements & links to Hemel Hempstead. Land ownership & negotiations are therefore key issues. Delivery may have to be set up as a series of smaller projects to deliver an over all GI masterplan vision. Landscape management changes in methodology across the landscape (e.g. arable reversion) will require on-going monitoring (e.g. through implementation of Higher Level Stewardship schemes). With regard to access proposals affecting the registered landscape, consultation with English Heritage will be required. As of 2010, restrictions on HLS revenue payments (access).

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Landowners & Natural England (through HLS agreements to deliver landscape capital improvements). Ashridge (National Trust & potentially Ashridge Management College), Dacorum Borough Council including government funded schemes (e.g. HLF for the historic restoration elements), Sustrans, the Herts Rights of Way & the Local Access Forum. Monitoring mechanisms for continued green access routes are likely to be through potential CMS implementation, Higher Level Stewardship agreements & the Hertfordshire Rights of Way Improvement Plan (e.g. developing & implementing improved access projects). Local promotion & signage projects to be delivered through bodies such as Groundwork who could assist community led work, e.g. parts of the project in closer proximity to Hemel Hempstead. Also developers, if growth was considered at Hemel West (factor into s.106).

WHAT HAPPENS NEXT? PRIORITY / RANKING : HLS initiatives should be encouraged as a priority, as this could deliver many aspects of the overall project. Promotional projects (e.g. Green Hertfordshire - Project 8), to raise consciousness of the alternative ways to visit Ashridge (non car), will also be key.

PROJECT : 5. River valleys project - Gade, Bulbourne & Ver



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

- Conserving, restoring & enhancing wetland environments to create 'space for water' & climate change adaptation/proofing
- Enabling river valleys & riverine habitats to be more resilient to abstraction & low flow pressures through an expanded wetland resource
- Enhancing & linking wetland habitats through positive management & restoration, to also deliver stronger sense of place & character
- Improved settlement gateways through expanded wetland areas to avoid pressure on pinch points & urban flooding (e.g. at Berkhamsted approaches, & at Gadebridge, north of Hemel Hempstead)
- Creating appropriate river access and access to nature, linking to existing routes
- Enhanced links to & from local wildspaces at Hemel Hempstead & Markyate
- Enhance & promote valleys as key educational resources for outdoor learning (e.g. Geography)



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Can address landscape quality & enhancement issues (contribute to landscape character assessment guidelines). Contribute to bridging access barrier revealed in access (ROWIP) & prestige strand analyses at Roughdown & into Bulbourne Valley, & also in securing better connectivity to northern parts of the Borough e.g. Markyate. Creation, enhancement & promotion of the network could also contribute to the aspirations & aims of the Transition Towns movement, which is focussed on the Three Towns - Tring, Berkhamsted & Hemel Hempstead (this project could contribute to enhanced green links to & between all these settlements). Complementary to objectives of the Chilterns AONB Chalk Streams Project and the Dacorum Chalk River Restoration Strategy. Contributes to the objectives of the Thames River Basin Management Plan (TRBMP).

ISSUES ASSOCIATED WITH DELIVERY : 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). Other issues relate to provision of enhanced signage & interpretation, both through Herts Rights of Way & Herts Highways, as well as the need to liaise and consult with the Environment Agency. The main focus of the project is the link to the interactive green infrastructure web based map proposals (Green Hertfordshire: Project 8), which could potentially be developed & hosted, as part of a wider, multi-district project & subject to resources, with HCC & Countryside Management Service. As of 2010 restrictions on HLS revenue payments (access).

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Landowners & Natural England (through HLS agreements to deliver landscape capital improvement. Environment Agency and Herts and Middlesex Wildlife Trust. Herts Rights of Way, the Local Access Forum & Box Moor Trust. Also Herts County Council/Landscape Unit & CMS for interactive & interpretative project (Green Hertfordshire - Project 8). 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 other 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. The same applies to translating the network into a promotional/awareness raising project (Green Hertfordshire), although the cost of an developing interactive GIS mapping/app based package, & hosting/updating this is significant.

PROJECT : 6. Rural villages & commons links



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

- Enhancing the functionality, quality & diversity of the rural landscape
- Promotion of enhanced walking, cycling & riding links between rural settlements & outlying green infrastructure assets - low key recreational routes from villages/pubs & destinations
- Potential to develop a series of themed trails which could be promoted through interactive mapping/smartphone explorer app/package (refer to non spatial projects in GI Plan: Project 8: Green Hertfordshire)
- Conserve, enhance & re connect landscape structure of arable farmland through agri environment schemes, to provide link to areas of woodland creation & linkage as shown on the GI proposals map (Fig 3.1)
- Conservation management / sustainable farming & local production (e.g. wood fuel)



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Can enhance landscape quality & contribute to the objectives of the Dacorum Landscape Character Assessment guidelines. Through providing enhanced access links can contribute to bridging access barriers revealed in the Herts ROWIP, such as major transport corridors (e.g. A41 link road). Enhanced sense of prestige at Roughdown & into the Bulbourne Valley as well as securing better connectivity to northern parts of the Borough e.g. Markyate. Creation, enhancement & promotion of an enhanced green network will assist the aspirations & aims of the Transition Towns movement, which is focussed on the Three Towns - Tring, Berkhamsted & Hemel Hempstead (this project could contribute to enhanced green links to & between all these settlements). Project can contribute to objectives of Dacorum Cycle Strategy & to enhancement of wildspaces (e.g. Bovingdon Green) identified in Dacorum Urban Nature Conservation Strategy, & enhanced green space functionality / quality.

ISSUES ASSOCIATED WITH DELIVERY : The 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 schemes). Other project elements relate to the provision of enhanced signage & interpretation, which could be partly delivered through Herts Highways & Rights of Way (subject to funding). The main focus of the project is the link to the interactive green infrastructure web based map proposals (Project : 8, Green Hertfordshire), which could potentially be developed & hosted, as part of a wider cross district project (subject to resources), with Herts County Council & the Countryside Management Service. As of 2010, restrictions on HLS revenue payments (access) apply.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Landowners & Natural England (take up of HLS agreements to deliver landscape capital improvements). Herts Rights of Way & the Local Access Forum. Herts County Council / Landscape Unit & CMS for interactive & interpretative project (Project : 8, Green Hertfordshire), also volunteer groups such as the BTCV. Monitoring mechanisms are likely to be through the Herts ROWIP e.g. developing & implementing priority projects & monitoring progress against these. Smaller scale monitoring through visitor groups & BTCV (for community led initiatives). Take up of HLS agreements is the other key monitoring mechanism for landscape capital projects.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Landowner HLS take up should be encouraged as a high priority, delivering many aspects of the work (excluding revenue payments for access as part of these schemes). Another priority is promotion & awareness raising of the project & enhanced links to the rural & wider community (alongside Project 8 : Green Hertfordshire).

PROJECT : 7. Urban greening for Hemel Hempstead

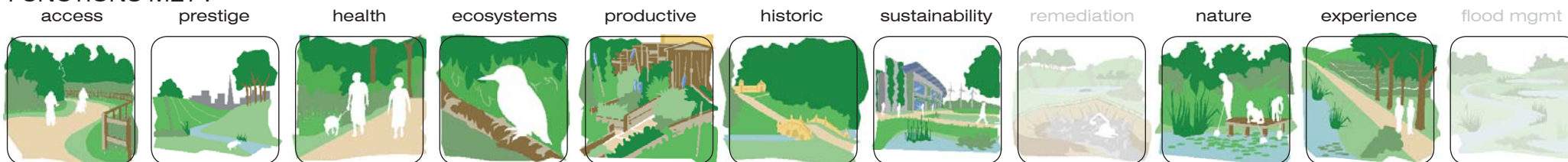


URBAN WILDSpace - Brief description / snapshot of the project :

- Enhancing the functionality, quality & diversity of the green wedges in Hemel Hempstead
- New tree planting & localised community woodland creation in green wedges
- Maintain distinctive chalk valley character of the wedges
- Maintain simple New Town character & design vernacular within enhanced landscape management
- Introduction of community gardens & orchards in local greenspaces
- Local play provision - natural play
- Creating spaces which are adapted to climate change
- Restoration & interpretation of the Jellicoe Water Gardens - link to wider town centre regeneration project
- Link to growth at Hemel east & to Nickey Line via new shared use greenway, to provide enhanced strategic access out to wider countryside



FUNCTIONS MET :



PLANS / POLICIES / PROGRAMMES WHICH THE PROJECT CAN HELP DELIVER : Can address quality & functionality issues associated with Hemel Hempstead open spaces as identified in the PPG17 study. Also address deprivation issues to east Hemel, as identified in the Indices of Multiple Deprivation, through enhanced greenway links to the Nickey Line. Potential to create better transition between landscape & townscape (e.g. Gade Valley at Gadebridge Park - restoring wetland character) & to help deliver Landscape Character Assessment objectives. Opportunities for local food production & community gardens could help contribute to aspirations of 'Hemel in Transition' & complement the objectives of draft Dacorum Environmental Forum Food Strategy. Contribute to enhancement of wildspaces (e.g. Gadebridge Park) identified in Dacorum Urban Nature Conservation Strategy, & enhanced green wedge functions through positive management. Potential to address identified wildspace deficiency north of Hammerfield.

ISSUES ASSOCIATED WITH DELIVERY : Project encompasses many sub projects & spatial interventions, most of which are low key & associated with changes in management, the objectives of which would clearly need to be communicated to existing residents. Scope for widespread community involvement through the Transition Towns movement (establishment of Local Green Groups to improve local greenspaces). Other component projects (Water Gardens restoration) & east Hemel Greenway link are very costly (capital & revenue activity) & would depend on Heritage Lottery Funding & Developer Contributions (CIL/s.106), respectively. Whilst Jellicoe Water Gardens are linked to a longer term masterplan for Hemel, & dependent on HLF funding, match funding for the HLF is (as of December 2010) now considerably more flexible & may provide a starting point.

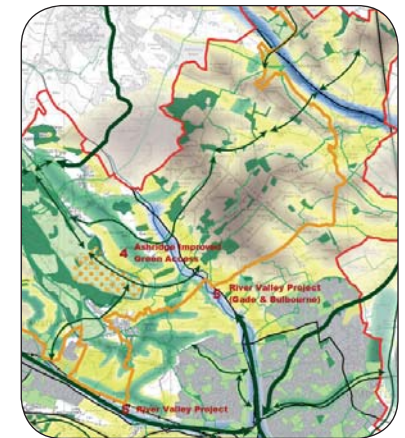
POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : Developers (Hemel East) & Dacorum Borough Council, including Sustrans if cycle route is pursued as part of greenway. Dacorum Borough Council for Greenspace Management. Herts Env't Forum & the Box Moor Trust. Contact should be made with Hemel in Transition (Transition Towns Movement) to establish community gardens & to identify possibility of resources to implement low key changes in community greenspaces/wedges. Groundwork may also be able to assist with securing funding for/delivering community projects - potential scope for 'Green Team' subject to resources, project has links to localism agenda, e.g. involvement of school groups / volunteering / voluntary organisations (BTCV). Monitoring for developer led components is likely to occur through planning conditions & site inspections.

WHAT HAPPENS NEXT? PRIORITY / RANKING : Low key management changes to green wedges could deliver much for low cost & are highest priority. Enhanced greenway link at Hemel East should be realised through planning conditions & developer contributions & factored into any CIL/s.106 charge. Co ordinate bid to the HLF for a restoration scheme for the Jellicoe Water Gardens.



Brief description / snapshot of the project :

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

ISSUES ASSOCIATED WITH DELIVERY : A communications strategy (to market the GI network & embed the concept) & user groups market research (e.g. school & youth groups) should be undertaken prior to & during development of the App. Key delivery issues relate to 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. Map licensing protocols & restrictions on use of Ordnance Survey data would need to be worked around (lead in times associated with delivery of project are likely to be an issue). Need for compatibility with main Smartphone platforms. Could be compatible with traditional leaflet media using Smartphone scannable 'QR' codes with links to interactive material.

POTENTIAL DELIVERY PARTNERS & MONITORING MECHANISMS : The Hertfordshire Districts, Hertfordshire County Council, Hertfordshire Chief Technical Officers Association (HTCOA) landscape group, & Countryside Management Service, as well as key agencies & organisations with an interest in promoting GI (e.g. Natural England, Herts & Middlesex Wildlife Trust, British Waterways) & landowners of key sites within the Hertfordshire districts (e.g. National Trust, Box Moor Trust) - 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

3.14 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 links with adjacent authorities and relevant bodies in terms of GI links and projects:

- **1. Tring Park Enhancement:** Physical connections to Wendover Woods and Buckinghamshire GI.
- **2. Aldbury Nowers Habitat Restoration:** Links to Chilterns AONB and commons project.
- **3. Grand Union Canal Enhancement:** Links to Buckinghamshire GI (strategic Bucks project). Also links to Three Rivers District and the All London Green Grid (ALGG)
- **4. Ashridge Improved Green Access:** Links to Buckinghamshire GI.
- **5. River Valleys Project (Gade, Bulbourne and Ver):** Links to Chilterns AONB River Valleys project and associated funding streams operating in the AONB (LEADER/LANTRA funds).
- **6. Rural Commons and Villages Links:** Links to AONB Commons Project. Also physical links to Three Rivers District, in terms of enhancing, promoting and way marking.

- **7. Urban Greening for Hemel Hempstead.** As this extends to consideration of the urban edges and strategic links such as the Nickey Line, liaison with St Albans District will be desirable in delivering component projects/GI as advance mitigation for potential future development east of Hemel Hempstead.

3.15 In addition, several of the projects proposed in this GI Plan should also be cross referenced with proposals contained in the county wide Strategic Highlights Green Infrastructure Plan (also referred to as the strategic plan). **Project 3** forms part of the 'Grand Union Canal, Colne Valley and Regional Park Enhancements' project in the strategic plan. **Project 5** forms part of a wider 'Thames Tributaries, River Valleys and Corridors' project, whilst **project 7** is linked to an 'Urban GI Heritage' project in the strategic plan. The non spatial 'Green Hertfordshire' mapping/app project (**project 8**) is also referenced in the strategic plan.

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

- 4.1 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. Future policies dealing with green infrastructure will have to meet three ‘tests of soundness’:
- To be consistent with National Policy; a green infrastructure approach is clearly advocated by national policy.
 - To be justified; evidence to prove why it is justified (why something is being proposed and that there is a problem or a need)^{xi} (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^{xii} 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 and counties have been reviewed to ensure consistency between this plan and that of neighbouring authorities. A robust and transparent methodology has been used to ensure that GI proposals are clearly linked to issues and needs identified in the evidence base. A workshop and consultation with delivery partners has ensured that proposals (**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

- The Green Infrastructure Plan is to be included as part of the evidence base for the LDF process. There may also be benefits of including or referring to parts of the evidence gathering and analysis work 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** of the Plan.
- Key green infrastructure issues are summarised by function at **section 2** and explained more fully at **Appendix 2**. These issues should be used by plan makers, SA practitioners and consultees to identify what the broad green infrastructure (and environmental) issues are in the Borough.
- The assessment of need for green infrastructure is given by function in **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

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

- Wetland enhancement and sustainable water management in the Gade, Bulbourne and Ver Valleys;
- Increased green connectivity for people and for wildlife, creating enhanced links to existing GI assets;
- Nature conservation management: Dacorum already has a good green infrastructure network, and proactive management is needed to conserve and enhance and reinforce biodiversity.
- Sense of place and local distinctiveness: Recognition and conservation of the key assets of chalk valleys, river valleys and woodlands and formal GI associated with the New Town heritage (e.g. the Jellicoe landscapes in Hemel Hempstead)
- Urban greening and enhanced functionality of urban greenspaces such as in Hemel Hempstead New Town.

DEVELOPMENT MANAGEMENT

- 4.6 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** overleaf. A standardised approach to the design and implementation of

a generic green infrastructure development project is shown in the central column of this Figure, with respective responsibilities of the applicant and the Borough Council, as they relate to GI, shown to the left and right hand sides respectively.

4.7 It should be noted that this GI Plan sets out strategic principles. More detailed proposals for site design, land management and habitat creation, will need to be assessed on a site by site basis, with input from the Borough Council’s ecological advisor.

4.8 **Figure 4.1** is designed to assist Development Management officers and planning applicants in ensuring 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 in which a specific development proposal lies and whether it relates to, can contribute to or affects any proposed GI projects. 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.

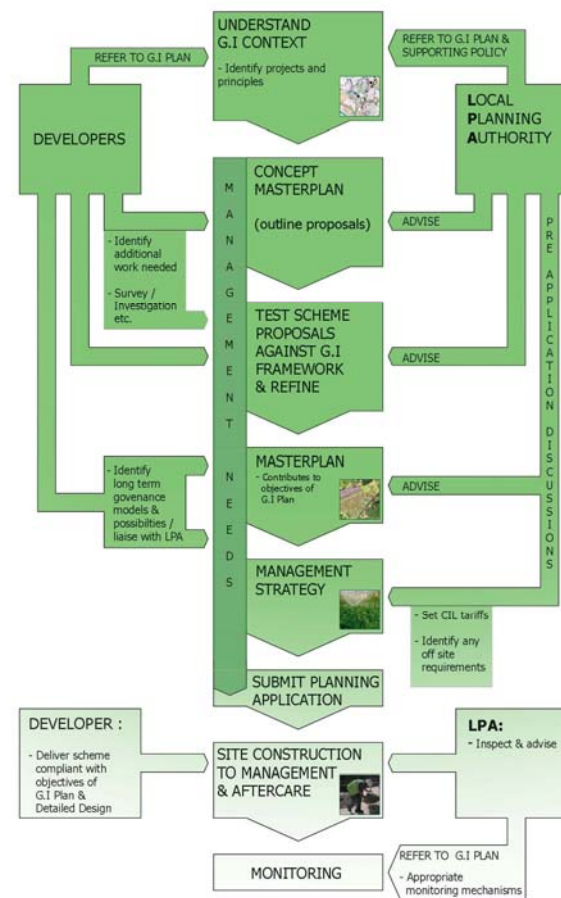


Figure 4.1: Embedding GI in Development Management

NEXT STEPS: TAKING GI FORWARD 'ON THE GROUND'

- 4.9 The following steps/alternatives are proposed 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 if Dacorum were to fund this service in future. The Council's ecological advisor will have a key role in ensuring achievement of appropriate habitat creation on the ground. The GI Plan should also be cross referenced with the Council's Greenspace Strategy and associated action plan, which will form an important delivery mechanism for wider GI objectives;
 - Attendance at and participation in a potential new Hertfordshire wide/cross district **GI Delivery Panel** (potentially linked to HTCOA's landscape group), which 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 working with other organisations with parallel interests and objectives. 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 Hertfordshire Forward and the Local Strategic Partnership, to ensure that green infrastructure contributes to the objectives of spatial planning;
 - Subject to resources, 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 (Green Hertfordshire) described in **section 3**. 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 following:
- **A checklist** for evaluating development proposals in terms of GI and against the components of the GI network in this GI Plan. This could potentially link with other related checklists being considered by the Development Management Team, such as one for biodiversity;
- **Consider potential for further work** to bring GI forward/additional studies, 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);
- 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 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^{xiii};
- 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 for long term governance to deliver design intentions and desired environmental outcomes;
- **Make appropriate links with future funding partners** identified 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.
- **'Grass roots' delivery:** Make links with the **Transition Towns Movements** operating in Tring, Berkhamsted and Hemel Hempstead as these will be key to local level delivery/achieving smaller projects which can contribute to the GI Plan's message (**potential for formation of local green groups working with a Delivery Officer/panel**);

- Liaise with the relevant Local Strategic Partners and other project 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;
- Liaison with appropriate community representatives e.g. Friends Groups;
- Develop appropriate consultancy briefs for masterplanning and detailed design services in relation to key GI projects, making appropriate reference to key messages in **section 3** of this plan;
- **Create an audit trail of appropriate monitoring mechanisms** for green infrastructure delivery, using 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 Dacorum;
- 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 (e.g. successful working examples such as Box Moor Trust, which could be used on other projects), and lessons learned.

Potential future GI work

GI Checklist for Development Management Decisions

- 4.11 Note that this could be considered/developed in parallel with other checklists. From a GI perspective, and in addition to the general pointers shown on **Figure 4.1**, this could cover the following:
- 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 Advice Note

- 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. In light of resourcing, it may be most practical for this to be considered as part of a GI Supplementary Planning Document, as described below.

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 Local Development Framework. It may be more useful to include or reference aspects of the Green Infrastructure Plan and potential future work within other SPD (e.g. Planning Obligations/Developer Contributions, or a Design SPD. A Design SPD is currently programmed in the Local Development Scheme for the Borough).

More detailed and local level GI planning work

- 4.14 This is a strategic level Borough wide GI Plan and more detailed and 'site specific' GI planning work, drawing on this plan, is likely to be required within the Borough. This will particularly be the case as growth locations and areas of change become more fixed, with the need for growth location specific local GI (elements to be delivered through Community Infrastructure Levy tariffs and or section 106 contributions). Whilst not prepared by the Borough, neighbourhood and or parish level GI plans may form part of the local /detailed GI planning process, considering more

site specific information. This would also help ensure conformance of such plans with strategic policies in the Core Strategy.

- 4.15 A key part of more detailed GI planning work is likely to be the working up of more detailed project proposals, to support collection of the Community Infrastructure Levy.

Outward facing projects to 'launch' the GI concept

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

- 4.16 This is described in project 8 at **section 3** of this plan.

Other potential relevant studies (suggested by stakeholders)

- Local Food Strategy (co ordinated approach to local food growing initiatives proposed by Transition Towns and linking to the Urban Greening project proposed in this GI Plan).
- Green Travel Plans for key recreational sites such as Ashridge.

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- ⁱ <http://www.hertsdirect.org/infobase/docs/pdfstore/gifframework.pdf>
- ⁱⁱ <http://naturalengland.etraderstores.com/NaturalEnglandShop/NE176>
- ⁱⁱⁱ NE176, **Op Cit**
- ^{iv} <http://www.hemelintransition.org/>
- ^v Dacorum Borough Council, 2008 **Open Space Study**
- ^{vi} Natural England/The Landscape Partnership **Analysis of Accessible Natural Greenspace Provision in Hertfordshire**
- ^{vii} Source: V4C Project. Study produced for Hertfordshire County Council
- ^{viii} <http://www.hertsdirect.org/libisleisure/heritage/landscape/hlca/>
- ^{ix} Dacorum Borough Council/Hertfordshire Biological Records Centre 2006 **Urban Nature Conservation Study**
- ^x Dacorum Borough Council, 2010 **Dacorum Chalk River Restoration Strategy**
- ^{xi} Planning Advisory Service 2008 **Local Development Frameworks: Evidence Base**
- ^{xii} The Planning Inspectorate 2008 **Local Development Frameworks: Examining Development Plan Documents – Soundness Guidance**
- ^{xiii} http://www.sustainabilityeast.org.uk/index.php?option=com_content&view=article&id=17&Itemid=22



www.landuse.co.uk

