

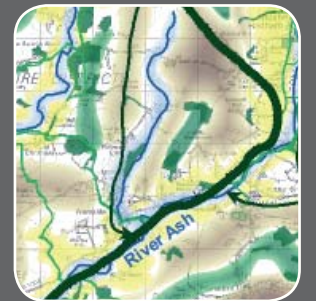
EAST HERTS GREEN INFRASTRUCTURE PLAN APPENDICES

Prepared for East Herts Council
by
Land Use Consultants

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LUC SERVICES

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Landscape Design

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1 Stakeholder consultation record: Stakeholder event, East Herts Council, 27th January 2011

4993 East Herts GI Plan: Stakeholder event, 27th January. Record of discussion and LUC responses (in bold)

Stakeholder workshop report
The workshop was held at EHDC's offices on 27th January from 1.30-4.30pm, facilitated by Bryan Thomsett, Jenny Pierce and Ian Sharratt (EHDC) and Andrew Tempany and Fearghus Foyle (LUC). Attendees were split into 5 groups and considered three subject areas/exercises to inform development of the GI Plan, following a short introduction to the work by LUC. Exercises considered: Visioning, Proposals and Projects and Delivery. Findings and LUC responses (where appropriate) are summarised by group below.
Group 1: Visioning (LUC responses in bold)
• We should protect areas that are not yet protected. Yes, agree with principle • Identify all protected landscapes (other than Panshanger) LUC to check • Too specific – provide examples Yes • Define 'protected' • Separate routes for cyclists Detailed consideration for future work • Why particularly Beane Valley The importance of all river valleys is recognised and will be referenced • More thought about, e.g. linking neighbouring strategies (cross-county) Cross district links are identified in parallel Herts district GI work being undertaken by LUC - e.g. North Herts / Broxbourne - re-word – adjoining districts • Identify SSSI locations to avoid conflict from increased access Yes, these have been identified as part of the functional mapping undertaken for the project • Biodiversity should be stressed more as a key message Can emphasise more • Are other documents linked e.g. Living Landscapes? Yes • What does low key and informal mean? • Conservation of 'heritage' landscapes not mentioned, e.g. historic landscape character. HLC is being referenced in the GI Plan Report and the functional analysis • Wider assets? • Growth points – ensuring new developments are designed to link with and enhance green infrastructure. Agree with principle

Want to see:

- Need for good evidence base **This has been provided in document review and functional analysis which will form part of the full GI Plan report**
- Could maps be made available online to see more detail **This is not within the contract scope. The GI proposals map has been circulated by EHDC for information**
- External river valleys “outside” of the map boundary **LUC to check**
- More emphasis on “quality of place” – v important to residents. **Can emphasise more**

Group 2: Visioning

- Stevenage and Lee Valley (the natural place rather than the park itself) links **Agree, these form part of the network**
 - Promote as an asset separate to Lee Valley Regional Park. **Agree with promotion of the valley itself in principle**
- Ownership – shared ownership with council and stakeholders
- Buntingford (all urban areas in the district)
 - Urban envelope
 - Enhance / maintain rural character **Agree**
 - Urban / rural links – reinforce importance of countryside **Agree**
- Land Use **Recognise its importance as a key component of GI and planning for the future**
 - Wider land use issues for the future
 - Water / water quality will be a significant driver in land use **Agree**
- GI should inform development and not the other way round. **Agree**
- Access – promotion of existing and improvement **Incorporated into GI proposals**
- Education **Agree with importance and need for awareness raising**
 - Rights of way
 - Farming – promotion
- Identity / place / setting – crucial to development proposals **Agree**
- Belonging **Agree**
 - Ownership
 - Localism
 - Shared ownership – Council, EH & Stakeholders

- Urban – rural links **Yes**
- Development
 - GI informs development plans **Agree with principle**
 - GI evidence base for development
- Access – promotion of existing and additional routes **Agree**
- Taking forward
 - Agri-schemes/HLS **Agree**
 - Section 106 **Yes, agree**
 - No longer publicly supported route to delivery
 - HLS
- Education **Yes, very important**
 - RoW
 - Farming – promotion (agri-environment)
 - Those in receipt of funding should be reminded
- Place / setting - ensure landscape is a primary element in deciding development **Agree with principle. GI forms a part of that process**

Group 3: Visioning

- Buffering of communities – e.g. Stevenage and the way it accesses wider resources. Could this be stronger? More on requirement of community **LUC to check**
- Vision is quite comprehensive for this level/spatial scale
- ‘How to get there?’ **A point for consideration of delivery**
- Sensitivity of landscape north of Harlow **Agree this is important in terms of GI assets**
- Links with Stort Valley & Harlow area GI work **Yes**
- Joined up approach – linking to project delivery at Stort Valley **Agree with principle**
- Good to express more clearly along Lee Valley
- Farmland: more on local food initiatives **Agree with principle**
- Rural tourism
- Value of farmland for linked habitats **Importance has been identified**
- Linking HLS areas **Agree with principle**

- Link to other activities – skills / training etc **Yes, agree with principle**
- Need for co-coordinating role – (CMS?) e.g. how to achieve projects. Land ownership & discussion & Parish councils are key. **Agree**
- Partnership working irrespective of development. **Agree with principle**

Group 4: Visioning

- Are we acting for and on behalf of London spreading north using Herts GI assets or vice versa? – **Providing a network of open space within Hertfordshire with links to and from adjoining districts. GI aims to remove boundaries**
- Barge over-crowding on the Stort
- River network is a ready-made GI network **Agree**
- Needs to be a link between development extraction levels harming the very environment they want to take advantage of
- Importance of Broxbourne & Herts woodlands NNR **Signpost to strategically important assets as appropriate**
- Increasing corridor effect for wildlife / plants migration – issues getting land owners to sign up, particularly funding solutions (Climate change)
- Landowners funding
- Links to 'localism' to maximise asset use **Agree with principle – parishes and local community involvement in future**
- Needs to be actioned – not another study on the shelf – need to give much greater priority to GI **Agree with principle. GI Plan will identify initial steps to begin bringing the network forward**
- Needs more reference to biodiversity. **LUC to check**

Group 5: Visioning

- Sense of place **Agree with importance**
 - Rural once out of town
 - Physical barrier around edge of town
 - Happy with consultation proposals
- How are we going to link the wooded areas? Farms already encouraged to do this
- What about the concept of "landscape view" as GI **Unsure of meaning**
- To add:
 - Act to improve, enhance information dissemination esp. Permissive Rights of Way – (in conjunction with Herts Rights of Way Improvement Plan). **RoW and Herts RoWIP considered as part of document review undertaken for**

the project. Agree that promotion and awareness raising are key principles for GI

Group 1: Proposals and Projects

Project 1: Kings Mead

- Hartham wetland – care in research? **Unsure of the meaning of this**
- Would like Rivers Nursery mentioned specifically as historical site. **This may be too detailed for a strategic vision**

Project 2: More emphasis on enhancing and protecting the area and its rural environment. **Recognise and reference as appropriate**

Project 3: Why Stort Valley not mentioned? Lee also **Agree, will add**

Project 4: Roman Rd East of Stevenage would potentially impact on archaeology – needs assessing **Agree**

Project 5: What is envisaged? **LUC to check**

- Link to wetland enhancement – make clearer.
- Emphasise historic environment

- Could be more a specific project to identify and regenerate the ‘lower quality’ landscapes? **LUC to check**
- Why not mapping Entry Level Stewardship schemes This did not form part of the specification for the contract
- Mention traditional orchards (BAP) **Yes, account has been taken of this in the functional analysis**

Group 2: Proposals and projects

Project 1

- King’s Mead – Amwell Quarry
- Greening River Lee around Hertford and Ware
- Encompassing a broader area to include a number of different bodies to bring projects forward
- Herts Civic Society

LUC to check/take account of the above, as appropriate

Project 2

- Scale / size of projects
- Stort valley / Harlow GI Plans act as an overall vision
- Investment in Harlow North countryside

- Lack of funding
- What do zones mean – compulsory consideration or optional
- Green belts – results in overcrowding in urban areas

LUC to check/take account of the above, as appropriate

Project 3

- Beane – runs dry
- EA in consultation with CC to reduce abstraction
- Stort is over licensed
- All Herts Rivers over abstracted
- Programming money to reduce abstraction
- Habitat quality & habitat management
- Run off mgmt
- Tributary mgmt - Beane in particular
- Physical habitat & farming mgmt
- Developing suitable industries along river valleys

LUC to check/take account of the above, as appropriate

Project 4 (grassland mgmt)

- Lateral links **Agree**

Project 5

- Panshanger
- Mineral abstraction
- Designated mineral sites (future sites allocated in the Minerals Core Strategy) – what happens in the in-term? E.g. can they be used as part of GI network until extraction commences?
- Long term ambition for mineral sites

- Abstraction issues

LUC to check/take account of the above, as appropriate

Group 3: Proposals and Projects

Project 1: Link to existing work being done in Hartham **Agree, reference this**

- Land ownership an issue **Agree**
- Links to others e.g. Beane an opportunity
- Hertford Green Fingers study **Make reference as appropriate**
- Information is a key part to “translate why GI assets are special” **Agree**
- Support for idea of links to Amwell NR + Lee Valley Regional Park
- Expand on the good people links of navigation
- Explore links along valley via nature reserve **LUC to check**
- Possible link along A414, but many barriers – railway.
- BWB – works on links at Roydon. Potential further work on Sustrans route
- Also at Bishop Stortford – opportunity for good link in town centre where river un-canalised (Grange Paddocks) **LUC to check**. Could this also link to 2020 vision for Bishops Stortford? (some towpath works being delivered to canalised part). Make sure gaps are joined for users of network **Agree with principle**
- To do rest of towpath is a key aspiration of the Stort Valley Plan, but no funds to deliver
- Need for signage / interpret – action. Awareness raising is absolutely key **Yes, agree**

Project 2: Pole Hole (mineral ext.) & ex Harlow Town rubbish tip. Key opportunity on floodplain site and restore higher ground to farmland **Could be assessed further at a later, more detailed stage**

- Therefore need to formalise as part of valley
- Other aspects of project cover points well
- Land ownership + negotiation key **Agree**
- Wording sounds a bit “Harlow North”? – could it be cast it more in Eastwick / Gilston perspective (local resonance) **Agree, will check**
- Interesting idea re wider landscape sculpture trail
- Potential “tourism angle” – local business input? **Agree, an opportunity**

Project 3: Ecosystem services - should link to vision, e.g. what landscape and habitat provide for people (flood risk management).

Same issues re land ownership. **Agree**

- Link to existing Beane Valley trail / walk (Walkern etc) – Hertford (1996 leaflet- needs updating!)
- Beane arable but some significant HLS in the valley

Project 4: Principle sounds good

Project 5: Project is good but how will it be delivered? **GI Plan will identify initial thoughts and recommendations re: delivery of the network. Links with Lafarge will be key for this project in future**

- Sounds good if phased and more use of quiet roads also.

Panshanger

- Good to have woodland and landscape connections
- Links to phased restoration of site
- What about management – grazing (viability)?

Project 6: Non spatial project

- App idea sounds sensible / appropriate
- Current/relevant idea a cost effective proposal for which there is broad support
- Potential for communities to come together to share info, in addition to hosting by tourism board
- Good for awareness raising
- Potential to act as “portal” for different interest groups **Agree with principle**
- Educational value – enhanced understanding / perception.

Group 4: Projects and Proposals

- Bias towards wetland projects **Landscape as a whole has been analysed however, East Herts water courses are a prominent landscape feature and clearly form a key part of the strategic GI network**
- Need natural history societies input **A point for future engagement**
- Perhaps group river valleys / wetland projects into an overarching project leaving room to accommodate woodland and other projects **LUC to consider**

- Add Mimram to Panshanger Park to link East Herts to Welwyn Hatfield **Agree, this proposal has been developed for the strategic County GI Plan and should cross reference to this district scale GI Plan – proposal can be amended to include**
 - Stort sewerage issues preventing floodplain from functioning properly as it would harm valley biodiversity
 - Is the west at risk of being missed due to focus on river valley **Appropriate promotion and use of river valleys can impact positively on the GI network**
 - Add a project on farmland and stewardship schemes **LUC to check, possibly more an overarching point re: delivery**
 - Increase the involvement of voluntary organisations (Natural History Societies) **Agree with principle, for future engagement**
 - DEFRA – funding for environmental stewardship schemes – 10 yr revenue & capital
1. Wetland and river valleys
 2. Woodland
 3. Farmland (environmental stewardship)
 4. North of Harlow
 5. Lateral links
 6. Panshanger Park
- Need to draw out use of renewables in new developments **Agree with general principle**

Group 5: Projects and Proposals

Project 1: Hetford Ware

- Possible conflict with public access / wildlife **Principle of project is about striking appropriate balance between such interests and avoiding conflict**
- Need for more 'permissive paths' as preferred by farmers / landowners
- Agree with project generally
- 'Natural' approach to flood management prevention important. Need to increase vegetation to slow run off. Reduce canalisation. **Agree with principles**

General:

- Need for more co-ordination between separate landowners and stewardship scheme

- Problem now that access is missing from Stewardship Schemes.

Agree in principle with the above points

Project 2: North of Harlow

- 'Legibility' What is this concept? **A more detailed explanation will be given in GI Plan Report**
- Make sure 'access' is considered at the start of any development, so public access is available to surrounding countryside

Agree with principle

Project 3: River Valleys – R. Beane

- Too much abstraction from River Beane – this causes massive damage **Agree, an important issue**
- There is no more water from aquifers
- All waste water is lost from the catchment as ends up in R. Lee
- Climate change making this a more pressing issue **Agree**

Project 4: Lateral Links to Bishops Stortford

- Strongly support the proposal east-west link
- Conflict with some future development opportunities; whilst conversely it may benefit others in the rural economy **This need not conflict as link can work with and around any future development, if principle of link is established early enough**

Project 5: Panshanger

- Agree with proposals

Project 6: Non-spatial project

- Need more awareness of water management and use. East Herts a very dry area.
- Need for web based register of Permissive Paths, linked with HCC existing web site of Rights of Way
- Agree with concepts, especially on education / local produce.
- Awareness with regard to litter & dog mess **A micro level consideration, although use and misuse issues should be recognised in greenspace management**

Group 1: Delivery

- Parish Council – putting link on Parish websites, path, workgroups involvement in access issues in Standon. **Strongly agree with promotion and publicity for GI, and agree that local level engagement will be key in future**
- County archaeology
 - Checking evidence base
 - Advice for projects re. archaeology **Agree with principle, although this would be a focus for later, more detailed and site specific proposals/work**
- Consultation at an early stage **Yes**
- RSPB – expertise on land management
- North Herts
 - Learning experience, joint working **Agree**
- Rivers Nursery
 - Objectives re living landscapes etc
 - Supportive role
 - Herts Orchard Initiative (link)

Group 2: Delivery

- Buntingford (other town plans)
- Two levels
 - Delivery of vision
 - Delivery of projects **We see the two levels as linked e.g. implementation of projects on the ground will be able to help deliver the vision**
- Living landscape
- Agri-environment
 - PR exercise
 - Public money been spent on the ground – utilise it
- Showcasing existing work to bring forward additional projects **Agree with principle**
- Harlow local initiative – good example of localism
- Delivery bodies
 - Partnership

- Stort Valley
- Project leader / mentor
 - How?
 - Ownership of plan?

Group 3: Delivery

- Identify partners to deliver objectives / projects **Agree with principle**
- Portfolio of projects – strategic approach **Yes, agree**
- Need coordinating role (sub groups) **Agree with principle**
- Resource dependent. Need someone with overview. **Yes, agree, as per above point**
- Prioritisation and costing **Agree, early consideration of prioritisation is part of the work. More detailed feasibility studies and costings will be required as a later stage, although broad cost range can be identified to help guide future investment**
- Use of existing mechanisms as well to help mobilise e.g. Herts Env't Forum **Agree**
- Link to CMS / HMWT
- Scope for delivery panel? **Idea should be referenced as an option**
- Role of CMS in 'doing role' (cf. North Herts) **Agree, a key player**
- Another tier of work? – Delivery plan? – gap between GI strategy and on ground delivery **Yes, key future stage after this study**
- Cluster projects together (strategic) = larger funding bid (cf. Stort Valley) **Agree with principle**
- Factor in staffing costs **Agree with principle for future detailed costings**
- Fully costed project plans advantageous for tie in re S.106 (link to Planning). Developers need to factor GI costs into "bottom line" **Agree with principles**
- How to make it happen. Identify interested parties
- Look at other successful models
- Identification of resources (& capacity) to deliver / lead.
- HCTOA
 - Consider possible GI officer appointment? **Idea is interesting if resources were available**
 - Could they oversee strategically?
- Need for & ability for GI to happen irrespective of development
- Parish plans inc. GI element. Could parishes enable through liaison with CMS? **Reference**

Group 4: Delivery

- Need to be opportunistic – don't ask, don't get
- Identify key landowners and opportunities **Key principle for future work**

- Willingness to participate
- Funding – where from / how to spend –
- Natural England: Key issues/interests
 - Landscape
 - Environmental Stewardship Schemes
 - Higher Level Schemes
- Partnership working
 - Lafarge e.g. at Panshanger & HCC
 - Commercial – S.106
 - County & District
 - NE, EA, Forestry Commission, HMWT, FWAG (Farming and Wildlife Advisory Group), HBRC, CMS, Ground Work.
 - Local groups – Green space groups / community groups
 - Farmers Markets use / support local producers
- Need to keep at it as landowners change
- Capture Development Gain S.106

LUC to take account of the above, as appropriate

Group 5: Delivery

<u>Project</u>	<u>Who</u>	<u>How + mechanisms</u>
Project 1; Hertford / Ware	Existing groups in place	Need to link with landowners / developers
Project 3: River Valleys	Andrew Bott	Political pressure & coordination with water company / EA.

General points

1. Farmers / landowners
 - How to help deliver. Need subsidy. Arable land use is key use in East Herts. Grain prices high.
 - Council – can help with coordination between landowners – get them together. Encourage green infrastructure ideas to be considered in HLS & ELS & cross compliance at start of these agreements **Agree with principle**
2. Adaptation to climate change
 - Landowners will be reactive

3. Need to keep communities moderate in size so people can walk to 'town centre'.

2 Summary findings from the document review

This section also includes messages useful for future, local level GI planning, and which go beyond the scope of this high level GI Plan. Where relevant, appropriate projects and proposals in the GI Plan (section 3 and **Figure 3.1** in the main report) are also identified.

KEY MESSAGES FROM THE LITERATURE REVIEW, BY THEME

Access and recreation (open space)

- 2.1 *The following documents were reviewed: East Herts Open Spaces Strategy, East Herts Council, 2009, East Herts PPG17 Audit and Assessment, 2004, Hertfordshire Rights of Way Improvement Plan, 2008.*
- 2.2 The open space strategy identifies extensive open space provision in East Herts. Of the 21117 acres in East Herts, this includes 986 hectares of semi-natural open space which accounts for over 30% of the landscape. East Herts has developed quantity provision standards for publicly accessible open space, most of which are met, with the exception of provision for young people and children, where there are deficiencies identified at Hertford and Buntingford. A number of open spaces across the District have also been identified for quality improvements.

- 2.3 There is good overall provision of public rights of way and the network is extensive, but disjointed in places, where a need to improve off-road cycle access, particularly around Bishop's Stortford, is required. Roads and other barriers affect the use of rights of way in many parts of the District, particularly in close proximity to larger settlements.
- 2.4 GI opportunities in **section 3** of the GI Plan which aim to improve access to open space include River Valley Links and Lateral Links across the District which aim to create an a network encompassing the entire District with strategic links incorporated. These broad principles are expressed in **projects 3 and 4** and on **Figure 3.1** in the GI Plan.

Landscape character, experience, settlement setting

- 2.5 *The following documents were reviewed: Landscape East/Natural England, 2009: East of England Regional Landscape Framework: Landscape Typology Final Report, HCC, 2001: Hertfordshire Landscape Character Assessment, EHDC Landscape Character SPD, CPRE, 2007, Intrusion Mapping, CPRE, 2000, Night Skies Mapping.*
- 2.6 The landscape context of the main settlements in East Herts (Hertford and Ware, Sawbridgeworth, Buntingford and Bishop's Stortford) is a relatively simple and unified, intact and strongly rural, often tranquil chalk landscape of lightly settled Wooded Plateau Farmlands, cut by a network of well defined Wooded Chalk Valleys. The

wooded plateau farmlands are characterised by small scale, traditional settlement and have a gently rolling landform, with blocks of ancient broadleaf woodland, often connected by a strong network of hedgerows, imparting an intact, historic feel to the landscape. The chalk valleys generally have a quiet character, and in some instances definition is provided by wooded valley crests and adjacent plateau woodlands. A number of the chalk valleys are associated with the Valley Meadowlands of the principal river valleys and chalk streams which cut the District, such as the Beane, Quin, and Rib. The principal nucleated settlements are often located in larger valleys, such as the Stort. Other aspects of the local landscape experience include intact and larger scale arable plateau farmlands and a network of parkland estates and areas of designed landscapes overlooking the valleys (e.g. Gilston in the Stort Valley).

- 2.7 Key issues relevant to green infrastructure are fragmentation of the parkland estates and their settings due to mineral extraction, agriculture and development, the severance of intimate valley landscapes such as the Stort and the Ash by transport corridors, and exposed settlement edges which jar with landscape character.
- 2.8 Key opportunities are to use the parklands as primary foci for the GI network and to enhance their setting and understand such landscapes through interpretation. Historic gems such as Gilston and Pishiobury and (with ongoing positive restoration) Panshanger will form primary components of the GI network, as will the tranquil lowland

river valleys – clear opportunities for interlinked ‘necklaces’ of landscape and habitat, threading through countryside and settlements (see **projects 3 and 4** in the GI Plan).

The historic environment

- 2.9 *The following documents were reviewed: Historic Landscape characterisation (HLC), Hertfordshire County Council, 2001: Hertfordshire Landscape Character Assessment, Conservation Area Appraisals where available: Hertford and Bishop’s Stortford, The Hertfordshire Historic Environment Record.*
- 2.10 A rich historic landscape resource exists across the District, with some of the most intact areas of historic landscape in the county. The Historic Landscape Characterisation (HLC) has identified large scale presence of intact early enclosure field systems across the rural landscape, allied to historic parklands and designed landscapes, ancient woodland and a network of river meadows.
- 2.11 Much of the historic character of East Herts is the legacy of Roman occupation, where the landscape is crossed by a network of Roman roads such as Stane Street in Bishop’s Stortford and Ermine Street in Hertford. These should be considered key cultural assets and where accessible these should be integrated into District wide non motorised routes (see **project 4** in the GI Plan) and **Figure 3.1**. Greater accessibility to the numerous river valleys across the District and in particular the integration of the Lee

Valley with the wider landscape will be a key element of green infrastructure planning. Although the quarried sites across the district have become a key feature of the landscape over time particularly near Hertford, their restoration should be considered where their recreational functions could be better utilised – woodland and landscape linkages (see **project 5** in the GI Plan).

Health and deprivation

- 2.12 *The following documents were reviewed: East Herts Open Spaces Strategy, East Herts, 2009, East Herts PPG17 Audit and Assessment, 2004, Hertfordshire Rights of Way Improvement Plan, 2008.*
- 2.13 According to the Indices of Multiple Deprivation, there is no significant health deprivation in East Herts. In addition, there is extensive provision of open space in the District, although there are some localised deficiencies which may affect the health of the population, including lack of provision for young people and children at Hertford and Buntingford. Public consultation indicates that 1/3 of respondents had not visited an open space of any type in the last 12 months. The majority of residents also access the public rights of way network by car, and healthier, sustainable transport options should be promoted (see **project 4** in the GI Plan). GI opportunities include enhancing links to nearby initiatives, such as the Lee & Stort Valleys and Gilston Park proposals and Harlow GI Plan (see **project 2** in the GI Plan).

Functional ecosystems and flood risk

- 2.14 *The following documents were reviewed: East Herts Level 1 Strategic Floodrisk Assessment (SFRA) 2008, EA Thames Catchment Flood Management Plan, EHDC Landscape character SPD, Hertfordshire County Council note on drought sensitive landscape character areas.*
- 2.15 East Herts is hydrologically complex, cut by a network of chalk valleys (Beane, Mimram, Quin, Rib and Lee) and clay valleys (Ash and Stort), with five river valleys converging on the town of Hertford. The wide floodplains of the valleys are a key part of floodrisk management, although the clay catchments are prone to flash flooding (see **project 3** in the GI Plan for further details).
- 2.16 Key issues are in respect of abstraction pressures resulting from existing urban areas and potential future settlement growth, the vulnerability of the valley landscapes to climate change, and consideration of urban flooding (due to lack of space for water) where rivers flow through towns such as Hertford (see **projects 1 and 3** in the GI Plan).
- 2.17 Primary opportunities for the Green Infrastructure Plan are therefore to conserve, enhance and extend floodplain landscapes, to create more space for water, specifically flood storage in the event of drought. SuDS should be an integral consideration in planning any new development. This would both assist with flood storage functions and with management of run off/groundwater re charging, alleviating pressures in respect of water abstraction and therefore

assisting in conservation of landscape character and biodiversity.

Productive landscapes

- 2.18 *The following documents were reviewed: PPG17 Audit and Assessment - East Herts Council, 2005, Natural England mapped data on traditional orchards, HLS Target Area mapping (www.natureonthemap.org.uk) and statements, Woodland For Life: The Regional Woodland Strategy For The East Of England, November 2003, East Herts Core Strategy Issues and Options Consultation Document, August 2010, Hertfordshire Low & Zero Carbon Technical Study – Final Report, March 2010.*
- 2.19 Small areas of the District along its eastern and southeast border (e.g. Sawbridgeworth) fall within the Essex Coast and Growth Areas HLS Target Area. HLS schemes which will be supported within this area include those which seek to maintain, restore or create wet woodland or ancient semi-natural woodland (see **project 2** in the GI Plan). An opportunity therefore exists to benefit both biodiversity and the production of timber and/or biofuels by tree planting, support for natural woodland expansion or the bringing of existing woodland under management such as coppicing.
- 2.20 There is an opportunity to enhance the existing woodland from potential adverse effects of any future settlement growth at Bishop's Stortford, Hertford, while there is also an opportunity to provide new biomass fuel sources (e.g. woodland managed as short rotation coppice) to meet the energy needs of existing high density heat demand areas

identified in the Low and Zero Carbon Study and areas targeted for high density new development (see **project 2** and broad principles relating to woodland enhancement zones outlined in **Figure 3.1** in the GI Plan).

- 2.21 Opportunity identified in the East Herts Core Strategy Issues and Options to supply new development in villages from community energy schemes using combined heat and power technology fired by newly planted woodland. New woodland could also help to provide climate change adaptation through shading and cooling effects in summer while also softening the urban edge.

Land remediation

- 2.22 *The following documents were reviewed: Strategic Housing Land Availability Assessment (SHLAA), Minerals and Waste Development Framework for Hertfordshire – Waste Core Strategy, East Herts LDF – Core Strategy, Indices of Multiple Deprivation (IMD), National Land Use Data (NLUD).*
- 2.23 The 2007 Index of Multiple Deprivation (IMD) shows that overall the District has very few areas of deprivation. Much of the land is used for agricultural practices; however areas in the south west of the District surrounding Hertford and Ware have higher levels of deprivation. These include Hertford Sale, Hertford Castle, Stanstead Abbots and Hertford Kingsmead. Areas of Bishop's Stortford in the east of the District such as Bishop's Stortford Central and Bishop's Stortford Meads are areas which present opportunity for regeneration. The District's landscape is rich and diverse, reflecting a variety of natural features and

thousands of years of human activity. It is an undulating, complex, and widely dispersed mix of fields, woodland, river valleys and settlements, with the main river valleys of the Lee and Stort containing the major settlements where limited higher levels of deprivation exist.

- 2.24 Existing mineral sites in the District could be monitored in terms of landscape quality to minimise any long term impacts on the landscape and allow for restoration to be planned at an earlier stage of the life of mineral sites such as the ongoing positive restoration work at Panshanger Park (see **project 5** in the GI Plan).
- 2.25 A number of sites (e.g. Waterford, Presdales Pit & St Mary's Lane) within the District which have formerly been used as mineral extraction sites and have since been restored, provide interesting landscapes with an enormous GI resource potential in landscape, recreational and biodiversity terms. However, due to the pervious and outdated restoration techniques used, many of them have the potential to be re-restored once again and become key GI assets throughout the District.

Nature conservation

- 2.26 *The following documents were reviewed: East of England Biodiversity Mapping Project 2005, Hertfordshire Biodiversity Action Plan 2006, Hertfordshire & Middlesex Wildlife Trust Living Landscapes, Statutory designated sites (Natura 2000, SSSI, NNR, LNR), County Wildlife Sites.*

- 2.27 The primary land use across East Herts is agricultural. Hertford, the county seat, and Ware form the primary urban foci, and, to a lesser extent, Bishop's Stortford in the north east. Each of these settlements enjoy linear stretches of naturalised habitat into the built up area, several of which are centred on the river corridors. There is a wide network of chalk rivers across East Herts. The principal rivers of the Stort, Lee, Rib, Mimram, and Beane support a range of associated wetland features and woodland assets. However, areas of reduced ecological value do occur, largely as a result of water abstraction or pollution (see **project 3** in the GI Plan for proposals for river valley enhancements).
- 2.28 The East of England Biodiversity Map identifies core biodiversity areas through the south west of the District, in addition to the principal river valleys – the Lee, Beane and Rib. The two most common threats to ecologically-valued habitats across the District is first the relatively small and isolated patch size, which has inherently limited viability in the long term, and second, the conflict between recreational use and nature conservation. The Woodland and Heathland BAPs identified additional key threats as the lack of active management and changing management practices. The Wetlands BAP identified additional threats of low water levels and drainage, natural succession, nutrient enrichment, acidification and pollution.
- 2.29 Key opportunities include ensuring the consideration of green infrastructure provision within the strategic / Masterplanning of proposed development. Also expanding

of existing wetland features to a varied wetland mosaic, for example, including wet grassland, carr and open water could also improve biodiversity. Key areas for expansion identified in the Wetland BAP include the Stort valley, Lee and Stort confluence (Rye Meads and the Lee between Hertford and Ware, including the Rib and Beane confluences) and the Mimram Valley (see **projects 1 and 3** in the GI Plan).

- 2.30 Key areas within the District which have been identified for heathland, grassland and woodland enhancement and expansion include the north east chalklands, Benington and Ardeley plateau, the East Herts river valleys, River Stort flood plains, Lee Valley, and the Mimram Valley and Bramfield plateau (see **Figure 3.1** and Green Infrastructure Zones at section 3).
- 2.31 Alleviation of severance along transport infrastructure and use of such linear features as foci for connectivity, for example, expansion of wildlife corridors along the existing transport network, using the principles of the Trees Against Pollutionⁱ initiative pioneered in St Albans District are also important measures to be considered (see **projects 2 and 4** in the GI Plan).

3 Summary findings from the functional analysis

THE FUNCTIONS – SUMMARY OF NEED, SUPPLY AND OPPORTUNITY IN EAST HERTS

- 3.1 For each function the methodology behind the GIS spatial analysis is summarised in italics, with summary findings and pointers presented afterwards. This appendix cross references to the mapping shown in section 2 of the GI Plan (main report). For each function, consideration was also given to broad situations where functional need and supply mismatch may be exacerbated (potential longer term growth using initial options considered in the emerging Core Strategy where known).

Access to recreation

- 3.2 *The analysis considered the 2.5 km envelope around the main settlements in East Herts (Hertford, Ware, Buntingford, Bishop's Stortford, Sawbridgeworth). Accessible open space was mapped using open space datasets in the Open Space Study, together with other datasets such as Local Nature Reserves. Access links (paths and rights of way, promoted routes and cycleways) were mapped, as was point data for ROWIP priority projects. A number of open space provision standards were also applied, mainly in the form of Natural England Accessible Natural Greenspace (ANG) and Woodland Trust Accessible*

Woodland Buffers. GIS spatial and visual map analysis was then used to identify gaps in provision and barriers to access, to identify potential foci for proposals.

- 3.3 In Hertford, there is a deficiency in space for children and young people, and in local ANG. There appear to be few off-road links between the urban area and the surrounding countryside, and this is particularly true to the north and west of Hertford, which is severed from the countryside by the A414 and B1502 road (see proposed GI network at **Figure 3.1**). Cycle provision is also limited to one route which runs north-south through the town. Potential growth locations surrounding the town should aim to improve ANG provision as well as rights of way to support these new communities. Four 'green fingers' have been designated in local policy, and the GI functions of these areas should be maximised to help ensure that all residents have access to recreational sites.
- 3.4 There is good provision of open space within Bishop's Stortford, but deficiencies in strategic ANG exist, and there is a lack of provision for people to travel off-road by cycle or foot between the town and countryside. Links to the River Stort, Gilston Park, Harlow and the woodland sites to the south and east should be enhanced, and there is a potential need for a new strategic ANG site to serve existing and future communities (see **projects 2 & 3** and **Figure 3.1** in the GI Plan).
- 3.5 Growth is being considered to the north, south and east of the town, and access links to the countryside as well as

cycle routes should be enhanced with consideration to potential new communities as well as existing residents.

- 3.6 There is poor provision of ANG at Buntingford, as well as in space for children and young people. This should be alleviated through creating better public access to the countryside resource that surrounds the settlement. There is also a lack of cycle route and rights of way to the north and south east of the settlement. If growth was considered to the settlement edge, rights of way / green corridors should be created to ensure these new homes have sustainable access. ANG and open space for children and young people will also need to be provided alongside any new residential areas.
- 3.7 There is a deficiency in strategic ANG (500ha) and the M11 is a barrier to movement/access to the countryside. This deficiency should be alleviated either through enhancing existing assets or through the creation of new strategic ANG to serve the existing and future populations of Bishop's Stortford, Sawbridgeworth and Harlow. Small amounts of growth are being considered to the west and north of Sawbridgeworth, as well as a potential larger extension to the north of Harlow, and there is a need for strategic ANG sites to cater for existing and new communities (see **project 2** in the GI Plan).
- 3.8 There is poor provision of ANG at Ware, as well as in space for children and young people. This should be alleviated through creating better public access to the countryside resource that surrounds the settlement,

including the Lee and Rib rivers. The A414 and B1502 are barriers to access to the countryside (see **project 1** and **Figure 3.1** in the GI Plan).

Prestige on Settlement Approach Corridors

- 3.9 *The analysis considered the 2.5 km envelope around the main settlements in East Herts. Using data developed for the earlier Hertfordshire V4C project, a series of assets and detractors were mapped around settlement fringes. Assets included open space and areas of woodland planting, as well as water bodies and main rivers. Detractors included degraded land such as mineral workings and industrial sites. These were mapped within a 500m buffer of main road and rail corridors on settlement gateways, to understand where experience of GI assets may be impaired currently and to inform the spatial direction of proposals. Detractors were also considered with landscape character areas of lower quality as identified in the Landscape Character Assessment, to target areas where landscape enhancement could contribute to GI proposals development.*
- 3.10 In Hertford, key issues are in relation to verge management and character e.g. to introduce a less urban character to the A414 and A10, as well as to re connect woodlands as part of the ongoing positive restoration scheme for Panshanger Park and to buffer/foil detracting features, as well as to enhance the setting of Hartham Common (see **projects 1 and 5** in the GI Plan). Also re-connection of woodlands to the south of Hertford around Hertford Heath and restoration of valley floor features

where eroded by detracting features, to provide more positive sense of arrival e.g. Rivers Beane and Rib (see **project 3** in the GI Plan).

- 3.11 Key issues in Ware relate to severance of main assets by transport corridors (e.g. Hartham Common and King's Mead by the A10). Seek to enhance crossing and interface with road corridors (landform/heathland/low level planting). Also restore and reinstate wetland habitats associated with workings in the Rib Valley to give a better settlement approach (see **project 1** in the GI Plan). Similarly in the eastern Lee Valley and the Navigation.
- 3.12 Main issues relate to enhancing and buffering of primary assets such as Pishiobury Park at Sawbridgeworth. Also beyond the settlement envelope, to include consideration of the relationship to Gilston Park (and buffering from detractors south and east of Gilston). The setting of the Stort Valley is impaired to the north of Sawbridgeworth and could be improved with small scale wetland planting as part of a package of measures to deliver the Stort Valley Project as identified in the Harlow GI Plan and the Stort Valley Feasibility Study, e.g. that structural green infrastructure provision, whilst buffering detractors and edges, should not detract from the more open landscape character here. There may be considerable potential for detracting features in the valley floor to be restored and used as part of the greenspace network/Stort Valley Park (see **projects 2 and 3** in the GI Plan).

- 3.13 Severance and fragmentation of landscape structure due to the bypass at Bishop's Stortford is an issue relevant to GI – opportunity to reconnect areas of woodland to enhance perception of tranquillity and settlement approach. Assets and detractors are at close proximity in the Stort Valley, which also contains a number of transport corridors. A key opportunity is to extend wetland vegetation and wet woodland habitat to enhance settlement edge/interface with the valley at this point and to consider this as part of proposals for access links in the Stort Valley Park proposed in the Harlow GI Plan. To the east of Bishop's Stortford within Essex expanded woodland planting could re connect Hatfield Forest and provide attenuation in relation to the M11 interchange (see **Figure 3.1** in the GI Plan).
- 3.14 In Buntingford, the landscape has a simple and open character with few detractors. GI enhancement issues will relate mainly to integration of the hard southern edge of Buntingford with localised foiling and using such landscape structure to make better visual connections with wet woodland in landscapes such as the Quin Valley (see **project 4** in the GI Plan). Also occasional small scale woodlands to link the existing relatively sparse distribution in the settlement envelope whilst maintaining simple, open landscape character. Enhanced hedgerow planting would be beneficial to the A10 bypass to improve the setting of and approach to Buntingford in the landscape.

Health

- 3.15 *The analysis considered the 2.5 km envelope around the main settlements in East Herts. In addition to paths and rights of way and other access routes such as cycle routes, the Indices of Multiple Deprivation (IMD) were mapped, considering the 40% most deprived wards in the settlement within the District. Taking this with mapped information on barriers such as arterial transport corridors enabled the analysis to target areas where green infrastructure could potentially address deprivation issues through enhanced linkages.*
- 3.16 *Within Hertford poor health is not currently a problem, with the exception of Sele ward. However, lack of adequate open space provision for children and young people should be addressed to avoid problems arising in the future. Growth is being considered to the north, south and west of Hertford, and open space provision as well as routes for healthy transport options should be delivered alongside this potential growth (see **project 2** in the GI Plan).*
- 3.17 *In Bishop's Stortford, the Central and Meads Wards have been identified as areas of deprivation. Poor health is not generally a problem in Sawbridgeworth or Ware; however improvements to the cycle and path network should be delivered to enable people to live healthier lifestyles. Where growth is proposed, healthy new communities should be enabled through provision of quality open space, cycle and path routes. Enhanced links are shown at a strategic level on Figure 3.1 in the GI Plan.*

Sound ecosystems

- 3.18 *The analysis considered the whole District. Environment Agency Water Framework Directive (WFD) GIS data was used for the main rivers and their catchments, to understand issues of ecological quality, low flows and abstraction pressures. High intensity traffic flows and main roads were also mapped to provide a broad picture of air quality issues. These two datasets enabled targeting of strategic GI proposals and zones in terms of wetland enhancement and large scale tree and woodland planting.*
- 3.19 *The analysis indicates a need for positive management of all the rivers in the District, particularly the Ash due to the high level of environmental contaminants (see **project 3** in the GI Plan). The riverine environment of the Lee, Stort, Mimram, Rib, Beane, Quin & Ash Rivers are identified as being of poor ecological status and vulnerable to abstraction and low flow pressures. Key areas for expansion identified in the Wetland BAP include the Stort valley, Lee and Stort confluence (Rye Meads and the Lee between Hertford and Ware, including the Rib and Beane confluences) and the Mimram Valley.*
- 3.20 *Opportunities include reinstatement of native wetland and riparian river valleys (see **project 3** in the GI Plan). Also additional wetland creation in the Ash and Lee to reinforce habitats in light of high abstraction pressures.*
- 3.21 *Whilst large parts of the principal transport corridors are partly wooded (M11 & M25) there is a need for additional woodland and hedgerow belts to re connect existing*

woodlands and improve air quality (e.g. connecting Panshanger Park to the eastern edge of Ware via the A414).

- 3.22 Although the Trees Against Pollution (TAP) project (pioneered by St Albans District) does not fall within this District, the principles relating to tree selection and management could be implemented along roadsides throughout the District. The TAP project notes that only trees adjacent to transport corridors are effective in absorbing pollution. It also identified species which can positively contribute to air quality as Scots pine, common alder, larch, Norway maple, field maple, ash and silver birch. With reference to the TAP report species which can have a detrimental effect on air quality are English oak, crack willow, goat willow, poplar, red oak, sessile oak and white willow.
- 3.23 Future development in Ware, Hertford and Bishop's Stortford could place further abstraction pressures on the Lee, Ash and Stort Rivers, further heightening the need for positive management and wetland expansion (see **projects 1 and 3** and broad principles set out in **Figure 3.1** in the GI Plan).

Productive green environments

- 3.24 *This analysis considered the whole District, mapping provision of allotments, traditionally managed orchards and farmlands covered by higher level stewardship agreements, as well as land in organic stewardship. Patterns were noted in terms of*

distribution and opportunities for new provision noted.

Performance against recommended provision standards (e.g. for allotments) was also considered.

- 3.25 Consideration of the wider farmland landscape in East Herts reveals that a relatively large proportion (864.50 ha) of the District's landscape is managed through Higher Level Stewardship (HLS). These areas are notably parts of the estate at Benington and associated farmland in the Ash Valley east of Ware, while there is also a small area at the Rivers Nursery Site at Sawbridgeworth protected. As such, there is an opportunity to enhance HLS uptake to improve functionality of farmland, particularly where this could deliver enhanced landscape connectivity or interpretation of historic landscape assets (linked to 'conserving historic landscape character' analysis). There is also potential to improve uptake of organic level stewardship with the District currently having only one site (81 ha). This also forms part of the focus for a series of GI 'action zones' (including for farmland conservation and enhancement), shown on GI Plan **Figure 3.1**.
- 3.26 At the local level, allotments, as part of Bishop's Stortford's 'green wedges', are cited by the East Herts Core Strategy Issues and Options as an important feature of the relationship between the town and the surrounding countryside. They are also cited as a valued leisure facility in Bishop's Stortford, Sawbridgeworth, Ware and Hertford, with council-owned sites in Bishop's Stortford and Sawbridgeworth having waiting lists. This is at odds with the older evidence from the PPG17 audit that the

quantity of allotment provision is sufficient so additional orchards could be integrated in applications for new large scale development in the larger settlements.

- 3.27 The Rivers Nursery site at Sawbridgeworth has historic importance for fruit production and breeding and is cited by the East Herts Core Strategy Issues and Options as one of the open spaces of particular importance to the settlement's character and promoting its identity as an important GI asset could help improve the setting and approaches to Sawbridgeworth (see **projects 2 and 3** in the GI Plan).

Conserving historic landscape character

- 3.28 *This analysis considered the whole District. Designated historic assets such as registered parks and gardens and Conservation Areas were mapped and the qualifying features of designation relevant to green infrastructure noted. Consideration was also given to non designated assets important to urban green infrastructure heritage in general (e.g. links to green spaces project in Harlow New Town).. Ancient woodlands were mapped, and the proportion of both these and registered parks and gardens actively protected through schemes such as environmental stewardship identified. As much of this function is about understanding and conserving historic legacy, the Historic Landscape Character types identified as regionally rare by Hertfordshire County Council, were mapped. The aim was to understand distribution of historic landscape elements and boundary networks which could contribute to the green infrastructure network.*

- 3.29 Rare historic landscape types in East Herts are Co Axial Enclosures, which occupy around 1% of the District area. The Co Axial Enclosures (boundaries of adjacent fields make a series of long, roughly parallel lines) form part of the Farmland Conservation and Enhancement Zone on **Figure 3.1**.
- 3.30 Although there is a large number of Registered Parks and Gardens (15) alongside a high number of Conservation Areas, little of the ancient woodland heritage resource is protected and only four of the sixteen registered parks are in an agri-environment scheme. There is a very large and rather dispersed ancient woodland resource, with two covered by Conservation Areas (Moor Hall Wood and Hadham Cross Wood) in addition some sites enjoying other protection e.g. through SSSI designation (High Wood, Moor Hall Wood, Plashes Wood, Wormley Wood, Hodesdon Park, Broxbourne Wood and Great Hornead Park).
- 3.31 Any urban extension to the settlements within the District, particularly surrounding Hertford would need careful consideration to integrate the design proposals with the historic landscape with emphasis placed on the retention and protection of ancient woodlands and consideration of parkland settings. Any such development would require the creation of additional features which would enhance the setting of the site using historic landscape framework as template. Any additional road or infrastructure corridors which create severance within the historic fabric of the landscape pose a threat to the protection of this

resource and may require further woodland creation to buffer and enhance such sites.

Sustainability and responding to Climate Change

- 3.32 *Within the 2.5km envelope of the main settlements, accessible woodlands were mapped using National Woodland Inventory data. Visual analysis of aerial photography was also undertaken, to understand the distribution of street trees and the opportunity for urban greening. Gaps were noted as possible opportunity areas for green infrastructure.*
- 3.33 *In general, the settlements display a relatively high density of tree cover in terms of woodland blocks and corridors, in principal open spaces and along infrastructure routes. However tree cover within the public realm is generally limited to these and streetscape planting including higher density of planting in the suburbs.*
- 3.34 *Most settlements appear to have very high levels of tree cover in private gardens but are lacking in parts where street verges are limited. Issues and opportunities relate mainly to conserving what exists and managing this appropriately / planning for succession planting and ensuring new tree planting in relation to redevelopment sites – use of the TCPA standards for enhanced urban tree planting of 80 street trees (of appropriately robust grade) per linear km. Any future growth and redevelopment should plan for street tree planting as an integral part of the masterplan to ensure climate change adaptation,*

seeking to apply the TCPA tree planting standard as referenced above.

Land remediation

- 3.35 *This analysis considered the whole District. East Herts has been mapped and analysed for this exercise in order to identify where former waste, restored minerals and contaminated land sites could be restored and aid the development of the GI network. Any disused mineral sites within the District were identified and their current use and surface condition were assessed. Also considered in the analysis were the IMD (Indices of Multiple Deprivation) and the quality of the Landscape Character Areas in which the sites were located.*
- 3.36 *As referenced in the Liz Lake Landscape and Visual Assessment Report, the former mineral sites within the District are each in relatively good condition and could be considered for re-restoration. Restored sites, particularly Waterford Pit and Presdales Pit could contribute to the GI network within the District and any future urban extensions could incorporate plans for links to these areas which are in close proximity to urban settlements and provide interesting landscapes with great potential for improvement (see **project 5** in the GI Plan).*
- 3.37 *Areas of lower landscape quality as identified in the Landscape Character Assessment tend to have been previously worked for minerals. These occur in close proximity to the larger settlements of Buntingford, Bishop's Stortford, Sawbridgeworth and to a larger extent*

around Hertford and Ware. As such they form part of the focus for ongoing landscape conservation, enhancement and restoration zones as shown on **Figure 3.1** in the GI Plan.

Nature conservation

- 3.38 *Consideration was given to the whole District, noting distribution of internationally, nationally and locally designated assets. Cross referring to the earlier document review, main issues and vulnerabilities were noted. Hertfordshire Biodiversity Action Plan Key Biodiversity Areas and Living Landscape areas were mapped, to understand where there may be potential for enhanced landscape and habitat linkages through green infrastructure.*
- 3.39 Key issues for the GI Plan to focus on are alleviation of pinch points on river corridors through urban areas – Hertford and Ware in particular (see **project 3** and **Figure 3.1** in the GI Plan for broad principles).
- 3.40 Where future growth points may potentially link distinct urban areas - maintenance/enhancement of ecological connectivity through this belt may entail ‘stepping stones’ as well as linear features through GI incorporated into new development proposals (e.g. to reconnect landscape features).
- 3.41 Key locations for GI to deliver biodiversity benefits are throughout the Mimram / Lee Key Biodiversity Area (KBA). Extended west along the Mimram valley to alleviate pinch points through Hertford and extend to Welwyn

through the adjoining KBA. Extend north east along the Lee valley to strengthen GI through the urban areas of Harlow, Sawbridgeworth and Bishop’s Stortford. Strengthen the Rib KBA close to the A10 corridor (existing severance), south of Buntingford (several growth points), while also through the Ash KBA extending north to Little Hadham (which overlaps Little Hadham KBA) and south to link to the Mimram/Lee KBA / LL (which encompasses the locally designated sites to the south east of Ware).

- 3.42 Additional areas include potential future growth points – along the east county boundary (Harlow, Sawbridgeworth and Bishop’s Stortford), Hertford and Buntingford. Potential for greatest impact is where currently distinct urban areas become linked, e.g. Harlow and Bishop’s Stortford, with associated potential fragmentation of ecological/landscape features.

Experience

- 3.43 *The analysis considered the whole borough. Using the Regional Landscape Typology as a starting point, the 27 rural landscape types of the region were assigned rarity based on percentage distribution. The three rarest landscape types were considered for analysis as these often form a potential focus for place and conservation orientated green infrastructure proposals (e.g. chalk landscapes). Their distribution was noted as was the percentage distribution as a proportion of the total regional distribution of the landscape type. Tranquillity, intrusion and*

night skies mapping were also used to build a broader picture of landscape experience and quality.

- 3.44 The main regionally rare landscape typesⁱⁱ in East Herts have been identified as Settled Chalk Valleys and Wooded Chalk Valleys landscape types. The Settled Chalk Valleys represent approximately 19% of the District area (note that this also represents approximately 43% of the total regional distribution of the landscape type) and the Wooded Chalk Valleys represent approximately 4% of the District (note that this also represents approximately 10% of the total regional distribution of the landscape type).
- 3.45 The Regional Landscape Typology identifies key characteristics of the Wooded Chalk Valleys as steep sided, wooded valley landforms, seasonal watercourses in upper valleys and permanent watercourses/flood meadows in larger, lower valleys. Also an interlocking pattern of ancient woodlands on the steepest valley slopes, creating an intimate spatial character. The valleys often form transport corridors, impairing tranquillity, which is apparent in this District.
- 3.46 The Settled Chalk Valleys and Wooded Chalk Valleys should be conserved, managed and enhanced to maximise their functions (character, floodplain, biodiversity, access). However, the tranquillity of the Wooded Chalk Valleys is often impeded by road and transport corridors, with all of this landscape type within the District lying within areas of intrusion as defined by the CPRE intrusion mapping. There

is an opportunity to enhance access in a way that maintains the tranquil character of the valleys

- 3.47 A key opportunity may be to facilitate enhanced access in appropriate locations, such as the expansion of the riparian habitat through HLS (e.g. Beane Valley). There may also be an opportunity for some restoration of woodland linkages and to re connect ancient woodlands on ridges, to provide enhanced definition of the valley network.
- 3.48 Both the Settled Chalk Valleys and Wooded Chalk Valleys form primary aspects of the District's green infrastructure network (in terms of landscape character, floodplain, biodiversity, and, to a degree, access. They should therefore be conserved, managed and enhanced as such. A key opportunity may be to facilitate enhanced access in appropriate locations, ensuring this was of a low-key character, maintaining the often more tranquil character of the tributary valleys. Also expansion of riparian habitat through HLS (for example in the Beane Valley). Whilst the landscapes surrounding the valleys are often open and of relatively large scale there may be the opportunity for some restoration of valley crest woodland linkages and to re connect ancient woodlands on ridges, to provide enhanced definition of the valley network, where a more intact landscape framework already exists as a template (see **Figure 3.1** in the GI Plan).
- 3.49 If growth was considered in valley settlements such as Buntingford and Sawbridgeworth, this could place pressure on the existing green infrastructure resource and

necessitate expansion of valley landscape and habitat to ensure landscape fit, although the floodplain constrains development within the valley proper. Any growth within Sawbridgeworth should seek to respond to the aims and objectives of the Stort Valley project e.g. to maintain space for a linked and multi-functional network of valley landscapes (see **project 2** in the GI Plan). Growth to the fringe of Bishop's Stortford may provide the opportunity to enhance the settlement interface with the Stort Valley – positive new green gateways as part of the GI network. Similarly any growth to the northern fringe of Bishop's Stortford should aim to secure enhanced links to the local green infrastructure resource e.g. the Stort Valley. The same principles would be applicable to Hertford, at the confluence of five valleys. If large scale growth was considered to the north of Harlow, key objectives would be to conserve and enhance the character of the valley and associated assets such as Gilston Park, as well as to maximise linkages and connections to and across the valley, as part of the GI network and the Stort Valley Park proposed as part of the Harlow Green Infrastructure Plan.

Flood attenuation and water management

- 3.50 *This considered the flood zones in the 2.5km envelope of the main settlements, and proximity to designated nature conservation sites, to understand vulnerabilities in the context of water level fluctuation.*
- 3.51 East Herts falls within the River Lee and Stort Catchments, part of the wider Thames catchment and Thames River

Basin. The River Lee, rising north of Luton, flows in a southerly direction through the District towards London, fed by a number of chalk tributaries which cut the landscape of East Herts. These are the River Mimram, rising in Welwyn and joining the Lee at Hertford, the River Beane, rising in North Hertfordshire and running into the District east of Stevenage at Walkern, before joining the Lee at Hartham Common, the River Ash, flowing through the Hadhams and Furneaux Pelham, meeting the Lee at Amwell Nature Reserve (near the northern extents of the Lee Valley Regional Park), the River Rib, which flows through Buntingford and south of Braughing before joining the Lee east of Hertford, and its associated tributary, the River Quin. Finally the River Stort, which rises from Royston and flows along the Harlow boundary before meeting the Lee at Rye Meads.

- 3.52 Hertford is located at the confluence of a number of tributaries and as a result the flood zone poses a significant threat to development. A review by the EA has identified most of the river water bodies in this area as been at risk in terms of low flows and abstraction pressures. Pinch points along the rivers routes are common in Hertford and developed land near Mill Bridge and Cow Bridge is at risk of flooding due to the narrow width of the river channels.
- 3.53 The flood zone in Ware acts as a multi-functional GI asset where expansive areas of open space benefit from flooding. Amwell Quarry, a former abstraction site, now acts as a flood attenuation area and nature reserve. Much of the Lee in this area has been heavily modified and its course

altered over time. To the west of this area the flood zone widens at Kings Meads and any flood risk is alleviated by the expansive open space.

- 3.54 Any further development within the flood zone could potentially exacerbate the risk of flooding in the area. The tributaries of the Lee which run through the town centre pose significant risk to residential properties in this area and increase the risk of surface water flooding. Retro-fitting SuDS where possible and ensuring permeable paving is used where possible should be considered.
- 3.55 The flood zone within Buntingford is primarily open space along the river valley which runs through the settlement. Acting as a multi-functional space, the river is a key GI asset in the town. A number of flood defences have been built along the course of the river which has its course modified over time; however the flood zone poses a risk to a number of residential properties along its route.
- 3.56 Any sites identified for future development surrounding the settlement could potentially be at risk of flooding due to proximity to the flood zone. Potential sites are located outside the flood zone; they could however lead to increased pressure on ground water resources as the area is considered to probably be at risk of abstraction and low flow pressures. Mitigation could include SuDS and additional flood attenuation areas to contain run off and fluvial flooding during times of high flows.
- 3.57 On the northern side of Bishop's Stortford, the flood zone is a wide valley which follows a natural meandering course

through the centre of the settlement. Where the river runs through Hockerhil and New Town, and its natural course has been altered, pinch points (bridges, weirs etc.) have been created which could exacerbate flood risk during times of high flows.

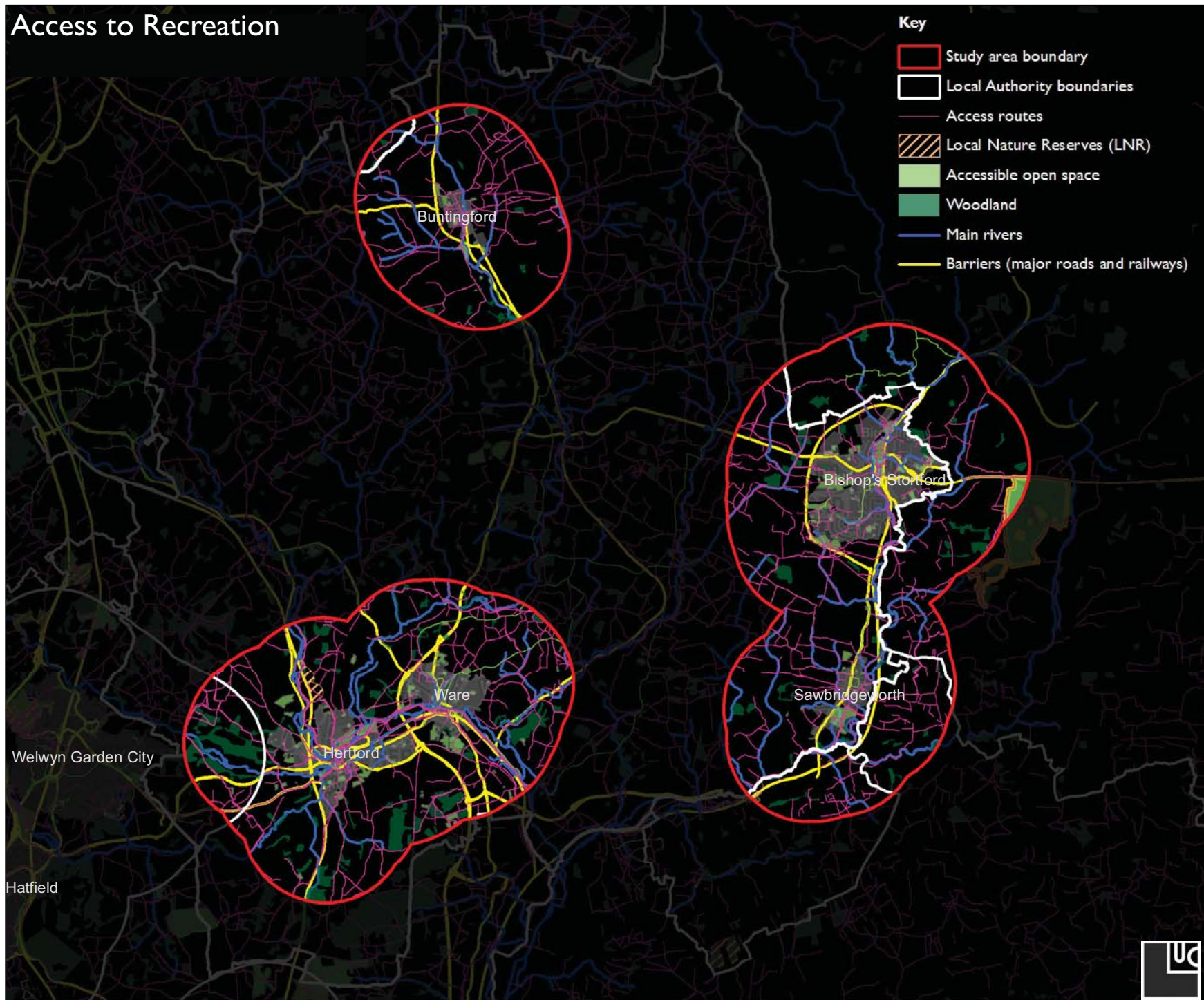
- 3.58 Any proposals for development to the north of the settlement near Foxdellas Farm could be at risk of flooding due to the proximity to the flood zone. Any proposals would need integrated flood attenuation areas and would need to be sympathetically designed with the natural flow of the river. Other areas zoned for potential development do not lie directly in the flood plain but could exacerbate pressures on abstraction levels in the area and could create problems in relation to surface water flooding.
- 3.59 The flood zone in Sawbridgeworth extends over expansive areas of open space along the eastern boundary which is a key GI asset in this area. Within the flood zone, The Stort Valley Way and the Three Forests Way provide access to this recreational area. Much of the river valley here benefits from flooding and although the river is heavily modified, existing abstraction pressures probably do not pose a risk. Development however has encroached on the flood zone in Lower Sheering and a number of residential properties are at risk of flooding.
- 3.60 Development is confined by the railway line which could increase pressures on the flood zone. A potential urban extension to Sawbridgeworth located on the western boundary near Chalks Farm, may pose surface water

problems in this area. Also development to the north near Three Mile Pond Farm may pose a risk to properties in relation to fluvial flooding and ground water flooding in this area. Additional flood storage areas may provide an opportunity to divert water away from this area and create additional wetland habitats. These broad principles in relation to wetland habitats and valley conservation are outlined in greater detail the description of GI action zones and shown in **Figure 3.1**.

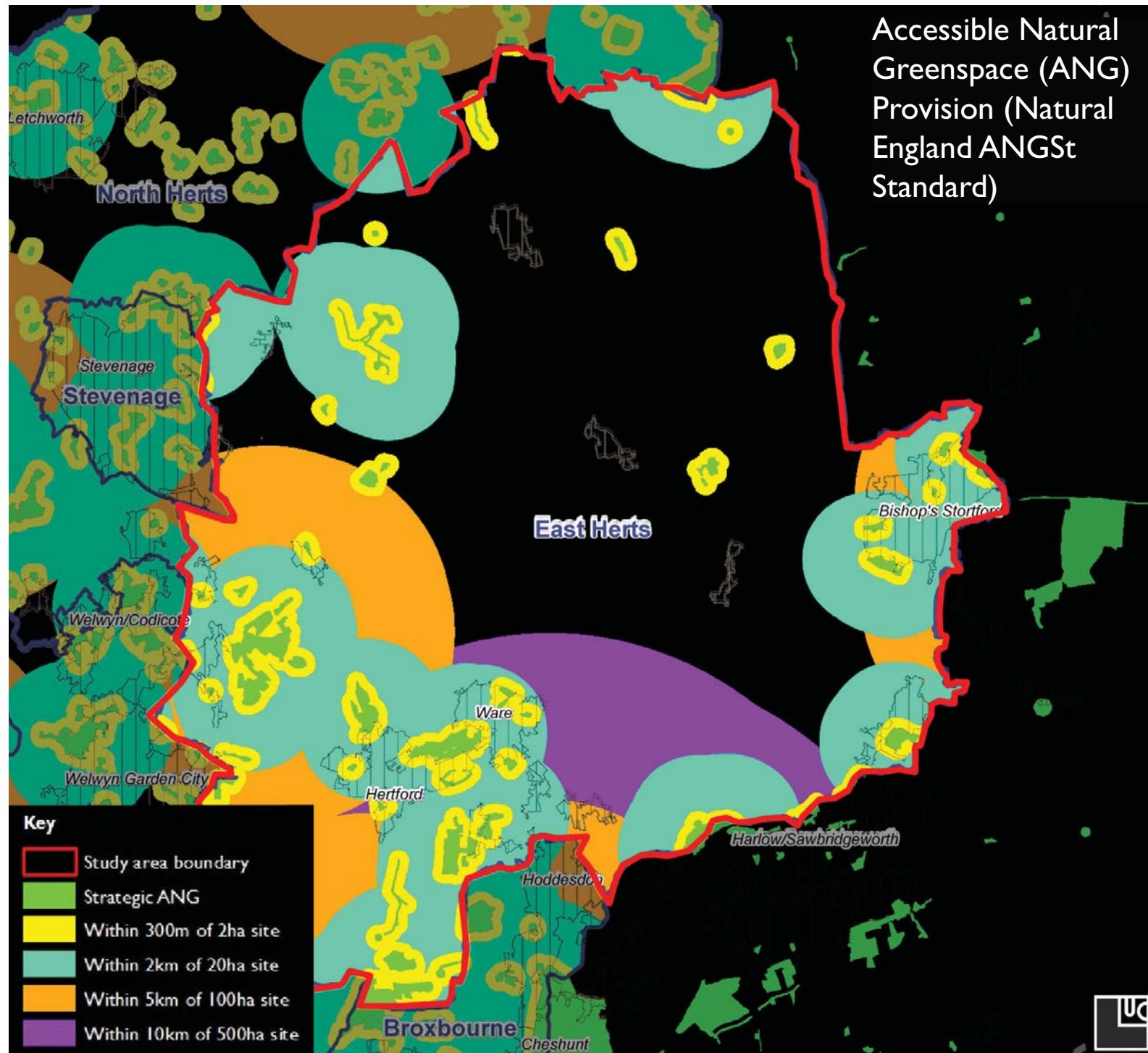
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Access to Recreation



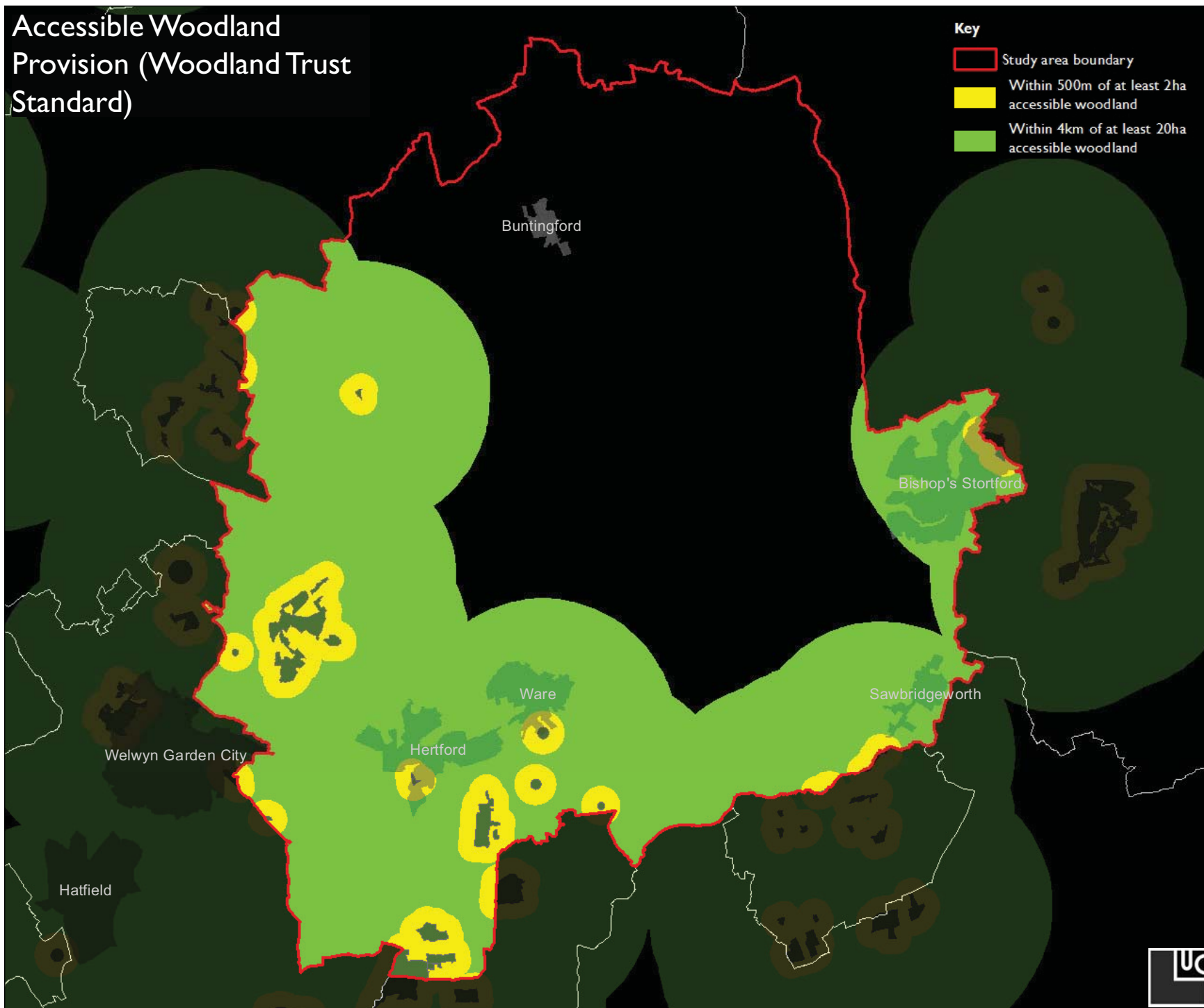
Accessible Natural
Greenspace (ANG)
Provision (Natural
England ANGSt
Standard)



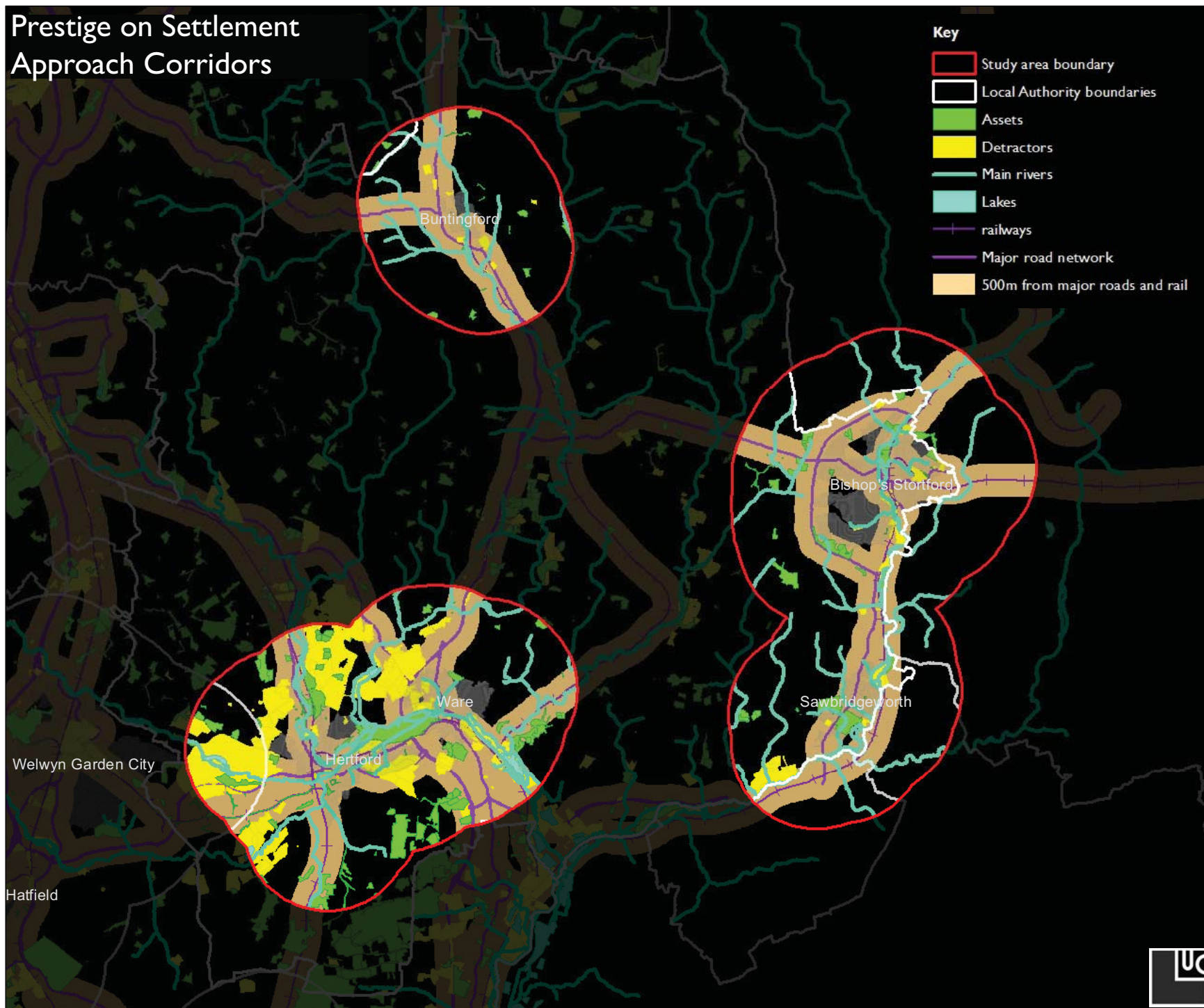
Accessible Woodland Provision (Woodland Trust Standard)

Key

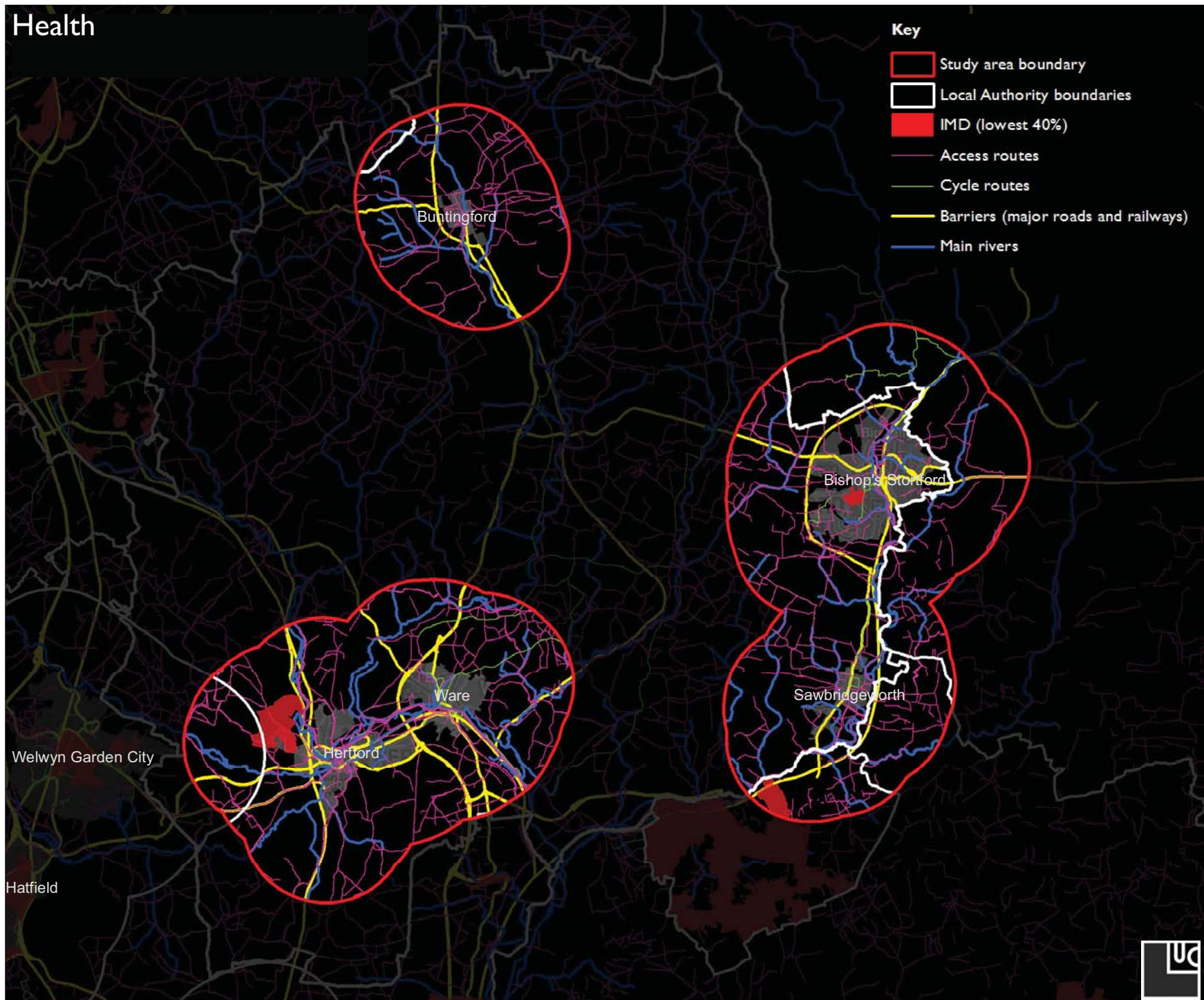
- Study area boundary
- Within 500m of at least 2ha accessible woodland
- Within 4km of at least 20ha accessible woodland



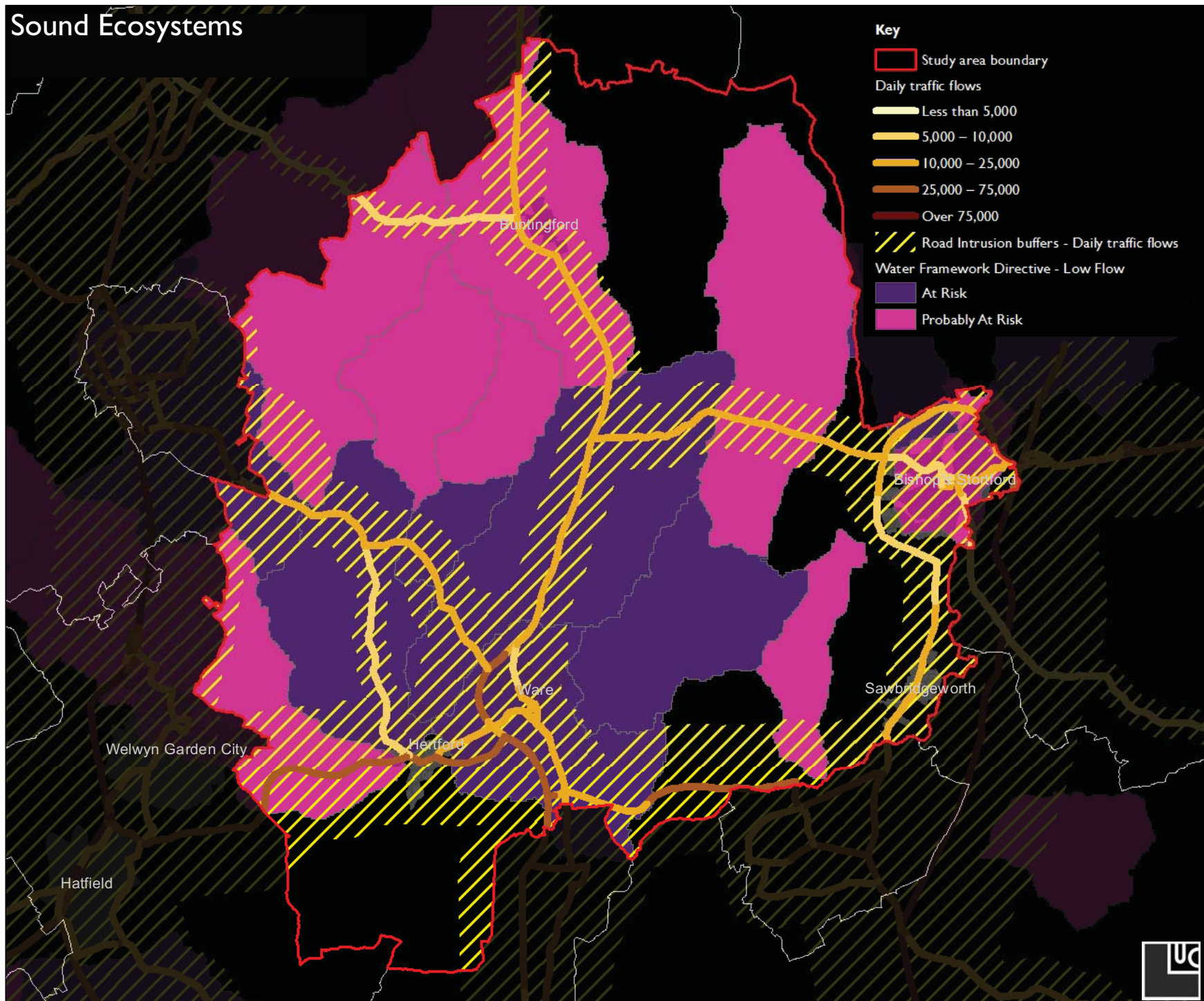
Prestige on Settlement Approach Corridors



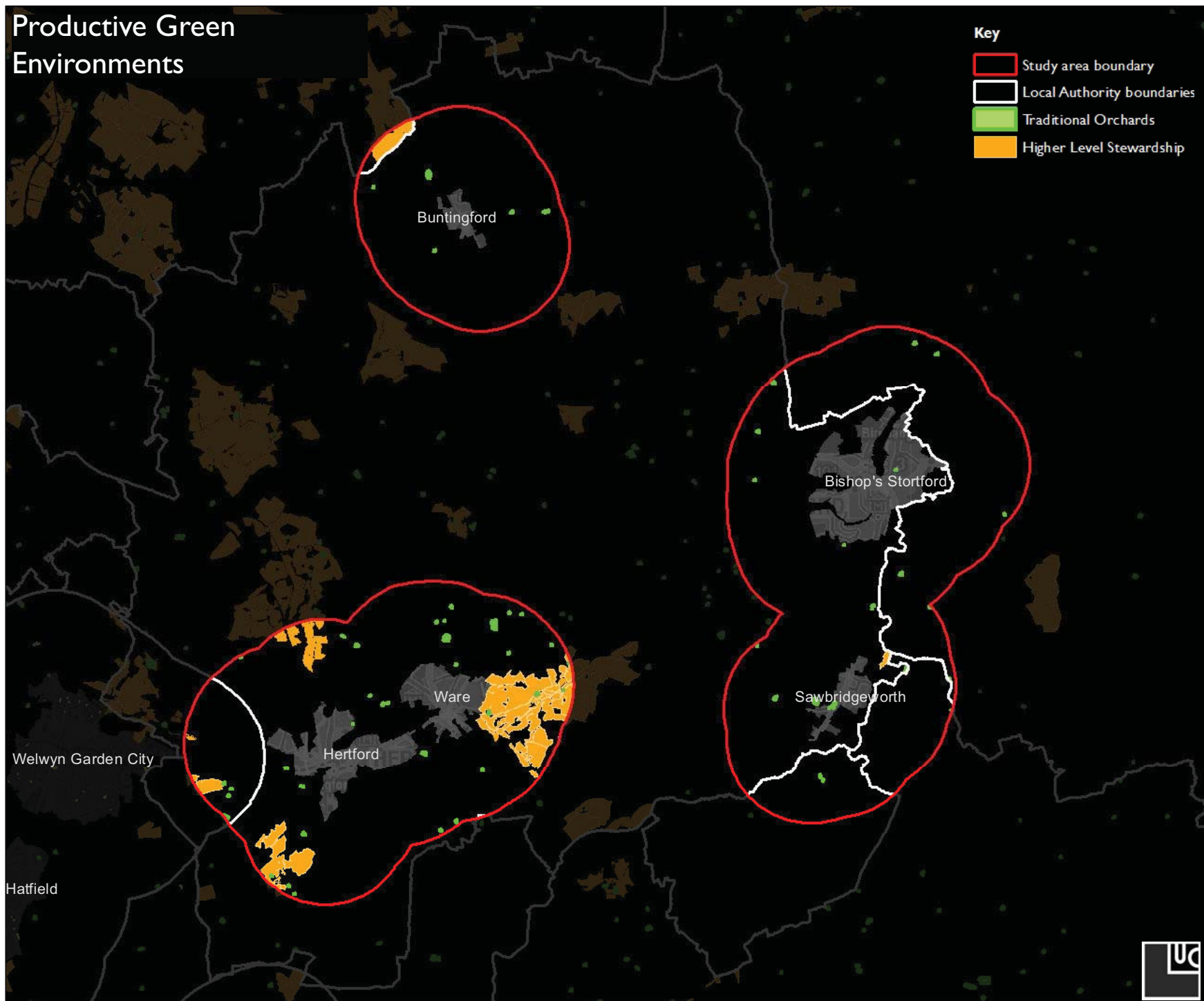
Health



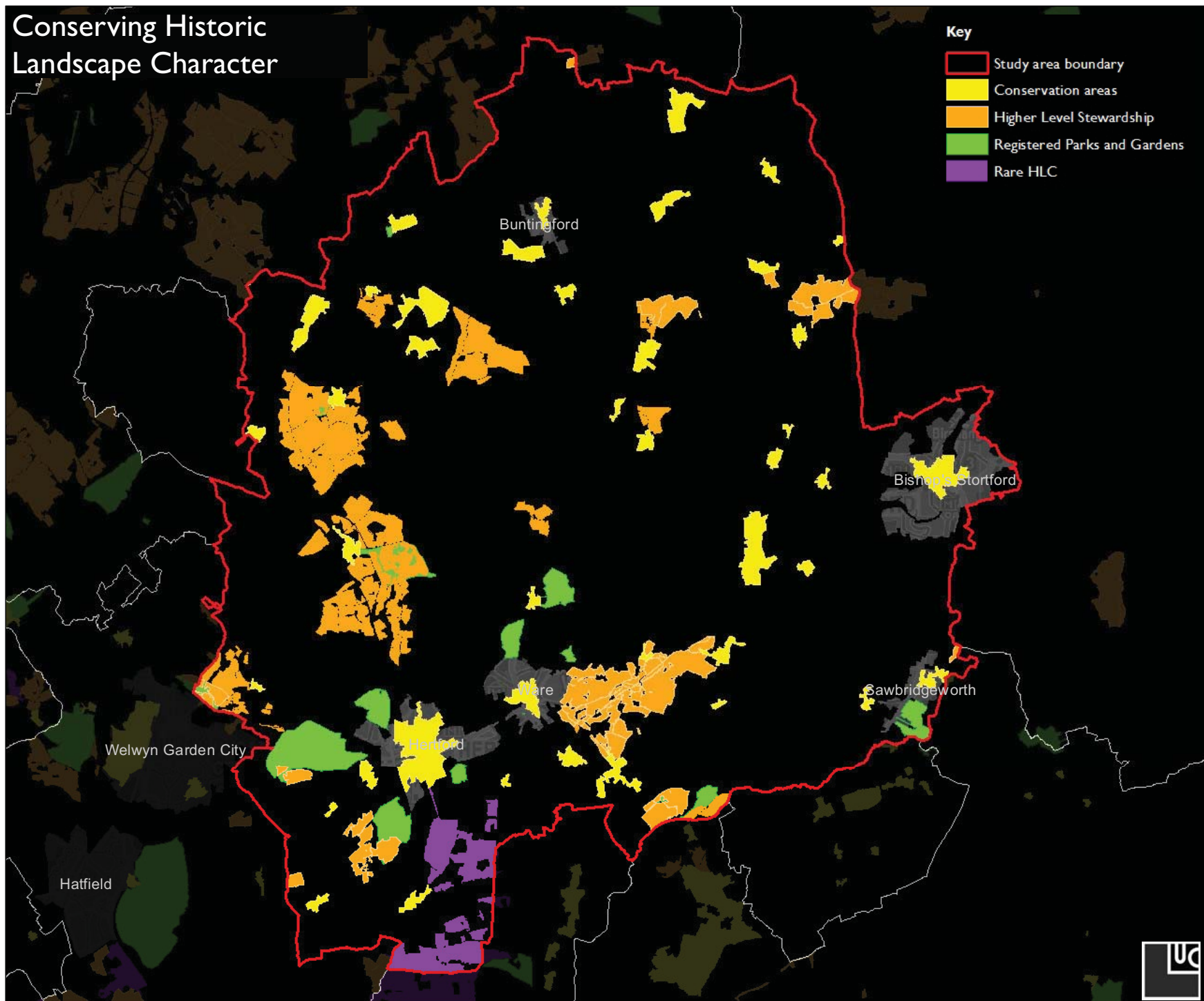
Sound Ecosystems



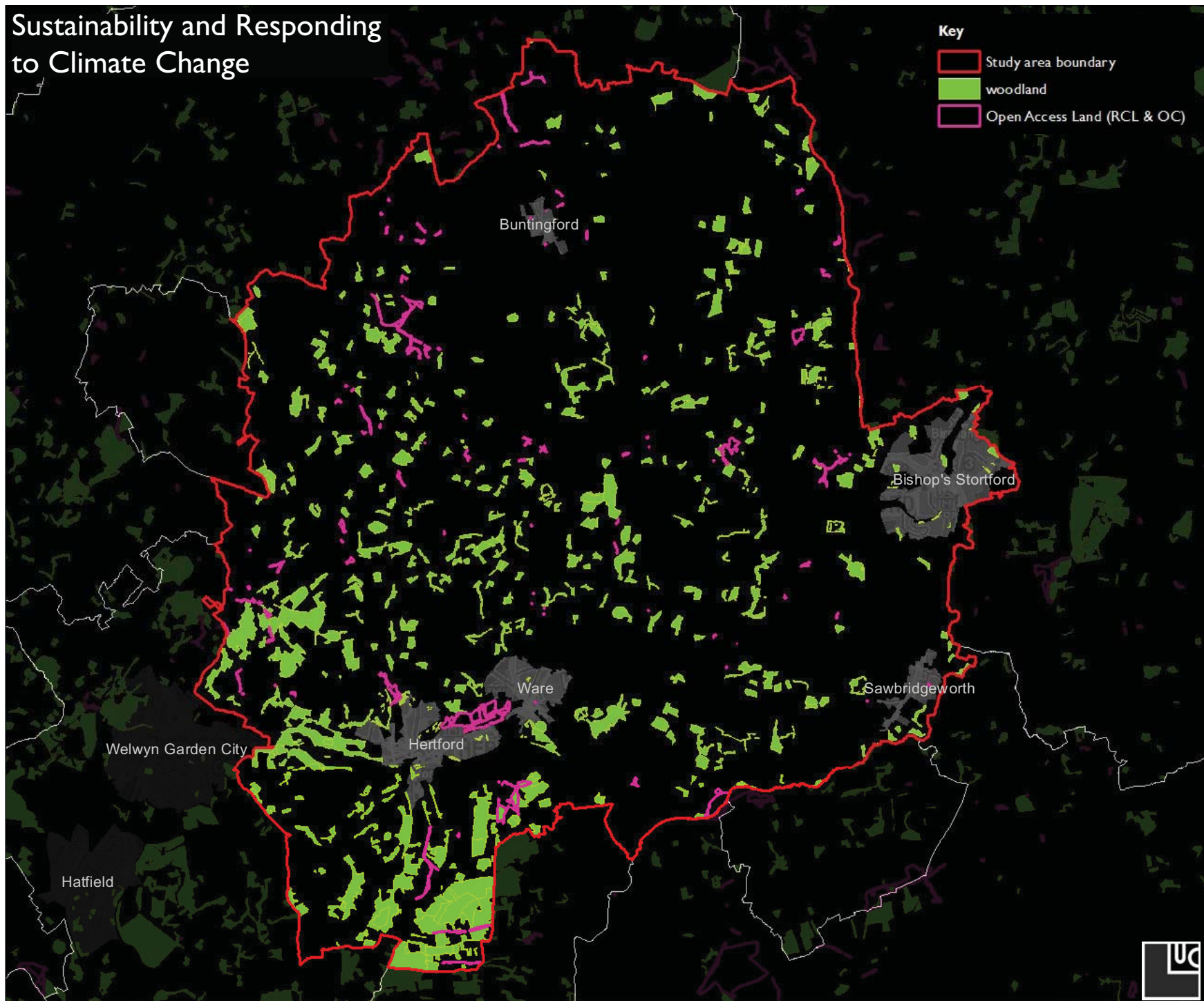
Productive Green Environments



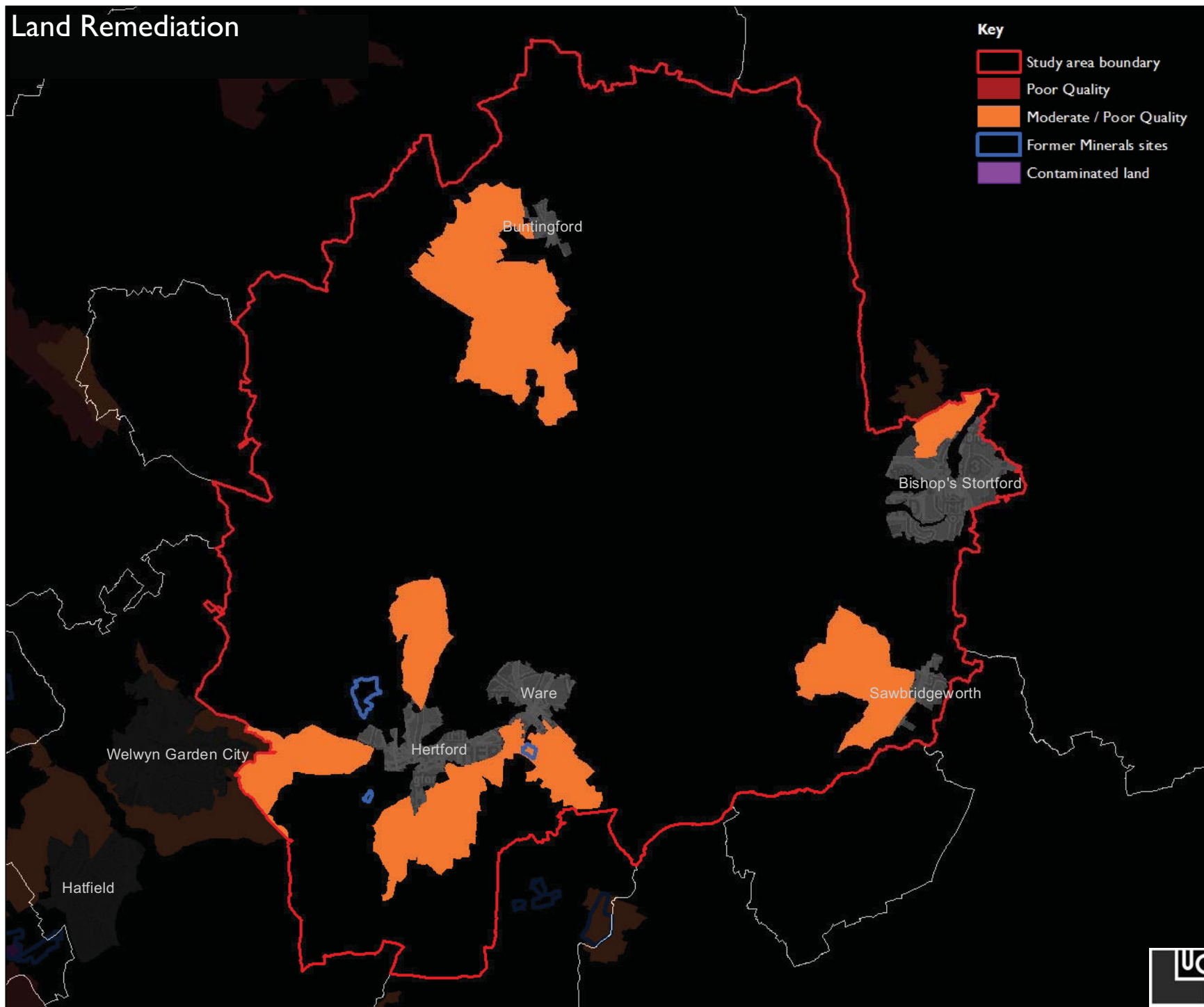
Conserving Historic Landscape Character



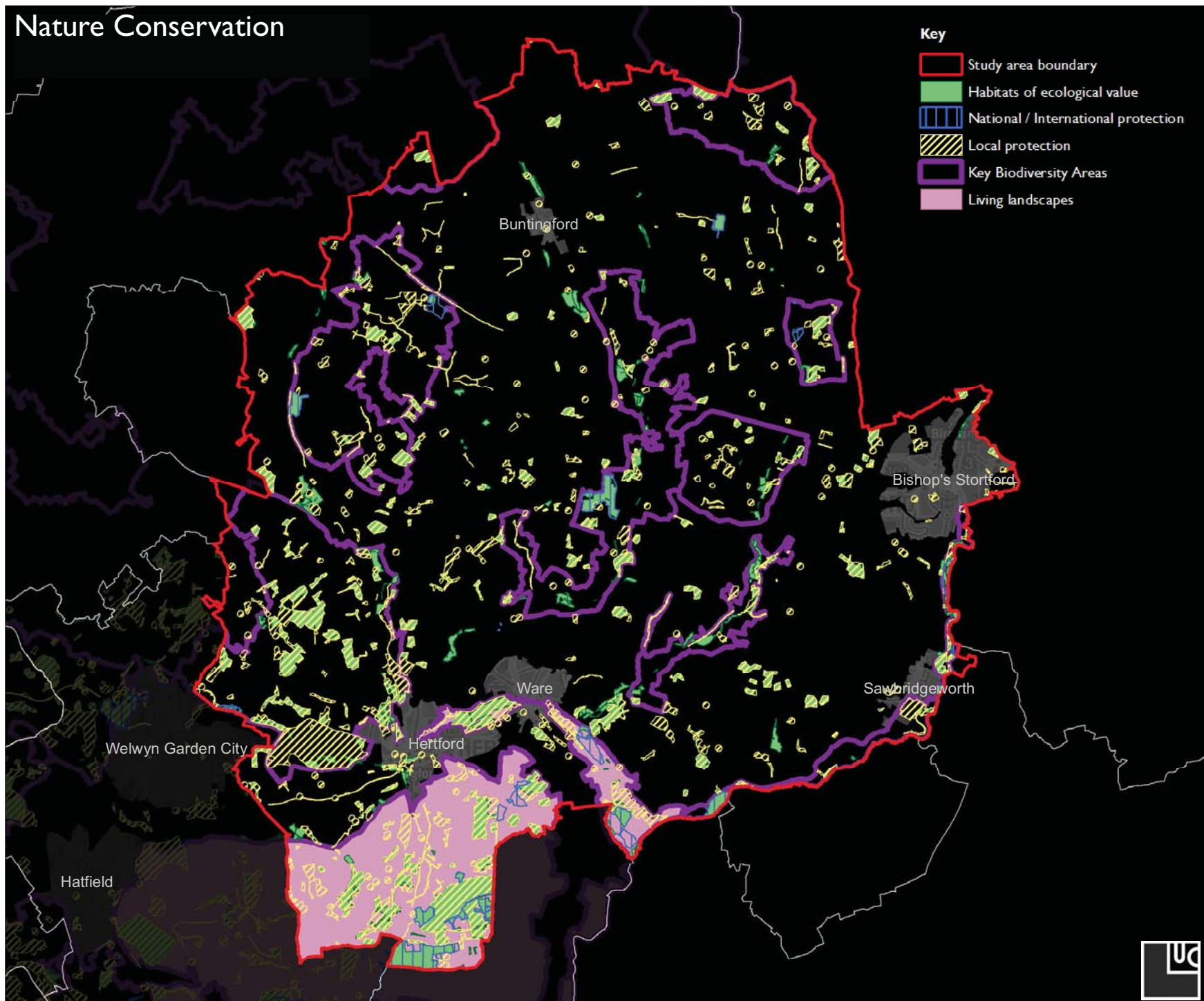
Sustainability and Responding to Climate Change



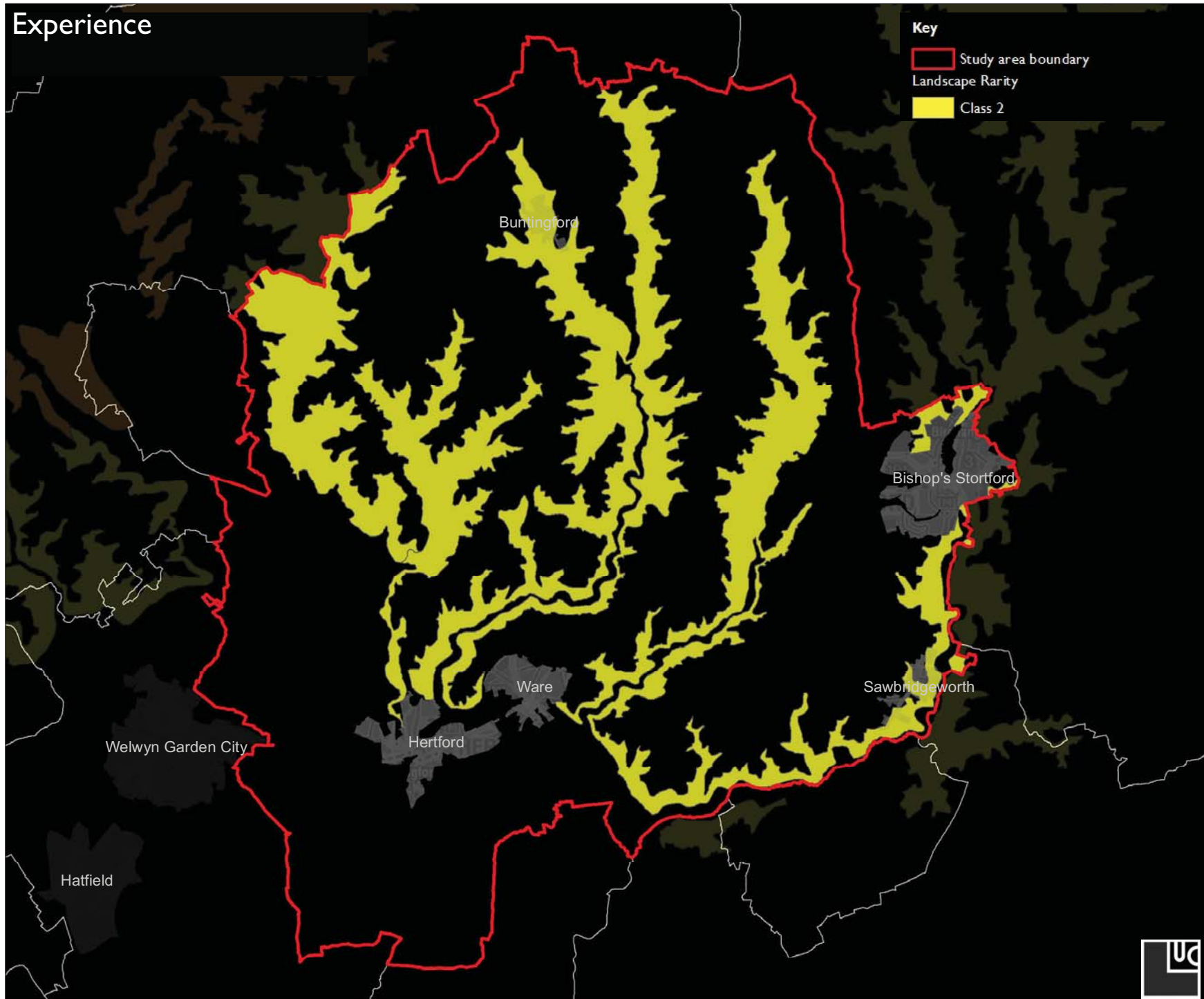
Land Remediation



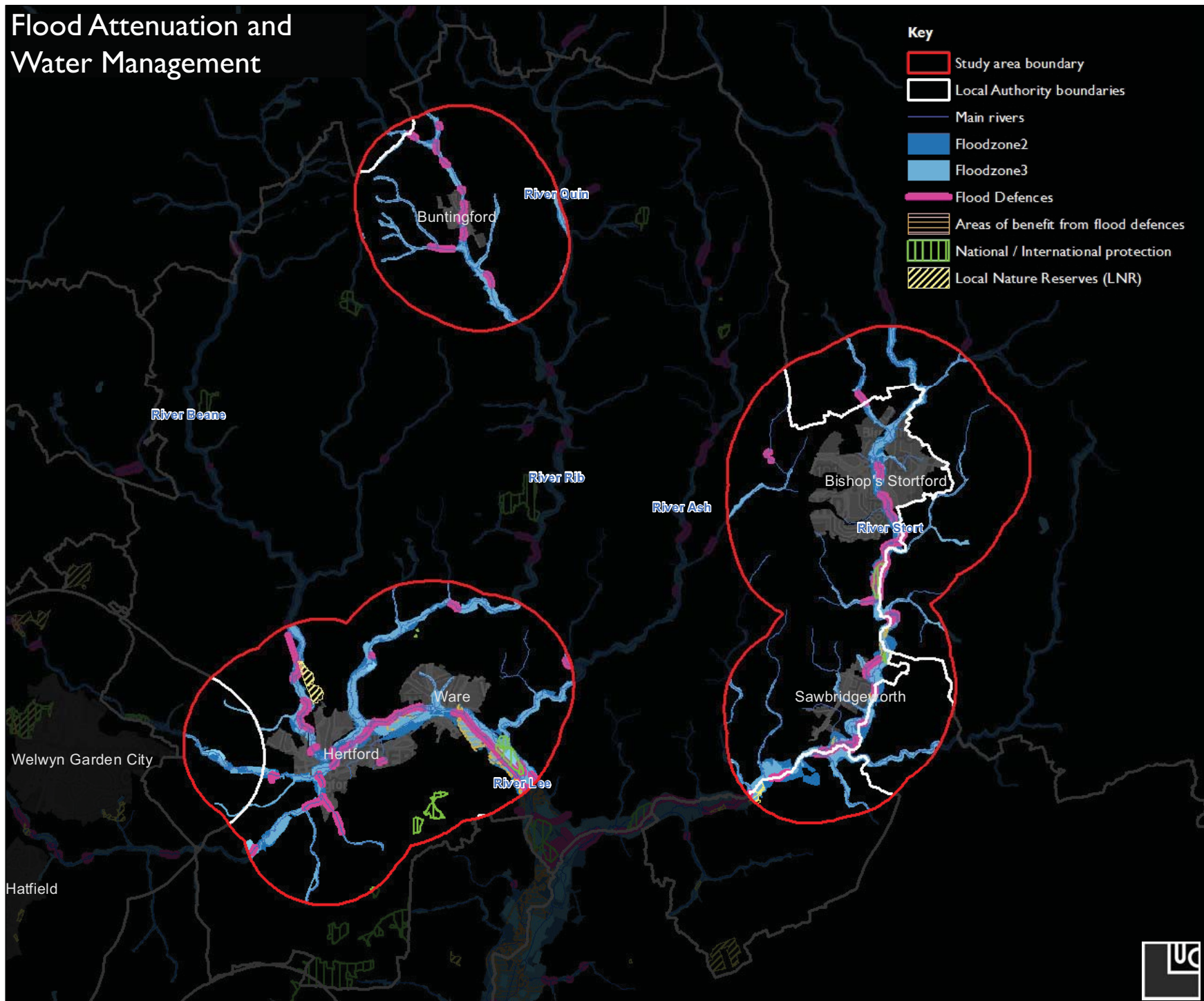
Nature Conservation



Experience



Flood Attenuation and Water Management



ⁱ Groundwork Hertfordshire 2004 **Trees Against Pollution: A Strategy for Tree Planting and Air Quality**

ⁱⁱ Hertfordshire County Council, 2001: **Hertfordshire Landscape Character Assessment**



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