

# WELWYN HATFIELD BOROUGH GREEN INFRASTRUCTURE PLAN APPENDICES

Prepared for Welwyn Hatfield Borough Council  
by  
Land Use Consultants  
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## LUC SERVICES

Environmental Planning

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## **1 Stakeholder consultation record**



### Welwyn Hatfield GI Plan: Stakeholder consultation report

The workshop was held at WHBC's offices on Monday Wednesday 26<sup>th</sup> January, from 4.30-7.30pm, facilitated by officers from Welwyn Hatfield Borough Council and by Land Use Consultants. Attendees were split into 4 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 A: Visioning (LUC responses in bold)

- Access to wetland networks – Mimram. **Agree, important**
- Managed access – some erosion from use. Agree that the principle should be about balance. **Sub points below are detailed considerations**
  - Increase visitors
    - but need to manage issues, e.g. rubbish
    - respect for landscape
- Promoting links. **Agree**
- Better planting on edge of new developments. **Agree with principle**
  - Adaptation to climate change, e.g. shade. **Agree**
- Mimram Valley – separates settlements. **Agree with principle and this is a key part of GI functionality in WHBC**
- Tree planting integral to WGC. **Agree**
- Young people – local schools – tree planting – but health & safety barriers (?)
- Active wood management – productive – food, materials – but need income (Northaw + Sherrards Park Wood). **Agree with principle**
- Former railways. **Yes, important part of sense of place and the GI network**
- Ayot Greenway + Wheathampstead
  - Careful of enhancing
    - Signs – would detract from character. **Detailed principles but agree with spirit of this**
  - Overcoming barriers – road
  - Enhancing and expanding – where appropriate

### Group B: Visioning

1. Lee Valley
  - Not chalk
  - Highlight the river valleys. **Yes**
  - Not so much the 'chalk' to the Lee. **Suggest we highlight the importance of the river valleys and river environment more generally**
  - Term 'expand' needs to be clearer (restore the extent). **Suggest using 'reinforce' as well as conservation and enhancement**
2. Settlement separation = KEY. **Agree**
3. Second half
  - No need for enhancement of urban green spaces in WGC. **Will revisit wording of this part**
4. Urban Greening
  - Add greater accessibility to greenspace in Hatfield. **Agree**
  - Appropriate
5. Promotion is key to both greenways but is it a vision. More general about access to Countryside / town. **Agree**
6. Sensitive recognition of smaller, local sites, e.g. Danesbury? **Visioning is necessarily high level and can't pick out site specific issues**

### Group C: Visioning

- Biodiversity underpinning / overarching / whole landscape / Env't. Biodiversity as the starting point. **Yes agree, is a key concept. Biodiversity and landscape underpin the whole network**
- Mustn't underestimate role of parishes / Parish Env't Action Plans (PEAPS). **Agree, they are key to future delivery**
- Settlement separation – Lee Valley. Also key for connectivity. **Agree**
- Issue of 'bottlenecks' in valleys (development). **Agree is an issue. Need to reflect positive opportunities for making further space for water and habitat up and downstream of these areas**
- North-south corridors (inc. cross / out of district links) – key for species movement. **Agree, these are important**



- Commons enhance grassland management – create links. **Agree with principle**
- Alternative approach to management. Need for education – peoples' perceptions. Be able to tell people why important and the benefits of different types of management. **Yes, agree**
- More mention on villages and how these tie in. + parishes + identify 'ad hoc' groups responsible for management. **Can make more mention of villages in vision**
- Hatfield Park asset but key barrier? (access will be wider spring 2011)
- Balance between people and wildlife esp. re green corridors. **Agree, key part of GI approach**
- Greenbelt run issue of severance at Mill Green
- Lafarge + Lord Salisbury key landowners. Land ownership V opportunity is a key concept for future delivery. **Yes, agree**

#### **Group D: Visioning**

- Issue of how links to other areas, e.g. Ayots / St Albans. **Agree and that cross boundary links are important**
- Shouldn't think of this in WHBC terms
- GI can help retain character and in particular strengthen the separateness of settlements, e.g. Welham Green / Hatfield. **Yes**
- Localised vision
- Birchwood playfields dropping demand / dog walking / car boot sale. **Probably a detailed consideration**
- Very small areas of GI can be very important for local communities. **Agree with concept of value of local greenspaces**

#### **Group A: Proposals and Projects**

1. Hatfield Greening  
 Yes – redress balance with WGC.  
 Maintenance standards – different for Hatfield.  
 Push productive aspects of greenspace. **Agree**  
 Involve young people in tree planting. **Agree with principle and of wider community involvement in future delivery**  
 Community allotment?  
 Local ownership – control local involvement.  
 Training – skills / knowledge. **Yes, an opportunity**
2. Heritage / rail routes  
 Possible circuit: Ayot Greenway / Heartwood / Ellenbrook. JT working with St Albans & East Herts. **LUC to check/look into**

Signage – balance – not too much but enough (Beginning and end of routes). **Agree**

GI study – put links together

Long term – re-introduction of rail? – E-W transport links

3. Mimram Corridor

Environment Agency role critical. **Agree, they will be key to delivery**

Water abstraction. **Key issue**

Improve access / connectivity. **Yes, agree**

Agreed – very important

Minerals operators – important landholdings. Negotiate with landowners. **Yes, this will be a key future step in bringing GI forward**

4. WGC

Parkway – what is the issue here? (already linear?)

For cyclists – is there sufficient parking? **Detailed consideration but principle could be signposted**

TC partnership – link to Public Realm Group

View / impression from railway

5. Woodland

Promotional work with private landowners. **Agree, this would be a useful future step**

Deer / herbivore management

- What about village projects? – best kept village / hamlets. **GI Plan establishes strategic framework and principles which can be applicable at the local/finer grain level**
- Hedging – AI(M). Ash tree problems.

**Group B: Proposals and projects**

I. Poor visual amenity of greenspace. **Offers key enhancement opportunity**

Promotion

- Orchards and allotments already happening. **Reference this work generally in GI Plan**

- All elements of functionality (i.e. attenuation)

2. Greenways  
Ayot + Alban

3. Mimram Green Corridor

- Maybe mention about river quality improvement. **Yes, agree**
- Sensitive access needed. Where access currently is – popular + abused. **Agree that sensitivity and balance are key points**
- Hard to achieve
- Town major access/vista.

4. Not project leave as. Spaces already provide a lot of social functions (i.e. football / pool). **Ok, with other stakeholder comments, this one will not be included. Suggest that a wider project in WGC may be about improving legibility of links through signage, considered collectively with Hatfield urban greening.**

5. Mardley Woods might be more in need (locally)

- Woodland / heathland project
- Large scale costly
- Largely in place already

Possible projects (local)

- Queensway Bishop Rise (land) – could fulfil:
  - Flood
  - Nature con
  - Prestige (approach)
  - Ecosystem
- Longmead – flood attenuation
  - Community orchard (Northaw, transition town initiative)

- Links across Ayot Greenway. **LUC to check these/consider as appropriate**

### **Group C: Proposals and Projects**

#### Project 1. Urban Greening

(GC Society)

- Golf courses – improve management / appearances?
- Allotments can still accommodate biodiversity – depends on integration / management. **Agree**
- (cf. Cole Green Way)

#### Project 3. Mimram Green Corridor

- Need for grazing. **Agree, a consideration for future and ongoing management**
- Mustn't be 'parkified'. **Agree, is about sensitive landscape management and balance of uses**
- District Plans must feed into County re county level planning, cf. Panshanger Airfield – avoid pinch points (Mimram). Must be integrated to avoid 'nibbling'. County level planning mustn't squash district aspirations. **Need for an integrated approach and this is being secured through parallel work with the strategic County level GI Plan**
- Mimram + Lee should be linked as one project. **Ok**
- Panshanger – C Park written into minerals PP but who takes on and runs it?
- Issue of HLS to + beyond 2013

#### Project 4. WGC Functional Greenspace

- Not appropriate in current form. More a question of better signage, e.g. to Sherrards Park Wood. **Ok, see comments in relation to Group B above**
- An information project. Points re Howardsgate equally applicable to Caponfield, Hatfield. **Ok**
- Better promotion of existing assets. Heritage Walks. **Agree**
- Was old rail line at Peartree an historic missed opportunity.
- Is project a bit 'micro' – probably links more to project 1. How to deliver?

#### Project 5. Woodland and heathland grassland links

- Fantastic opportunity but land ownership of Hatfield Estate key issue. **Agree, this and negotiation and engagement in future will be key**

- Think about heathlands / other habitat mosaic. **Ok**
- Living landscape + delivery thereof (capture both habitats + species)
- Land management – key issue as land needs reason to exist / function. Heathland. (Grazing). **Agree with principle**
- Whole landscape approach
- Landscape restoration zone – what happens if extraction takes place? Phasing?
- Mitigation should be written in, in advance of restoration if future extraction takes place.
- Is it about creating new character after extraction – wetlands? Potential opportunity. **This and above points can be written into general principles for that GI zone**

#### **Group D: Projects and Proposals**

- Urban Greening – positive  
Build on WGC ethos – But settlements are different. **Yes, recognise this point**  
Don't limit to Hatfield. **Ok, can apply to the other settlements**
- Good approaches to the town – trees  
Improve views from roads, paths. **Agree with principles**  
Trees – selective – every village is different  
(Discrete) footpath along Parkway – linking to Panshanger  
More than one thing to all (diff people)  
Howardsgate – Town Centre management  
But liabilities (?) County cost for maintenance, management – diff approaches
- New? Or promote, e.g. Rights of Way – current lack of understanding  
Promote
  - Education
  - WH Times, Life Magazine, WH website
  - Confidence – can I walk / cycle on the right of way?
  - Health boost
 Easier to know about, to use. **Agree with principles**  
Parish Councils (some) have own maps / leaflets – but 'gathering dust'?

Promoting - Putting maps in receptions etc – allowed? WBC to check.  
Suitable access – can I take a buggy?  
Publicise alongside events, e.g. Farmers Market – portable notice board

### **Group A: Delivery**

#### **1. WPAG**

Parish Plans/Parish Councils

Digswell Lake Society

Mimram Corridor

- Voluntary assistance
- Put together working group
- Work with District / Borough Councils

#### **2. Borough Council – think about joint-working on allotments – food production / schools.**

Promotion:

Forum

Parish / Town Councils

Allotments Association

‘Transition Towns’

#### **3. S106 / CIL developers’ contributions**

#### **4. Forestry Commission**

- a) Coalition Govt – street trees £2-3m nationally – Direct Gov website – small woodlands. **Yes, can reference National Tree Planting Campaign**
- b) England Woodland Grant Scheme – up to 2013 – Northaw / Sherrards Park Wood
- c) Landfill Tax grants

Post ind. Heritage

#### **5. HCC archaeology / RoW**

With WHBC / St Albans

Industrial / rail heritage routes

Ellenbrook Park – work with residents / local management – Trust.

6. Cycleways / Paths??

Must be practical. Use local forums

Herts Highways – may have funding for printing maps.

**The above are useful thoughts/ideas to consider**

**Group B: Delivery**

- Partnerships
- Council - scope + locals already (Project No. 1) – more involvement for smaller projects (i.e. Friends of the Mimram)
- Promotion + local encouragement. For local input / drive + even fundraising. By achieving best benefit for all the community in order to deliver projects locally. **Agree with principles**
- The soft approach (management) to save money. **Agree**
- S106 + CIL, HLS
- Highways

### Group C: Delivery

- Comes back to landownership + opportunity. **Agree**
- Landscape scale: main mechanisms are HLS / EWGS. **Yes**
- CMS can do stewardship for district owned land only
- Establish link to private / commercial companies. **Potential future opportunity for WHBC and partners to consider**
- FWAG
- EA as consultee / partner + funding streams (access to)
- Council pressures – Borough + County
- Funding – developers, wildlife trusts
  - Who can provide the grant and do the work? Do the land management and physically deliver?
  - Private land management
- Farmers, land owners – some don't want to take part
- GROUNDWORK / CMS
  - Funding links
  - Community link (particularly relevant as potential for Groundwork involvement)
- Who's going to do what?
  - Some groups could extend remit – Sherrardspark helping out elsewhere
  - Local green space groups
- Promote
  - Look after own patch – don't complain, get on with it! Proactive approach
  - Use established village groups / parish
- Find the right person who wants to do something
- Link with healthy living
- Balance with houses
- Incentives
- Long term
- Impact on farmers (Lord Salisbury's tenant farmers)
- Forestry Commission
  - Linking with projects



<ul style="list-style-type: none"> <li>- (Projects – corridors for wildlife along railway lines / corridors)</li> <li>• Corridors (wildlife already in place) <ul style="list-style-type: none"> <li>- Across, e.g. North Herts</li> <li>- AI corridor – habitat management</li> </ul> </li> <li>• Problems with time limits on HLS schemes, e.g. 5/10 years. What happens after that?</li> </ul> <p>Long term vision</p> <ul style="list-style-type: none"> <li>• Buy-in from landowners. <b>Agree, key point for future delivery and achieving projects</b></li> <li>•</li> </ul> <p><b>All the above points are useful for consideration</b></p>
<p><b>Group D: Delivery</b></p> <ul style="list-style-type: none"> <li>• Need a strategic plan to help with delivery. <b>Agree, this GI Plan can suggest initial steps. Further more detailed consideration will be needed</b></li> <li>• Liabilities and advantages of trees</li> <li>• Transfer of funds</li> <li>• Pilot scheme – monitor costs / performance – added value – parish precept – deliver some of GI services, e.g. Action Plan to deliver.</li> <li>• Who delivers, Councils, Gov agency, commercial – interests difficult to engage.</li> <li>• Parish GI plan for Woolmer Green as a pilot. Templates for working with other Parish Councils, e.g. CMS, HCC</li> <li>• NB. Hatfield Town Centre – Green areas – important as part of regeneration.</li> </ul> <p><b>Useful and interesting points for consideration</b></p>

### **Group C additional map annotations**

- Key landowners must be on board
  - Lafarge
  - Lord Salisbury (Hatfield Estate and associated land holdings)
  - Brocket Estate

- Mardley Heath = issues of Highways management
- Management e.g. limited. 20 yrs for woodland, 10 yrs for HLS. Incentive – Landowner buy-in is key
  - Link up to strategic plan @ county – cf. Mimram. Link this to river valley / post-extraction wetlands (Panshanger – original intention was to give to HMWT post extraction workings S of Panshanger Park)
- Corridors for movement
  - rail corridor
  - A505 – chalk grassland corridor. Highways involvement? Cf. Baldock bypass (seed source issues) but will be positively managed for 5 years.
- Landowners can provide block to development in some instances
- Potential to enhance g/space grassland mgmt generally
- Importance of veteran trees and acid grassland to Panshanger
- Need for good landowner links cf. Panshanger
- Landscape links Hatfield Park – Northaw (Acid grassland)
- Delivery: river corridors – stewardship schemes
- Greenspaces Groups – community / voluntary groups to take action/ownership cf. “Earth Summit”
- Use of existing / established groups – positive action (cf. Lemsford)
- Need for more strategic overview for Nature Conservations
- Links to Parish Env't Action Plans (PEAPS) – still deliver- albeit at local scale
- “Green gyms” – BTCV – CMS health walks
- Nyn Park – Good scheme but essentially PRIVATE.

## 2 Summary findings from the document review

### KEY MESSAGES FROM THE LITERATURE REVIEW, BY THEME

- 2.1 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.

#### Access and recreation (open space)

- 2.2 *The following documents were reviewed: An Assessment of Welwyn Hatfield's Open Space, Sport and Recreation. 2009, Welwyn Hatfield Cycling Strategy, 2003-2008, Welwyn and Hatfield Play Strategy (no date), Hertfordshire Rights of Way Improvement Plan (ROWIP), 2008.*
- 2.3 There are over 2,200 ha of accessible open space in Welwyn Hatfield Borough. The quantity of provision in the Borough is very high relative to surrounding boroughs/districts, although some localised deficiencies in provision, particularly for young people and children, exist in Hatfield South, Hatfield North and Haldens wards. Welwyn city has the best provision of accessible open space in the Borough, and probably the County. The

Borough has a Cycling Strategy in place and this should be supported by the GI Plan.

- 2.4 There is little need to create new publicly accessible open space in the Borough, and GI opportunities should focus on enhancement and delivering a greater range of functions. Opportunities include the Ellenbrook Fields Country Park (DeHavillands Airfield urban village), and creating off-road links between residential areas and the strategic cycle/walking routes. There is moderate provision of public rights of way across Welwyn Hatfield Borough, and provision is disjointed in many areas, with many routes severed by road corridors. The exception to this is Welwyn Garden City, which has wide access to the rights of way network via off-road routes. Strategic long distance routes which run through the Borough include the Lee Valley Way. Hertfordshire County Council and partners have highlighted the Welwyn and Hatfield ROWIP Project Area which will enhance rights of way in Welwyn.

#### Landscape character and 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, Hertfordshire County Council, 2001: Hertfordshire Landscape Character Assessment, CPRE, 2007, Intrusion Mapping, CPRE, 2000, Night Skies Mapping, Watling Chase Community Forest Plan Review and Landscape Supplement, 2001.*

- 2.6 The landscape of Welwyn Hatfield Borough is defined by a number of interlocking landscape types – the Wooded Hills and Ridges, Wooded Chalk Valleys, Valley Meadowlands and Lowland Settled Farmlands. Within this strategic landscape framework, the local landscape character areas encompassing the fringes of the larger settlements (Hatfield, Brookmans Park, Cuffley, Welwyn Garden City and the cluster of settlements associated with Welwyn) includes the riparian landscapes of the Lee and the Mimram as well as areas of strong, historic estate character (Hatfield Park), which are often of variable accessibility. Other aspects of the landscape experience include wooded valley crests and a mosaic of different woodland types, including ancient, broadleaf and plantation woodland. More detailed information on local landscape character is contained in the Hertfordshire Landscape Character Assessment.
- 2.7 Whilst the landscape is not designated for its importance or quality at national level, part of the southern half of the Borough and adjoining the southern and western fringes of Hatfield is washed over by the Watling Chase Community Forest, the stated aspirations of which are large scale tree planting and afforestation.
- 2.8 Key issues relate to the severance created by the A1(M) and hard, prominent settlement edges in relation to Welwyn Garden City as they abut the Mimram Valley and De Havilland Plain landscape character area, respectively. Also the presence of active and restored mineral workings, the character and quality of which is variable.

- 2.9 Principal opportunities relate to enhanced links between the proposed Ellenbrook Fields Country Park and the wider wetland landscape which has resulted in places from mineral extraction. Also enhancing access to and interpretation of valued historic resources including Hatfield and Nyn Parks and Gobions, attenuation in relation to the A1(M) corridor and enhancement of the settlement edges in relation to intact, river valley landscapes. See links on **Figure 3.1** in the GI Plan.

### **The historic environment**

- 2.10 *The following documents were reviewed: Historic Landscape Characterisation (HLC), Conservation Area Appraisals where available (Welwyn Garden City), Hertfordshire Landscape Character Assessment.*
- 2.11 Welwyn Hatfield Borough is rich in historic landscape assets, from the largely intact historic landscape pattern of early Enclosure field systems and ancient woodland blocks associated with important registered parks such as Hatfield and Broom's Barn Park, to a network of other minor parklands and estates. Also a diverse settlement pattern including market towns associated with the Great North Road, a Garden City and a New Town.
- 2.12 Key issues are in respect of severance of historic landscape features created by arterial transport routes such as the A1(M), variable accessibility of important historic landscape resources such as Hatfield Park and the low profile,

awareness and level of interpretation of other historic designed landscapes such as Gobions and Nyn.

- 2.13 Opportunities relate to enhancing access to and understanding of historic parklands. For example in the case of Nyn if access could be secured, this could enhance and expand the recreational offer at Northaw Great Wood Country Park. Also creating physical links between these sites as the foci for new healthy walking routes and trails, tying into the existing network and routes such as Ayot Greenway, as well as seeking to provide interpretation of less obvious sites such as Gobions and Nyn. See **Figure 3.1** in the GI Plan.

### Health and deprivation

- 2.14 *The following documents were reviewed: An Assessment of Welwyn Hatfield's Open Space, Sport and Recreation. 2009, Welwyn Hatfield Cycling Strategy, 2003-2008, Welwyn and Hatfield Play Strategy (no date), Hertfordshire Rights of Way Improvement Plan, 2008.*
- 2.15 With reference to the above baseline documents, there is generally good provision of open space, however there are some deficiencies in provision for young people and children in the Hatfield South, Hatfield North and Haldens wards, and several pockets of health deprivation across Welwyn Garden City. Public consultation indicates that 60% of respondents never visit any type of open space.
- 2.16 GI priorities should include improving the network of cycle routes, and links to the public rights of way network from

residential areas, with the exception of Welwyn where access is already relatively well provided. There is also a need to work with the Council to build on, or create new initiatives to promote and inform residents on healthy exercise opportunities.

### Functional ecosystems and flood risk

- 2.17 *The following documents were reviewed: Welwyn Hatfield Level 1 Final Strategic Floodrisk Assessment (SFRA), 2009, Rye Meads Water Cycle Strategy, 2009, EA Thames Catchment Flood Management Plan, HCC note on drought sensitive landscape character areas, Environment Agency Water Framework Directive (WFD) dataset.*
- 2.18 Welwyn Hatfield Borough is cut by a number of rivers and associated tributaries, notably the chalk stream of the Mimram, the River Middle Lee, the Upper Colne and the Mimms Hall Brook. The narrow floodplains of the valleys are a key part of flood risk management.
- 2.19 Key issues are in respect of water quality, abstraction pressures resulting from existing urban areas and potential future settlement growth, the vulnerability of the valley landscapes to climate change, and consideration of fluvial (river) and groundwater flooding.
- 2.20 Primary opportunities for the Green Infrastructure Plan are therefore to conserve, enhance and expand wetland 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. Creation of expanded and enhanced wetland habitat and landscape would also assist in improving the quality of the riparian environment.

### Productive landscapes

- 2.21 *The following documents were reviewed: Welwyn Hatfield DC Open Space Strategy Draft for Consultation, July 2009, Natural England mapped data on traditional orchards, Woodland For Life The Regional Woodland Strategy For The East Of England, November 2003, HLS Target Area mapping ([www.natureonthemap.org.uk](http://www.natureonthemap.org.uk)) and statements, Welwyn Hatfield Core Strategy Issues and Options Consultation Document, March 2009, Hertfordshire Low & Zero Carbon Technical Study – Final Report, March 2010.*
- 2.22 Existing woodlands within the Borough offer the opportunity, through sustainable woodland management, to achieve the key objective within the Draft Open Space Strategy to ‘Establish links with other woodland owners through the Forestry Commission to market woodland green waste to the bio fuel industry’.
- 2.23 Woodland linkage and enhancement as shown on **Figure 3.1** of the GI Plan could create an opportunity to provide new biomass fuel sources (e.g. woodland managed as short rotation coppice). This would help 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.

- 2.24 At a ‘local’ level, there is uneven allotment distribution across the Borough with Welwyn North, Northaw and Brookmans Park wards having no provision. Accessibility, in terms of residents living within 1 km of an allotment, is restricted in the south of the Borough, with no residents in Cuffley, Northaw, Brookmans Park and Little Heath wards having an allotment within 1 km. Accessibility is also low in Oaklands and Mardley Heath wards. Many sites had waiting lists based on the Open Space Strategy, 2009, although three additional allotment sites have been provided since the 2009 audit in order to meet demand. These are Hawbush Road, Welwyn, Marley Road, Welwyn Garden City (Haldens Ward) and St Audreys Green, Welwyn Garden City (Peartree Ward).
- 2.25 14% of allotments within the Borough are of poor or very poor quality and there is some correlation between poor quality and high vacancy rates. In general, improvements are required to access, maintenance and the provision of basic facilities such as water supply and refuse bins.
- 2.26 There is an opportunity to bring poorly maintained allotments back into workable condition and to create new ones where provision is below average and/or waiting lists for plots exist. This would take advantage of increasing public interest in and demand for food that is of good quality, known provenance and has low ‘food miles’.

## Land remediation

- 2.27 The following documents were reviewed: *Strategic Housing Land Availability Assessment (SHLAA)*, *Minerals and Waste Development Framework for Hertfordshire – Waste Core Strategy*, *Welwyn Hatfield Core Strategy Issues and Options Consultation Document*, *National Land Use Data (NLUD)*.
- 2.28 Over 80% of Welwyn Hatfield's area is designated Green Belt which provides an important green infrastructure asset when planning any future growth in the Borough. Pockets of deprivation do exist in both of the main towns in the Borough and particularly in and near the town centres. Regeneration of these areas should consider green infrastructure as an integral part of environmental enhancement. Areas of high deprivation include Peartree and Panshanger wards in Welwyn Garden City and in Hatfield areas include Hatfield North, Hatfield East and Hatfield Central.
- 2.29 Most of Welwyn Hatfield falls within a sand and gravel belt and Hatfield Quarry, including land at Symondshyde Farm, is currently being worked. In the longer term, such areas present opportunities for land remediation and restoration/delivery of landscape enhancement (see 'action zones' on **Figure 3.1** in the GI Plan).

## Nature conservation

- 2.30 The following documents were reviewed: *East of England Biodiversity Mapping Project 2005*, *Hertfordshire Biodiversity Partnership (2006) A 50-year vision for the wildlife and natural*

*habitats of Hertfordshire: A Local Biodiversity Action Plan*, *Ancient Woodland Inventory*, *Statutory designated sites (Natura 2000, SSSI, NNR, LNR)*, *County Wildlife Sites, Hertfordshire & Middlesex Wildlife Trust Living Landscapes*.

- 2.31 Welwyn Hatfield is the central local authority of Hertfordshire, with the A1 (M) and associated urban areas running along its north-south axis. West of the A1 (M) the land use is largely rural with a network of woodlands scattered across the predominantly agricultural land. East of Hatfield and Welham Green, is similarly agricultural, but with the notable Hatfield Estate County Wildlife Site (CWS) and Northaw Great Wood Site of Special Scientific Interest (SSSI).
- 2.32 The hornbeam woodland of Northaw Great Wood SSSI is part managed as a Country Park, part as a Schools Park where traditional techniques such as coppicing are employed. Other SSSI in the district (totalling c.329ha) include Water End Swallow Holes, south west of Welham Green – a willow carr/swamp community established across the only major sinkholes in chalk which are a permanent feature of the landscape in the UK. Wormley-Hoddesdon Woods SSSI SAC (oak-hornbeam) also overlaps the south west of the Borough by c.6ha.
- 2.33 In total, Welwyn Hatfield Borough supports c.2,090ha woodland. The largest outside of the SSSI are Sherrards Park Woods to the north west of Welwyn Garden City, Dowdell and Warren Woods on the western boundary, Millwards Park (ancient replanted) within the Hatfield

Estate south east of Hatfield and the Cobs Ash / Cangsley Grove complex in the south west. CWS designations typically encapsulate such woodland sites, but also include Mardley Heath CWS in the north of the Borough, and grassland sites such as Essendon Meadows and Pasture CWS and the grassland by Hooks Copse CWS.

Lee Valley – wetlands, woodlands and heath – flows from the north west. Also the Lower Mimram, as described above, in the northern part of the Borough.

- 2.34 The Borough BAP focuses on the ancient semi-natural woodland habitat in particular, with the associated features of hornbeam / hazel coppice, oak and hornbeam pollards, wood pasture, acid grassland and heath, ponds, rides and clearings.
- 2.35 In common with the rest of Hertfordshire, Welwyn Hatfield supports a number of highly valued chalk rivers, such as the Mimram – one of the most unspoilt chalk streams in the County. The Lee is not classified as a chalk stream but is fed from the dip slopes of the Chilterns. Sections of the Lee retain reasonable ecological value, e.g. between Lemsford and Essendon, although it is heavily influenced by inflow at Luton. In addition to the rivers themselves, associated wetland habitats include Blackfan Fen, a remnant fen meadow on the outskirts of Welwyn Garden City, and along the middle reaches of the Mimram, Singlers Marsh, Digswell Meadows South and Digswell Lake.
- 2.36 Four Key Biodiversity Areas occur within the Borough. Broxbourne Woods / Hatfield Park across the centre and south east of the Borough comprises oak-hornbeam woodlands, grasslands and heaths. Mymmshall / Water End in the south western tip comprises woodland. The Upper



### 3 Summary findings from the functional analysis

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

- 3.1 In addition to highlighting issues which have fed into the GI Plan, cross referenced to relevant proposals and projects, this section also includes pointers for future, more detailed GI planning, drawn from the functional analysis.
- 3.2 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). Supporting mapping for each function is shown at the end of this appendix. 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, although it is recognised these are likely to change).

#### Access to recreation

- 3.3 *The analysis considered the 2.5 km envelope around the main settlements in Welwyn Hatfield (Welwyn Garden City, Hatfield and Cuffley, using datasets provided by Hertfordshire County*

*Council). 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 Rights of Way Improvement Plan (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.*

- 3.4 There are 2,200 ha of accessible open space within the Borough. Accessible Natural Greenspace (ANG) covers 468 ha or 3.6% of the Borough. In 25% of the Borough, none of the ANGSt standards are met, while only 0.8% of the Borough meets all ANGSt standards. There is a network of cycle routes but no national (Sustrans) routes running through the Borough. The A1 (M) is a barrier to sustainable access to the countryside from Welwyn Garden City and Hatfield, and the railway line acts as a barrier to the east of Cuffley. There is an opportunity to deliver improvements through the Welwyn and Hatfield Project Area as identified in the Hertfordshire ROWIP and there is a need to provide a strategic site (500ha) to serve the Welwyn Hatfield communities, or to enhance off-road access and links to the countryside to provide similar benefits (see links shown on **Figure 3.1** in the GI Plan).
- 3.5 There is good provision of open space in and around Welwyn Garden City, but a need for a strategic ANG site

(500ha) for the locality, or alternatively and more practically, enhanced countryside links. There is also potential to enhance rights of way and cycle path access to the natural assets around the town, particularly by addressing barriers to movement such as the A1 (M1) and the A414. Natural assets include the River Mimram, and registered Parks and Gardens including Panshanger and Tewin Water to the north east, the Lee Valley to the west and south, and Sherrards Park Wood and Bocket Hall estate to the west.

- 3.6 Access to freely available natural and semi-natural space is more restricted in Hatfield than in other parts of the Borough. There is also significant deficiency in access routes to the east and west of the town (see enhanced links on GI Plan **Figure 3.1**), with public access to the Hatfield Estate essentially limited.
- 3.7 Deficiencies in access to open space exist at the local level, and there is also a need for a strategic (500ha) site which serves the area. Provision of cycle access and providing an off-road link over the railway to the east of town should also be considered. Potential growth location to the south west of Cuffley, may require the provision of local open space alongside this new residential area.

### **Prestige on Settlement Approach Corridors**

- 3.8 *The analysis considered the 2.5 km envelope around the main settlements in Welwyn Hatfield. 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.*

- 3.9 **Welwyn Garden City:** Key GI assets include the Woodlands at Digswell/Tewin, Dowdell's Wood (Ayot St Peter), the edge of Symondshyde Great Wood and woodlands fringing Panshanger Park. Key issues relate to more sensitive integration of road corridors such as the A1(M) through attenuation to enhance perception of sites such as Sherrardspark Wood, Bocket Park and to buffer nature reserve sites such as Mardley Heath. Also to restore and enhance aspects of the historic landscape as part of the accessible GI network – Panshanger Park could form a valuable and high quality node on a green necklace of landscape and habitat sites around the Garden City and link to woodland sites along the A414. Also potential to enhance settlement edge and approach quality to the south of the Garden City through wetland restoration linked to Stanborough Lakes and woodland linkages, as well as to buffer and re link important woodland sites such as

Symondshyde Wood. See woodland and wetland zones on **Figure 3.1** in the GI Plan.

- 3.10 Potential growth locations on the south eastern edge of Welwyn Garden City would create a need for buffering and linking of existing woodland sites, and enhanced attenuation provision particularly in the context of the A414 – an improved settlement gateway as well as reinforcing the separation between the Garden City and Hertford.
- 3.11 **Cuffley:** Key GI assets include Northaw Great Wood Country Park. A well connected GI network is apparent to the northern arc of Cuffley (Northaw Great Wood and outlying woodlands to the east and west), and more fragmented south of the settlement and towards the M25.
- 3.12 A key opportunity is to extend and re link broadleaf woodland sites in this area, which could potentially also link to the South Herts Woodlands and to the network of wooded parklands west of Cuffley, as well as providing attenuation function in relation to the M25 corridor (see **Figure 3.1** in the GI Plan).
- 3.13 Potential growth locations on the western edge of Cuffley, would not affect GI assets in the main transport corridors however it would be likely that enhanced links would be needed to wider GI assets (e.g. Northaw Great Wood), given the absence of assets on this settlement edge.
- 3.14 **Hatfield:** The key GI assets include much of the woodland at Millward's Park, part of North Mymms Park and

Walsingham Wood, woodlands fringing Coopers Green Gravel works, woodland at Pope's Farm and Essendonbury Farm.

- 3.15 Key issues relate to severance resulting from the A1 (M) and the need to enhance assets which are often located in close proximity to detracting features e.g. at Coopers Green/Symondshyde, e.g. to create landscape and habitat connectivity and resilience. Native woodland planting in this area could also create physical links to Heartwood Forest and assist with delivering planting targets for the DeHavilland Area as set out in the Watling Chase Community Forest (WCCF) Plan. Also to enhance the relatively poor settlement gateway to South Hatfield (potential screen planting to transport corridors/business parks and campus buildings between Hatfield and Welham Green. The woodland assets around and to the south of Hatfield Park could also be linked and enhanced to tie these in to the South Hertfordshire Woodlands network. Greater levels of woodland planting to the A1 (M) could provide attenuation and connectivity and enhance the perceptual settlement setting of Hatfield.
- 3.16 Growth locations in WHBC are not fixed at the time of writing. However if further growth was located on the south western edge of the town at DeHavillands Airfield which has already been substantially developed, this could secure links to strategic GI associated with the A1057 (Ellenbrook Fields Country Park). Potential growth to the north west of the town would be likely to create the need for structural GI mitigation to enhance the settlement

edge, this could link to Symondshyde Wood and assist in meeting WCCF planting targets. Locating growth near to Welham Green and the A1 (M) corridor would create need for significant structural green infrastructure to the A1 (M) to provide attenuation.

### Health

- 3.17 *The analysis considered the 2.5 km envelope around the main settlements in Welwyn Hatfield. In addition to paths and rights of way and other access routes such as cycle routes, the Indices of Multiple Deprivation (IMD, 2007) were mapped, considering the 40% most deprived wards in the settlement within the Borough. 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.*
- 3.18 **Welwyn Garden City:** Open space deficiencies have been identified in the Haldens ward, and this area should be a priority for improving quality and access to open space, and access to healthy transport and rights of way. Disaggregating the IMD indicates health deprivation in the central parts of Welwyn Garden City, with social deprivation in Peartree and Panshanger Wards.
- 3.19 **Cuffley:** Poor health is not currently a problem in Cuffley, however improvements to the cycle and rights of way network should be delivered to enable people to live healthier lifestyles.

- 3.20 **Hatfield:** Access to freely available natural and semi natural space is more restricted in Hatfield than in other parts of the Borough, and the town should be a priority for improving quality and access to open space, and access to healthy transport and rights of way. There is also a need to reduce pollution across Hatfield and protect/buffer areas for healthy recreation from air pollution. Potential growth to the north, south and west of Hatfield, including at several locations with poor air quality (AIM corridor). Poor air quality affects long term health, and public spaces/rights of way/cycle routes should be buffered from pollution sources through tree planting, whilst these pollution levels should also be reduced. See **Figure 3.1** in the GI Plan, in relation to Woodland Enhancement Zones.

### Sound ecosystems

- 3.21 *The analysis considered the whole Borough. 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.*
- 3.22 Interpreting the Water Framework Directive (WFD) data produced by the Environment Agency for river catchments, the riverine environment of the Mimram and the Colne (some of the associated brooks and tributaries

of the Colne fall within the Borough) are identified as being of poor ecological status and vulnerable to abstraction and low flow pressures. The Lee however is not identified as such, although both the Mimram and the Colne also have issues in relation to spread of invasive species, indicating a need for positive landscape management. In the case of the Mimram, this issue is extensive, although invasive species only have very localised occurrence in the Lee. In addition, other minor brooks such as the Cuffley Brook and Turkey Brook are affected by low flow and abstraction pressures.

3.23 The analysis indicates a need for positive management of the Mimram, the Lee and the upper stretches of the Colne including Mimshall Brook. Reinstatement of native wetland and riparian river corridors would help restore the ecological quality of the rivers (see rivers project – **project 3** in the GI Plan). Also additional wetland creation and aiming towards public involvement in riverside management of invasive species may help alleviate the problems they cause throughout the county.

3.24 Whilst large parts of the principal transport corridors are partly wooded (A1 (M) & M25) there is a need for additional woodland and hedgerow belts to reconnect existing woodland blocks and improve air quality. Key areas as shown on **Figure 3.1** in the GI Plan are South Hatfield (A1[M]), and also re linking of existing woodlands in transport corridors such the woodland sites along the A1(M) to the north west of the Garden City and the eastern approach to Welwyn Garden City on the A414.

3.25 Although the St Albans Trees Against Pollution (TAP)<sup>i</sup> proposals do not fall within this Borough, they do provide a template for potential woodland enhancement along the A1(M), which could contribute to improved air quality within Welwyn Hatfield. The TAP report 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.

### Productive green environments

3.26 *This analysis considered the whole Borough, 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.*

3.27 Consideration of the wider farmland landscape in Welwyn Hatfield Borough reveals that only a relatively small proportion (289.94 ha) of the Borough's landscape is managed through higher level environmental stewardship. These areas are notably parts of the estate at Tewin Water and associated farmland in the Mimram Valley north of the Garden City, the Mimshall Woods and

Walsingham Woods Complex to the south of Hatfield, and land at Lemsford around Bocket Park. There are no organic entry level stewardships schemes within the Borough. As such, there is an opportunity to enhance Higher Level Stewardship (HLS) and organic stewardship 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). 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**.

- 3.28 At the local level, the analysis has revealed uneven allotment distribution across the Borough with Welwyn North, Northaw and Brookmans Park wards having no provision. Accessibility, in terms of residents living within 1 km of an allotment, is restricted in the south of the Borough, with no residents of Cuffley, Northaw, Brookmans Park and Little Heath wards having an allotment within 1 km. Accessibility is also low in Oaklands and Mardley Heath wards. Many sites had waiting lists at the last audit (finalised 2009) and demand has increased significantly since then. Some of this demand may have been met by three additional sites which were due to be opened in 2009. See urban greening **project 1** in the GI Plan.
- 3.29 There is an opportunity to provide new biomass fuel sources, through sustainable woodland management which would also benefit landscape character and biodiversity

(e.g. woodland managed as short rotation coppice). Opportunities for woodland creation and linkage which could contribute to this aim, are shown on **Figure 3.1** in the GI Plan.

### Conserving historic landscape character

- 3.30 *This analysis considered the whole Borough. 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. greenspaces in Hatfield 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.*
- 3.31 Interpreting the Hertfordshire Historic Landscape Characterisation (HLC) reveals a relatively small distribution of rare historic landscape types in the Borough. These are areas of co axial enclosures (early, sinuous field boundary enclosures), located south of Hatfield and south west of Hatfield Park. They represent around 0.87% of the Borough area.

3.32 Principal heritage assets in the form of the rich legacy of parklands and landed estates are generally protected through inclusion on the Register of Parks and Gardens, which accords protection to other heritage features within their boundaries (e.g. a large block of ancient replanted woodland within Hatfield Park). However few of these designated landscapes enjoy other formalised management arrangements for conservation such as agri environment schemes. Only Tewin Water benefits from Higher Level Stewardship (HLS). As such, there may be a case for HLS agreements on registered sites to enhance accessibility, conservation and interpretation of historic resources. This could apply to sites where management and resourcing has been an issue (e.g. Gobions).

3.33 Few ancient woodland sites are formally protected through HLS, statutory nature conservation designation or forming part of registered landscape boundaries. They may be vulnerable to fragmentation. A key opportunity is to link wooded parklands such as Gobions and Hatfield to wooded sites wooded sites such as Northaw Great Wood and the Mymmshall Wood complex, creating woodland features of comparable association to link historic features and better set the parklands in context. Also to consider incorporating ancient woodland sites within HLS schemes, or enhancement through take up of Forestry Commission English Woodland Grant Schemes.

3.34 Aspects of the rich urban green infrastructure heritage are protected through Conservation Area designations e.g. parts of the Garden City and its associated monumental,

formal designed landscapes. In Hatfield, greenspaces are identified on the Proposals Map and are protected by policies in the Welwyn Hatfield District Plan (2005). The Welwyn Garden City Conservation Area has a formal estate management arrangement although there is no formal tree planting and replacement strategy. Given the age of the tree stock (1920s), this may be a need in future conservation terms, and in terms of sustaining historic character. This arrangement does not protect the open spaces in the Garden City, which are subject to the same District Plan policy protection as those in Hatfield. Whilst the greenspaces within Hatfield New Town are not protected through heritage designation they are nonetheless important aspects of urban GI heritage in the Borough (they form foci for **project 1** in section 3 of the GI Plan).

3.35 The Garden City principles behind the masterplanning of Welwyn Garden City present clear opportunities/template to guide any growth which may occur within Welwyn Garden City or to its fringes. If growth were to occur on the fringes of Hatfield, the heritage resource to the east (Hatfield Park) constrains development, but other sites on the north and west provide an opportunity to create links to enhanced greenways in Hatfield New Town as part future urban regeneration (to improve functionality and create distinctive places of new character or enhance existing to create a 21st Century legacy. See GI Plan **projects 1 and 2**.



### Sustainability and responding to climate change

- 3.36 *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 distribution of street trees and urban greening. Gaps were noted as possible opportunity areas for green infrastructure.*
- 3.37 *Given the character and origin of the largest settlements (Welwyn Garden City and Hatfield New Town), relatively widespread tree cover is a characteristic of settlement form. This is less the case with smaller traditional settlements, of higher density, traditional layout e.g. Welwyn, Disgwell and Old Hatfield.*
- 3.38 *Welwyn Garden City and Hatfield New Town display a relatively high level of tree coverage where many settlements have densely planted recreational spaces, primary infrastructure corridors and streetscapes. However there are areas in need of additional tree cover particularly surrounding the industrial estate in Peartree Ward in Welwyn Garden City, and along the A1(M). Tree coverage in private land (residential properties) is potentially the most significant GI asset in Welwyn Hatfield. Tree cover in the public realm is limited to the boundaries of recreational spaces and street trees, although in the Garden City this extensive.*
- 3.39 *Issues and opportunities relate mainly to conserving what exists and managing this appropriately and ensuring new tree planting in relation to redevelopment sites – use of*

the Town and Country Planning Association (TCPA) standards for enhanced urban tree planting of 80 street trees (of appropriately robust grade) per linear km.

- 3.40 *See urban greening project (**project 1**) in the GI Plan. In addition, in terms of the wider landscape, **Figure 3.1** identifies areas of broad woodland linkage which could contribute to climate change adaptation, as well as helping to deliver WCCF planting aspirations.*

### Land remediation

- 3.41 *This analysis considered the whole Borough. Welwyn Hatfield 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 Borough were identified and their current use and surface condition were noted. 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.*
- 3.42 *In Welwyn Hatfield Borough, only one former mineral site (re restoration site) lies partly within the Borough, although the great majority of the site is within the adjacent St Albans District. As such the focus of the analysis has been landscape character areas identified as being of lower quality within the Hertfordshire LCA. These are the DeHavilland Plain and the Welwyn Fringes landscape character areas, which have formed the focus for*



a number of GI action zones targeted towards landscape enhancement, through restoration and re-connection of areas of fragmented landscape. These zones are shown on **Figure 3.1** (primarily concerned with improving connectivity – Farmland Conservation and Enhancement Zone, Woodland Enhancement Zone for example). The objective of these is to contribute to enhancing landscape character and quality, and they could also be complementary to other initiatives such as the WCCF (linking Symondshyde to Ellenbrook Fields Country Park and Heartwood Forest).

### Nature conservation

- 3.43 *Consideration was given to the whole Borough, 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.*
- 3.44 Primary issues relate to the connectivity of habitats in light of future landscape change and climate change, and barriers to habitat connectivity created by the transport network. Main barriers to habitat links are the A1(M) and the A414. Other important issues identified by the analysis are that habitats are fragmented in distribution and isolated in nature, corresponding mainly to the two larger urban areas of Welwyn Garden City and Hatfield themselves. There is

a notable distribution of habitat, primarily in the form of ancient and broadleaf woodlands (part of the South Herts Woodlands Key Biodiversity Area and Living Landscape) and the river valleys (including the Mimram Valley KBA), as well as heathland remnants. However the habitat network is often fragmented (lack of linear corridors and of ‘stepping stones’ for metapopulations). These issues have formed foci for a number of action zones whose aim is to secure landscape and biodiversity connectivity, at **Figure 3.1** (these include zones for woodland, farmland and heathland/grassland creation).

- 3.45 Chalk streams and rivers are identified as a priority habitat in the EU Habitats Directive. Whilst the Borough includes notable examples of chalk streams, with the Mimram one of the County’s most important unspoilt (if vulnerable) chalk streams, loss of chalk river characteristic quality is also a key issue relevant to biodiversity. This results from low water levels in the main rivers due to rainfall fluctuation, over abstraction (particularly in the Mimram), drainage and flood defence. There may also be a need to address road (A1[M] and A414) agricultural run-off and sewage effluent in order to protect the quality of the water and associated riverine habitats (e.g. through reedbeds for cleaning and filtration).
- 3.46 Over abstraction and low flows are likely to be exacerbated depending on future direction of growth e.g. if considered around Welwyn Garden City, this could create increased riverine pinch points in the Mimram.

3.47 Visitor pressure, in terms of accessing main sites of interest by car (Northaw Great Wood, and in future, Heartwood Forest) is also a key issue in terms of protecting the wider nature conservation resource, and as part of the focus of efforts to create a green travel network to relieve such pressures (see the network on **Figure 3.1**).

3.48 The Biodiversity Action Plan identifies opportunities in relation to heathland and grassland creation e.g. Broxbourne-Northaw-Hatfield Park complex, the historic commons at Northaw and Cuffley, and acid grassland restoration and enhancement to other isolated sites such as Mardley Heath and Panshanger Park. In light of recent initiatives such as Heartwood Forest and in proximity to other heathland sites in the adjacent St Albans District (Nomansland Common), heathland connectivity here/at Symondshyde and in relation to eventual restoration of mineral workings at Coopers Green, also presents an opportunity (**Figure 3.1**).

### Experience

3.49 *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.*

3.50 The main regionally rare landscape type<sup>ii</sup> in Welwyn Hatfield is the Wooded Chalk Valleys, which cover around 3.46% of the Borough. This represents some 2.25% of the total regional distribution of the landscape type. However the tranquillity of the Wooded Chalk Valleys is often impeded by road and transport corridors, with all of this landscape type within the Borough lying within areas of intrusion as defined by the CPRE intrusion mapping.

3.51 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 (ancient woodland coverage is very limited in this small part of the Borough, although interlocking woodlands surround the densely settled landscape associated with A1[M] corridor which crosses the landscape type as it occurs in Welwyn Hatfield). The valleys often form transport corridors, impairing tranquillity, which is apparent in this instance.

3.52 The occurrence of the Wooded Chalk Valleys within Welwyn Hatfield is essentially a fragmented relic, and of largely urbanised character, although it is also closely associated with the fine chalk stream of the River Mimram.

Severance and fragmentation are created by the A1(M) and associated development within the transport corridor. Efforts should therefore be directed towards conserving and enhancing what remains as part of the local green infrastructure network, as well as seeking to enhance linkages to the Mimram Valley (which has variable accessibility) as an integral part of the GI network – see **Figure 3.1** in the GI Plan.

### **Flood attenuation and water management**

- 3.53 *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.*
- 3.54 Welwyn Hatfield Borough falls within the Thames catchment and Thames River Basin, with the Borough cut by a number of river valleys and associated tributaries. With reference to the Strategic Flood Risk Assessment (SFRA), these are the River Mimram, the River Middle Lee, the Upper Colne and the Mimms Hall Brook. A number of artificial water bodies lie within the Borough, these are principally the lake within the designed landscape of Bocket Hall, Broadwater (in Hatfield Park), the recreational facility (former extraction site) at Stanborough Lakes, and sand and gravel pits at Coopers Green, near Hatfield.
- 3.55 **Welwyn Hatfield:** The River Lee is heavily modified north of Hatfield where numerous flood defences are in

place. This large flood zone is a prime GI asset which runs between both Hatfield and Welwyn Garden City as is Home Park which is utilised as an amenity area that forms part of the flood zone. Capturing run off from the A1(M) and future development surface water could help alleviate pressures relating to urban extensions and could aid in enhancing biodiversity in the area.

- 3.56 Any potential future development on the west near the airfield and Nast Hyde may have implications for ground water with regard to increased abstraction levels. With good flood management such as SuDS and permeable surfaces, new development is less likely to increase the risk of flooding in Hatfield (although surface water issues may need further investigation to reduce the risk to proposed development and the existing residential properties in Hatfield). Any proposed development should incorporate areas of open space to contain excess flood waters during high flows and also to enhance biodiversity in the area (multi functional greenspace). Any potential future development north of Welham Green could exacerbate existing surface water pressures in this area.
- 3.57 **Welwyn Garden City:** The flood zone on the northern boundary of Welwyn Garden City along the River Mimram is defined by large areas of open space including Digswell Lake. Water management of run off and water recharging in urban areas can be assisted by sensitive design, e.g. using SuDS to help to reduce abstraction pressures through new development. Water and flood storage in times of drought

is therefore a key GI priority for all potential growth locations in Welwyn Hatfield.

- 3.58 Any settlement edge development to the north and south of Welwyn Garden City would potentially detract from the existing naturalistic landscape. Utilisation of the flood zones between Hatfield and Welwyn Garden City and the villages to the north as multifunctional greenspaces should be a priority (and also to help maintain settlement separation and setting). Enhancement of wetland habitat and features within the river catchments and flood zones to create more flexible and adaptive response to managing flood risk. The creation of soft and flexible solutions to flood defences ('spaces for water') and around settlement pinch points reflecting landscape character of the valley landscapes is often more appropriate than engineered solutions.
- 3.59 **Cuffley:** Two tributaries which flow into the River Lee are located on either side of the settlement. To the north west of the settlement, the flood zone is in close proximity to residential properties although it is mostly contained within Home Wood. With appropriate design, any additional flood attenuation areas may have a positive impact on improving biodiversity around Home Wood; however future development proposals may detract from the quality of groundwater due to increasing abstraction levels.
- 3.60 Any proposed development to the north of Wells Farm may place increased pressures on the ground water in the area due to abstraction. Additional flood storage areas in

this location may also aid in dealing with surface water run off from proposed development. Any development proposals should contain plans for integrated SuDS.



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

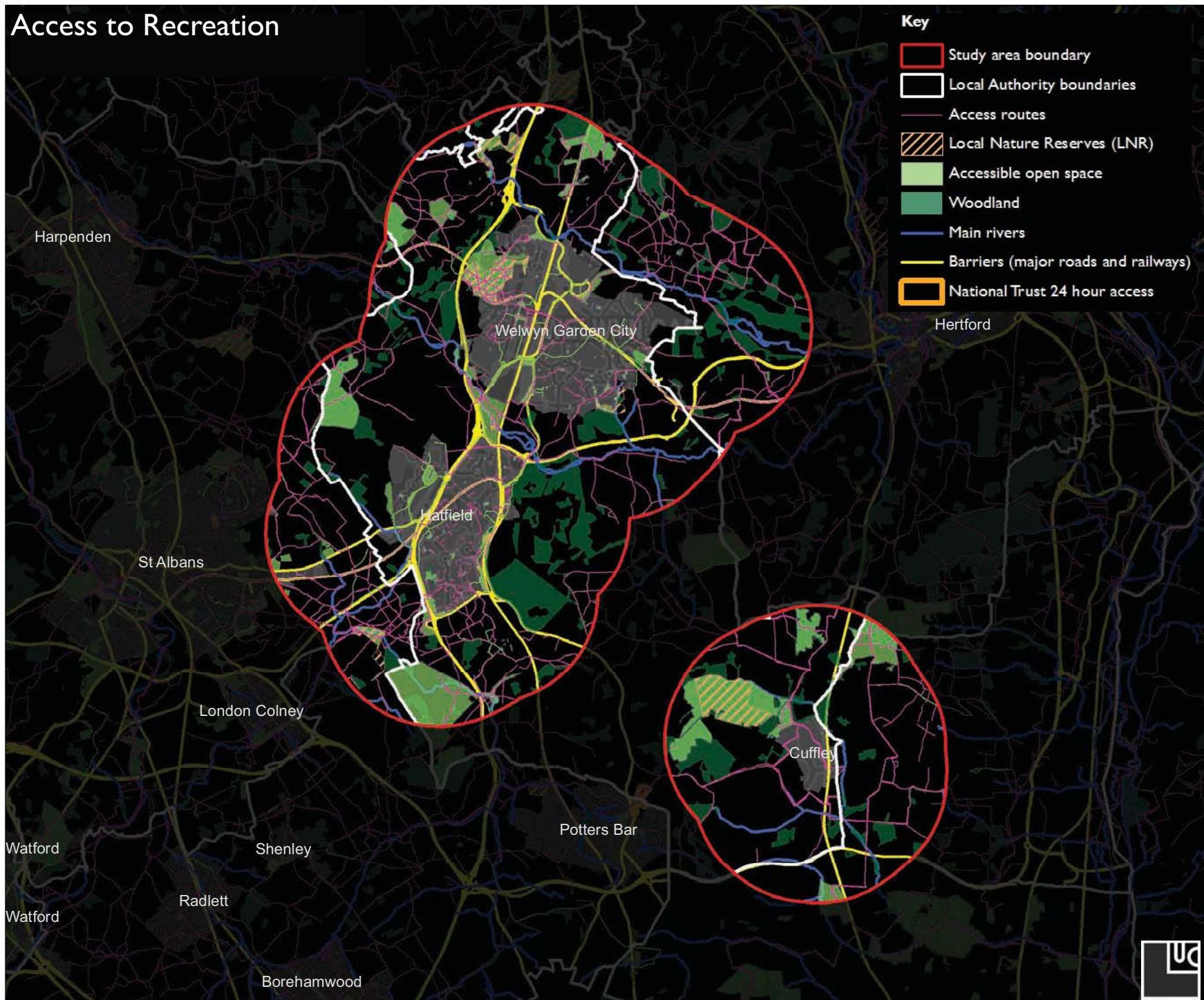
**Functions Mapping:**

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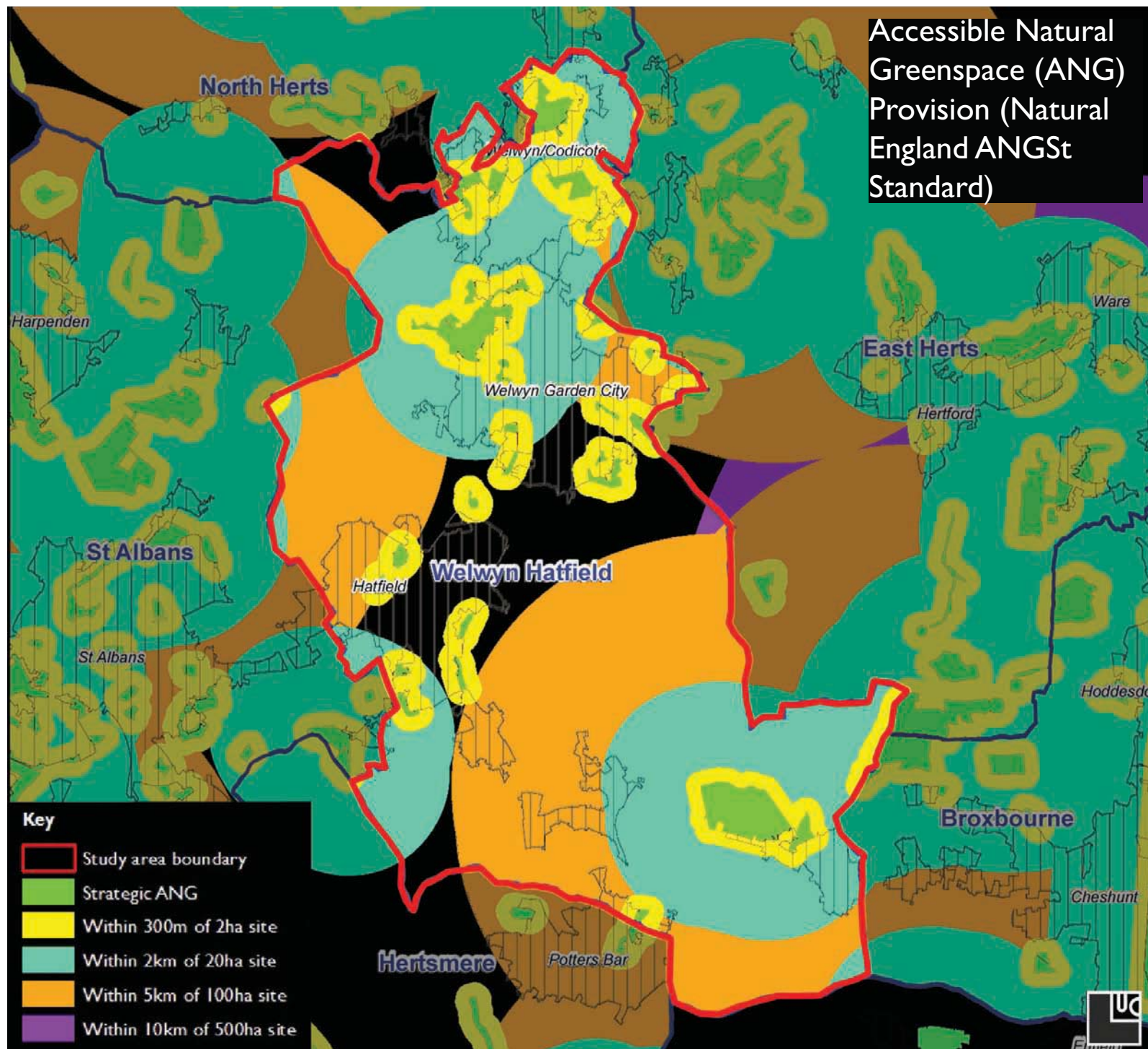
# Access to Recreation





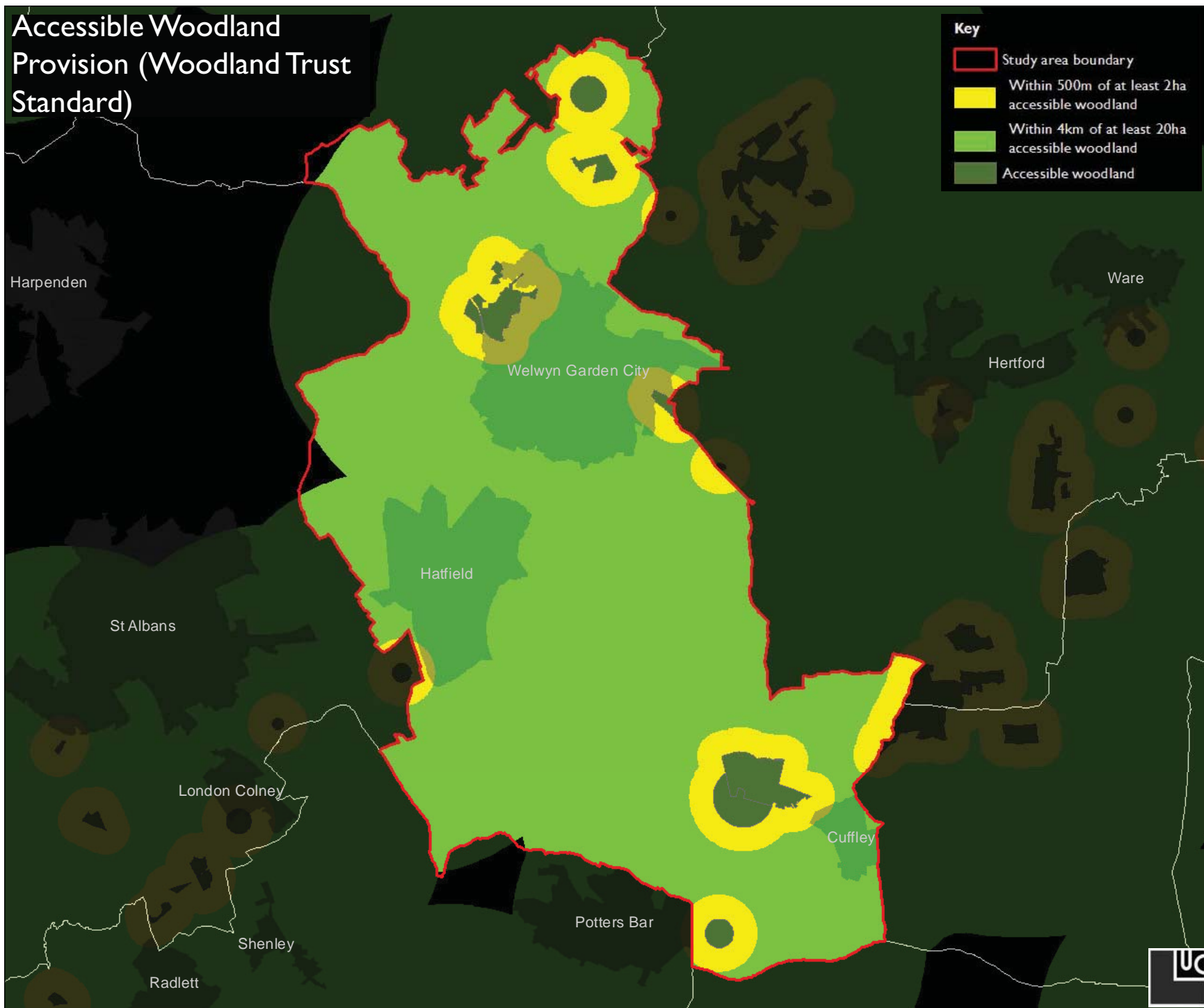


Accessible Natural  
Greenspace (ANG)  
Provision (Natural  
England ANGSt  
Standard)





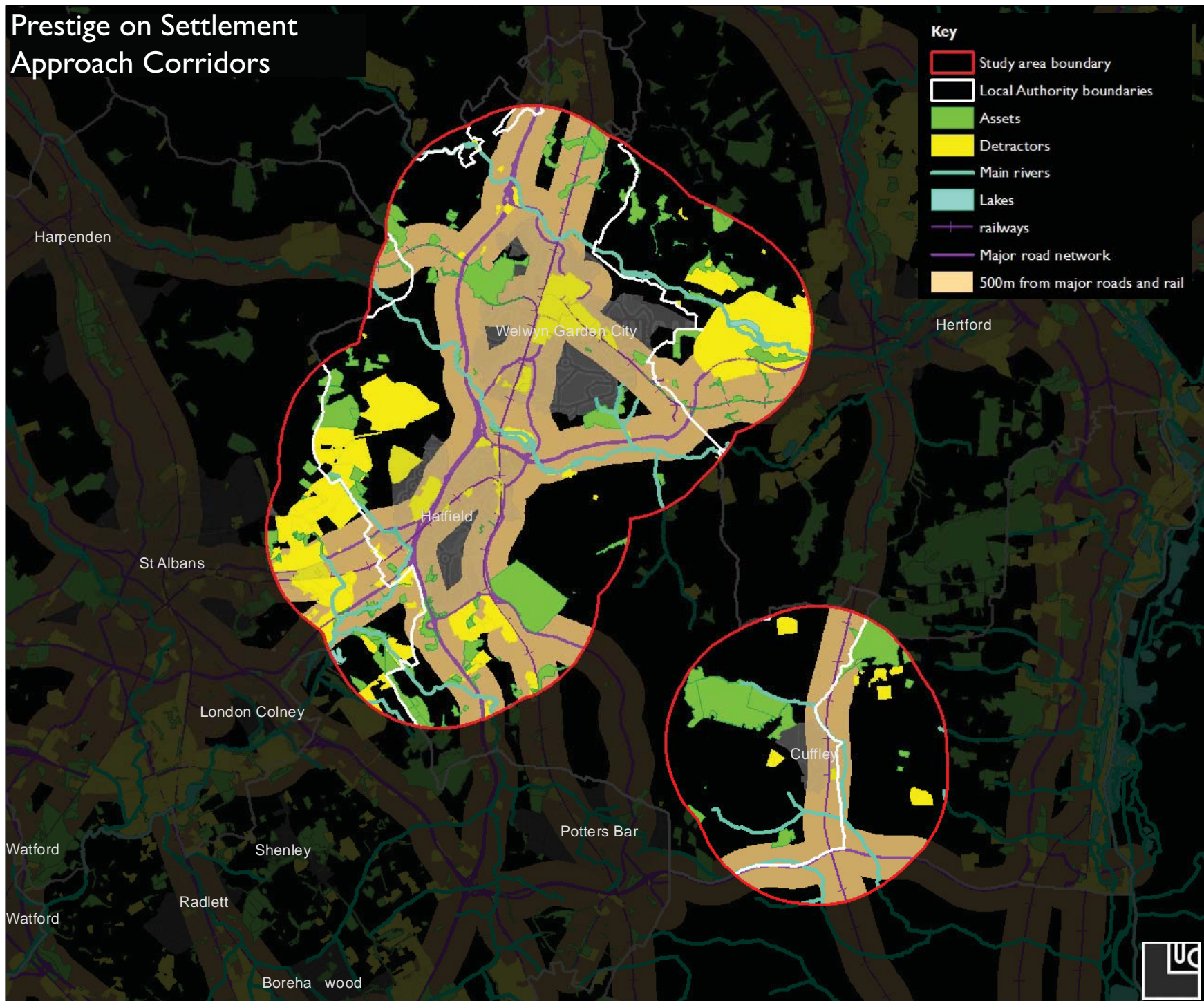
# Accessible Woodland Provision (Woodland Trust Standard)







# Prestige on Settlement Approach Corridors



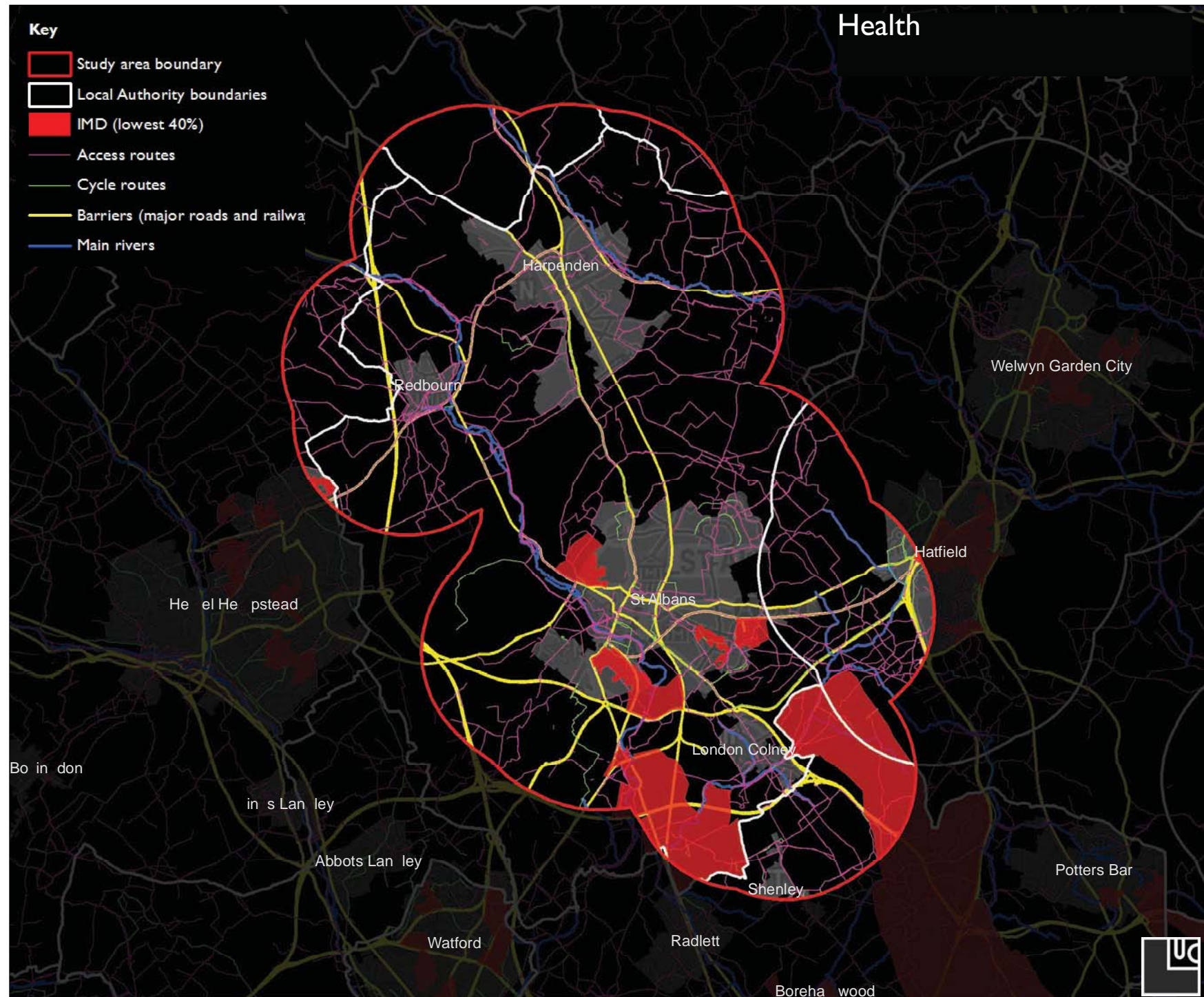




# Health

## Key

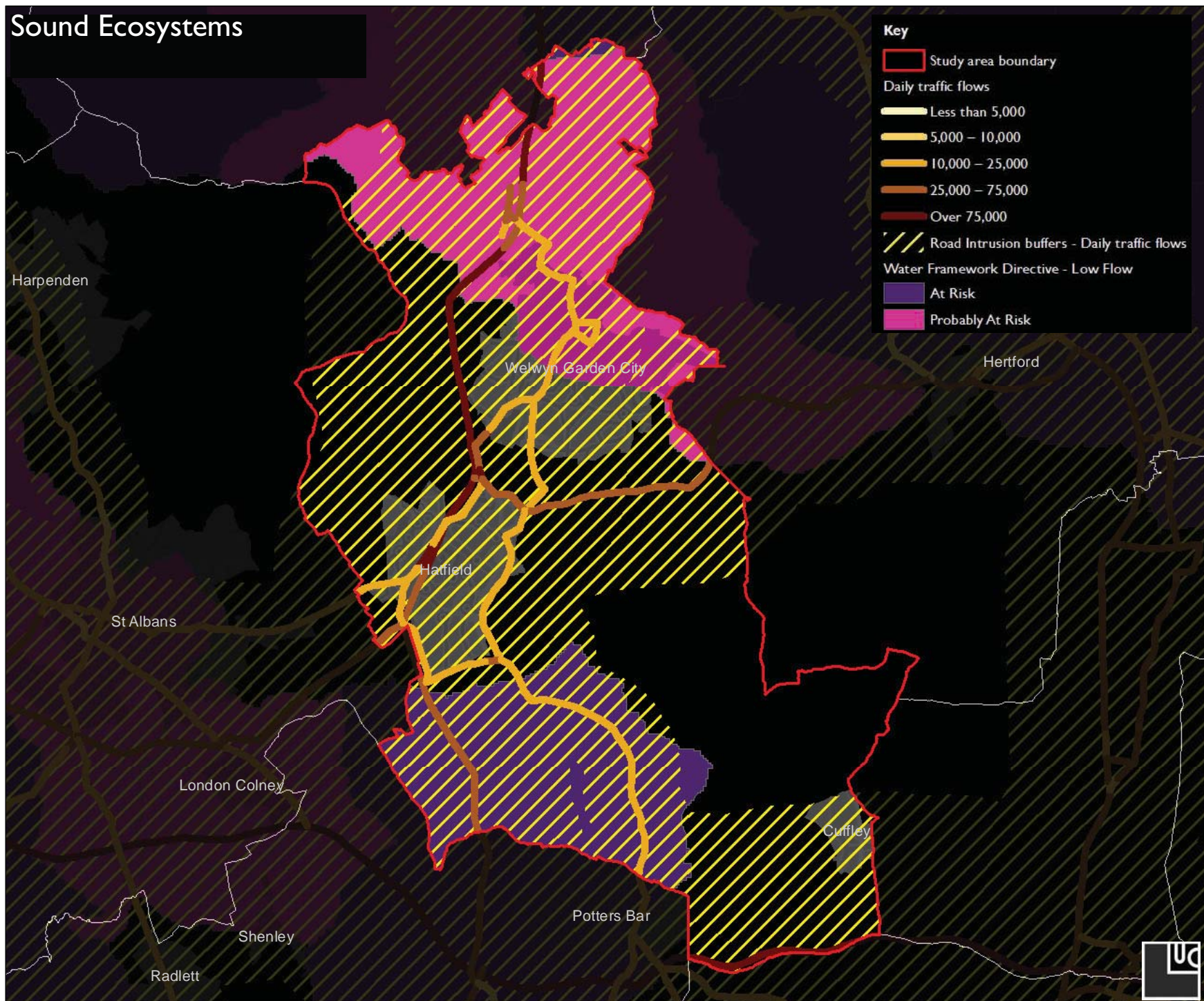
- Study area boundary
- Local Authority boundaries
- IMD (lowest 40%)
- Access routes
- Cycle routes
- Barriers (major roads and railwa
- Main rivers







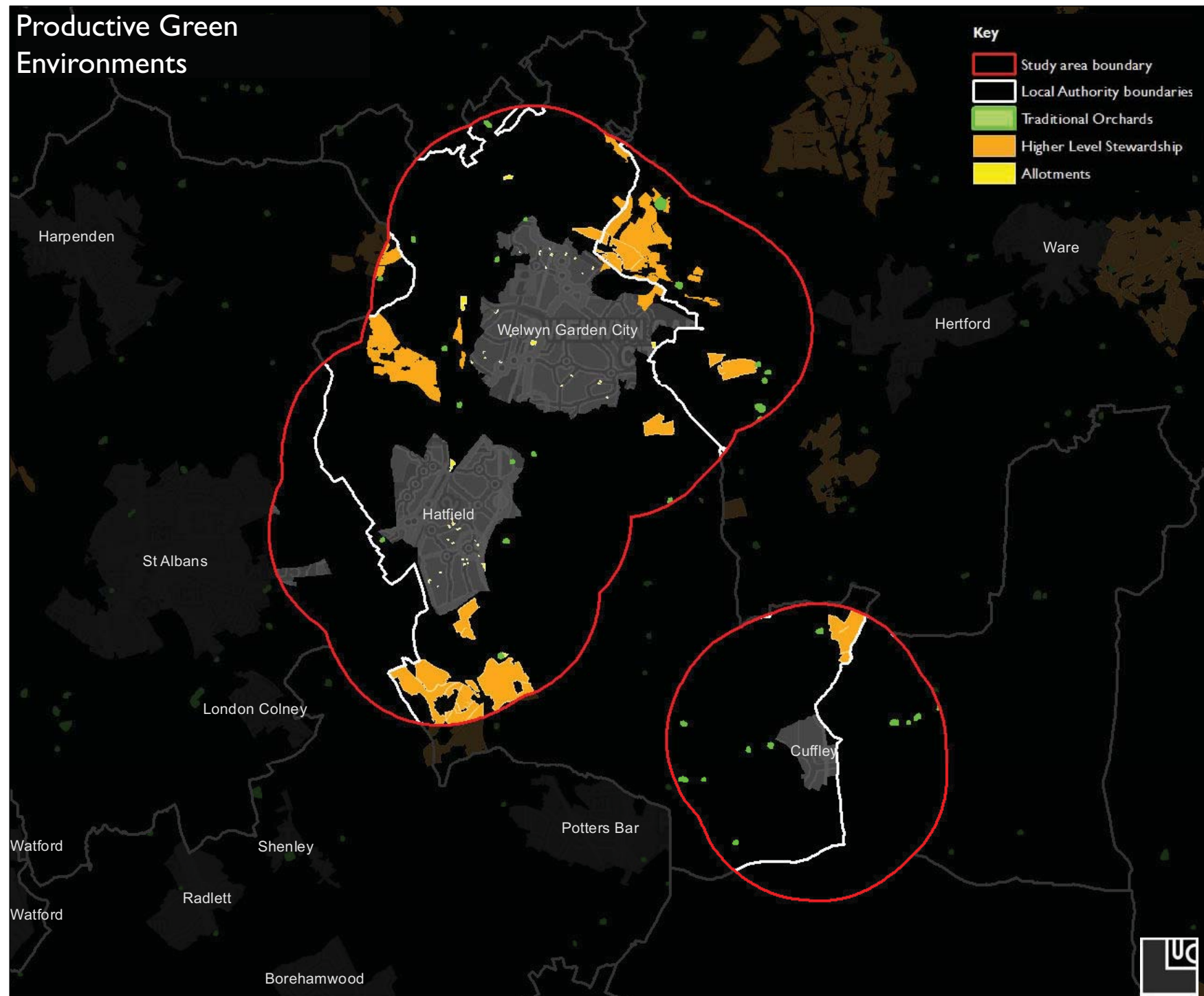
# Sound Ecosystems





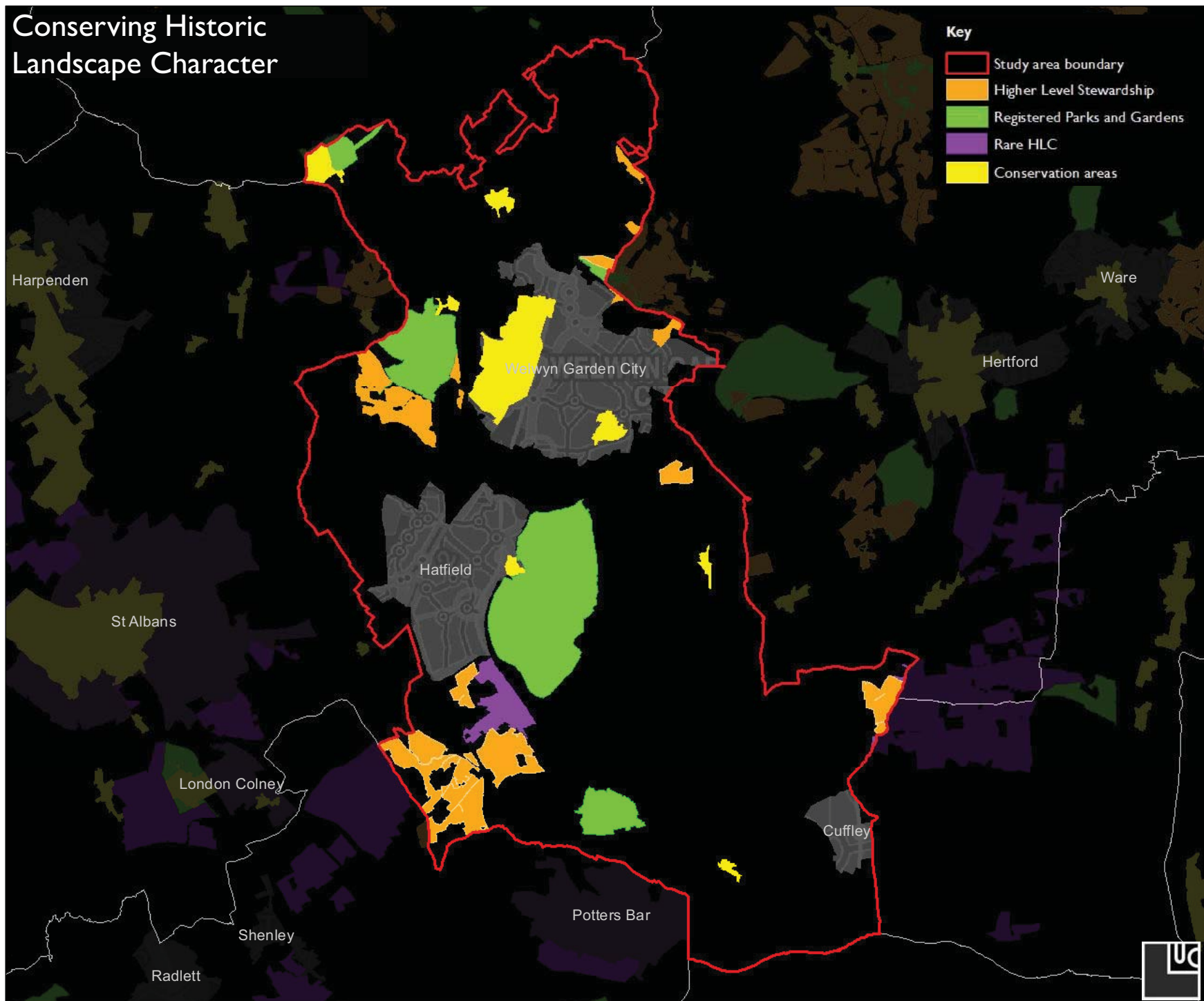


# Productive Green Environments





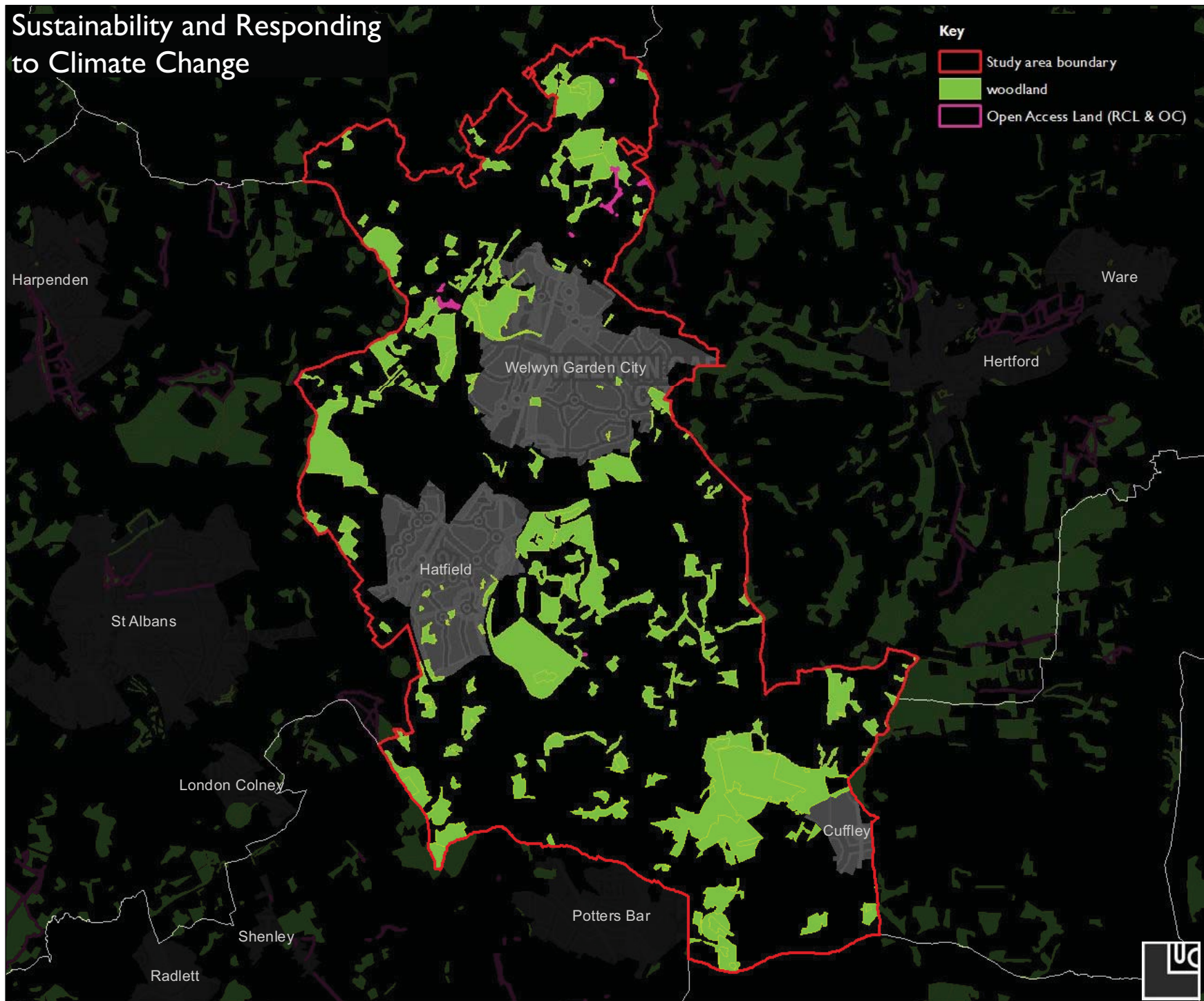
# Conserving Historic Landscape Character





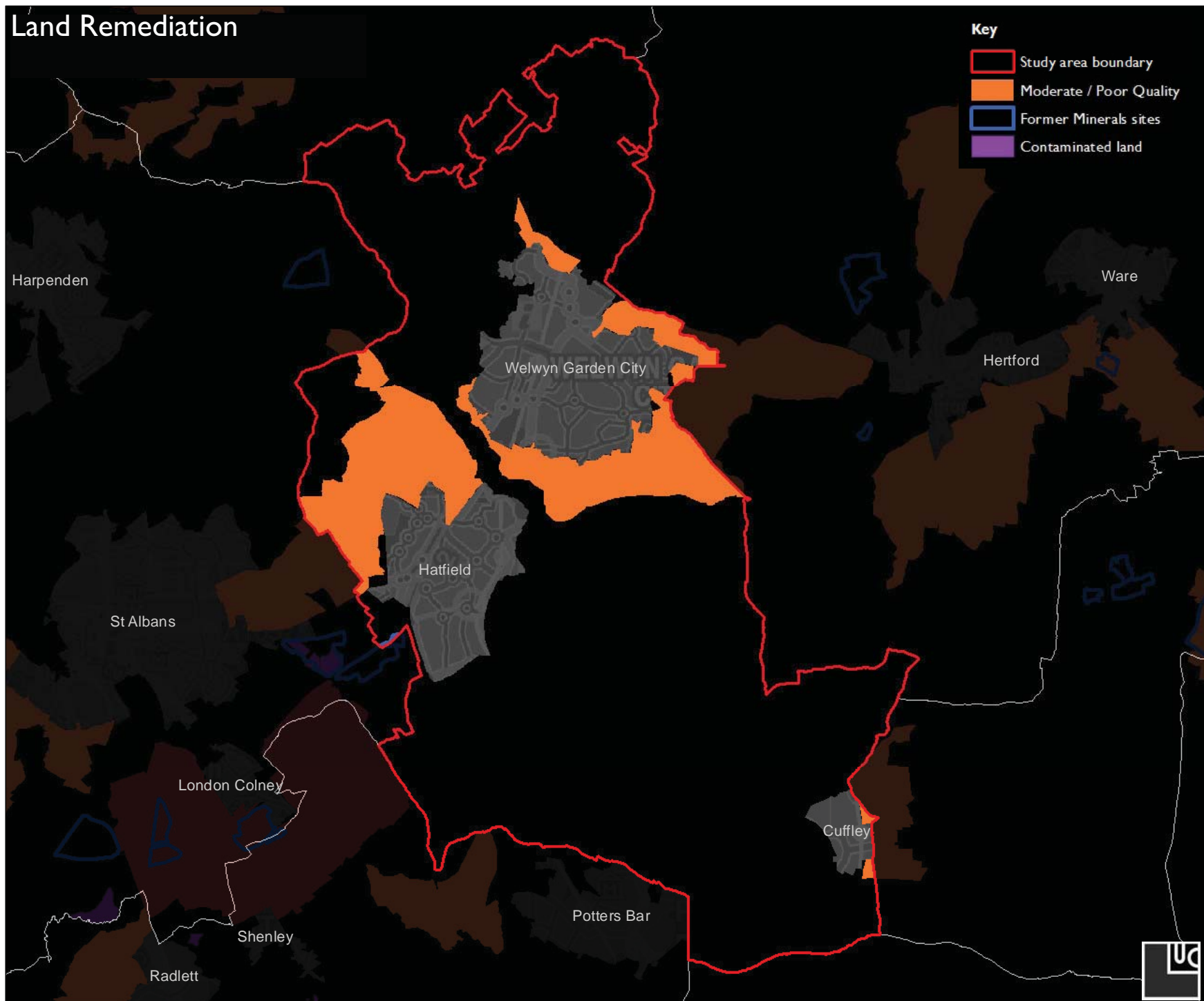


# Sustainability and Responding to Climate Change





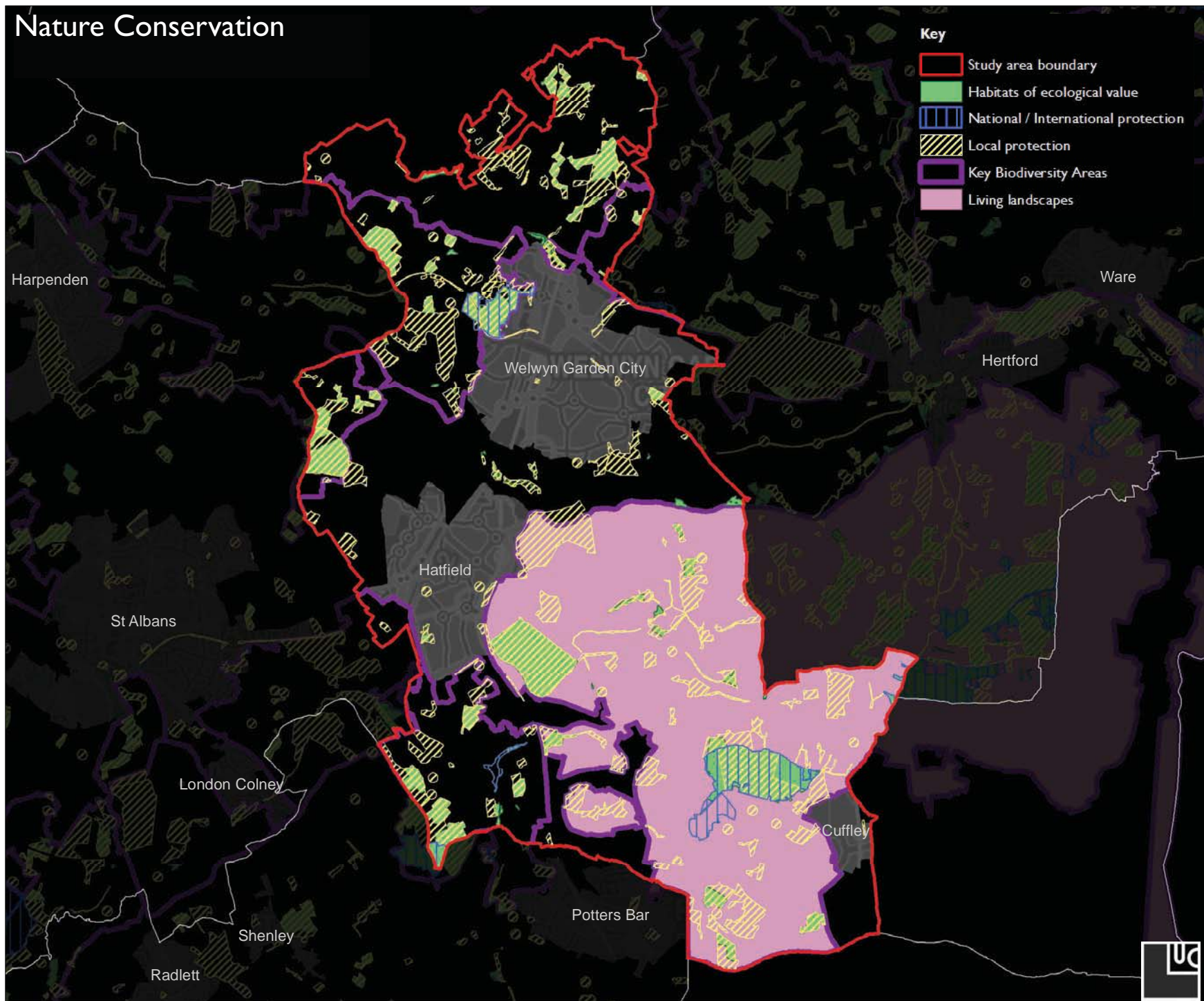
# Land Remediation





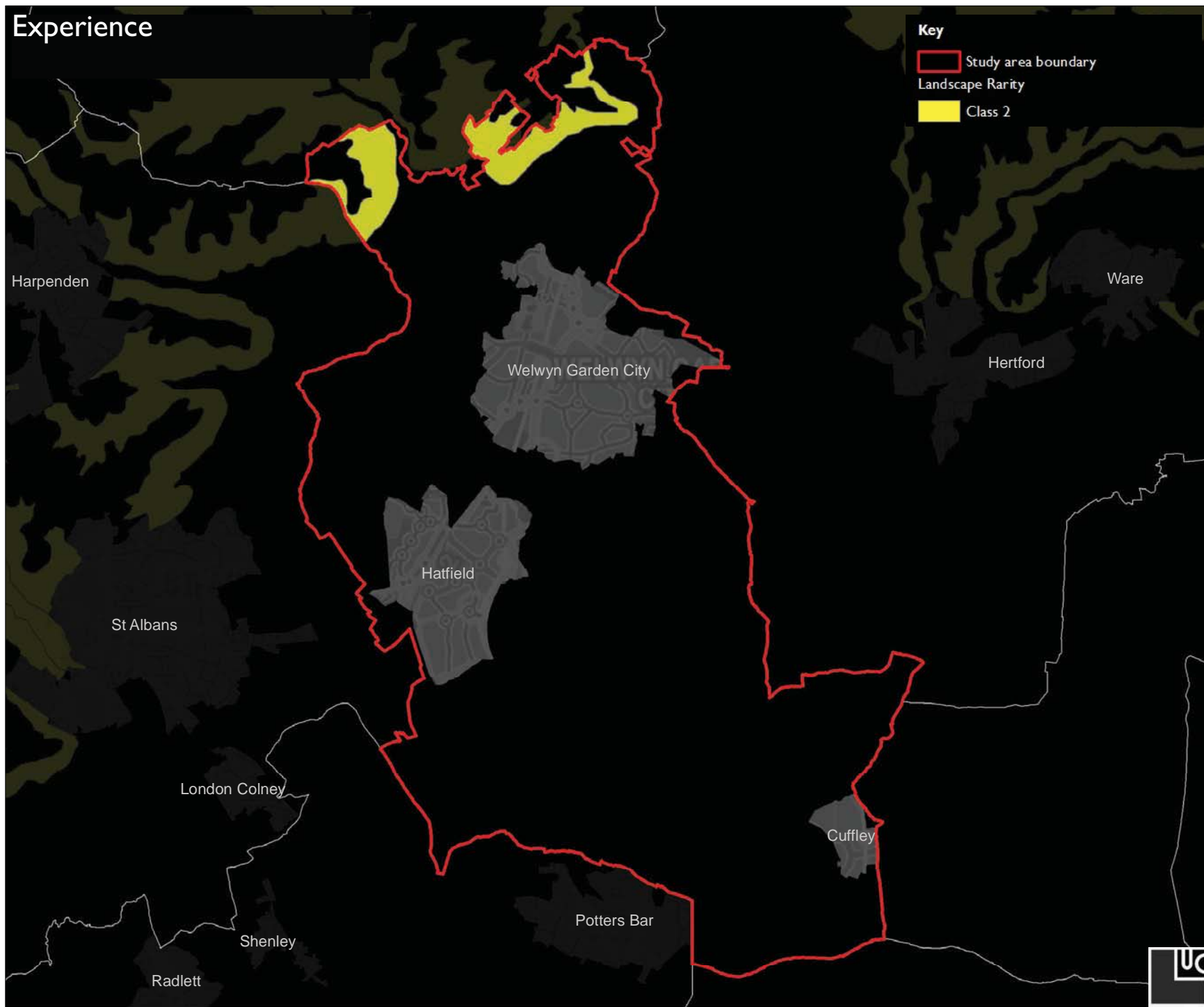


# Nature Conservation





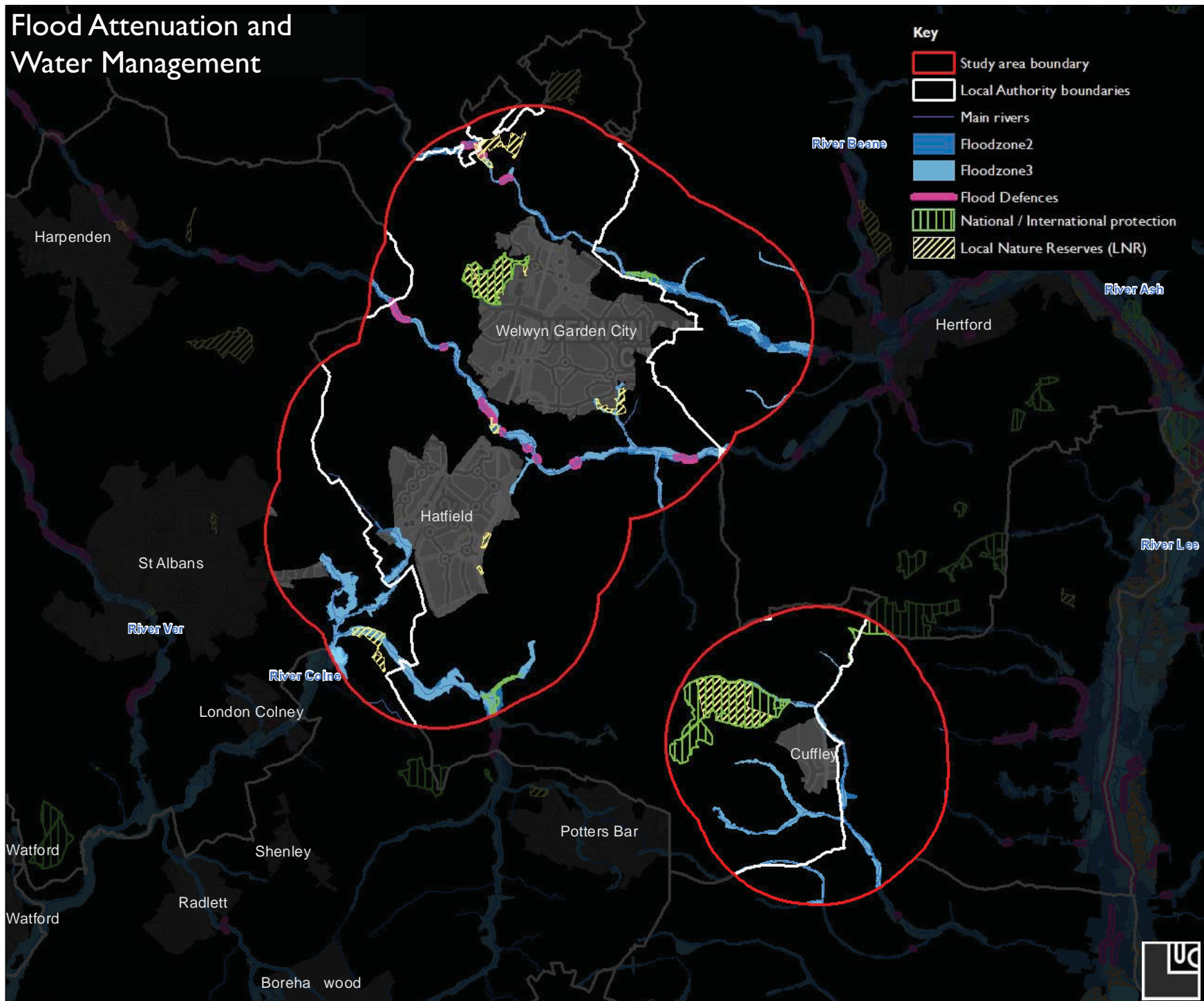
# Experience







# Flood Attenuation and Water Management









[www.landuse.co.uk](http://www.landuse.co.uk)

