Harlow and Gilston Garden Town

Green Infrastructure Framework
Part One: Context

Final report
Prepared by LUC
December 2022

Harlow and Gilston Garden Town

Green Infrastructure Framework
Part One: Context

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Contents

Executive Summary

The Garden Town project shapes the transformational growth of Harlow that will be delivered by 2033. In support of this, the green infrastructure (GI) Framework shapes the GI network that forms an integral part of the growth.

Connecting across the Garden Town and to the wider landscape, GI is an essential component of healthy, thriving communities, ecosystems and economy, and therefore underpins sustainable living within the Garden Town. Endorsed by the HGGT Board, it forms part of the evidence base in the planning process.

The five partner councils are at different stages of the Plan-making process, each with GI Strategies of varying scope and age. This Framework sets a common understanding of the value of, and vision for, GI assets across the Garden Town as a cohesive network. It ensures development meets the GI principles within the 2018 HGGT Vision.

Current and emerging legislation and policy shape not only the requirements and targets for the GI network to deliver but also the parallel obligations of Biodiversity Net Gain (BNG), Local Nature Recovery Strategies (LNRS), and wider Environmental Net Gains. Co-ordinated planning and delivery of these through the GI network will optimise funding and stewardship collaborations and protection of GI in the long-term.

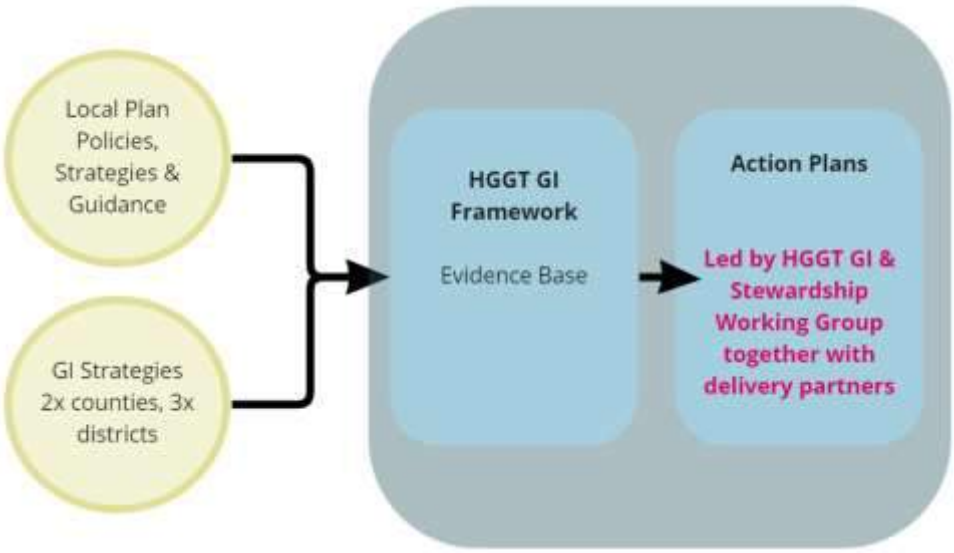
The Framework delivers strategic functions whilst reflecting local need and character. It collates and builds on existing plans, strategies and initiatives to identify strategic GI opportunities for the GI network. The opportunities will be taken forward as Action Plans led by the HGGT GI & Stewardship Working Group, through engagement with landowners/promoters and stewardship bodies.

Part One details the context of proposed growth, legislation and policy, and existing GI strategies across the Garden town. Baseline analysis of 'local need and character' includes the landscape context to which the Framework and any new growth must respond, as well as the 'triple challenge' of nature recovery, climate change mitigation and health and wellbeing.

Part Two subsequently sets out the common vision and the principles to guide development growth that responds to local context as well as upholding the vision of Gibberd. The strategic GI opportunities precipitate from the needs and opportunities identified in Part One. These enable planners and delivery partners to focus finer grain initiatives and projects toward strategic gains within the overarching vision and principles. The strategic opportunities will underpin engagement between the partner councils, landowners/developers and stewardship bodies to realise opportunities as part of dynamic management of land in the long-term.

The future Action Plans that prescribe the timeframe, funding, actions and responsibilities to deliver each strategic opportunity will be informed by consultation with these stakeholders.

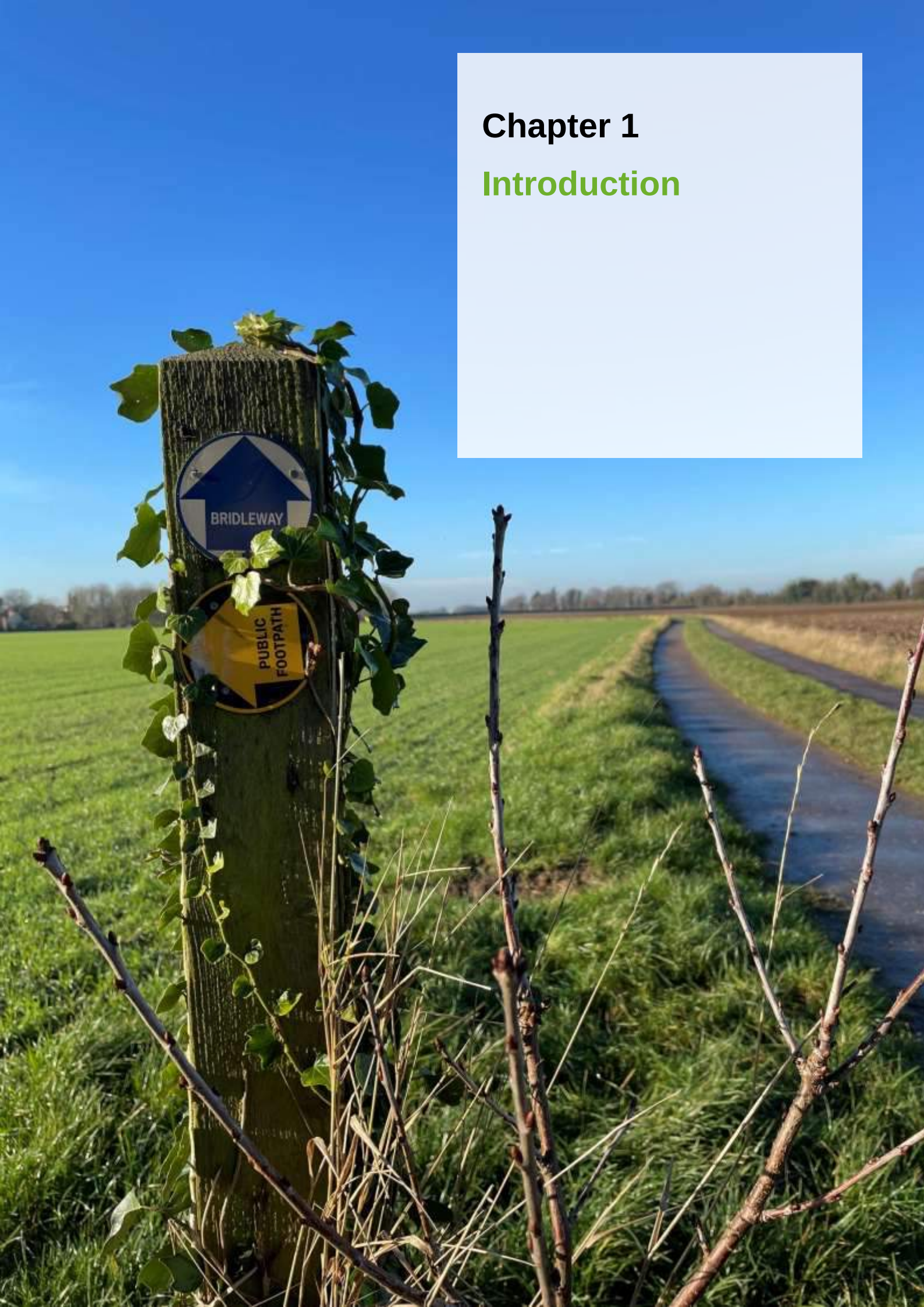
Inset: Developing the GI Framework as an evidence base for delivery through future Action Plans



The Framework has been developed through consultation with technical specialists within the partner councils and from external bodies that lead the planning and delivery of GI assets in the region. Stakeholder contributions have informed all parts of the study process, including involvement of the by the HGGT Quality Review Panel and Board.

Chapter 1

Introduction



Chapter 1
Introduction

The Harlow and Gilston Garden Town project shapes the transformational growth of Harlow that will be delivered by 2033 through the collaborative work of the five partner councils. Green infrastructure (GI) is integral to successful delivery of that growth.

This GI Framework brings together information in existing strategies, plans and guides to set a common understanding of the value of vision for and route to, a cohesive GI network across the Garden Town.

1.1 This chapter provides an introduction to the requirement for and aims of the HGGT GI Framework.

GI can be described as "*A network of multi-functional green and blue spaces and other natural features, urban and rural, which is capable of delivering a wide range of environmental, economic, health and wellbeing benefits for nature, climate, local and wider communities and prosperity*."

2021 National Planning Policy Framework (NPPF)

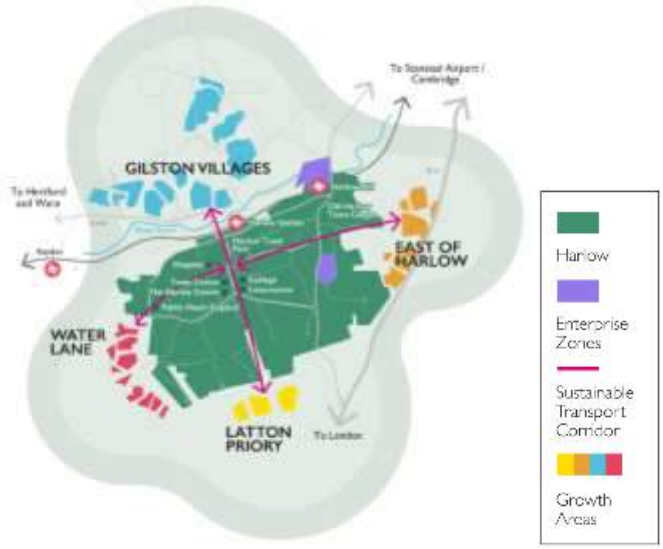
1.2 The Harlow and Gilston Garden Town (HGGT) project shapes the transformational growth of Harlow that will be delivered by 2033 through the collaborative work of East Hertfordshire, Epping Forest and Harlow District Councils and Essex and Hertfordshire County Councils. The partner councils are working to a shared vision that will set the agenda

for sustainable living that is Adaptable, Healthy, Sustainable and Innovative (the four Vision Principles).

1.3 Growth will include at least 16,000 new homes across four strategic growth areas as well as the Harlow Local Plan housing allocations. Green infrastructure (GI) will connect between and through areas of growth, as well as to the wider landscape. It is an essential component of healthy, thriving communities, ecosystems and local economy, attracting investment and regeneration. It is therefore integral to the achievement of sustainable living within the Garden Town.

1.4 Within the Framework, the existing settlement of Harlow is referred to as "Harlow New Town", to differentiate between the existing town and the future Garden Town growth.

Inset 1.1: The four strategic HGGT growth areas surrounding Harlow town (source: https://hggt.co.uk/)



1.5 LUC has been appointed to prepare the GI Framework on behalf of HGGT which responds to the proposed growth. This Framework forms an endorsed strategy by the Garden Town Board and the three District Councils, as an evidence base within the suite of HGGT Core Documents[1].

Integral Green Infrastructure

1.6 Successful delivery of the HGGT growth areas will be underpinned by a comprehensive package of infrastructure, phased for timely delivery ahead of, or in tandem with, the development it serves. GI is one such element to be embedded into Area and Village masterplans.

> "*Green infrastructure is the ecological framework for environmental, social, and economic health – in short, our natural life support system*."
>
> Benedict & McMahon, 2006[2]

1.7 This Framework will ensure the GI network delivers strategic functions whilst reflecting local need and character. It will align with the GI and landscape strategies of the partner councils and, at the strategic scale, will supersede them for areas within the Garden Town.

1.8 Focusing on macro-scale HGGT issues and opportunities, it provides the basis for a coordinated approach across local authority boundaries and the involvement of a range of partners including land owners/promoters, infrastructure providers, stewardship bodies, local communities and other stakeholders.

1.9 The Framework has been developed through consultation with technical specialists within the partner councils and from external bodies that lead the planning and delivery of GI assets in the region. Stakeholder contributions have informed all parts of the study process, including involvement of the by the HGGT Quality Review Panel and Board (see Chapter 2).

1.10 Development of Action Plans to deliver the strategic opportunities identified herein will form a separate, subsequent stage of work.

Aims

1.11 The aims of this GI Framework are to:

- Provide a framework with coherent vision for HGGT, which recognises the GI strategies independently progressed by the five partner councils (variously dated 2011 to 2022);
- Respond to the proposed growth areas and infrastructure of the Garden Town;
- Reflect legal and planning requirements, both current and emerging;
- Serve as an evidence base that constructively informs future land planning and management, signposting relevant workstreams within the HGGT project such as the Sustainable Transport Corridors;

[1] https://hggt.co.uk/our-resources

[2] Benedict, M.A. & McMahon, E. (2006) Green Infrastructure: Linking landscapes & communities. Island Press, Washington DC.

- Provide an overarching strategic framework to inform landscape-led master planning; and
- Support engagement with landowners and stewardship bodies to enable successful delivery of dynamic land management in the long-term.

1.12 The Framework has a 15-year lifespan. Review will be conducted at a minimum of every five-years to reflect the review cycles of the design codes and the Local Plans of the HGGT district councils. Additional review in response of emerging legislation and policy, such as BNG and LNRS to ensure the Framework remains most fit for purpose.

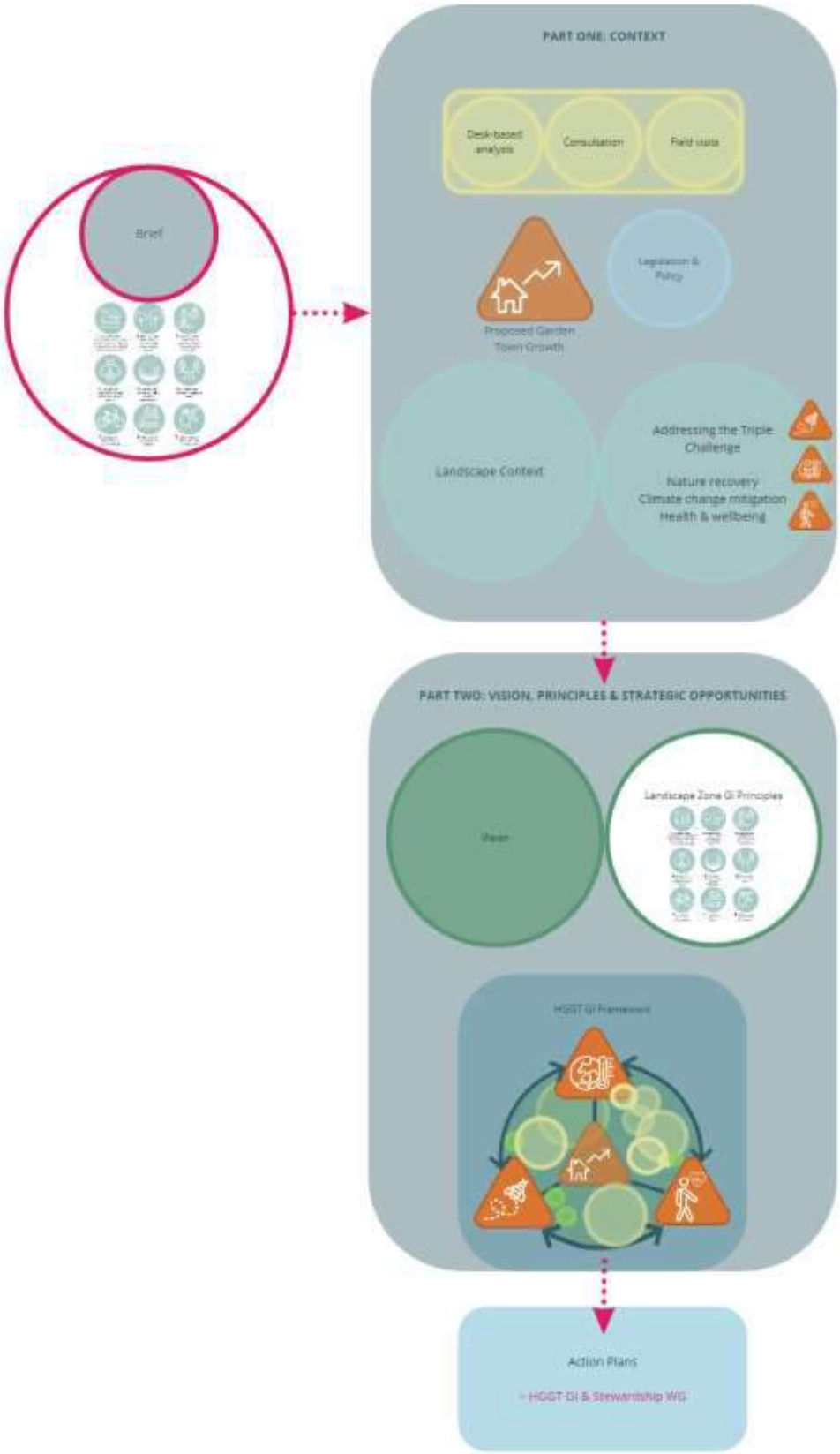
Structure of Report

1.13 This report is structured as follows:

- **Part One: Context**
  - **Chapter 2** provides an overview of the method used to develop the Framework;
  - **Chapter 3** sets out the proposed growth areas and infrastructure to which the Framework responds;
  - **Chapter 4** interprets relevant legislation and policy; and
  - **Chapter 5** collates the existing commitments to GI as outlined in the strategies of the five partner councils.
  - **Chapter 6** describes the landscape context and local variability as landscape zones across the Garden Town to provide a spatial framework for GI and promote locally distinctive GI interventions; and
  - **Chapter 7** addresses the triple challenge of nature recovery, climate change mitigation and health and wellbeing, providing analysis of the baseline and drawing out locally appropriate opportunities for the GI Framework.
- **Part Two: Vision, Principles and Strategic Opportunities**
  - **Chapter 8** develops the vision for GI in HGGT; and
  - **Chapter 9** describes the GI principles that inform the design and delivery of GI more widely across the Garden Town.
  - **Chapter 10** identifies the strategic GI opportunities for HGGT; and
  - **Chapter 11** recommends the next steps (as Action Plans led by the HGGT GI & Stewardship Working Group) to progress delivery of the Framework, with support from council members, developers and local communities.

1.14 The glossary, schedules of supporting material and technical supporting data where relevant are provided as appendices.

Inset 1.2: Overview of the HGGT GI Framework



Chapter 2

Approach

Chapter 2
Approach

This project builds on the existing GI work of the five partner councils to provide a cohesive and up to date Framework that delivers strategic functions whilst reflecting local need and character. It has been developed through collaboration between the partner councils, informed by consultation with a range of technical specialists and stakeholders.

2.1 This chapter sets out the approach taken to develop the Framework from initial information gathering, through analysis and consultation.

Developing the Framework

2.2 The Framework was developed through an iterative process of data gathering, analysis and consultation to inform each stage of work as illustrated in Inset 2.1.

2.3 It has been shaped by cycles of consultation with technical specialists regarding current priorities and the trajectory of existing or emerging initiatives. A comprehensive list of relevant specialists was collated in collaboration with the HGGT client team to ensure all disciplines were considered, and relevant workstreams cross-referenced. All contributing specialists are listed in Appendix C.

Inset 2.1: Consultation-led approach to GI Framework development

Desk Review

2.4 Desk review of existing information was completed to gain full understanding of the planning and delivery of GI completed to date across the partner, the landscape context, nature and condition of existing GI assets. The pressures on, and opportunities for, GI was considered in terms of nature recovery, climate change mitigation and health and wellbeing. Together these are referred to as the 'triple challenge'.

2.5 The following key documents were assessed:

- GI strategies for each of the five partner councils, variously dated 2011 to 2022;
- Principal local plan policies requiring consideration of, or adherence to, relevant strategy/ies;
- Current and emerging legislation and policy requirements which can be met through GI, including mechanisms, such as BNG, that also present funding opportunities to secure delivery;
- Key plans, strategies and supporting documentation regarding components of the triple challenge (examples include ecological assets, flood risk, access networks, historic assets, planning and socio economics; see Appendix B: Schedule of Supporting Documents);
- Habitat Regulations Assessment (HRA) of Plans across the five partner councils to ensure the GI Framework is in synchrony with the HRA decision-making process (see Appendix D);
- Emerging growth plans for the Garden Town.

Site Visits

2.6 Field visits were conducted in April 2022 to help inform analysis of the character, quality and functioning of the network. Visits focused on the proposed areas of growth, the Stort Valley and the key GI assets.

Developing the Framework through Analysis and Stakeholder Consultation

2.7 Information from the desk review, site visits and consultation were brought together in analysis to develop this GI Framework.

2.8 Targeted consultation was held with technical specialists at an early stage to:

- Agree the sites to be considered as 'critical threshold sites. the associated buffers and mitigation measures for each;
- Ascertain existing information on the future Local Nature Recovery Strategies (LNRS) which will be required under the 2021 Environment Act (see Chapter 4).

2.9 Technical Stakeholder Workshop 1 was attended by lead specialists from the five partner councils and external bodies leading the planning and delivery of GI assets locally. The purpose of the workshop was to:

- Present the initial analysis findings;
- Test the completeness of contributing baseline information / datasets;

- Gather the current priorities, in the words of the contributing specialists, to be captured in a GI vision for HGGT; and
- Identify opportunities in response to local pressure or need.

2.10 Following the workshop, the initial analysis was refined in line with the recommendations from consultees.

2.11 Strategic GI opportunities were developed building on key opportunities of the existing GI strategies. Additional strategic opportunities were identified within HGGT and extending cross-boundary. The composite long list was agreed in outline through consultation.

2.12 A 'Technical Specialist Review' was held to agree the arising strategic opportunities. The review was attended by select contributors to Workshop 1, and additional specialists from the partner councils who lead advice to HGGT.

2.13 Opportunities were then streamlined to:

- Rationalise the number i.e. select a single strategic opportunity where this can usefully capture several others with cross-compatible aims;
- Complement parallel HGGT workstreams (such as the Sustainable Transport Corridors), so too streamline target setting, delivery mechanisms, etc; and
- Cross-reference projects and initiatives of established delivery partners such as the River Lea Catchment Partnership.

2.14 The streamlined list of strategic opportunities was presented at Technical Stakeholder Workshop 2 to test the GI priorities and ensure:

- Opportunities span the Garden Town, across both sides of the Stort and reach beyond the BOI boundary to create an integrated GI network;
- Local variability is recognised where appropriate within each opportunity, particularly those which are far-reaching and linear; and
- Concepts, such as providing space for social prescribing, are intentionally replicated at key foci to ensure that whilst GI reflects local variability, strength in provision of each is achieved across the network.

2.15 The workshop also gave opportunity for consideration of additional or updated information identified during the consultation process. The workshop was attended by select contributors from the previous events, as well as additional government and non-government bodies leading land use management (including designated sites), including the Stort Valley.

2.16 Following completion of the workshops and analysis to that time, the HGGT Quality Review Panel (QRP) provided feedback on the process, resources and technical contributions underpinning the emerging Framework. Recommendations of the QRP were used to inform the draft issue.

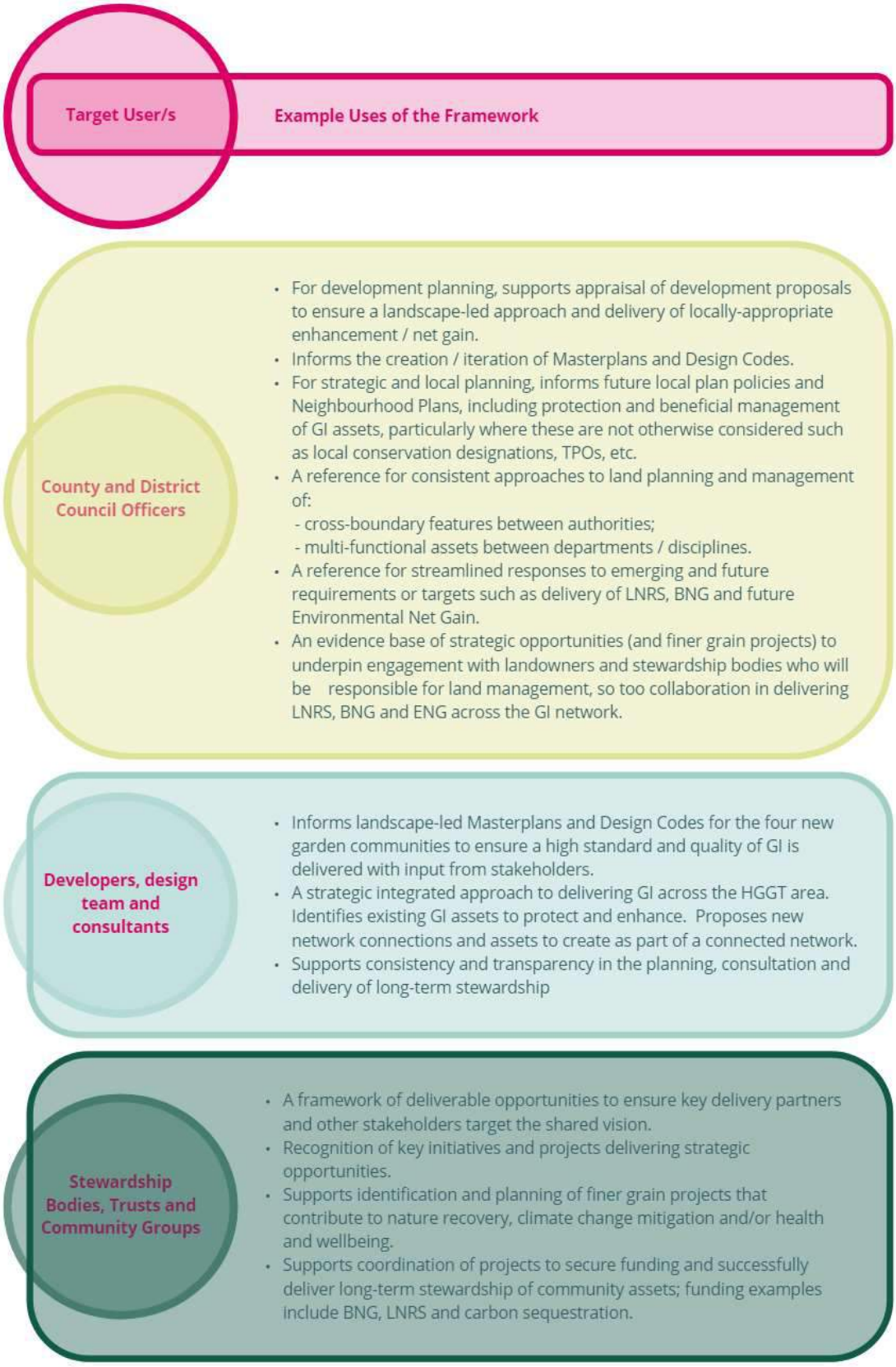
2.17 Subsequent consultation with the HGGT Stewardship Officer and the HGGT GI & Stewardship Working Group (established June 2022), focused the scope of the Actions Plans included as closing recommendations in the Framework.

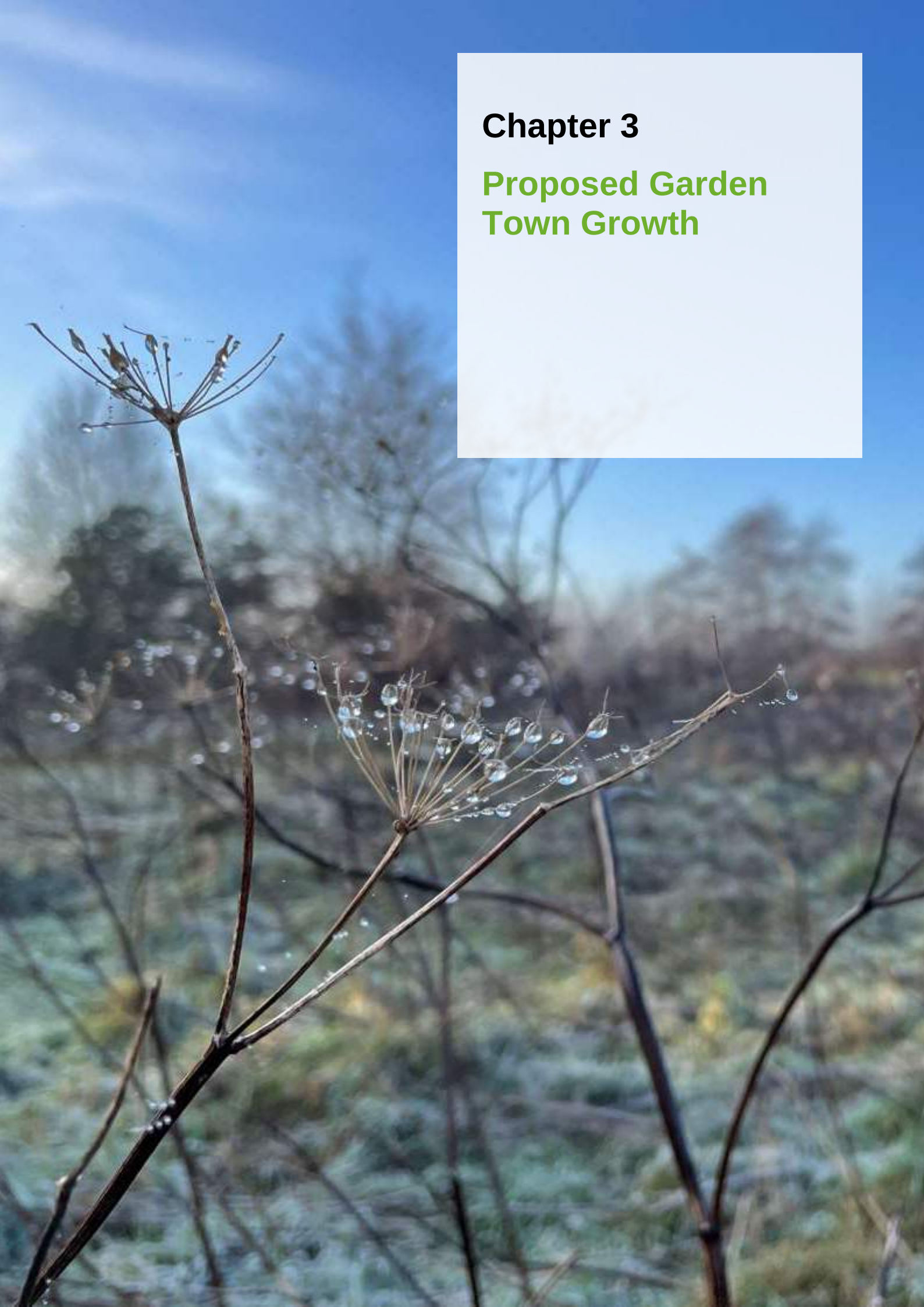
2.18 Presentation to the HGGT Developer Forum was delivered in November 2022 to introduce the Framework as an evidence base.

Target Audience

2.19 Inset 2.2 summarises the target audience for the Framework and sets out example uses by each. Note that the Framework will be delivered as a series of Action Plans (see Chapter 12) and it is anticipated that these will be developed through consultation, including that with relevant representatives from each of the user groups – council officers and technical specialists, developers and community groups.

Inset 2.2: Target audience for the Framework and examples of its use





Chapter 3

Proposed Garden Town Growth

Chapter 3
Proposed Garden Town Growth

The central purpose of the GI Framework is to respond to planned growth. GI connects between and through development areas, and to the wider landscape. It contributes both to the spatial separation and the integration of development into the Garden Town.

3.1 This chapter sets out the strategic growth areas, housing allocations and infrastructure considered in the preparation of the GI Framework.

TCPA Garden City Principle VII[3]:

"*Development that enhances the natural environment, providing a comprehensive green infrastructure network and net biodiversity gains, and that uses zero-carbon and energy-positive technology to ensure climate resilience*."

[3] https://tcpa.org.uk/garden-city-principles/

Growth Areas & Housing Allocations

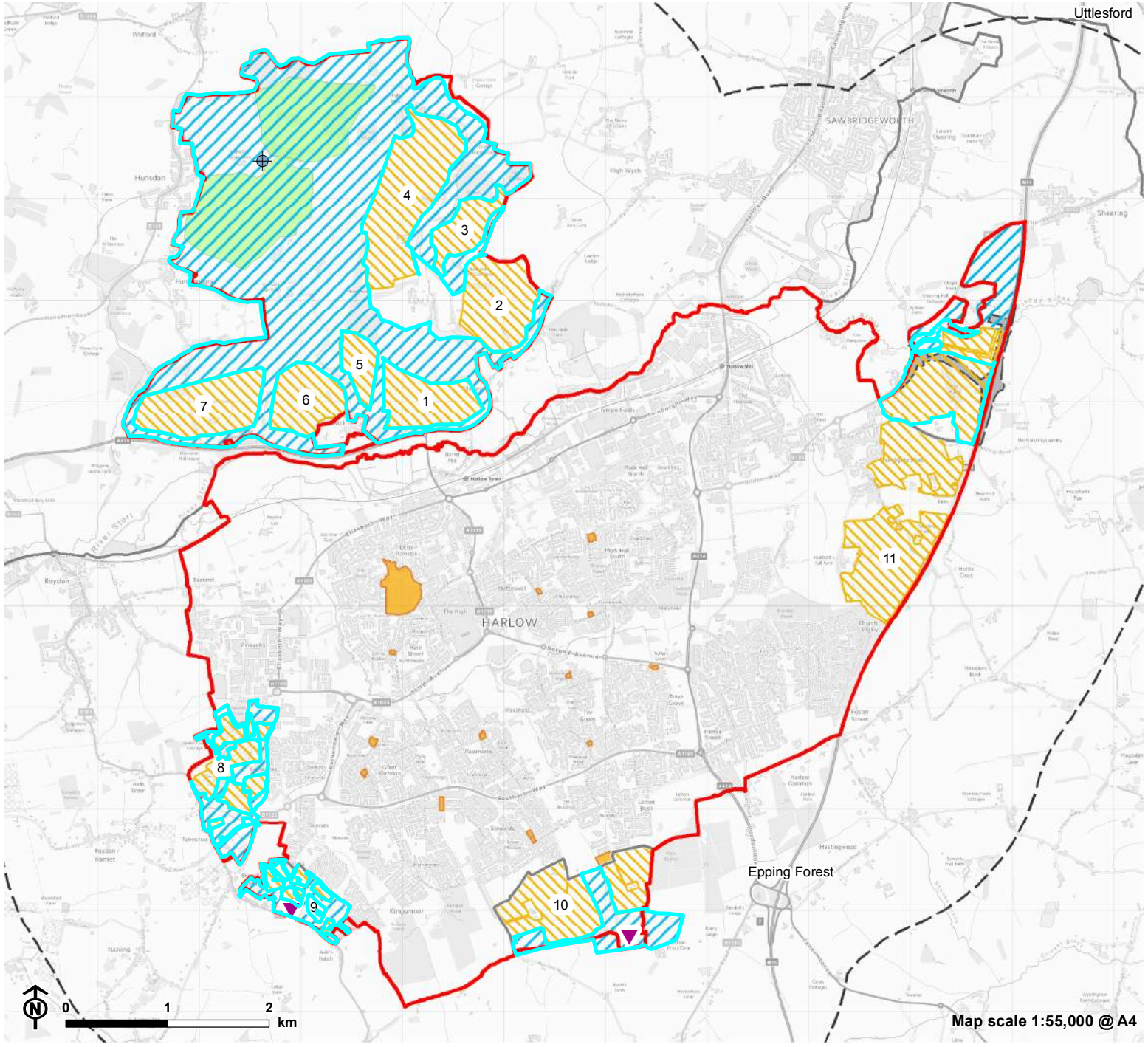
Inset 3.1: Summary of housing allocations

3.2 Figure 3.1 illustrates the location of proposed HGGT growth across four new strategic growth areas (noting the minimum number of houses to be delivered) in addition to the housing allocations of the draft Harlow Local Plan. Figure 3.2 illustrates the associated sustainable transport infrastructure.

Framework GI Strategy - Harlow and Gilston Garden Town
HGGT Partner Councils

LUC

Figure 3.1: Growth: Development Areas



- Hunsdon Airfield war memorial (indicative)
- Boundary of influence (BOI)
- Study area
- J7a and link road: indicative outline*
- Local authority boundary
- Strategic Growth Area: Development
- Strategic Growth Area: Unbuilt
- HDC Local Plan: Housing Allocation
- Proposed country park
- SANGS

Strategic Growth Area: Development

1. Gilston Village 1
2. Gilston Village 2
3. Gilston Village 3
4. Gilston Village 4
5. Gilston Village 5
6. Gilston Village 6
7. Gilston Village 7
8. West Katherines
9. West Sumners
10. Latton Priory
11. East of Harlow

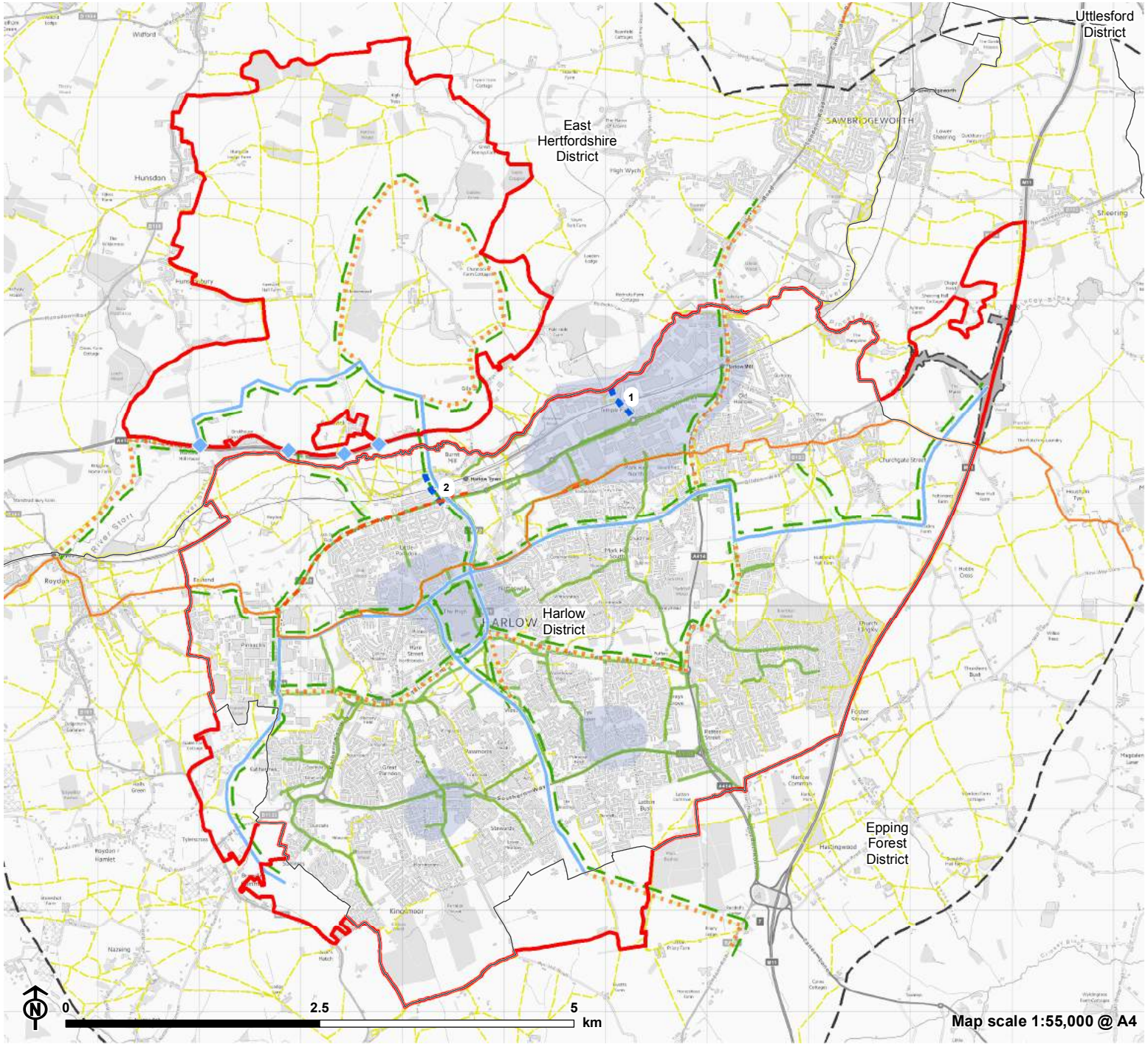
* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:davies_h LUC 11904_FIG3_1_r1_GrowthAreasInfrastructure_A4L 09/12/2022
Source: OS, LUC, HDC, EFDC, EHDC

Framework GI Strategy - Harlow and Gilston Garden Town
HGGT Partner Councils

LUC

Figure 3.2: Growth: Sustainable and Active Transport Connections



- Boundary of influence (BOI)
- Study area
- J7a and link road: indicative outline*
- Local authority boundary
- HGGT Sustainable Transport Corridor**
- HGGT Sustainable Transport Corridor (possible extension)**
- Stort Crossing
- National Cycle Network (NCN)
- NCN link
- Public Right of Way
- HGGT Super Greenway**
- Local cycle route (HDC)
- LCWIP Walking Zone
- HGGT Cycle Crossing

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

** Indicative. Subject to changes and extension through Masterplanning processes.

CB:JT EB:Scobie_G LUC 11904_FIG3_2_r1_SustainableTransport_A4L 08/12/2022
Source: OS, LUC, HDC, Sustrans, EFDC, EDC

Master planning and Design Codes

3.3 Overarching design guidance and principles for growth of the Garden Town, which relate to GI, are included in the following core documents:

- 2018 HGGT Vision[4];
- 2018 HGGT Design Guide[5];
- 2019 HGGT Infrastructure Delivery Plan (IDP)[6]; and
- 2021 HGGT Sustainability Guidance and Checklist[7].

3.4 Across the Garden Town, the emphasis on landscape-led master planning requires an understanding of the existing landscape character context, so should be informed by relevant national and local landscape character assessments, and the guidelines for managing change within them. Within the site, landscape-led master planning requires early consideration of existing features – from rivers to woodland to heritage assets – for protection and enhancement within proposed development. Future local character of the growth areas is therefore responsive to existing landscape assets and the associated ecosystems, flood cycles, etc.

3.5 Alongside the HGGT Core Documents, each growth area has a range of documents that inform strategic master planning and design coding and, in turn, the master planning and design coding for each development.

3.6 The areas of Garden Town growth are at varying stages of master planning and design code, as summarised under the subheadings below. Consultation has highlighted that where master planning is currently broad and conceptual it offers significant opportunity to incorporate effective multi-functional GI, with a particularly large area across Gilston for example. In contrast, finer grain detail is in progress for Latton Priory through the EFDC Pathfinder Design Code pilot.

3.7 Detail on current master planning and design codes for each of the growth areas and for transport infrastructure is provided in Appendix D.

Transport Infrastructure

River Stort Crossings

3.8 Two crossings of the River Stort are proposed[8]:

- Central Stort Crossing (CSC) comprises the widening of the existing Fifth Avenue (A414) Crossing;
- Eastern Stort Crossing (ESC) is a new crossing of the Stort Valley and will create a new road and new walking and cycling paths that runs west to east from the existing Eastwick roundabout, across the valley to River Way in Harlow next to the Templefields Enterprise Zone and connecting to Edinburgh Way.

Inset 3.8: Proposed Eastern Stort Crossing (source: East Hertfordshire Council[9])

3.9 Further information of the crossing footprint is provided in Chapter 7 under ‘Stort Valley: Nature Recovery’.

HGGT Sustainable Transport

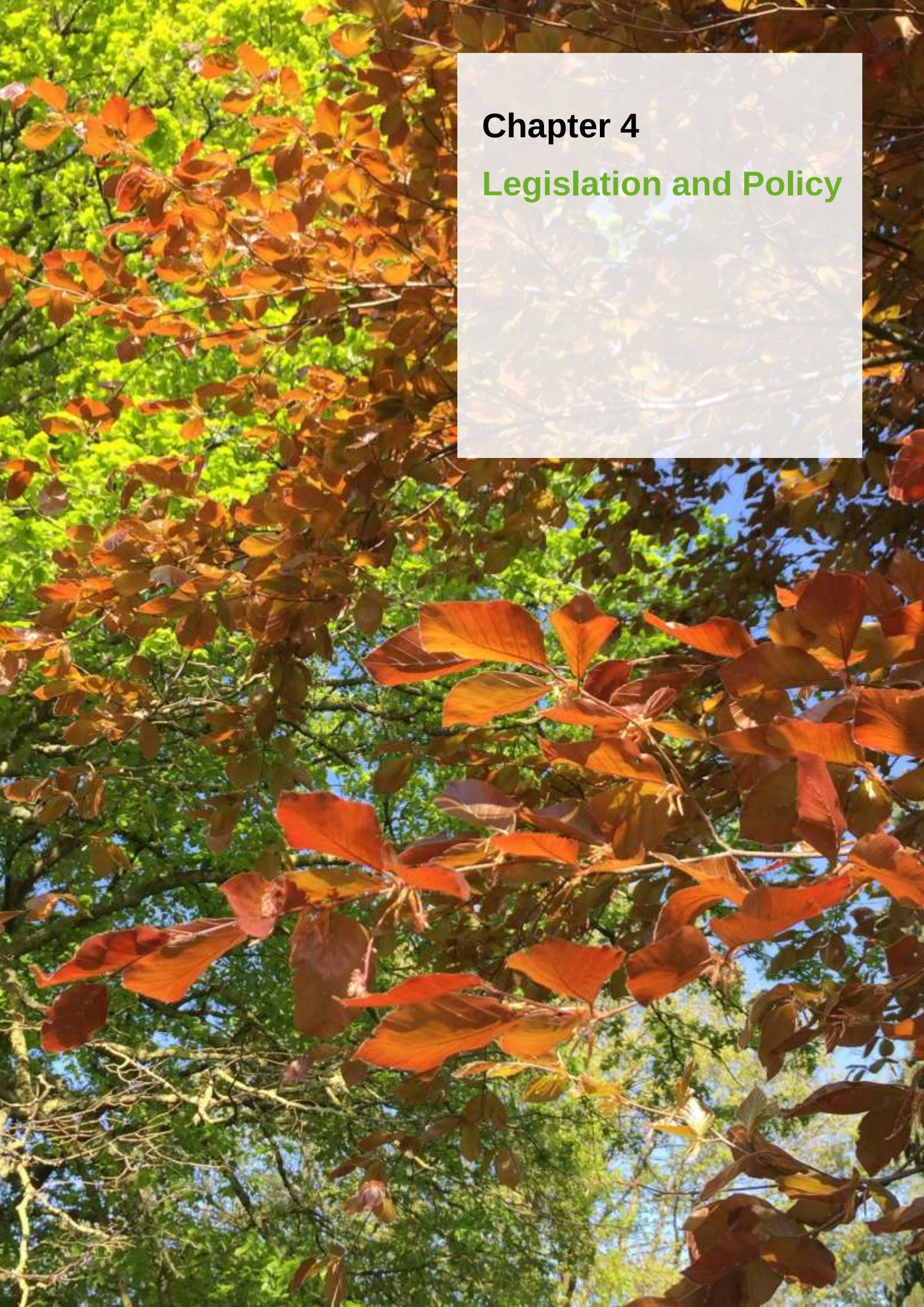
3.10 The Sustainable Transport Corridors (STC) will span the entire Garden Town, connecting neighbourhoods with key destinations such as the town centre and rail station with public and active travel options. The ‘Super Greenway’ cycling and walking routes are located along the STC and often within

[4] https://hggt.co.uk/our-vision
[5] https://www.harlow.gov.uk/sites/default/files/documents/HEB3%20-%20Harlow%20Design%20Guide%20Supplementary%20Planning%20Document.pdf
[6] https://www.harlow.gov.uk/sites/default/files/documents/Harlow%20and%20Gilston%20Garden%20Town%20Infrastructure%20Delivery%20Plan%20Final%20Report%20April%202019.pdf
[7] https://eppingforest.moderngov.co.uk/mgConvert2PDF.aspx?ID=98697
[8] https://hggt.co.uk/stort-crossings
[9] Available: https://www.eastherts.gov.uk/latest-news/2022/river-stort-crossing-applications-approved

the Green Wedge network, providing enjoyable, accessible transport choices to all ages and abilities.

3.11 The HGGT Local Cycling and Walking Infrastructure Plan (LCWIP) includes crossings of the Stort (utilising existing crossings in addition to the two proposed), connecting to a network of routes which uses Harlow's Green Wedge network as well as other green spaces and the wider streetscape.

As a result of the consultation process, the planned long distance Stansted Airport-Lea Valley cycle route, whilst currently on-going and not at a stage for publication, has been considered within the strategic opportunities identified (Chapter 10).



Chapter 4

Legislation and Policy

Chapter 4
Legislation and Policy – Application to GI in the Garden Town

The Framework responds to the requirements of environmental legislation and policy. Both current and emerging are considered to help streamline their implementation by partner councils and by developers.

4.1 This chapter provides a high-level summary of the principal legislation and policy to which the HGGT GI Framework must respond. It includes review of the Local Plan policies that identify and protect GI assets. Requirements to avoid and mitigate potential impacts on the network of international and national sites that are already established in the development planning process are also summarised in relation to the GI network.

National

4.2 The principal drivers behind GI delivery at the national level include:

- 2021 Environment Act;
- 2018 Government's 25 Year Envt Plan (25YEP);
- 2006 Natural Environment & Rural Communities (NERC) Act; and
- 2012 National Planning Policy Framework (NPPF) (as amended).

4.3 The 2021 Environment Act requires the development of targets by government to enact change, and drives a landscape-scale, network-led response. The Act addresses four 'priority areas' of air quality, water, biodiversity and resource efficiency/waste reduction[10]. The Act includes a duty on local authorities to review every five years all policies regarding nature conservation. This cycle is reflected in the

[10] Resource efficiency and waste reduction are effectively addressed through HGGT sustainability guidance, hence; not explicitly addressed in the Framework.

timescale for Local Plan review, so too GI Framework review (Chapter 1).

4.4 The 2018 25YEP set the direction for the Environment Act, including long-term targets for environmental improvement. It committed to a national GI framework, a network of 'nature recovery areas' and to embed the principle of 'environmental net gain' to development (see later subheadings). These emerging approaches will become established during the lifespan of this GI Framework. The Framework must recognise and, through future reviews, accommodate their requirements.

4.5 The NERC Act places a duty on public and local authorities to have 'regard to the conservation of biodiversity in exercising their functions', including the provision of local polices and strategies, in planning and development control, and in managing their estates. Section 41 of the Act lists the habitats and species of principal importance; these are used to inform the identification of local conservation priorities.

4.6 The 2012 NPPF (updated 2021) requires that Plans should take a strategic approach to maintain and enhance networks of green infrastructure, and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries (Paragraph 175). GI is identified as a tool to help meet the challenge of climate change (Paragraph 20), notably in relation to the planning of new development (Paragraph 154) and to promote healthy and safe communities (Paragraph 192).

4.7 In response to these key drivers, this Framework considers the landscape context of HGGT (Chapter 6) which then underpins the three elements of nature recovery, climate change adaptation and health and wellbeing (Chapter 7).

Biodiversity Imperatives

4.8 The imperatives for nature conservation against which the Government, and local authorities, must act are set out in two key pieces of statute:

- Protection of habitats and species of European importance to be protected, within the UK, is a requirement of the Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019. This includes habitats listed in Annex I and species listed in Annex II.
- The Wildlife and Countryside Act 1981 (as amended) is the principal legislation that transposes the Regulations into UK law.

4.9 Designated sites form the core of a nature recovery network. Consideration of designated sites as biodiversity imperatives in the Garden Town GI network are described further under the later subheading of 'Critical Threshold Sites'.

Local Nature Recovery Strategies (LNRS)

4.10 To achieve nature recovery in line with the 2021 Environment Act, Natural England is establishing a national nature recovery network, delivered by LNRS (statutory plans). Each LNRS will be delivered by an NE-led partnership, with approximately 50 covering the country.

4.11 LNRS are yet to be developed for the areas capturing either Hertfordshire or Essex but will be given full consideration in future review/s of this Framework. Ecological mapping on which the LNRS will be founded is explored in Chapter 7: Addressing the Triple Challenge. Targets for nature recovery identified by each the Hertfordshire and Essex Local Nature Partnerships (LNP) are also provided in Chapter 7.

4.12 BNG is anticipated to be a significant funding source for the delivery of LNRS, the aim being to ensure that net gain is delivered in locations which contribute effectively to the landscape-scale nature network. This is reflected in the BNG metric through the 'Strategic Significance' multiplier which attributes up to 15% greater score for BNG delivered in areas identified to be of strategic significance e.g. in an LNRS or GI Strategy.

Biodiversity Net Gain (BNG)

4.13 Under the 2021 Environment Act, BNG aims to ensure that development delivers measurable enhancement (net gain) for biodiversity. The Act requires a minimum 10% BNG to be delivered over a minimum legacy period of 30 years, which become mandatory in 2023. Essex county council and the district councils are variously in the process of determining percentage targets for BNG, which would become legally binding once included within a Local Plan (supported by a robust evidence-base). To date, DEFRA guidance does not specify whether counties must have a consistent percentage target across the entire authority. No district-specific targets have yet been identified within the partner councils.

4.14 BNG should reflect habitat types which are locally representative and compliment the nature and spatial spread of existing habitat features. Calculation of BNG is weighted to encourage delivery in locations recognised to be of 'strategic significance', such as a GI strategy or LNRS.

4.15 In accordance with the mitigation hierarchy, BNG delivers compensation where ecological impacts cannot be avoided or mitigated. The process of BNG also follows the hierarchy itself i.e. is delivered on site or, where this is not possible, in adjacent land or, as a final option, off-site. Local authorities typically seek to ensure BNG is delivered at sites within their administrative area or as collaborative cross-boundary network projects. In autumn 2020, DEFRA appointed research into a national market of biodiversity credits. In principle, the market will enable BNG which cannot

be delivered on or adjacent to a development site to instead be transferred to biodiversity credits which fund BNG delivery at wider distance through a national scheme. At the time of writing, DEFRA-led consultation to inform the research remains on-going.

4.16 Mechanisms securing the delivery of BNG include Conservation Covenants and S106 agreements. The emerging HGGT Stewardship Charter (founded on the 2022 Gilston Area Appendix to S106 Stewardship Key Principles and Objectives) will support successful delivery in the Garden Town.

Environmental Net Gain (ENG)

4.17 The Government's ambition for Environmental Net Gain (ENG) was set in the 25YEP but, unlike for BNG, legislative drivers are yet to be established. The range of benefits captured by this term reflect the multi-functionality of GI, such as flood risk alleviation to, carbon sequestration and storage, improvement of air and water quality to improvement of health and wellbeing. ENG targets, and indeed funding opportunities, may be delivered in tandem with those of BNG and/or LNRS as part of a cohesive GI network.

> "*Environmental Net Gain is an approach for improving the condition of, and ecosystem services that flow from, our natural assets in the context of development*".
>
> Environmental Industries Commission Natural Capital Taskforce, 2019[11]

4.18 DEFRA appointed the Natural Capital Committee to provide response to ENG. Enabling a Natural Capital Approach (ENCA) was published in 2020[12]; a biodiversity-led tool which evaluates natural capital based on eight asset types –capturing urban and farmland, upland and lowland habitats, marine and freshwater. No target or minimum requirement for ENG has been identified and it is yet to be seen whether targets would be set simply as a single 'environmental complex' figure or whether individual authorities address local priorities such as water quality or carbon with greater weighting.

4.19 There is no clear roadmap for implementation of ENG. However, in anticipation, Natural England have developed a voluntary decision support tool, the Environmental Benefits for Nature Tool (EBN Tool), to expand net gain approaches to include wider natural capital benefits. The EBN Tool indicates relative change in ecosystem service provision associated with habitat change. As focus and policy shifts towards the question of how to achieve more from planned BNG delivery in the future, more metrics and tools are anticipated to come forward to help direct and quantify the delivery of wider natural capital benefits.

2022 Levelling Up & Regeneration Bill

> "*Publication of the Levelling Up and Regeneration Bill finally allows us to take stock of what English planning will look like when the reformed system is implemented in 2024*".
>
> Town & Country Planning Association

4.20 The 2022 Bill proposed replacement of the existing EIA and SEA/SA process with Environmental Outcome Reports (Part 5), placing greater emphasis on the measurement of environmental effects against improving environmental outcomes. The outcomes (yet to be determined) are assumed to be at the national level. There may also be regional and local influence in determining what constitutes an environmental outcome based on evidenced local relevance.

4.21 In the context of the Garden Town, GI Framework, the Bill relates to proposed development that could be subject to EIA or, in the context of future plans or policies of the partner councils, subject to Sustainability Appraisals or Strategic Environmental Assessments. Whilst future consultations and guidance on the Bill will provide detail on the requirements and their implementation, at this stage, it is recognised that the Environmental Outcome Reports provide opportunity for the planning, delivery and monitoring of environmental change that is complementary to the wider GI network of the Garden town.

GI Policies of the Five Partner Councils

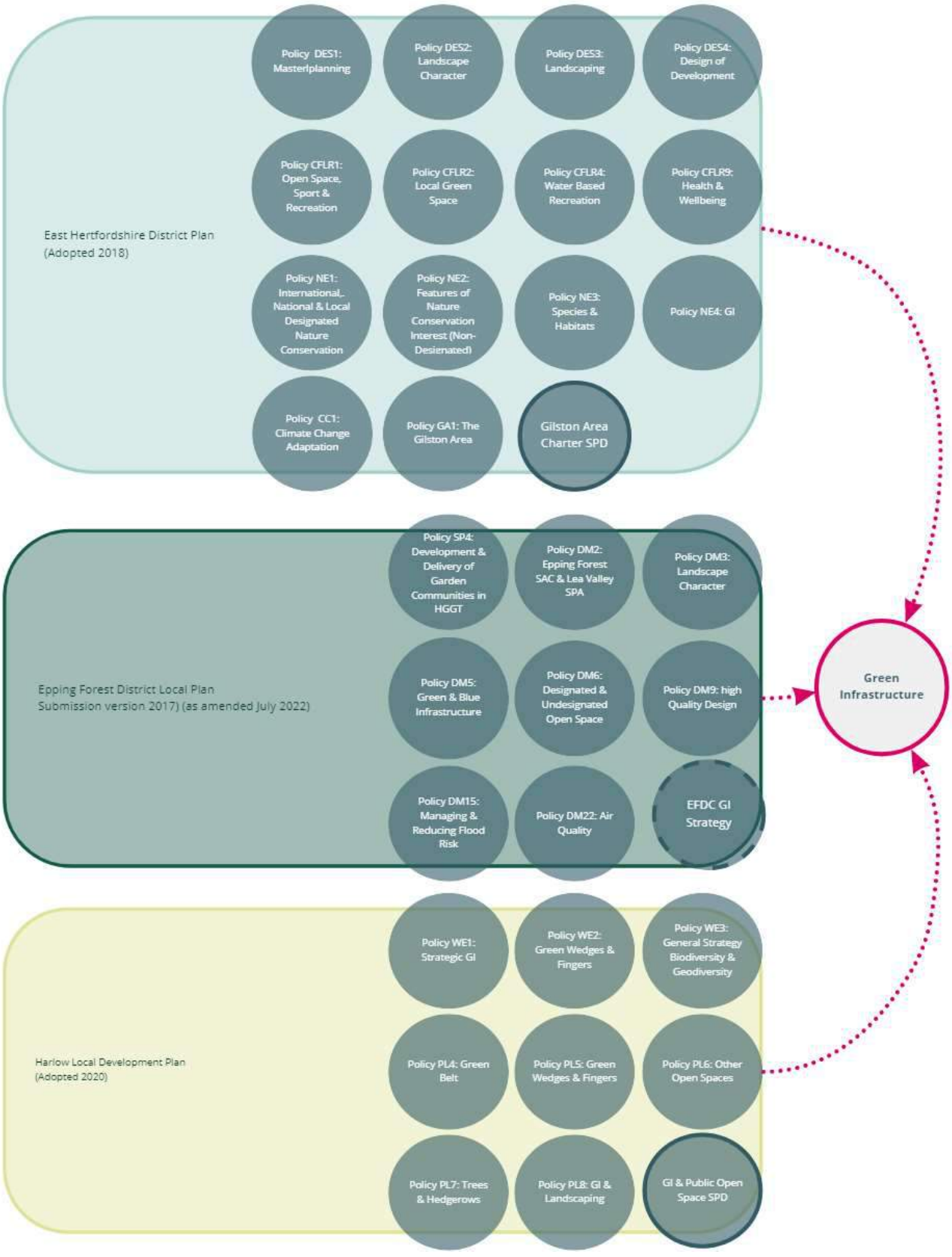
4.22 The three district councils are responsible for producing Local Plans (with the exception of Minerals and Waste Local Plans at county level) and determining planning applications in their areas. Therefore, whilst both Hertfordshire and Essex County Councils do not have relevant GI policies, their GI strategies feed identified GI opportunities and priorities down to district councils. This is highlighted further in Chapter 5.

4.23 Inset 4.1 illustrates the current planning policies, specific to GI, of the district councils. The detail of those specific to GI are tabulated in Appendix E.

[11] https://eic-uk.co.uk/media/eebhjdb3/delivering-environmental-net-gain-2019.pdf

[12] https://www.gov.uk/guidance/enabling-a-natural-capital-approach-enca#enca-assessment-template

Inset 4.1: Overview of the GI policies within the Local Plans of the three district councils



Protection of GI Assets in Local Policy

4.24 Effective GI planning policies ensure the protection and long-term management. Protection from encroachment by development can be achieved through strong wording in specific policies alongside more widespread coverage and integration throughout a given Local Plan[13].

4.25 Policy NE4 of the East Herts District Plan, for example, requires that development proposals 'should' avoid the loss, fragmentation or functionality of the GI network. In contrast, stronger alternate wording (as may be expressed 'must', 'required' or 'expected'), is included in Policy GA1 of the same document although only directly attributed to the Gilston Area. Policy DM5 of the Epping Forest District Local Plan (submission version) and Harlow Council's GI and Public Open Space Standards SPD include requirements for development to retain existing GI assets, such as trees, woodland and hedgerows. Explicit reference to particular GI assets in the SPD generally improves the likelihood they will be retained. This is further addressed in Chapter11: Recommendations.

4.26 Protection of GI from the encroachment of development may also be achieved through policy, where assets are also designed for nature conservation or heritage value, as SANGS, etc. 'Special protection' of parkland, habitat corridors and other greenspaces through specific controls and/or requirements in S106 obligations or covenants forms Objective 5 of the 2022 Gilston Area Appendix to Section 106 Stewardship Key Principles and Objectives (on which the emerging HGGT Stewardship Charter is founded). Note that this document is written for the Gilston Area but is applicable across the Garden Town.

HGGT

4.27 The GI Framework will feed into the 2019 HGGT Infrastructure Delivery Plan (IDP)[14], which sets out the infrastructure required to deliver the planned growth of the Garden Town. Infrastructure interventions identified in the IDP include amenity and natural greenspace, public parks, flood defences and SuDS. Funding sources and phasing are also outlined and categorised by each strategic site.

4.28 The schedule of key plans and strategies that have been used to inform this Framework are listed, alongside relevant HGGT core documents, in Appendix B. This is structured as a matrix to allow cross-reference across the five partner councils, as well as easy update in future review of the Framework when relevant documents are issued / reissued.

Critical Threshold Sites

4.29 Designated sites form the core of any nature recovery network. The GI Framework aims not only to protect these key assets but to address the pressures they face – from recreational pressure to poor air quality. This section sets out how the strict legislation and planning requirements of Habitats Regulations Assessment (HRA) are recognised, and responded to, in the Framework.

4.30 For the purposes of the Framework, the term 'critical threshold sites' refers to sites that have reached the threshold at which the integrity of qualifying habitats and/or favourable conservation status of qualifying species can no longer be maintained without the intervention of a recognised mitigation strategy. Such strategies typically include development control applied across a recognised buffer or 'Zone of Influence' (ZoI). Mitigation measures may, for example, include provision of minimum area of recreation greenspace to accommodate new housing growth and developer contributions to management interventions within the designated site itself.

4.31 The process of assessment and identification of appropriate ZoI and mitigation is embedded in the Habitats Regulations Assessment (HRA) for European and international designations i.e. Special Areas of Conservation (SAC) for habitats and species, Special Protection Areas (SPA) for birds, and Ramsar wetlands. 'Critical threshold sites' is used in this Framework also to capture national Sites of Special Scientific Interest (SSSI), ancient woodland or local designations where recognised mitigation and recognised buffers apply. By considering the hierarchy of assets supporting the upper echelon sites allows a more holistic approach to mitigation through connecting, buffering and dilution of impacts as part of a nature network.

4.32 Critical threshold sites relevant to the Framework, were identified through targeted consultation (see Chapter 2) with the following specialists:

- Epping Forest District Council Independent Planning Consultant (advising in relation to the EFDC 2020 GI Strategy and its's consideration of ZoI);
- National Trust, Regional Planning Adviser (the Trust being responsible for the management of Hatfield Forest SSSI);
- Essex Wildlife Trust, Director of Conservation (previously engaged with the HRA process of select strategic growth areas).

[13] Scott, A.J. & Hislop, M. (2019) What Does Good GI Policy Look Like? Town and Country Planning 88(5) pp.177-184

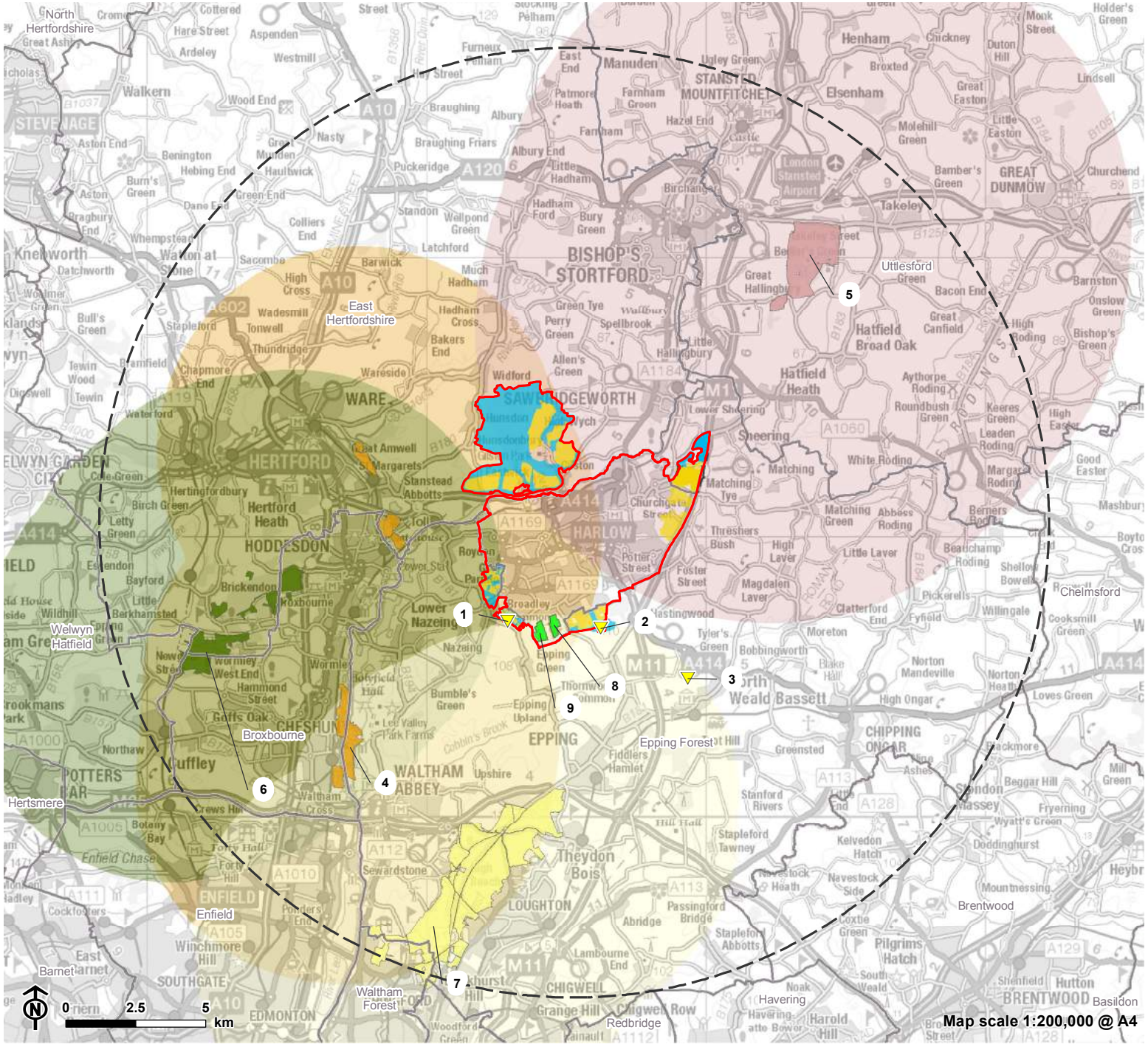
[14] Available: https://647.f4f.myftpupload.com/wp-content/uploads/2019/08/20190417_FINAL_-IDP_REPORT.pdf

4.33 Figure 4.1 illustrates the critical threshold sites and associated ZoI. Description of each site in relation to the HGGT GI Framework is provided in Appendix E.

Framework GI Strategy - Harlow and Gilston Garden Town
HGGT Partner Councils

LUC

Figure 4.1: Critical Threshold Sites



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary

Proposed Growth

Strategic Growth Area: Unbuilt
Strategic Growth Area: Development

Proposed SANG

1. Water Lane
2. Latton Priory
3. North Weald Bassett
4. Lee Valley SPA & Ramsar
5. Hatfield Forest SSSI & NNR
LUC_EastofHarlowUpper_20220715
6. Wormley Hoddenson Wood SAC
13c. East of Harlow
7. Epping Forest SAC
8. Harlow Woods SSSI
Lee Valley SPA and Ramsar (7 km Zone of Influence)
Hatfield Forest (10.4 km Zone of Influence)
Wormley Hoddedson Wood SAC (7 km Zone of Influence)
Epping Forest SAC (6.2 km Zone of Influence)

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG4_1_r2_CriticalThresholdSites_A4L 08/12/2022
Source: OS, LUC, HDC, EFDC, EHDC

Chapter 5

Existing GI Strategies

Chapter 5
Existing GI Strategies

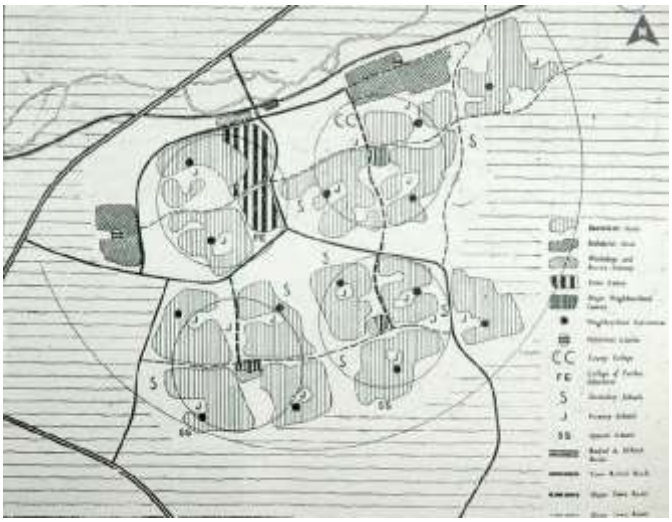
The concept of GI is rooted in Gibberd's original vision for Harlow New Town. Today, high quality and multifunctional GI remains integral to the proposed expansion of the Garden Town and is recognised across key strategies, plans and guides.

5.1 To enable the partner council's strategies to be taken forward in an integrated way, this chapter provides an overview of the existing GI information that has been reviewed and used to inform the Framework.

The New Town Origins of Green Infrastructure

5.2 The origin for GI within the Garden Town stemmed from the landscape-led master planning of Sir Frederick Gibberd's initial masterplan for Harlow New Town to integrate landscape and townscape. The mosaic of hills, valleys and woodland used as a framework for urban planning created distinct neighbourhoods separated by the landscaped greenspaces framed around tributaries to the Stort and Lee, which now form the Green Wedge network.

Inset 5.1: Extract of the initial masterplan for Harlow New Town prepared by Gibberd (source: JR James Archive Sheffield University, cited in Water Lane Growth Area Design Concept 2018)



5.3 Today, the 2022 Town Centre Masterplan SPD highlights that "*natural landscape and greenspace can be easily reached by foot from the town centre, including Town Park, although the centre itself* [now] *lacks planting and open space*". The importance of this easy access to nature and greenspace for wellbeing and social inclusion for people of all ages is reinforced within the 2022 Green Infrastructure and Public Open Space Standards SPD[15].

GI Strategies of the Five Partner Councils

5.4 The GI strategies of the five councils date variously from 2011 to 2022:

- 2022 Hertfordshire GI Strategy[16];
- 2020 Essex GI Strategy[17] and supporting 2022 GI Standards[18];
- 2020 Epping Forest District GI Strategy[19] and supporting HGGT QRP Report[20];
- 2005 A GI Plan for the Harlow Area[21] and 2022 Green Infrastructure and Public Open Space SPD; and
- 2011 East Hertfordshire GI Plan[22].

5.5 Figure 5.1 illustrates the collated opportunities of these strategies where geographic anchors are provided, with non-spatial opportunities provided as annotated text. Note that this figure includes recognition of the 2020 Gilston Neighbourhood Plan green corridors (see later subheading 'Additional Local GI Information').

5.6 Figure 5.2 summarises the supporting information under comparable subheadings. All strategies other than Epping Forest define priority GI themes or functions as the basis for the GI network analysis. This reflects the particular focus of the Epping Forest Strategy to inform landscape-led design of strategic allocations.

5.7 The Hertfordshire Strategy follows a notably strategic level with the ten proposed actions focused on the 'how' (rather than traditional 'where') of GI delivery. This strategic approach is in deliberate response to county council consultation seeking, not only greater join-up of GI functions and priorities across the county but ensuring deliverability through the planning system.

5.8 Subsequent to the Essex Strategy, the 2020 Essex Climate Action Commission Report recommendations for land use and GI outline targets for the natural environment and creation of natural GI in relation to development; these are summarised under Chapter 7 HGGT-wide Context Nature Recovery.

5.9 The 2022 Essex GI Standards are a result of taking part in Natural England's national GI Framework trials and, at the time of writing, are in the process of being added to the Essex Design Guide under Supplementary guidance. The Standards list nine principles and standards for GI to be delivered through the development management and planning policy process.

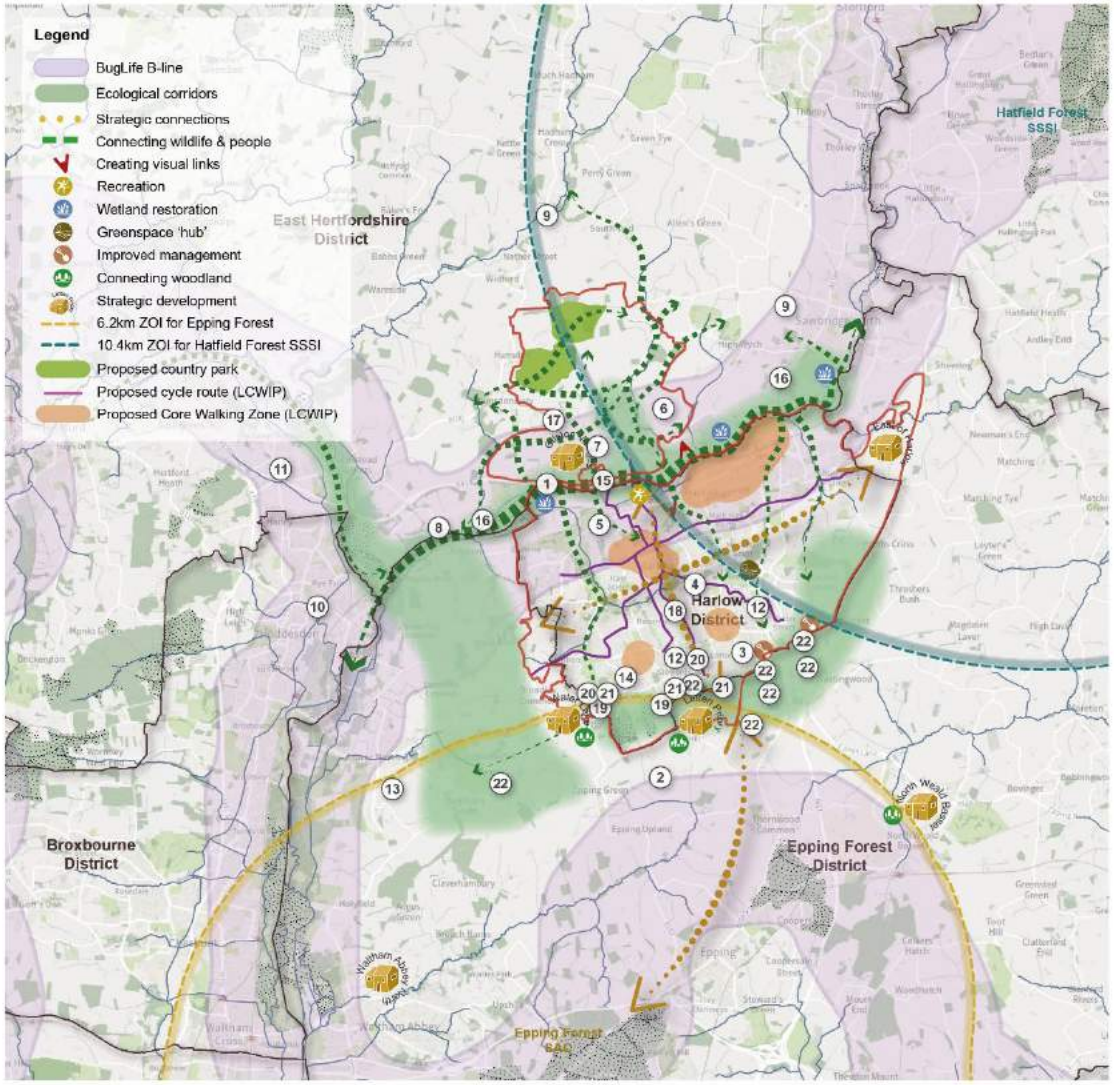
5.10 Since publication of the partner council GI strategies (with the recent exception of Hertfordshire), Natural England has published the national GI Framework, incorporating the

[15] https://moderngov.harlow.gov.uk/documents/s19894/App%20A%20-%20Harlow%20GI%20Open%20Spaces%20SPD%20FINAL.pdf
[16] Awaiting publication
[17] https://www.placeservices.co.uk/media/325323/EGIS_MainStrategy_09062020-LR.pdf
[18] https://www.essex.gov.uk/protecting-environment/guidance-for-professionals
[19] https://www.eppingforestdc.gov.uk/planning-and-building/planning-policy/green-infrastructure-strategy/#:~:text=Following%20consultation%20on%20the%20Draft%20Green%20Infrastructure%20Strategy,as%20a%20material%20planning%20consideration%20in%20April%202021
[20] https://www.eppingforestdc.gov.uk/planning-and-building/planning-policy/quality-review-panel/
[21] https://www.harlow.gov.uk/sites/default/files/documents/HEBPS4A%20-%20Green%20Infrastructure%20Plan%20for%20the%20Harlow%20Area%202005.pdf
[22] https://cdn-eastherts.onwebcurl.com/s3fs-public/documents/Green_infrastructure_plan_joined.pdf

Beta Mapping Tool[23] (see later subheading of 'Emerging National GI Information'). The accompanying guidance on its interpretation and use (referred to as 'Process Journeys') is scheduled for publication in Q4 2022. This publication is also due to incorporate a GI Design Guide, case studies and core GI standards from which local authorities will be able to develop their own local standards in relation to accessible natural greenspace and urban greening.

[23] Version 1.1 available: https://designatedsites.naturalengland.org.uk/GreenInfrastructure/Home.aspx

Figure 5.1: Illustration of existing GI opportunities within the partner council strategies



Location specific GI initiatives from existing strategies

1. Increase access to the Outdoor Pursuits Centres
2. Potential for improved north - south access links to the south of Harlow to link woodland assets to Epping Forest, which could be delivered as part of wider landscape enhancement and restoration in this area.
3. Expanded woodland linkage to provide settlement foiling/ improved landscape edges and settings for future development, especially re-connecting woodland sites to the southern/ south eastern fringe of the town.
4. Interpretation of pre New Town landscape features such as ancient woodlands and Latton Farm. Potential for community supported agriculture to consider landscape future of Latton Farm as new greenspace 'hub'.
5. Creating improved visual legibility between Town Park and the Stort Valley through vegetation and view management.
6. On-going restoration of mineral sites in and north of the Stort Valley and creation of an expanded network of wetland habitats/ alternative accessible green infrastructure, as part of minerals consents.
7. Seek to maintain visual connectivity and legibility e.g. between the Stort Valley floor, valley sides and adjacent plateaux in planning structural GI for remediation, to visibly retain the landscape context and relationships which formed part of the original Harlow master plan.
8. Enhanced woodland linkage and tree planting to the Stort Valley crests, as proposed in other functional analyses, has the potential to contribute to surface water catchment and assist with flood risk management more strategically.
9. Links should be made with access proposals made in the adjoining East Herts GI Plan, creating connections across the Stort Valley to the north-south links proposed west of Sawbridgeworth, to help address issues of deprivation in this area.
10. Link to the Stort Valley Way and Lea Valley.
11. Complete strategic scale ecological corridor between Long Green Lane and Marks Wood (Ware).
12. Enhance habitats by improving management of local woodlands and grasslands, including Harlow and Latton Commons.
13. Develop local walks to connect communities with local Green Infrastructure assets including Nazeing Common.
14. Latton Priory and Water Lane Garden Communities Complimentary network of green open spaces tying together new and existing communities, including the provision of SANG. Connect new communities into the proposed Sustainable Travel Corridor (STC).
15. Enhanced pedestrian access and habitat links from the Stort Valley and Harlow to local GI sites of interest (Rivers Nursery Site, Lee Valley and river network) plus wider farmland landscape
16. Wetland enhancement and sustainable water management up and downstream of the main settlement pinch points.
17. Reinforcement of the green back drop to Harlow and Sawbridgeworth, where conserving Gilston Park's woodland and Pishiobury Park could enhance the rural character of the area.
18. Connect into Harlow's Green Wedges to provide direct links to Harlow Town Centre, the surrounding countryside and other greenspaces.
19. Plan for and achieve a balance of open space typologies. Existing spaces that need to be addressed in qualitative terms are Rye Hill Road Recreation Ground, Parringdon Road Recreation Space, and Parsloe Road Open Space.
20. Encourage social interaction initiatives which link help to tackle loneliness, obesity, and encourage healthy eating. Places where this could be achieved are: The Green Wedge north of Latton Priory, and the Parsloe Road Open Space.
21. Develop Productive Landscapes beyond just the provision of allotments at the Netteswell Common Allotments. Other potential opportunities include: Rye Hill Road Recreation Ground, Parsloe Road Open Space and the proposed schools to be developed within the Garden Town Communities.
22. Enhance people's understanding and enjoyment of nature at local woodlands, the three Commons, local Green Lanes, and the Scheduled Monuments at Latton Priory and Nazeing.

Figure 5.2: Comparative summary of the GI Strategy across the five partner councils

County-scale

Essex

Landscape

- Strategically identify priority areas for the creation or improvement of green infrastructure to enhance local landscape character.
- Encourage and support the review of existing designations (i.e. SSSIs etc.) and local landscape designations to ensure their currency and maintain the accuracy of site information.

Ecosystem Services

- Explore Environmental therapies and challenges across all social, demographic, ethnic and diversity groups and promote activities in green spaces.
- Public Realm green infrastructure improved to reduce pollution and improve character and sense of place.

Biodiversity

- Use new green infrastructure provision to buffer or extend existing designated sites.
- Encourage better management of green infrastructure to benefit locally native species, focussing on recognised nature conservation priorities.

The Water Environment

- Create water gardens, green roofs and bio retention areas to absorb urban water.
- Case study example of natural flood management at Thaxted, Uttlesford & Kingsmoor, Harlow.
- Case study example of pond improvements at Oakwood Pond, Harlow.

Development

- Embed an 'environmental net gain' principle for development, including housing and infrastructure.
- Create green infrastructure in new developments such as Garden Communities.
- Use planning policy to secure multi-functional green spaces within and beyond development site boundaries through the application of biodiversity net gain, biodiversity off-setting and the creation of compensation habitat and other green infrastructure promotion schemes.

Hertfordshire

Landscape

- Undertake informed studies and assessments to understand the capacity of the landscape to accommodate land use changes.
- Enhance and remediate the landscape condition of deteriorating landscapes.
- Enhance the landscape framework which form an important feature of the character of Garden City communities.
- Expand tree coverage and enhance woodland connectivity within the county.
- Integrate GI and sustainable farming practices to support biodiversity and encourage uptake of agri-environment schemes.

Biodiversity

- Address visitor needs and recreational pressure on important wildlife sites through a strategic county-wide approach.
- Protect, enhance and connect habitats across the county to support species recovery and greater climate resilience.
- Bring more of the county's LWS into positive management to support the network of statutory designated sites.
- Expand the ecological mapping resource to underpin the identification of future local nature recovery networks.

Access & Connectivity

- Identify opportunities for increased recreational access to river corridors.
- Address visitor needs and recreational pressure on wildlife sites through a strategic county-wide approach.

The Water Environment

- Deliver environmental enhancements to chalk streams within the county, ensuring improvements to ecological and chemical qualities.
- Retrofit nature-based solutions for surface water run-off into urban areas.

Development

- Embed GI and equitable access to open space policies into development.
- Integrate flood risk into the design of new developments.
- Deliver a strong network of active travel routes between developments and key services. Aim for sustainable 15-minute neighbourhoods within the county.

District-scale

Harlow

Landscape

- Enhancement of woodland experience and accessible woodlands as a multifunctional woodland resource, reinforcing 'town of trees' identity.
- Potential for improved north - south access links to the south of Harlow to link woodland assets to Epping Forest, which could be delivered as part of wider landscape enhancement and restoration in this area.
- Tying such landscape enhancement into a robust and integrated landscape framework for Harlow's edges, providing foiling for settlement edges (existing and potential new).
- Expanded woodland linkage to provide settlement foiling/improved landscape edges and settings for future development, especially re-connecting woodland sites to the southern/south eastern fringe of the town.

Biodiversity

- Relaxed intensity of landscape management in green wedges for nature conservation focus, creation of long grass, meadow and heathland swathes to link local sites of interest and reinforce the urban biodiversity network.
- Search for appropriate locations for new semi natural woodland which could deliver aspects of the urban biodiversity network, as well as other functions.

Development

- Proposals to address more local severance and impairments of the urban green infrastructure experience resulting from highway layouts could include traffic calming and more relaxed landscape management of the associated amenity grassland green space swathes within the green wedges, creating an enhanced sense of place as well as improved connectivity through safer crossing points.
- Consideration of potential for enhanced community green space provision e.g. in the principal green wedge and the wedge south of the Water Gardens should link with a consideration and conservation of the best landscape assets within the wedges.

Epping

Landscape

- To develop a network of high-quality art across the District, which is integrated into the landscape and builds on Harlow's Sculpture Trail.
- Ensure good landscape design that creates multifunctional spaces and incorporates a balance of social, environmental and place-making functions.

Biodiversity

- To implement cutting regimes for roadside verges, and undertake the seeding of areas, to provide for the creation of wildflower verges.
- Boosting the District's tree canopy cover with new tree planting on appropriate sites identified by the community.
- Identify site-specific opportunities that create more varied and ecologically connected places and spaces.

Access & Connectivity

- Developing and supporting the implementation of a Strategy for the enhancement of the District's Public Rights of Way (PRoW) network to make it more legible, accessible and usable by everyone.
- Ensure the delivery of thoughtfully designed interpretation.

Development

- Improving local greenspaces through a community-led design approach, by developing a toolkit of guidance on initiatives and stewardship strategies.

East Hertfordshire

Landscape

- Using green infrastructure to contribute positively to landscape character enhancement, restoration and linkage (e.g. areas for farmland, grassland restoration and woodland enhancement).
- Green infrastructure to interpret and appreciate significant cultural heritage assets.
- Context, sense of place and local distinctiveness. Recognition, conservation and enhancement of the key assets of river valleys, woodlands, grasslands and commons.
- Recognition, conservation and enhancement of the key assets of river valleys, woodlands, grasslands and commons.

The Water Environment

- Wetland enhancement and sustainable water management up and downstream of the main settlement pinch points.

Development

- Increased green links to the countryside from high density settlements, seeking enhanced links along the river valleys network, where these do not conflict with nature conservation interests.
- Improved strategic links with adjunct District/ County, facilitating greater levels of car free access.

Regional

Green Arc

A partnership which encourages the bringing of the 'big outdoors' closer to people through conserving the Green Belt, protecting biodiversity and expanding open space.

Additional Local GI Information

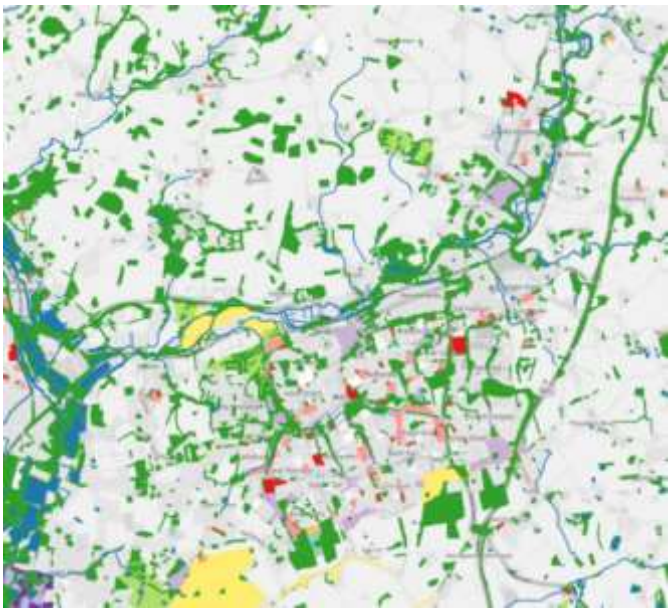
5.11 Additional local GI information for the following document is provided in Appendix F:

- 2021 HGGT Design guide;
- 2022 Harlow Town Centre SPD;
- 2018 Gilston Area Concet Framework;
- 2020 Gilston Parameters Plan;
- 2022-2033 Gilston Neighbourhood Plan.

Emerging National GI Mapping

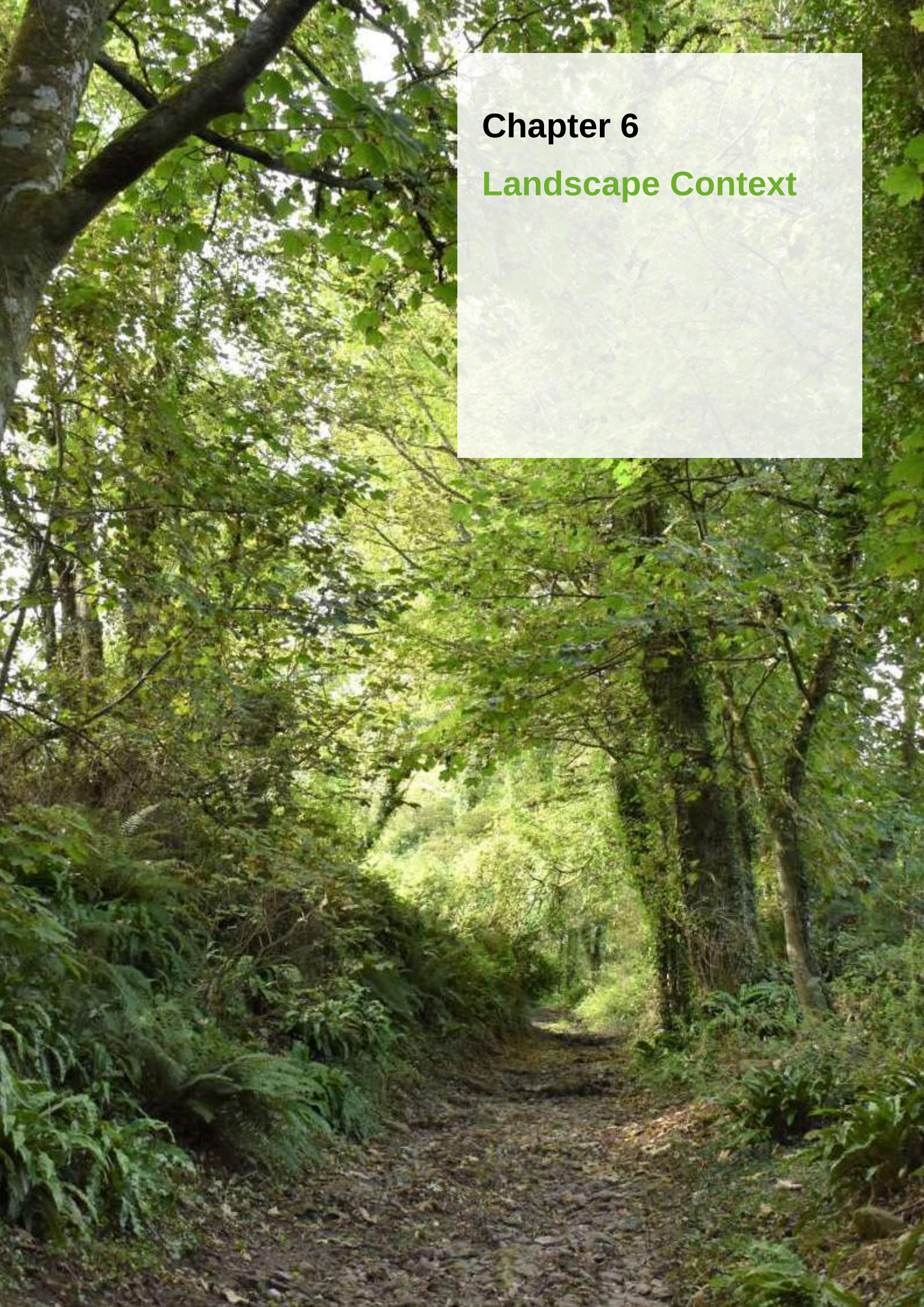
5.12 The Beta Mapping Tool, included within the Natural England GI Framework, provides a consistent foundation for GI mapping across administrative boundaries. Publication of the accompanying guidance is scheduled for Q4 2022 and update of the data itself to v1.2 in December 2023, hence; only an overview is provided at this stage. Future publications will be included in future review/s of the Framework.

Inset 5.6: Extract of national GI mapping across the Garden Town area



5.13 Woodlands and wetlands are the GI typology most strongly represented across the Garden Town. These habitat types are strongly associated with the riparian corridors of the Rivers Stort and Lee, and reach out across Harlow New Town and the HGGT strategic growth areas of Essex and Hertfordshire. Large woodland parcels anchor the GI network south of Harlow New Town, and woodland buffering the motorway forms a boundary to the east.

5.14 The Garden Town also supports extensive areas of open 'access land (CRoW)' in the west flanking the River Stort, and the south at Latton Common. Similarly, LNR occur through the Stort floodplain (Parndon Moat Marsh Nature Reserve and Marshgate Spring & Honeymead Marsh Conservation Area) and in the south at Kingsmoor Recreational Ground. The wider network of public parks, allotments, playing fields, golf courses, other sports facilities, and cemeteries and religious grounds almost exclusively occur in and around Harlow. Existing GI assets are explored further in Chapter 7: Addressing the Triple Challenge.



Chapter 6

Landscape Context

Chapter 6
Landscape Context

The GI network must respond to the variety of landscape characters in and around the proposed Garden Town expansion. Landscape Zones are identified across the Garden Town and used to identify locally appropriate opportunities for the GI network.

6.1 This chapter provides a summary of the landscape context. It uses information from the existing assessments (national character areas and local landscape character assessments) to identify seven Landscape Zones across the Garden Town area.

6.2 Each Landscape Zone is described in terms of the changes associated with proposed growth and the GI opportunities specific to each. This gives the reader a clear picture of the landscape context for the GI opportunities relevant to each area of growth.

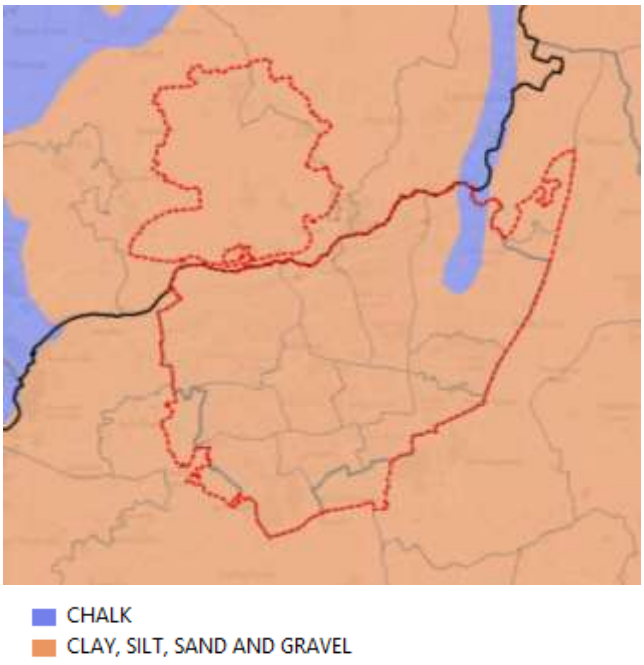
Formative Influences

Geology

6.3 Bedrock geology is comprised of a mix of clay, silt, sand and gravel with a band of chalk extending south from Sawbridgeworth into Old Harlow, as shown in **Inset 6.1**.

6.4 The surface geology includes occasionally exposed London Clay interspersed with Claygate Beds. Lowestoft till dominates the drift geology, with alluvium along the river valleys, and sand and gravels along the outer valley floor. An area of chalk extends into the northeast of the area.

Inset 6.1: Geology underlying HGGT



Topography and Drainage

6.5 The area comprises a low, gently undulating landscape dissected by the River Stort and the Stort Navigation. These form the northern boundary of Harlow New Town and run westwards to join the river Lee. A number of tributaries join the Lee and Stort, forming distinctive features within the wider landscape. Fidlers's Brook and Golden Brook flow south to the Stort through Gilston. Canon's Brook forms the boundary to the west of the New Town where it joins with Parndon Brook. Pincey Brook, as it flows through The Gibberd Garden and merges with the Stort, marks the north-eastern extents of the Garden Town. Todd Brook forms the basis of the east-west Green Wedge through the centre of Harlow, with minor narrow tributaries forming landscape and recreation links through the urban landscape to the south.

6.6 The existing Garden Town is bounded and framed by watercourses, with an enclosing ridge of higher land which forms a key landscape feature to the south.

Townscape

6.7 Harlow was one of the first New Towns to be designated in Britain. Sir Frederick Gibberd was appointed as the consultant architect-planner for Harlow in 1946, and his masterplan for the town was approved in 1949.

6.8 The valley of the river Stort formed the north boundary and Rye Hill the south. Gibberd's Master Plan had a mirror symmetry about a north to south axis extending from the Stort Valley to Rye Hill, with housing and industry balanced on either side. The boundary of the New Town was designed to retain as much of the good agricultural land to the east as possible.

6.9 The Master Plan was developed through the application of key principles specifically developed for Harlow by Gibberd. These innovative principles demonstrate the early application of GI thinking and help inform this Framework.

Gibberd's Principles for Harlow New Town (illustrated in images 1 t0 8 below)

The pre-existing landscape – The masterplan planned for a strong relationship between the design of the New Town and the existing landform, including valleys and ridges (**Image 1 and 2**). It also planned around existing historic features, including buildings and roads with older routes being retained as cycle lanes and footpaths (**Image 3**). The conservation of the character of existing villages at Old Harlow and Potter's Street was also a priority of the masterplan, alongside the restriction of development in hamlets to help retain their rural character.

Landscape pattern – This is based around a geometric pattern of four districts centred on the Town Park, separated by Green Wedges (**Image 4**) that cut into the very heart of the town and surrounded by an encircling Green Belt.

Connectedness: open space, recreation and access to the countryside – Within Harlow open space forms an inter-connected landscape including green routeways and linear parks, as well as more traditional parks. *"Everyone has natural landscape within walking distance and … can walk to other parts of the town or out into the countryside without passing through other built-up areas".*

Tree planting and land shaping – Tree planting and land shaping were key to the Harlow masterplan. Tree planting was undertaken on a massive scale to enhance the greenspace within the town and to provide more variety and contrast within the built urban landscape (**Image 6**). New topographic features, such as mounds, were created as screens and to form interesting landforms in their own right (**Image 5**).

Building Contrast – Buildings of more than two storeys have a broad landscape setting, to create visual contrast and to achieve maximum variety across the town. This was a particular feature of the Town Centre, which was the only part of the town designed to have vertical growth. Building groups were placed on high ground, leaving the valleys open and extended to separate the built-up areas from each other. At the edges of the town, contrast was achieved between the urban area and its surrounding rural setting.

District, neighbourhood and housing groups – The town was divided into four districts, each operating like a small town, with a primary school, shops, a pub and a small local communal hall. Within these neighbourhoods, more localised identities were created through the distinct architecture used for each housing group (**Image 7**).

Town Centre – The town centre includes an inner pedestrian core of precincts and squares surrounded by roads and car parks. This area was the heart for Harlow and contained shops, civic buildings, a college and offices, all set within a series of pedestrian 'rooms' with their own character and function. Landscape gardens within the Town Centre and lawns to the south of the area were used to provide landscape setting for the buildings. The Town Centre had a concentrated urban form and was the only site within the town designed to have vertical growth (**Image 8**).

1 *Views south from the Water Gardens to the ridge of land at Rye Hill*

2 *View from Town Park towards the undulating parklands and wooded mounds to the north of the Stort Valley*

3 *Traditional timber framed building, Churchgate Street*

4 *Green Wedges and Green Fingers provide connectivity through the New Town*

5 *Land shaping and sculpture mark the transition between distinctive and separate neighbourhoods*

6 *Mass tree planting has created a strong sense of place and 'green' character*

7 *Doorstep open space and specimen trees characterise residential neighbourhoods*

8 *Harlow Water Gardens provide a landscape setting to vertical growth*

6.10 The original plan developed by Gibberd accommodated 60,000 people. In 1952 this was expanded to 80,000. Through the 1960s and 1970s, Harlow New Town expanded to include new housing areas at Katherines and Sumners at Tylers Cross.

6.11 The current proposals to expand the town are therefore part of its evolution and indeed tie in with Gibberd's description of Harlow as *"An organism which would go on changing and being rebuilt as the needs of people altered."*

Landscape Character

Landscape character is defined as *"A distinct, recognisable and consistent pattern of elements, in the landscape that makes one landscape different from another, rather than better or worse."*

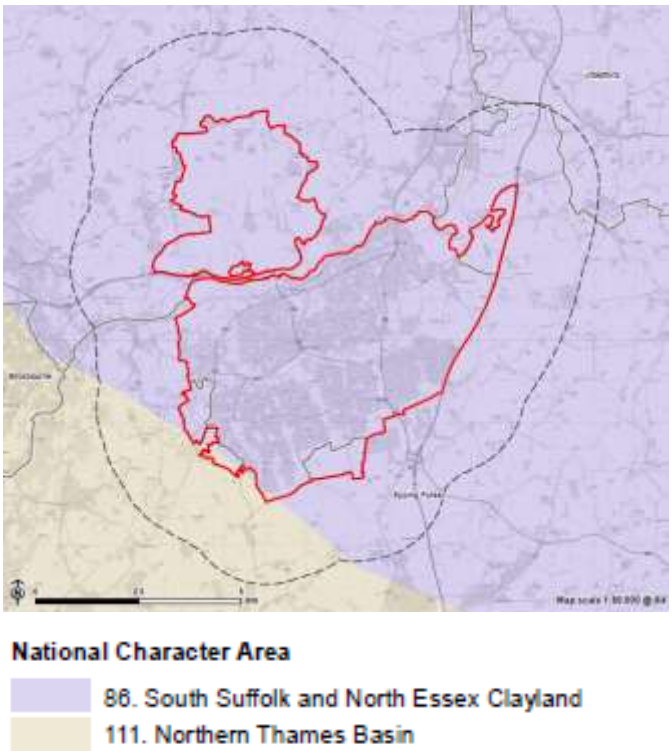
2002 Landscape Character Assessment Guidance for England and Scotland, The Countryside Commission & SNH

National Character Areas

6.12 Natural England's National Character Area (NCA) profiles cover the whole of England. These group areas of similar characteristics and enables positive decision-making which aims to conserve environmental character. They contain Statements of Environmental Opportunity (SEOs) that inform change, including the delivery of emerging Local Nature Recovery Strategies, Green Infrastructure Strategies and guiding appropriate management. HGGT is located almost entirely within NCA 86: South Suffolk and North Essex

Clayland[24], with a very small portion of NCA 111: Northern Thames Basin[25] encompassing the south-western extents of the development boundary, as shown in Inset 6.2. Further detail on the characteristics of the relevant NCAs can be found in Appendix G.

Inset 6.2: National Character Areas



6.13 A number of the SEOs and are specifically relevant to strategic GI objectives across the Garden Town and beyond its study area.

NCA86: South Suffolk and North Essex Clayland

- **SEO1** – Enhance the character of the gently undulating rural landscape by maintaining agricultural productivity whilst encouraging sustainable land management practices for the benefit of carbon storage, biodiversity, water quality and landscape.
- **SEO2** – Protect and enhance ancient woodland cover, parkland trees and ancient hedgerows through management and planting of new woods, hedgerows, and hedgerow trees for the benefit of landscape character, habitat connectivity and ecosystem services.
- **SEO3** – Enhance winding river valleys and their pastoral floodplains, including former gravel and sand extraction sites, for ecological, recreational, and historical importance. Support the operation of natural processes which contribute to biodiversity, geodiversity, soil quality, water availability, regulating water flower and character.

Local Landscape Character Assessments

6.14 Local Landscape Character Assessments (LCA) have been undertaken at the county and district level across the study area. Those relevant to the Framework are summarised below in Table 6.1.

Table 6.1: Landscape character hierarchy

Title	Date	Relevant landscape types / areas
National		
National Character Areas, *Natural England*	2014	South Suffolk and North Essex Clayland Thames Basin
Regional		
East of England Landscape Framework, *Landscape East and Natural England*	2010	Wooded Plateau Farmlands Settled Chalk Valleys Valley Meadowlands Wooded Hills and Ridges
County		
Hertfordshire LCA, *Hertfordshire County Council*	2004	Area 81 – Stansted to Pishiobury Parklands Area 82 – River Stort Area 83 – Hunsdon Plateau Area 84 – High Wych Slopes
Essex LCA, *Essex County Council*	2003	**Glacial Till Plateau** B1 – Central Essex Farmland **River Valley Landscapes** C2 – Stort Valley C3 – Lea Valley **Urban Landscapes**

[24] Natural England (2014) National Character Area Profile 86: South Suffolk and North Essex Clayland

[25] Natural England (2013) National Character Area Profile 111: Northern Thames Basin

Title	Date	Relevant landscape types / areas
		G1 – Harlow and Environs
District		
Epping Forest LCA, *Epping Forest District Council*	2010	**River Valley Floodplain, Flood Gravel Pits and Marshes** Area B1 – River Stort **Farmland Plateau** Area C1 – Sheering Area C2 – Matching Area C7 – Roydon Hamlet Area C8 – Bumble's Green **Farmland Ridges** Area E1 – Jack's Hatch to Church Langley
East Herts LCA SPD, *East Herts Council*	2007	Area 81 – Stansted to Pishiobury Parklands Area 82 – River Stort Area 83 – Hunsdon Plateau Area 84 – High Wych Slopes
Other		
Harlow Area Landscape and Environment Study, *Harlow District Council and Partners*	2005	**Major Urban Areas** Harlow Major Urban Area **Valley Floodplain** River Stort **Ridges and Slopes** Stanstead and Pishiobury Parklands High Wych Slopes Little Hallingbury Ridges and Slopes **Plateaus** Matching Plateau Hunsdon Plateau Roydon and Nazeing Plateau **Ridges**
		Jack's Hatch to Church Langley Ridge **Ridges and Valleys** Epping Ridges and Valleys Thornwood Common Ridges and Valleys

6.15 The 2004 Hertfordshire county and 2010 Epping Forest district LCA provide comparable assessment of the Garden Town at similar level of detail, as shown in Figure 6.1 and 6.2. The overarching outputs of these assessments are explored in Table 6.2, which identifies relevant planning and management guidance to inform the GI Strategy. Detail on the individual Local LCA can be found in Appendix G.

6.16 In addition to the Hertfordshire and Epping Forest LCAs, the 2005 Harlow Area Landscape and Environment Study, identified 31 distinctive Local LCAs which are organised across ten landscape character types, as shown in Inset 6.4. Six of these landscape character types apply to the HGGT study area and are detailed below in Table 6.3.

6.17 These assessments were used to define seven 'Landscape Zones' across the Garden Town (described later in this chapter) as well as informing application of the GI principles (see Chapter 9).

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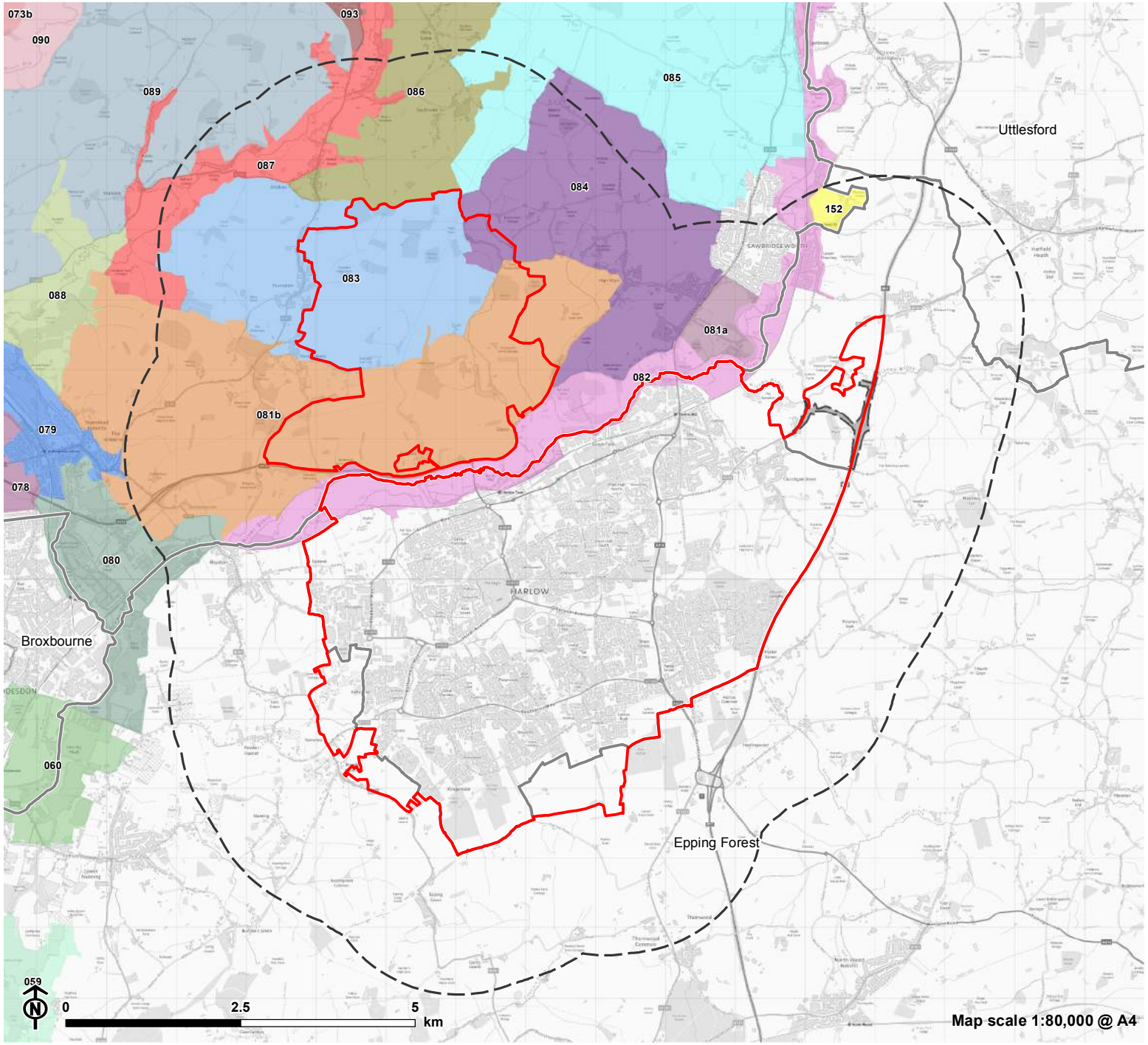
Figure 6.1: Local Landscape Character Areas



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary

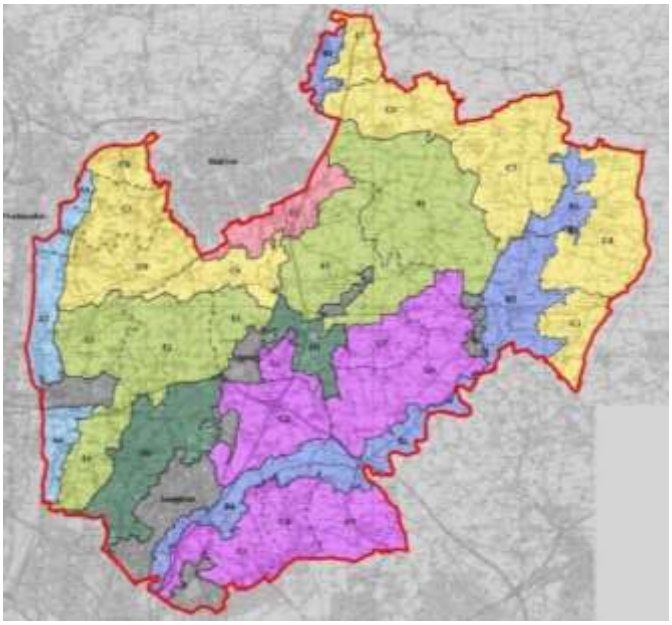
East Hertfordshire Landscape Character Area

- 059: Lea Valley Marshes
- 060: Middle Lea Valley South
- 073b: High Cross Plateau - B
- 078: Great Amwell Ridge and Slopes
- 079: Amwell Floodplain
- 080: Rye Meads
- 081a: Stanstead and Pishiobury Parklands - A
- 081b: Stanstead and Pishiobury Parklands - B
- 082: River Stort
- 083: Hunsdon Plateau
- 084: High Wych Slopes
- 085: Thorley Uplands
- 086: Perry Green Uplands
- 087: Middle Ash Valley
- 088: Lower Ash Valley
- 089: Wareside / Braughing Uplands
- 090: Middle Rib Valley
- 093: Hadhams Valley
- 152: Great Hyde Hall

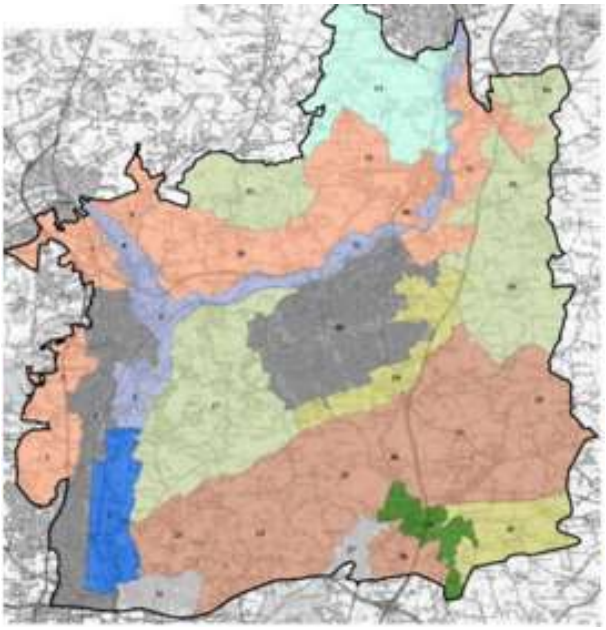
* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG6_1_r1_LandscapeCharacterArea_A4L 08/12/2022
Source: OS, LUC, EFDC, HCC

Inset 6.3: Extract of the Epping Forest LCA Landscape Character Types and Areas[26])



Inset 6.4: Extract of the Harlow Landscape and Environment Study, Landscape Character Types[27]



6.18 Tabulated overview of the following analysis are provided in Appendix G (table E1 and E2 respectively):

- Combined overview of the local landscape character areas across the Garden Town generated from the 2004 Hertfordshire LCA and 2010 Epping Forest LCA; and
- Landscape character types identified within the Harlow Landscape & Environment Study relevant to the Garden Town.

Views and Landmarks

6.19 Harlow's position adjacent to the river Stort and situated within a topographic basin means higher ground is present to the north, at Gilston, and to the south, at Rye Hill. This green backdrop for the town forms an important landscape setting, as part of Frederick Gibberd's original vision, which achieves views across the urban area and towards local landmarks. The Garden Town, and so too its integrated GI network, therefore, aim to maintain, and where possible enhance, important views across Harlow, as well as outward towards surrounding horizons and skylines. Key views and landmarks across Harlow identified within the 2018 HGGT Design Guide are illustrated in Figure 6.2, as well as long distance views and landmarks identified within the 2021 Gilston Area Neighbourhood Plan[28]. Additional views towards and from distinctive landmarks, as well as views of open countryside, are identified within the Gilston Area Neighbourhood Plan and should also be considered for their enhancement through new development.

[26] Provided as a visual reference. Please see source document for detail and key: https://www.efdclocalplan.org/wp-content/uploads/2018/03/EB709E1.pdf (Page 49)
[27] Provided as a visual reference. Please see source document for detail and key: https://www.harlow.gov.uk/sites/default/files/documents/HEBPS5%20-%20Harlow%20Area%20Landscape%20and%20Environment%20Study%202005.pdf (Page 267)
[28] https://hegnp.org.uk/?mdocs-file=2918

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HGGT Partner Councils

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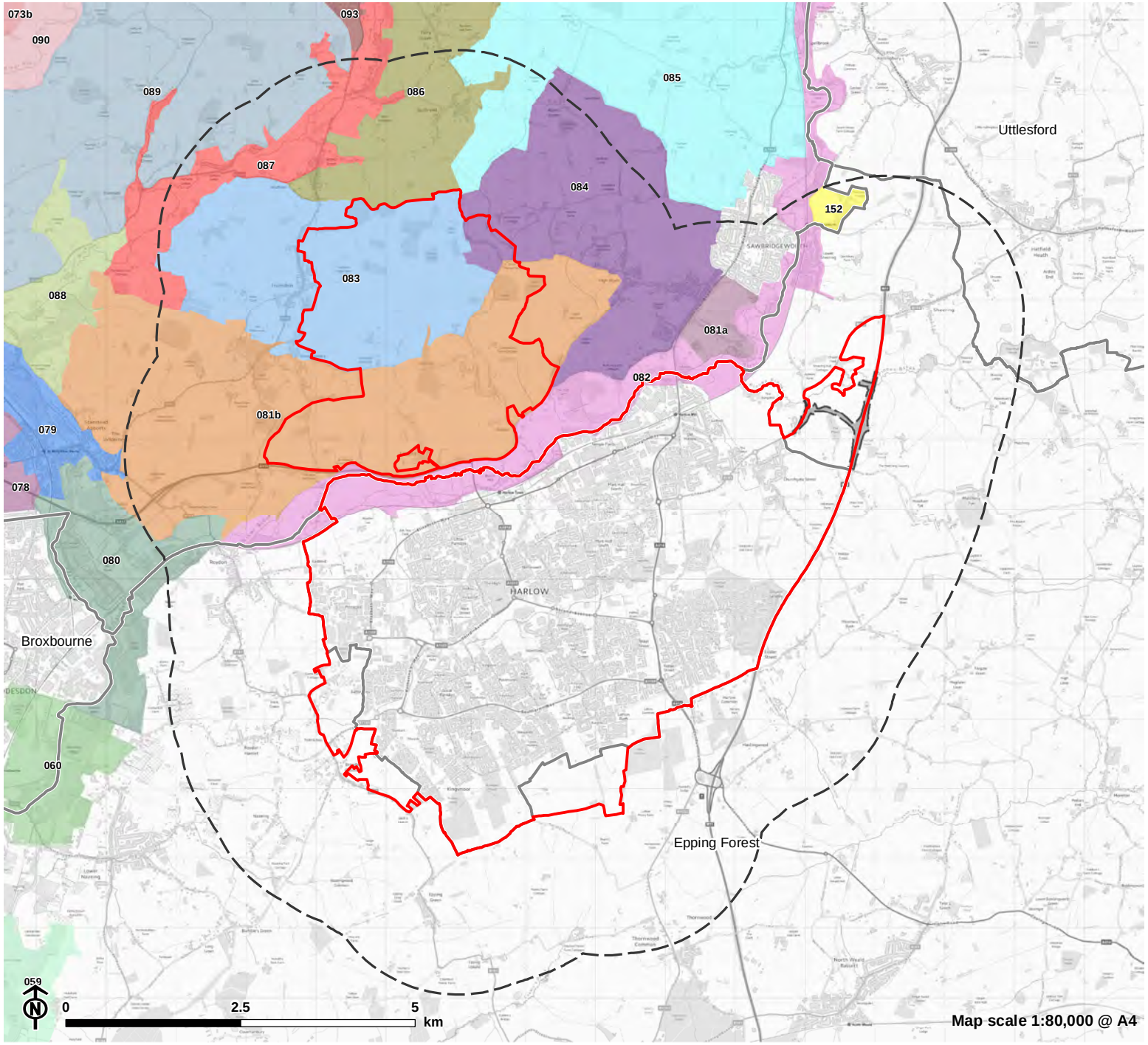
Figure 6.2: Local Landscape Character Areas



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary

East Hertfordshire Landscape Character Area

- 059: Lea Valley Marshes
- 060: Middle Lea Valley South
- 073b: High Cross Plateau - B
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* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG6_1_r1_LandscapeCharacterArea_A4L 08/12/2022
Source: OS, LUC, EFDC, HCC

Landscape Zones of the Garden Town

6.20 Using the existing landscape baseline and field survey, seven landscape zones for the Garden Town have been developed to integrate thinking on commonalities and characteristics. These key characteristics can then be reflected in design and GI principles to ensure growth across the Garden Town relates to local character and context, helping to create distinctive places which still align with future aspirations.

6.21 The seven landscape zones are illustrated in **Figure 6.5**, and each detailed in the subsequent two-page proformas. Emerging opportunities for each Landscape Zone have been included. These have been informed through the interpretation of existing LCA, field visits, professional judgement and consultation process.

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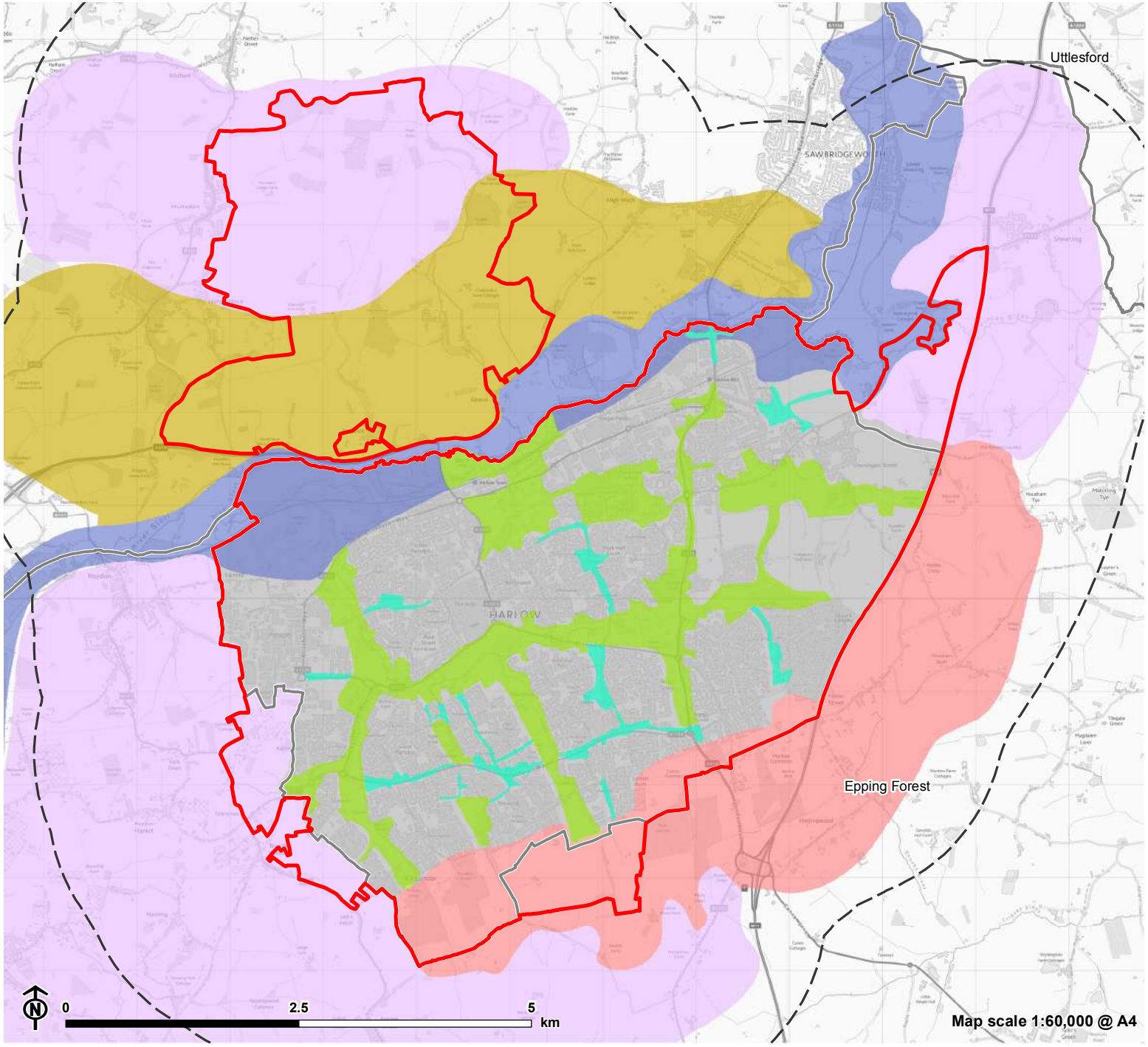
Figure 6.3: HGGT Landscape Zones



Boundary of influence (BOI)
Study area
Local authority boundary

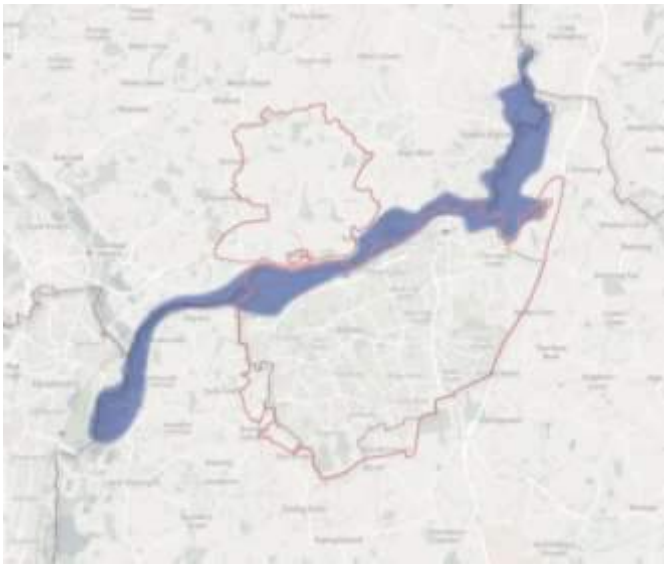
Landscape Zones (as created by LUC)

Green Fingers
Green Wedges & Brooks
Farmland & Wooded Ridge
River Stort Valley
Farmland Plateau
Undulating Parklands
Harlow New Town

CB:JT EB:Tomlinson_J LUC 11904_FIG6_5_r0_LandscapeZone_A4L 25/10/2022
Source: OS, LUC, EFDC

River Stort Valley

Inset 6.3: River Stort Valley Landscape Zone



This landscape zone encompasses the River Stort and its functional valley sides. It is characterised by areas of wetland, meadow and woodland blocks which adjoin and connect with the wooded river corridor. In some areas, built form of new development and industrial growth encroaches into the valley. The Stort corridor stretches from the Lea Valley in the south-west towards Bishop's Stortford in the north-east, bisecting the Gilston Villages in the north from the rest of Harlow to the south.

Proposed Garden Town Growth

- This landscape zone adjoins Gilston Villages 1, 2, 5, 6 and 7, and development at the East of Harlow strategic growth area.
- Two Stort crossings are proposed, the Eastern Stort Crossing (new) and the Central Stort Crossing (expanded).

Key characteristics

- A relative sense of enclosure due to surrounding vegetation, buildings and a gently sloping topography.
- A mosaic of floodplain grazing marsh, wetlands and woodland line the river corridor and connect with adjoining hedgerows and woodland blocks.
- Glimpsed views of the parklands and clumps of woodland to the north of the Stort are possible where there are gaps in the vegetation.
- Planned avenues and lines of native black poplars commonly form field boundaries and are distinctive features in views.
- Recreation assets occur along the course of the river, including marinas, Parndon Mill and Essex Outdoors activity centre.
- Former gravel pits are present along the Stort Valley which achieve varying degrees of remediation. Redricks Lakes form an important leisure asset for swimming and water sports.
- Tranquillity of the valley is reduced due to the railway, (A414 road, construction works and recreation facilities. However, the sound of birdsong persists.
- Vistas along the valley are afforded in places with riparian woodland framing views of industry and construction activity.
- Chimneys extend upwards on the skyline in some views.

Positive features to retain
Linear belts of woodland and hedgerows which contribute to the valley's sense of enclosure.
Areas of open meadow and floodplain pasture.
Occasional long views along the valley.
Stretches of little man-made influence, for example around Parndon Mill and Parndon Lock Meadows.
Rows of native back poplar.
Adverse features to address
The overt presence of development and industry which is amplified by the noise of main roads and the trainline.

Landscape Zone-Specific GI Opportunities

- Reinforce the Stort as a movement corridor for wildlife where recreation and movement of people is incorporated sensitively.
- Screen the northern edge of Harlow, particularly industrial areas and warehouses, using additional tree cover on valley slopes.
- Concentrate recreation improvements at appropriate foci, recognising the need for low levels of disturbance at sensitive locations, for example education boards and benches at existing stopping places along the river

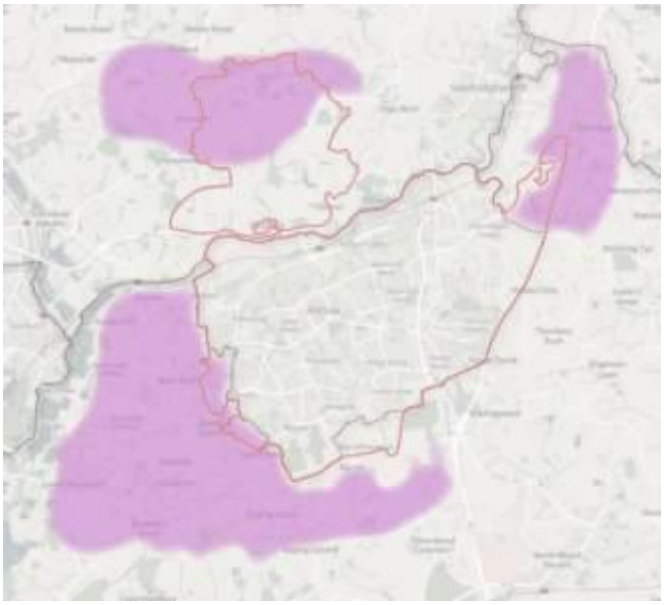
corridor to help manage recreation pressures in controlled locations.

- Control invasive species using a coordinated approach along the main river and tributaries.
- Increase the buffer zone between adjacent farmland and the river to reduce impacts of farming on water quality. Explore the use of low impact grazing as a tool for managing vegetation and creating a mosaic of habitats.
- Explore opportunities for nature-based increases in flood storage capacity through riparian woodland, carr, wetland and grasslands. This could help to address flooding issues downstream in the Lea Valley.
- Explore the feasibility for additional biodiversity enhancement to be achieved at former gravel extraction sites. The restored Pole Hole Quarry, for example, is characterised by large swathes of open grassland. A more diverse habitat mosaic could be delivered here.
- Reinforce habitat connectivity through the valley expanding wetlands, wet woodland, hedgerows, grazing marsh and meadows. Extend these interventions along tributaries to extend a local nature network more strongly into the into Harlow's Green Wedges and to new development / along infrastructure.
- Increase provisions for undisturbed habitat for birds to breed, forage and overwinter. Explore opportunities for low-impact bird watching features and sensitive interactions with nature.
- Integrate community participation in the planning, co-design and management of the valley through stewardship and masterplanning.
- Retain views of undeveloped horizons when looking north towards Gilston.

The River Stort at Parndon Mill

Farmland Plateau

Inset 6.4: Farmland Plateau Landscape Zone



This landscape zone comprises three areas across the Harlow and Gilston Garden Town which exhibit similar characteristics. This gently rolling agricultural landscape occurs to the north of Gilston, as well as the east and western extensions of Harlow.

Proposed Garden Town Growth

- The East of Harlow strategic growth area, including the proposed PAH site and a parcel of unbuilt land north of Pincey Brook.
- Water Lane strategic growth area, including West Sumners and West Katherines.
- Gilston Village 4, alongside two new country parks.

Key characteristics

- A gently rolling and highly agricultural landscape generally formed of large-scale arable fields which afford some open views towards local landmarks.
- Small blocks of broadleaved woodland intersperse the arable fields and break up the large-scale landscape. In places, these blocks include ancient woodland, particularly around Hunsdon.
- Hedgerow and tree-lined field boundaries persist in many places but have become increasingly fragmented over the years due to agricultural intensification.
- The Hunsdon Airfield within the northern plateau provides a uniquely open landscape which affords distant views southward across Harlow and towards the wooded ridge around Latton Priory. The airfield also provides physical separation between Hunsdon and Gilston.
- Woodland blocks shorten views and disconnect the landscape from Harlow, creating a more rural sense of place, particularly true to the north of Gilston.
- Views across Harlow and towards some of its locally distinctive buildings is possible where vegetation and topography permit.
- This landscape zone commonly adjoins villages, for example Hunsdon and Broadley Common, or former villages that have merged with Harlow, for example Churchgate Street, creating a rural sense of place which is reinforced by scattered farm buildings.
- Within the eastern areas, the hum of the M11 and the presence of manmade structures on the skyline, including the M11 Water Tower, pylons and tall buildings within Harlow, creates a highly human-influenced landscape with little tranquillity.
- Within the west, glasshouses form a distinctive man-element on the edge of the Lea Valley.
- Large areas of common land and access to the countryside at Nazeingwood Common.

Positive features to retain
Blocks of woodland, including some ancient woodland, connected by hedgerows which help to create a more enclosed landscape with a rural sense of place.
The agricultural and rural setting of existing villages.
Veteran trees, hedgerows and hedgerow trees.
Hunsdon Airfield and its open views southward.
Arable field margins and habitats important for farmland birds.
Adverse features to address
The prominence of pylons within the open landscape which contribute to the sense of a human-influenced landscape.
Fragmented, sparsely and entirely lost hedgerows.
Large-scale fields with minimal arable margins or connectivity for wildlife.
Significant tracts of inaccessible greenspace with sometimes fragmented or limited PROWs.

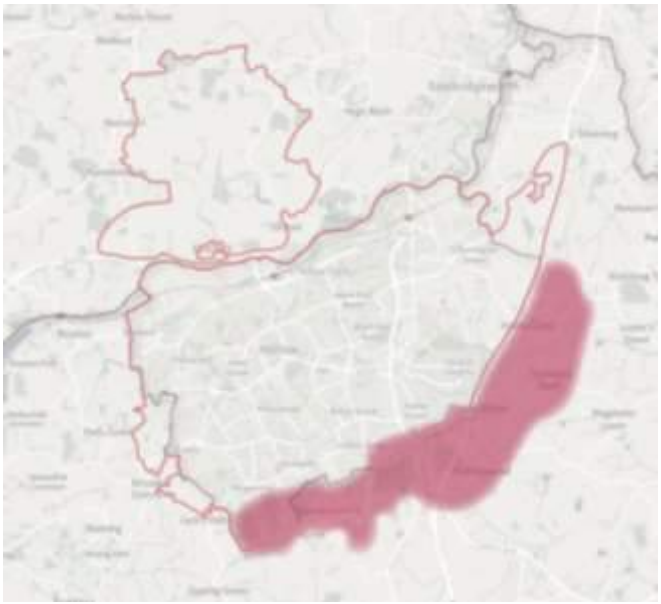
Landscape Zone-Specific GI Opportunities

- Reinstatement, reconnection and extension of the hedgerow network using a range of locally-appropriate native species such as hawthorn, sallow, and oak. Augment with standard trees. Ditch boundaries should utilise wet-loving species such as pollard willow and alder.
- Local nature and landscape recovery will be delivered for Gilston outside the village 'red-line boundaries', such as the developer contributions that will realise the country parks. Locally-appropriate opportunities across the rural farmed landscape include the enhancement and expansion of arable field margins, specifically focussing on managing these for farmland birds, as well as enhancements along brooks and watercourses which bisect the plateau.
- For Village 4 in the north, consideration will be needed for how active travel connections between Gilston and the services of Harlow will be achieved.
- Explore biodiversity enhancements to Hunsdon Airfield, alongside interpretation of its cultural and heritage significance. Although it is important to retain some open characteristics and views from the airfield, it could accommodate significant biodiversity improvements, including hedgerows and trees. Consider transforming some of the area still used as an airfield to meadow and increasing habitat connections with surrounding blocks of ancient woodland and proposed country parks.
- Expand existing woodland blocks through additional planting, helping to increase their scale and ecological diversity, as well as exploring opportunities for creating new woodland. This should include locally native species or cultivars which encourage diversity and succession, whilst also enhancing resilience to climate change and pests. The form of woodlands should be re-examined and more non-uniform, scalloped woodland edges created to move away from the straight-lined edges associated with agricultural intensification. Explore how glades, breaks in the treeline, arable margins and woodland edges can provide additional microhabitats and microclimates. Large-scale interventions to be explored across the extensive area of open land at Gilston.
- Introduce additional landscape features such as wet ditches, ponds and coppices as part of development, which knit into the wider, enhanced rural landscape.
- Better connect with Harlow's Green Wedges and Green Fingers network, particularly within areas of growth to the west of the town.
- Integrate community participation in the planning, co-design and management of accessible greenspaces through stewardship and master planning.

Views across large-scale arable fields near Churchgate Street where the M11 Water Tower forms a distinctive skyline feature

Farmland and Wooded Ridge

Inset 6.5: Farmland and Wooded Ridge Landscape Zone



This landscape zone extends along the southern boundary of the existing edge of Harlow Town, forming an area of higher ground encompassing commons, woodland and farmland which traverse the slopes of the ridge. Existing development within this area is limited to scattered farm buildings and occasional rows of houses adjoining roads. Views north across Harlow and towards the towards the farmland plateau rising above the Stort plays an important part in reinforcing this area's sense of place.

Proposed Garden Town Growth

- Latton Priory strategic growth area.

Key characteristics

- A gently undulating ridge with areas of common land and large blocks of woodland, including ancient woodland at Parndon Wood.
- Commons (Latton Common and Harlow Common) mark the southern edge of Harlow with their open nature affording views to the ridgetop.
- Commons are grazed which increases the sense of a rural edge to Harlow. Within places, dwellings directly face onto and adjoin the commons, reinforcing this rural character.
- Large woodland blocks form distinctive elements in views towards the ridge, alongside providing habitat and recreation opportunities. Generally characterised by straight edges, these include a mixture of broadleaved woodland, coniferous plantation and ancient woodland.
- Open views northwards across Harlow and further afield from the ridgetop.
- Rye Hill Poplars and the Rye Hill Water Tower form distinctive local landmarks on the skyline when viewed from the south-west of Harlow.
- Large-scale arable fields create open views, reinforced by fragmented or removed hedgerows in places.

Positive features to retain
Views southward towards local landmarks such as the Rye Hill Poplars and Rye Hill Water Tower from receptors in the south of Harlow.
Open views northward across Harlow and towards the farmland plateau and parklands north of the Stort.
Large woodland blocks and smaller coppices/ shelter belts of trees.
Common land which hosts a patchwork of habitats and offers access to nature within the south of the town.
The semi-rural landscape setting to Harlow reinforced by the commons and ancient woodlands.
The triangle of greenspace bounded by London Road, Latton Street and Church Road which is lined by an avenue of horse chestnut and has a village green feel to it, despite forming part of the common. This is reinforced by the attractive St Mary Magdalene Church which faces onto the greenspace.
Adverse features to address
Sometimes unattractive perception of common land where littering or fly tipping has occurred.
Large tracts of close-grazed grassland which could provide a greater variety of habitats.
Straight-edged woodland with large blocks of coniferous plantation.
Expansive arable fields which provide minimal space for arable margins and farmland birds.

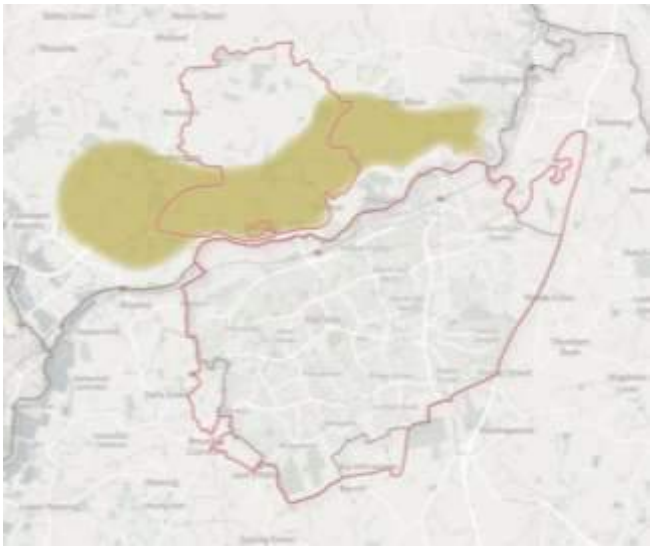
Landscape Zone-Specific GI Opportunities

- Connect with Harlow's Green Fingers and Green Wedges to ensure the continued movement of people and wildlife through to the centre of Harlow.
- Plan for positive management of woodlands across the ridge, particularly for ancient woodland around Parndon Wood. Consider re-structuring areas of coniferous plantation to include broadleaved species and creating scalloped woodland edges.
- Consider the ridge as a recreation asset, providing views across Harlow with a network of PRoW and promoted routes (Stort Valley Way and Forest Way).
- Enhance interpretation and education opportunities along the ridge, including the earthworks of the former moats and the remains of Latton Priory.
- Enhance recreation and play, interpretation and signage to woodlands which are less sensitive and to common land to provide important interactions with nature for residents in the south of the town.
- Enhance and manage the distinctive areas of common land on the ridge to the south of the town.
- Integrate community participation in the planning, co-design and management of woodlands through stewardship and master planning.
- Explore strategic biodiversity connections with surrounding ecologically important sites, including the Lea Valley and Epping Forest.
- Utilise vegetation to help retain the landscape-setting of existing farms and to enhance connectivity for wildlife where this is disrupted by large arable fields.

Looking north across Harlow from Harlow Common

Undulating Parklands

Inset 6.6: Undulating Parklands Landscape Zone



This landscape zone comprises the area of former parklands to the north of Harlow forming south facing slopes from the Stort Valley, including Gilston Park. The undulating landscape is characterised by blocks of ancient woodland and veteran trees which create a strong sense of history within the landscape.

Proposed Garden Town Growth

- Gilston Villages 1, 2, 3, 5, 6 and 7.

Key characteristics

- A gently undulating landscape with patchwork of large-scale arable fields, grassland, woodland blocks and mature specimen trees.
- Small woodland blocks, commonly ancient woodland, sit atop small undulations and provide distinctive features on the skyline whilst shortening views to create a sense of enclosure.
- Relics of the former parklands which once occupied the area exist within the landscape in the form of veteran and mature trees, woodland copses, open areas of grassland and a lake.
- Historic banks and ditches, including those surrounding the holloways at Cock Robin Lane and between Fox Earths and Channocks Farm, provide a sense of time depth to the landscape.
- Gilston Hall, which is set within fragmented parkland, creates a sense of time depth within the landscape.
- Small streams and brooks dissect the plateau to create narrow vegetated corridors.
- Avenues of trees provide an indication of the planned nature of this landscape.
- Where topography and vegetation permit, distant views across the Stort Valley and towards the woodland and farmland ridge to the south of Harlow are possible.
- Local landmarks form important features on the skyline in views southward, including the chimneys within the north-east of Harlow and taller buildings framed by vegetation. The spire of St Mary's Church forms a distinctive feature in shorter views.
- Scattered farmsteads contribute to the rural character of the landscape.
- A relatively tranquil landscape, however this is often detracted by the regular hum of planes landing at Stansted Airport.
- Fragmented or lost hedgerows have made way for intensified agricultural practices.

Positive features to retain
Views across the Stort Valley and towards Harlow. Particular note should be had for 'cherished views' (as noted in the Gilston Area Neighbourhood Plan).
Shelter belts of trees, planned avenues and hedgerows.
Veteran and mature trees, standing and fallen deadwood.
Woodland blocks, some of which are ancient.
The lake at Gilston Park.
Brooks and their vegetated corridors (Fiddler's Brook, Golden Brook and Gould's Brook).
Local views towards the spire of St Mary's Church, Gilston.
Historic banks and ditches, including holloways at Cock Robin Lane and between Fox Earths and Channocks Farm.
The rural and agricultural setting to existing settlements at Eastwick, Hunsdon, Gilston, High Wych and Pye Corner.
Adverse features to address
Large-scale arable fields with limited margins or gappy hedgerows.
Absence of positive management for veteran and avenue trees and lack of forward planning for succession.

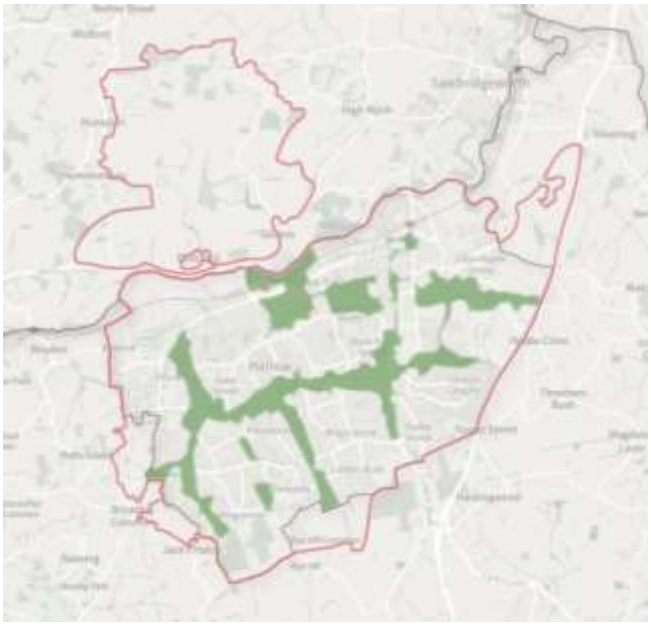
Landscape Zone-Specific GI Opportunities

- Reinstate and reconnect fragmented hedgerows, particularly along historic field boundaries. Introduce new hedgerow trees.
- Enhance public interpretation and engagement with the historic and ecological value of this landscape, including historic parkland features.
- Implement a veteran tree strategy to achieve the succession of mature trees, ensure appropriate replacement species are planted, plan for the cessation of individual veterans and retention of deadwood. Species choice should reflect the future pressures of climate change, yet also retain the native character of the landscape, for example, exploring cultivars.
- Create woodland management plans for existing and new woodland to ensure species, age and structural diversity, alongside climate and pest resilience, is delivered.
- Encourage the reversal of intense arable farming to regenerative practices or smaller-scale food growing within areas of former parkland, including orchards.
- Plant additional small woodlands along the edges of existing parklands to reinforce their character and screen new development where appropriate.
- Replicate parkland features within new development, including specimen trees, large ponds, boundary treatments such as estate railings and ha-has, as well as small woodland blocks interlinked by hedgerows to mirror the use of coverts and coppices within parklands.
- Enhance wildlife connections to Gilston lake.
- Explore possibilities for nature-based flood storage, utilising the existing brooks for water movement.
- Enhance the mosaic of habitats along tributaries to the River Stort, such as Fiddlers' Brook, Golden Brook, Gould's Brook, and extending out along ditches and wetlands where the water tables permits.
- Utilise the course of existing brooks as new Green Wedges which provide wildlife and active travel connections with Harlow New Town.
- Revitalise ancient holloways for the movement of people and wildlife using native vegetation such as spindle and hornbeam.
- Strengthen shelter belts of trees and vegetated buffers between infrastructure and main road corridors.
- Address potential conflicts between new development and heritage assets through green boundary treatments.

Veteran trees at Gilston Park

Green Wedges

Inset 6.7: Green Wedges Landscape Zone



Harlow's Green Wedge network largely follows the course of brooks and watercourses which dissect the town and form part of Gibberd's original vision, spatially separating and functionally connecting neighbourhoods. Encompassing strategic areas of woodland, riparian habitat, open space, recreation networks, agricultural land and sports facilities, the Green Wedges provide an important suite of ecosystem services, as well as helping to define the boundaries of distinct neighbourhoods.

Proposed Garden Town Growth

- The existing Green Wedge and Brook network adjoins the Latton Priory and Water Lane (West Sumners) strategic growth areas.
- Parts of the proposed new sustainable transport corridors will be focussed within the Green Wedge network.

Key characteristics

- A series of interconnecting green corridors which are largely publicly accessible.
- Commonly following the route of watercourses, including the Todd Brook, Canon's Brook, Parndon Brook and Newpond Spring, creating a mosaic of wet woodland, riparian habitats, broadleaved woodland and grassland.
- A diversity of experiences for users including enclosed and tranquil woodland walks which open up to large-scale fields adjacent to main roads.
- Occasional agricultural uses, including arable and pastoral fields which are smaller in scale to surrounding farmland and are commonly bounded by mature hedgerows or woodland.
- Providing opportunities for movement, including main roads and active travel links.
- Playing fields, sporting facilities and opportunities for leisure are commonly found across the network.
- Provide spatial separation between neighbourhoods.

Positive features to retain
Significant areas of publicly accessible greenspace.
Natural courses of a number of brooks with associated riparian habitats.
Large blocks of broadleaved woodland and linear woodland connections.
Small-scale agricultural functions which provide a rural setting to the town.
A diversity of recreation and active travel opportunities.
Direct connections from residential neighbourhoods into the Green Wedges.
The strategic scale of the Green Wedges.
Adverse features to address
Large swathes of amenity grassland which could host a greater diversity of wildlife-rich habitats.
Stretches of poorly managed or littered woodland and stream corridors.

Landscape Zone-Specific GI Opportunities

- Whilst retaining usability and public access, provide distinct routes for active access, exploring nature, and undisturbed habitats to accommodate a balance of spaces for wildlife, recreation and education. Ensure accessibility improvements provide access for all abilities and ages, where feasible.
- Extend Green Wedges into areas of new development (potentially connecting via Green Fingers) to provide for the movement of people and wildlife. Where new Green Wedges are proposed, they must be of sufficient scale to create a sense of connecting to the countryside. They should also be multi-functional, providing for nature,

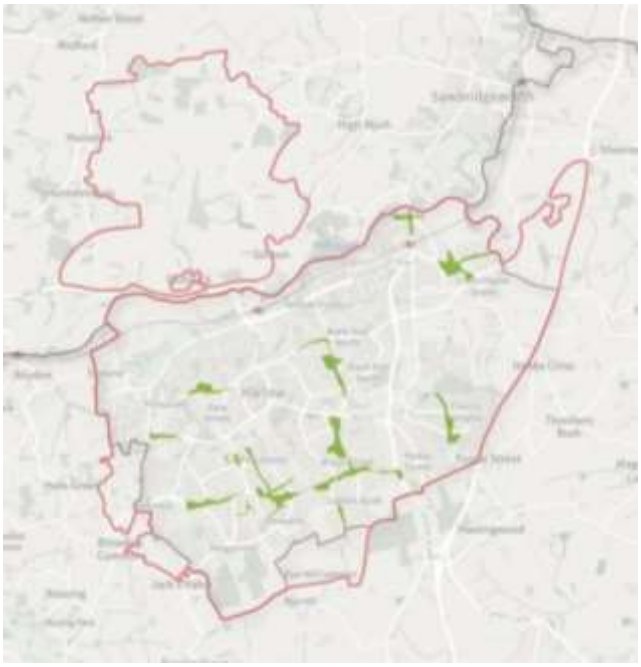
recreation, movement, nature-based solutions and food production, whilst being sensitive to the landscape setting they provide for settlement.

- Form strategic links between Harlow's Green Wedges and the wider countryside to encourage rural recreation and active lifestyles without the need for personal vehicles.
- Identify areas where woodland boundaries can be naturalised to create a more scalloped shape with a more distinct hierarchy and woodland edge habitat.
- Explore opportunities for diversifying habitats across the network, particularly where large swathes of amenity grassland exist. This could include areas of meadow, wetlands, wet woodland, hedgerows and broadleaved woodland.
- Explore opportunities for nature-based solutions to flooding, carbon sequestration, and health and wellbeing within, adjoining or as near-neighbours to the network.
- Identify locations for community growing, market gardens and orchards, working in partnership with local health practices to deliver social prescribing and enhance community cohesion.
- Integrate community participation in the planning, co-design and management of Green Wedges through stewardship and master planning.
- Improve wayfinding and legibility through the network, advertising distances and time taken to travel to key locations across Harlow. Enhanced natural surveillance in places could be used to improve perceptions of safety.
- Ensure the scale of Green Wedges are retained and not eroded by piecemeal development. The spatial separation role of the Green Wedges between distinct neighbourhoods is fundamental to Gibberd's original vision and must be preserved.
- Control invasive species using a coordinated approach along the main river and tributaries.

The Todd Brook as it passes through woodland

Green Fingers

Inset 6.8: Green Fingers Landscape Zone



Harlow's Green Fingers are smaller in scale to the Green Wedges and provide local links between greenspaces, play areas, neighbourhood centres and amenities. They can also act as connecting features between Green Wedges. Green Fingers dissect areas of townscape but do not necessarily provide a green gap between neighbourhoods.

Proposed Garden Town Growth

- Four housing allocations lie in close proximity to the Green Fingers of Harlow New Town. New connection to Water Lane is also under consideration within the emerging West Sumners masterplan [client to confirm this sentence can be included].
- Local walking, cycling and bridleway routes, connecting beyond the STC extend to and through the Green Finger network.

Key characteristics

- Small, linear open spaces which link areas of local greenspace, parks and play areas with neighbourhoods and local centres.
- Often urban in character due to the proximity of built form and infrastructure. Frequently overlooked by residential development.
- Provide opportunities for connections to the wider countryside, via Green Wedges.
- Characterised by areas of open amenity grassland bounded by shelter belts of trees.
- Commonly cater for the movement of people by foot or bike, occasionally hosting main roads, for example the A1169.
- Focussed on the movement of people as opposed to wildlife.

Positive features to retain
Segregated active travel corridors.
Connections to the Green Wedge network and the wider countryside.
Natural surveillance.
Opportunities for local and doorstep play.
Vistas towards Green Wedges and open countryside.
Adverse features to address
Limited opportunities for wildlife in places due to extended stretches of close-mown grass.

Landscape Zone-Specific GI Opportunities

- Vistas towards Green Wedges and open countryside should be retained along the Green Fingers network.
- Improve wayfinding and legibility through the Green Fingers network, advertising distances and time taken to travel to key locations across Harlow. This should be coupled with improved provisions for cycle parking at amenities and local centres to encourage active travel and deliver on the sustainable neighbourhood agenda.
- Integrate community participation in the planning, co-design and management of Green Fingers through stewardship and master planning.
- Promote activities for health and wellbeing within the Green Fingers network, including fitness trails, outdoor gym equipment, community gardens and areas for quiet reflection and relaxation. Promote the network alongside wider trails for public art.
- Provide doorstep play opportunities through the implementation of regular natural and incidental play features across the network, for example climbing boulders, balancing logs and stepping stones.
- Create corridors for the movement of wildlife between open countryside, Green Wedges and proposed Harlow

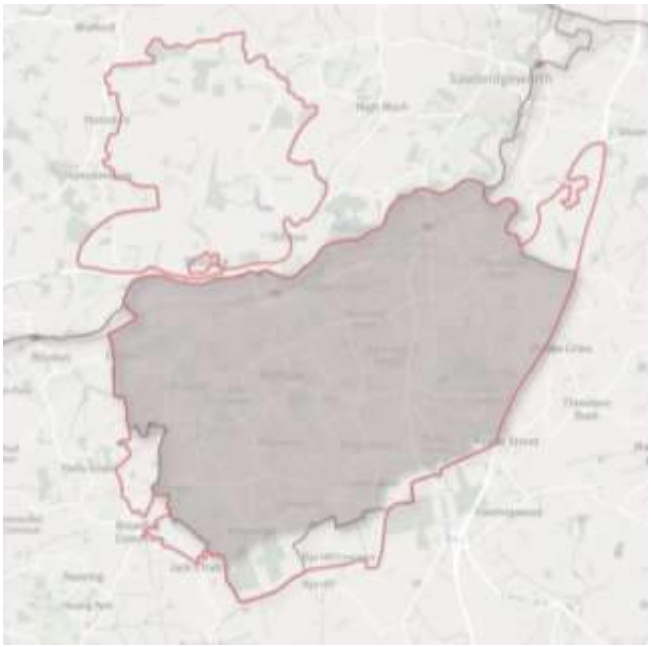
Urban Forest. This could include linear strips of meadows or relaxed mowing regimes, alongside tree and hedgerow planting.

- Create small-scale habitat improvements, such as leaf litter piles, bird and bat boxes, insect hotels, deadwood and small areas of undisturbed land. This should be coupled with education boards and opportunities for sensitive interactions with nature.

Linking Harlow Town Park with Harlow Town Centre

Harlow New Town

Inset 6.9: Harlow New Town Landscape Zone



Harlow New Town landscape zone encompasses the present extents of the town and follows the current district boundary. This includes Gibberd's original 'New Town' alongside subsequent infill and growth. The zone is largely bounded by the River Stort to the north, the wooded and farmland ridge to the south, the M11 to the south-east, and agricultural fields and glasshouses which separate the town from Halls Green and Broadley Common to the west.

Proposed Garden Town Growth

- Harlow Local Plan housing allocations;
- Stort Crossings – central and eastern;
- Sustainable transport corridors, plus local walking and cycling routes.

Key characteristics

- A blend of residential neighbourhoods, commercial space, neighbourhood centres, hatches and industrial areas.
- The townscape is dissected by green corridors (wedges and fingers) of open space, streams, woodland and grass-lined transport corridors.
- Neighbourhoods are generally discrete, separated by the green corridors, and exhibit a varying vernacular.
- Commercial and industrial areas are isolated from residential areas.
- Remnants of Old Harlow and other merged villages are present in the incorporate of historic buildings into the townscape, for example Parndon Hall and the churches at Churchgate Street and Old Harlow.

Positive features to retain
Historic buildings and streets from former villages.
Relationship to the Green Wedges and Green Fingers network.
Walkability to neighbourhood and local centres.
The use of public art as defining features within greenspaces and green corridors.
Adverse features to address
Vehicle-dominated transport corridors and disconnections in the cycle / walking network.
Large swathes of close-mown grassland along transport corridors and within open spaces – New Town character but poor wildlife value and high maintenance costs.
Sometimes under-used and unwelcoming public realm including underpasses and walking / cycling connections.
There is a need to green the town centre.

Landscape zone specific GI opportunities

Gibberd's original overarching principles for the town should be reinforced through GI delivery in new infill development and retrofitting / enhancement within the existing urban form of Harlow New Town. These principles include:

- **Compact development**
  Gibberd's principle of compact development should be adopted across all new development sites to ensure sufficient space is created for public realm, nature and open space.
- **Integrating natural and historic environments**
  Any infill development should be formed around natural features to enhance access to nature, allow for the movement of wildlife, and to create a landscape setting. Further incorporation of heritage assets also helps in fostering a sense of place.

- **Role of Green Wedges**
  Access to Harlow's Green Wedge network should be delivered from all new development and enhanced from existing neighbourhoods. The role of Green Wedges in delivering nature-based solutions, for example to flooding and carbon sequestration should be explored.
- **Circulation**
  GI, including trees, hedging, raised planters, SuDS and urban greening features, should be utilised to indicate street hierarchy and aid legibility, whilst promoting streets as places for the movement of people and cyclists. These interventions should be installed within any new development, as well as retrofitted into Harlow's existing townscape, as is proposed for the Harlow Urban Forest.
- **Role and form of neighbourhood centres**
  Walkable neighbourhoods should be achieved through the delivery of attractive and functional neighbourhood centres which are served by safe and accessible walking and cycling routes. GI and public realm enhancements should be used to encourage investment in neighbourhood centres. These centres should ideally be within a walking distance from homes (approximately 800m or a 10-minute walk), which will also discourage the use of private vehicles.
- **Role and form of hatches**
  Sub-neighbourhood areas, or 'hatches', should cater for daily needs within a 5-minute walk (approximately 400m), effectively creating permeability through the urban fabric. Retrofitting active travel networks and urban greening into the existing townscape, or delivering new sub-neighbourhood centres within new development, should be aspired to.
- **Housing quality**
  Trees, boundary treatments and private gardens, and their role in the setting of development, should be considered when designing layouts for infill development sites.
- **Well-defined urban spaces**
  GI should be used as a tool in creating more welcoming and attractive public realm. All streets should take advantage of opportunities for GI to add character and provide air quality and drainage benefits. However, the impact that un-managed or overly-screening vegetation can have on perceptions of safety should also be considered. Appropriate planting and tree choices should reflect the context and climatic conditions.
- **Public art**
  Public art should be integrated into new open spaces, active travels routes, gateways and public realm, helping to enhance the quality of place.

The Water Gardens

Chapter 7

Addressing the Triple Challenge

Chapter 7
Addressing the Triple Challenge

The Framework delivers strategic functions whilst reflecting local need and character. Local need and character are identified through the analysis of baseline data grouped under three broad headings:- nature recovery, climate change mitigation and health and wellbeing. For each, high level opportunities for the GI Framework are identified.

7.1 This chapter considers how the triple challenge of nature recovery, climate change mitigation and health and wellbeing will be addressed through the HGGT GI Framework. Relevant existing strategies, initiatives and projects are collated from the work progressed / progressing across the five partner councils. High level baseline analysis is first described at the Garden Town-wide scale. Further detail on the priorities for each Landscape Zone is then set out in Appendix H.

Inset 7.1: Meeting the triple challenge through GI

7.2 For each aspect of the baseline presented, high level opportunities for the GI network are considered in turn. A summary of opportunities to address each challenge is provided at the end of each section. Together with the landscape context baseline (Chapter 6), these inform the priorities for the GI principles (Chapter 9) and strategic opportunities subsequently identified (Chapter 11).

7.3 It is recognised that the contributing baseline datasets are of varying age and resolution. The most relevant are included with anticipated update or new publications signposted for consideration in future review/s of the Framework.

HGGT-wide Context

7.4 Collectively, the GI network should be biodiverse, climate resilient and support the health and wellbeing of the local community. It is however recognised that component GI assets within the network will deliver these functions to differing extent, reflecting local character and need.

Nature Recovery

Relevant Targets for Nature Recovery

7.7 This section summarises the existing targets that drive local nature conservation action, and inform policy decision making, at the county level.

7.8 Hertfordshire's State of Nature Report found that, of the Hertfordshire Species of Conservation Concern assessed, 20% are extinct or threatened in a Hertfordshire context. The county council's 2020 Sustainable Hertfordshire Strategy Action Plan sets out targets as listed at right. Complementary targets of the Wildlife Trust are also given.

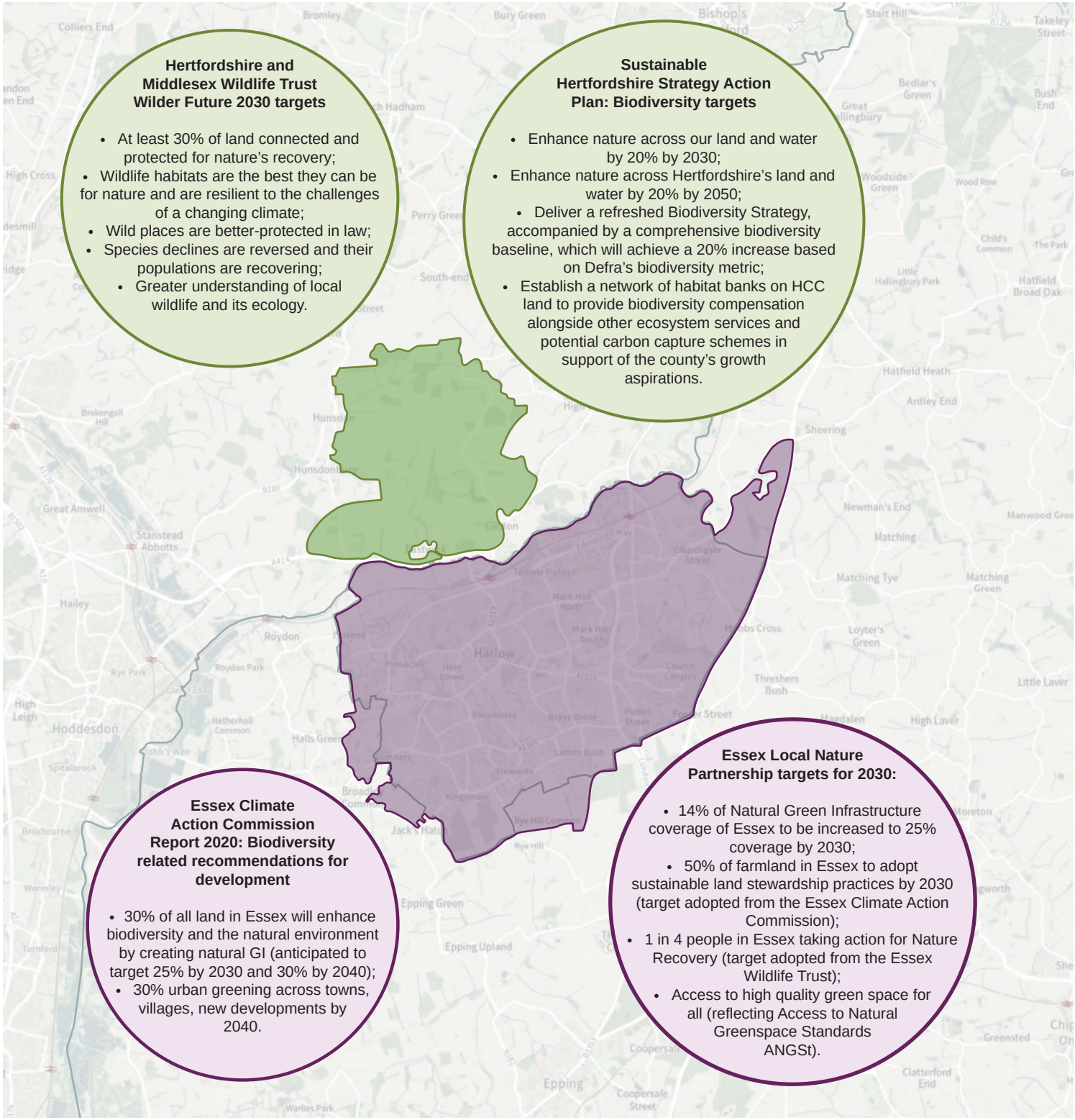
7.9 To address the target for greater understanding, comprehensive mapping of the biodiversity baseline across Hertfordshire has been completed by the county council. This will augment the 2014 Hertfordshire ecological network mapping, which produced a county-wide habitat inventory and potential habitat network maps. These are expected to underpin the future LNRS and should be incorporated into the GI Framework during the next review period.

7.10 Essex County Council helped to coordinate the Local Nature Partnership. Four targets have been set to achieve by 2030.

7.11 The Wilder Essex Map, led by Essex Wildlife Trust and the RSPB, remains in draft form but is anticipated to inform the future LNRS[37].

7.12 The Essex Climate Action Commission Report 2020 'Net-Zero: Making Essex Carbon Neutral' recognises the importance of biodiversity alongside other GI functions. Recommendations for natural GI and urban greening in relation to developments are given.

[37] At the time of consultation in June 2022 to inform the Framework, the 2021 draft map is undergoing review by the Focus Group.



Guiding Principles for a Nature Recovery Network

7.10 The key principles of a thriving nature network that stem from Lawton (2010)[30] and Natural England's Nature Network guidance (2020) will be reflected in the GI Framework. These are summarised as follows:

- **Expanded** – increase in the number, area and, where appropriate, buffering of assets.
- **Well-connected** – allowing dispersal of flora and fauna to respond to seasonal and climatic change, allowing permeability through highly modified landscape such as urban or intensive agriculture. Connectivity may be direct connection or via stepping stone habitats.
- **Optimal complexity** – habitat mosaic/s that support a diversity of locally-appropriate habitats, that reduce fragmentation (by built development, disturbance, intensive management, etc), accommodate restoration of ecosystems, successfully support rare and locally representative species as well as those 'common and widespread'.
- **Management** – to ensure long-term ecological continuity to protect soils and the thriving ecosystems they support.

7.11 Management of the network is essential to ensure habitats are able to fulfil multiple GI functions, whilst maintaining rich biodiversity. Stewardship established through local bodies, in consultation with the partner councils, land owners/promoters and the local community can deliver long-term management which is informed by technical expertise, responsive to local changes in need and cultivates community participation.

Designated Sites: Core of the Nature Network

7.12 Local biodiversity assets are integral to the character of the Garden Town. They contribute to national nature recovery and in turn form part of our response to the global biodiversity emergency.

7.13 Nature recovery networks are built around core sites of high nature conservation value. These are usually designated to conserve nationally and locally important habitats and species. Figure 7.1 illustrates the designated site network across HGGT and the surrounding 2km, as well as ancient woodland[31] and veteran and ancient trees.

7.14 Priorities for action within the designated network are described as 'critical threshold sites'. Chapter 4 provides the legal and policy context of critical threshold sites and, therein, Figure 4.1 maps the extent of relevant Zone of Influence across the Garden Town. Recognising the need for the GI network to address recreational pressure on critical threshold sites, the next subheading specifically considers the balance of access types within greenspaces, before local conservation priorities are then explored.

Accommodating Different GI Needs Through Different Access Types

7.15 The critical threshold sites exemplify the need to balance different functions of greenspaces, particularly functions for biodiversity and recreational access. The GI network as a whole must accommodate accessible greenspace but, therein, some areas will necessarily be left undisturbed e.g. for successful nesting, burrowing, foraging. To accommodate different functions within the GI network, three types of access are proposed for the planning and management of GI assets. The weighting for each at one location or asset will reflect local need and priorities.

Three access types:

Active Access – for bicycles, push chairs, wheelchairs on even surface routes.

Exploring Nature – uneven chipping, dead wood stepping stones, etc, creating a sense of 'wild' and play and tying into health & wellbeing.

Undisturbed Areas – structurally complex areas for bird to nest and mammals to burrow. Speaks to the 'messiness' of habitats described in Natural England's Nature Network guidance [3233].

[30] Lawton, J. (2010) Making Space for Nature: The Lawton Report
[31] Update to the ancient woodland inventory (AWI) by Natural England is in progress, with the objective to capture habitat parcels smaller than 2ha and facilitate greater sensitivity to monitoring change over time. Following pilots in 2021, publication of the updated AWI is anticipated in 2024. This will be included in future review/s of the Framework.

[32] Crick *et al* (2020) Nature Networks Evidence Handbook, Natural England NERR081. Available: http://publications.naturalengland.org.uk/publication/6105140258144256
[33] Crick *et al* (2020) Nature Networks Evidence Handbook, Natural England NERR081. Available: http://publications.naturalengland.org.uk/publication/6105140258144256

Inset 7.2: Three access types

Inset 7.3: Canopy and scrub areas providing undisturbed habitat around recreation and active travel routes through the Stort Valley

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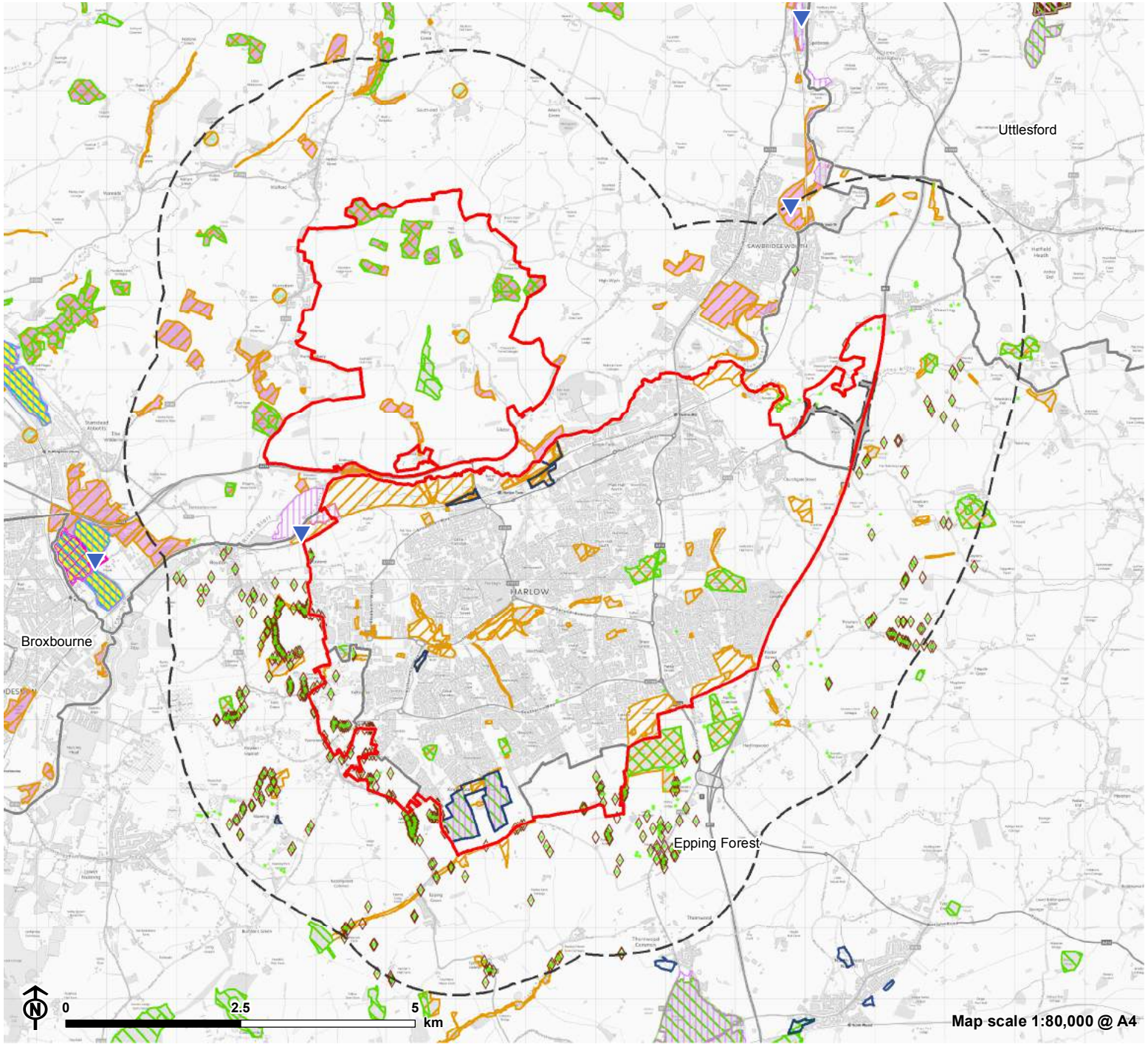
Figure 7.1: Protected and Notable Nature Conservation Features



- Boundary of influence (BOI)
- Study area
- J7a and link road: indicative outline*
- Local authority boundary

Designated Wildlife Sites

- Ramsar
- Special Protection Area
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Local Nature Reserve (LNR)
- Local Wildlife Site (LWS) Essex
- Wildlife Heritage Site (WHS) Hertfordshire: Actual
- Wildlife Heritage Site (WHS) Hertfordshire: Nominal

Other Nature Conservation Sites

- Wildlife trust site
- RSPB reserve

Ancient Woodland and Trees

- Ancient woodland
- Veteran tree (Essex)
- Ancient tree (Essex)

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:XX EB:Scobie_G LUC 11904_FIG7_1_r1_NatureConservationFeatures_A4L 08/12/2022
Source: OS, LUC, HDC, NE, HCC, EFDC, RSPB

Local Conservation Priorities: Soils, Habitats and Species

7.16 This section summarises the local conservation priorities as identified as local targets (see earlier subheading), in the national priority habitat inventory, in local Biodiversity Action Plans (BAP) and other related publications. For each aspect of the baseline described, high level opportunities for protection and promotion within the GI Framework are considered. A summary is provided at the end of the section.

7.17 Reflecting the Nature Networks Evidence Handbook (Natural England, 2020) consideration is first given to the underlying geology. The underlying geology across the majority of HGGT is 'clay, silt, sand and gravel', with a linear intrusion of chalk in the east, broadly following the Stort (see Chapter 6, Inset 6.1). Clay soils provide opportunity for wetland habitat creation and expansion across the higher plateau as well as buffering existing important and sensitive wetland sites along the lower lying Stort Valley, such as Hudson Mead SSSI.

7.18 The River Stort is characterised as a chalk stream; Hertfordshire is home to 10% of all global chalk streams. Aims of the Catchment Management Plan[34] focus on water quantity and quality sufficient to maintain the habitats and species of a healthy ecosystem, and to increase people's awareness, appreciation, education and involvement. Consultation with the Environment Agency emphasise the priority for 'functional restoration'. Recreating dynamic interconnections between the river and the floodplain and restoring ecosystem processes that create a truly heterogenous and dynamic habitat are priorities for nature recovery.

7.19 Associated fen (marsh) habitats are fed by alkaline water from the underlying chalk. Fens make significant contributions to the reduction of nitrogen and slowing surface water run-off. However little habitat remains along the reaches of the Stort through Harlow and Gilston, with the remaining mapped habitat being adjacent to development at Terlings Park and upstream near Sawbridgeworth (Figure 7.2). Chalk stream restoration can consider coupling with landscape-scale fen restoration along the spring line, for example, through blocking of drains in conjunction with restoring natural aquifer flows.

7.20 'Irreplaceable habitats' are described in NPPF as "*Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity".* Irreplaceable habitats of the Garden Town include ancient woodland, chalk streams and lowland fen. Depending on the size, quality, etc of habitat, flood plain grazing marsh, lowland meadows and lowland heath may also be accurately included.

7.21 It is recognised that woodland across the Garden Town, and wider counties is an important habitat, including those types beyond the 'priority' categories. In general terms the value of woodland for wildlife is limited by a general lack of management. Implementation of positive management, particularly across areas supporting a mosaic of woodland types, and those within country park or accessible greenspace exemplifies how all nature network principles – expansion, well-connected, optimal complexity – can be successfully met.

7.22 Figure 7.2 illustrates all priority[35] and notable habitats together with Natural England's habitat network zones of restoration, enhancement and fragmentation action. These underpin national nature network planning and future LNRS, hence; are fundamental considerations to a GI network delivering nature recovery across authority boundaries. These are explored further for each landscape zone in Appendix H.

7.23 Key biodiversity areas identified in the Hertfordshire Biodiversity Action Plan (BAP) are also layered within Figure 7.2. These three areas – the River Ash (recognised for woodlands and wetlands), the River Stort (grasslands and wetlands) and the Lea Valley (wetlands) – not only represent priority areas for conserving the existing biodiversity resource, but also provide principal opportunities for maintaining and creating large areas of high quality habitat.

[34] River Stort Catchment Management Plan, available: http://www.riverleacatchment.org.uk/index.php/river-stort-cmp/river-stort-projects

[35] Update to the priority habitat inventory (PHI) by Natural England is in progress, with the objective to issue annual or six-monthly cycle updates, thereby more accurately monitoring change over time. In addition, mapping of hedgerows and trees outside of woodland is being led by Forestry Research. Future updates to these national habitat datasets will be included in future review/s of the Framework.

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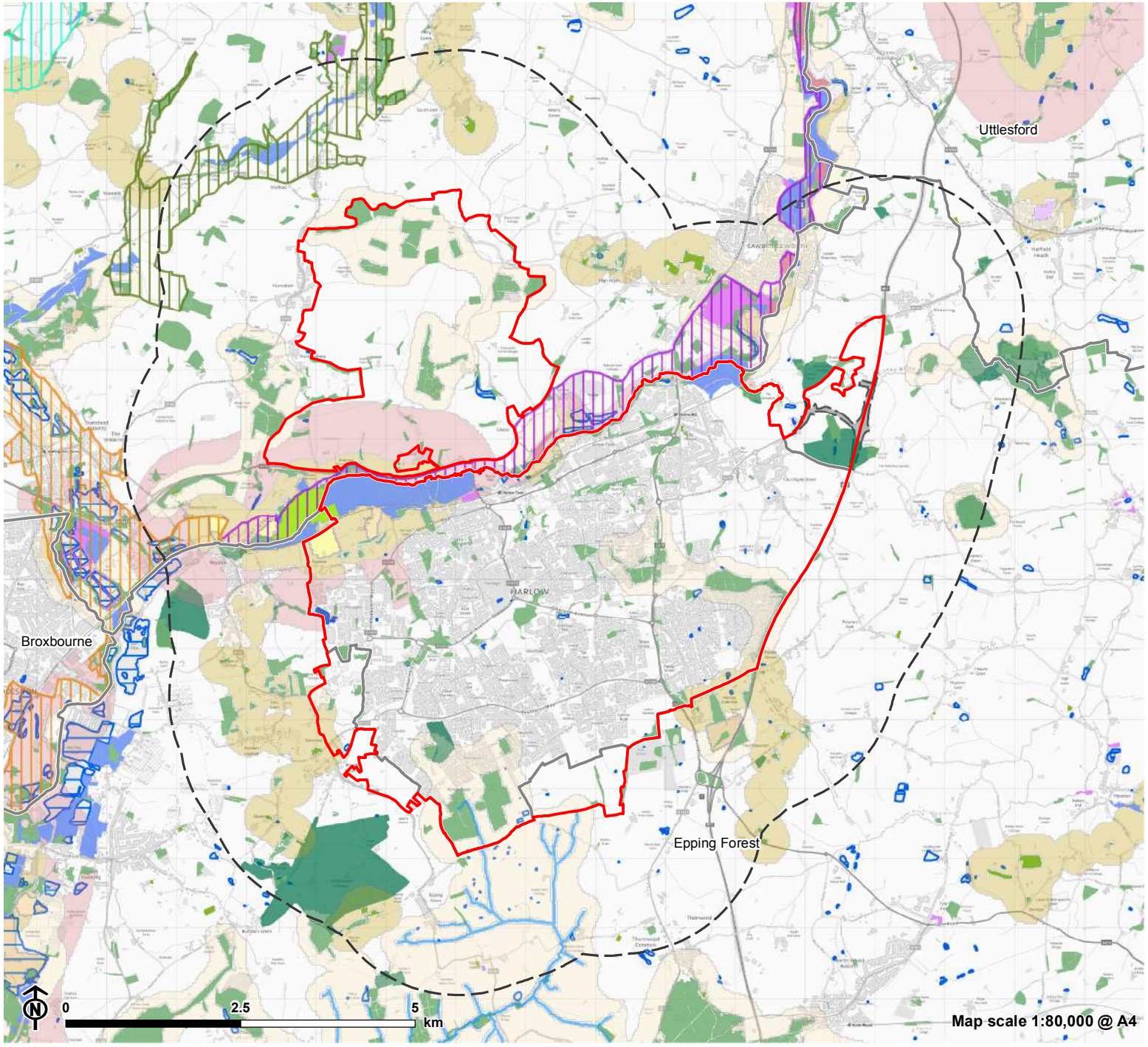
Figure 7.2: Priority Habitat Network



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary
Wood pasture and parkland (Essex)
Wet woodland (Essex)
Open water
Priority river habitat

Hertfordshire Key Biodiversity Area

13: River Ash
14: Stort Valley
15: Lea Valley
16: Rib Valley

National Priority Habitat Type

Coastal and floodplain grazing marsh
Deciduous woodland
Good quality semi-improved grassland
Lowland fens
Reedbeds
Lowland heathland
Lowland meadows
Traditional orchard

National Habitat Network Class

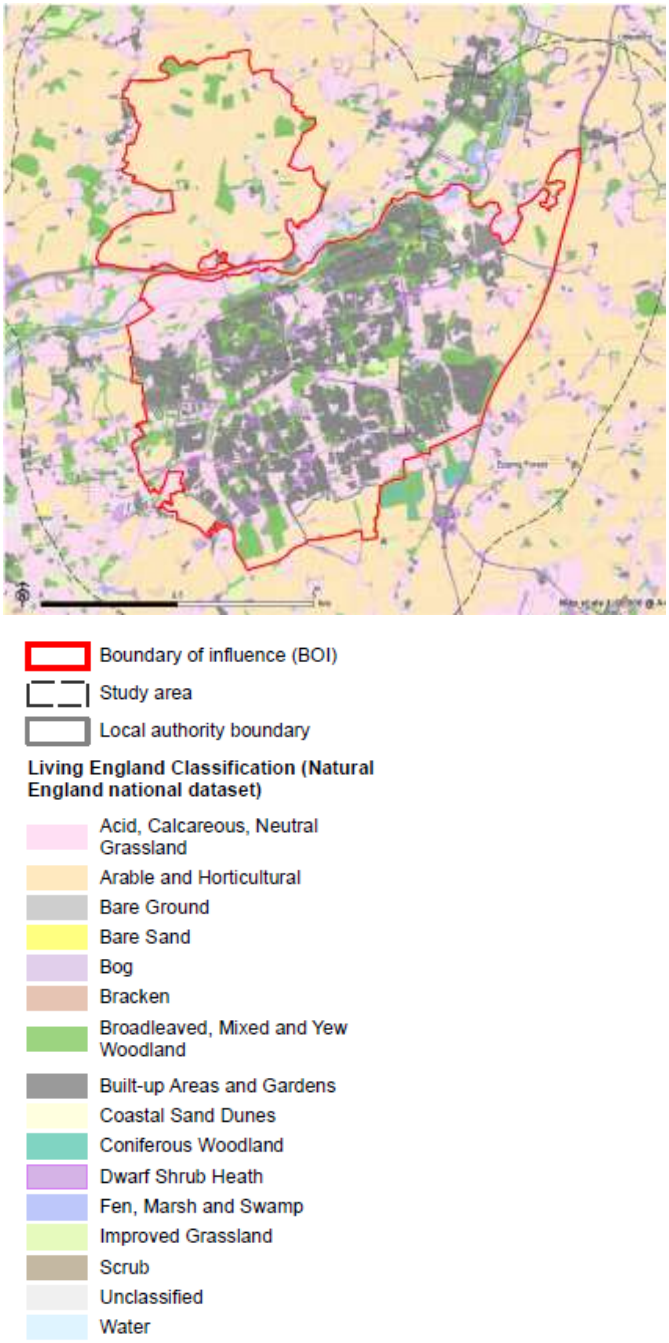
Habitat Restoration-Creation
Restorable Habitat
Fragmentation Action Zone
Network Enhancement Zone 1
Network Enhancement Zone 2
Network Expansion Zone

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG7_2_r1_PriorityHabitatNetwork_A4L 08/12/2022
Source: OS, LUC, HDC, NE, HCC, EFDC, OSM

7.24 Inset 7.4 shows the Living England Habitat Mapping for the Garden Town. This dataset provides full national coverage through remote sensing to inform future nature network mapping[36] so is anticipated to hold greater weight in future review/s of the Framework. In contrast to priority habitat mapping it does not so clearly distinguish between the wetland-grassland mosaic habitats through the Stort Valley, instead mapping as the 'Acid, Calcareous, Neutral Grassland' habitat type. Similarly, much of the Green Wedges and fingers around Harlow Town centre, including Harlow Town Park, are mapped as this natural grassland class rather than improved grassland as the 2022 field visits revealed. There is a need to enhance the intervening greenspaces of Harlow New Town, to increase structural complexity, 'messiness'[37] and species diversity.

Inset 7.4: Extract of 2022 Living England Mapping



[36] Update by Natural England to standardise the methodology and improve change detection of Living England mapping are anticipated in 2023/2024 and will be included in future review/s of the Framework.ll be

[37] As described by Natural England; see Appendix A: Glossary.

7.25 Local conservation priorities for action across both counties are recognised as Biodiversity Action Plan (BAP) habitats and species, as summarised in Table 7.1. Whilst the Framework focuses on habitat rather than species data, the requirements of these species is used to inform local need for an expanded, well-connected habitat network.

Table 7.1: Priority habitats and species in HGGT

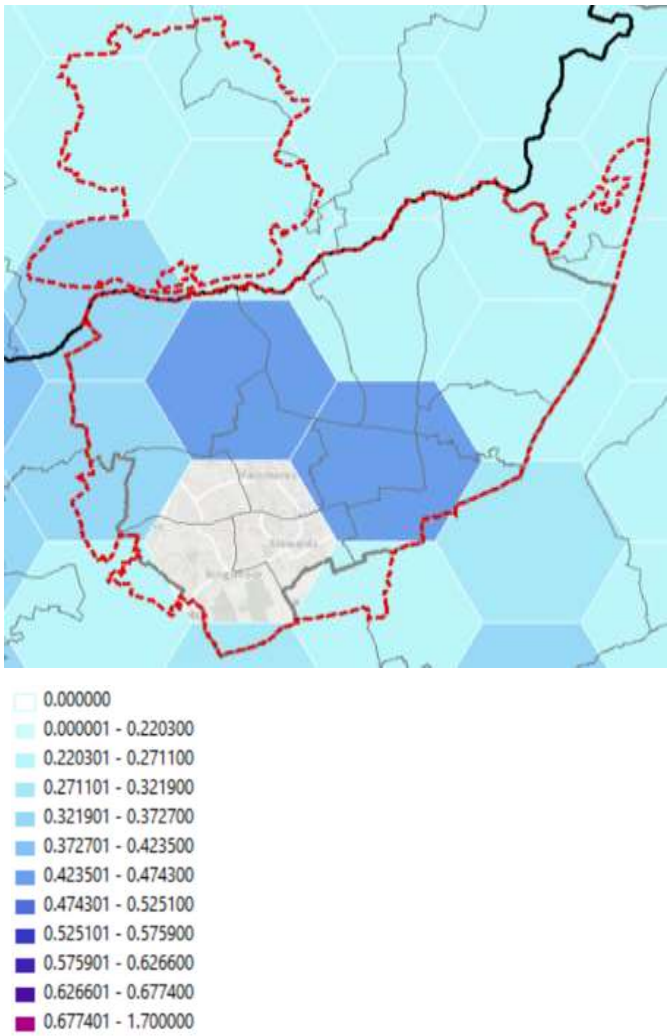
Priority habitat or species	Essex BAP	Hertfordshire BAP
Habitats		
Ancient and/or species rich hedgerows and green lanes	✓	
Reedbed	✓	✓
Urban areas	✓	✓
Wet woodland		✓
Neutral grassland		✓
Species		
Water voles	✓	✓
Otter	✓	✓
Bittern	✓	✓
Stag beetle	✓	✓
Black popular	✓	

Condition of Existing Assets

7.26 The most recent assessment by Hertfordshire and Middlesex Wildlife Trust[38] found that only 30% of Hertfordshire's LWS are in positive conservation management that is relevant to their features of interests. A survey of Essex LWS was not readily available at the time of writing. LWS require management to maintain good habitat condition. Without this their ability to provide vital buffering and habitat connectivity between the statutory designated site network is compromised.

7.27 The entire area of the Garden Town is listed as a Nitrate Vulnerable Zone i.e. at risk of agricultural nitrate pollution. Inset 7.5 shows mean estimates of total nitrogen concentration in topsoil. Areas in darker blue, with greater percentages of nitrogen concentration, may cause greater impacts on water quality if nitrogen leaches from soils. This can result from poor land management practices and is exacerbated by climate change. In these areas, maintaining buffer strips between watercourses and cropped land will be even more important. Along with soil organic carbon, nitrogen plays a key role in the processes of soil formation. Maintaining cover crops that fix nitrogen or stabilise the soil through their root systems are essential to lock nutrients into the ground.

Inset 7.5: Soil Nitrogen (source: Natural England Natural Capital Atlas, Hertfordshire)

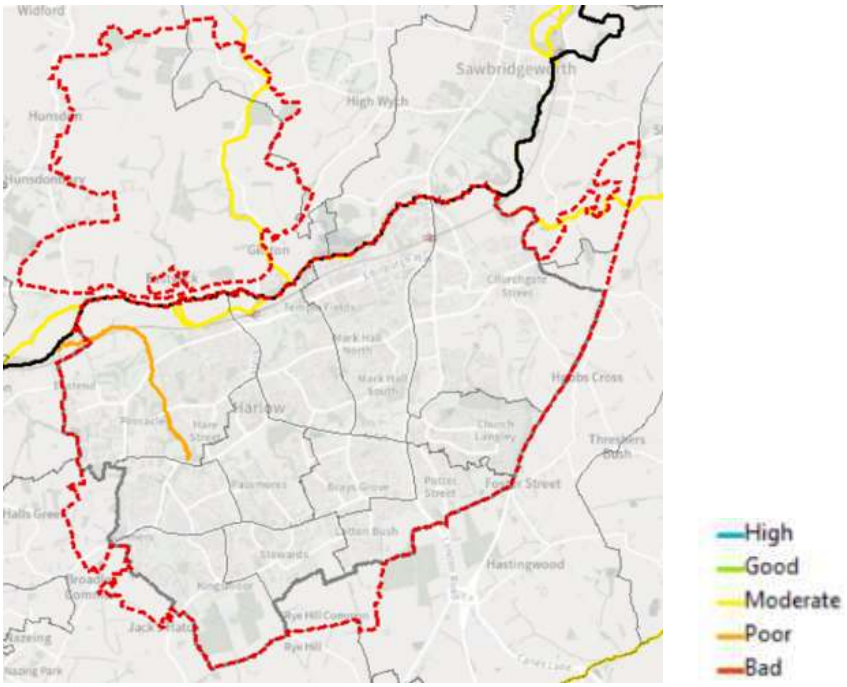


7.28 Water quality is one of the four priority areas of the 2021 Environment Act and one of the four aims of the River Stort Catchment Management Plan. The Stort Navigation and Fiddler's Brook are classified as moderate ecological quality under the Water Framework Directive (WFD) (see Inset 7.6). In contrast, Cannon's Brook and its catchment, which covers the west and south of Harlow town including Water Lane and

[38] https://www.hertswildlifetrust.org.uk/working-wider-countryside

Latton Priory, is in poor ecological condition due to diffuse pollution from urban and transport and agricultural run-off.

Inset 7.6: WFD Overall Status (source: Natural England Hertfordshire Natural Capital Atlas)



Summary of HGGT-wide GI Opportunities for Nature Recovery

- Planning and management of the GI network in accordance with the key principles of a thriving nature network developed from Lawton (2010) and Natural England (2020 i.e. a network that is expanded, well-connected, of optimal complexity, protected / managed.
- Long-term management of assets across the network which is informed by technical expertise, responsive to local changes in need and cultivates community participation, for example, through engagement with stewardship bodies.
- Balance recreation and biodiversity by ensuring provision of 'active access', 'exploring nature' and 'undisturbed areas', reflecting local pressures and needs. Priorities for 'undisturbed areas' are open habitats through the Stort Valley, open habitats within productive farmland and closed and structurally complex habitats within woodland and scrub. All PROW brought to a high standard, including natural buffering within the landscape so as to discourage deviation.
- Recognise the sensitivity of the Stort as an internationally important chalk stream. Dilute recreational pressure through creation of new destination greenspace and address underlying causes of unfavourable water quality through creation and restoration of riparian buffer strips and reedbeds as well as promoting sustainable land management techniques.
- Bring the local designated site network into positive conservation management to ensure bigger and better habitats, particularly for ancient woodland, wetland-grassland mosaics, parkland and grasslands on common land.
- Positive management planning for woodland habitats to enhance condition and connectivity.
- Diversify habitat mosaics within the network of Green Wedges and Green Fingers to strengthen corridors for species dispersal through the urban and agricultural matrix.
- Ensure habitat creation or restoration responds to local variability in soils, topography and landscape.

Opportunities for each Landscape Zone are explored in Appendix H.

Climate Change Mitigation

7.29 This section sets out relevant targets for climate action, which tie to both GI and, inherently, to nature recovery. Analysis of the baseline in relation to key targets is then described under the subsequent subheadings.

Relevant Targets for Climate Action

7.30 Hertfordshire, Epping Forest and Harlow councils have all declared a climate emergency and therefore state publicly their commitment to take action to address this. All HGGT partner councils have set targets to be carbon neutral across their operations 2030.

7.31 Climate commitments from Hertfordshire and Essex County Councils that relate to GI are summarised below. These inform the local priorities for GI to mitigate climate change. Those relating to carbon, water and temperature regulation are addressed within this section. Whilst active and sustainable travel is inherently linked to carbon, for the purposes of this Framework, these are addressed under 'Health and Wellbeing'.

Climate action targets for Essex[39]

- All farmland to adopt sustainable land stewardship practices;
- 30% of land cover to be managed as 'Natural Green Infrastructure';
- 30% of urban areas under Natural Green Infrastructure;
- Native tree cover to double (approx. 5-10% cover);
- Every Parish to have a Biodiversity Action Plan;
- Every Parish to have a climate emergency strategy.

Hertfordshire County Council climate commitments[40]

- Become a net zero greenhouse gas county by 2050;
- Deliver a culture of sustainable transport usage in Hertfordshire, establishing active travel networks, increased usage of public transport and widespread behavioural change;
- Specifying that all new investments to be ready, or easily adaptable to future climates;
- Develop a Countywide Risk assessment and adaptation plan.

Carbon Storage in Healthy Ecosystems

7.32 Healthy ecosystems store a significant amount of carbon in soils, sediments and vegetation. The largest carbon sequestration rates amongst semi-natural habitats are in woodlands with the right combination of soil type and tree species[41]. As the destruction and degradation of natural habitats has resulted in the direct loss of carbon stored within, restoration of habitats and natural processes is a priority to halt and reverse this. Expansion of woodlands as part of the GI network includes natural regeneration as well as targeted planting. Together with the woodland network, hedgerows, orchards and other trees store carbon and contribute to the Essex target for a doubling of native tree cover across the county.

7.33 Soil organic matter (SOM) improves soil structure, reduces erosion, and improves soil quality through increased retention of water and nutrients. Once soil structure is lost, its ability to deliver ecosystem service functions is reduced and difficult to restore and, in the long-term, could cause significant losses of carbon. Certain habitat types are associated with greater densities of soil carbon. Figure 7.3 illustrates where carbon density is the highest.

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[39] https://assets.ctfassets.net/knkzaf64jx5x/3dW3CnB3EpMAgTXeqXGTuh/b76471e8b4b49ac2488ca7e67832df81/Climate-Action-Annex-Land-Use-and-Green-Infrastructure.pdf

[40] https://data.climateemergency.uk/media/data/plans/hertfordshire-county-council-2447da2.pdf

[41] Gregg, R. et al (2021) Carbon Storage and Sequestration by Habitat, Natural England NERR094. Available: http://publications.naturalengland.org.uk/publication/5419124441481216

7.34 Opportunities to enhance soil health, e.g. through regenerative farming, will consider scale as well as existing carbon density. The scale of open land at Gilston surrounding and across the country parks offers a significant resource to contribute to climate change resilience. As part of recovering/healthy ecosystems, opportunities for carbon sequestration can be layered with other environmental gains to secure associated funding through fiscal credits whilst achieving local food production.

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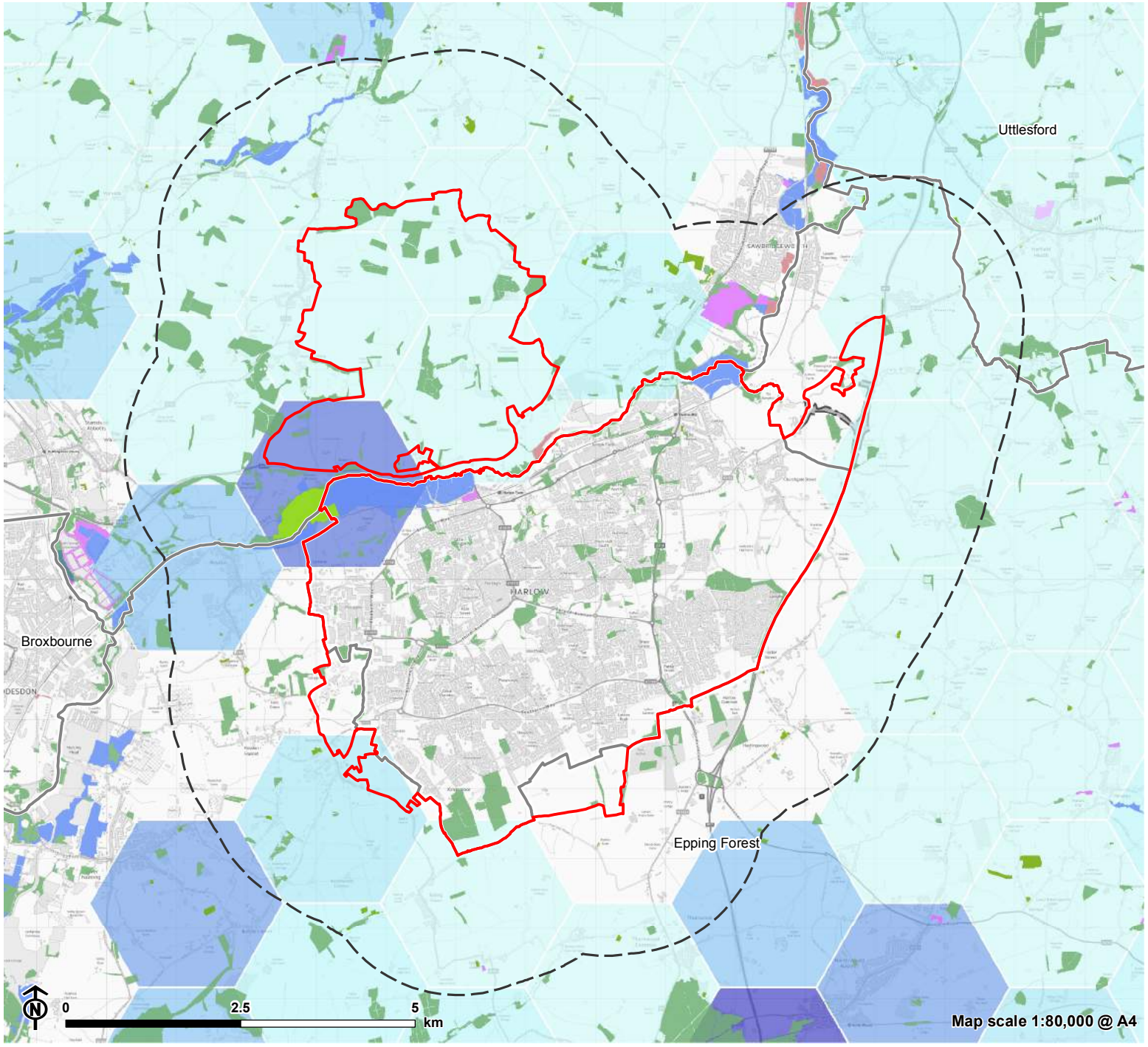
Figure 7.3: Soil Carbon



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary

Soil Carbon: Carbon density (tonnes per hectare)

0.01 - 48.55
48.56 - 51.46
51.47 - 54.37
54.38 - 57.27
57.28 - 60.18
60.19 - 63.09
63.10 - 66.00
66.01 - 68.91

National Priority Habitat Type

Coastal and floodplain grazing marsh
Deciduous woodland
Good quality semi-improved grassland
Lowland fens
Reedbeds
Lowland heathland
Lowland meadows
Traditional orchard

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG7_3_r1_SoilCarbon_A4L 08/12/2022
Source: OS, HDC, NE, EFDC

7.35 Much of the land surrounding Harlow New Town and within Gilston is arable. The Committee on Climate Change recommend that around one-fifth of agricultural land will need to be released before 2050 for actions that reduce emissions and sequester carbon[42]. Agricultural soils are considerably modified from their natural state through drainage, cultivation, and fertilisation. As a result of this degradation, agricultural topsoils support relatively low carbon stocks held in comparison to semi-natural habitats. Reversion to extensive, low input semi-natural grassland from a lower carbon land use, such as arable farmland, represents an opportunity to create a carbon sink alongside biodiversity benefits.

7.36 Above- and below-ground organic carbon stock can be maintained and increased through beneficial habitat management. Within Gilston, for example, hedgerows have been degraded and lost (Inset 7.7) and traditional parkland landscapes around Gilston Park lack favourable grazing (Inset 7.7). Low intensity grazing can stimulate plant and root growth, taking up carbon from the atmosphere. Hedgerow management has been shown to have a significant impact on above-ground carbon storage[43]; for longer-term accumulation of carbon they should be managed to be taller and wider. Allowing trees to become established along a hedgerow's length may provide further opportunities to store carbon.

Inset 7.7: Opportunity to create and re-connect hedgerow network in Gilston farmland

Inset 7.7: Opportunity for favourable grazing at Gilston Park

Carbon Storage in Wetland Habitats

7.37 Rivers, lakes and wetlands form an important element of carbon cycling by habitats due to their interactions at a catchment scale. Land management across the catchment directly impacts the source-sink dynamics of freshwaters. Physical modifications and nutrient inputs from neighbouring land can tip these systems from carbon sinks to sources. Most of the rivers and brooks through HGGT have physical modification, although weir removal is underway as part of the River Stort Catchment Plan to reinstate natural bank structure and increase flow. Stewardship bodies bringing together technical expertise, funding opportunities (including those arising through the planning system such as BNG and future ENG), and local engagement must coordinate to achieve a catchment-led approach.

7.38 Chalk bed streams, as found along the Stort, are more sensitive to organic matter inputs, potentially causing hotspots of carbon dioxide and methane in areas that are generally considered to have good ecological status. Riparian buffer strips can help reduce nutrients entering watercourse.

7.39 The Stort and Lee are nationally important wetland habitats (Figure 7.4). Environment Agency WWNP data layers indicate where there are opportunities for nature-based solutions to reinstate natural processes, addressing, for example, flood risk and water quality. WWNP data is

[42] Committee for Climate Change. 2020. Land use: Policies for a Net Zero UK. https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/

[43] Biffi,S (et al). 2022. Soil carbon sequestration potential of planting hedgerows in agricultural landscapes. Journal of Environmental Management. (307) 114484. Available from: https://www.sciencedirect.com/science/article/pii/S0301479722000573?dgcid=author

recognised to be relatively coarse-scale mapping, hence; opportunities such as tree planting close to the banks must be interpreted with site-specific habitat information such as local priority grasslands. Outside of the Stort's immediate riparian corridor, opportunities responding to proposed growth include ambitious natural flood management solutions (creation of new wetlands, swales etc) in association with the Gilston tributaries, and roll out of biodiverse surface SuDS (in line with the Essex SuDS Design Guide[44]) upstream of the Harlow tributaries.

Inset 7.7: Temple Farm, Chelmsford (source: Essex SuDS Design Guide)

Temperature Regulation by Vegetation

7.40 The Garden Town GI can help to stabilise the effects of a warming climate; evidence shows that vegetation can cool the air by 2-8ºC [45]. Within urban areas, the cooling effects of vegetation are generally attributed to two distinct processes: shading by canopy and evaporative cooling by evapotranspiration. Figure 7.5 shows canopy cover, with trees, shrubs and woodlands playing an important role in this function.

7.41 Opportunities to extend existing the canopy cover of Green Fingers through the existing urban fabric of Harlow include street tree planting, increasing species and structural diversity of vegetation on amenity land, surrounding housing estate and road verges to connect the proposed Harlow Urban Forest across the town. Collectively, small spaces, green walls and roofs provide local climate regulation whilst also increasing permeability of the built environment to wildlife.

Early integration of substantial GI for climate cooling into landscape-led master planning has greater likelihood of success.

[44] https://www.essexdesignguide.co.uk/suds/

[45] https://www.forestresearch.gov.uk/publications/air-temperature-regulation-by-urban-trees-and-green-infrastructure/

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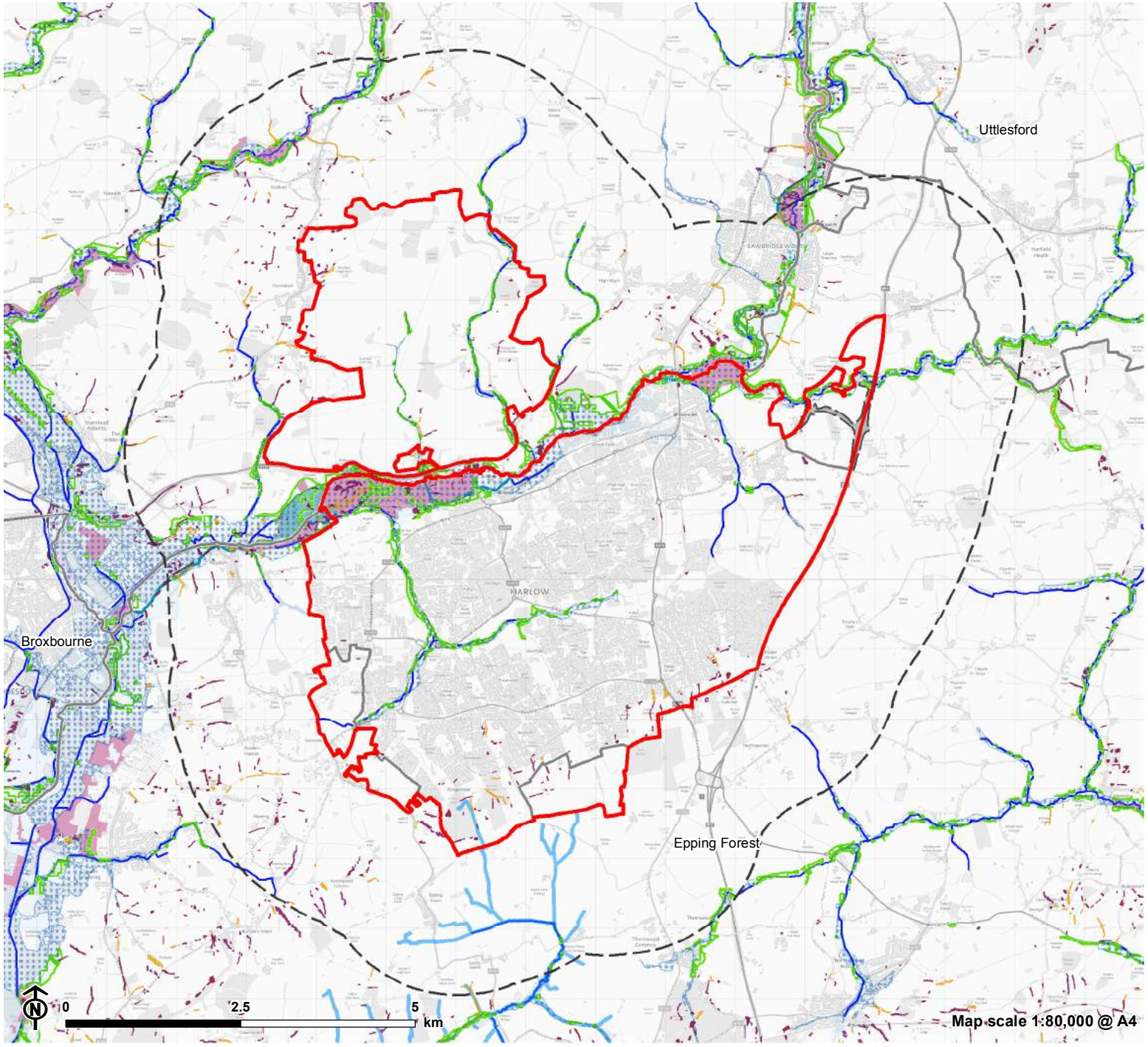
Figure 7.4: Wetland Habitats



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary
Flood zone 2
Flood zone 3

Wetland Habitat

Canal
Priority river habitat
River

National Priority Habitat Type

Coastal and floodplain grazing marsh
Lowland fens
Lowland meadows
Reedbeds
Wet woodland (Essex)

WWNP Habitat Opportunity

WWNP runoff attenuation potential features 1% AEP
WWNP funoff attenuation potential features 3.3% AEP
WWNP floodplain reconnection potential

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG7_4_r1_WetlandHabitat_A4L 08/12/2022
Source: OS, LUC, HDC, NE, HCC, EFDC, OSM, WWNP

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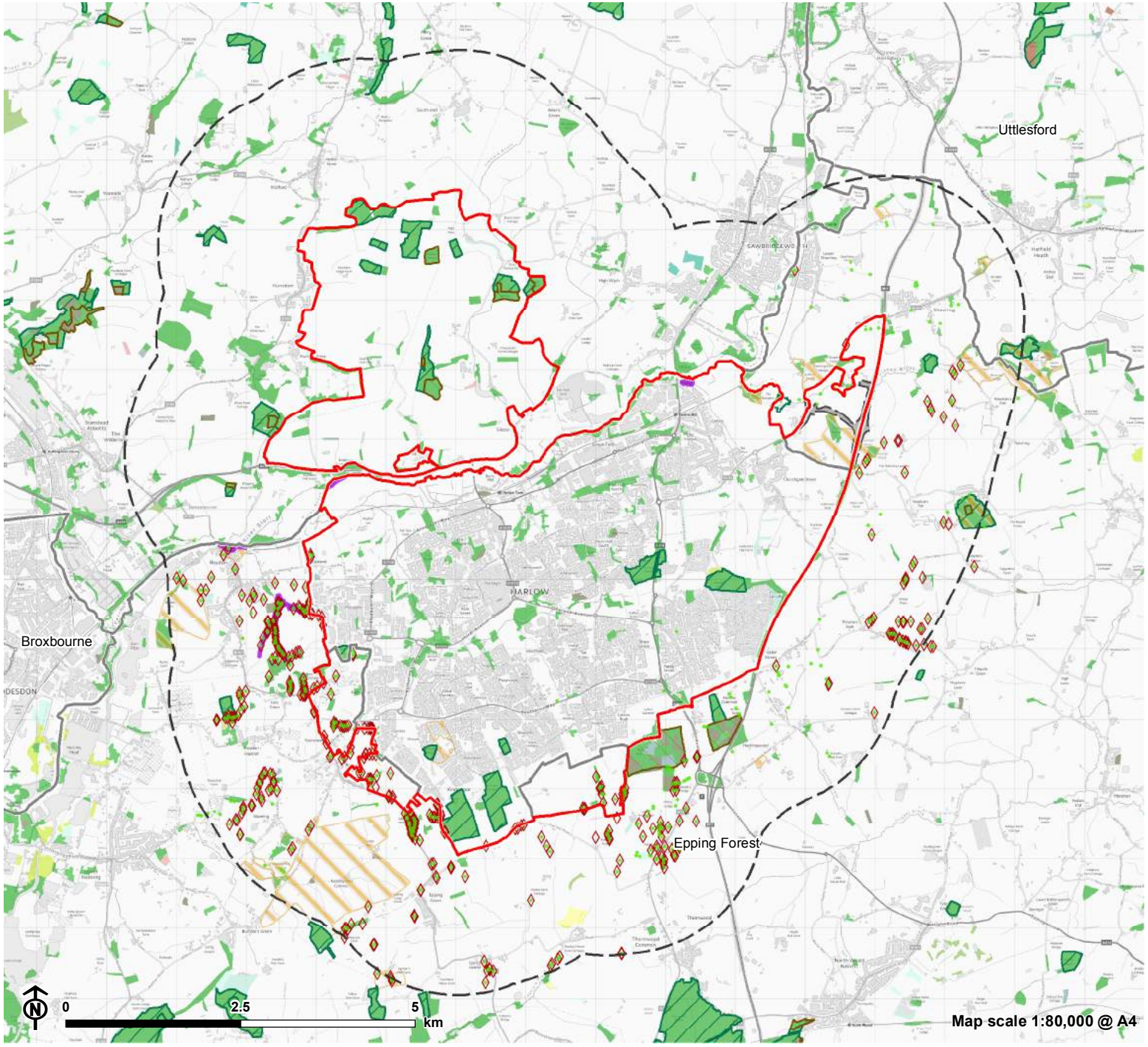
Figure 7.5: Canopy Cover



- Boundary of influence (BOI)
- Study area
- J7a and link road: indicative outline*
- Local authority boundary
- Wood pasture and parkland (Essex)
- Wet woodland (Essex)
- Veteran tree (Essex)
- Ancient tree (Essex)

Ancient Woodland Inventory

- Ancient & semi-natural woodland
- Ancient replanted woodland

National Forest Inventory (2019)

- Assumed woodland
- Broadleaved
- Conifer
- Coppice
- Felled
- Ground prep
- Low density
- Mixed mainly broadleaved
- Mixed mainly conifer
- Shrub
- Young trees

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG7_5_r1_CanopyCover_A4L 08/12/2022
Source: OS, LUC, HDC, NE, EFDC

Summary of HGGT-wide GI Opportunities for Climate Change Mitigation

- Expand woodland habitat, particularly south of Harlow through targeted planting or natural regeneration, to increase above ground carbon stores. Increase the range of age-classes and structural heterogeneity to also provide resilience against pests and diseases.
- Increase below ground carbon stores through practices that establish and maintain healthy soils, such as regenerative farming or reversion to low input semi-natural grassland.
- Reinstatement, re-connection, and extension of the hedgerow network to increase carbon storage and sequestration, buffer against land-use practices and provide wildlife corridors.
- Restore wetland habitats, especially along the sensitive chalk River Stort, to return healthy catchment scale carbon cycling. Remove physical modifications and buffer against nutrient inputs that can tip the river network from being carbon sinks to sources.
- Manage flood risk by restoring riparian habitats along the Stort Valley, implementing ambitious natural flood management solutions in new growth areas, and retrofitting SuDS into Harlow New Town.
- Increase connectedness of canopy cover through the Green Wedges and Green Fingers to increase cooling and shading.
- Creation and management of land through dynamic management to optimise the number and scale of mitigation benefits at the landscape or catchment-scale through collaborative engagement between the partner councils, stewardship bodies, landowners/promoters and technical specialists.
- Where land, soil and water management opportunities permit alongside local food production, optimise use of funded habitat creation and management through fiscal credits such as BNG and other environmental gain payments,

Opportunities for each Landscape Zone are explored in Appendix H.

Health and Wellbeing

7.42 Evidence shows that a thriving, wildlife-rich environment benefits both physical and mental health[46]. From increasingly active lifestyles and improved concentration to addressing air quality impacts on mortality and a sense of peace and purpose; nature and wellbeing are mutually supportive.

Access and Recreation

"*The pandemic showed how important nature is to our health and wellbeing, but also how many people do not have access to high quality greenspace close to home. The Green Infrastructure Framework released today will help us achieve this by providing an England-wide evidence base to help local authorities and others target Green Infrastructure improvements where they are most needed - a vital step in levelling up access to nature"."*

Marian Spain, Natural England Chief Executive speaking on publication of the national GI Standards, 2022.

7.43 Natural England's Accessible Natural Greenspace Standard (ANGSt) provides a set of benchmarks for ensuring access to places near to where people live. Figure 7.6 illustrates the standards met across the Garden Town.

[46] Public Health England (2020) Improving Access to Greenspace: A new review for 2020, available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904439/Improving_access_to_greenspace_2020_review.pdf

7.44 Figure 7.7 illustrates the Index of Multiple Deprivation (IoD)[47] mapped against open space data. Areas of least derivation map across similar spatial extent as the area of higher access to nature shown in Figure 7.6. Opportunities for GI to contribute to addressing low scoring IoD include creating new destination greenspaces. This may include increasing wayfinding to GI assets which are under-utilised and improving their attractiveness and naturalness (e.g. Todd Brook) or by providing new links out into the countryside (e.g. Nazeing Common).

67.34% of people in Essex use greenspaces for health reasons

Green Essex 2020: Consultation results[48]

7.45 The PROW network (see earlier Figure 3.2) is a key asset for existing and future communities and visitors. The network supports active travel and recreational use as well as opportunities for social prescribing initiatives. Status or quality of such infrastructure influences availability and use. Within Hertfordshire, the 2017 Rights of Way Improvement Plan[49]. Improvements to the active travel (non-motorised) network are recommended to reflect the HCC NMR Design Guide (applied appropriate to site-specific context). Initiatives for expansion of the active travel network include connection to long-distance routes through the London to Cambridge corridor and to the Lea Valley, as well more localised detail within the LCWIP.

7.46 The Essex Design Guide promotes 'walkable neighbourhoods' and the Hertfordshire GI Strategy recommends the delivery of a network of active travel routes to achieve 15-minute neighbourhoods within the county. Figure 3.2 (Chapter 3) illustrates existing and proposed active travel through the Garden Town as part of the wider sustainable transport network. The STC and LCWIP will enhance long distance routes and supports the delivery of sustainable travel targets. As per the HGGT Sustainability Guidance and Checklist and the Local Plans of HGGT partner district councils, 50% of all trips originating from and ending within Harlow New Town (the existing settlement) should be by active and sustainable travel modes. Within the new Garden Communities, 60% of trips originating from and ending within them should be by active and sustainable travel modes. To be optimally green, the STC should incorporate natural flood management, local climate regulation and ecological connectivity by integrating green infrastructure such as trees, hedgerows and species-rich grassland along the routes.

Inset 7.1: Rain gardens, tree pits and permeable paving integrated along a bicycle street, Grangetown Cardiff (source: Susdrain Case Studies)

[47] The IoD is a combined measure of deprivation based on a total of 37 separate indicators that have been grouped into seven domains, each of which reflects a different aspect of deprivation experienced by individuals living in an area.

[48] https://consultations.essex.gov.uk/rci/green-essex-strategy/

[49] Available: https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/countryside-access-and-management/rights-of-way/improvement-plans/rights-of-way-improvement-plan-201718-202728.pdf

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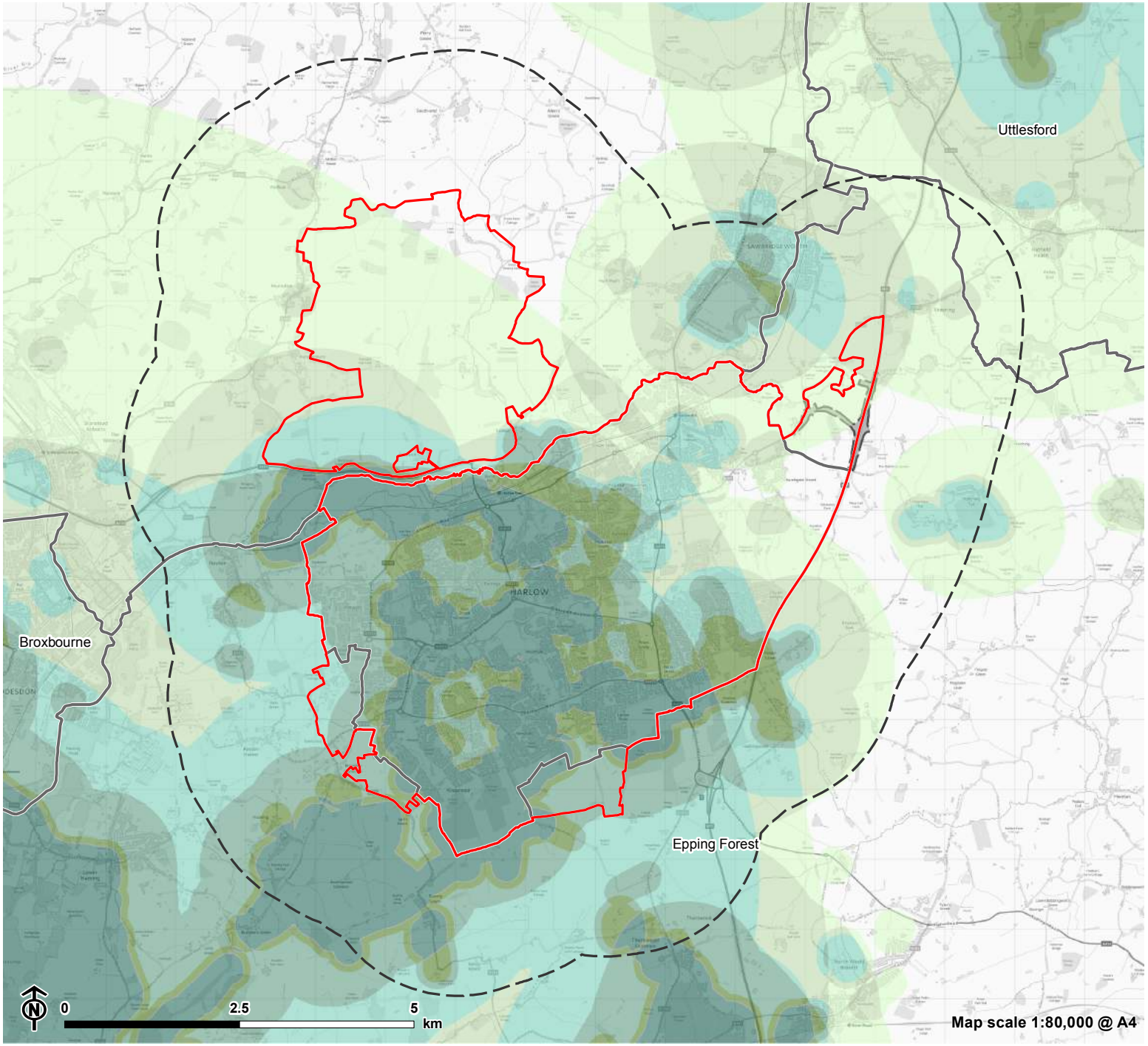
Figure 7.6: Existing Accessible Natural Green Space Standard (ANGSt) Profile



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary

Access to Natural Green Space Standards (ANGSt) Profile

Meets 1 standard
Meets 2 standards
Meets 3 standards
Meets 4 standards
Meets 5 standards
Meets 6 standards

ANGSt profile: The full set of ANGSt assessment into one "combined buffer" map to allow an understanding of the ANGSt Profile for any given location.

- Doorstep Standard: At least 0.5 ha within 200m
- Local Standard: At least 2ha within 300m
- Neighbourhood Standard : At least 10ha within 1km
- Wider Neighbourhood Standard: At least 20ha within 2km
- District Standard: At least 100ha within 5km
- Sub-regional Standard: At least 500ha within 10km

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Hardie_T LUC 11904_FIG7_6_r1_ANGStProfile_A4L 09/12/2022
Source: OS, LUC, HDC, NE

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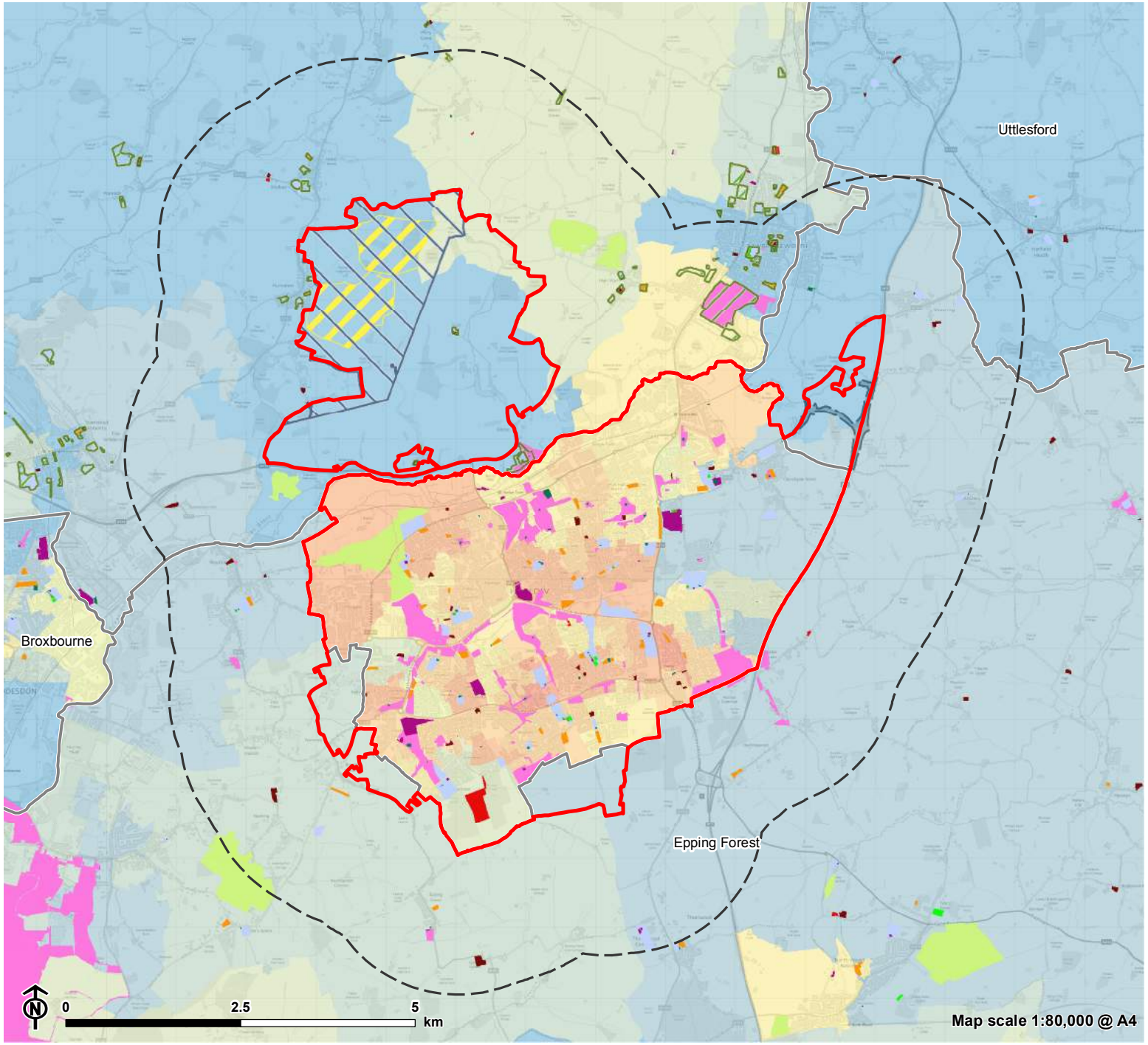
Figure 7.7: Health Deprivation and Open Space



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary
Open Space Allocations on Site (EHC)
Proposed country park

Index of Multiple Deprivation: Health

0 - 10% (most deprived)
10 - 20%
20 - 30%
30 - 40%
40 - 50%
50 - 60%
60 - 70%
70 - 80%
80 - 90%
90 - 100% (least deprived)

Open greenspace (Ordnance Survey)

Allotment or community growing space
Play space
Cemetery
Bowling green
Golf course
Other sports facility
Playing field
Public park or garden
Religious grounds
Tennis court

CB:JT EB:Scobie_G LUC 11904_FIG7_7_r1_DeprivationOpenSpace_A4L 08/12/2022
Source: OS, LUC, ONS, EHDC

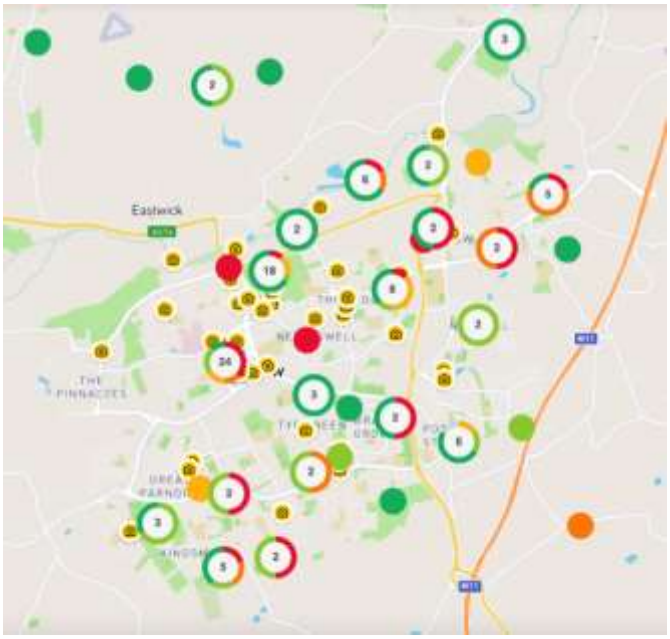
Air Quality

7.47 Poor air quality has been described as the largest environmental risk to public health in the UK[50]; it forms one of the four priority areas within the 2021 Environment Act. The potential of GI to improve air quality primarily lies in its ability, not to remove pollution by deposition, but to control its dispersal (i.e., distribution close to source) and thereby reduce public exposure. Figure 7.8 maps green assets (Ordinance Survey) with levels of PM2.5 (i.e. particles that have diameter less than 2.5 micrometres) as an indicator of air quality. Low-lying vegetation can act as a barrier to reduce exposure to particulate matter. This can have the greatest benefits along roads also used by cyclists and pedestrians, or bordering schools.

HGGT Quality of Life Project

7.48 HGGT Quality of Life[51] is an engagement and monitoring project which, during an initial three-month period during summer 2022 captures the values and needs of the local community. One of the project themes is nature and green-blue infrastructure. Survey and mapping – both online and in-person – shape questions around the principles of community, nature, movement, health, wonder and control. This proactive approach captures aspects of physical and mental health broader than, but complimentary to the scope of the GI Framework. The collated results *"will influence how plans are taken forward by the five partner councils and underpin future work around engagement, stewardship and design, including community development and the long-term care of public assets*", and are scheduled for presentation to the HGGT Board in December 2022 (similar timeframe to the GI Framework). Residents highlighted the need for active travel routes and regeneration in the Gilden Park area towards the East of Harlow as well as the need to reduce vehicle traffic and encourage walking and cycling from the north of Harlow through Templefields. Residents value the peace and tranquillity offered by the River Stort and the varied recreation opportunities at Harlow Town Park.

Inset 7.7: Quality of Life map comments resulting from consultation (extract: October 2022)



[50] https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

[51] https://golmap.commonplace.is/

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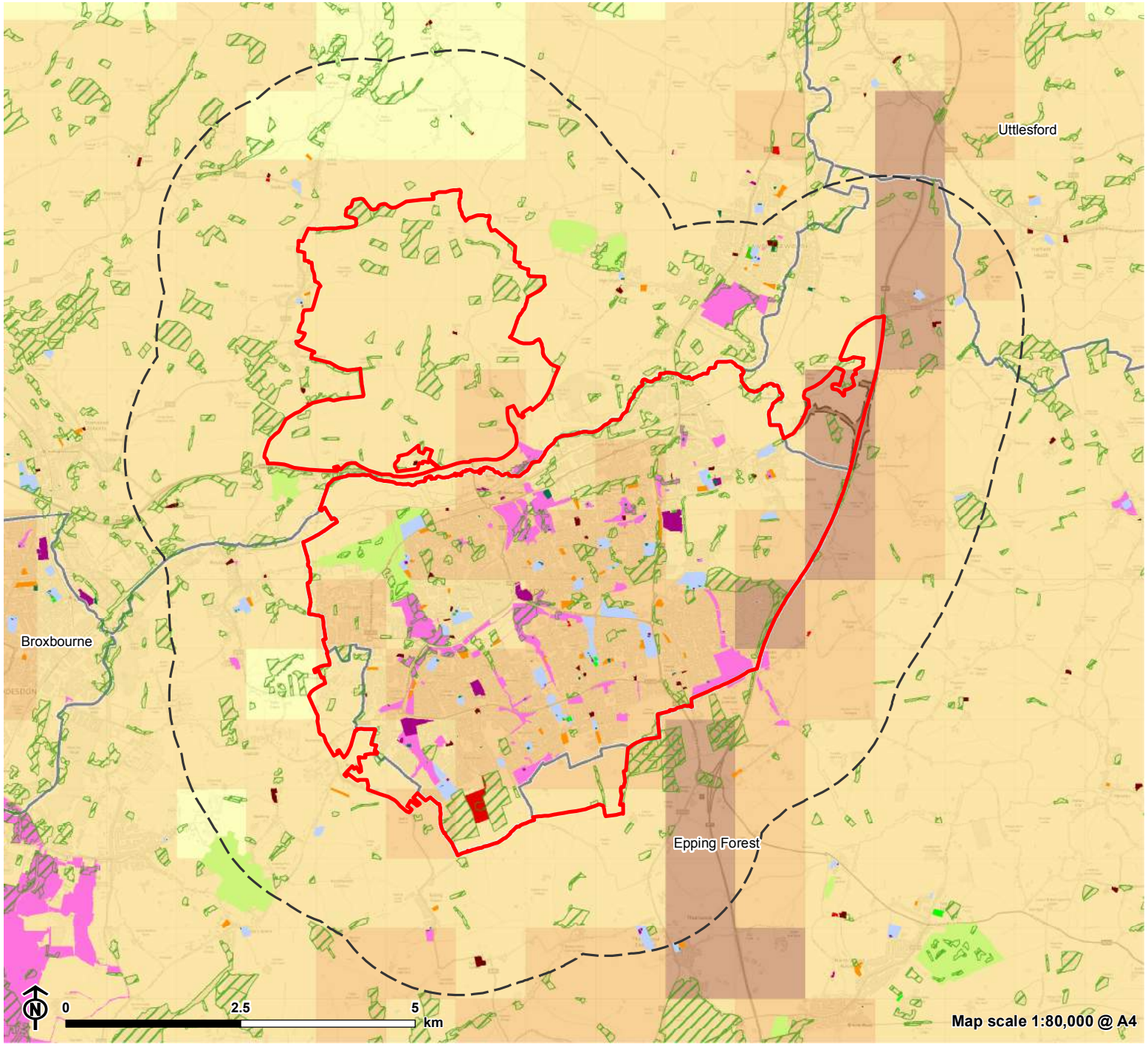
Figure 7.8: Air Quality and Green Assets



Boundary of influence (BOI)
Study area
J7a and link road: indicative outline*
Local authority boundary
National Forest Inventory

Air quality PM2.5 (concentration µg/m^3)

8.95 - 9.73
9.74 - 10.27
10.28 - 11.07
11.08 - 12.16
12.17 - 14.45

Open greenspace (Ordnance Survey)

Allotment or community growing space
Play space
Cemetery
Bowling green
Golf course
Other sports facility
Playing field
Public park or garden
Religious grounds
Tennis court

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG7_8_r1_AirQualityGreenAssets_A4L 08/12/2022
Source: OS, LUC, NE, DEFRA

Local Food Growing

7.49 Local food-growing can contribute to, and benefit, the environment and improve the quality of life for residents of all ages. A sense of community and purpose is encouraged when people participate in food growing activities. Supporting community cohesion and inclusion will be especially relevant as HGGT grows and welcomes new residents. Within Harlow, 2011 data[52] indicates that of the provision of 35 allotment sites (at that time), 30 had waiting lists. The 2018 HGGT vision and Local Plans of HGGT partner district councils illustrate the location of existing and potential new allotments, largely through the Harlow New Town area (see Chapter 5, Inset 5.2).

Inset 7.7: Local food growing opportunities in container allotments on 'meanwhile sites' provide benefit local communities as well as providing foraging patches for pollinators

Inset 7.7: Raised planter box at a community food growing scheme in Newham, London (source: Local Government Information Unit)

Cultural Heritage

7.50 Recognition of cultural heritage in the planning and delivery of GI contributes to sense of place, of belonging and celebrates local variability. Research by Historic England [53] shows that heritage is inherently sustainable and is an integral part of a low carbon economy heritage as well as being a catalyst for inclusive growth. Cultural assets are widely distributed across HGGT (Figure 7.9), reflecting the history of the New Town and Gibberd's to be celebrated. There are few large cemeteries or crematoriums within HGGT (Figure 7.10). However, Parndon Wood Cemetery & Crematorium has an important role linking the ancient woodlands of Risden Wood, Hospital Wood and Parndon Wood, ensuring connectivity through this southern swathe.

[52] https://www.whatdotheyknow.com/request/56186/response/147707/attach/html/3/FOI%20Letter%20749245.doc.html

[53] https://historicengland.org.uk/research/heritage-counts/heritage-and-economy/

Inset 7.7: Abney Park Cemetery Nature Reserve, Hackney[54] illustrating the biodiversity value of structurally complex habitats

Summary of HGGT-wide GI Opportunities for Health and Wellbeing

- Accommodate sensitively planned active travel through the Stort Valley as defined corridors through a landscape of high ecological sensitivity i.e. re-framing from a park of recreation priority. Promote the enhancement and expansion of the Green Wedge network into the new Garden Communities surrounding Harlow to provide alternative, well-connected capacity for recreation in nature.
- Create new accessible destination greenspaces to address deficiency in access to natural greenspace, such as in the East of Harlow, and/or within the ZoIs for critical thresholds sites to provide low-impact recreational opportunities.
- Facilitate local community participation in the planning, management and monitoring of GI assets by stewardship bodies to maximise community empowerment and wellbeing, as well as the long term sustainability and care for GI assets.
- Increase wayfinding and improve the quality of existing greenspaces in areas of high deprivation, for example to the west of Harlow New Town, to providing for a range of socio-demographic groups, physical and active recreation needs, and for quiet reflection and calm.
- Utilise active travel routes and the STCs to connect greenspaces to each other, to HGGT growth areas, to the wider countryside, and to neighbouring settlements (e.g. Sawbridgeworth) or attractions (e.g. the Lee Valley Regional Park).
- Utilise vegetation to create barriers against, and absorption of, air pollution, especially along major roads, active travel corridors and near schools.
- Promote local food growing, through supporting community initiatives and sufficient provision of allotments, to promote cohesion and inclusion across HGGT.
- Recognise and celebrate the cultural heritage of Gibberd's New Town vision. Extend this to increase enjoyment and appreciation of wider heritage assets including Registered Parks and Gardens and Scheduled Monuments.

[54] Source: https://abneypark.org/

Opportunities for each Landscape Zone are explored in Appendix H.

Framework GI Strategy - Harlow and Gilston Garden Town
HGGT Partner Councils

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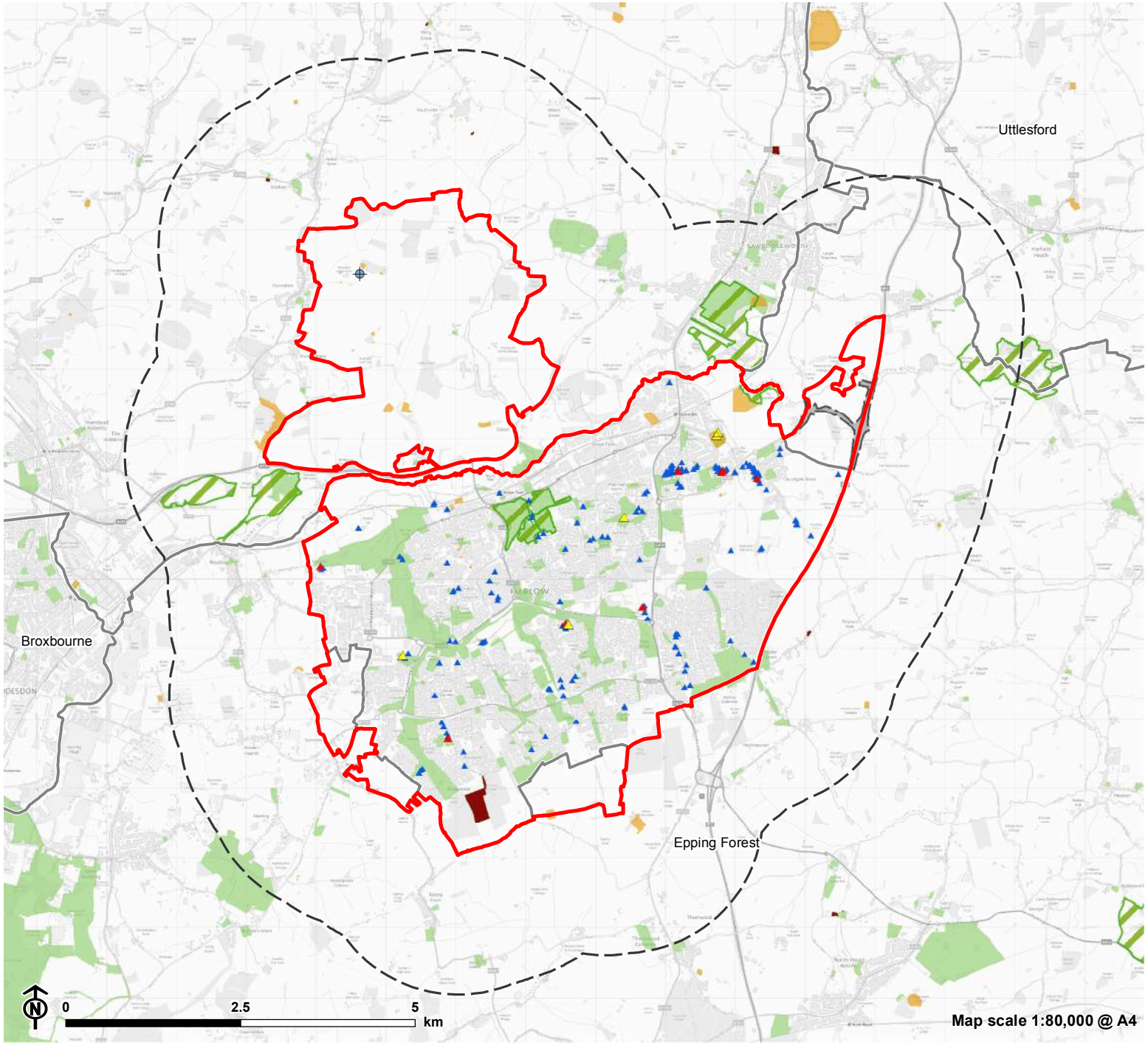
Figure 7.9: Cultural Heritage Assets and Green Space



- Boundary of influence (BOI)
- Study area
- J7a and link road: indicative outline*
- Local authority boundary
- Hunsdon Airfield war memorial (indicative)
- Open greenspace (Ordnance Survey)
- Cemetery
- Scheduled monument
- Registered parks and gardens

Listed building

- Grade I
- Grade II*
- Grade II

* https://www.essexhighways.org/highway-schemes-and-developments/highway-schemes/multi-district-schemes/m11-junction-7a

CB:JT EB:Scobie_G LUC 11904_FIG7_9_r1_CultHeritage_Gspace_A4L 08/12/2022
Source: OS, LUC, HE, EFDC