



Public Document Pack

Uttlesford District Council

Chief Executive: Peter Holt

Local Plan Leadership Group Remote Meeting

Date: Monday, 29th November, 2021

Time: 7.00 pm

Venue: Zoom

Chair: Councillor G Bagnall

Members: Councillors M Caton, R Freeman, P Lees, M Lemon, B Light,
S Merifield, R Pavitt (Vice-Chair), N Reeve, M Sutton and M Tayler

Public Participation

At the start of the meeting there will be an opportunity for up to 10 members of the public to ask questions and make statements subject to having given notice by 2pm the working day before the meeting. Each speaker will have 4 minutes to make their statement. Please write to committee@uttlesford.gov.uk to register your intention to speak with Democratic Services.

Public speakers will be offered the opportunity for an officer to read out their questions or statement at the meeting, or to attend the meeting over Zoom to readout their questions or statement themselves

Members of the public who would like to watch the meeting live can do so [here](#). The broadcast will be made available as soon as the meeting begins.

AGENDA

PART 1

Open to Public and Press

- 1 Apologies for Absence and Declarations of Interest**
To receive any apologies and declarations of interest.
- 2 Minutes of the Previous Meeting** 4 - 7
To consider the minutes of the previous meeting.
- 3 Landscape Sensitivity - Phase 2** 8 - 94
To note the findings of Phase 2 of the landscape work undertaken to inform the emerging Local Plan.
- 4 Uttlesford Employment Needs & Economic Development Evidence** 95 - 223
To note the Uttlesford Employment Needs & Economic Development Evidence.
- 5 Strategic Flood Risk Assessment update** 224 - 367
To note the Strategic Flood Risk Assessment update.
- 6 Development Options Process** 368 - 372
To note the Development Options Process report.

For information about this meeting please contact Democratic Services

Telephone: 01799 510369, 510548, 510410 or 510467

Email: Committee@uttlesford.gov.uk

General Enquiries

Council Offices, London Road, Saffron Walden, CB11 4ER

Telephone: 01799 510510

Fax: 01799 510550

Email: uconnect@uttlesford.gov.uk

Website: www.uttlesford.gov.uk

Agenda Item 2 Public Document Pack

LOCAL PLAN LEADERSHIP GROUP held at ZOOM, on THURSDAY, 28 OCTOBER 2021 at 7.00 pm

Present: Councillor G Bagnall (Chair)
Councillors M Caton, P Lees, M Lemon, B Light, R Pavitt (Vice-Chair), N Reeve, M Sutton and M Taylor

Guest (non-voting) Councillor J Evans

Officers in attendance: J Bennett (New Communities Principal Urban Design Officer), C Gibson (Democratic Services Officer) and S Miles (Local Plans and New Communities Manager).

1 **APOLOGIES FOR ABSENCE AND DECLARATIONS OF INTEREST**

Apologies for absence were received from Councillors Freeman and Merifield.

There were no declarations of interest.

2 **MINUTES OF THE PREVIOUS MEETING**

The minutes of the meeting held on 30 September 2021 were approved.

3 **PUBLIC SPEAKER**

Vincent Thompson spoke about the Landscape Sensitivity and Heritage Sensitivity reports. He said that he felt that a highly granular approach had been taken and that while he had no problem with the quality of the reports, the documents by moving straight from the policy context to the detail had failed in the basic objective of informing the plan. He suggested that paragraphs should be added after the policy and before the micro wording that set out the context, whether landscape or heritage and then the assessment should be reconsidered within that context.

The Local Plans and New Communities Manager referred to Paragraph 2.8 of the Landscape Sensitivity report on page 18 and said that he would review the document and get back to Mr Thompson in respect of the heritage references.

Prior to the next item Councillor Evans outlined that at some future point Councillor Pepper, Portfolio Holder for Environment and Green issues and the Climate Change Project Officer would provide input to the group and that climate change considerations were integral to the work on the Local Plan.

4 **LANDSCAPE SENSITIVITY - PHASE 1**

The Local Plans and New Communities Manager presented a report on the first phase of the Landscape work that was currently underway to examine whether the landscape around towns and villages in the district, as well as sites for new settlements, had the capacity to accommodate new development without causing significant adverse effects on its character. Phase 1 of the work looked at the sensitivity of landscape around the main towns and key villages. The report had been compiled using the professional judgement of LUC through site visits and desktop analysis.

The report was very favourably received by Members.

Areas of discussion included:

- The 500 metre and 1 kilometre boundary lines.
- The request for an explanation as to why flatter land was less sensitive to change.
- The views of the settlements and the request for further clarification of the third bullet point of Paragraph 1.20 re the visual character of the landscape.
- The possible inconsistency between the report's local areas of wildlife and the recent survey to Parish Councils.
- Future timescales included Phase 2 works almost completed and would be brought to LPLG in November. Phase 3 was likely to follow in Q1, 2022/3.
- The request to check to what extent and how the consultants had used emerging Neighbourhood Plans and emerging Neighbourhood Plans' evidence. It was noted that the Newport, Quendon and Rickling Neighbourhood plan had not been referenced.
- The request to check to what extent and how the consultants had used emerging Neighbourhood Plans and emerging Neighbourhood Plans' evidence.
- The request to ask the consultants how they had identified the absolute constraints 'grey out areas'. A request was made for greater clarity around the absolutes.
- The request to ask for a more detailed explanation for the difference in the assessment of residential and employment/ mixed use sites as the pictures appeared to be similar massing and ridge heights.
- Clarification was requested as to what was the definition of a new development.
- The overall assessment of landscape sensitivity at Takeley and Priors Green, south of the Flitch Way, appeared to have been assessed as lower sensitivity due to it being 'breached'. Clarification was sought as this did not appear to make sense.
- Carver Barracks would be assessed in the next phase.

The Group noted the report.

5 **HERITAGE SENSITIVITY - PHASE 1**

The Local Plans and New Communities Manager presented a report on the first phase of the heritage work undertaken to inform the allocation of development in the emerging Local Plan and development management policies guiding the location and form of the development. Phase 1 of the work examined the sensitivity of

heritage assets around the main towns and key villages and had been compiled by Oxford Archaeology.

Areas of discussion included:

- Members being asked to identify any anomalies and to feedback.
- The works had been compiled by consultants working out of the Oxford offices.
- An explanation being requested as to why the Landscape report had covered Hatfield Heath but the Heritage report had not.
- The need to check for consistency of the Phase 2 sites. The assumption had been made that the base data would be the same but there appeared to have been omissions in the Heritage report.
- Typos were identified in respect of the River 'Stour' and 'Chesterfield'

The Chair said that both reports were very good and asked that this information be fed back to the consultants.

The Group noted the report.

6 UPDATE ON LARGER DEVELOPMENT SITES

The Local Plans and New Communities Manager provided an update to the Group on the discussions with the landowners and promoters of the larger development sites. Following the "Call for Sites" process in April this year, sixteen larger development sites, and clusters of sites to form larger development options, had been identified. Officers had now held meeting with 49 groups' representatives for all of these sites and landowners and they had been given copies of a Model Memorandum of Understanding (MOU) which set out the 'ground rules' for proceeding, should the Council decide to allocate a particular site in the local plan. He said that 22 of the 49 groups had agreed in principle to sign up to the MOU. 2 groups had indicated that they were not prepared to sign.

The Local Plans and New Communities Manager said that all sites would be assessed on their merits.

The Chair said that the fact that a MOU had not been signed would form part of the assessment.

The Group noted the update.

7 UTTLESFORD BUILDING FOR A HEALTHY LIFE DESIGN TOOLKIT

The New Communities Principal Urban Design Officer presented a report on the Uttlesford Building for a Healthy Life Design Toolkit. The document had been developed as an Uttlesford specific version of the Building for a Healthy Life; an existing national design toolkit and assessment tool which is specified in the National Planning Policy Framework (NPPF) to be used by Local Authorities to help raise design quality in the built environment. Changes from the national

version included an Uttlesford specific introduction and examples of 'good' national schemes substituted for 'good' schemes with Uttlesford.

Areas of discussion included:

- Feedback had come from Councillors but not Parish/Town Councils currently.
- An explanation of the BHL accreditation system and the costs of accreditation to be ascertained.
- The benefits of utilising the toolkit for pre-application meetings involving Planning Development officers and for also feeding into Planning Committee reports.

The Local Plans and New Communities Manager said that the Planning Development Team were aware of the document and that discussions in respect of future usage were on-going.

The LPLG endorsed the 'Uttlesford Building for a Healthy Life' document as a material planning consideration to inform decision making.

There was some further discussion as to how to ensure that all Members were aware of the Phase 1 reports. Members Briefings were scheduled in the New Year. Discussions would be held to take this forward.

The Chair thanked Mr Thompson and all report authors for their contributions.

The meeting ended at 8.42 pm

Agenda Item 3

Committee: Local Plan Leadership Group
Title: Landscape Sensitivity - Phase 2
Report Author: Stephen Miles, Local Plans and New Communities Manager
smiles@uttlesford.gov.uk

Date:
Monday, 29
November 2021

Summary

1. Landscape work is underway to inform the emerging Uttlesford Local Plan. Phase 2 of the work looks at the sensitivity of landscape around potential new settlements.

Recommendations

2. To note the findings of the work and to utilise it in the development of the emerging Local Plan.

Financial Implications

3. This work is within the 2021/22 budget.

Background Papers

4. N/a

Impact

- 5.

Communication/Consultation	The timetable builds in three stages for people to make representations on the draft Local Plan.
Community Safety	N/a
Equalities	Forthcoming policies will be subject to an Equalities and Healthy Impact Assessment (EqHIA).
Health and Safety	N/a
Human Rights/Legal Implications	Preparation of a local plan is a statutory duty. It needs to meet legal tests and comply with regulations.

Sustainability	Forthcoming policies will need to meet the sustainability objectives of the Council and the Local Plan will be subject to a Sustainability Appraisal.
Ward-specific impacts	All
Workforce/Workplace	N/a

Situation

6. The emerging Local Plan will allocate land to meet the development needs of the district. One of the factors influencing where land should be allocated is the impact on landscape.
7. Landscape work is underway to inform the emerging Uttlesford Local Plan. The work examines whether the landscape around towns and villages in the district, as well as sites for new settlements, has the capacity to accommodate new development without causing significant adverse effects on its character.
8. This work is split into 3 phases:
 - a. Phase 1 of the work looks at the sensitivity of landscape around the main towns and key villages;
 - b. Phase 2 of the work looks at the sensitivity of landscape around potential new settlements; and
 - c. Phase 3 of the work will look at the sensitivity of landscape around allocations in other villages.
9. Phase 2 of this work is complete and being brought before the group for noting. These findings will be used to inform the development of reasonable alternatives and the assessment of sites. Where Neighbourhood Planning Groups have produced their own landscape evidence, their evidence will also be used to inform the assessment of sites.
10. The work assesses the sensitivities of the site and its ability to accommodate development. Key landscape and visual sensitivities are identified to inform decision making and policy drafting.
11. Impact on landscape is only one factor that will influence the allocations in the emerging Local Plan, this will need to be weighed up against meeting the development needs of the district and other factors, such as transport, heritage, and infrastructure consideration ns.

Risk Analysis

- 12.

Risk	Likelihood	Impact	Mitigating actions
If the Council does not have an NPPF compliant evidence base the plan could be found unsound	2	4 – delays in adopting the Local Plan	Professional evidence developed in line with the NPPF and PPG

1 = Little or no risk or impact

2 = Some risk or impact – action may be necessary.

3 = Significant risk or impact – action required

4 = Near certainty of risk occurring, catastrophic effect or failure of project.

Uttlesford District Council

Landscape Sensitivity Assessment

Phase 2: New Settlements

Draft final report
Prepared by LUC
November 2021



Uttlesford District Council

Landscape Sensitivity Assessment
Phase 2: New Settlements

Version	Status	Prepared	Checked	Approved	Date
1.	First draft	A Knight K Davies	K Davies	K Davies	30.09.2021
2.	Final draft	A Knight	K Davies	K Davies	03.11.2021

Contents

Chapter 1	
Introduction	A-1
Background and purpose of this study	A-1
Policy context	A-2
Local Plan	A-3
Limitation of the landscape sensitivity assessment	A-3
Structure of the report	A-4

Chapter 2	
Methodology	A-5
Evaluating landscape sensitivity	A-7
Assessment criteria	A-7

Chapter 3	
Landscape Guidance	A-11

Appendix A	
Data / information sources	A-1

Appendix B	
Glossary	B-1

Appendix C	
Landscape sensitivity profiles	C-4
Birchanger	C-5
Carver Barracks, Wimbish	C-10
Easton Park	C-15
Elsenham	C-21
Felsted	C-26
Great Chesterford	C-31
Great Dunmow	C-36
Hatfield Broad Oak	C-41
Leaden Roding	C-46
Stebbing	C-51
Takeley	C-56
Ugley	C-61

Chapter 1

Introduction

This chapter gives an overview of the study and presents the policy context

Background and purpose of this study

1.1 Uttlesford District Council (UDC) is in the early stages of preparing a new Local Plan to cover the period 2020 - 2040, which will need to accommodate a significant amount of new housing growth. As part of the evidence base for the Local Plan, the Council needs to consider whether the landscape around towns and villages in the district, as well as sites for new settlements, has the capacity to accommodate new development without causing significant adverse effects on its character.

1.2 UDC commissioned LUC in June 2021 to prepare a landscape sensitivity assessment (hereafter referred to as the study) for the following:

- Phase 1: Towns and key villages
- Phase 2: Potential new settlement locations
- Phase 3: Allocations around other villages

1.3 The purpose of the study is to provide a robust and up-to-date evidence base and assessment to inform the appropriate scale, form and location of future development to minimise harm to the landscape and the setting of settlements. By assessing and mapping the relative sensitivity of different landscapes the study will provide a tool for informing landscape change.

1.4 The outputs of the study will be used by UDC to;

- Identify land where development would be most appropriate to minimise impact on landscape i.e. areas of least sensitivity.
- Help in refining broad growth areas and inform the evaluation of potential development locations.
- Help establish individual site options for consideration through the Sustainability Appraisal process and for future consultation.

1.5 This report includes the results for **Phase 2** of the study: the Landscape Sensitivity Assessment of potential new

settlement locations, and will help to inform the evaluation of potential new settlement locations within Uttlesford.

Policy context

National Planning Policy Framework (NPPF)

1.6 The UK Government published an updated and revised National Planning Policy Framework (NPPF) in July 2021, which sets out the environmental, social and economic planning policies for England. Central to NPPF policies is a presumption in favour of sustainable development; that development should be planned for positively and individual proposals should be approved wherever possible.

1.7 One of the overarching objectives that underpins the NPPF is set out in **Paragraph 8**: “an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment.”

1.8 Paragraph 174 states that “planning policies and decisions should contribute to and enhance the natural and local environment by **protecting and enhancing valued landscapes**” and “**recognising the intrinsic character and beauty of the countryside**”.

1.9 Paragraph 20 states ‘Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for:

- a) housing (including affordable housing), employment, retail, leisure and other commercial development;
- b) infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);
- c) community facilities (such as health, education and cultural infrastructure); and
- d) conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation’.

1.10 Paragraph 130 states ‘Planning policies and decisions should ensure that developments:

- a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
- b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
- c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not

preventing or discouraging appropriate innovation or change (such as increased densities);

d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit.

e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience’.

1.11 Paragraph 175 states ‘Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries’.

1.12 Paragraph 185 contains one reference to sensitivity as follows:

‘Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development...’

National Planning Policy Guidance (NPPG)

Further guidance is provided in the NPPG. Paragraph: 037 Reference ID: 8-037-20190721 Revision date: 21 07 2019 notes the following under the heading of ‘How can the character of the landscape be assessed?’

1.13 “...*Landscape sensitivity can inform policy development and appropriate locations for development and can also be one of the considerations to be taken into account when making decisions on planning applications.*”

1.14 *To help assess the type and scale of development that might be able to be accommodated without compromising landscape character, a Landscape Sensitivity and Capacity Assessment can be completed. To demonstrate the likely effects of a proposed development on the landscape, a Landscape and Visual Impact Assessment can be used.*

Local Plan

1.15 The draft Local Plan 2019 was withdrawn in April 2020 following the Inspectors' Letter of January 2020. Preparation of the new Local Plan 2020-2040 is currently underway, with the first consultation stage completed in April 2021. The aim is to adopt the new Local Plan in December 2023.

1.16 The 2005 Local Plan is the current adopted plan for Uttlesford. The following policies relate directly to the Local Plan's stance on the protection of landscapes:

- **Policy S8 The Countryside Protection Zone** states that development will not be permitted if it promotes coalescence between Stansted Airport and existing development in the surrounding countryside, or if it would adversely affect the open character of the landscape.
- **Policy GEN2 Design** states that new development should safeguard important environmental features in its setting, retaining them and using them to reduce the visual impact of the new development were possible.
- **Policy GEN5 Light Pollution** states that developments with lighting schemes must use the minimum level of lighting necessary to achieve its purpose, and minimise glare and light spillage.
- **Policy ENV3 Open Spaces and Trees** states that traditional open spaces, visually important spaces, groups of trees and fine individual trees should be maintained, unless the need for development outweighs their amenity value.
- **Policy ENV8 Other Landscape Elements of Importance for Nature Conservation** states that the following landscape features should be retained where possible, and mitigation provided if this is not possible:
 - Hedgerows
 - Linear tree belts
 - Larger semi natural or ancient woodlands
 - Semi-natural grasslands
 - Green lanes and special verges
 - Orchards
 - Plantations
 - Ponds
 - Reservoirs

- River corridors
- Linear wetland features
- Networks or patterns of other locally important habitats.
- **Policy ENV9 Historic Landscapes** states that significant local historic landscapes, historic parks and gardens and protected lanes should not be harmed by new development.

Neighbourhood Plans

1.17 Four settlements within Uttlesford have adopted Neighbourhood Plans:

- Felsted (adopted February 2020)
- Great Dunmow (adopted December 2016)
- Newport, Quendon and Rickling (adopted June 2021)
- Thaxted (adopted February 2019).

Landscape character context

1.18 Uttlesford is a large rural district. As set out in the Uttlesford Landscape Character Assessment (2006)¹ the landscape is one of gently rolling plateaux, generally under arable cultivation. The landscape is incised by river valleys, including the main rivers Cam, Stort, Pant and Upper Chelmer. The west of the district is underlain by chalk and has a more strongly rolling landform of round backed ridges.

1.19 The distinct rural character of the District with its attractive and historic market towns and villages is widely recognised. The settlement pattern is sparse, with small historic villages strung along winding rural lanes. There has been expansion of the main towns of Saffron Walden, Stansted Mountfitchet and Great Dunmow. The M11 and A120 cut through the district. London Stansted Airport is located in the south-west of the district. Although noise from the overhead flight paths reduces tranquillity, the airport is well-integrated in the landscape and screened from view.

1.20 In order to help develop its policies and allocations for new housing and employment growth in new settlements, the Council needs to consider the sensitivity of the local landscape to new development and its capacity to accommodate development without causing significant adverse effects on its character.

¹ Uttlesford Landscape Character Assessment (Chris Blandford Associates, 2006)

Limitation of the landscape sensitivity assessment

1.21 This study provides an assessment of the landscape sensitivity of different locations within Uttlesford that are being considered for potential new settlements, without knowing the exact mix of development types, location, layout, design or mitigation proposed.

1.22 It should not be interpreted as a definitive statement on the suitability of certain locations for a particular development. It is not a replacement for detailed studies for specific siting and design and all developments will need to be assessed on their individual merits.

1.23 The study is based on an assessment of landscape character using carefully defined criteria. Landscape sensitivity is the result of a complex interplay of often unequally weighted variables (or 'criteria'). We have sought to address this issue in the list of key landscape and visual sensitivities given for each site – and a conclusion which highlights sensitivities across the site and variations in sensitivity between different areas within the site. The assessments are based on professional judgement, taking account of the interplay between criteria, as well as those which might be more important to the landscape character of each site.

1.24 It is also worth noting that the assessment considers the following:

- The natural character of the landscape but not specific ecological issues in relation to species or habitats;
- The historic and cultural character of the landscape but not specific cultural heritage/archaeological issues associated with individual designated heritage assets and their settings; and
- The visual character of the landscape but not visual amenity issues associated with specific receptors, such as public views from specific locations (e.g. promoted viewpoints), or private views and outlooks available to occupants of residential properties.

1.25 These are all issues that will need to be taken into account in site selection and impacts will need to be reported at the time when individual proposals are put forward – as such they will be addressed through the Sustainability Appraisal, the Strategic Land Availability Assessment (SLAA), planning applications and the Environmental Impact Assessment (EIA) process including more detailed landscape and visual impact assessments and appraisals (LVIA).

1.26 This study concentrates on understanding the sensitivities to development and does not address capacity. Capacity is a further stage of assessment that requires

consideration of cumulative development, landscape objectives, and thresholds of acceptable change to identify likely quantum of change that can be accommodated.

1.27 Finally, this remains a strategic study which is based on the assessment of broad sites. There are likely to be spatial variations in character within any one site and these are generally described in the text. Individual site level investigations will likely indicate further differences and variations at the site scale. This study was undertaken at 1:25,000 scale, involving desk study and field work from public rights of way and public vantage points.

Structure of the report

1.28 Each phase of the study will be presented in its own report. Each report is structured as follows:

Chapter 1 presents an introduction and policy context (this chapter)

Chapter 2 sets out the methodology for the landscape sensitivity assessment.

Chapter 3 sets out generic guidance to help accommodate development within the landscape.

Appendix A contains the sources of information used in the assessment.

Appendix B contains a glossary of terms.

1.29 Appendix C presents the landscape sensitivity assessment profiles for each site.

Chapter 2

Methodology

This chapter sets out the approach to assessing landscape sensitivity

2.1 The process for undertaking the landscape sensitivity assessment involved three main stages:

- Phase 1: Towns and villages
- Phase 2: Potential new settlements
- Phase 3: Additional sites around smaller villages

2.2 The methodology for **Phase 2: Potential new settlements** is described below.

Development scenario

2.3 The assessment considers the landscape sensitivity of twelve potential new settlements in Uttlesford District. The development scenario considered in the assessment was for a new settlement remote from the edges of existing towns and villages. Developers provided different levels of information in the SHLAA Call for Sites exercise. The approximate size of the development site and information provided on the number of proposed dwellings, educational and employment facilities are noted in each assessment.

Spatial framework for the assessment

2.4 The assessment uses the spatial framework of Landscape Character Types (LCTs) and components Landscape Character Areas (LCA) identified by the existing Uttlesford Landscape Character Assessment (2006) which identifies 3 LCTs and 20 component LCAs.

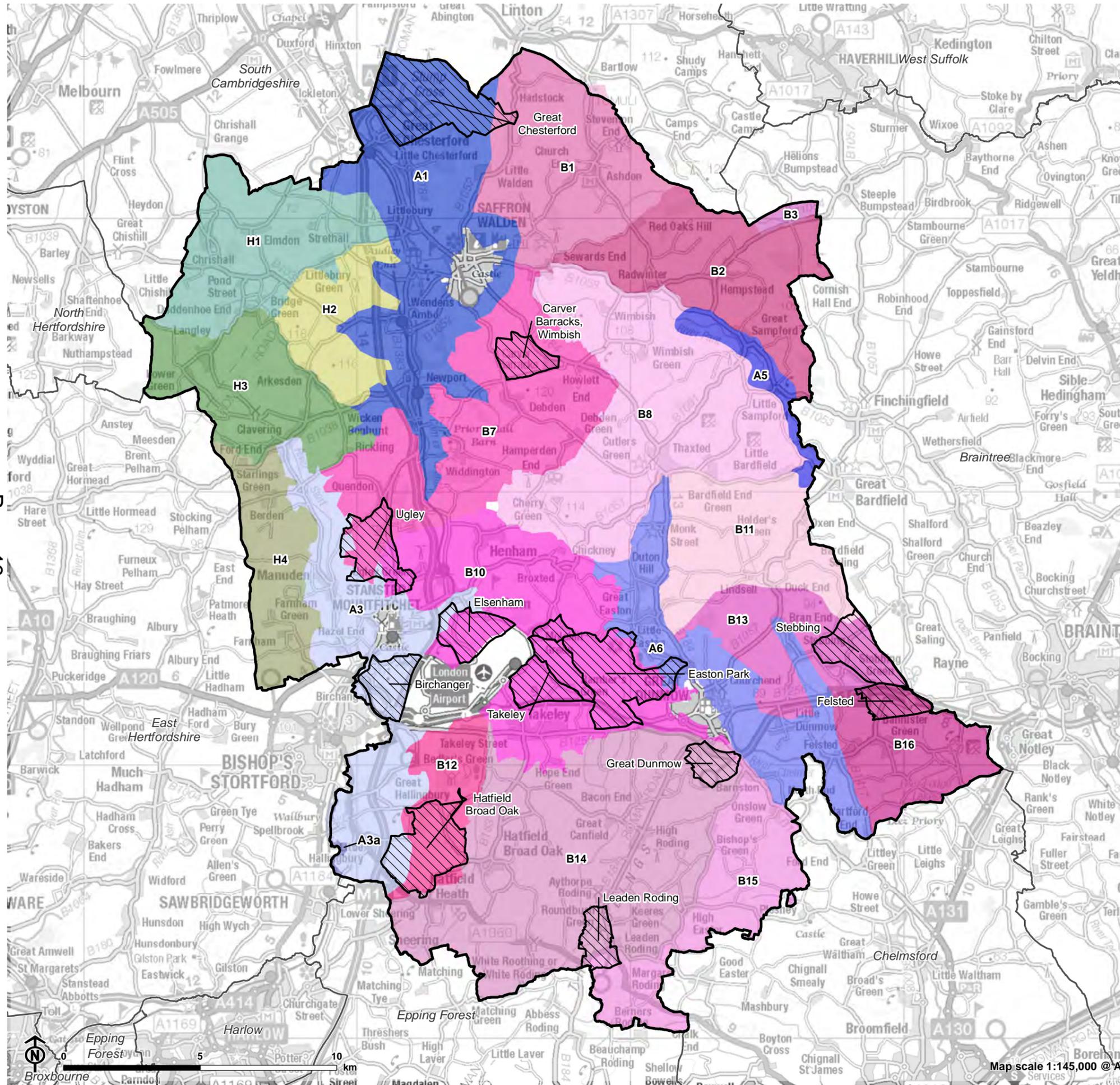
2.5 The LCTs and component LCAs which form the spatial framework for this study are shown in **Figure 2.1**.

Study areas

2.6 The assessment focusses on twelve potential new settlement sites brought forward by developers in the 2021 SHLAA Call for Sites and as agreed with UDC. Study areas around these sites were defined and agreed with UDC, following a desktop analysis of the site proposed in the Call for Sites and the surrounding landscape.



Figure 2.1 Landscape Character context



- Uttlesford District boundary
- Potential new settlements
- Landscape Character Area**
- A - Chalk Uplands
- A1. Cam River Valley
- A3. Stort River Valley
- A3a. Stort River Valley Floor
- A5. Pant River Valley
- A6. Upper Chelmer River Valley
- B - Glacial Till Plateau
- B1. Ashdon Farmland Plateau
- B2. Hempstead Farmland Plateau
- B3. Bumpstead Farmland Plateau
- B7. Debdon Farmland Plateau
- B8. Thaxted Farmland Plateau
- B10. Broxted Farmland Plateau
- B11. Lindsell & Bardfield Farmland Plateau
- B12. Hatfield Forest Farmland Plateau
- B13. Rayne Farmland Plateau
- B14. Roding Farmland Plateau
- B15. Pleshey Farmland Plateau
- B16. Felsted Farmland Plateau
- H - Chalk Uplands
- H1. Elmdon Chalk Upland
- H2. Arkesden Chalk Upland
- H3. Langley Chalk Upland
- H4. Berden & Farnham Chalk upland



2.7 No land within the site defined by the Call for Sites was scoped out of the assessment, although attention was paid to the absolute constraints identified in Phase 1 including:

- Flood Zone 3 (representing the highest level of flood risk);
- Statutory national ecological designations including Sites of Special Scientific Interest (SSSI); and National Nature Reserves
- Statutory heritage designations (Scheduled Monuments and Registered Parks and Gardens)

2.8 The twelve assessment sites are shown in **Figure 2.1** and listed below:

- Birchanger
- Carver Barracks, Wimbish
- Easton Park
- Elsenham
- Felsted
- Great Chesterford
- Great Dunmow
- Hatfield Broad Oak
- Leaden Roding
- Stebbing
- Takeley
- Ugley

Evaluating landscape sensitivity

2.9 This assessment draws on advice contained in Natural England's 'Approach to landscape sensitivity assessment' (2019)². This describes the term 'landscape sensitivity', within the context of spatial planning and land management, as follows:

"Landscape sensitivity may be regarded as a measure of the resilience, or robustness, of a landscape to withstand specified change arising from development types or land management practices, without undue negative effects on the landscape and visual baseline and their value."

2.10 It is a term applied to landscape character and the associated visual resource, combining judgements of their susceptibility to the specific development type / development

scenario or other change being considered together with the value(s) related to that landscape and visual resource.

Assessment criteria

2.11 Landscape sensitivity assessment requires judgements on both landscape susceptibility (how vulnerable the landscape is to change from the type being assessed, in this case a new settlement comprising residential, educational and commercial development) and landscape value (consensus about importance, which can be recognised through designation as well as through descriptions within the 2014 Landscape Character Assessment).

2.12 The selection of landscape sensitivity indicators ('criteria') for this study is informed by the attributes of landscape that could be affected by residential, educational and commercial development. These consider the 'landscape', 'visual' and 'perceptual' aspects of sensitivity. Their selection is also based on current best practice and experience of LUC in undertaking similar studies elsewhere in the UK.

2.13 The following six criteria headings are used for this study:

- Physical character (landform, scale and field pattern)
- Natural character
- Sense of time depth/ historic landscape character;
- Settlement character;
- Visual character (including skylines); and
- Perceptual and scenic qualities (including recreational value)

2.14 **Table 2.1** provides guidance and examples of higher and lower sensitivity features/attributes for applying the criteria in Uttlesford to new settlement development. The assessments present a commentary against each criterion. A list of key landscape and visual sensitivities is then provided, which pull out the sensitivities from the criterion above. In agreement with UDC an in-depth commentary provides a conclusion on the differences in sensitivity across the site, and identifies areas within the site where development may have less of an impact on landscape and visual sensitivities.

2.15 The initial stage of the assessment involved a thorough desk-based study drawing on sources of spatial and descriptive information regarding the landscape. This was supplemented by field survey work undertaken by a team of landscape professionals to verify the findings.

² ¹ Natural England's 2019 approach document is available [here](#)

Table 2.1: Criteria and guidance for assessing landscape sensitivity to new settlement development

Physical character (including landform, scale and field pattern)				
<p>This considers the shape and scale of the landform, landscape pattern and landscape elements in relation to the scale of potential development. Smooth, gently undulating or flat landforms are likely to be less sensitive to development than a landscape with a more dramatic landform, distinct landform features or incised valleys with prominent slopes.</p> <p>This criterion considers how developments fit with the scale of the landform (understanding the scale of the development proposed is important when applying this criterion). Larger scale, simple landforms are likely to be less sensitive to larger scale developments than smaller scale, enclosed landforms (where large-scale developments could appear out of scale with the underlying landform). Conversely, smaller developments may be able to be screened within enclosed landforms, therefore reducing landscape sensitivity. Existing small-scale features in the landscape in the form of existing buildings or trees can also influence the scale of development that can be accommodated in the landscape. This criterion also needs to be considered in relation to visual character.</p>				
Low	Low-Moderate	Moderate	Moderate-High	High
The landscape has smooth, gently undulating or featureless landform with uniform large-scale landscape pattern and low density of overlying landscape features.		The landscape has an undulating landform and some distinct landform features; it is overlain by a mixture of small-scale and larger scale field patterns and a moderate density of small-scale landscape features.		The landscape has a dramatic landform or distinct landform features that contribute positively to landscape character; the area has a high density of small-scale landscape features and is overlain by a small-scale field pattern.
Natural character				
<p>This criterion considers the 'naturalistic' qualities of the landscape in terms of coverage of semi-natural habitats and valued natural features (e.g. trees, hedgerows) which could be vulnerable to loss from development.</p> <p>Areas with frequent natural features (including large areas of nationally or internationally designated habitats) result in increased sensitivity to development, while landscapes with limited natural features (including intensively farmed areas or areas with high levels of existing development) will be less sensitive.</p>				
Low	Low-Moderate	Moderate	Moderate-High	High
Much of the landscape is intensively farmed or developed with little semi-natural habitat coverage and few valued natural features.		There are areas of valued semi-natural habitats and features found in parts of the landscape, whilst other parts are intensively farmed or developed.		Large areas of the landscape are nationally or internationally designated for their nature conservation interest; there is a frequent occurrence of valued natural features across the landscape.
Sense of time depth / historic landscape character				
<p>This considers the extent to which the landscape has 'time-depth' (a sense of being an historic landscape), with reference to the Uttlesford District Historic Environment Project (2009) and/or the presence of heritage assets that are important to landscape character (i.e. Conservation Areas, Scheduled Monuments, listed buildings, protected lanes, archaeological features and remains or other features listed in the landscape character assessment).</p> <p>Landscapes with small-scale, more irregular field patterns of historic origin are likely to be more sensitive to the introduction of modern development than landscapes with large, regular scale parliamentary field patterns.</p>				
Low	Low-Moderate	Moderate	Moderate-High	High
A landscape with relatively few historic features important to the character of the area and little time depth (i.e. large intensively farmed fields).		A landscape with some visible historic features of importance to character, and a variety of time depths.		A landscape with a high density of historic features important to the character of the area and great time depth (i.e. piecemeal enclosure with irregular boundaries, ridge and furrow).
Character and setting of settlement				
<p>This considers the character of existing settlements within the site and considers the extent to which the landscape contributes to the identity and distinctiveness of settlements, by way of its character and/or scenic quality, for example by providing a backdrop/ setting, or playing an</p>				

important part in views from a settlement. This also considers the extent to which the area contributes to a perceived gap between settlements (the loss of which would increase coalescence).				
Low	Low-Moderate	Moderate	Moderate-High	High
The site does not contribute positively to the setting of the settlement or play a separation role.		The site provides a rural backdrop to existing settlements, plays some part in views from those settlements, or plays a role in the perception of a gap between settlements.		The site provides an attractive backdrop to existing settlements, plays an important part in views from those settlements, or forms an important part in the perception of a gap between settlements. Development in the site would adversely affect an existing settlement edge (which may be historic or distinctive).
Visual character				
<p>This considers the visual prominence of the site reflecting the extent of openness or enclosure in the landscape (due to landform or land cover), and the degree of intervisibility with the surrounding landscape (i.e. the extent to which potential development would be visible).</p> <p>Visually prominent landscapes are likely to be more sensitive to development than those which are not so visually prominent. Landscapes which are visually prominent and inter-visible with adjacent landscapes (both urban and rural) are likely to be more sensitive to development than those which are more hidden or less widely visible.</p> <p>It also considers the skyline character of the site including whether it forms a visually distinctive skyline or an important undeveloped skyline. Prominent and distinctive and/or undeveloped skylines, or skylines with important landmark features, are likely to be more sensitive to development because new buildings/structures may detract from these skylines as features in the landscape. Important landmark features on the skyline might include historic features or monuments.</p>				
Low	Low-Moderate	Moderate	Moderate-High	High
The site is enclosed/visually contained and/or has a low degree of visibility from surrounding landscapes and the site does not form a visually distinctive or important undeveloped skyline		The site is semi-enclosed or has some enclosed and some open areas. It is likely to have some inter-visibility with surrounding landscapes and may have some visually distinctive or undeveloped skylines within the area.		The site is open and/or has a high degree of visibility from surrounding landscapes, and/or the area forms a visually distinctive skyline or an important undeveloped skyline.
Perceptual and scenic qualities (including access and recreation)				
<p>This considers qualities such as the rural character of the landscape (traditional land uses with few modern human influences), scenic qualities, sense of remoteness and/or tranquillity, and the extent of public access via Public Rights of Way and/or Open Access Land.</p> <p>Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a traditional rural feel with few modern human influences) tend to increase levels of sensitivity to development compared to landscapes that contain signs of modern development. High scenic value and dark night skies also add to sensitivity in relation to this criterion. This is because development will introduce new and uncharacteristic features (including flood lighting) which may detract from a sense of tranquillity, dark skies and or remoteness/naturalness.</p>				
Low	Low-Moderate	Moderate	Moderate-High	High
The site is significantly influenced by development/ human activity, where new development would not be out of character. Low or no public access.		A landscape with some sense of rural character, but with some modern elements and human influences. Some Public Rights of Way.		A tranquil or highly rural landscape, with high scenic value, dark skies and a high perceived degree of rural character and naturalness with few modern human influences. Extensive public access via PRoWs / open access land.

Desk study

2.16 The first task in the assessment process, following the definition of the 12 assessment sites against the agreed criteria, was to carry out a desk-top analysis. This involved the mapping of multiple data sets within ArcGIS (Geographical Information System) to identify the potential sensitivities of each site.

2.17 As with all assessments based upon data and information which is to a greater or lesser extent subjective, some caution is required in its interpretation. An assessment of landscape sensitivity is the result of a complex interplay of often unequally weighted variables (i.e. 'criteria'). Each site is assessed against each criterion in turn, with explanatory text indicating features or attributes of lower or higher sensitivity.

2.18 While the Landscape Sensitivity Assessment provides an initial indication of landscape sensitivity, it should not be interpreted as definitive statements on the suitability of individual sites for a particular development. If a site is taken forward, once a masterplan is developed a comprehensive landscape and visual impact assessment (LVIA) will be required to guide the master planning process, including opportunities for mitigation and enhancement.

Field Verification

2.19 A structured process of field survey verification was undertaken in September 2021 by landscape experts in order to test and refine the outputs from the desk study. Each assessment site was visited to record information and take photographs. The field survey was undertaken from roads and public rights of way to gain an understanding of landscape character sensitivity.

2.20 The fieldwork focused in particular on the perceptual and scenic character of the landscape.

Reporting

2.21 A pilot assessment was produced for agreement with UDC before the full report was prepared.

2.22 The report for each of the assessment sites is structured as follows:

- An aerial photograph showing the boundary of the site;
- A short description of the site, including any details provided about the proposed number of houses, educational and commercial development;
- An OS map of the site with relevant designations and constraints;
- Representative photographs of the site;
- Landscape sensitivity profile, comprising:

- Description of the landscape character context i.e. which Landscape Character Area(s) the site falls within.
- Criteria-based landscape sensitivity assessment, with a description given against each assessment criterion and its sensitivity;
- A list of the key landscape and visual sensitivities within the site;
- A conclusion with a summary of the differences in sensitivity across the site.

Chapter 3

Landscape Guidance

This section provides generic guidance to help accommodate development within the landscape.

Landscape guidance for accommodating residential and employment development in Uttlesford District

3.1 This guidance should be read in conjunction with the more detailed information provided in the Uttlesford District Council Landscape Character Assessment (2006) and the Essex Design Guide (2018).

3.2 All development should aim to:

- Utilise existing vegetation or plant new vegetation/trees to assimilate development into the landscape. Cues from the local landscape character should be used to design species and planting patterns.
- Avoid visually prominent locations, where development will be incongruous with the wider landscape context.
- Refer to the published landscape guidance in the Uttlesford Landscape Character Assessment (2006), Neighbourhood Plans (in place for Felsted, Great Dunmow, Newport, Quendon and Rickling, and Thaxted) and The Essex Design Guide (2018) for ideas for mitigation and enhancement that will be in character with the landscape.
- Improve access networks and recreational opportunities to enable access to, and enjoyment of, the landscape where possible.
- Ensure the landscape components of the development are in character with the locality, form part of a coherent green infrastructure network and provides ecosystem services including increasing pollinating insects, providing water storage, preventing soil erosion, enhancing water quality and enhancing sense of place.
- Ensure a high quality and responsive design, making reference to the National Design Guide, Building for a Healthy Life and Essex Design Guide, particularly the sections on character and context.

- Be in-keeping with the existing settlement form and vernacular taking into account specific local information including Neighbourhood Plans.
- Where appropriate, use visual representations to understand impact of development proposals – as set out in Landscape Institute's Visual Representation of Development Proposals.
- Take opportunities to mitigate the impact of existing detracting features within the landscape, and where possible enhance landscape character in line with published guidance, including local landscape character assessments.

A landscape photograph showing a field of tall grasses in the foreground, a large log lying on the ground, and a large tree on the left. In the background, there is a field of golden-brown crops, possibly corn, under a clear blue sky. The text 'Appendix A: Data and information sources' is overlaid in the top right corner.

Appendix A: Data and information sources

Appendix A

Data / information sources

A.1 The following documents were used to inform the Landscape Sensitivity Assessment:

- Uttlesford Landscape Character Assessment (Chris Blandford Associates, 2006)
- Conservation Area Appraisals:
 - Great Chesterford (2007)
 - Great Dunmow (2007)
 - Little Easton (2015)

– Quendon and Rickling (2015)

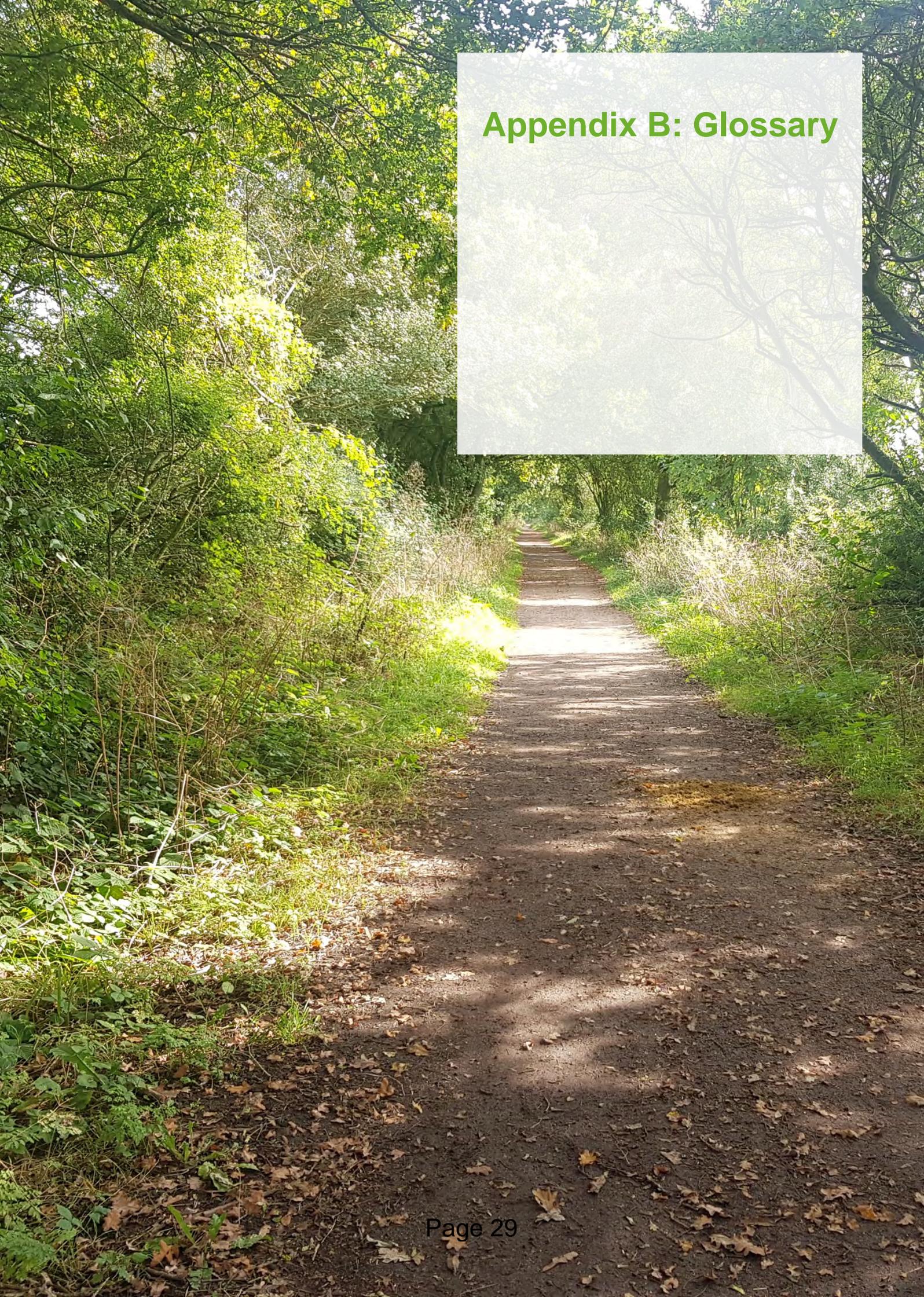
- Uttlesford Protected Lanes Assessment (Essex County Council, 2012)
- Uttlesford Call for Sites (2021) including forms submitted by developers

A.2 In addition, the following table lists the main datasets collated and analysed in Geographic Information System (GIS) software as a key part of the evidence base for this study.

Table A.1: GIS considered in the assessment

GIS layer	Source
Base maps	
Local authority boundaries	Ordnance Survey
Ordnance Survey 1: 25K	Uttlesford Council
Ordnance Survey 1: 50K	Uttlesford Council
Ordnance Survey 1:250k	Ordnance Survey
Aerial imagery	ESRI
Landscape	
National Character Areas	Natural England
Agricultural Land Classification	Natural England
Light pollution	CPRE
Tranquillity	CPRE
CORINE Land Cover	EEA
Historic environment	
Conservation areas	Uttlesford Council
Listed buildings	Historic England
Registered Parks and Gardens	Historic England
Scheduled Monuments	Historic England
Registered battlefields	Historic England

GIS layer	Source
Locally listed buildings	Uttlesford Council
Ecological environment	
Local Wildlife Sites (LoWS)	Uttlesford Council
Priority Habitat Inventory (PHI)	Natural England
Local Nature Reserves (LNR)	Natural England
National Nature Reserves (NNR)	Natural England
Sites of Special Scientific Interest (SSSI)	Natural England
Ancient Woodland Inventory (AWI)	Natural England
Access and recreation	
Country Parks	Natural England
National Trails	Natural England
National and Regional Cycle Routes	Sustrans
Ordnance Survey Open Greenspace	Ordnance Survey
CRoW Act Open Access Land / Open Country	Natural England
National Trust Land – Always Open / Limited Access	National Trust

A dirt path winds through a dense forest. Sunlight filters through the trees, creating dappled light on the path. The path is covered with fallen leaves and leads into the distance. The trees are lush green, and the overall atmosphere is peaceful and natural.

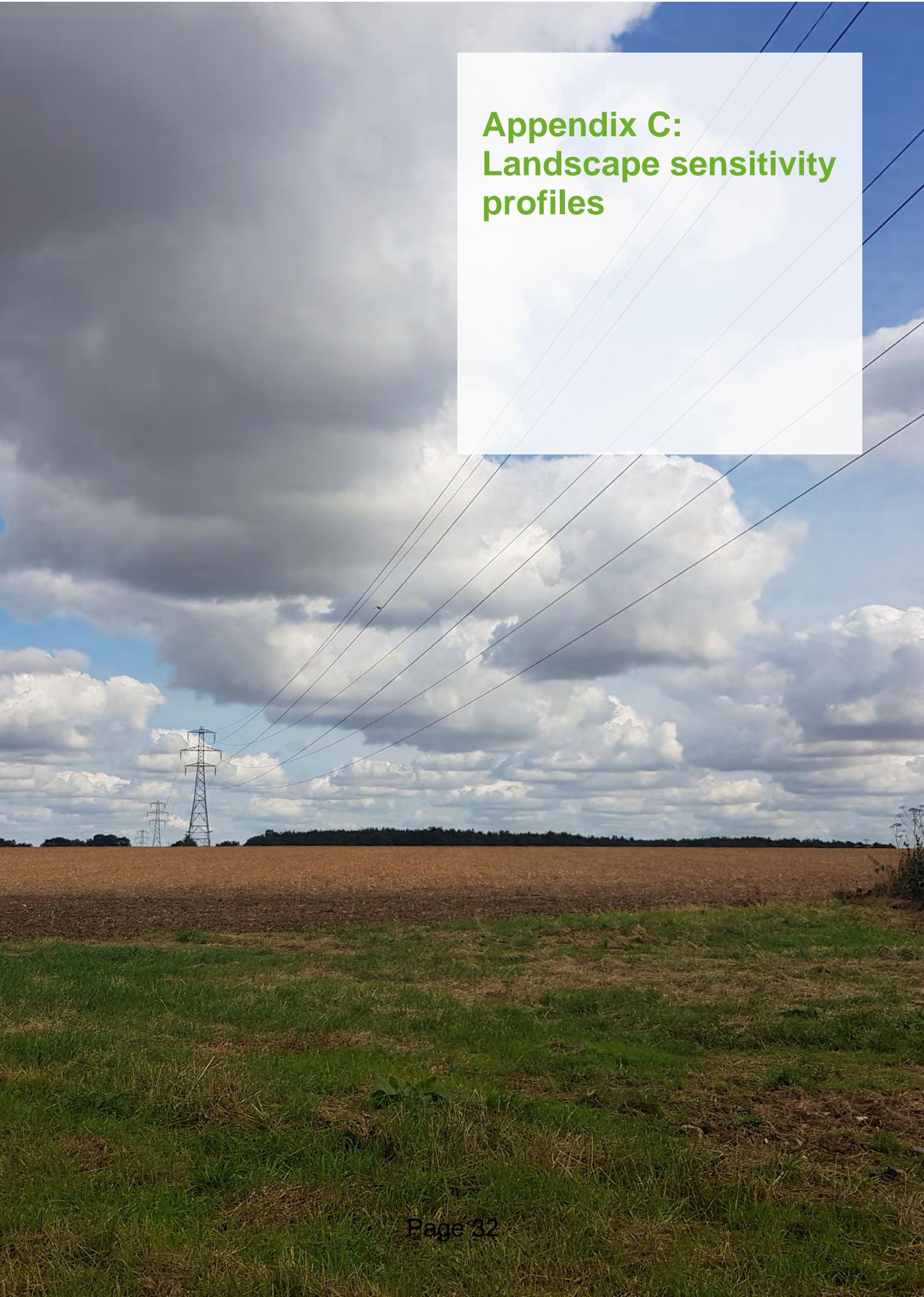
Appendix B: Glossary

Appendix B

Glossary

Term	Definition
Ancient woodland	An area of woodland which evidence shows has had continuous woodland cover since at least 1600 AD and has only been cleared for underwood or timber production. It is an extremely valuable ecological resource, with an exceptionally high diversity of flora and fauna.
AOD	Above Ordnance Datum (sea level)
Arable	Land used for growing crops
Biodiversity	The measure of the variety of organisms present in different ecosystems
Built form	The characteristic nature of built development
Feature	A prominent, eye-catching element (e.g. wooded hilltop, church spire)
Floodplain	The area that would naturally be affected by flooding if a river rises above its banks
GIS	Geographic Information System
Grassland	Land used for grazing. Grassland can be improved (by management practices), semi-improved (modified by management practices with a less diverse range of species than unimproved grasslands), or unimproved (not treated with fertiliser, herbicide or intensively grazed, and consequently has a high species diversity)
Habitat	The natural home or environment of an animal, plant, or other organism
Intact	Not changed or diminished
Land cover	Combinations of land use and vegetation that cover the land surface
Landmark	An object or feature of a landscape that is easily seen and recognised from a distance, especially one that enables someone to establish their location
Landscape	The term refers primarily to the visual appearance of the land, including its shape, form and colours. However, the landscape is not a purely visual phenomenon; its character relies on a whole range of other dimensions, including geology, topography, soils, ecology, archaeology, landscape history, land use, architecture and cultural associations.
Landscape Character Areas (LCAs)	A unique geographic area with a consistent character and identity, which forms part of a landscape character type.
Landscape Character Types (LCTs)	Distinct types of landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different areas in different parts of the district, but share broadly similar combinations of geology, topography, drainage patterns, vegetation, historic land use and settlement pattern.
Landscape value	The relative value that is attached to different landscapes. In a policy context the usual basis for recognising certain highly valued landscapes is through the application of a local or national landscape designation. Yet a landscape may be valued by different communities of interest for many different reasons without any formal

Term	Definition
	designation, recognising, for example, perceptual aspects such as scenic beauty, tranquillity or wildness; special cultural associations; the influence and presence of other conservation interests; or the existence of a consensus about importance, either nationally or locally.
Listed building	A building, object or structure that has been judged to be of national importance in terms of architectural or historic interest, designated by Historic England
Local Plan	A development plan prepared by local planning authorities
LSA	Landscape Sensitivity Assessment
LoWS	Local Wildlife Site
Natural character	Character as a result of natural or semi-natural features such as woodland, grassland, hedgerows
NPPF	National Planning Policy Framework
Nucleated settlement	A settlement that is clustered around a centre, in comparison to a linear or dispersed settlement
OS	Ordnance Survey
Pastoral	Land used for keeping or grazing sheep or cattle
Priority habitat	UK Biodiversity Action Plan priority species and habitats were identified as being the most threatened and requiring conservation action under the UK BAP. The original lists of UK BAP priority habitats were created between 1995 and 1999 and were subsequently updated in 2007. See http://jncc.defra.gov.uk/page-5155 for further information.
Riparian habitat	Riverbank habitat
Scheduled Monument	Nationally important archaeological sites or historic buildings, given protection against unauthorised change.
Semi-natural vegetation	Any type of natural vegetation which has been influenced by human activities, either directly or indirectly
Sense of place	A person's perception of a location's indigenous characteristics, based on the mix of uses, appearance and context that make a place memorable
Sensitive	The response to change or influence
SSSI	Site of Special Scientific Interest
Time depth	The time period expressed in the landscape, or the extent to which the landscape reflects a certain time period (a landscape with greater time depth will comprise older elements than a landscape with lesser time depth).
Topography	Combinations of slope and elevation that produce the shape and form of the land surface
Valued landscape attributes	Positive features and characteristics that are important to landscape character and that, if lost, would result in adverse change to the landscape
Vernacular	Buildings constructed in the local style from local materials. Concerned with ordinary rather than monumental buildings

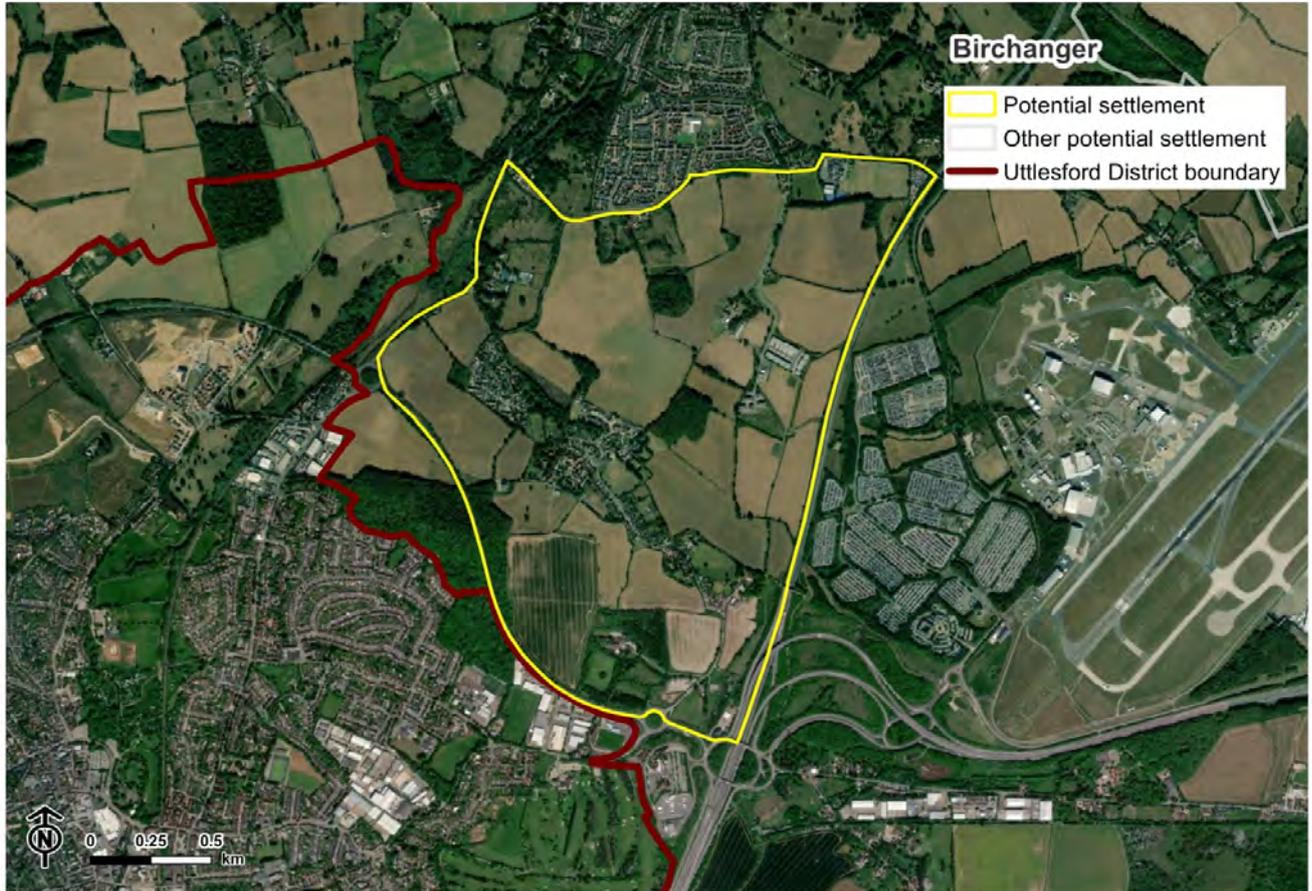
A landscape photograph showing a wide, flat field in the foreground, likely a harvested agricultural field, with a line of trees in the distance. Several high-voltage power lines stretch across the sky from the left towards the right. The sky is filled with large, white, fluffy clouds, with some blue patches visible. The overall scene is a rural landscape with infrastructure.

Appendix C: Landscape sensitivity profiles

Appendix C

Landscape sensitivity profiles

Birchanger



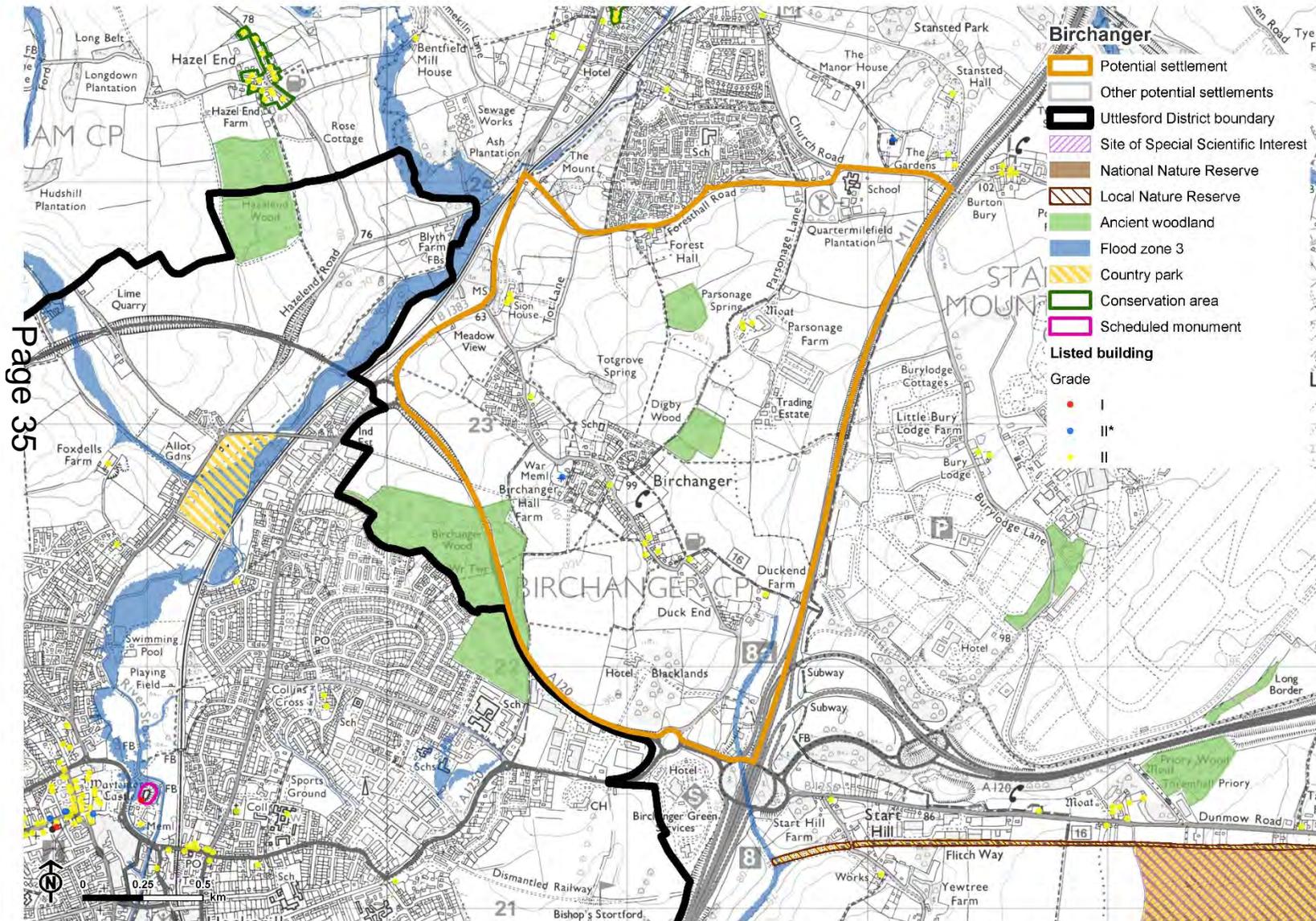
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site is located immediately to the south of Stansted Mountfitchet, west of the M11, north of the A120 and east of the B1383. It is 223ha in extent and is proposed for approximately 3,500 dwellings and associated infrastructure including roads, a bus route and primary school provision.

The site lies within LCA A3: Stort River Valley and is largely in arable use. Birchanger village, which lies within the site contains a number of listed buildings, including the 12th century Grade II* Church of St Mary the Virgin.



Birchanger representative photos



View across the plateau to northern settlement edge of Birchanger



View west across the Stort valley, with new development at Hazel End Bishop's Stortford visible



Enclosed character south of Birchanger



View from Parsonage Lane to settlement edge of Stansted Mountfitchet

Birchanger

Landscape Character Area: A3 Stort River Valley

Landscape sensitivity assessment: Birchanger		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> ■ High, flat plateau at Birchanger around 100m AOD. ■ Gently falling topography to the south-east and north-west towards the River Stort and its tributaries, ranging from 75m to 100m AOD. ■ Medium scale arable fields, interspersed with woodland copses and hedgerow field boundaries. Smaller pasture fields are found west of Tot Lane. 	<ul style="list-style-type: none"> ■ Lower sensitivity ■ Moderate sensitivity ■ Moderate sensitivity
Natural character	<ul style="list-style-type: none"> ■ Much of the site is intensively farmed. ■ Valued semi natural habitats include scattered copses of priority habitat deciduous woodland, often of ancient origin. Digby Wood, Birchanger Wood and Parsonage Spring are LoWS and Important Woodlands. ■ Hedgerows, mature hedgerow trees and roadside trees provide semi-natural habitats. 	<ul style="list-style-type: none"> ■ Low sensitivity ■ Higher sensitivity ■ Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> ■ Clusters of Grade II listed buildings at Parsonage Farm and Sion House. The Grade II* listed Church of St Mary, Birchanger, lies outside the settlement boundary of Birchanger. ■ Historic field patterns have largely been lost to modern agricultural practices. Evidence of older enclosure patterns remains east of Birchanger. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> ■ The site provides a rural setting to Birchanger village, including its historic church, and to the modern southern settlement boundary of Stansted Mountfitchet. ■ The site is part of the wider rural area which provides separation between Bishop's Stortford and Stansted Mountfitchet. Development would risk coalescence of Bishop's Stortford, Birchanger and Stansted Mountfitchet. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Higher sensitivity
Visual character	<ul style="list-style-type: none"> ■ The landscape north of Birchanger has an open character, with long-distance views across the arable fields of the plateau and river valley to a wooded horizon and there is a high degree of visibility from surrounding landscapes. ■ South of Birchanger, the woodlands, mature hedgerows and roadside vegetation along the A120 and M11, provide a more enclosed character. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> ■ The well-used public right of way network provides connections between Birchanger, Stansted Mountfitchet and the wider countryside. ■ Modern development within the site detracts from its rural character including residential expansion at Birchanger, a caravan site on Old Burylodge Lane, Forest Hall School, and commercial development at M11 Business Link and the Ibis hotel complex. ■ The area is influenced by modern development in the wider landscape, with views from the north of the site to the settlement edge of Stansted Mountfitchet, and new residential development at Hazel End, Bishop's Stortford. ■ The A120, M11 and Stansted Airport to the east are largely screened by vegetation but are still audibly intrusive and reduce tranquillity. ■ Light pollution from the M11, Bishop's Stortford and Stansted Mountfitchet reduces dark skies in the site. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity ■ Lower sensitivity ■ Lower sensitivity ■ Lower sensitivity

Key landscape and visual sensitivities

- Parsonage Spring, Digby Wood and Birchanger Wood are all LoWS, recorded as priority habitat deciduous woodland and ancient woodland. The woodlands are of higher sensitivity due to their contribution to the landscape pattern, complexity and time depth.
- Hedgerow trees and woodland copses are valued landscape features and contribute to a rural character.
- Older enclosure field patterns east of Birchanger are of higher sensitivity due to their time depth.
- Historic assets at Parsonage Farm, Sion House and St Mary, Birchanger are valued for their time-depth.
- The site contributes to the rural backdrop to Birchanger, which retains some of its historic linear settlement pattern, and particularly to the small flint Church of St Mary on the edge of the village.
- The site provides rural separation between Stansted Mountfitchet and Bishop's Stortford. Foresthall Road provides a hard southern boundary to Stansted Mountfitchet.
- The open character of the Birchanger plateau is a key sensitivity, especially where there is intervisibility with the wider landscape across the Stort valley in the west of the site.
- Tot Lane is a sunken rural lane, which contributes to the rural pattern of the landscape and time-depth.
- Valued public right of way network connecting Stansted Mountfitchet and Birchanger.

Conclusion

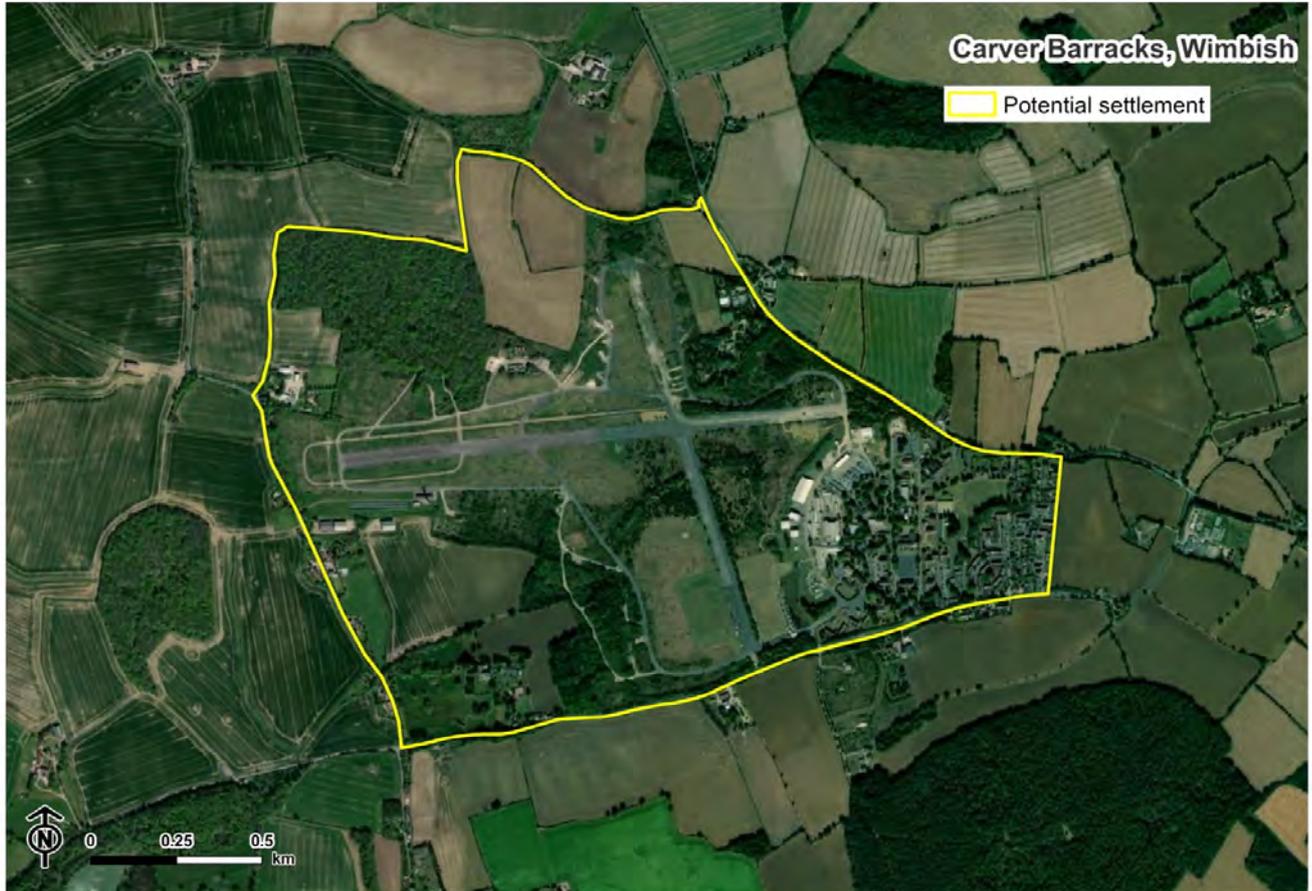
3.3 The key sensitivities of the site relate to its function and value as a rural landscape which provides separation between Bishop's Stortford and Stansted Mountfitchet, and should be maintained to avoid coalescence, or perceived coalescence, between these settlements. The rural setting provided to Birchanger village, particularly to the St Mary's Church, is also sensitive to change. Ecologically valued woodlands provide an important part of the rural landscape pattern, and along with the built heritage assets are valued landscape features which provide time depth to the site.

3.4 The elevated open character of the plateau has long-distance intervisibility with the wider countryside and areas on the edge of the plateau to the west of the site are particularly sensitive due to the potential visual impacts on the wider landscape outside the site.

3.5 The east of the site has a lower sensitivity due to the influence of existing development within the site and the audible intrusion of the M11 on the perceptual qualities of the landscape, the limited semi-natural habitats and more enclosed character. The landscape south and south-east of Birchanger is also less sensitive due to its more enclosed character and proximity to the M11.

3.6 It is therefore considered that the east and south of the site could accommodate some development, providing the key sensitivities are respected and the landscape and visual impacts minimised.

Carver Barracks, Wimbish



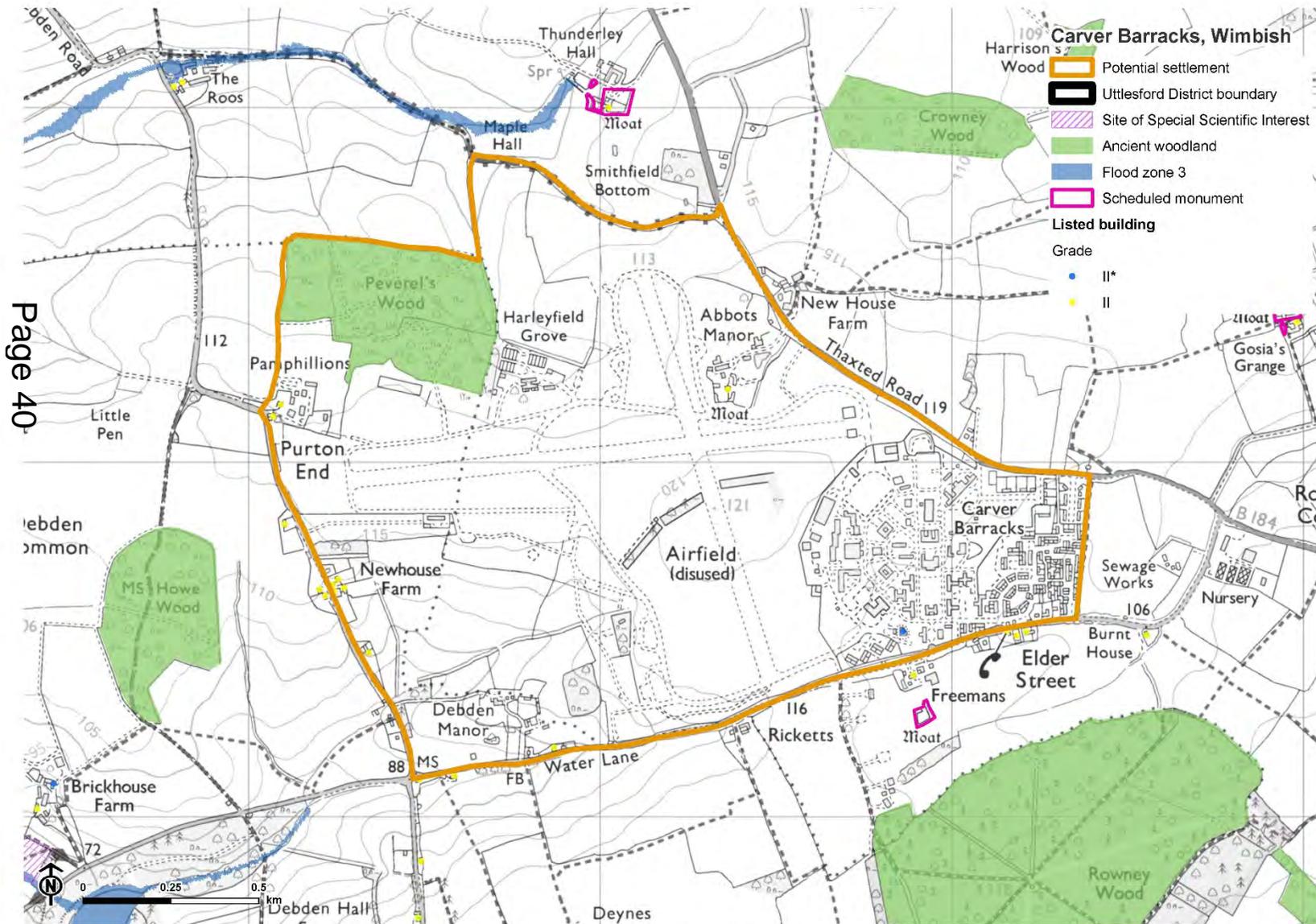
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site is located in the north of the district, south-east of Saffron Walden and north of Debden. It extends to 154ha. No details are available on the number of dwellings or employment space.

The site lies within LCA B7: Debden Farmland Plateau. It is a British Army base located on the former site of RAF Debden.



Carver Barracks representative photos



Limited views across the flat landform of the former airfield.



View across open arable fields from Fulfen Slade Lane, with Peverel's Wood providing a wooded backdrop



Mature roadside vegetation along Water Lane



Military fencing prevents access into the site

Carver Barracks, Wimbish

Landscape Character Area: B7 Debden Farmland Plateau

Landscape sensitivity assessment: Carver Barracks, Wimbish		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> Largely flat landform around 120m AOD, reflected in its former use as airfield. Land falls gently in the north-west and south-west towards the Fulfen Slade and Debden Water respectively, from 115m to 90m AOD. Large scale open landscape in the centre of the site with medium scale arable fields with in the north and south west. Hedgerow trees and fragmented hedgerows provide smaller-scale features. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity Moderate sensitivity
Natural character	<ul style="list-style-type: none"> Peverel's Wood is a priority habitat deciduous woodland and ancient woodland, designated as LoWS and Important Woodland. Scattered areas of priority habitat woodland, grassland and traditional orchard habitats are present on the periphery of the site, including at Elder Street and Fulfen Slade Lane, designated as a Special Roadside Verge and LoWS. There are no recorded semi-natural habitats on the former airfield. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity Lower sensitivity
Sense of time depth	<ul style="list-style-type: none"> The Operations Block in Carver Barracks is Grade II* listed. There are small clusters of Grade II listed buildings at Newhouse Farm and Purton End, and at Abbots Manor in the east. Archaeological sites cover Abbots Manor and Peverel's Wood. Carver Barracks is a former RAF airfield built in 1935. The construction of the airfield has removed any historic field patterns. Some older enclosure patterns remain around Harley field Grove and Debden Manor. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> The site is part of the wider countryside between Debden and Saffron Walden. Carver Barracks lies adjacent to Elder Street, which is characterised by modern residential housing. The barracks do not form an attractive backdrop to Elder Street. 	<ul style="list-style-type: none"> Moderate sensitivity Lower sensitivity
Visual character	<ul style="list-style-type: none"> The perimeter of the site is largely enclosed by roadside vegetation and military fencing. Within the site there are open views across the former airfield, with a wooded skyline provided by Peverel's Wood to the north-west and by woodland outside the site including Rowney Wood and Forty Acre Wood. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> Light pollution from Carver Barracks reduces dark skies in the south and south-east of the site. Dark skies are present in the north-west, west and south-west. Access is limited across the site due to its military use. Existing development is concentrated in the east at Carver Barracks and this along with the former airfield are modern influences on the site. More historic houses and farmsteads are located in the north and west. A generally tranquil character, although there is some noise from Stansted airport and passing road traffic. 	<ul style="list-style-type: none"> Lower sensitivity Higher sensitivity Lower sensitivity Lower sensitivity Moderate sensitivity Moderate sensitivity

Key landscape and visual sensitivities

- Semi-natural habitats at Peverel's Wood, Elder Street and Fulfen Slade Lane are ecologically valued and highly sensitive to change. The setting of the ancient woodland at Peverel's Wood is also sensitive.
- Priority habitat deciduous woodland, traditional orchard, hedgerows and hedgerow trees contribute to the landscape pattern, provide a wooded horizon, are ecologically valued and are vulnerable to loss from development.
- The site provides a rural setting to the cluster of Grade II listed historic buildings, which themselves provide time depth and contribute to the historic landscape character of the site.
- Dark skies, away from Carver Barracks, are sensitive to new development.

Conclusion

3.7 The key sensitivities of this site relate to the ancient woodland of Peverel's Wood, scattered priority habitats, historic farms and cottages, and dark skies away from Carver Barracks.

3.8 However, most of the site has a lower sensitivity due to the large-scale flat landform, limited semi-natural habitats, limited time-depth, influence of modern development from Carver Barracks and the airfield which detract from the rural character of the site, the visual enclosure and lack of access to the site due to its military use.

3.9 It is considered that the former airfield could accommodate development, providing the key sensitivities are respected and the landscape and visual impacts minimised. There are opportunities to integrate Elder Street into the new development.

Easton Park



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

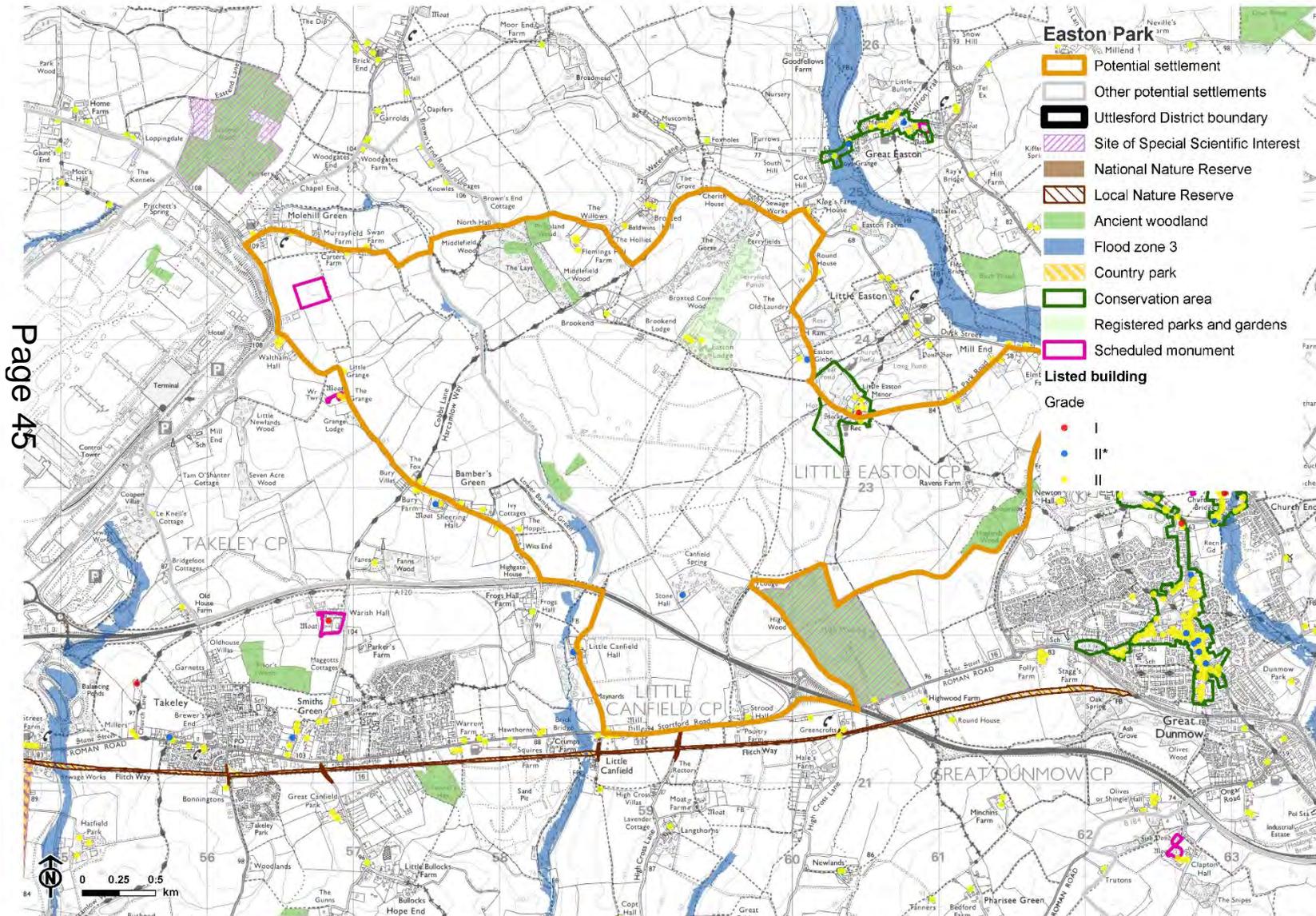
The site lies between Stansted Airport and Great Dunmow, east and north of Takeley and Priors Green. The area is 809ha and is proposed for 10,000 houses and associated commercial and community facilities.

The area lies predominately within LCA B10: Broxted Farmland Plateau, with the north-east within LCA A6: Upper Chelmer River Valley. The area is largely in arable use with small areas of pasture and woodland blocks. Highwood Quarry in the south of the site is still active. The site contains a few small farmsteads, Easton Lodge and part of the linear hamlets of Bamber's Green and Little Easton Manor.

NB The west of the site is also assessed within the Takeley potential new settlement site.

Appendix C
Landscape sensitivity profiles

New Settlements LSA
November 2021



Page 45

Easton Park representative photographs



Open arable fields provide a rural setting to Little Easton



View to Great Dunmow across large open arable fields to a wooded skyline



View across arable fields and Roding valley to the wooded skyline



The large-scale open landscape around Highwood Quarry

Easton Park

Landscape Character Area: B10 Broxted Farmland Plateau and A6 Upper Chelmer River Valley

Landscape sensitivity assessment: Easton Park		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> ■ Flat to very gently undulating plateau topography between 90 and 100m AOD. ■ Sloping topography in the north-east falling to the River Chelmer, from 85m to 60m AOD, and at Perryfield Ponds falling from 100m to 70m AOD. ■ Spoil heaps at Highwood Quarry have created a manmade topography. ■ Medium to large scale arable fields bound by hedgerows and interspersed with woodlands. 	<ul style="list-style-type: none"> ■ Lower sensitivity ■ Moderate sensitivity ■ Lower sensitivity ■ Moderate sensitivity
Natural character	<ul style="list-style-type: none"> ■ Priority habitat deciduous woodland concentrated in the north-east extending from the Chelmer Valley, much of ancient origin, designated as LoWS and Important Woodland. ■ Molehill Green LoWS is designated for its good quality semi-improved grassland. The River Roding and associated tributaries are priority habitat rivers. Priority habitat traditional orchard is recorded at Easton Lodge. ■ Much of the site is intensively farmed or is in use as a quarry and few priority habitats are recorded in the centre and west of the site. ■ Hedgerows, hedgerow trees and riverside vegetation provide semi-natural features. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Higher sensitivity ■ Lower sensitivity ■ Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> ■ Easton Lodge is a Grade II listed Registered Park and Garden and contains a number of Grade II listed buildings. Little Easton Conservation Area extends into the site in the north-east, and the landscape surrounding the village ponds is regarded as an important open space in the Conservation Area Appraisal. ■ Waltham Hall Scheduled Monument is in the north-west. Grade II listed houses and farmsteads line the road network on the edges of the site. Many of the rural lanes are designated as Protected Lanes. ■ The former RAF Great Dunmow airfield extends across the centre of the site, and the runways are still visible. Historic field patterns have largely been lost to modern agricultural practices. ■ Evidence of older enclosure patterns remain north and east of Bamber's Green, at The Grange and south of Molehill Green. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Higher sensitivity ■ Lower sensitivity ■ Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> ■ The rural landscape contributes to the undeveloped setting to Little Easton, as noted in the Conservation Area Appraisal. ■ The site contributes to the separation between Great Dunmow, Mill End and Little Easton. The west of the site forms part of the rural landscape separating Stansted Airport from surrounding settlements contributing to the 'airport in the countryside' character. ■ There are no settlements or buildings in the centre of the site on the former airfield. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Higher sensitivity ■ Lower sensitivity
Visual character	<ul style="list-style-type: none"> ■ An open site, with long views across open fields on the plateau to a wooded skyline. Some localised enclosure is provided by mature hedgerow trees. ■ Views to the new settlement edge of Great Dunmow in the east reduce the rural character. Communications towers associated with Stansted Airport can be seen in the west, although vegetation screens the airport itself. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity

	<ul style="list-style-type: none"> The open landscape around Highwood Quarry is contained by woodland with a low degree of visibility from surrounding landscape and no intervisibility with Little Easton or Great Dunmow. 	<ul style="list-style-type: none"> Lower sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> Light pollution from Stansted Airport reduces dark skies in the west, and Great Dunmow contributes to light pollution in the south-east. Darker skies characterise the north of the site, away from development. The Saffron Trail and Harcamlow Way promoted routes run through the site, and with the rest of the public right of way network provide connections between the settlements and into the wider countryside. Development is limited to the road network on the site boundaries including at Bamber's Green, Molehill Green and Easton Lodge. The A120 to the south is audibly intrusive, although generally screened by vegetation. Electricity pylons in the east are intrusive modern influences. 	<ul style="list-style-type: none"> Lower sensitivity Higher sensitivity Moderate sensitivity Higher sensitivity Lower sensitivity

Key landscape and visual sensitivities

- Woodlands and mature hedgerow trees within the site, including those designated as Important Woodland and LoWS, are ecologically valued and contribute to the rural character of the site. Vegetation in the west of the site screens Stansted Airport. These features are vulnerable to loss from new development.
- The River Roding and associated tributaries are ecologically valued as priority habitat, and provide some topographical variation.
- The site is part of the rural landscape which provides open space and separation between Stansted Airport and nearby settlements, and forms part of Stansted Airport's 'airport in the countryside' character.
- The eastern part of the site provides separation between the new settlement edge of Great Dunmow, Mill End and Little Easton, and also forms part of the rural setting to these settlements.
- Protected lanes at Waltham Hall Road, Kings Farm Lane, Browns End Lane and Laundry Lane are valued for their historic and rural character and are highly sensitive to 'road improvements' including lighting, signage and widening.
- Historic assets at Easton Lodge, Molehill Green and Bamber's Green are valued for their time-depth. The rural setting to the Easton Lodge Registered Park and Garden and the Little Easton Conservation Area in the north of the site has a high sensitivity to change.
- Much of the site has an open character, with long-distance views across the arable fields to wooded skylines, especially in the east where there is intervisibility with surrounding landscapes, as well as with Great Dunmow and Little Easton.
- The valued public right of way network including the Saffron Trail and Harcamlow Way promoted routes provide connections across the countryside.

Conclusion

3.10 This large site has a number of key sensitivities which are concentrated in the north and east. These include the semi-natural deciduous woodlands which provide wooded skylines to the site and could be vulnerable to loss from development. The north and east of the site also has a high density of heritage assets that are important to landscape character (including Easton Lodge and Little Easton) and a strong rural character, with limited views of existing development and is highly valued for recreation. This area also provides rural separation between Great Dunmow, Mill End and Little Easton which increases its sensitivity.

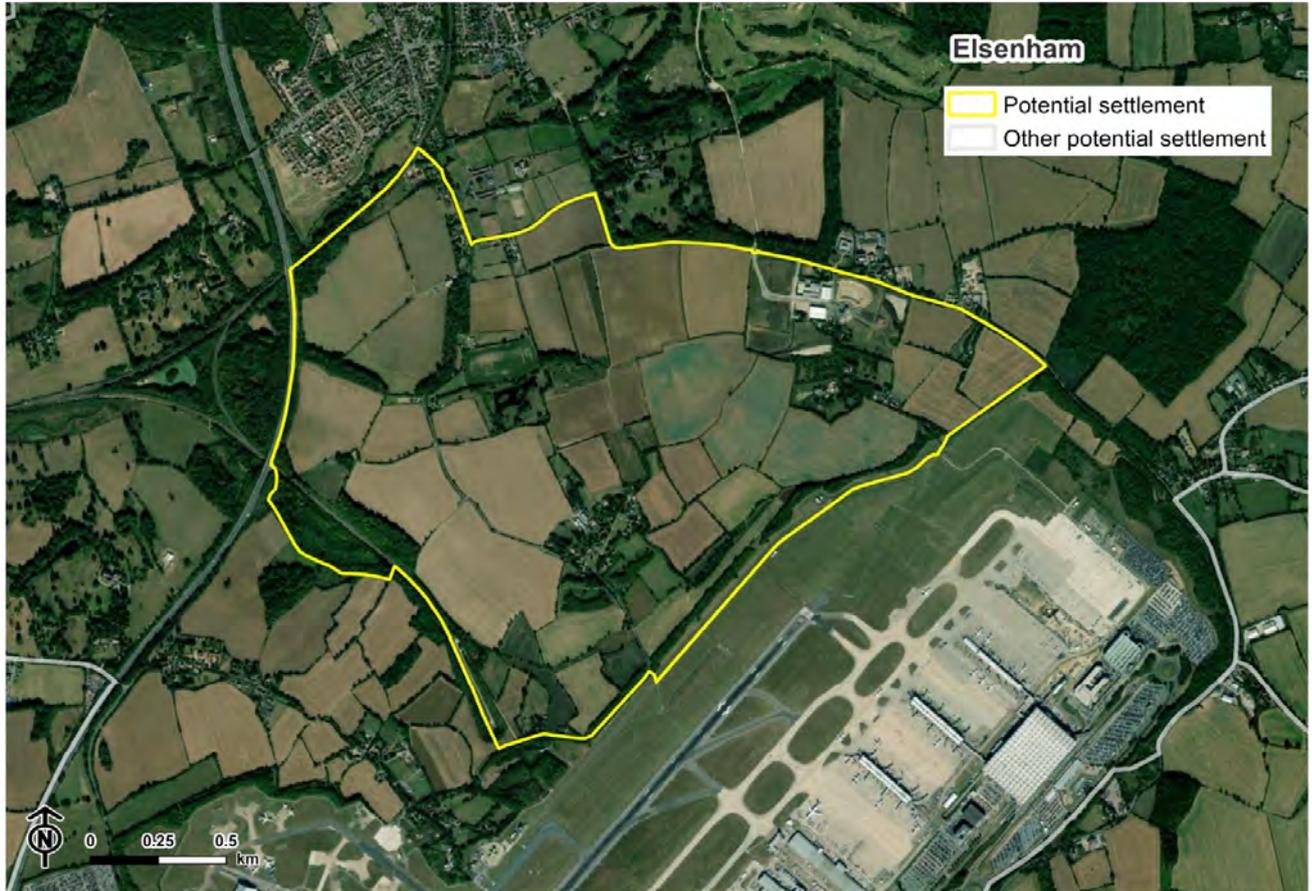
3.11 The west of the site is sensitive to change due to its importance in maintaining the character of Stansted Airport as an 'airport in the countryside'.

3.12 The centre of the site on and around the former Dunmow airfield and Highwood Quarry is visually contained by surrounding woodland and has no intervisibility with the Great Dunmow or Little Easton. This flat, open plateau has a large-scale landscape pattern, no recorded heritage assets and limited semi-natural habitats, although it is located in close proximity to High

Wood, which is designated as a SSSI for its semi-natural wet woodland (some of which is ancient in origin). The centre of the site is therefore less sensitive to development than the landscape in other areas of the site.

3.13 It is considered the centre of the site could accommodate development, providing the key sensitivities are respected and the landscape and visual impacts minimised.

Elsenham



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

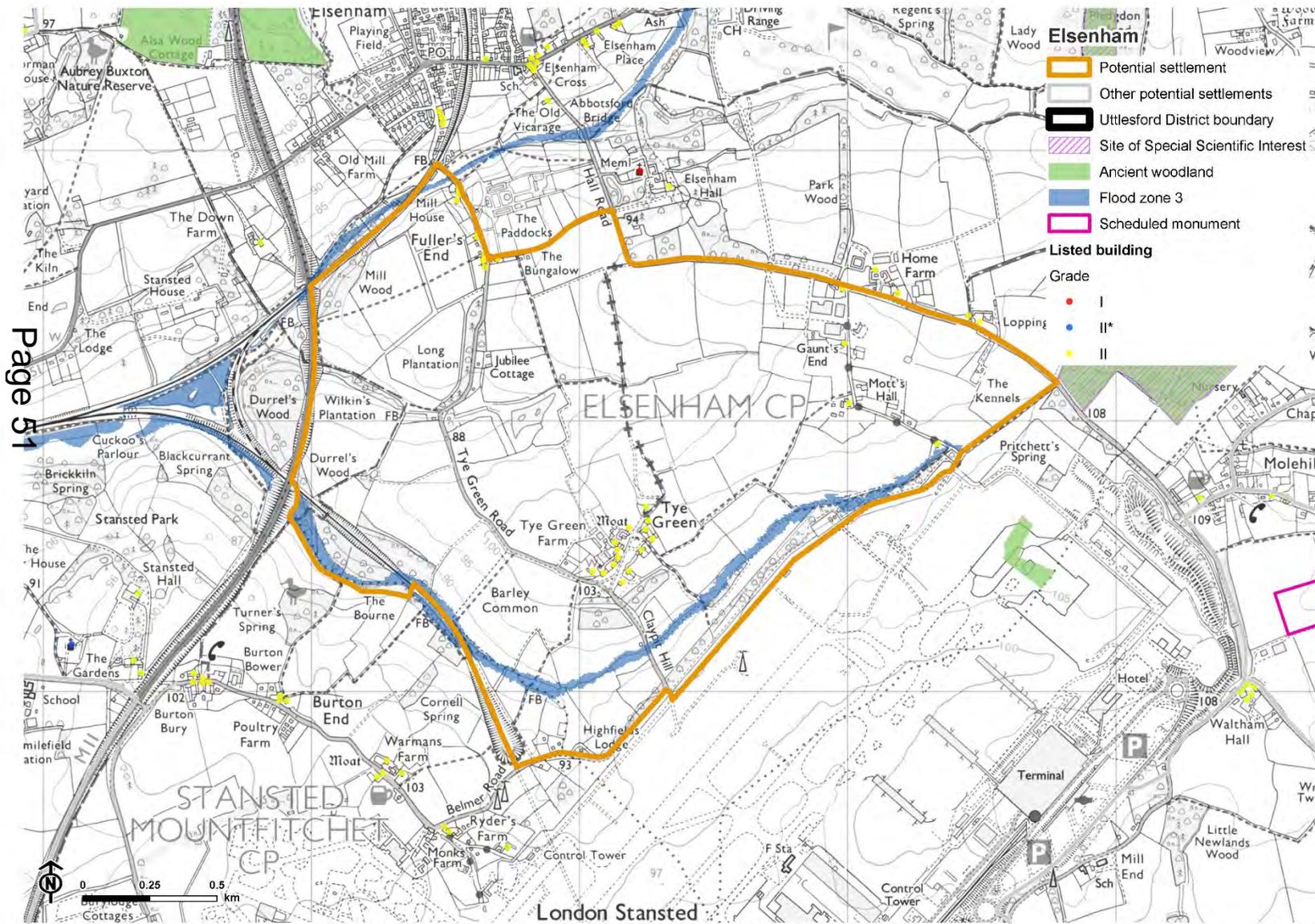
Location and description

The site lies south of Elsenham, north-west of Stansted Airport, east of the M11 and railway line. The area is 180ha, and is proposed for approximately 500 dwellings and commercial space.

The area predominately lies within LCA B10: Broxted Farmland Plateau, with a small area in the north within LCA A3: Stort River Valley. The area is largely in arable use, with scattered farmsteads often in airport-related commercial use. Tye Green is a small hamlet containing a number of listed buildings and is located in the centre of the site.

Appendix C
Landscape sensitivity profiles

New Settlements LSA
November 2021



Page 51

Elsenham representative photographs



Undulating arable fields west of Tye Green Road



The historic hamlet at Tye Green



Incongruous business centre at Gaunt's End within the rural landscape



View across open arable fields to a wooded horizon

Elsenham

Landscape Character Area: B10 Broxted Farmland Plateau and A3 Stort River Valley

Landscape sensitivity assessment: Elsenham		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> Largely flat plateau at Tye Green, around 100m AOD. Tributaries of the Stansted Brook in the south and centre of the area provide gentle undulations within the plateau landscape, from 100m to 85m AOD. Medium to large scale arable fields bound by hedgerows with mature hedgerow trees and interspersed with woodlands. Some grazing west of Tye Green Road. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity Moderate sensitivity
Natural character	<ul style="list-style-type: none"> Much of the site is intensively farmed. Scattered linear deciduous woodlands in the west are notified as priority habitat and many designated as LoWS and Important Woodlands. Priority habitat good quality semi-improved grassland is recorded at Fuller's End and traditional orchard at Mott's Hall. Hedgerows and mature hedgerow trees are valued natural features. 	<ul style="list-style-type: none"> Lower sensitivity Higher sensitivity Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> Tye Green and Fuller's End contain a number of Grade II listed houses and cottages. There are archaeological sites at Mott's Hall, Tye Green and Durrel's Wood. Historic field patterns have largely been lost to modern agricultural practices. Evidence of older enclosure patterns remain north and south-east of Tye Green. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> The undeveloped character of the site contributes to the rurality and provides a rural setting to the scenic, historic hamlets of Fuller's End and Tye Green. The site is part of a wider rural area which provides separation between Elsenham and Stansted Airport, and maintains Stansted as an 'airport in the countryside'. The railway line and M11 provide a strong boundary to site to the west, and development beyond this would not relate well to any development within the site. 	<ul style="list-style-type: none"> Higher sensitivity Higher sensitivity Higher sensitivity
Visual character	<ul style="list-style-type: none"> An open character with views across the arable fields to a wooded skyline. Areas of enclosure are provided by woodland copses and mature hedgerow trees. Communication towers at Stansted Airport are visible to the south, although the airport is well screened by surrounding vegetation. 	<ul style="list-style-type: none"> Moderate sensitivity Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> There is considerable light pollution from Stansted Airport to the south/south-east. The public right of way network provides connections across the road and rail infrastructure, and connects Tye Green to Elsenham. Unmanaged fragmented hedgerows have resulted in a slightly neglected character along Tye Green Road. A rural landscape lacking modern intrusive elements, despite its proximity to the airport. Tye Green and scattered farmsteads are traditional in character. Small-scale development associated with the airport include a small hotel, commercial centre at Gaunt' End and Motts Hall, as well as audible intrusion 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity Moderate sensitivity Higher sensitivity Lower sensitivity

	from the M11 and Stansted Airport, are intrusive modern elements that detract from the rural character of the site.	
--	---	--

Key landscape and visual sensitivities

- Broadleaved woodlands in the west of the site are ecologically valued, contribute to the localised enclosure and provide a wooded horizon to the site and are vulnerable to loss from development.
- An intact rural landscape of undulating arable fields with mature hedgerow trees and woodland copses and limited modern development.
- The landscape provides an important open space and separation between Elsenham and Stansted Airport, and contributes to the character of Stansted Airport as an 'airport in the countryside'.
- The site provides a rural setting to the historic hamlet of Tye Green, which is valued for its time-depth and scenic qualities.
- Older enclosure field patterns at Tye Green are of high sensitivity due to their time depth.
- The public right of way network connects Tye Green and Elsenham is valued for recreation.

Conclusion

3.14 The key sensitivities of the site relate to its function as a rural landscape, which provides a backdrop to the scenic hamlet of Tye Green, and separation between Elsenham and Stansted Airport. The woodlands and mature hedgerow trees are natural features which provide an important part of the rural landscape pattern. The concentration of built heritage assets, including at Tye Green and Fuller's End, provide time depth.

3.15 Despite its proximity to the airport, and the resulting impact on tranquillity and dark skies, this is a landscape with a high degree of perceived traditional rural character. However, the flat landform and modern field pattern across much of the site reduce sensitivity to development. Small modern scale developments largely associated with the airport, in the north-east of the site at Gaunt's End and Mott's Hall introduce modern influences to the landscape.

3.16 It may be difficult to reconcile new development while respecting the key sensitivities of the site, especially retaining the rural separation between Elsenham and Stansted, the character of Stansted Airport as an 'airport in the countryside', and the rural setting to Tye Green.

Felsted



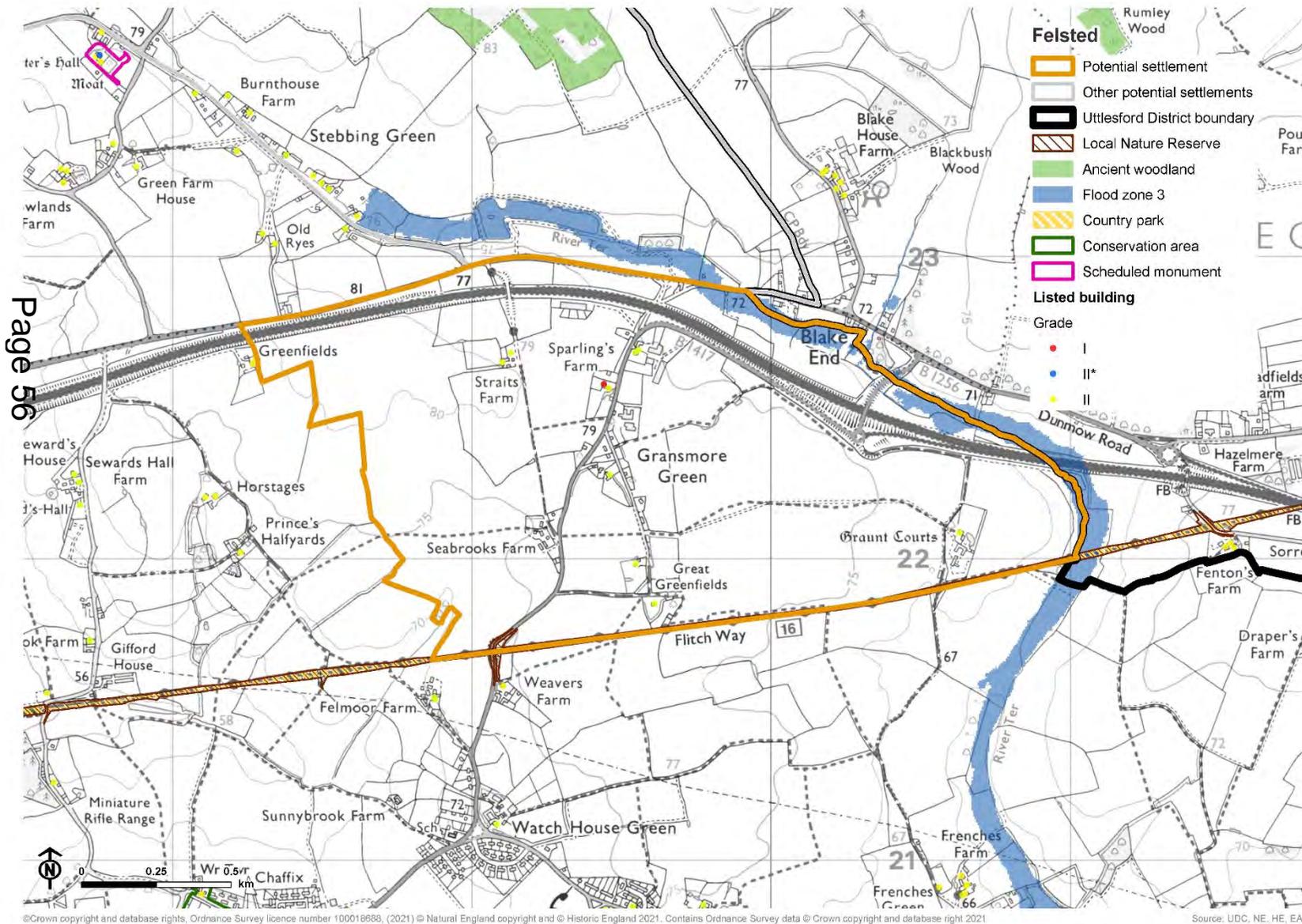
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site lies in the east of the district, north of Felsted and Watch House Green. The site is 133ha and is proposed for 2000 dwellings, education, medical and commercial facilities.

The site lies within LCA B16: Felsted Farmland Plateau with the north-east within LCA A6: Upper Chelmer River Valley, and is in arable use. The A120 runs through the north of the site, and the Flich Way long distance path marks the southern boundary. The site contains Gransmore Green hamlet and a number of small farms.



Page 56

Felsted representative photos



View across the open arable fields to Gransmore Green in its wooded setting



Fritch Way enclosed by mature trees



Arable fields provide a rural setting to Gransmore Green



View across arable fields to the A120 which is screened by vegetation

Felsted

Landscape Character Area: B16 Felsted Farmland Plateau

Landscape sensitivity assessment: Felsted		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> Very gently undulating plateau topography, between 70m and 80m AOD. Medium scale arable fields, with hedgerow field boundaries in varied condition, some fragmented and some missing. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity
Natural character	<ul style="list-style-type: none"> Small areas of priority habitat deciduous woodland at Great Greenfields and Graunt Courts. Flitch Way on the southern boundary is a LoWS and LNR. Much of the site is intensively farmed and there are no recorded priority habitats west of the B1417. Hedgerows, mature hedgerow trees and roadside vegetation provide semi-natural features. 	<ul style="list-style-type: none"> Higher sensitivity Lower sensitivity Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> Gatehouse Farmhouse is a Grade I listed building dating from the 1300s. There are many Grade II listed farmhouse and cottages around Gransmore Green. Archaeological sites are recorded at Great Greenfields, Seabrooks Farm and west of Straits Farm. Historic field patterns have largely been lost to modern agricultural practices. Evidence of remnant older enclosure patterns remain at Great Greenfields. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> The site has no relationship with Felsted to the south, as the Flitch Way provides separation between them. The site contributes to the rural setting of the historic hamlet at Gransmore Green. 	<ul style="list-style-type: none"> Lower sensitivity Higher sensitivity
Visual character	<ul style="list-style-type: none"> Open views across farmland, with hedgerows, mature hedgerow trees and roadside vegetation providing a wooded skyline. The tree-lined Flitch Way provides a wooded backdrop to the south, screens the site from the south. 	<ul style="list-style-type: none"> Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> Light pollution at the Blake End roundabout on the A120 reduces dark skies in the north and east. Dark skies are evident in the west of the site. Flitch Way on the southern boundary is a Country Park, promoted route and route of National Cycle Route 16. Public rights of way link Gransmore Green and isolated farmsteads to the wider countryside. Existing development in the site is limited to the hamlet at Gransmore Green and scattered small farmsteads which contribute to the landscape character of the site. Some new small-scale developments are under construction in the hamlet and at Seabrooks Farm. There is limited road access within the site, however the A120 to the north reduces the sense of remoteness. Stansted airport is also an audible modern intrusion. 	<ul style="list-style-type: none"> Moderate sensitivity Higher sensitivity Moderate sensitivity Moderate sensitivity Moderate sensitivity

Key landscape and visual sensitivities

- Areas of priority habitat deciduous woodland in the east and west are ecologically valued, and along with mature hedgerow trees would be vulnerable to loss from development.

- Mature hedgerow trees and roadside hedgerows along the B1417 are valued landscape features which contribute to a rural character.
- The majority of buildings within the site are listed, and provide time depth and contribute to the landscape character of the site.
- The A120 provides a strong boundary to the north of the site, and development in this area of the site, between the A120 and B1256, would have little relationship with the rest of the site.
- Fritch Way Country Park, LoWS and LNR on the southern boundary of the site are sensitive features and valued for recreation.
- Dark skies in the west of the site are sensitive to new development.

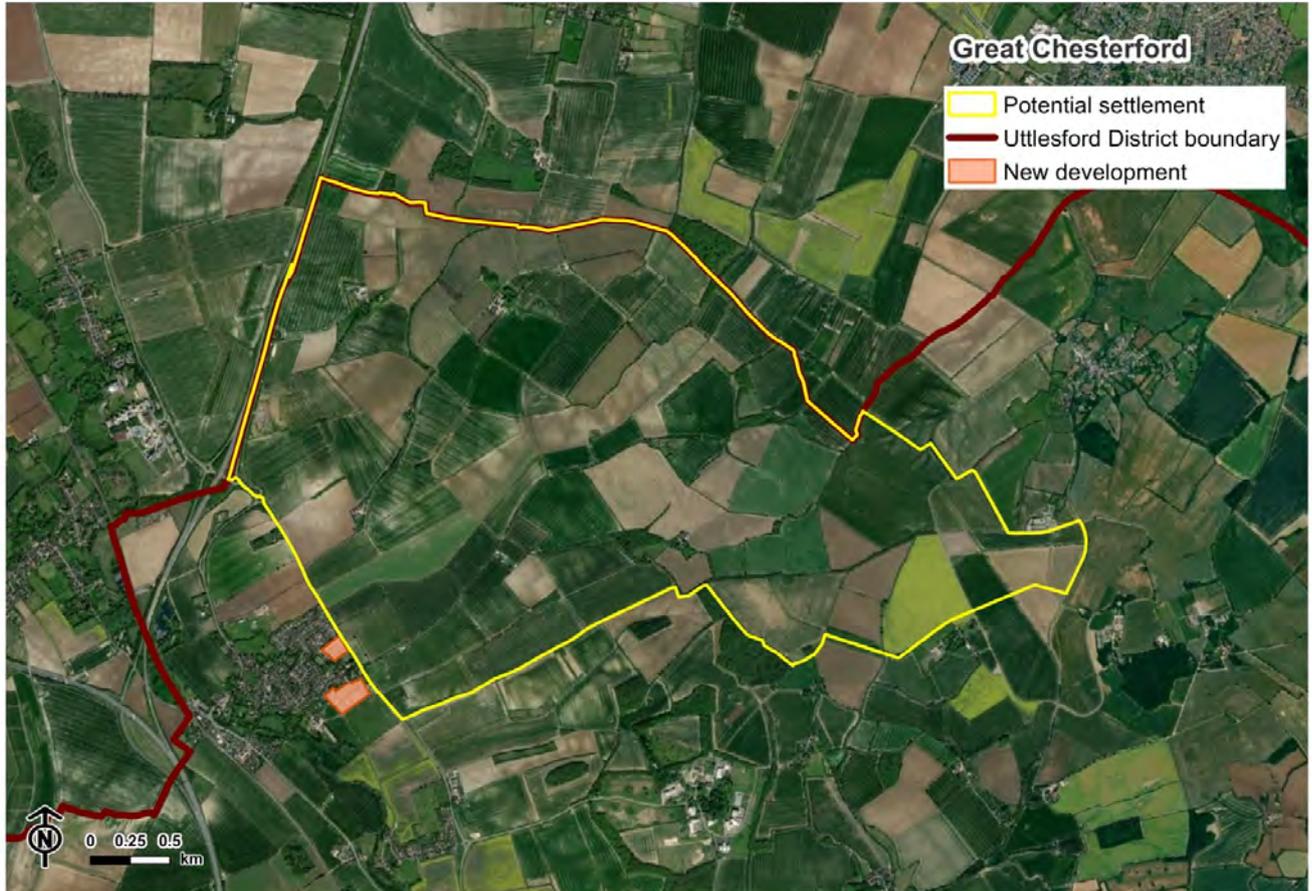
Conclusion

3.17 The key sensitivities relate to the historic cottages and farmsteads within the site, and small areas of priority habitat deciduous woodland. The public rights of way, in particular Fritch Way to the south are also sensitive.

3.18 However, the flat landform, limited semi-natural habitats, and modern field pattern reduce sensitivity to development. The audible intrusion of the A120 on the perceptual qualities of the site, as well as visual enclosure provided by roadside vegetation to the north and mature trees along Fitch Way to the south also lower landscape sensitivity. The A120 provides a strong boundary to the north of the site, and development between the A120 and B1256, would have little relationship with the rest of the site.

3.19 It is considered the site could accommodate development south of the A120 providing the key sensitivities are respected and the landscape and visual impacts minimised. Any planned new development in Braintree District to the east would need to be taken into consideration if development is planned in the east of this site.

Great Chesterford



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

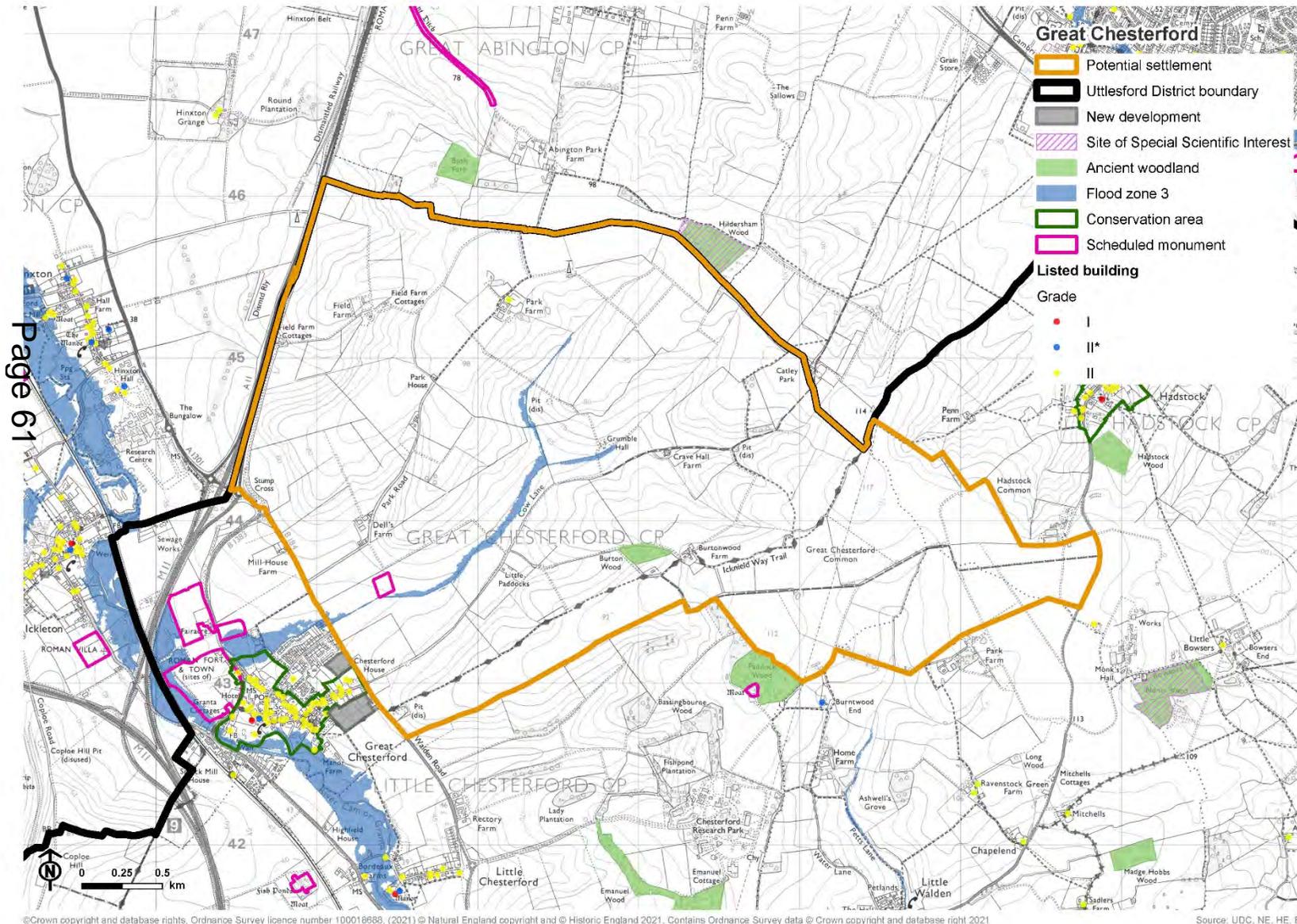
Location and description

The site lies in the north of the district, to the east of Great Chesterford. The site is approximately 268ha and is proposed for 3500 dwellings, associated commercial space and community facilities.

The site lies predominately within LCA A1: Cam River Valley, and a small area in the east is within LCA B1: Ashdon Farmland Plateau. The site is in arable use and contains a number of farmsteads.

Appendix C
Landscape sensitivity profiles

New Settlements LSA
November 2021



Page 61

Great Chesterford representative photos



View south-west from Park Road across the Cam Valley with under managed hedgerows



View from Cow Lane to the settlement edge of Great Chesterford



Large scale undulating arable fields with a wooded skyline and prominent electricity pylons



Extensive open views across undulating arable farmland

Great Chesterford

Landscape Character Area: A1 Cam River Valley and B1 Ashdon Farmland Plateau

Landscape sensitivity assessment: Great Chesterford		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> ■ Undulating topography, between 55m and 95m AOD. ■ Some areas of flatter plateau landscape in the north around Park Farm and in the east around Great Chesterford Common. ■ Large scale arable fields with fragmented hedgerows with small areas of pasture around farmsteads. Hedgerow trees and small woodland clumps provide small-scale landscape features. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity ■ Moderate sensitivity
Natural character	<ul style="list-style-type: none"> ■ Small areas of priority habitat deciduous woodland in the north-east and south-east. Burton Wood is recorded as ancient woodland and is a designated Important Woodland and LoWS. Crave Hall Meadow is also a LoWS. ■ Much of the site is intensively farmed and there are no recorded priority habitats north of Cow Lane. ■ Mature hedgerow trees and roadside vegetation provide semi-natural features. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity ■ Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> ■ Park Farm is the only listed building within the site, and has a parkland character setting. A Romano-Celtic temple south of Dell's Farm is designated as a Scheduled Monument. There are large archaeological sites at Field Farm, Stump Cross and Crave Hall Farm. ■ There are no recorded heritage assets in the east of the site. ■ Historic field patterns have largely been lost to modern agricultural practices, and in the east due to the Little Walden airfield off the B1052 Linton Road. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity ■ Lower sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> ■ The west of the site provides a highly rural setting to Great Chesterford. ■ The site has no visual relationship with Hadstock to the north-east due to roadside vegetation within Hadstock and the undulating topography. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Lower sensitivity
Visual character	<ul style="list-style-type: none"> ■ An open site with long views across undulating arable farmland to wooded skylines outside the site. A high degree of visibility from surrounding landscapes, with views to Great Chesterford and into Cambridgeshire to the north, north-east and west. ■ Fragmented hedgerows, roadside vegetation and mature hedgerow trees on the rural Park Road and Cow Lane provide occasional areas of enclosure. ■ No long-distance views from the east off the B1052 Linton Road due to intervening hedgerow vegetation. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity ■ Lower sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> ■ Dark skies characterise the site in the north, centre and east. ■ Great Chesterford and the B184 Walden Road create some light pollution in the west. ■ Extensive public right of way network, including the Icknield Way Trail promoted route, which provide links into the wider countryside. ■ Highly rural area which lacks intrusive modern elements, has limited access by road and is characterised by traditional farms and cottages located along the ridges. ■ The A11 and M11 which run along the north-west boundary of the site, are intrusive modern influences, and the M11 is visible across the site. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity ■ Moderate sensitivity ■ Higher sensitivity ■ Lower sensitivity

	<ul style="list-style-type: none"> ■ A communications tower in the north, electricity pylons in the east and wind turbines from Burton Wood are intrusive modern influences. 	<ul style="list-style-type: none"> ■ Lower sensitivity
--	---	---

Key landscape and visual sensitivities

- The landform of rolling arable fields.
- Small areas of priority habitat deciduous woodland in the north-east and south-east including Burton Wood, and Crave Hall Meadow LoWS are ecologically valued, and are vulnerable to loss from development.
- Mature hedgerow trees, minimal road access and traditional farms and cottages creates a rural character, which is sensitive to new development.
- Heritage assets including the Scheduled Monument Romano-Celtic temple south of Dell's Farm and Grade II listed Park Farm provide time depth and contribute to the landscape character of the site.
- The open, expansive views and high level of visibility across the site and intervisibility with the surrounding landscape.
- The west of the site along the B184 Walden Road provides part of the rural setting to Great Chesterford and its historic settlement edge at High Street and there is an intervisibility with the village in this part of the site.
- The Icknield Way Trail and other rights of way within the site are sensitive features and valued for recreation.
- High levels of tranquillity and dark skies, with a strong rural character across most of the site, despite proximity to the A11 and M11.

Conclusion

3.20 The key sensitivities of the site relate to the rolling landform, the open character of the site and expansive views to surrounding landscapes, the rural character of the site with limited human influences and the setting this provides to Great Chesterford.

3.21 However, the uniform large-scale of the arable landscape with modern field patterns, some areas of flatter plateau landscape in the north and east (at Park Farm and Great Chesterford Common), scattered semi-natural habitats and limited heritage assets reduce sensitivity across the site. The intrusion of the M11 and A11, also reduce sensitivity in the west of the site.

3.22 There are fewer sensitivities in the east of the site on the site of the former Little Walden airfield, between the B1052 Linton Road and Great Chesterford Common, due to the flatter landform, more enclosed character, and the influence of the B1052 and large-scale farm buildings. It is considered that the east of the site could accommodate some development, providing the key sensitivities are respected and the landscape and visual impacts minimised.

3.23 The landscape in the north around Park Farm also has a flatter plateau landform and is influenced by proximity to the M11/A11 and therefore is less sensitive. However, there are extensive long views from Park Farm and new development in this location may be intrusive on views from the surrounding countryside. The area could accommodate some small-scale development, although careful consideration would need to be given to the intervisibility of development with the wider countryside. Careful consideration would also need to be given to the relationship between development of the site and any development in South Cambridgeshire District to the north and west.

Great Dunmow



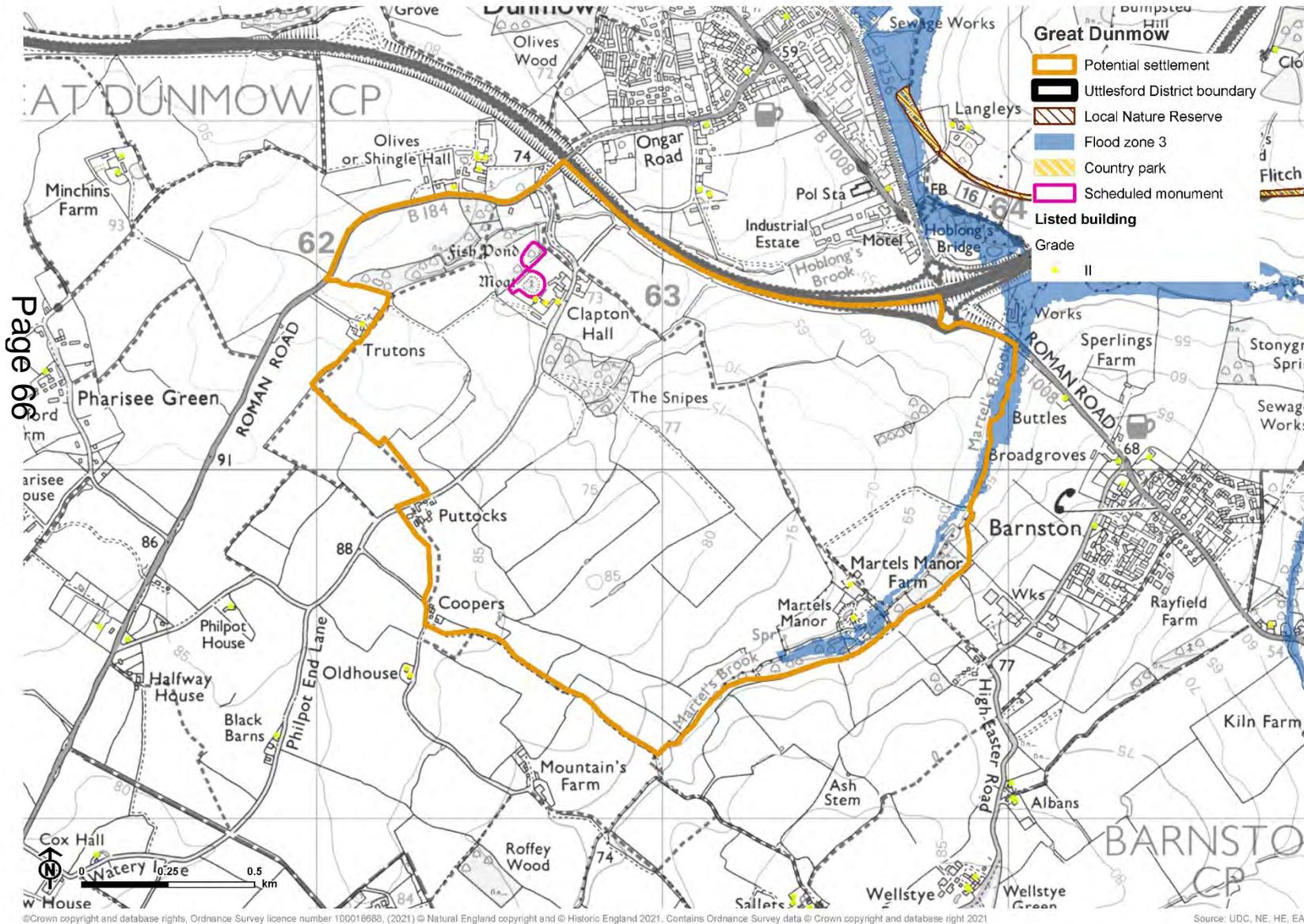
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site lies in the south east of the district, to the south of Great Dunmow, and west of the small village of Barnston. The site is 120ha and is proposed for 2,200 dwellings, primary and secondary education facilities and commercial facilities.

The site lies within LCA B14: Roding Farmland Plateau, with the north-east within LCA A6: Upper Chelmer River Valley. It is in arable use with small areas of woodland, and contains small farmsteads at Clapton Hall and Martels Manor.



Great Dunmow representative photos



Large arable fields with mature hedgerow trees providing enclosure



Distant views across Hoblong's Brook valley to Great Dunmow and a wooded skyline



Occasional views to A120 and to the wooded skyline across the valley



Arable fields on the flat plateau with mature hedgerow trees providing enclosure

Great Dunmow

Landscape Character Area: B14 Roding Farmland Plateau

Landscape sensitivity assessment: Great Dunmow		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> Gently undulating plateau topography, around 85m AOD. The landform falls to the east towards Martel's Brook, and to the north to Hoblong's Brook, ranging from 85m to 55m AOD Medium to large scale arable fields, with mature hedgerow field boundaries. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity Moderate sensitivity
Natural character	<ul style="list-style-type: none"> Areas of priority habitat deciduous woodland are concentrated around Clapton Hall and Hoblong's Brook to the north west and around Martels Manor and along Martel's Brook to the south east. The site is intensively farmed and there are no recorded priority habitats in the centre away from the brook valleys. Mature hedgerow trees, riverside and roadside vegetation provide semi-natural features. 	<ul style="list-style-type: none"> Higher sensitivity Lower sensitivity Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> Clapton Hall includes a moated site and fishpond designated as a Scheduled Monument and a cluster of Grade II listed buildings. Martels Manor also has two Grade II listed buildings and an archaeological site. Clapton Hall Lane is designated as a protected lane. There are no recorded heritage assets in the centre of the site. Historic field patterns have largely been lost to modern agricultural practices. Evidence of older enclosure patterns remain around Clapton Hall and The Snipes. 	<ul style="list-style-type: none"> Higher sensitivity Lower sensitivity Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> There are no buildings in the centre of the site. The A120 and associated vegetation provides a strong barrier between the site and Great Dunmow to the north. Martel's Brook provides a barrier between the site and Barnston to the south. 	<ul style="list-style-type: none"> Lower sensitivity Lower sensitivity
Visual character	<ul style="list-style-type: none"> Woodland, mature hedgerow trees, and vegetation along Martel's Brook provide a wooded skyline, although there is some intervisibility with Barnston across the Martel's Brook valley. Vegetation along the A120 restricts most views into the site from the north. although there is some intervisibility with the modern settlement edge south of the B184. 	<ul style="list-style-type: none"> Moderate sensitivity Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> Light pollution from Great Dunmow reduces dark skies in the north. Dark skies are evident in the south of the site. Two public footpaths cross the site, in the north and the south. There is limited access to the site except for small rural lanes (Clapton Hall Lane and Mountain's Farm Road) in the west of the site, reinforcing the rural character of the site. The area is influenced by modern development in the wider landscape, with distant views from the north of the site across the river valleys to the settlement edges of Great Dunmow and to Barnston to the east. The A120 to the north is largely screened by vegetation, but is audibly intrusive and reduces tranquillity. 	<ul style="list-style-type: none"> Lower sensitivity Higher sensitivity Moderate sensitivity Higher sensitivity Lower sensitivity Lower sensitivity

Key landscape and visual sensitivities

- Areas of priority habitat deciduous woodland in the east and west along the brook valleys are ecologically valued, and are vulnerable to loss from development.
- Martel's Brook and Hoblong's Brook are important features in the landscape, and provide topographic variation to the site.
- The landscape pattern of arable fields, mature hedgerow trees, small woodland copses and limited modern development within the site creates a rural character.
- Clapton Hall Lane is a protected lane, valued for its historic and rural wooded character, and is of higher sensitivity in terms of its contribution to the landscape pattern, visual character and time depth.
- Historic assets at Clapton Hall and Martels Manor are valued for their time-depth. The setting to the Scheduled Monument at Clapton Hall is sensitive to change.
- Public rights of way provide limited access through the site.
- Dark skies in the south of the site are sensitive to new development.

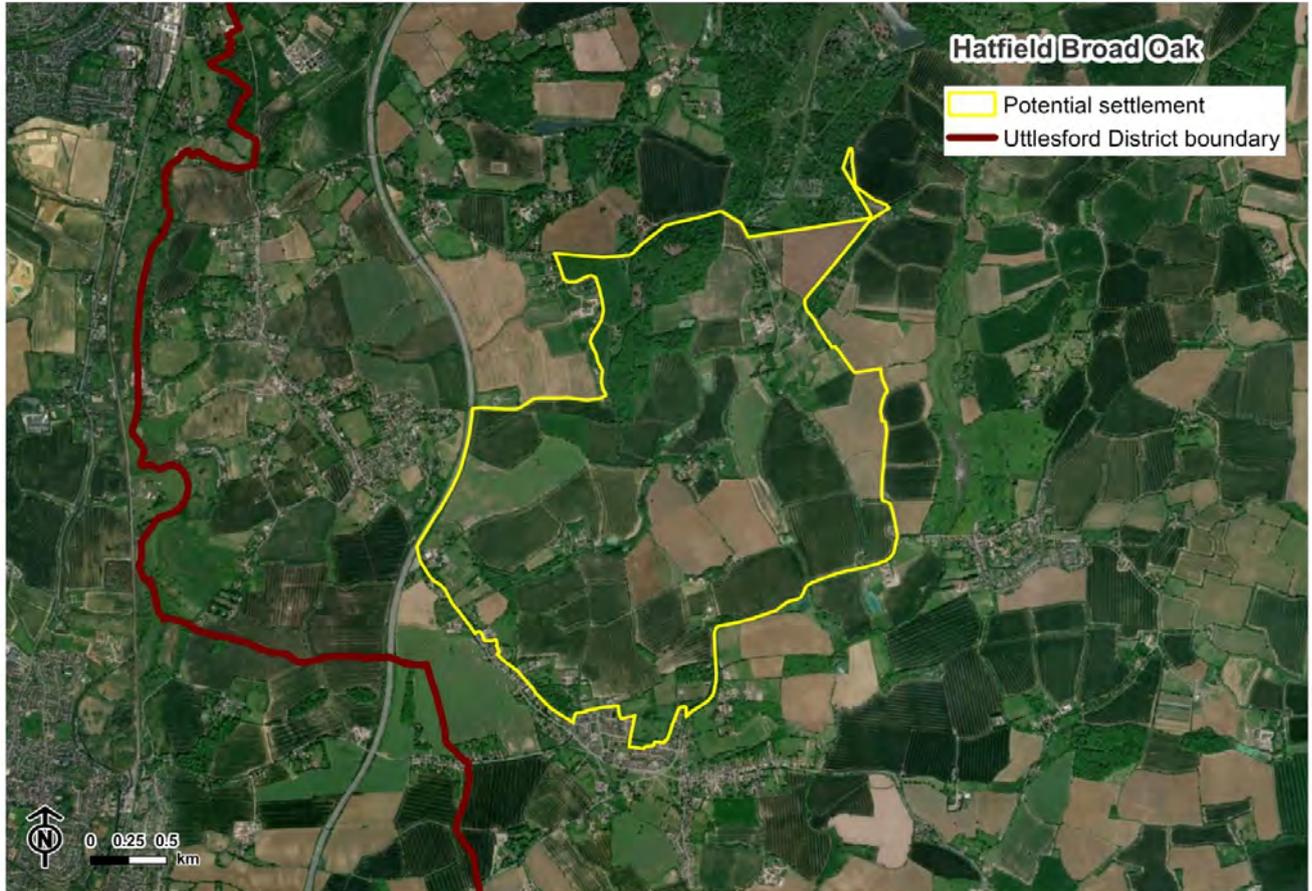
Conclusion

3.24 The key sensitivities are generally located on the edges of the site, including Martel's Brook to the south east and Hoblong's Brook to the north west and associated semi-natural habitats including deciduous woodland, as well as historic assets at Clapton Hall and Martels Manor, and Clapton Hall Lane protected lane.

3.25 The centre and north of the site are less sensitive to development change, due to the flat plateau landform, medium to large scale of the intensively farmed arable fields, the influence of modern development at Great Dunmow and Barnston and the influence of the A120 on the perceptual qualities of the landscape as well as the strong boundary it provides between the site and Great Dunmow to the north. These areas of the site have limited semi-natural habitats and cultural heritage assets and enclosure is provided by surrounding vegetation.

3.26 It is considered the site could accommodate development in the centre and north of the site, providing the key sensitivities are respected and the landscape and visual impacts minimised. It is particularly important to respect the setting of the heritage and natural heritage sensitivities at Clapton Hall and Martels Manor and along the brook valleys.

Hatfield Broad Oak



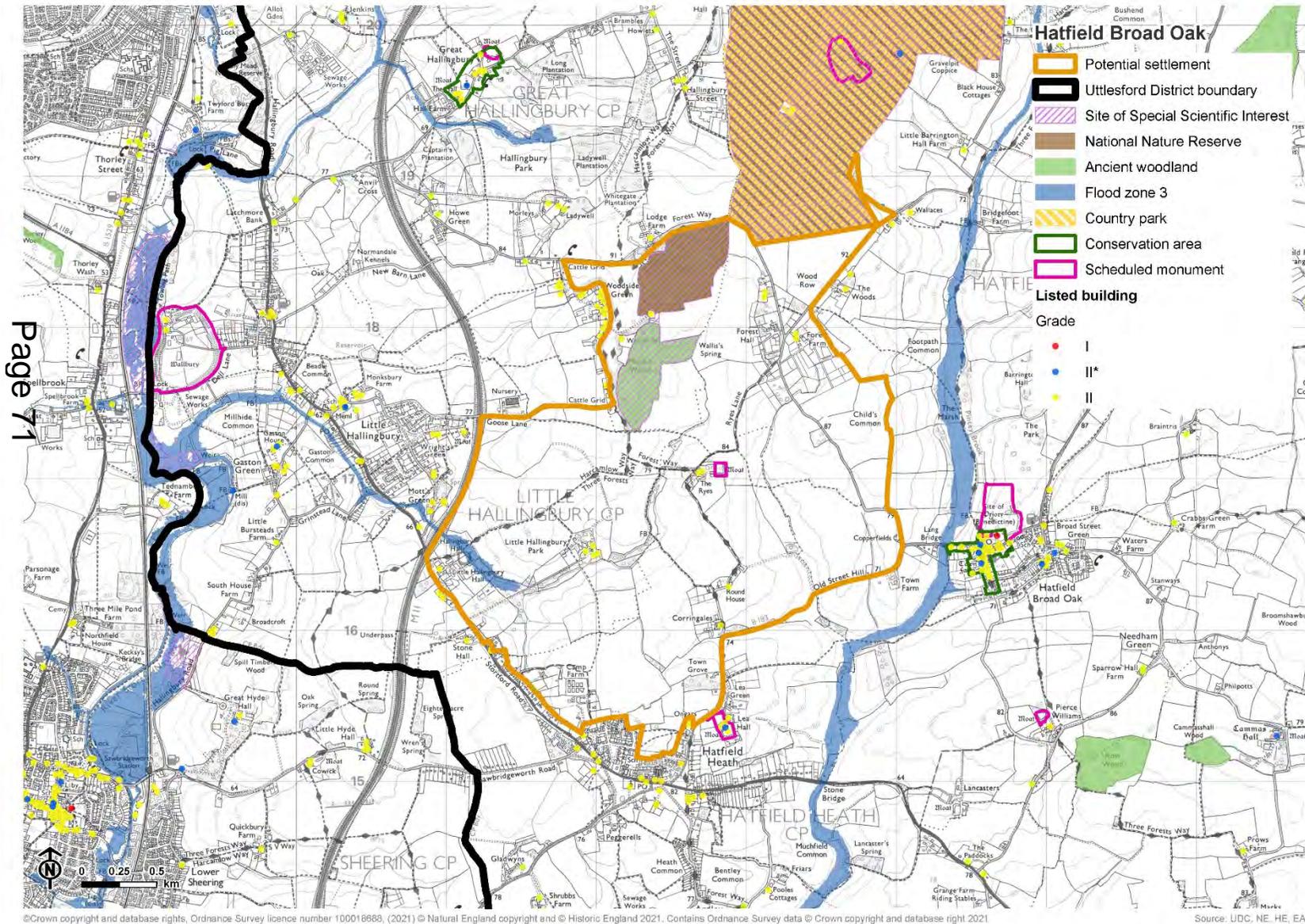
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site lies in the south-west of the district, west of Hatfield Broad Oak and north of Hatfield Heath. The site is 580ha and is proposed for a new garden settlement of 6500 dwellings, associated commercial, education and community facilities.

The majority of the site lies within LCA B12: Hatfield Forest Farmland Plateau, and a small area in the west is within LCA A3: Stort River Valley. The site is in arable use with some areas of pasture around the small farmsteads.



Hatfield Broad Oak representative photos



The rural setting to Woodside Green



Open arable fields with mature hedgerow trees along Goose Lane



Hatfield Forest provides a wooded skyline west of Ryes Lane



Long views east across open arable fields to a wooded skyline

Hatfield Broad Oak

Landscape Character Area: B12 Hatfield Forest Farmland Plateau and A3 Stort River Valley

Landscape sensitivity assessment: Hatfield Broad Oak		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> ■ Gently undulating topography, between 75m and 90m AOD. ■ Steeper sloping stream valley sides around small water courses. ■ Medium scale arable fields bounded by fragmented hedgerows and smaller-scale pasture fields at Forest Hall and Forest Farm. Mature hedgerow trees and small woodland clumps provide smaller-scale landscape features. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Higher sensitivity ■ Moderate sensitivity
Natural character	<ul style="list-style-type: none"> ■ Monk's Wood and Wall Wood are part of the Hatfield Forest SSSI, contain ancient woodland and are Important Woodlands. Wall Wood is also an NNR. Woodside Green west of Wall Wood, is a LoWS and Town Grove is an Important Woodland. Small areas of priority habitat deciduous woodland are recorded in Little Hallingbury Park, around The Ryes and south of Camp Farm, and there is priority habitat lowland heathland at Hatfield Heath. ■ Mature hedgerow trees, hedgerows and roadside vegetation provide semi-natural features. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> ■ Ryes Moated Site is a Scheduled Monument. Grade II listed buildings are found at Little Hallingbury Park and The Ryes, and at isolated farms. Forest Cottage in the far north is the only Grade II* building in the site. There are scattered archaeological sites, and Howe Green Road is designated as a protected lane. ■ Wall Wood and Monks Wood were outside the boundary of Hatfield Forest, but Woodside Green was created as a miniature Hatfield Forest, where forest law applied. ■ Historic field patterns have largely been lost to modern agricultural practices although there are some older enclosure patterns in the north around Monk's Wood, and the National Trust is creating woodpasture on Woodside Green common. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Higher sensitivity ■ Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> ■ The south of the site provides a rural setting and approach to Hatfield Heath, particularly along Old Street Hill. The site is part of the wider rural setting to Hatfield Broad Oak, and contributes to the separation between Hatfield Heath and Hatfield Broad Oak. ■ The north of the site provides an important rural setting to the historic cottages in the linear hamlet that extends along Woodside Green, and the open common forms part of the wider rural setting to Hatfield Forest. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Higher sensitivity
Visual character	<ul style="list-style-type: none"> ■ The site has an open character with wide views across arable farmland to a wooded skyline. ■ Roadside vegetation provides enclosure and limits views to Hatfield Heath, although there are some scenic views from the B183. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> ■ Dark skies characterise the centre and north of the site. ■ Dark skies are reduced in immediate vicinity to Hatfield Heath, Hatfield Broad Oak and the M11. ■ Woodside Green and Wall Wood (owned by the National Trust) are Open Access Land. The extensive public right of way network, including the Harcamlow Way, Forest Way and Three Forests Way promoted routes, provide links into the wider countryside and to Hatfield Forest. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity ■ Higher sensitivity

	<ul style="list-style-type: none"> ■ A rural character with limited modern human influence where development is restricted to isolated farmsteads. ■ The M11 to the west and Stansted Airport to the north are intrusive modern influences. ■ Unmanaged hedgerows, some replaced by post and rail fencing, are often associated with horse grazing at Forest Hall and Forest Farm 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity ■ Lower sensitivity
--	--	--

Key landscape and visual sensitivities

- The historic common at Woodside Green and its surrounding ancient woodland (which forms part of the Hatfield Forest SSSI) in the north has a high sensitivity to change.
- Scattered deciduous woodland, copses and riparian woodlands lining watercourses as well as mature hedgerow trees and lowland heathland north of Hatfield Heath are ecologically valued and contribute to the landscape pattern.
- Heritage assets including the Scheduled Monument at The Rye, listed houses and farm buildings provide time depth and contribute to the landscape character of the site.
- Open expansive views extend across undulating farmland, to wooded skylines provided by Monk's Wood, Wall Wood and Hatfield Forest in the north and woodlands outside of the site to the east and south-west.
- The south of the site and land along Old Hill Lane contribute to the rural setting and approach to Hatfield Heath.
- Road access is limited, contributing to the site's rural character. Howe Green Road is a protected lane, valued for its historic and rural character, and is of higher sensitivity in terms of its contribution to the landscape pattern, visual character and time depth and sensitive to 'road improvements' including lighting, signage and widening.
- The National Trust Open Access Land, Harcamlow Way, Three Forests Way, Forest Way and other rights of way within the site are sensitive features and highly valued for recreation.
- A strong rural character across most of the site, despite proximity to the M11 in the west with relatively high levels of tranquillity and dark skies (away from Hatfield Heath, Hatfield Broad Oak and the M11).

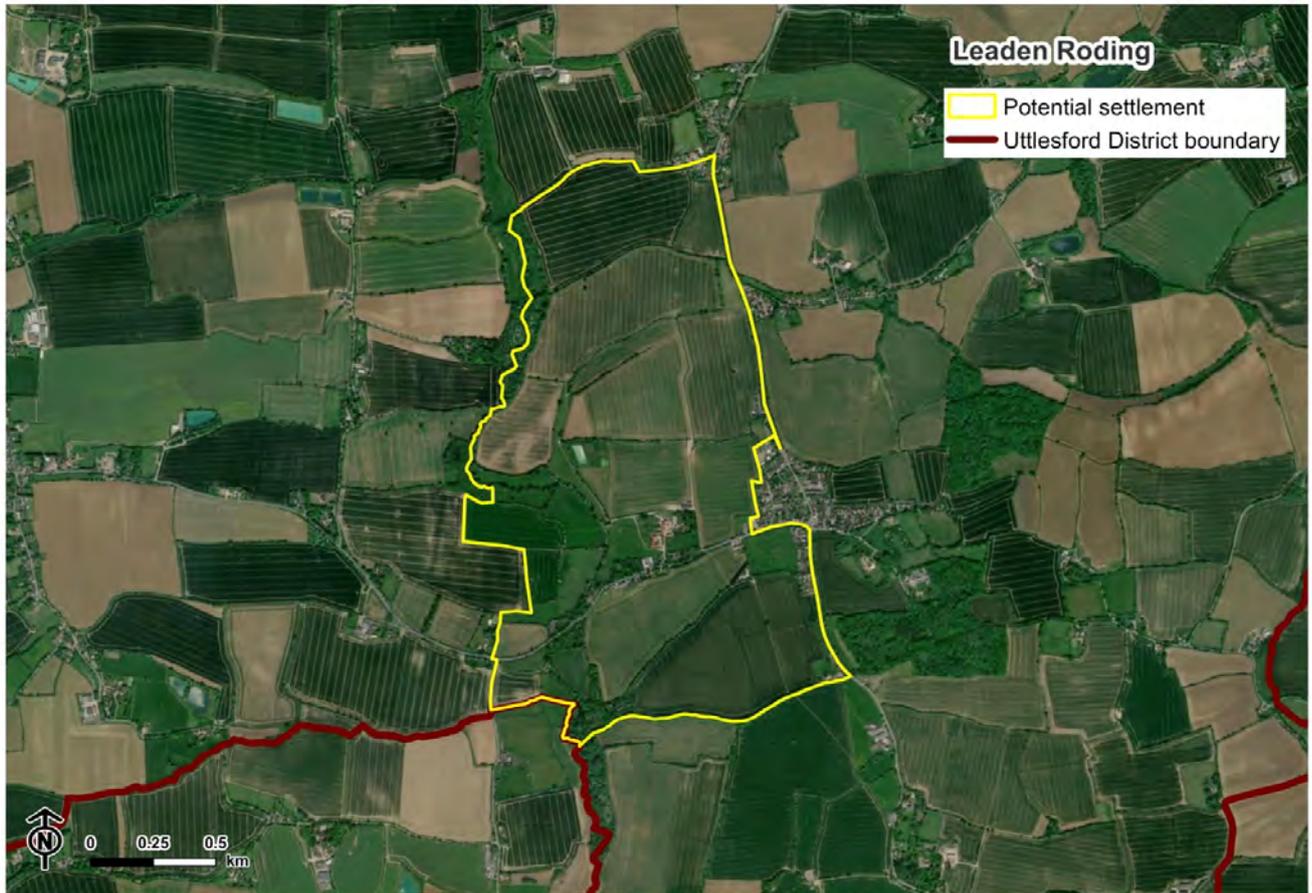
Conclusion

3.27 The key sensitivities of the site relate to the natural and cultural heritage importance of Wall Wood and Monk's Wood in the north of the site, the recreational value of the open common at Woodside Green and the setting this provides to the historic cottages along its western edge. The ecologically valued woodlands, which are concentrated in the north, but also extend along the stream valley, provide an important part of the rural landscape pattern, and along with the built heritage assets provide time depth to the site. Promoted routes extending from the Forest across the site are highly valued for recreation. The site's function as a backdrop to Hatfield Forest result in high sensitivity in the north and north-west of the site.

3.28 The rural backdrop the site provides to Hatfield Heath in the south also results in higher sensitivity, although the landscape north and west of Camp Farm plays less of a role in the rural setting to Hatfield Heath, and proximity to the M11 in the west reduces sensitivity.

3.29 The landscape in the east of the site is less sensitive as there are fewer recreational routes, large-scale open fields along Old Street Hill south of Ryes Lane, fragmented hedgerows, often replaced with post and rail and no intervisibility with Hatfield Broad Oak or Hatfield Heath. Any new development would need to ensure there is no coalescence, or perceived coalescence, between Hatfield Broad Oak and Hatfield Heath.

Leaden Roding



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site lies in the south of the district, west of Leaden Roding and south of Roundbush Green. The site is 140ha and is proposed for 1500 dwellings.

The site lies within LCA B14: Roding Farmland Plateau, and is in arable use with strong hedgerow boundaries.

Leaden Roding representative photos



Open arable fields provide a rural backdrop to the north of Leaden Roding



Large scale arable fields with mature hedgerow trees



Arable fields provide a rural backdrop to the south of Leaden Roding



Arable fields with wooded horizons

Leaden Roding

Landscape Character Area: B14 Roding Farmland Plateau

Landscape sensitivity assessment: Leaden Roding		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> Flat plateau landscape, very gently rising to the east from the River Roding, from 60m to 75m AOD. Medium to large scale arable fields, with strong hedgerows, and riverside vegetation providing smaller-scale landscape features. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity
Natural character	<ul style="list-style-type: none"> Priority habitat deciduous woodland lines the River Roding in the west and south, and is present at Leaden Hall. Woodland in the south is designated as Important Woodland. Longstead Lane in the south is a LoWS. Much of the site is intensively farmed and there are limited semi-natural habitats recorded in the east of the site. Mature hedgerows and hedgerow trees provide valued landscape features. 	<ul style="list-style-type: none"> Higher sensitivity Lower sensitivity Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> There is limited development within the site, except for historic listed buildings, including the cluster of buildings at Leaden Hall and the Grade II* Church of St Michael and All Angels on Stortford Road. The historic field patterns have largely been lost to modern agricultural practices, although there are some older enclosure patterns around Leaden Hall. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> The site provides a rural backdrop and approach to Leaden Roding from the south, north and west. The site also provides separation between the historic church and Leaden Hall and Leaden Roding, although ribbon development on the A1060 Stortford Road diminishes this gap. The site contributes to the sense of separation between Leaden Roding and Keeres Green and Roundbush Green to the north. 	<ul style="list-style-type: none"> Moderate sensitivity Moderate sensitivity
Visual character	<ul style="list-style-type: none"> Open arable fields are enclosed by woodland lining the Roding to the west, Longstead Lane to the south and roadside vegetation to the north and east. There is limited intervisibility between the site and the wider countryside. Limited views into the site from Stortford Road and Dunmow Road due to roadside vegetation. 	<ul style="list-style-type: none"> Moderate sensitivity Lower sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> There are dark skies across much of the site. Low level light pollution from Leaden Roding reduces dark skies in the immediate vicinity of the village. A strong public right of way network, with paths running through the site connect Leaden Roding and the wider countryside, including to Epping Forest District to the south-west. A rural area with few intrusive modern human influences and a high degree of tranquillity, except for traffic noise on the A1060 Stortford Road and some noise from Stansted Airport. Existing development in the site is limited to the historic church and Leaden Hall, with some individual houses and cottages along the roads, including a small business centre on the A1060 Stortford Road. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity Higher sensitivity Moderate sensitivity Moderate sensitivity Moderate sensitivity

	■ Modern development on the site boundary, including the settlement edge of Leaden Roding and along Dunmow Road detracts from the rural character of the site in these areas.	
--	---	--

Key landscape and visual sensitivities

- Priority habitat deciduous woodland along the course of the River Roding and at Leaden Hall contributes to the landscape pattern and is ecologically valued.
- Strong hedgerow boundaries and hedgerow trees are valued landscape features.
- The site provides a setting to heritage assets including the Grade II* Church of St Michael and All Angels and Leaden Hall. The historic buildings provide time depth and contribute to the landscape character of the site.
- The rural gap between Leaden Hall and the church and Leaden Roding is particularly sensitive to new development.
- The hedgerows, roadside vegetation and woodland on the River Roding which provide enclosure to the site.
- Public rights of way within the site are sensitive features and highly valued for recreation.
- The strong rural character across most of the site, due to the lack of modern human influences, relatively high levels of tranquillity and dark skies, despite disturbance from the A1060 Stortford Road in the south and Stansted Airport.

Conclusion

3.30 The key sensitivities of the site relate to the wooded river corridor of the River Roding, the landscape backdrop provided to historic buildings and to Leaden Roding and the rural and tranquil character of the site. The public rights of way are also sensitive features.

3.31 However, the flat landform, limited semi-natural habitats and large-scale modern field pattern as well as the visual enclosure provided by roadside and riverside vegetation, reduce sensitivity to development across the site.

3.32 It is considered the site could accommodate development, especially in proximity to Leaden Roding, as long as separation is maintained between the village and the historic church/Leaden Hall, and the landscape and visual impacts minimised.

Stebbing



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

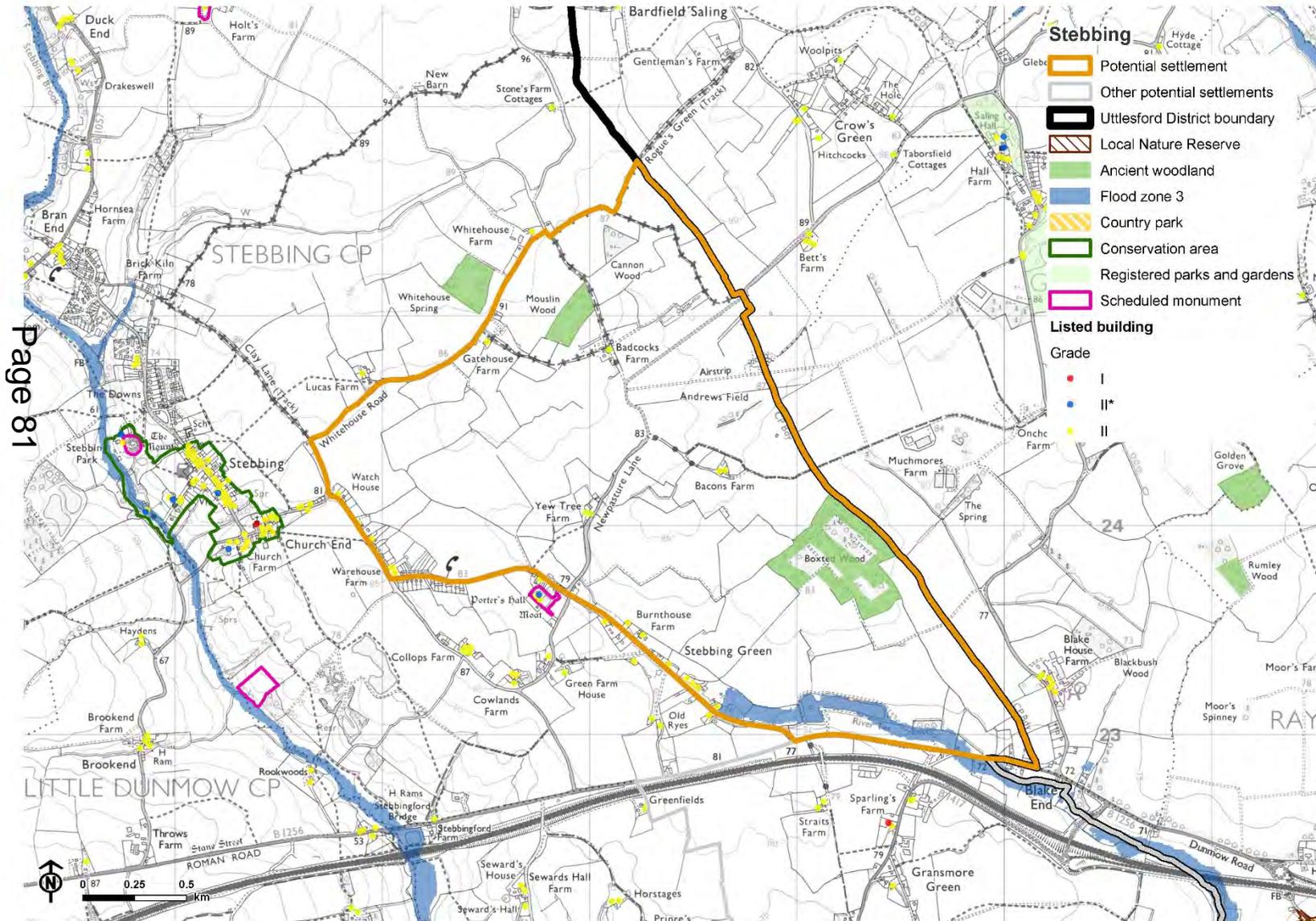
Location and description

The site lies in the east of the district, to the east of Stebbing. Within Uttlesford, the site is approximately 176ha, although the overall potential developable area extends into Braintree district. The wider West of Braintree Garden Community, which includes the 176ha site within Uttlesford and 731ha within Braintree district is proposed for up to 13,500 new homes and associated medical, educational and community facilities.

This report only assesses the land within Uttlesford district.

The site lies predominately within LCA B13: Rayne Farmland Plateau, within a small area in the north part of LCA B11: Lindsell and Bardfield Farmland Plateau. The site is in arable use, with small-scale ribbon development along roads and part of the Andrews Field airfield.

New Settlements LSA
November 2021



Page 81

Stepping representative photographs



Open arable fields with wooded horizon



Andrews Field airfield with uncharacteristic conifer block



Grade II listed Yew Tree Farmhouse



Open arable fields with woodland blocks providing visual enclosure

Stebbing

Landscape Character Area: B13 Rayne Farmland Plateau, B11 Lindsell and Bardfield Farmland Plateau

Landscape sensitivity assessment: Ugley		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> ■ Largely flat plateau, from 85m to 90m AOD. ■ Small water features and ponds associated with the River Ter in the south-east. ■ Medium scale arable fields with fragmented hedgerows and small woodlands provide smaller-scale landscape features. 	<ul style="list-style-type: none"> ■ Lower sensitivity ■ Moderate sensitivity ■ Moderate sensitivity
Natural character	<ul style="list-style-type: none"> ■ Priority habitat deciduous woodlands are often of ancient origin and designated as Important Woodland and LoWS. Stebbing Street is a LoWS as part of the Stebbing village green. ■ Hedgerows and hedgerow trees provide semi-natural features. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> ■ Properties at Stebbing Green and a number of scattered farmsteads are Grade II listed. Whitehouse Road is designated as a Protected Lane. Archaeological sites are noted east of Stebbing Green. ■ Historic field patterns have largely been lost to modern agricultural practices, although older enclosure patterns remain in the south-east. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> ■ The site is part of the wider open countryside between Stebbing, Felsted and Rayne (within Braintree district). ■ The site contributes to the rural setting of the historic linear hamlet of Stebbing Green. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Moderate sensitivity
Visual character	<ul style="list-style-type: none"> ■ Open views across arable fields, although hedgerows, mature hedgerow trees and occasional woodland limit intervisibility with the surrounding landscape outside the site. 	<ul style="list-style-type: none"> ■ Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> ■ Dark skies are present across the site, with some light pollution from Blake End / A120 in the south-east and Bran End north-west of the site which impacts the edge of the site. ■ Public rights of way link the rural road network and the farms, and provide access into the wider countryside. ■ Development within the site is limited to a small number of houses at Stebbing Green and scattered farmhouses. ■ Andrews Field airfield is a modern element and the A120 is audibly intrusive. ■ A rural character, although in places hedgerows are unmanaged, and a line of conifers at the airfield is out of character in the landscape. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Higher sensitivity ■ Higher sensitivity ■ Moderate sensitivity ■ Moderate sensitivity

Key landscape and visual sensitivities

- Priority habitat deciduous woodland blocks, including ancient woodland, hedgerows and mature hedgerow trees contribute to the landscape pattern, are ecologically valued and vulnerable to loss from development.
- The site provides a setting to the Grade II listed historic buildings at Stebbing Green and the rural farmsteads, which themselves provide time depth and contribute to the landscape character of the site.
- The public right of way network has recreational value.

- Whitehouse Road is a protected lane, valued for its historic and rural character, and contributes to the landscape pattern, visual character and time depth of the landscape, and is sensitive to 'road improvements' including lighting, signage and widening.
- Dark skies in the north and east are sensitive to new development.

Conclusion

3.33 The key sensitivities of the site relate to the deciduous woodland blocks, many of which are ancient woodlands, the landscape setting provided to the historic buildings at Stebbing Green, and the rural character with dark skies experienced across much of the site.

3.34 However, the flat plateau landform, modern field pattern as well as the visual enclosure provided by woodland blocks, reduce sensitivity to development across the site. The centre and east of the site around the airfield have lower sensitivity to new development due to the limited landscape features and lack of intervisibility with Stebbing Green. Consideration of planned new development in Braintree District would need to form an important part of any further investigation of this site.

3.35 It is considered that the east and centre of the site could accommodate some development, providing the key sensitivities are respected and the landscape and visual impacts minimised.

Takeley



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

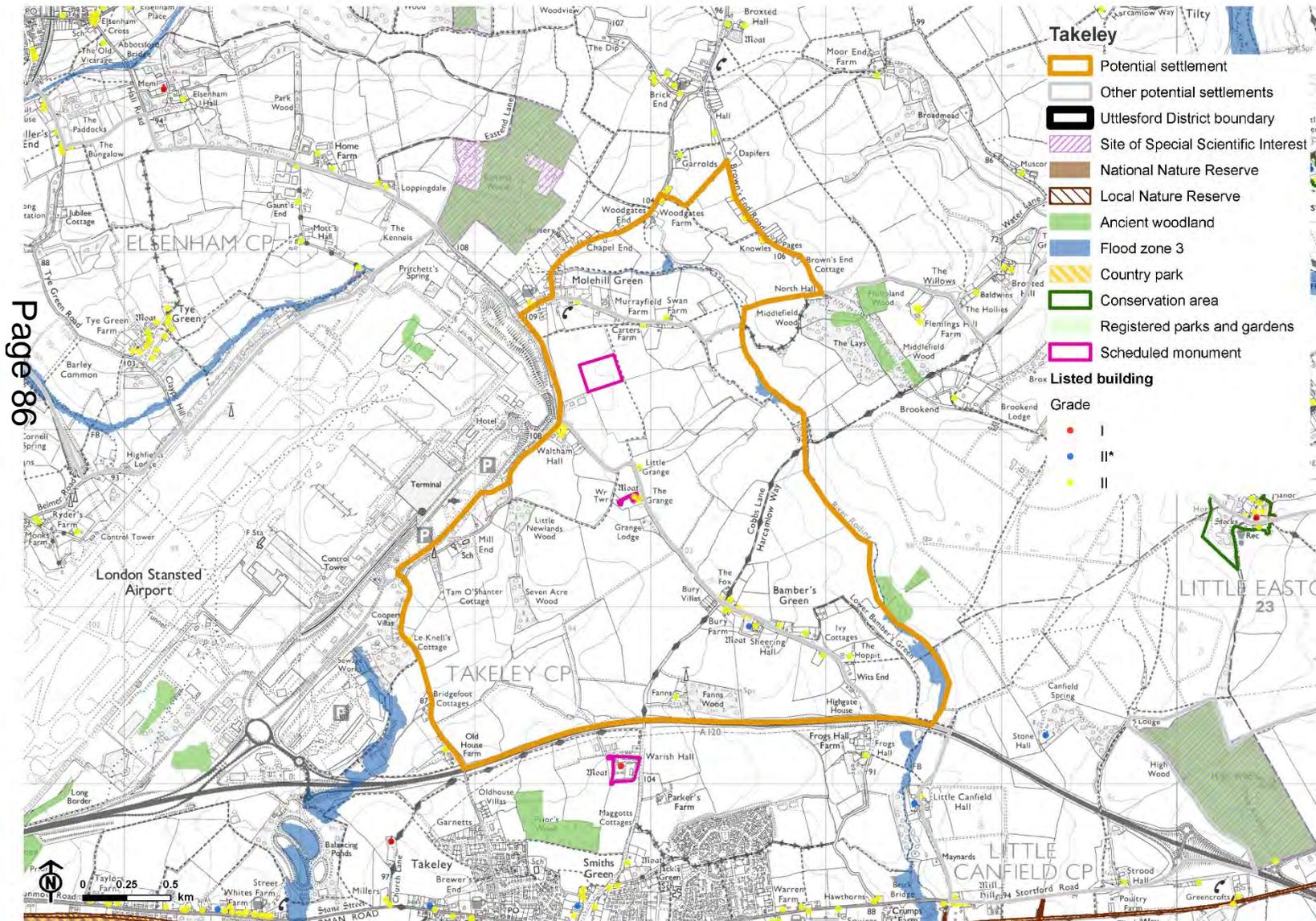
Source: UDC

Location and description

The site lies north of Takeley and Priors Green and east of Stansted Airport. The site is 307ha, and is proposed for housing, employment and transport infrastructure.

The site lies within LCA B10: Broxton Farmland Plateau, and is largely in arable use with small areas of woodland. The site contains the linear hamlets of Bamber's Green to the south-east and Molehill Green to the north-west.

NB The east of the site is also assessed within the Easton Park potential new settlement site.



Takeley representative photos



Flat, open arable fields with mature hedgerow trees at Molehill Green



Open arable fields with view towards business park at Woodgates Farm and a wooded skyline



View to the Harcamlow Way crossing large open arable fields, looking towards the Roding valley



Mature hedgerow trees mark field boundaries and provide a wooded skyline

Takeley

Landscape Character Area: B10 Broxsted Farmland Plateau

Landscape sensitivity assessment: Takeley		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> Generally flat topography between 100m and 105m AOD. More sloping topography to the Pincey Brook in the south-west and the River Roding to the east, from 105m to 85m OAD. Medium to large scale arable fields with hedgerow field boundaries, interspersed with small woodlands in the south and south-west. 	<ul style="list-style-type: none"> Lower sensitivity Moderate sensitivity Moderate sensitivity
Natural character	<ul style="list-style-type: none"> Small blocks of priority habitat woodland in the south and south-west, most designated as Important Woodland. Priority habitat good quality semi-improved grassland is recorded at Molehill Green and is a LoWS. The streams within the area are all designated as priority habitat rivers. Hedgerows, hedgerow trees and roadside trees provide semi-natural features. There is less woodland in the north. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> Scheduled Monuments are found at Waltham Hall and The Grange. There are clusters of Grade II listed buildings in the small settlements and farmsteads. A number of Archaeological Sites are scattered through the area. Historic field patterns have largely been lost to modern agricultural practices. Evidence of older enclosure patterns remain north and east of Bamber's Green, at The Grange, and south of Molehill Green. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> The site forms part of the rural setting to Stansted Airport, and is important to retaining its 'airport in the countryside' character and rural separation between the airport and larger villages at Takeley and Priors Green. The landscape provides a rural backdrop to Bamber's Green and Molehill Green, and forms part of the rural approach to Takeley and Priors Green to the south. 	<ul style="list-style-type: none"> Higher sensitivity Higher sensitivity
Visual character	<ul style="list-style-type: none"> The landscape has an open character, particularly in the north, with areas of enclosure from mature oak hedgerow trees and woodland blocks. Stansted Airport is generally well screened by mature vegetation, although some communications towers are visible above the treeline 	<ul style="list-style-type: none"> Moderate sensitivity Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> The public right of way network including the promoted route Harcamlow Way provides connections between the small settlements and into the wider countryside. A rural landscape with small linear settlements at Bamber's Green and Molehill Green. Small-scale airport related development including warehouses and rural business parks introduce a more urban-edge character. This is reinforced by scrubby and fragmented hedgerow boundaries. The A120 and Stansted Airport are audibly intrusive modern influences and light pollution from the airport reduces dark skies across the site. 	<ul style="list-style-type: none"> Higher sensitivity Moderate sensitivity Lower sensitivity Lower sensitivity

Key landscape and visual sensitivities

- Important semi-natural habitats designated as Important Woodland and LoWS are ecological valued landscape features that are vulnerable to loss from development. The woodlands would also be sensitive to adjacent residential development

- Hedgerow trees and woodland blocks are valued landscape features that contribute to a rural character.
- The streams and watercourses including Pincey Brook and River Roding are sensitive landscape features.
- The landscape forms part of the rural open space surrounding Stansted Airport, creating its 'airport in the countryside' character. Vegetation encloses Stansted Airport and provides an important visual screen.
- Historic assets at Molehill Green, Grange Lodge and Bamber's Green, and the historic linear settlements at Molehill Green and Bamber's Green are valued for their time-depth. The site provides a rural backdrop to these villages and heritage assets.
- The site forms part of the rural setting and approach to Takeley and Priors Green.
- The public right of way network connecting Molehill Green, Bamber's Green and into the wider countryside, including the Harcamlow Way promoted route is highly valued for recreation.
- The strong rural character of the site, with higher levels of tranquillity away from the A120 and Stansted Airport.

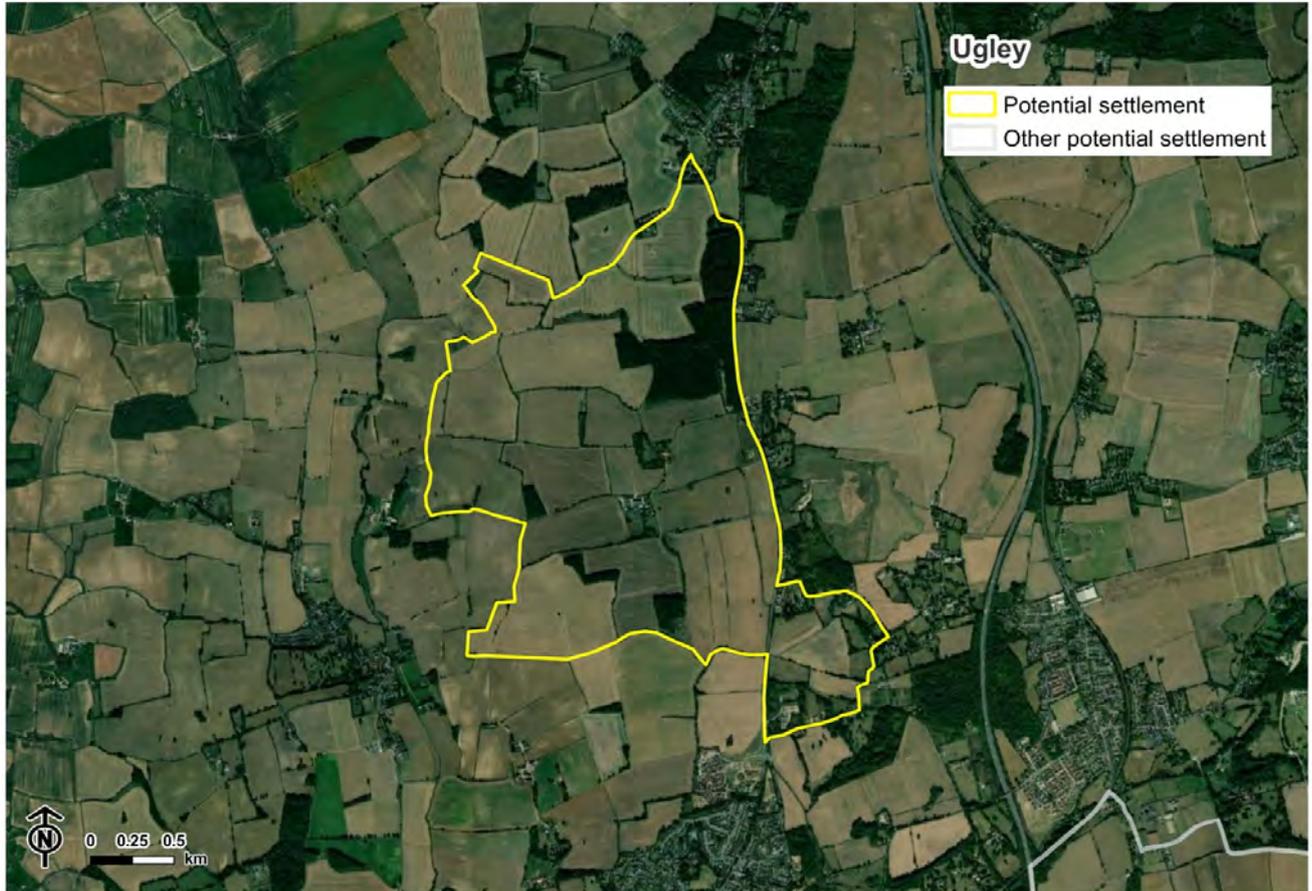
Conclusion

3.36 The main sensitivities of the site relate to its function as part of the rural setting to Stansted Airport, Bamber's Green and Molehill Green, and the historic character of these small rural hamlets which provide time depth to the landscape. The ecologically valued woodlands provide an important part of the rural landscape pattern. The public rights of way, in particular the promoted route Harcamlow Way, are also sensitive features.

3.37 However, the flat landform, modern field pattern (except at Bamber's Green) as well as the visual enclosure provided by woodland blocks, reduce sensitivity to development across the site. Rural characteristics of the site have been compromised by the influence of the airport in the form of small-scale commercial development as well as the busy A120 to the south and the resulting visual and audible intrusion on the countryside.

3.38 It is considered the site could accommodate development, although particular care would need to be taken to ensure the rural setting of Stansted Airport is retained and the separation it provides to Takeley and Prior's Green to the south, as well as the respecting the key sensitivities and minimising the landscape and visual impacts.

Ugley



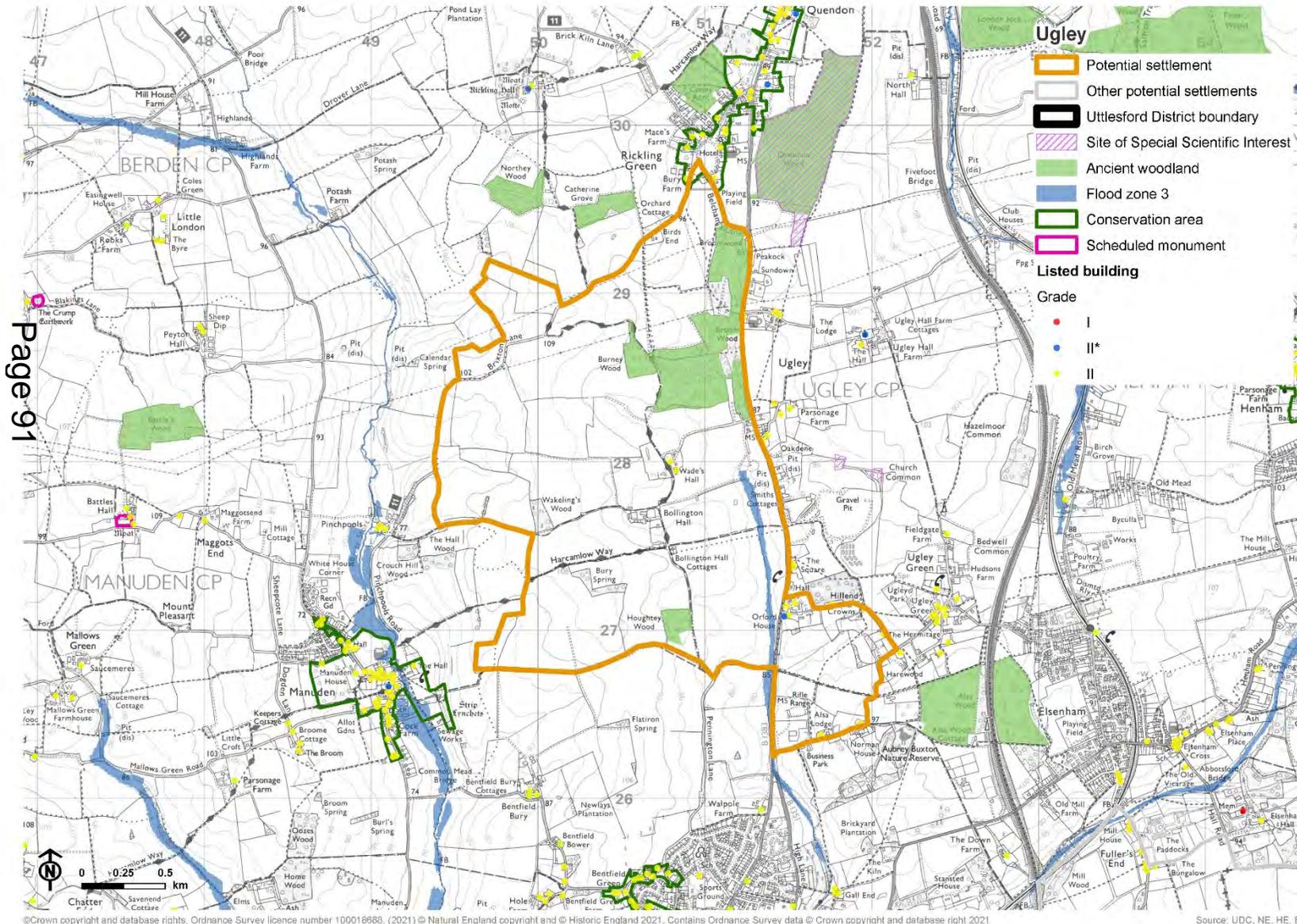
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: UDC

Location and description

The site lies in the west of the district, west of Ugley, east of Manuden, south of Rickling Green and north of Stansted Mountfitchet. The site is 324ha and is proposed for 4800 dwellings, 20,000m² of employment space and educational facilities.

The site lies predominately within LCA B7: Debden Farmland Plateau, with the east within LCA B10: Broxted Farmland Plateau and the south and west in LCA A3: Stort River Valley. The site is in arable use with small woodland blocks and some pasture east of the B1383.



Representative Ugley photographs



Large arable fields with Broom Wood providing wooded skyline. Pylons are intrusive modern influences.



Village green at Rickling Green, covered by the Quendon Conservation Area.



Enclosed character along Snakes Lane.



Sloping arable fields with wooded backdrop and Orford House visible.

Ugley

Landscape Character Area: B7 Debden Farmland Plateau, B10 Broxted Farmland Plateau, A3 Stort River Valley

Landscape sensitivity assessment: Ugley		
Criteria	Description	Sensitivity
Physical character	<ul style="list-style-type: none"> ■ Gently rolling plateau between 90m and 105m AOD. ■ Slightly steeper slopes in the west falling towards the River Stort, and to the east towards a tributary of the Stort. ■ Alsa Lodge Sand Pit is a Local Geological Site with exposures of glacial sand and gravel. ■ Medium to large scale arable fields, with fragmented hedgerows and small woodland blocks providing smaller-scale features. Smaller scale pasture fields are located east of the B1383. 	<ul style="list-style-type: none"> ■ Lower sensitivity ■ Moderate sensitivity ■ Higher sensitivity ■ Moderate sensitivity
Natural character	<ul style="list-style-type: none"> ■ Scattered areas of priority habitat woodland including at Broom/Burney Woods and Houghtey Wood, which are recorded as ancient woodland and designated as LoWS. Broom/Burney Woods is also an Important Woodland. Alsa Lodge Pit is a LoWS designated for its insect wildlife. ■ Much of the site is intensively farmed and there are limited semi-natural habitats recorded in the north-west of the site. ■ Mature hedgerow trees provide semi-natural landscape features. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity ■ Moderate sensitivity
Sense of time depth	<ul style="list-style-type: none"> ■ Isolated clusters of listed buildings along the rural road network, including the Grade II* listed Orford House. The village green at Rickling Green is designated as part of the Quendon Conservation Area. Pennington Lane and Brixton Lane are protected lanes. ■ Historic field patterns have largely been lost to modern agricultural practices, although there are some older enclosure patterns around Wade's Hall. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity
Character and setting of settlement	<ul style="list-style-type: none"> ■ The north of the site provides a rural backdrop and wooded approach to Rickling Green and Quendon, including the historic village green. The west of the site also provides a rural backdrop to the rural riverside village of Manuden. ■ The south of the site provides a rural backdrop to the new Walpole Meadows development at Stansted Mountfitchet. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity
Visual character	<ul style="list-style-type: none"> ■ The site has an open character, with views across rolling farmland. There is intervisibility with the wider countryside across the Stort valley from the valley slopes in the west of the site and from the slopes on the eastern edge of the site. ■ Burney Wood/Broom Wood provide a wooded skyline in views in the north of the site. ■ Roadside vegetation on Pennington Lane and Pound Lane/Snakes Lane/Alsa Street provides some enclosure in the south-east. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Moderate sensitivity ■ Moderate sensitivity
Perceptual and scenic qualities	<ul style="list-style-type: none"> ■ Dark skies are present across much of the site, particularly away from the B1383. ■ Light pollution from Stansted Mountfitchet reduces dark skies in the south and south-east. ■ Public rights of way including the Harcamlow Way promoted route cross the site, providing links between the small settlements and the wider countryside. 	<ul style="list-style-type: none"> ■ Higher sensitivity ■ Lower sensitivity ■ Moderate sensitivity

	<ul style="list-style-type: none"> ■ A rural character with limited modern influences except for electricity pylon routes in the north and the B1383 in the east. Stansted Airport and the M11 to the south east of the site are audibly intrusive and reduce tranquillity. ■ Existing development in the site is limited, with only rural farm complexes at Wade's Hall and Bollington Hall in the centre of the site and Orford House in the south-east. There are a small number of houses on the edge of Rickling Green/Quendon. 	<ul style="list-style-type: none"> ■ Moderate sensitivity ■ Moderate sensitivity
--	--	--

Key landscape and visual sensitivities

- Priority habitat deciduous woodland and ancient woodland at Broom Wood and Houghtey Wood contribute to the landscape pattern, are ecologically valued and vulnerable to loss from development.
- Small woodland copses, hedgerow boundaries and mature hedgerow trees are valued landscape features and contribute to the rural character of the site.
- The site provides a setting to heritage assets including the Grade II* Orford House, and the Quendon Conservation Area. The historic buildings provide time depth and contribute to the landscape character of the site.
- The site provides a rural backdrop and approach to Rickling Green and Quendon in the north, Manuden in the west and Stansted Mountfitchet to the south.
- Protected lanes at Brixton Lane and Pennington Lane are valued for their historic and rural character and are highly sensitive to 'road improvements' including lighting, signage and widening. Alsa Street, Pound Lane and Snakes Lane are wooded and have an enclosed, rural character.
- Public rights of way within the site are sensitive features and highly valued for recreation.
- Relatively high levels of tranquillity and dark skies (away from Stanstead Mountfitchet) with few human influences create a strong rural character across most of the site.

Conclusion

3.39 The key sensitivities of the site relate to the priority habitats and ancient woodland of Broom Wood and Houghtey Wood, its function as a rural backdrop to Rickling Green and Quendon in the north, Manuden in the west and the historic buildings within them. The open character of the site is sensitive to change, particularly the slopes of the River Stort due to their intervisibility with the wider countryside. The public rights of way and protected lanes through the site are also sensitive features.

3.40 However, the plateau landform, modern field pattern (with fragmented hedgerows) as well as the visual enclosure provided by woodland blocks, reduce sensitivity to development across the site. Sensitivity is reduced in immediate proximity to the B1383 in the east of the site, and there is some aural intrusion from the M11 and Stansted Airport which reduces rural tranquillity.

3.41 The southern edge of the site is sensitive to new development due its proximity to the northern edge of Stansted Mountfitchet and the potential role of the landscape here as a rural a rural gap between the settlement edge and any new development proposed within the site.

3.42 The west of the site has a strong rural character, with long open views across the Stort valley which increases its sensitivity.

3.43 The north of the site provides a rural setting to the historic village green at Rickling Green, making it highly sensitive to new development.

3.44 The area of the site east of the B1383 is smaller scale, with pasture fields and wooded rural lanes, which increase sensitivity to change. Any new development east of the B1383 should carefully consider the relationship with Stansted Mountfitchet in order to avoid coalescence.

3.45 It is considered that the site could accommodate development in the south-west of the site, providing there is no coalescence, or perceived coalescence, with Stansted Mountfitchet, the key sensitivities are respected, and the landscape and visual impacts minimised.

Committee: Local Plan Leadership Group
Title: Uttlesford Employment Needs & Economic Development Evidence
Report Author: Joanna Hill, Planning Policy Officer
jhill@uttlesford.gov.uk
Date: Monday 29 November 2021

Summary

1. This report sets out current progress on the assessment of economic growth and employment needs that will inform the Local Plan.

Recommendations

2. To note the findings in the Uttlesford Employment Needs & Economic Development Evidence report, which will be utilised in the development of the emerging Local Plan.

Financial Implications

3. This work is within the 2021/22 budget.

Background Papers

4. Uttlesford Employment Needs & Economic Development Evidence Report (Iceni - November 2021)

Impact

- 5.

Communication/Consultation	N/a
Community Safety	N/a
Equalities	Forthcoming policies will be subject to an Equalities and Healthy Impact Assessment (EqHIA).
Health and Safety	N/a
Human Rights/Legal Implications	Preparation of a local plan is a statutory duty. It needs to meet legal tests and comply with regulations.
Sustainability	Forthcoming policies will need to meet the sustainability objectives of the Council and

	the Local Plan will be subject to a Sustainability Appraisal.
Ward-specific impacts	All
Workforce/Workplace	N/a

Situation

6. The intention of this work is to detail the baseline assessment of employment needs, employment land availability and economic development forecasts, and identify the economic issues to:
 - Inform the Preferred Options Local Plan
 - Build a strong, competitive economy and support a prosperous rural economy, as required in the NPPF

7. The report reviews the following:
 - The baseline situation for Uttlesford's population structure, employment sectoral composition and spatial distribution of employment and enterprises
 - Commercial market review
 - Key learning from a business survey, focusing on small businesses
 - The growth context of Stansted airport
 - Economic growth sectors and drivers
 - Employment land supply
 - Employment floorspace needs
 - Recommendations for policy development

8. The report completes the baseline assessment and forecasting, considering the different strands of Uttlesford's economy including life sciences, Stansted airport and surrounding area, the rural, visitor and green economies.

9. The programme of work includes:
 - Topline input into strategic context - three working papers completed July 2021:
 - Literature review
 - Socio-economic baseline assessment
 - Insights from employment projections prepared by Cambridge Econometrics
 - This report to inform the Preferred Options Local Plan – November 2021 (the report appended)
 - Further work to inform Reg 19 Submission Plan – Autumn 2022
 - Contribution to Local Plan examination of Reg 19 Submission Plan and modifications, as required - Autumn 2023-Spring 2024

Risk Analysis

10.

Risk	Likelihood	Impact	Mitigating actions
If the Council does not have an NPPF compliant evidence base the plan could be found unsound	2	4 – delays in adopting the Local Plan	Professional evidence developed in line with the NPPF and PPG
That the uncertainty around the pandemic impacts on the quality of the evidence	2	this will impact the ability of the Local Plan to implement the right policies	Up to date forecasts are being used to inform the evidence, if necessary an early review of the plan can update policies

1 = Little or no risk or impact

2 = Some risk or impact – action may be necessary.

3 = Significant risk or impact – action required

4 = Near certainty of risk occurring, catastrophic effect or failure of project.



NOVEMBER
2021

Uttlesford Employment Needs & Economic Development Evidence

Draft Final Report

Iceni Projects Limited on behalf of
Uttlesford District Council

November 2021

ICENI PROJECTS LIMITED
ON BEHALF OF
UTTLESFORD DISTRICT
COUNCIL

Iceni Projects

London: Da Vinci House, 44 Saffron Hill, London, EC1N 8FH
Edinburgh: 11 Alva Street, Edinburgh, EH2 4PH
Glasgow: 177 West George Street, Glasgow, G2 2LB
Manchester: This is the Space, 68 Quay Street, Manchester, M3 3EJ

t: 020 3640 8508 | w: iceni-projects.com | e: mail@iceni-projects.com
linkedin: [linkedin.com/company/iceni-projects](https://www.linkedin.com/company/iceni-projects) | twitter: @iceni-projects

Uttlesford Employment Needs &
Economic Development Evidence
DRAFT FINAL REPORT

CONTENTS

1. EXECUTIVE SUMMARY.....	4
2. INTRODUCTION.....	10
3. OVERVIEW OF UTTLESFORD.....	12
4. KEY BASELINE INFORMATION	15
5. COMMERCIAL MARKET REVIEW.....	41
6. BUSINESS SURVEY	60
7. ECONOMIC GROWTH: SECTORS AND DRIVERS.....	76
8. GROWTH OF STANSTED AIRPORT.....	88
9. ECONOMIC GROWTH OUTLOOK	95
10. EMPLOYMENT LAND NEEDS	99
11. FURTHER POLICY DEVELOPMENT.....	113
12. SUMMARY AND RECOMMENDATIONS.....	119

1. EXECUTIVE SUMMARY

1.1 Uttlesford District Council has commissioned Icen Projects and SQW to prepare a report on its Economic Needs and Economic Development Evidence to inform the preparation of its new Local Plan and the Council's activities in supporting sustainable economic development and growth.

1.2 The Study brief includes the following key components:

- Economic Growth Assessment: assessment of future economic growth prospects for Uttlesford and associated employment land requirements.
- Land Availability Assessment: appraisal of existing employment land supply and how it meets needs, including existing employment allocations and land with planning permission (provided separately).
- Employment Land Requirements: an assessment of the need for employment land in Uttlesford, including an assessment of the scale and type of employment land needed and locational considerations.
- Stansted Hub: advice on the needs and economic opportunities associated with London Stansted Airport for the Uttlesford economy.
- Rural Economy Advice: best practice in supporting and developing strong rural economy.

1.3 Main findings across the topics contained in this report are set out below:

Overview of Uttlesford

1.4 Uttlesford is a district in north-west Essex. In 2019, it had a total population of 91,000 people. According to ONS sources, the total number of jobs in the district was 56,000 in 2019 and the total number of enterprises was 5,475. Within Uttlesford, the largest settlements are Saffron Walden (population approximately 15,500), Great Dunmow (8,800), and Stansted Mountfitchet (6,400). Collectively these settlements accommodate 30,700 – around a third of the District's population – with two-thirds living in rural areas.

1.5 Stansted Airport sits within the District, but larger settlements in proximity to it such as Bishop's Stortford and Harlow lie outside of the District's boundaries. Stansted is the UK's fourth busiest airport by total passenger traffic in 2019 - and aided by its location between London and Cambridge is well served by major road and rail links.

- 1.6 The M11 runs north/south through the District. Junction 8 (Stansted/ Bishop's Stortford) falls within the District, with Junction 9/9A (Great Chesterford) on the District's northern boundary. Great Chesterford Research Park, in the north of the District, forms part of the wider Southern Cambridgeshire research and bio-tech cluster.

Baseline

- 1.7 The evidence suggests that **Uttlesford has seen relatively rapid employment growth in recent years**, out performing surrounding areas in comparative terms.
- 1.8 The Covid-19 pandemic has affected the local economy in the short-term but the claimant count in Uttlesford – which stood at 4.4% in May 2021 – remains below regional and national averages.
- 1.9 The **largest sectors in Uttlesford** by the proportion of total employment in 2019 were: Transportation and Storage (19.6%), Professional, Scientific and Technical Services; and Wholesale and Retail Trade (both 10.9%). Other sectors that recorded greater than 5% of total employment included Accommodation and Food Service Activities (8.7%), Manufacturing, Administration and Support Services and Education (all of which accounted for 6.5%).
- 1.10 **Uttlesford is home to a high proportion of micro-enterprises** and a lower proportion of small, medium-sized and large enterprises when compared to the East of England and England as a whole.
- 1.11 Saffron Walden and Great Dunmow are home to just over a quarter of **business units** in Uttlesford. Rural areas accommodate nearly a third of units. Birchanger (including Stansted Airport) is home to 60% of large business units in Uttlesford.
- 1.12 Around a third of employment in Uttlesford is within Stansted Airport and its environs. Around three quarters of employment in this area are in Transportation and storage and Accommodation and food services. Rural areas and Small Towns/Villages accommodate around 40% of employment in Uttlesford.

Property market

- 1.13 **Office** demand is focused generally on local SME businesses and particularly space of up to 20,000 sq.ft. The market is difficult at the time of writing (July 2021) influenced by Covid-19. It is reported that that outstanding requirements are all for small and medium-sized units, with little demand for larger HQ office space. Rents around Stansted Airport achieve around £19 psf which is below viable for speculative development. The new-build office scheme at Tristal Towers has been on the market for five years, but appears unlikely to come forwards in the short-term given viability challenges.

- 1.14 The local market in Saffron Walden is focused typically on units of 500 – 1,500 sq.ft.. Some inquiries from small businesses are reported, for satellite offices instead of commuting to London or Cambridge.
- 1.15 A lack of **industrial supply** is noted in Uttlesford and more generally within 10 miles of Bishops Stortford with a 98% occupancy level within the industrial market. Demand outstrips supply and there is a need to bring forward new development. Within a 10 mile radius of the Airport, agents report significant requirements. There is demand for industrial space in a range of small, medium and large size bands across the District including from established manufacturing businesses in the District. Additional supply is needed, particularly close to M11 Junction 8, which is the area of strongest occupier demand. Demand exists for smaller rural premises across the district and around the smaller towns and villages.

Key sectors and opportunities

- 1.16 This data shows that **rural areas and rural town/villages** within Uttlesford accommodate a very significant portion of economic activity within the district. There appears to be an opportunity to diversify and grow Uttlesford's Rural Economy.
- One potential opportunity may be to focus **floorspace provision of small (potentially shared) units in rural areas** which offer micro businesses an alternative to working from home, particularly in relation to office type premises. There is also potential for growth of non-office-based sectors (e.g. manufacturing). Engagement with stakeholders revealed that there was a lack of workshop space (particularly incubator space for small businesses).
 - **Agri-tech, Agri-food** and Forestry-tech sectors may provide opportunity to deliver growth and support sustainable food production, maintain plant and animal health and support and enhance natural habitats. There are a number of major institutions in Cambridge and initiatives associated with the University of Essex that could provide a springboard for Uttlesford.
 - **Digital connectivity** is vital in diversifying the rural economy - Uttlesford's Economic Development Strategy produced in 2018 stated that digital connectivity is particularly poor in rural parts of the district. Opportunities around 5g may be more appropriate than broadband investment.
 - Providing **sufficient housing and affordable housing in rural areas** is vital to unlocking the potential of rural businesses.
 - There is a **need to allow farmers of modernise/replace buildings, expand and diversify, both from an economic and environmental sustainability perspective.**

1.17 Key issues for Uttlesford's **green economy** include:

- Essex is one of the sunniest counties in the UK with an average of 1,598 hours of sunshine per year compared to the national average of 1,373. Solar farms are currently under development at two sites near Thaxted and Saffron Walden.
- Construction, which is evidently a strength in Uttlesford, has a number of green economy related opportunities most notably in terms of retrofit of properties and new build using modern methods of construction. The retrofit agenda has been distorted by the short lived green homes grants scheme by government, but is likely to remain a priority given the impact on overall carbon emissions and the move for example away from gas powered boilers.

1.18 In 2018, Uttlesford's **visitor economy** represented the second most important income strand for the district after retail spending . The district's visitor economy is best understood in relation to two main elements: One part is centred around the historic market towns of Saffron Walden, Great Dunmow and Thaxted as well as regionally and nationally important visitor attractions; A second element is linked to London Stansted Airport.

1.19 A key local economic driver in Uttlesford is **Chesterford Research Park** which provides laboratory and office space for biotechnology, pharmaceutical and technology R&D companies. Chesterford Research Park is Uttlesford's most prominent R&D facility. The Park masterplan set out the potential for around 1m sqft for research and development uses of which approximately 300,000 sq ft of space is already occupied. Around 700,000 sqft or 65,000 sqm remains for construction of which some has planning permission. It would be reasonable to expect that by the end of the Plan period the masterplan could have been developed in full.

Stansted Airport

1.20 In May 2021, Stansted Airport secured planning consent (through appeal) for expansion to 43 million passengers per year. Additional Direct On-Airport **Additional employment of 3,000 is expected in the Plan period.** Potentially 400-500 additional jobs could be created through indirect and induced employment.

1.21 The airport owners, Manchester Airports Group (MAG), have brought in a development partner – Columbia Threadneedle – to bring forward development of land at **Northside**, on the northern side of the Airport. Around 2.1million sq.ft (200,000 sqm) of principally B8 warehousing development is envisaged. It is expected that the early phases of development will be targeted at 'big box' logistics exceeding 100,000 sqft and possibly much larger. This reflects the target occupiers as being regional / national occupiers rather than meeting the needs of local businesses. Oxford Economics, for the scheme promoters, estimate that the **scheme will deliver around 2,600 net additional jobs.**

Economic Growth outlook

- 1.22 IcenI has considered baseline forecasts by Cambridge Econometrics which report 61,500 jobs by 2040 from a start of 53,900 in 2019. Based on potential developments at Stansted Airport, Northside and Chesterford Research Park, IcenI is of the view that employment could reach 66,600 by 2040 and that this is a more realistic figure.

Employment Land Needs to 2040

- 1.23 **For offices** IcenI therefore considers a range of 4.0-6.3 ha is a reasonable provision for the office market based on a labour demand model and taking into account a discount for R&D premises growth.
- 1.24 For industrial 18.9 ha should be considered as a minimum with **27.2 ha being a pragmatic and recommended level of net growth that facilitates new premises for business over the Plan period**. This reflects that the vast majority of premises are essentially full and there is justification to support business growth through new allocations. IcenI's of the view that the development at Northside should **not** be considered suitable supply for the general industrial needs established here, given the very large nature of units which, certainly for phase one, are large scale and strategic in nature and not relating to the historic and local development patterns.
- 1.25 The pattern of future allocations should be considered in full as the Local Plan Spatial Strategy developed. At present our view is that Great Dunmow has the strong local industrial market with a range of local businesses. We consider that the allocation of 5-10 ha or more of employment land would be justified. Saffron Walden is the largest settlement. Given the size of the settlement there is limited existing employment land provision. The allocation of some additional land (c. 2-4 ha) would therefore be warranted through the Local Plan having regard to current provision and to support sustainable development. Historic take-up data shows a strong preference for industrial type business to be located up to 5 miles from Stansted where it can access the M11, population centres at Bishop's Stortford and supply chain and business benefits of Stansted Airport. Further industrial and business space should be considered for allocation in this area, beyond Northside.
- 1.26 Given competition from larger and more established centres in surrounding areas, we see limited role for corporate offices. The Council should however look to maintain a supply of good quality, SME space to support local business formation and growth. To do so may however require public sector intervention and support to overcome viability challenges. The Council could appropriately target provision initially at boosting provision in the main urban centres of Saffron Walden, Great Dunmow and Stansted Mountfitchet. There are a range of potential options to do so, including repurposing retail space.
- 1.27 Great Chesterford Research Park is somewhat unique and has developed as an important site for biology and lifesciences. There is a good case for the allocation of additional land in line with the

masterplan already developed in order to provide certainty for larger plots which are capable of attracting investment from biotech businesses looking to establish a campus. There is the potential for international inward investment in this regard.

Policy

- 1.28 In terms of the **rural economy**, planning policy requires a nuanced approach. Supporting small businesses to survive and grow is essential for rural areas. Particular recognition should be given to the retention and attraction of value-adding processes in rural areas.
- 1.29 There may well be a case for the greater provision of small business units. ‘Hubs’ of small business units could be part of the solution. In practice, schemes of this nature often struggle in terms of viability and may require public sector support but their role can be important. Live/work interlinked facilities should also be considered by the planning system in order to attract new incoming workers and business facilities that allow people to meet and collaborate.
- 1.30 Planning policy through **S106** can be applied to new developments where there are opportunities to provide apprenticeships or training thus raising skills and attainment and supporting people into higher paid employment, potentially connecting employers and employment opportunities to local schools, colleges, training organisations and voluntary services.
- 1.31 The market analysis and business engagement undertaken by Iceni has identified a floorspace **affordability issue in the office and employment market** in Uttlesford particularly relating to better quality spaces. The workspace market can be difficult for micro-enterprise and SME’s to enter. London authorities and the GLA provide good examples of planning policies that seek to secure affordable workspace. These use Section 106 agreements in order to deliver affordable workspace.

2. INTRODUCTION

- 2.1 Uttlesford District Council has commissioned Icen Projects and SQW to prepare a report on its Economic Needs and Economic Development Evidence to inform the preparation of its new Local Plan and the Council's activities in supporting sustainable economic development and growth.

Uttlesford District's Geography

- 2.2 Uttlesford is principally a rural district located in North West Essex. It includes two market towns – Saffron Walden and Great Dunmow – and over 60 rural settlements. Around 70% of the District's population live within the villages and countryside outside of the main towns. Larger villages comprising more than 1900 population within the District include Stansted Mountfitchet, Thaxted, Elsenham, Great Chesterford, Hatfield Heath, Newport and Takeley.
- 2.3 Stansted Airport sits within the District boundaries, but larger settlements in proximity to it such as Bishop's Stortford¹, Harlow and Braintree lie outside of the District's boundaries. The south-western fringes of the District fall within Metropolitan Green Belt.
- 2.4 The M11 runs north/south through the District. Junction 8 (Stansted/ Bishop's Stortford) falls within the District, with Junction 9/9A (Great Chesterford) on the District's northern boundary. Great Chesterford Research Park, in the north forms part of the wider Southern Cambridgeshire research and bio-tech cluster. The A120 dual carriageway runs east-west through the District from Bishop's Stortford/M11 Junction 8 to Braintree, Colchester, and the Port of Harwich. There are six rail stations in the District served by Greater Anglia services.

Study Objectives

- 2.5 The objectives of the report are to provide a robust evidence base regarding economic issues to support the Uttlesford Local Plan, and in doing so meet the requirements of the National Planning Policy Framework (NPPF) and associated Planning Practice Guidance (PPG).
- 2.6 The Study brief includes a number of components:
- Economic Growth Assessment: assessment of future economic growth prospects for Uttlesford and associated employment land requirements. This is intended to be informed by consideration of key strands of the local economy, including the Stansted Hub; the Life Science sector focused around Chesterford Research Park; and the needs of the rural, visitor

¹ Bishops Stortford is in East Hertfordshire

and green economies. This is intended to inform a strategic vision for economic development for Uttlesford.

- Land Availability Assessment: appraisal of existing employment land supply and how it meets needs, including existing employment allocations and land with planning permission. Identification of development opportunities at existing sites; and sites which are no longer suitable for continued employment use or allocation.
- Employment Land Requirements: an assessment of the need for employment land in Uttlesford, including an assessment of the scale and type of employment land needed and locational considerations; with comparison of the need and available land supply (as above) to identify what additional land is needed. Advice on development management policies for economic development.
- Stansted Hub: advice on the needs and economic opportunities associated with London Stansted Airport for the Uttlesford economy, including potential growth scenarios and land-use requirements for airport and non-airport related businesses.
- Rural Economy Advice: best practice in supporting and developing a strong rural economy, and the potential role of village/rural locations and neighbourhood planning in meeting employment land needs.

2.7 The Study has been prepared at an early stage in the preparation of a new Local Plan for the District. Icenis's commission includes reviewing the evidence and providing more focused advice as the plan-making process progresses, including inputting to the emerging strategy. This recognises that the strategy for economic development and employment land needs to relate and inter-relate to the wider development strategy for the District.

2.8 The Study has involved a combination of desk-based and statistical research; key stakeholder engagement; and on-site review of employment land / premises within the District undertaken in Summer 2021.

Report Status

2.9 This draft report is submitted as a draft for discussion. It will be finalised following discussions with the Council Team.

3. OVERVIEW OF UTTLESFORD

- 3.1 Uttlesford is a district in north-west Essex. In 2019, it had a total population of 91,000 people². According to ONS sources, the total number of jobs in the district was 56,000 in 2019³ and the total number of enterprises was 5,475⁴, 91.1% of which are micro enterprises (with less than 10 in employment).
- 3.2 Within Uttlesford, the largest settlements are Saffron Walden (population approximately 15,500), Great Dunmow (8,800), and Stansted Mountfitchet (6,400)⁵. Collectively these settlements accommodate 30,700 – around a third of the District's population – with two-thirds living in rural areas.
- 3.3 South Cambridgeshire and Cambridge lie to the north of Uttlesford, the Essex Districts (and towns) of Braintree and Chelmsford lie to the east and south east, the Districts of Epping Forest and Harlow lie to the South West, and the East Hertfordshire town of Bishop's Stortford lies to the west (Figure 3.1). The district is home to London Stansted Airport – the UK's fourth busiest airport by total passenger traffic in 2019⁶ - and aided by its location between London and Cambridge is well served by major road and rail links. The M11 motorway runs north-south through the district with junctions at Stansted Airport (junction 8) and Stump Cross near Saffron Walden (junction 9), whilst the A120 runs east-west between Bishop's Stortford and Braintree via Great Dunmow. This connects Uttlesford to Colchester, Harwich, and Hertford. These major transport corridors influence the geography of demand for employment space.
- 3.4 The West Anglia Main Line also runs north-south through the district with stations at six locations (Stansted Mountfitchet, Stansted Airport, Elsenham, Newport, Audley End [serving Wendens Ambo and to a lesser extent Saffron Walden] and Greater Chesterford). From all stations there are services to Cambridge operated by Greater Anglia. However, services from Elsenham, Newport and Greater Chesterford are less frequent (than the Stansted stations and Audley End) which may lead to greater reliance on car travel in these areas. Greater Anglia also runs services from Stansted Airport (and on occasion Stansted Mountfitchet) to London Liverpool Street, under the branding of the Stansted Express. These services run every half hour with a journey time of approximately 50 minutes.

² ONS Mid-Year Population Estimates, 2019

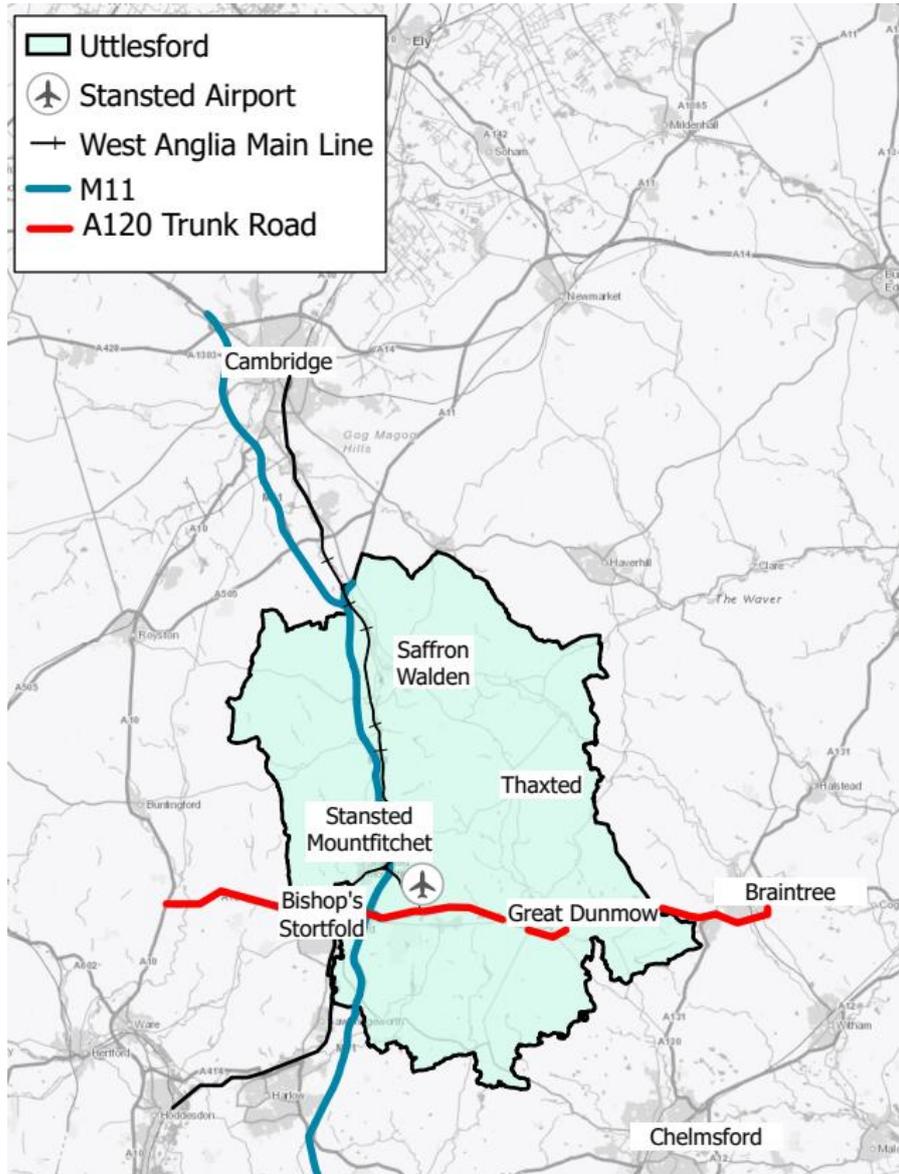
³ ONS Jobs Density, 2019

⁴ UK Business Counts, 2020

⁵ Essex Highways (2018) *Uttlesford District Cycling Action Plan*

⁶ UK Civil Aviation Authority (CAA) Airport Data 2019 - <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2019/>

Figure 3.1: Map of the Major Settlements and Transport Links in and around Uttlesford

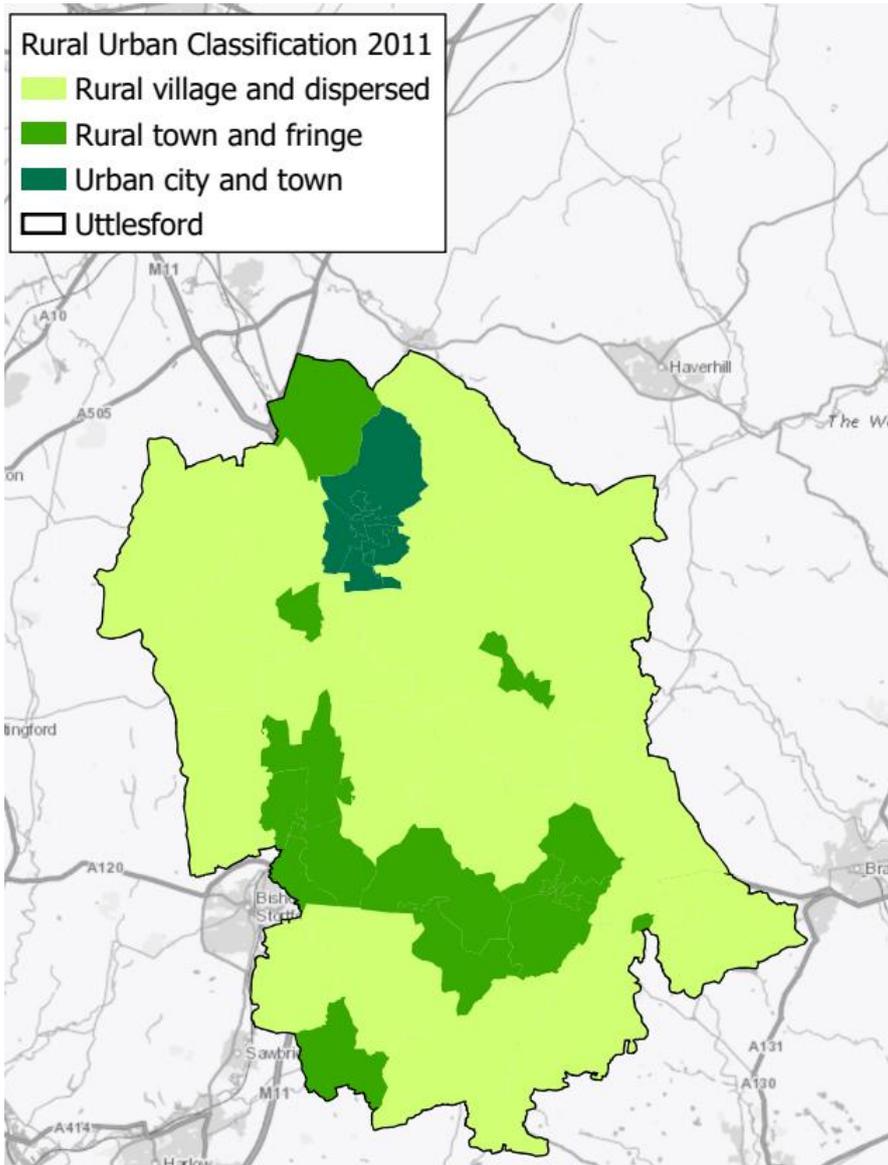


Source: Produced by SQW 2021. Licence 100030994

3.5 As shown in Figure.2, Uttlesford is predominantly rural; most of its territory is defined as either 'Rural village and dispersed' or 'Rural town and fringe' under the 2011 Rural / Urban Classifications⁷. The only Lower Layer Super Output Areas (LSOAs) classified as 'Urban city and town' are situated in the north of the district clustered around Saffron Walden. As set out above, two-thirds of the District's population lives in the rural areas/settlements.

⁷ This Classification defines areas as rural if they fall outside of settlements with more than 10,000 resident population.

Figure 3.2: Rural Urban Classification 2011 – Uttlesford



Source: 2011 Rural / Urban Classification, ONS. Produced by SQW 2021. Licence 100030994

4. KEY BASELINE INFORMATION

4.1 The following section presents key baseline information which informs this study regarding Uttlesford's Population Structure, Employment, Sectoral Composition and spatial distribution of employment and enterprises. Further separate baseline topic papers on the economy and literature review are appended to this report.

4.2 Whilst the focus is on Uttlesford, comparator areas are used to assess the District's relative performance across the key metrics. The comparator areas include a number of Local Authority Districts (LADs) which abut Uttlesford (namely Braintree, Chelmsford, East Hertfordshire, South Cambridgeshire), as well as county (Essex), regional (East of England) and national comparators (England).

Population Structure

4.3 In comparison to the neighbouring LADs, Uttlesford had the second largest 0-15 population behind South Cambridgeshire (20.1%), the third largest working age population behind East Hertfordshire (62.1%) and Chelmsford (61.6%), and the second largest 65+ population behind Braintree (20.4%).

4.4 In comparison to the average for England, Uttlesford had a relatively large 0-15 population and 65+ population, and a relatively small working age population.

Table 4.1 Population Age Structure 2019 (% of Total Population)

	0-15	16-64	65+
Uttlesford	19.9	60.5	19.6
Braintree	19.2	60.4	20.4
Chelmsford	19.1	61.6	19.2
East Hertfordshire	19.7	62.1	18.1
South Cambridgeshire	20.1	60.3	19.6
Essex	19.0	60.4	20.7
East of England	19.4	60.7	19.9
England	19.2	62.4	18.4

Source: ONS Mid-Year Population Estimates (2019)

4.5 Dependency ratios are calculated by dividing the size of the dependent population (those not typically in the labour force, namely those aged 0-15 and 65+) by the size of the working age population (16-64). Higher values indicate a greater the level of dependency.

4.6 In 2019, Uttlesford recorded a dependency ratio of 65.3 (Table 4.2). The dependency ratios recorded for the neighbouring LADs were very similar.

- 4.7 Looking across the county, regional and national comparators, Uttlesford had a slightly relatively lower level of dependency in its population compared to Essex, but a relatively higher level of dependency compared to the East of England and England.

Table 4.2 Dependency Ratios, 2019

	2019
Uttlesford	65.3
Braintree	65.5
Chelmsford	62.2
East Hertfordshire	61.0
South Cambridgeshire	65.9
Essex	65.6
East of England	64.7
England	60.3

Source: Analysis of ONS Mid-Year Population Estimates (2019)

Employment

- 4.8 The evidence reviewed through the working papers suggests that **Uttlesford has seen relatively rapid employment growth in recent years**, out performing surrounding areas in comparative terms.
- 4.9 ONS Jobs Density Data suggests that, since 2010, the total number of jobs (both full and part time) in Uttlesford has increased by roughly 16,000 . Between 2010 and 2015, the average annual growth in the number of jobs was 2.8%. This was on par with the growth rate observed in Braintree and, with the exception of East Hertfordshire (3.3%), exceeded the growth rates observed in the other comparator areas. Between 2015 and 2019, the average annual growth rate in the number of jobs in Uttlesford almost doubled to 5%. This exceeded the growth rates observed in the neighbouring LADs and across the county, regional and national comparators.
- 4.10 Data within the projections produced by Cambridge Econometrics (CE) differ slightly to the ONS Jobs Density data. The Cambridge Econometrics data estimated there to be 53,900 jobs in Uttlesford in 2019 (in comparison to 56,000), and the growth rates between 2010-2015 and 2015-2019 were 1.5% per annum and 4.7% per annum respectively, lower than those derived from the ONS Jobs Density data.
- 4.11 The Cambridge Econometrics forecasts also estimated there to be fewer jobs in the East of England in 2019 than the ONS Jobs Density Data (3,221,000 in comparison to 3,268,000) and the growth rates between 2010-2015 and 2015-2019 were also lower than those derived from the ONS Jobs Density data (1.7% and 1.2% respectively in comparison to 2% and 1.7%).
- 4.12 2019 is the last year for which historic data are available. ONS's Jobs Density dataset suggests that there were 56,000 jobs in Uttlesford. CE's estimate for 2019 is slightly lower – at 53,800. The

difference between the data sources, noting the former is modelled to the nearest 1,000 is modest. For consistency with other elements of the assessment, the core figure used should be 54,000 jobs.

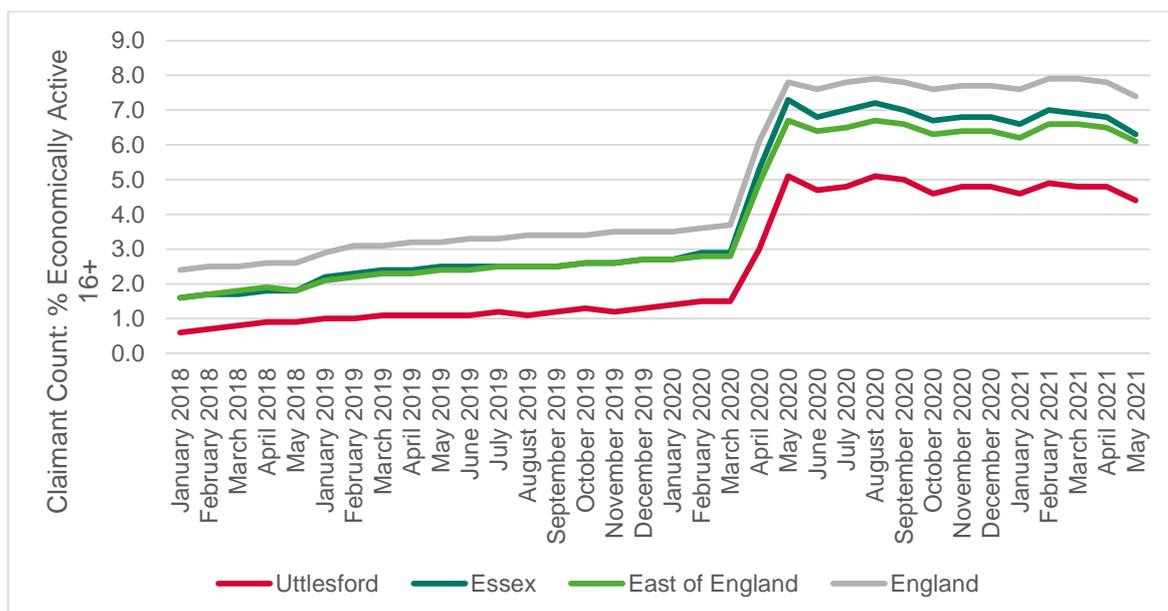
4.13 Between 2010 and 2020, economic activity and employment rates have fluctuated (mainly because of issues linked to the data) but overall, they have been close to the national average.

Impacts of Covid-19

4.14 The pandemic has precipitated a substantial economic shock and the scale of this is set out in some of the literature we reviewed. However, the evidence and data is mostly related to the uptake of government schemes and there is, as yet, little evidence of wider impacts – such as consideration of the long term effects on key sectors like aviation and the visitor economy.

4.15 Clearly the Covid-19 pandemic has affected the local economy in the short-term. Unemployment rose sharply in Spring 2020, but the claimant count in Uttlesford – which stood at 4.4% in May 2021 – remains significantly below regional and national averages, as can be seen in the figure.

Figure 4.1: Trend in Unemployment Claimants, 2018-21



Source: NOMIS

4.16 HMRC provisional data indicates that as at 31st May 2021, there were 3,900 employments⁸ furloughed in businesses within Uttlesford representing a rate of 10% of roles. This is slightly above the Essex, regional and national averages of 8%, but not as high as might be expected given that aviation is one of the sectors which has been relatively strongly affected by Covid-19. In addition to

⁸ There terms employment is used as, for example, where a person has two jobs and both of these are out on furlough, this is counted as two employments.

the employments furloughed, there will be self-employed persons who have sought support through the Self-Employed Income Support Scheme. The profile of the roles furloughed, shows that the highest absolute numbers are in transport and storage (760), wholesale/retail (520) and accommodation and food (470) highlighting that aviation and leisure are key areas affected. The Uttlesford Economic Recovery Plan highlights that some businesses in the District have been hit harder by the impact of the Covid-19 pandemic than others. These include:

- Businesses in town centres and in the retail, hospitality and personal services sectors.
- Businesses in the Visitor Economy and arts and entertainment venues and associated services.
- London Stansted Airport and business in the aviation supply chain and transportation sector.

4.17 Furthermore, Iceni has undertaken a business survey the results of which are set out later in the report.

Sectoral Composition

4.18 Sectoral composition can be understood by looking at sectoral split of enterprises and employment and GVA in Uttlesford.

Employment-based

4.19 As can be seen in the Table 4.3, the largest sectors in Uttlesford by the proportion of total employment in 2019 were:

- Transportation and Storage (19.6%), Professional, Scientific and Technical Services; and Wholesale and Retail Trade (both 10.9%).
- Other sectors that recorded greater than 5% of total employment included Accommodation and Food Service Activities (8.7%), Manufacturing, Administration and Support Services, and Education (all of which accounted for 6.5%), Construction and Human Health and Social Work Activities (both of which accounted for 5.4%).

Table 4.3 Employment by Sector (% of Total Employment)

	Uttlesford	Braintree	Chelmsford	East Hertfordshire	South Cambridgeshire	Essex	East of England	England
A : Agriculture	2.7	2.2	0.9	1.1	1.9	1.5	1.7	1.3
B : Mining	0.2	0.1	0	0.1	0	0	0.1	0.1
C : Manufacturing	6.5	10.7	4.4	5.9	12.1	6.7	7.5	7.8
D : Utilities	0	0	0.1	0.1	0.1	0.1	0.2	0.4
E : Water	0.7	0.8	1	0.4	0.5	0.8	0.7	0.6
F : Construction	5.4	8.9	6.7	6.6	6.6	7.9	6.2	5
G : Wholesale and retail	10.9	17.9	16.7	15.8	9.9	16.4	15.8	15.1
H : Transportation and storage	19.6	3.6	3.3	5.3	1.9	5.1	4.9	5
I : Accommodation and food	8.7	5.4	6.7	6.6	4.9	6.9	6.9	7.5
J : ICT	2.7	2.7	3.9	3.9	8.8	3.3	3.8	4.4
K : Financial and insurance	1.7	2.7	3.9	1.3	1.1	2.8	2.4	3.5
L : Real estate	1.7	1.8	1.9	2	1.4	2	1.9	2
M : Professional Services	10.9	8.9	7.8	10.5	25.3	8.9	9.6	9.2
N : Administrative and support	6.5	6.2	6.7	17.1	6.6	8.2	10.1	8.9
O : Public administration	2.7	3.6	5	2	1.4	3	3.2	3.9
P : Education	6.5	8	8.9	9.2	7.7	8.9	9	8.4
Q : Human health and social work activities	5.4	10.7	16.7	7.9	7.7	13	11.7	12.4
R : Arts, entertainment and recreation	2	2.2	2.2	2.6	1.1	2.5	2.5	2.5
S : Other service activities	1.5	1.8	2.8	1.6	1.9	2.1	2	2.1

Source: Business Register and Employment Survey (2019)

- 4.20 Analysis of compound annual growth rates for the period 2015 to 2019 reveals that one of the fastest growing sectors in Uttlesford by total employment was Professional, Scientific and Technical Services, recording 9.3% growth per annum. The data also show that the Wholesale and Retail Trade and Construction sectors declined in size during the four-year period (both sectors recorded annual growth rates of -4.5%).

- 4.21 In order to get an understanding of sectoral strengths in Uttlesford, location quotients (LQ) have been calculated which are a measure of the relative size of a sector in Uttlesford compared to the East of England and England as whole. An LQ of 1 shows that the same proportion of enterprises in Uttlesford are in the given sector compared to the comparator area. Where an LQ is greater than 1 this means that Uttlesford has a greater proportion of enterprises the a given sector than the comparator area. This would suggest that Uttlesford has a sectoral strength.
- 4.22 Analysis of location quotients (LQ) reveals that employment in the Transportation and Storage sector in Uttlesford in 2019 was almost four times as concentrated than the national average, shown by a LQ of 3.9 (Table 4.4). This reflects the importance of Stansted Airport. Other highly concentrated sectors in Uttlesford are Agriculture and Mining, and to a lesser extent Professional Services and Accommodation and food services.

Table 4.4 Employment-based Location Quotients

	Uttlesford	Brain tree	Chelmsford	East Hertfordshire	South Cambridgeshire	Essex	East of England
A : Agriculture	2.1	1.7	0.7	0.8	1.5	1.1	1.3
B : Mining	2.6	0.6	0.3	1.6	0.4	0.5	0.7
C : Manufacturing	0.8	1.4	0.6	0.8	1.6	0.9	1.0
D : Utilities	0.0	0.0	0.3	0.3	0.3	0.2	0.5
E : Water	1.0	1.3	1.6	0.6	0.9	1.3	1.2
F : Construction	1.1	1.8	1.3	1.3	1.3	1.6	1.2
G : Wholesale and retail	0.7	1.2	1.1	1.0	0.7	1.1	1.0
H : Transportation and storage	3.9	0.7	0.7	1.1	0.4	1.0	1.0
I : Accommodation and food	1.2	0.7	0.9	0.9	0.7	0.9	0.9
J : ICT	0.6	0.6	0.9	0.9	2.0	0.8	0.9
K : Financial and insurance	0.5	0.8	1.1	0.4	0.3	0.8	0.7
L : Real estate	0.9	0.9	1.0	1.0	0.7	1.0	0.9
M : Professional Services	1.2	1.0	0.8	1.1	2.8	1.0	1.0
N : Administrative and support	0.7	0.7	0.8	1.9	0.7	0.9	1.1
O : Public administration	0.7	0.9	1.3	0.5	0.4	0.8	0.8
P : Education	0.8	1.0	1.1	1.1	0.9	1.1	1.1
Q : Human health and social work activities	0.4	0.9	1.3	0.6	0.6	1.0	0.9
R : Arts, entertainment and recreation	0.8	0.9	0.9	1.2	0.4	1.0	1.0
S : Other service activities	0.7	0.8	1.3	0.8	0.9	1.0	0.9

Source: SQW Analysis of Business Register and Employment Survey Data (2019)

GVA-Based

- 4.23 The table below shows 2019 GVA and productivity (measured by GVA per worker) in Uttlesford with GVA per worker compared against the East of England and the UK as whole. This uses Oxford Economics data (Sourced from BRES and National Statistics Regional Accounts). The employment data presented here may differ from that presented above but is used in order to calculate GVA per worker using OE data only, for the purpose of consistency.
- 4.24 It can be seen that overall GVA per worker in Uttlesford is lower than at the regional and national level suggesting that productivity is relatively weak in Uttlesford.
- 4.25 Based on GVA, the largest sector in Uttlesford is Real Estate owing to its extremely large GVA per worker. Transportation and storage is the second largest sector in terms of GVA. This is owing to the high employment count in the sector which outweighs low levels of productivity and is likely to be driven by Stansted. It can be seen that Uttlesford's productivity in the Transportation and storage sector is lower than for the East of England and the UK as a whole. The Professional, scientific and tech sector is less strong in GVA terms than employment terms owing to low levels of GVA per worker.

Table 4.5 GVA and Productivity

	Uttlesford			East of England	UK Aggregate
	Employment	GVA	GVA per Worker	GVA per Worker	
Real estate activities	710	£387,070,000	£545,169	£443,889	£435,619
Transportation and storage	11,180	£381,050,000	£34,083	£44,794	£44,648
Construction	3,870	£263,610,000	£68,116	£63,282	£55,223
Wholesale and retail trade	5,950	£230,960,000	£38,817	£43,286	£42,072
Manufacturing	3,050	£173,500,000	£56,885	£81,315	£74,456
Administrative and support	3,580	£151,410,000	£42,293	£29,086	£33,920
Professional, scientific and tech	5,720	£129,840,000	£22,699	£36,580	£46,942
Education	3,620	£105,980,000	£29,276	£38,044	£40,529
Accommodation and food service	4,230	£104,410,000	£24,683	£23,386	£23,691
Public administration and defence	2,170	£95,960,000	£44,221	£62,834	£63,583
Human health and social work	3,090	£86,120,000	£27,871	£33,611	£34,621
Information and communication	1,600	£56,190,000	£35,119	£64,699	£83,591
Other service activities	1,130	£46,970,000	£41,566	£37,138	£38,004
Water supply	320	£30,450,000	£95,156	£102,112	£108,961
Arts, entertainment and rec	1,280	£28,010,000	£21,883	£27,049	£31,376
Agriculture, forestry & fishing	790	£25,290,000	£32,013	£43,519	£34,504
Financial and insurance	840	£19,520,000	£23,238	£110,662	£144,967
Mining & Quarrying	110	£10,120,000	£92,000	£58,707	£59,396
Electricity, gas, steam and air	10	£2,460,000	£246,000	£237,909	£210,473
Overall	53,210	£2,325,540,000	£43,705	£52,680	£56,178

Source: Icen Analysis of BRES, National Statistics Regional Accounts Oxford Economics

Enterprise-based

- 4.26 The table below shows the percentage split of enterprises in Uttlesford (and the East of England and England) by SIC07 Section with the largest section first. It can be seen that the largest section in Uttlesford is Professional, scientific and technical activities (whereby Uttlesford performs strongly compared to the comparators), followed by Construction; Wholesale and retail trade and then Administrative and support service activities.

Table 4.6 Percentage of Enterprises by SIC07 Section

	Uttlesford	East of England	England	United Kingdom
M : Professional, scientific and technical activities	19.0%	16.4%	17.5%	17.0%
F : Construction	16.0%	16.0%	12.8%	12.8%
G : Wholesale and retail trade	11.8%	13.7%	14.1%	14.1%
N : Administrative and support	9.7%	8.4%	8.8%	8.6%
J : Information and communication	7.5%	8.2%	8.7%	8.2%
A : Agriculture, forestry and fishing	6.8%	4.4%	4.2%	5.4%
C : Manufacturing	5.5%	5.3%	4.9%	5.0%
I : Accommodation and food service	3.6%	4.9%	5.6%	5.9%
L : Real estate activities	3.3%	3.5%	3.8%	3.7%
H : Transportation and storage	3.2%	5.1%	4.6%	4.5%
S : Other service activities	3.2%	3.6%	3.8%	3.9%
Q : Human health and social work	2.8%	3.5%	3.7%	3.8%
R : Arts, entertainment and	2.3%	2.2%	2.5%	2.5%
K : Financial and insurance	2.3%	1.9%	2.3%	2.3%
P : Education	1.7%	1.8%	1.7%	1.6%
O : Public administration	0.8%	0.5%	0.3%	0.3%
E : Water	0.3%	0.3%	0.3%	0.3%
D : Utilities	0.3%	0.1%	0.2%	0.2%
B : Mining and quarrying	0.0%	0.0%	0.0%	0.0%

Source: IDBR

- 4.27 LQ analysis of all enterprises shows – perhaps surprisingly - that Uttlesford has three key sectoral strengths: Electricity, gas, steam and air conditioning supply (utilities); Agriculture, forestry and fishing; and Public administration and defence; compulsory social security.
- 4.28 The table below shows the percentage of enterprises by size band in Uttlesford and is compared to the East of England, England and the United Kingdom. Uttlesford has a higher proportion of micro enterprises than the comparator areas and a lower proportion of small, medium-sized and large enterprises.

Table 4.7 Percentage of Enterprises by Size Band

	Uttlesford	East	England	United Kingdom
Micro (0 to 9)	91.1%	90.0%	89.7%	89.6%
Small (10 to 49)	7.5%	8.1%	8.4%	8.5%
Medium-sized (50 to 249)	1.2%	1.5%	1.5%	1.5%
Large (250+)	0.2%	0.4%	0.4%	0.4%

Source: IDBR

- 4.29 There are around 15 large enterprises in Uttlesford, around ten of which are in the Transport and storage sector. Three of the other large enterprises are in the public sector.

There are around 120 medium-sized enterprises in Uttlesford. The table below shows the percentage split of medium-sized enterprises by sector (those reporting zero are excluded). It can be seen that the largest SIC07 sector in Uttlesford is Manufacturing, with the Wholesale and retail trade; repair of motor vehicles and motorcycles second largest and the Transportation and storage the third.

Table 4.8 Split of Medium-sized Enterprises by SIC07 Section (Key Sections Only)

	Uttlesford	East of England	England	United Kingdom
C : Manufacturing	15.4%	15.0%	14.2%	14.7%
G : Wholesale and retail trade	15.4%	13.3%	12.0%	12.1%
H : Transportation and storage	15.4%	4.9%	3.6%	3.8%
F : Construction	7.7%	5.4%	4.5%	4.9%
I : Accommodation and food service	7.7%	5.5%	7.4%	7.8%
M : Professional, scientific and technical activities	7.7%	8.5%	9.6%	9.3%
N : Administrative and support	7.7%	10.8%	10.2%	10.0%
P : Education	7.7%	11.1%	9.4%	8.6%
Q : Human health and social work	7.7%	11.4%	12.5%	12.6%

Source: IDBR

- 4.30 LQs have been calculated across the medium-sized enterprises. Relative to the comparator areas, by far the largest sector in Uttlesford is Transport and storage. This, along with the number of large businesses in this section, highlights a sectoral strength. Uttlesford's IDBR shows that nearly all these medium-sized local units are at and/or serve Stansted Airport.

- 4.31 In second place (a long way behind Transport and storage) is the Construction section – many enterprises in this section may be based in Uttlesford but provide services in London and other parts of the UK (and may even be partly based in London). It is therefore likely that a significant proportion of employees of these enterprises do not live in Uttlesford.

- 4.32 The third largest section (when compared to England) is Wholesale and retail trade; repair of motor vehicles and motorcycles. Again, this may be due to the presence of retail at Stansted Airport (something which is looked at in more detail below).
- 4.33 Interestingly, Accommodation and food service activities is the 5th largest section when compared to England (with an LQ of only slightly above 1) but the third largest when compared to the East of England (with an LQ of 1.4). This shows in the context of a predominantly rural region Uttlesford has a lot of medium and large Accommodation and food service activities enterprises but that it mirrors the national pattern.
- 4.34 The table below shows the split of small enterprises by SIC07 Section. It can be seen that the most represented section is the Wholesale and retail trade. This section is more highly represented than it is when considering all enterprises within Uttlesford (See Table 4.6 above). The Human health and social work activities section is very well represented amongst small enterprises but is not when considering all enterprises.

Table 4.9 Split of Small Enterprises by SIC07 Section (Key Sections Only)

	Uttlesford	East of England	England	United Kingdom
G : Wholesale and retail trade	15.9%	17.3%	16.3%	16.3%
M : Professional, scientific and technical activities	11.0%	9.0%	10.2%	9.9%
N : Administrative and support service activities	11.0%	8.3%	7.8%	7.5%
F : Construction	9.8%	8.3%	7.1%	7.3%
I : Accommodation and food service activities	9.8%	12.2%	14.1%	14.7%
Q : Human health and social work activities	9.8%	10.4%	10.9%	11.1%
C : Manufacturing	8.5%	9.5%	9.2%	9.1%

Source: IDBR

- 4.35 The table below shows the split of micro enterprises by SIC07 Section. It can be seen that nearly 20% of micro enterprises in Uttlesford are in the Professional, scientific and technical activities section, driving the high representation of this sector when considering enterprises of all sizes (See Table 4.6 above). Overall, sectors which are best represented by micro enterprises are similar to those best represented by all enterprises. This reflects the fact that over 91% of enterprises are micro in size.

Table 4.10 Split of Micro Enterprises by SIC07 Section (Key Sections Only)

	Uttlesford	East of England	England	United Kingdom
M : Professional, scientific and technical activities	19.8%	17.3%	18.4%	17.9%
F : Construction	16.6%	17.0%	13.5%	13.5%
G : Wholesale and retail trade	11.4%	13.4%	13.9%	13.9%
N : Administrative and support service activities	9.5%	8.4%	8.9%	8.6%
J : Information and communication	7.8%	8.7%	9.2%	8.7%
A : Agriculture, forestry and fishing	7.2%	4.6%	4.5%	5.9%
C : Manufacturing	5.1%	4.7%	4.3%	4.4%

Source: IDBR

Summary of Sectoral Composition

4.36 In summary the analysis above suggests the following;

- Uttlesford is home to a high proportion of micro-enterprises and a lower proportion of small, medium-sized and large enterprises when compared to the East of England and England as a whole.
- The largest sectors based on both proportion of employment and enterprises are Wholesale and retail trade, repair of motor vehicles and motorcycles; and Professional, scientific and technical services. The construction sector is also one of the largest sectors in terms of employment.
- The Transportation and storage sector is the largest and has the highest LQ in Uttlesford in terms of employment. Whilst it is not large or highly concentrated in terms of enterprise numbers, it is in terms of medium and large enterprises. This means that a high proportion of the employment in the sector is in medium and large enterprises.
- Based on both employment and enterprise based LQs, the other highly concentrated sector in Uttlesford is Agriculture, forestry and fishing.
- However, in terms of employment LQs alone, Mining, and to a lesser extent Professional scientific and technical services and Accommodation and food services are also highly concentrated, although Mining has a limited employment count.
- Most large enterprises in Uttlesford are in the Transportation and storage sector. In addition to the Transportation and storage sector, there are a lot of medium-sized enterprises in the Wholesale and retail trade, repair of motor vehicles and motorcycles and Construction sector, both absolutely and comparatively. In absolute terms, there are also a lot of medium-sized Manufacturing enterprises in Uttlesford.

Spatial Distribution of Economic Activity

4.37 Icenis has sought to drill into spatial dynamics of economic activity within the District based on the distribution of businesses and, at coarser geographical scale, employment.

Employment-based

4.38 Using BRES data on employment, we have split the district into four geographical building blocks. These are as follows:

- Stansted Airport and Environs⁹
- Saffron Walden¹⁰
- Great Dunmow¹¹
- Other Rural Areas and Small Towns/Villages¹²

4.39 Our analysis is based on the best fit to lower level super output areas (LSOAs) – recognising that data robustness at this level of granularity is limited. In addition, the data will not fully count self-employment (which we would expect to be greater in the rural areas), but provide some indication of the relative composition of employment in different areas.

4.40 Stansted Airport and Environs has the greatest number of jobs at 14,900 accounting for around a third of the District total. Employment in this area is strongly focused in Transport and storage (7,700) – essentially activities associated with the airport operation – together with Accommodation and food (2,000), which will include employment in restaurants and hotels. These two sectors account for around three quarters of jobs in this area. The next largest sector is Administrative and support services.

4.41 The Saffron Walden area accounts for 7,000 jobs, around 16% of the BRES District total. The largest employment sector in this area is wholesale/retail (1,400 jobs, LQ 1.3). There is an above average representation of employment in public administration (350 jobs, LQ 1.6) influenced by the Council's presence here; but also above average jobs in higher value sectors such as professional, scientific and technical activities (800 jobs, LQ 1.2) and finance and insurance (250 jobs, LQ 1.3) albeit that employment numbers in these sectors are modest.

⁹ LSOAs E01022086 and 090

¹⁰ LOSAs E01022074, 075, 076, 077, 978, 079, 080, 081 and 082

¹¹ LSOAs E01022067, 068, and 69 plus E01033054, 55, and 56

¹² Remaining LSOAs in the District

- 4.42 The Great Dunmow area has around 4,100 jobs (around 9%). It appears to have a relatively broad employment base with slightly higher levels of employment relative to the region in real estate, construction, wholesale/retail and other services; albeit that the absolute numbers of jobs are modest. Wholesale and retail is the largest employment sector (900 jobs) followed by Admin and support services (almost 500).
- 4.43 The remaining Rural Areas and Small Towns/Villages of the District accommodate over 18,000 jobs, around 40% of the District total. The largest employment sectors in this area are again wholesale and food, construction and education – as is the case in many areas. Sectors which are more strongly represented in this area are Professional, scientific and technical activities (3,400 jobs, LQ 2.0), construction (1800 jobs, LQ 1.6). Health and accommodation and food also account for over 1,500 jobs, with the latter having an LQ of 1.3.

Enterprise-based

- 4.44 Based on 2020 IDBR data downloaded from NOMIS there are 5,475 enterprises registered in Uttlesford. Uttlesford's IDBR contains 4,583 local units (i.e. individual sites which often represent the whole enterprise but are sometimes just one site within an enterprise). Therefore, enterprise counts based on the data presented below do not necessarily align with those presented in the Uttlesford wide analysis above. For the purposes of this analysis rural is considered to be anything outside of Built-up Areas (BUA). Other BUAs are BUAs which are less significant (these all have a lower number of enterprises than Thaxted).
- 4.45 The table overleaf shows the geographical distribution of local units in Uttlesford (Overall row). It can be seen that Saffron Walden accommodates the most local units (16.7%) out of any BUA in Uttlesford by a significant margin. In second place is Great Dunmow at 10.2%. Some way behind with 6% and 5% respectively are Stansted Mountfitchet and Birchanger (including Stansted Airport). It can be seen that the rural areas make up a significant proportion of business activity with 32.5% of all local units in rural areas.
- 4.46 The table also shows the geographical distribution of local units in each SIC07 Section. Where a given area accommodates more than 10% of local units in a section this is highlighted in green. This highlights in absolute terms, where in Uttlesford business activity in each section is concentrated.
- 4.47 Saffron Walden and rural areas accommodate a significant proportion of business activity across all sections. Whilst accommodating less business activity than Saffron Walden, Great Dunmow is particularly strong in a number of sections.
- 4.48 Birchanger BUA covers Stansted airport as well as a small town/village (Birchanger) and a small industrial park. Birchanger accommodates a particularly large proportion of Uttlesford's

Accommodation and food service activities, Public administration and defence; compulsory social security and Transportation and storage businesses.

Table 4.11 Geographic Distribution of Local Units by SIC07 Section

	Birchanger (inc. Stansted Airport)	Stansted Mountfitchet	Takeley	Great Chesterford	Great Dunmow	Hatfield Heath	Newport	Saffron Walden	Thaxted	Other BUAs	Rural
Accommodation and food service activities	12.7%	6.1%	2.2%	2.2%	10.5%	3.5%	1.7%	17.5%	2.2%	20.5%	21.0%
Administrative and support service activities	5.9%	7.2%	4.1%	1.3%	9.5%	1.7%	1.9%	15.6%	1.1%	17.1%	34.6%
Agriculture, forestry and fishing	0.0%	1.5%	0.0%	1.5%	2.3%	0.0%	0.0%	0.8%	0.0%	9.0%	85.0%
Arts, entertainment and recreation	0.9%	7.2%	2.7%	1.8%	9.0%	0.0%	3.6%	21.6%	3.6%	19.8%	29.7%
Construction	1.2%	6.5%	3.5%	1.7%	9.5%	2.5%	2.2%	10.8%	1.7%	21.0%	39.5%
Education	1.0%	5.9%	6.9%	3.0%	4.0%	3.0%	4.0%	16.8%	1.0%	27.7%	26.7%
Electricity, gas, steam and air conditioning supply	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	33.3%	33.3%
Financial and insurance activities	5.4%	3.9%	3.9%	1.6%	12.4%	1.6%	2.3%	21.7%	3.9%	19.4%	24.0%
Human health and social work activities	1.9%	5.3%	6.7%	2.4%	12.0%	1.9%	1.4%	21.2%	2.9%	20.7%	23.6%
Information and communication	4.4%	9.1%	2.8%	2.5%	6.0%	1.3%	1.9%	17.2%	1.3%	26.6%	27.0%
Manufacturing	5.5%	4.7%	2.2%	2.5%	14.9%	0.7%	1.5%	13.5%	0.7%	13.8%	40.0%
Mining and quarrying	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	0.0%	20.0%	40.0%
Other service activities	1.4%	4.2%	4.2%	0.0%	18.2%	0.0%	2.1%	23.8%	2.8%	15.4%	28.0%
Professional, scientific and technical activities	2.2%	7.0%	3.4%	3.4%	8.4%	2.5%	2.4%	18.4%	2.8%	19.8%	29.8%
Public administration and defence; compulsory social security	22.6%	6.5%	3.2%	0.0%	16.1%	0.0%	3.2%	12.9%	6.5%	12.9%	16.1%
Real estate activities	5.3%	6.1%	4.4%	1.8%	14.9%	1.8%	2.6%	21.9%	0.9%	12.3%	28.1%
Transportation and storage	25.0%	4.3%	2.4%	1.8%	9.1%	1.8%	1.2%	7.9%	0.0%	18.3%	28.0%
Water supply; sewerage, waste management and remediation activities	4.0%	4.0%	0.0%	0.0%	12.0%	0.0%	0.0%	16.0%	0.0%	20.0%	44.0%
Wholesale and retail trade; repair of motor vehicles and motorcycles	7.1%	4.3%	3.2%	0.9%	13.1%	2.6%	1.9%	23.7%	2.2%	13.1%	28.0%
Overall	5.0%	6.0%	3.4%	1.9%	10.2%	1.9%	2.0%	16.7%	1.9%	18.4%	32.5%

Source: IDBR 2020

-
- 4.49 The table below presents LQs for SIC07 Sections of Uttlesford's BUAs and rural areas vs Uttlesford as a whole based on counts of local units in each section. This shows the relative strengths of Uttlesford's main BUAs, other BUAs and rural areas within the context of the District.
- 4.50 Birchanger (including Stansted Airport), as expected, has relative strengths in: Transportation and storage; Accommodation and food service activities; and Public administration and defence; compulsory social security (given the presence of government and public service activities at the airport).
- 4.51 Saffron Walden and Great Dunmow, the largest towns in Uttlesford, have relative strength in a mixture of sectors covering those which are typically office, industrial and retail based.
- 4.52 Again, as to be expected, rural areas have a significant relative strength in Agriculture, forestry and fishing. However, this is not the only strength in rural areas. There is also a relative strength in: Water supply; sewerage, waste management and remediation activities; Mining and quarrying; Manufacturing; and Construction.

Table 4.12 Location Quotient for SIC07 Sections of BUAs and Rural Areas vs Uttlesford

	Birchanger (Stansted Airport)	Stansted Moudfichet	Takeley	Great Chesterford	Great Dunmow	Hatfield Heath	Newport	Safron Walden	Thaxted	Other	Rural
Accommodation and food service activities	2.5	1.0	0.6	1.1	1.0	1.8	0.9	1.0	1.2	1.1	0.6
Administrative and support service activities	1.2	1.2	1.2	0.6	0.9	0.9	0.9	0.9	0.6	0.9	1.1
Agriculture, forestry and fishing	0.0	0.3	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.5	2.6
Arts, entertainment and recreation	0.2	1.2	0.8	0.9	0.9	0.0	1.8	1.3	1.9	1.1	0.9
Construction	0.3	1.1	1.0	0.9	0.9	1.3	1.1	0.6	0.9	1.1	1.2
Education	0.2	1.0	2.0	1.5	0.4	1.6	2.0	1.0	0.5	1.5	0.8
Electricity, gas, steam and air conditioning supply	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.8	1.0
Financial and insurance activities	1.1	0.7	1.1	0.8	1.2	0.8	1.2	1.3	2.1	1.1	0.7
Human health and social work activities	0.4	0.9	2.0	1.2	1.2	1.0	0.7	1.3	1.6	1.1	0.7
Information and communication	0.9	1.5	0.8	1.3	0.6	0.7	0.9	1.0	0.7	1.4	0.8
Manufacturing	1.1	0.8	0.6	1.3	1.5	0.4	0.7	0.8	0.4	0.8	1.2
Mining and quarrying	0.0	0.0	0.00	0.0	0.0	0.0	10.0	1.2	0.0	1.1	1.2
Other service activities	0.3	0.7	1.2	0.0	1.8	0.0	1.	1.4	1.5	0.8	0.9
Professional, scientific and technical activities	0.4	1.2	1.0	1.8	0.8	1.3	1.2	1.1	1.5	1.1	0.9
Public administration and defence; compulsory social security	4.5	1.1	0.9	0.0	1.6	0.0	1.6	0.8	3.5	0.7	0.5
Real estate activities	1.1	1.0	1.3	0.9	1.5	0.9	1.3	1.3	0.5	0.7	0.9
Transportation and storage	5.0	0.7	0.7	0.9	0.9	1.0	0.6	0.5	0.0	1.0	0.9
Water supply; sewerage, waste management and remediation activities	0.8	0.7	0.0	0.0	1.2	0.0	0.0	1.0	0.0	1.1	1.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.4	0.7	0.9	0.5	1.3	1.4	0.9	1.4	1.2	0.7	0.9

Source: IDBR 2020

4.53 The table below shows how local units in each size group are split across Uttlesford's BUAs and rural areas. It can be seen that whilst most local units are in rural areas, by far the most large local units are in Birchanger (Stansted Airport). The majority of medium sized local units are split evenly between Birchanger (Stansted Airport) and rural areas whilst Saffron Walden also has a significant portion of medium sized local units. Small units are split across a greater number of areas including Birchanger (Stansted Airport), Great Dunmow, Saffron Walden, other BUAs and rural areas. This is similar for micro local units, aside from Birchanger (Stansted Airport) which has few of this size.

Table 4.13 Split of Local Units by Area in Each Size-Band

	<i>Micro</i>	<i>Small</i>	<i>Medium</i>	<i>Large</i>	<i>Area Total</i>
<i>Birchanger (Stansted Airport)</i>	2.8%	12.7%	30.6%	60.0%	5.0%
<i>Stansted Mountfitchet</i>	6.1%	5.3%	6.5%	0.0%	6.0%
<i>Takeley</i>	3.6%	2.9%	2.4%	0.0%	3.4%
<i>Great Chesterford</i>	1.8%	3.4%	0.8%	0.0%	1.9%
<i>Great Dunmow</i>	10.2%	10.8%	4.8%	13.3%	10.2%
<i>Hatfield Heath</i>	1.9%	2.2%	0.8%	0.0%	1.9%
<i>Newport</i>	2.1%	1.7%	0.8%	0.0%	2.0%
<i>Saffron Walden</i>	16.5%	18.0%	17.7%	13.3%	16.7%
<i>Thaxted</i>	1.9%	1.7%	0.0%	0.0%	1.9%
<i>Other BUAs</i>	19.9%	12.4%	4.8%	6.7%	18.4%
<i>Rural</i>	33.2%	29.0%	30.6%	6.7%	32.5%

Source: IDBR 2020

4.54 The table below shows the percentage of local units by size in each area. It can be seen that Birchanger (Stansted Airport) has a particularly high percentage of small, medium and large local units. All other areas have a relatively low percentage of medium and large local units. Other areas with a high percentage of small units include Great Chesterford, Great Dunmow, Hatfield Heath and Saffron Walden whilst Takeley, Thaxted, and Other BUAs have a particularly high percentage of micro units. Rural areas have a slightly higher percentage micro enterprises relative to Uttlesford as a whole, with less small and large enterprises.

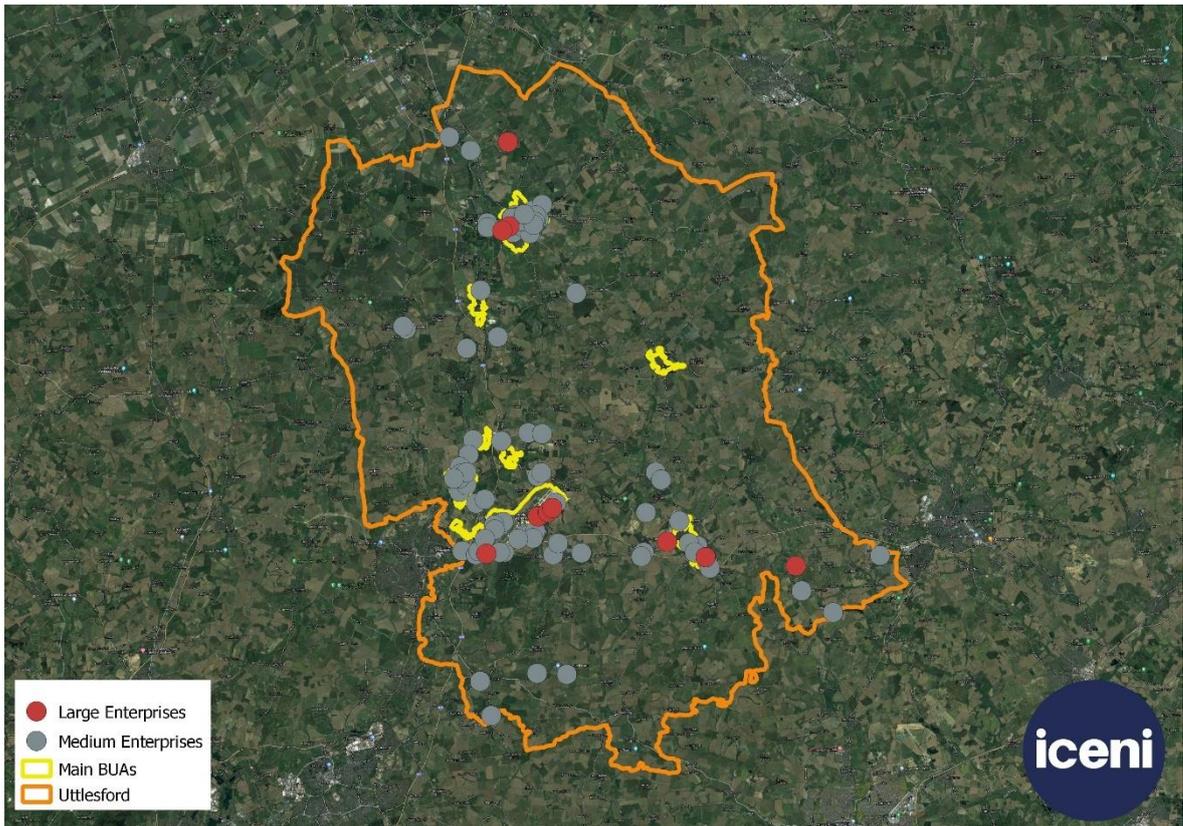
Table 4.14 Percentage of Local Units by Size Band in Uttlesford's BUAs and rural areas

	<i>Micro</i>	<i>Small</i>	<i>Medium</i>	<i>Large</i>
<i>Birchanger (Stansted Airport)</i>	46.7%	32.8%	16.6%	3.9%
<i>Stansted Mountfitchet</i>	85.8%	11.3%	2.9%	0.0%
<i>Takeley</i>	87.3%	10.8%	1.9%	0.0%
<i>Great Chesterford</i>	76.4%	22.5%	1.1%	0.0%
<i>Great Dunmow</i>	84.5%	13.8%	1.3%	0.4%
<i>Hatfield Heath</i>	84.1%	14.8%	1.1%	0.0%
<i>Newport</i>	88.0%	10.9%	1.1%	0.0%
<i>Saffron Walden</i>	83.0%	13.8%	2.9%	0.3%
<i>Thaxted</i>	88.2%	11.8%	0.0%	0.0%
<i>Other BUAs</i>	90.5%	8.6%	0.7%	0.1%
<i>Rural</i>	85.9%	11.5%	2.6%	0.1%
<i>Grand Total</i>	84.1%	12.9%	2.7%	0.3%

Source: IDBR

4.55 The map below shows the geographical distribution of medium and large local units in Uttlesford. It can be seen that the majority of medium-large local units are in and around Stansted Airport and to a lesser extent Saffron Walden. Around 28% of medium and large enterprises are in rural areas. However, as can be seen in the map, many of these rural units are in close proximity to Stansted Airport, Great Dunmow and Saffron Walden.

Figure 4.2: Map of Medium and Large Local Units in Uttlesford



Source: IDBR 2020

4.56 It can be seen in the table below that the majority of medium and large local units in the Transport and storage section are in Birchanger (Stansted Airport).

4.57 As indicated above, there are also a significant proportion (24%) of Wholesale and retail trade; repair of motor vehicles and motorcycles units in Birchanger (Stansted Airport) as well as Saffron Walden, rural areas and to a lesser extent Great Dunmow. Uttlesford's medium and large manufacturing units are split relatively evenly between in Birchanger (including Stansted Airport), Saffron Walden and rural areas.

4.58 Medium and large units, in Uttlesford's significant Professional, scientific and technical activities sector are mainly based in rural areas (60%) but Great Chesterford (likely due to the presence of Chesterford Research Park) and Stansted Mountfitchet are also home to 20% each.

4.59 As expected, medium and large units in the Agricultural, forestry and fishing sector of Uttlesford are completely focussed in rural areas.

Table 4.15 Percentage of Medium-sized and Large Enterprises by Area in each SIC07 Section

	Birchanger (inc. Stansted Airport)	Stansted Mountfichet	Takeley	Great Chesterford	Great Dunmow	Hatfield Heath	Newport	Saffron Walden	Other BUAs	Rural
<i>Accommodation and food service activities</i>	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	44.4%
<i>Administrative and support service activities</i>	33.3%	0.0%	8.3%	0.0%	8.3%	8.3%	0.0%	8.3%	0.0%	33.3%
<i>Agriculture, forestry and fishing</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
<i>Arts, entertainment and recreation</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	66.7%
<i>Construction</i>	0.0%	25.0%	25.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	25.0%
<i>Education</i>	0.0%	15.4%	7.7%	0.0%	0.0%	0.0%	7.7%	38.5%	15.4%	15.4%
<i>Financial and insurance activities</i>	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	33.3%
<i>Human health and social work activities</i>	7.1%	14.3%	0.0%	0.0%	14.3%	0.0%	0.0%	28.6%	7.1%	28.6%
<i>Manufacturing</i>	35.7%	0.0%	0.0%	0.0%	7.1%	0.0%	0.0%	28.6%	0.0%	28.6%
<i>Mining and quarrying</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
<i>Other service activities</i>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
<i>Professional, scientific and technical activities</i>	0.0%	20.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	60.0%
<i>Public administration and defence; compulsory social security</i>	57.1%	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%	14.3%	14.3%	0.0%
<i>Transportation and storage</i>	73.1%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	3.8%	11.5%
<i>Wholesale and retail trade; repair of motor vehicles and motorcycles</i>	23.5%	0.0%	0.0%	0.0%	11.8%	0.0%	0.0%	29.4%	5.9%	29.4%
Overall	33.8%	5.8%	2.2%	0.7%	5.8%	0.7%	0.7%	17.3%	5.0%	28.1%

Source: IDBR

Summary of Spatial Distribution of Economic Activity

4.60 Key points regarding the spatial distribution of economic activity in Uttlesford are as follows;

- Together Saffron Walden and Great Dunmow are home to just over a quarter of business units in Uttlesford. Rural areas accommodate nearly a third of units. Birchanger (including Stansted Airport) is home to 5% of units.
- Birchanger (including Stansted Airport) is home to 60% of large business units in Uttlesford. 30% of medium-sized units are in Birchanger, 30% are in rural areas (outside of Built-up Areas) and around 17% are in Saffron Walden. However, many of the medium sized units in rural areas are in close proximity to Birchanger and Saffron Walden.
- Birchanger (including Stansted Airport) accommodates a particularly large proportion of Uttlesford's Accommodation and food service activities, Public administration and defence; compulsory social security and Transportation and storage business units. Birchanger accommodates 8 out of the 15 large units in Uttlesford, all of which are in the Air Transport SIC07 Division.
- Around a third of employment in Uttlesford is within Stansted Airport and its Environs. Around three quarters of employment in this area are in Transportation and storage and Accommodation and food services.
- Rural areas and Small Towns/Villages accommodate around 40% of employment in Uttlesford. The Professional, scientific and technical activities; Construction and Accommodation and food services sectors are the most highly concentrated sectors in rural areas in terms of employment.
- In terms of business unit counts, rural areas of Uttlesford (Outside BUAs) are highly concentrated in Agriculture, forestry and fishing; Water supply, sewerage, waste management and remediation activities; Mining and quarrying; Manufacturing; and Construction when compared to the rest of Uttlesford.
- Saffron Walden (best fit LSOAs) accounts for around 16% of employment in Uttlesford. The largest sector here is Wholesale and retail trade, repair of motor vehicles and motorcycles. Public administration, and the high value Professional, scientific and technical activities and Finance and Insurance sectors are also highly concentrated in Saffron Walden.
- Great Dunmow (best fit LSOAs) accounts for around 9% of employment in Uttlesford and has a relatively broad sectoral composition in terms of both employment and enterprises.

Stansted Airport

- 4.61 Stansted Airport is clearly a major economic driver for the District's (and the East of England's) economy; but one which has been hit hard (as with other airports) by the Covid-19 pandemic. It is currently unclear how long it will take for passenger numbers and freight volumes to return to pre-pandemic levels and then to resume a growth trajectory. This will have implications for the wider footprint of Stansted as an employment hub.
- 4.62 Pre-pandemic, there had been ambitious plans for Stansted. In 2018, Manchester Airport Group outlined plans for £500 million investment over five years¹³. The plans included: construction of a new Arrivals terminal; reconfiguration of an existing terminal to become a departures terminal; and development of a new technical and professional skills college on site (which subsequently opened and is operated in conjunction with Harlow College).
- 4.63 In May 2021 the Airport was granted planning consent for expansion of the airport to enable combined airport operations of 274,000 aircraft movements (in line with the current cap), but with an increased proportion of passenger flights and an increased throughput of 43 million terminal passengers per annum. To facilitate this, the planning consent (UTT/18/0460/FUL) includes provision for two new taxiway links to the runway and nine additional aircraft stands, together with highways improvements including at M11 Junction 8.
- 4.64 The Appeal decision notes that the planning consent provides airlines and other prospective investors, with greater certainty regarding the ability of Stansted to grow, secure long-term growth deals and expand their network – potentially including long-haul routes. It notes that since the acquisition of the Airport by Manchester Airports Group (in 2013) and the onset of the Covid-19 pandemic there had been significant growth in passengers – with passenger numbers increasing by over 10mppa, from 17.8m in 2013 to 28mppa in 2019(?) with associated growth in routes, airlines and employment (from 10,200 to 13,000).
- 4.65 The Inquiry evidence estimated that it would take 3-4 years for passenger traffic to recover to levels seen before the pandemic. It notes that the airport is less exposed to the long-haul and business markets which are likely to see more prolonged recovery curves and (in the case of the business sector) structural change to working practices.
- 4.66 The Inquiry Panel found that the conclusions of the Environmental Statement and Environmental Statement Addendum regarding forecast passenger growth numbers were reasonable and sensible, and sufficiently robust (ID Para 27). The ES Addendum updated the demand forecasting to take

¹³ Uttlesford District Council (2018) *Uttlesford Economic Development Strategy and Action Plan 2018-21. 'Supporting Sustainable Business Growth'*

account of Covid. This shows 35mppa being achieved in 2027 the cap of 43 mppa being reached in 2032-34. The Panel found that if it takes the airport longer than expected to reach the anticipated levels of growth, the environmental effects would take longer to realise; we note that a worst-case scenario assessed (reaching the cap in 2034) in the ES/ ESA.

4.67 The Inquiry evidence on forecasts expected cargo volumes growing from 234k tonnes in 2019 to 375k tonnes in 2032 – a 60% growth in cargo tonnage, but just 2% of the overall total cargo handled at London Airports. The assumed split of flights in 2032 is 92% passenger (252,000), 5% cargo (15,000) and 7% other (e.g. private aviation).

4.68 An economic impact analysis was undertaken for MAG by Optimal Economics. This expected Stansted-related employment across a wide study area to grow from 24,100 in 2019 (of which 13,000 is direct on-airport employment) to 30,300 – with the proposed development supporting 5,600 additional jobs and £380m GVA. Of the additional employment, 3,000 is additional direct on-airport jobs. According to the evidence, 17.4% of Stansted's employees reside in Uttlesford, the highest portion reside in East Herts (28.0%).

4.69 In terms of the wider economic benefits, the evidence indicated that the proposed development will enable 1.2 million business passengers to travel through Stansted in 2032, which is estimated to create an additional £1 billion of GVA for the East of England and London economies. The spending of the 2.2 million inbound leisure passengers will support 13,900 jobs and £336 million of GVA in the tourism industry. Both these effects will support the growth of the East of England and London economies¹⁴. These wider economic benefits arise through a range of factors:

- Attractiveness to FDI and enabling local firms to exploit investment opportunities overseas;
- Facilitating trade – through both the shipment of goods and enabling people to visit customers;
- Labour market effects – in particular associated with the attraction of highly skilled individuals to work in the UK;
- Agglomeration effects – both through the role of the flight network and in influencing FDI decisions resulting in clustering of firms in locations around airports;
- Tourism – supporting growth in tourism through inbound visitor travel/ expenditure.

¹⁴ Proof of Evidence of Edith McDowall, Optimal Economics

-
- 4.70 Many of these wider benefits are at a regional level rather than specific to Uttlesford, which is likely to benefit more specifically from direct airport jobs and some potential for growth in businesses locally which provide products or services to the Airport.
- 4.71 The evidence then identifies particular air intensive or air sensitive economic sectors, but picks out in particular the globally important tech, pharmaceuticals and life science sector around Cambridge and in the LSC Corridor.

5. COMMERCIAL MARKET REVIEW

Office Market

- 5.1 The recent trend in office markets has been of subdued activity as a result of Covid-19 and the associated effect on the wider economy. Despite the overall subdued outlook, agents expect certain office sectors to see above average activity including the lifesciences sector which is an important component in the northern part of Uttlesford District.
- 5.2 This section considers the Functional Economic Market Area (FEMA) comprising Uttlesford, Epping Forest, East Hertfordshire and Harlow. For the purposes of this document, the PMA is the equivalent of the 'functional economic area' referred to in the PPG, although PMAs can differ for example by property type, with larger distribution units having a wider area than local offices of industrial units. The FEMA was defined in the 'Economic Evidence to Support the Development of the OAHN for West Essex and East Herts' (2015) by Hardisty Jones Associates and reinforced in Aecom's 2016 and 2017 Uttlesford District Employment Land Review Updates. It is considered that this area and analysis remains valid.

Office Stock

- 5.3 Based on Valuation Office Agency (VOA) data, Uttlesford contains around 94,000 sq.m of office floorspace, equating to 22% of the total office stock across the FEMA. Whilst East Hertfordshire and Harlow have seen a notable decline in office floorspace over the last decade, the stock in Uttlesford has declined only modestly in net terms – with a loss of 4,000 sq.m (-4%). This is broadly in line with trends across the East of England.

Table 5.1 Office Stock in the District and FEMA, 2019-20

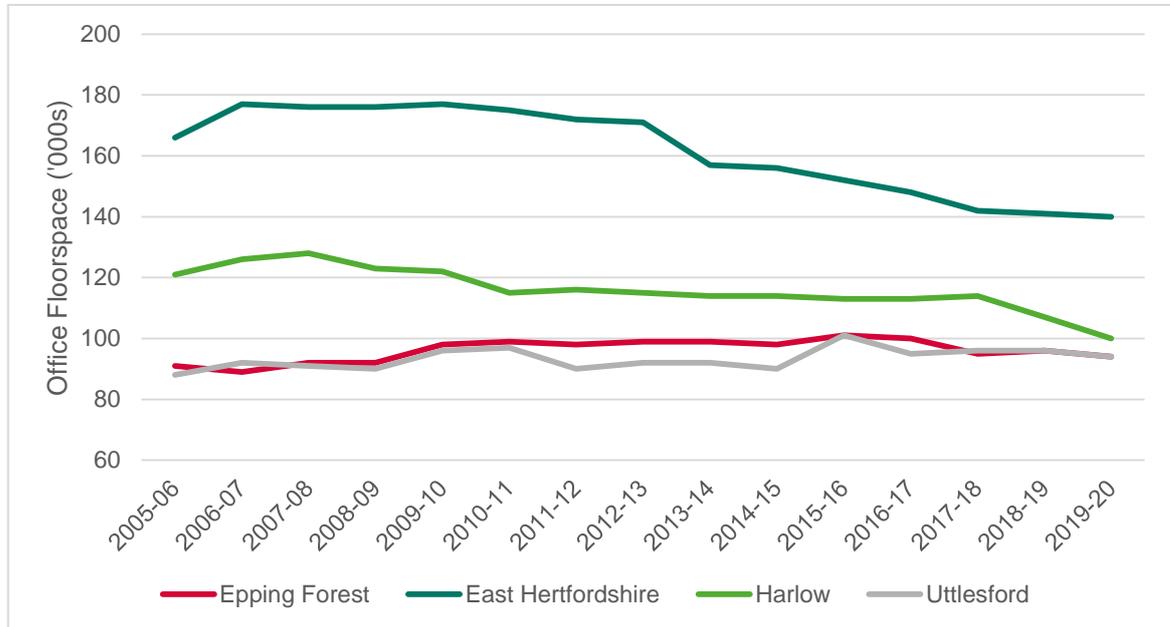
	Stock, 2020 (sq.m)	% FEMA Stock	Stock Change, 2010-20	% Change, 2010-20
Epping Forest	94,000	22.0%	-4,000	-4%
East Hertfordshire	140,000	32.7%	-37,000	-21%
Harlow	100,000	23.4%	-22,000	-18%
Uttlesford	94,000	22.0%	-2,000	-2%
FEMA	428,000		-65,000	-12%
East of England	7,041,000		-374,000	-5%
England	84,598,000		-5,000	0%

Source: VOA Non-Domestic Rating Statistics

- 5.4 As the chart below shows, whilst the scale of office floorspace in the FEMA has historically been greatest in East Herts, followed by Harlow, the reduction in floorspace in these areas seen – in

particular since the introduction of permitted development rights in 2013 – has reduced these differentials.

Figure 5.1: Change in Office Floorspace, 2005-20



Source: VOA Non-Domestic Rating Statistics

5.5 Data on the average size of office properties in the District is lower than in the other parts of the FEMA and across wider (regional/ national) geographies, and notably half that in Harlow. This reflects the rural nature of the District and focus on SME businesses.

Table 5.2 Average Size of Office Properties, 2020

	Stock, 2019-20 (sq.m)	Rateable Properties	Average Floorspace (sq.m)
Epping Forest	94,000	930	101
East Hertfordshire	140,000	1,000	140
Harlow	100,000	470	213
Uttlesford	94,000	890	106
FEMA	428,000	3,290	130
East of England	7,041,000	38,540	183
England	84,598,000	411,000	206

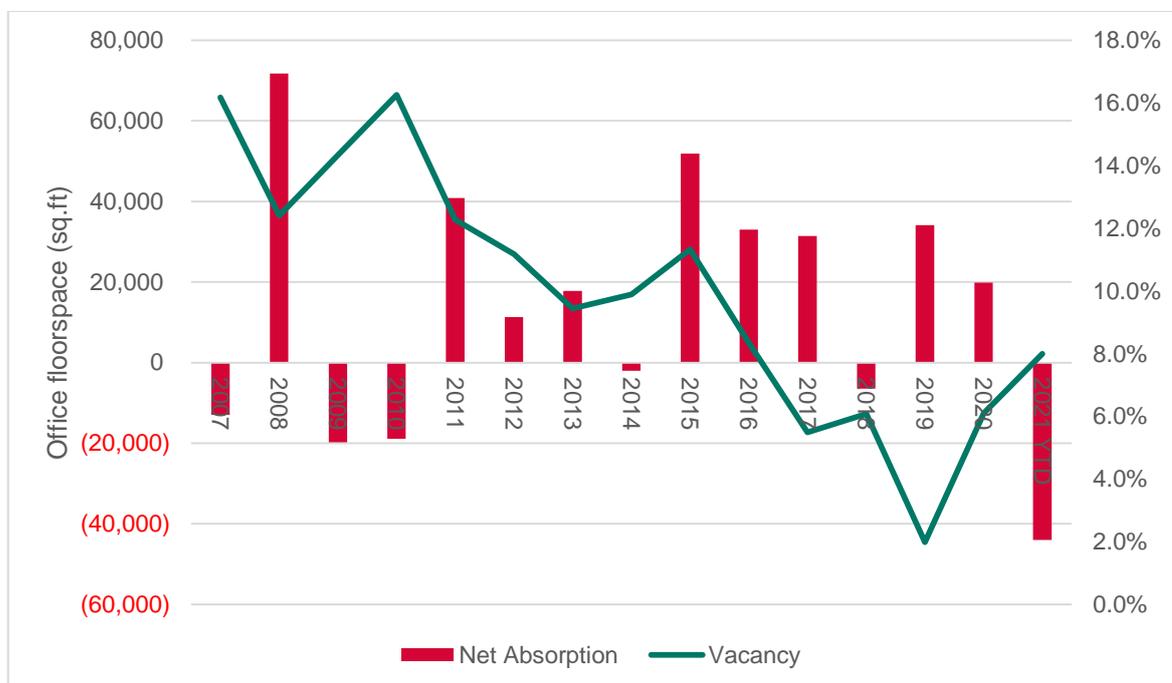
Source: VOA Non-Domestic Rating Statistics

5.6 We would note that CoStar shows a slightly higher level of office stock in the District than the VOA data (107,800 sq.m compared to 94,000 sq.m). CoStar rates the quality of existing office stock, and shows that just 8,000 sq.m (7.4%) of stock is rated 4 or 5 Star¹⁵.

Take-Up and Net Absorption

5.7 The District has seen positive net absorption in the majority of years over the 2010-20 decade, meaning that more office floorspace was being take-up than coming onto the market (either through existing office space being vacated or new-build development). As the graph below shows, this has resulted in a reduction in the level of vacant floorspace which fell to a low-point of 2.0% in 2019. This has however since risen and stands at 8.0% in mid 2021.

Figure 5.2: Office Net Absorption and Vacancy Rate – Uttlesford District



Source: Icen analysis of CoStar data

5.8 The trends in net absorption over time show an average take-up of 21,200 sq.ft of office space (2,150 sq.m) per annum over the 2011-20 period. However, the negative net absorption of 4,086 sq.m in 2021 to date has driven a rise in the vacancy rate.

Table 5.3 Office Net Absorption and Vacancy Rate – Uttlesford District

	Annual Net Absorption (sqm)	Vacancy Rate at End of Period
2007-10	467	16.3%
2011-15	2,226	11.3%

¹⁵ See Page 4 of the following link for definitions of each Star Rating - https://www.costar.com/docs/default-source/brs-lib/costar_buildingratingsystem-definition.pdf

2016-20	2,078	6.1%
2021 YTD	(4,086)	8.0%

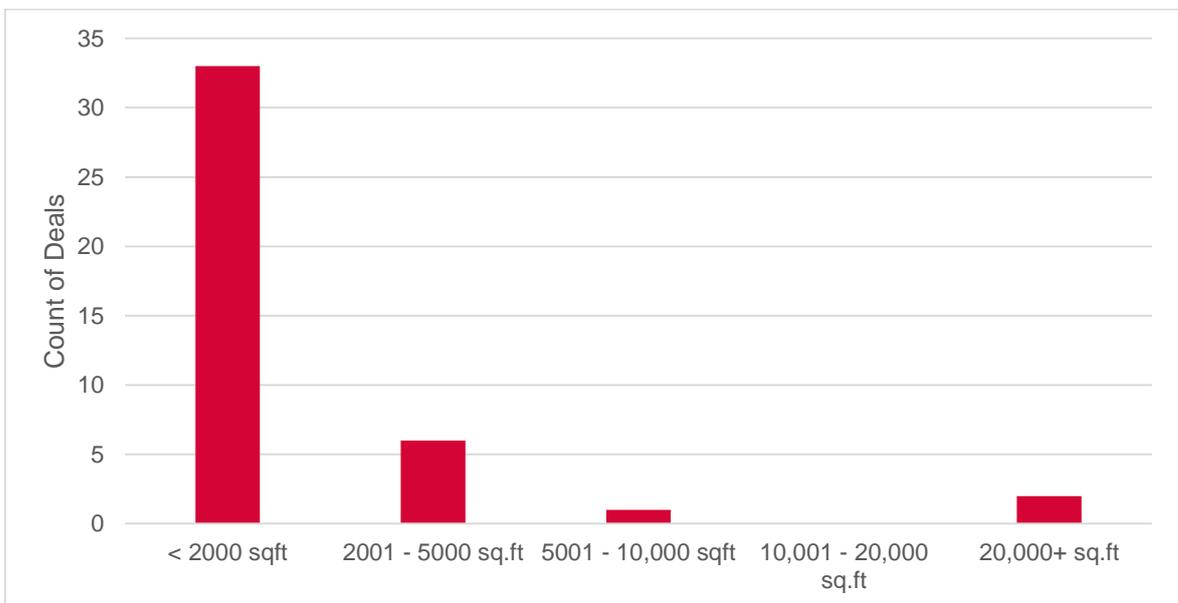
Source: Icen analysis of CoStar data

5.9 The overall vacancy rate for office stock at 8% is above the average for Essex (4.4%). However, this is reflective of vacant lower grade space, with no vacancy within the stock of Grade 4 or 5 Star space.

Leasing Activity

5.10 The median size of office floorspace leased in the District over the last three years (2018-20) has been of 850 sq.ft, reflecting the focus of the District's economy towards micro- and small businesses. Indeed as the chart below shows, leasing activity is strongly focused on office units of < 2,000 sq.ft (185 sq.m). CoStar records just nine larger deals.

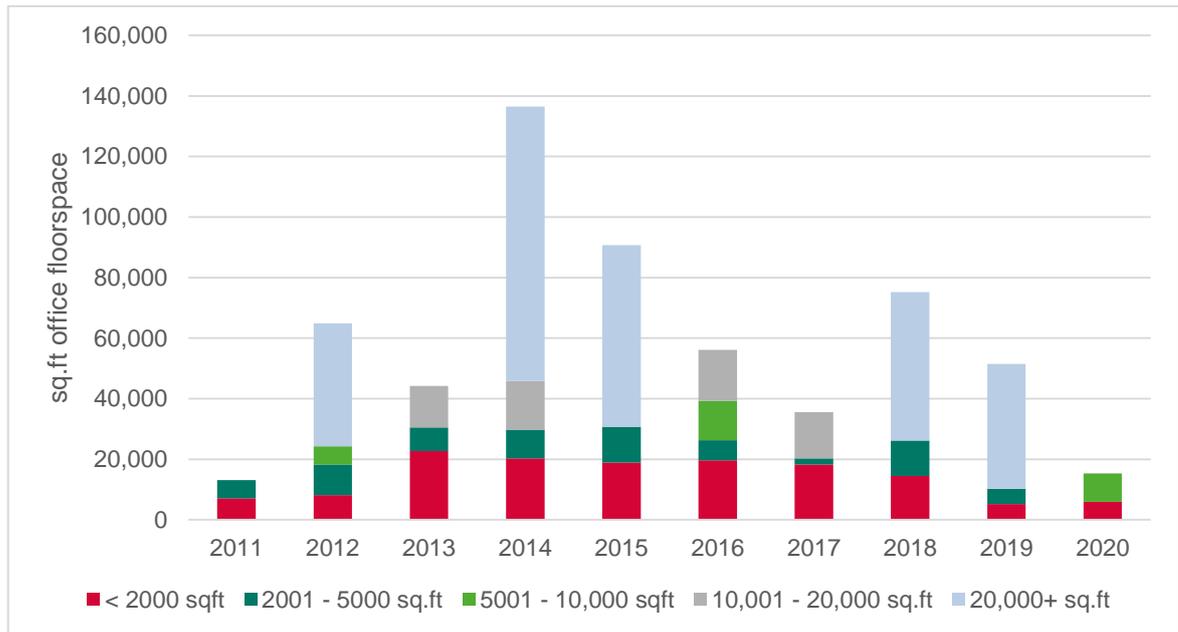
Figure 5.3: Leasing Activity by Size Band – Uttlesford, 2018-20



Source: Icen analysis of CoStar data

5.11 However, the larger deals disproportionately affect overall take-up, as the Figure below shows. Strong take-up in 2014 reflected the leasing of 49,000 sq.ft of space at Parsonage Road in Takeley to Weston Homes and of 41,500 sq.ft of space at Chesterford Research Park to Retroscreen Virology Ltd. 2015 similarly saw a single larger deal for 60,000 sq.ft of space at Chesterford Research Park to Biofocus. 2018 saw Weston Homes renewal 49,000 sq.ft at Parsonage Road; with 2019 seeing 41,300 sq.ft unit occupied by Lonza at Chesterford Research Park.

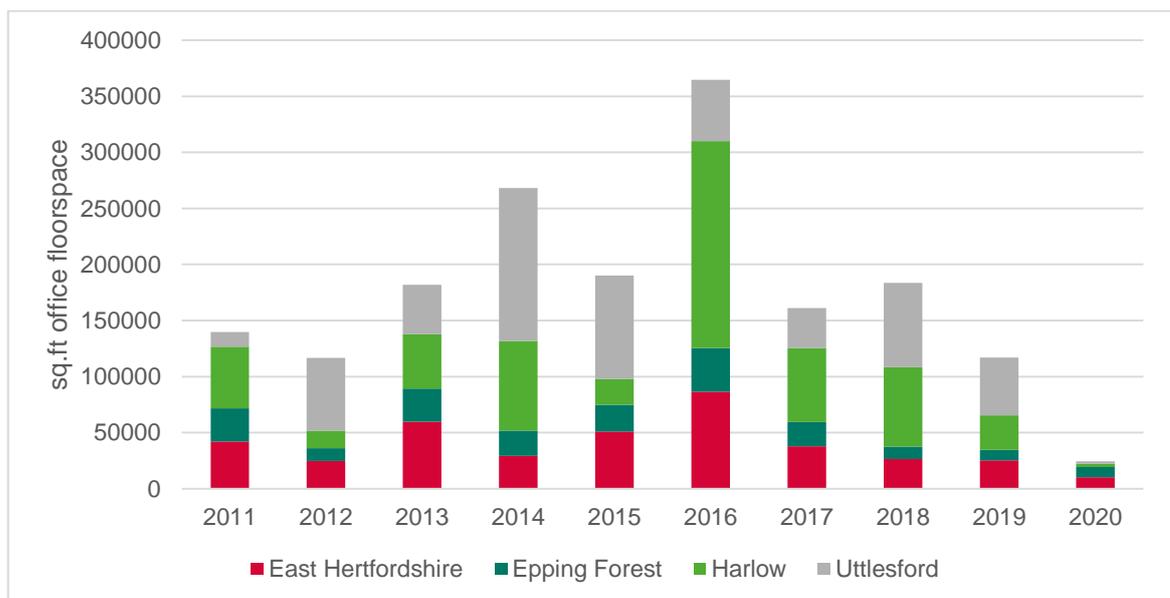
Figure 5.4: Office Leasing Activity by Size Band – Uttlesford



Source: Icen analysis of CoStar data

5.12 The analysis highlights the influence of a few larger deals on overall take-up; and the role which development at Chesterford Research Park in particular has had on office/R&D take-up. The chart below shows take-up across the wider FEMA. Over the last 10 years, CoStar records take-up of 175,000 sq.ft (16,200 sq.m) per annum with Uttlesford accounting for on average a third (33%) of this, consistent with overall office take-up in Harlow (33%). East Hertfordshire has then accounted for 22% and Epping Forest 12%.

Figure 5.5: Office Take-Up across the Property Market Area

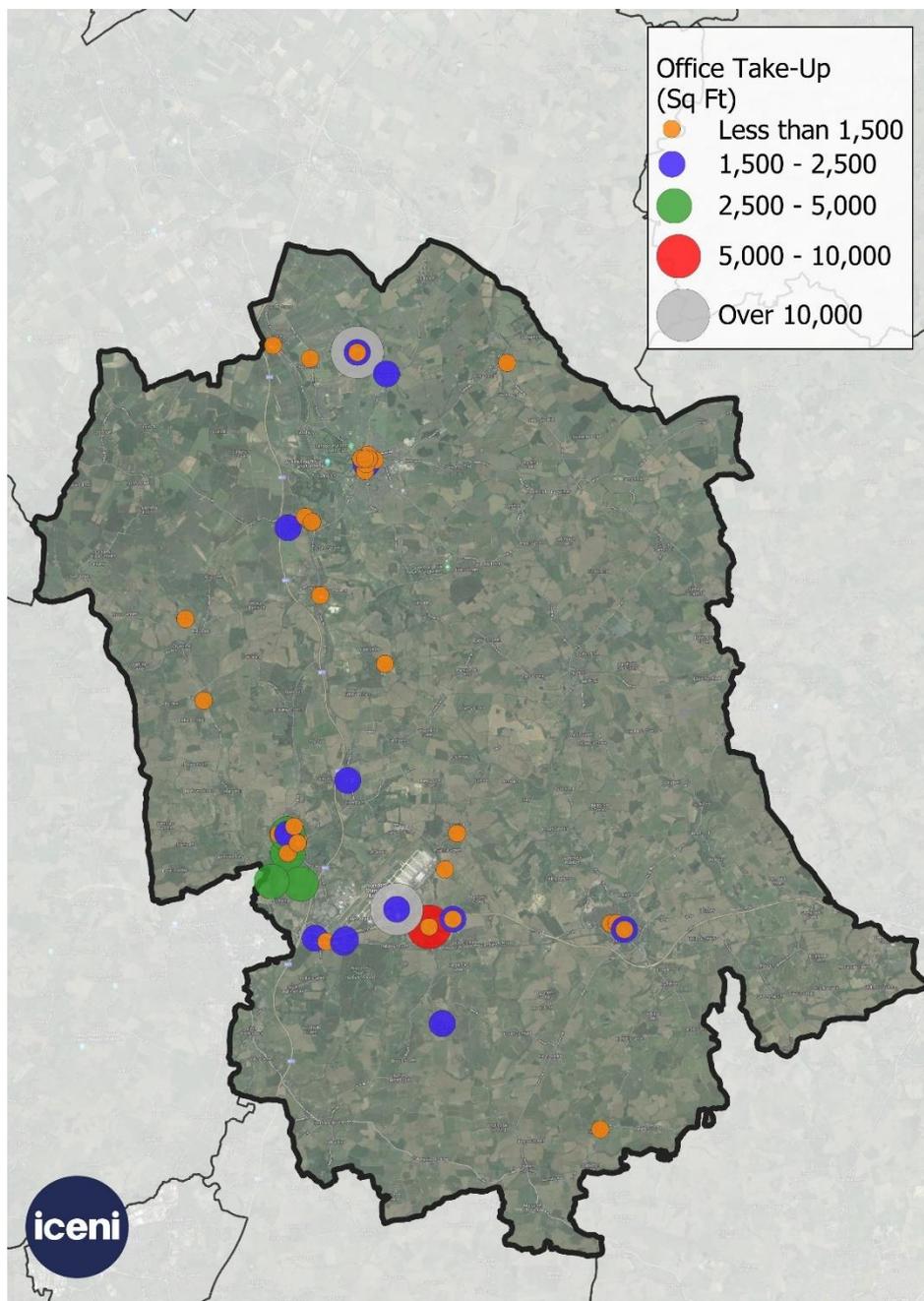


Source: Icen analysis of CoStar data

5.13 If a shorter time frame is used, Uttlesford has accounted for 40% of take-up in the PMA, with weak take-up in both Epping Forest and East Hertfordshire.

5.14 Figure 5.6 below shows the spatial distribution of office leasing activity in the District between 2015-20. Most leases above 1,500 sq ft are around Stansted Airport and Stansted Mountfitchet with some at Chesterford Research Park. There is a concentration of leases of between 2,500 and 5,000 sqm of space in and around Stansted Mountfitchet. These are at Stansted Road, Cambridge Road, Forest Hall Road and Stoney Common Road.

Figure 5.6: Office Leasing Activity in Uttlesford, 2015-20

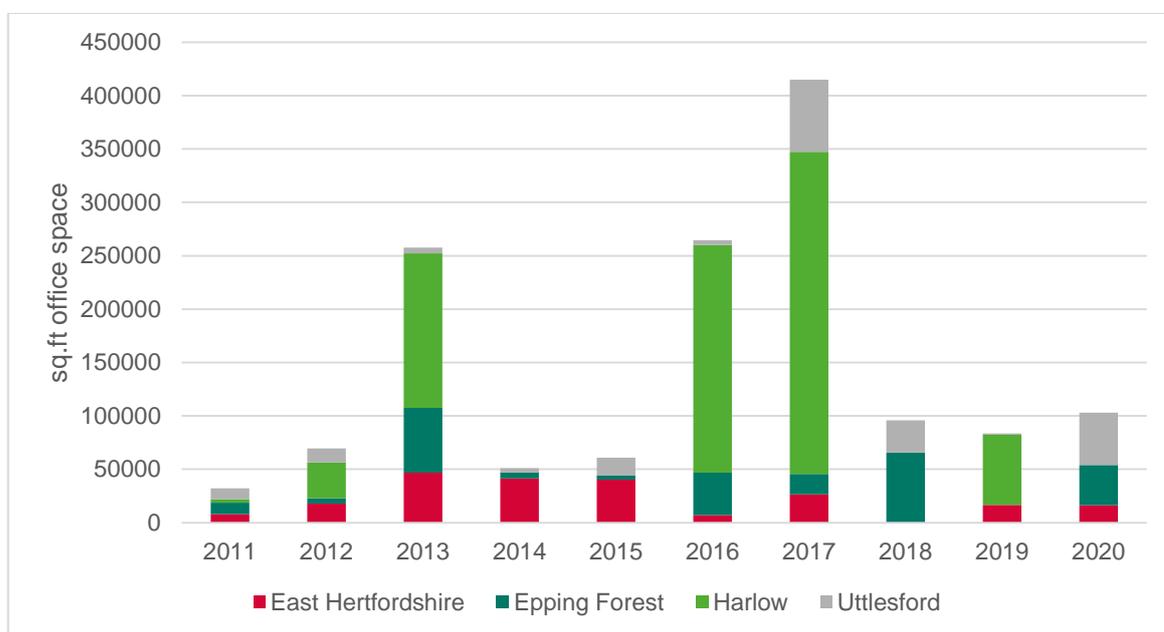


5.15 Recent new-build development of office space has been modest. The largest building constructed has been of 49,000 sq.ft at Innovation Centre, Parsonage Road for Weston Business Centres. Smaller schemes at Stansted Courtyard (9,476 sq.ft) and Thremhall Park (10,551 sq.ft) were completed in early 2020.

Freehold Activity

5.16 The chart below shows freehold sales of office space.¹⁶ Over the last 10 years, CoStar records take-up of just over 200,000 sq.ft of office space (18,700 sq.m) in Uttlesford accounting for around 14% of the total across the Property Market Area. Year-on-year take-up is significantly influenced by the larger deals.

Figure 5.7: Freehold Office Sales over Last 10 Years

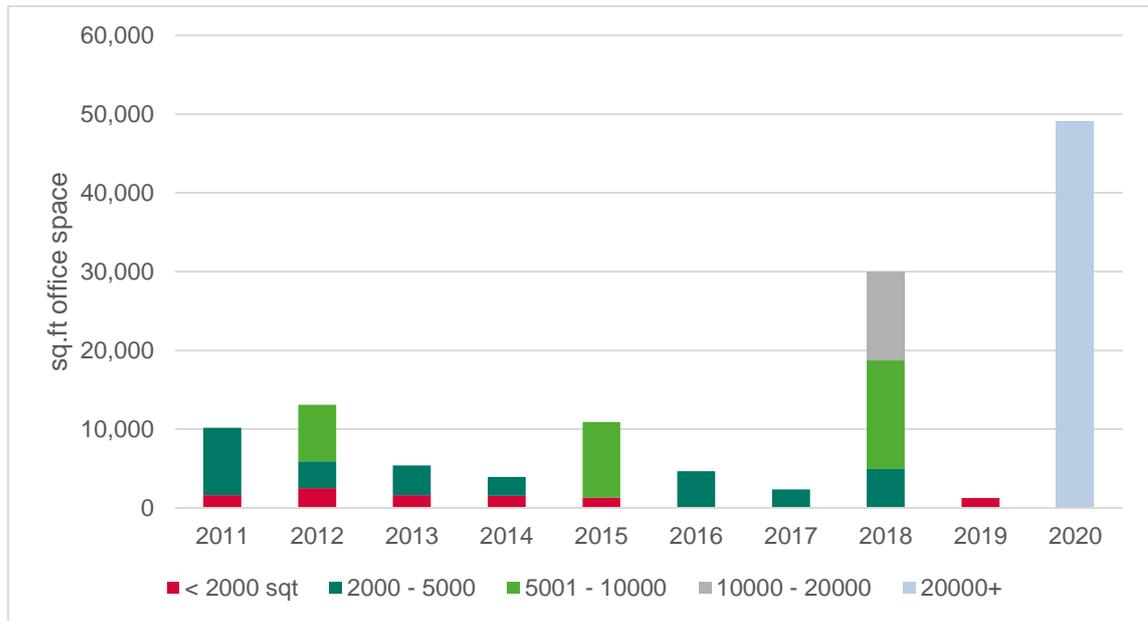


Source: IcenI analysis of CoStar data

5.17 In most years, freehold activity in Uttlesford is focused on units of < 5,000 sq.ft. There have however been one recent deal: the delivery of an Innovation Centre at Parsonage Road for Weston Business Centres, which completed in 2020.

¹⁶ IcenI has sought to exclude investment transactions

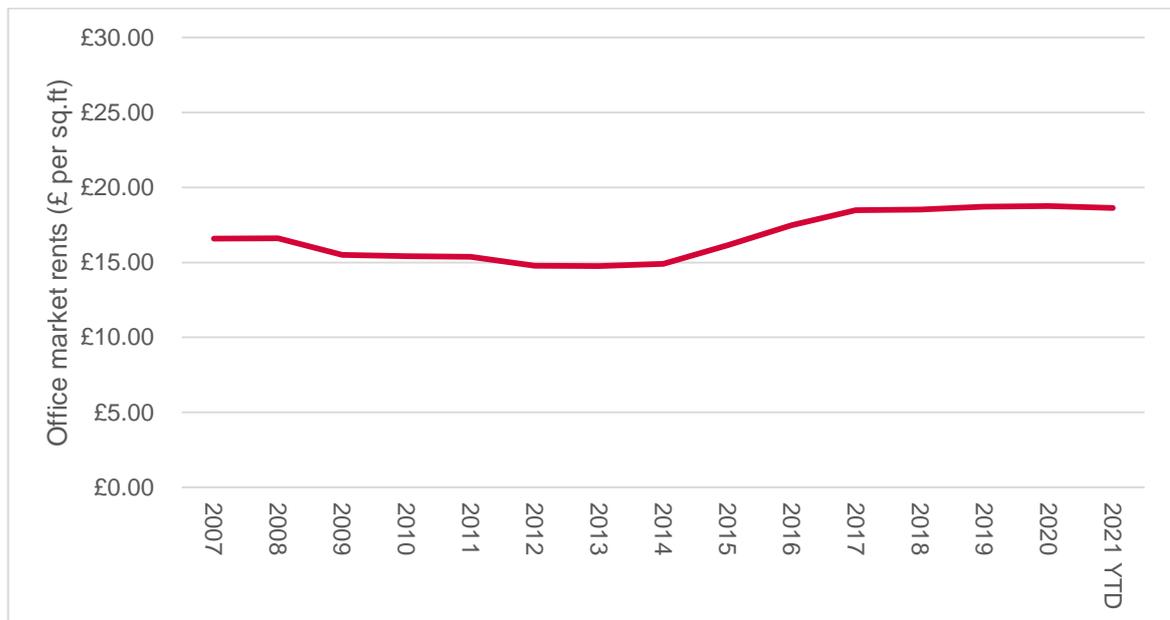
Figure 5.8: Freehold Sales in Uttlesford, 2011-20



Property Costs

5.18 As availability has fallen in recent years, office rents have increased growing from £14.90 psf in 2014 to £18.70 psf in 2019. They have remained broadly stable since. The market expectation is that rents will weaken slightly in the short-term.

Figure 5.9: Office Rental Trend



Source: Icen analysis of CoStar data

5.19 Headline rents for new/refurbished stock appear to have hit around £20 psf. This compares for instance with headline rents of close to £50 psf in Central Cambridge and rents exceeding £40 psf

for new-build fitted lab space¹⁷. Headline rents in Uttlesford are not sufficient to support speculative development; and thus in the short-to-medium at least we would expect pre-lets to be required before new office floorspace is brought forward. This may constrain business growth in the district – existing businesses may look elsewhere for space, home-based businesses may put-off growth plans and external businesses may not be likely to be able to find suitable space within Uttlesford. The council could help by taking pre-lets of space or otherwise creating more favourable conditions for development. For freehold sales, the average value stands currently at around £214 per sq.ft based on CoStar data for Uttlesford.

Chesterford Research Park

5.20 Chesterford Research Park is part of the South East Cambridge cluster of world leading life sciences research institutes and is part of the wider UK Innovation Corridor. Current occupiers include AstraZeneca, Cambridge Epigenetix, Microbiotica and Oxford Nanopore Technologies. The Research Park is a distinct area within the District with a strong property sub-market which supports high value employment.

5.21 Average market rents at Great Chesterford Research Park are £25.39 compared to £18.70 across the district as a whole and £20 for new/refurbished stock. This reflects the modern, high quality nature of stock at the Research Park as well as low vacancy rates (currently 0% according to CoStar). Much of the demand for larger office space in Uttlesford is within the Research Park, as well as demand for larger light industrial and medical space. Speculative is more likely to come forward at Chesterford Research Park.

Office Market Outlook

5.22 At the current time the market is relatively uncertain, not least due to uncertainties associated with how home working may change companies' office floorspace requirements, impacts of permitted development rights (PDR)/ further use class changes, and uncertainties as to whether some London-based firms may seek to open satellite offices in commuter-belt locations or move out of the City. Larger companies will principally seek high quality office space, with clear floor plates that allow for potentially more generous office spacing than pre-Covid.

5.23 Flexible working is long established in the UK, with Eurostat reporting that 22% of UK-based employees were occasionally working from home pre-pandemic – twice the EU average. Growth in home working, which seems likely, is therefore an acceleration of an existing trend.

¹⁷ <https://www.savills.co.uk/insight-and-opinion/savills-news/304868-0/cambridge-office-market-remains-resilient-despite-impact-of-covid-19>

Agent Feedback

- 5.24 Icenis has spoken to a number of commercially active local agents to understand current market conditions. Agents are clear that office demand is focused generally on local SME businesses and particularly space of up to 20,000 sq.ft. The market is difficult at the time of writing (July 2021) influenced by Covid-19. Coke Gearing reports that outstanding requirements are all for small and medium-sized units, with little demand for larger HQ office space.
- 5.25 Headline rents are quoted at £21 psf for Grade A office space such as at Enterprise House, close to Stansted Airport, but rents of around £19 psf are achieved. The agents stated that higher rents, in the early £20s, were required for speculative development. The new-build office scheme at Tristal Towers has been on the market for five years, but appears unlikely to come forwards in the short-term given viability challenges (influenced by the rental tone and high build costs) and poor access.
- 5.26 The local market in Saffron Walden is focused typically on units of 500 – 1,500 sq.ft. Deals of over 20,000 sq.ft are rare. It is clear that there has been relatively little activity in the office market over the last year (as supported by the CoStar data). Mullucks reports some inquiries from small businesses, particularly where the owner lives locally, for satellite offices instead of commuting to London or Cambridge.

Industrial and Logistics Market

- 5.27 Whilst other sectors have witnessed disruption from Covid-19, warehousing and logistics is a property sector which has thrived driven in particular by the substantial growth seen in online sales, continuing (and accelerating) the trend we have seen in recent years of growing demand for logistics space.
- 5.28 Nationally Lambert Smith Hampton Commercial Property reports that UK industrial and logistics take-up reached 59.7 million sq.ft in 2020, a record level, influenced in particular by strong take-up for large and extra large units (100,000 sq.ft+). Whilst this was influenced in particular by the very substantial (and partially temporary) shift towards online retailing, the logistics sector has been very active now for a number of years and there is no current evidence of this abating. Brexit is clearly disrupting some industrial activities, and LSH report that this may lead to some restructuring of supply chains which could demonstrate some additional demand for UK logistics if companies seek to keep increased stock volumes to mitigate potential impacts of trade disruption on sales. Brexit could also lead to some re-shoring of supply chains and/or restructuring to deliver separate EU and UK focused infrastructure.
- 5.29 Nationally the pandemic has had a smaller impact on speculative industrial development than initially feared, and despite strong delivery of new supply there has been ongoing rental growth which nationally averaged 4.2% for prime industrial units in 2020.

- 5.30 Whilst mid-box units have been the focus of speculative development activity in recent years, larger units (100,000 sq.ft+) saw the largest growth in 2010 and the pipeline nationally is skewed towards this sector. LSH reports a more modest pipeline of 2.1m sq.ft of speculative development in the mid box market is anticipated in 2021. LSH describes the East of England as a real hotspot of speculative development with 1.4 million of new space being brought forward speculatively at the end of 2020.
- 5.31 Uttlesford is not however particularly a market for 'big box' logistics space which is more focused towards major motorway corridors such as, within the East of England, the M1 corridor through Hertfordshire and Bedfordshire. There is no evidence of big box take-up in the District over the last decade. However, proposals for 200,000 sq.m. of Warehousing space at Northside (adjacent to Stansted Airport) suggests that there is demand for 'big box' space, which is reasonable, given the growth of online retailing, the presence of the airport and proximity to London.
- 5.32 In the East of England, LSH reports industrial take-up in 2020 which was 30% above the 5 year average at 5.2 million sq.ft. The available supply of units is 2.0 years for the mid-box units, and less than this for larger/ extra-large sizes.

Industrial Stock

- 5.33 Uttlesford accommodated around 20% of the Functional Economic Market Area's (FEMA's) industrial stock, with a total of 459,000 sq.m of floorspace recorded by the Valuation Office Agency (VOA) in 2020. The largest share of stock is seen in Harlow (with a quantity 60% greater than in Uttlesford).
- 5.34 The total industrial stock across the FEMA has declined in net terms over the 2010-20 decade, falling by a modest 4%, compared to a regional and national picture which is flat. However, in Uttlesford, the VOA data points to modest growth in stock of 6% over this period. Industrial floorspace includes industrial and warehousing/logistics floorspace.

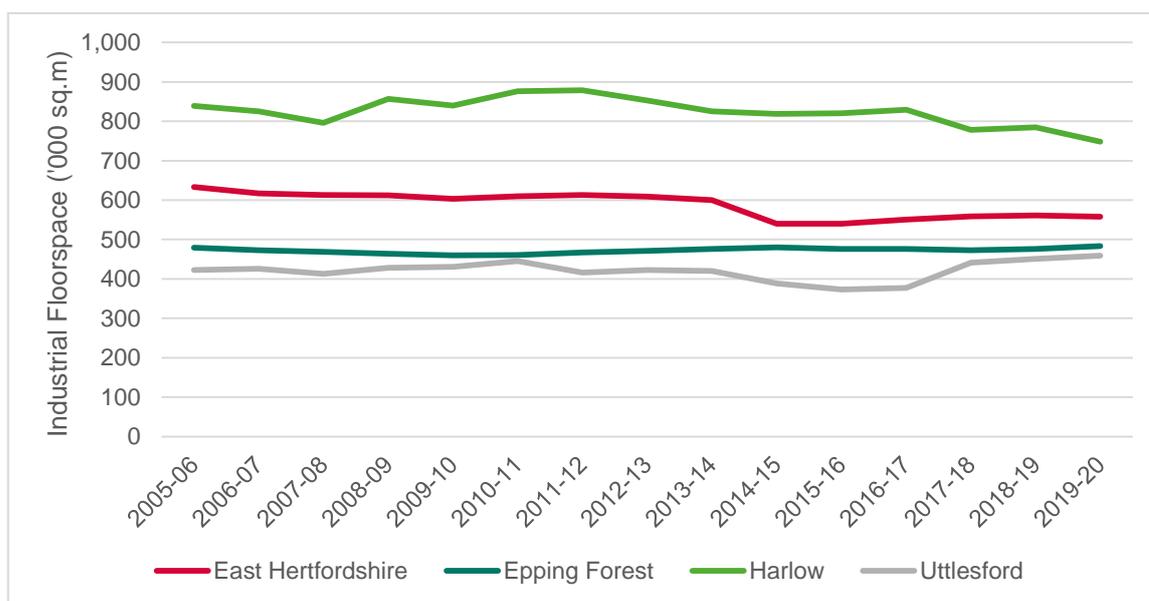
Table 5.4 Industrial Stock in the District and FEMA, 2019-20

	Stock, 2019-20 (sq.m)	% FEMA Stock	Stock Change, 2010-20	% Change, 2010-20
East Hertfordshire	558,000	24.8%	-45,000	-7%
Epping Forest	483,000	21.5%	23,000	5%
Harlow	748,000	33.3%	-92,000	-11%
Uttlesford	459,000	20.4%	28,000	6%
FEMA	2,248,000		-86,000	-4%
East of England	33,820,000		281,000	1%
England	311,632,000		-892,000	0%

Source: VOA Non-Domestic Rating Statistics

- 5.35 The chart below shows the trend in industrial floorspace by area. It shows that industrial floorspace in Uttlesford fell between 2009-16 but has been increasing since (with subsequent growth of 86,000 sq.m, 23%). A general downward trend is evident in East Herts and Harlow.

Figure 5.10: Change in Industrial Floorspace, 2005-20



Source: Icen analysis of VOA Non-Domestic Rating Statistics

5.36 The average size of industrial properties is below wider averages, indicating a focus of industrial stock and demand towards SME businesses. It is notable that the average size of industrial units in Harlow is more than twice that in Uttlesford, with Harlow more likely to cater for larger requirements.

Table 5.5 Average Size of Industrial Properties, 2020

	Floorspace, 2020 (sq.m)	Rateable Properties	Average Floorspace (sq.m)
East Hertfordshire	558,000	1,440	388
Epping Forest	483,000	1,500	322
Harlow	748,000	850	880
Uttlesford	459,000	1,080	425
FEMA	2,248,000	4,870	462
East of England	33,820,000	57,770	585
England	311,632,000	507,060	615

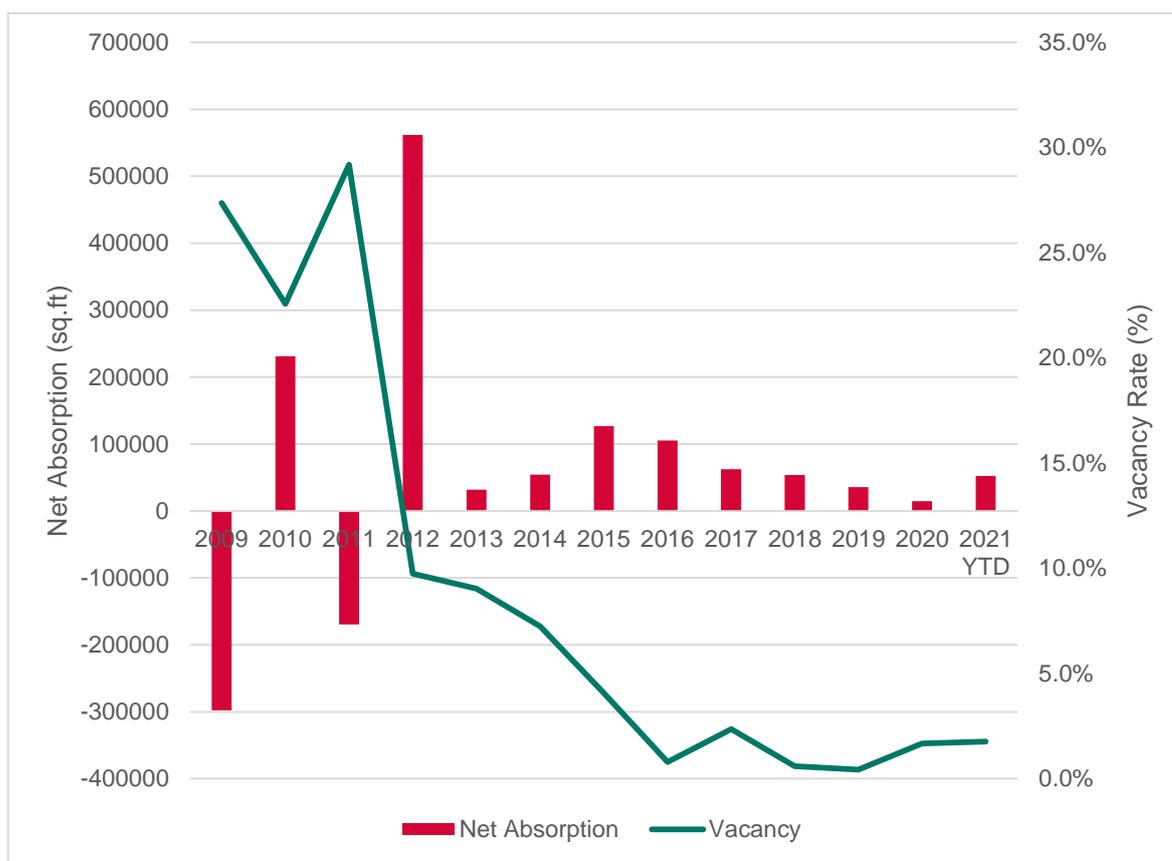
Source: VOA Non-Domestic Rating Statistics

Take-Up and Net Absorption

5.37 The District has seen positive net absorption in the majority of years over the 2010-20 decade, meaning that more industrial floorspace was being take-up than coming onto the market (either through existing office space being vacated or new-build development). As the graph below shows, this has resulted in a reduction in the level of vacant floorspace which fell to a low-point of 0.4% in 2019.

5.38 Net absorption over the last 6 years has averaged 66,400 sq.ft (6,200 sq.m) per annum of industrial space in the District.

Figure 5.11: Industrial Net Absorption and Vacancy Rate – Uttlesford District



Source: Icen analysis of CoStar data

5.39 The current industrial vacancy rate stands at 1.8% in mid 2021 – a very low level. This is still representative of constrained supply and tight property market conditions. As the table below shows, there is a greater level of vacant space within the specialist industrial category (albeit with this the vacancy level is still comparatively low); whilst for both light industrial and logistics space a vacancy rate of 1.5% points to a tight market and need to bring forward further supply.

Table 5.6 Vacancy Rate for Different Types of Industrial Space – Uttlesford District

	Floorspace (sq.ft)	Vacancy Rate	Availability Rate
Logistics	2,384,277	1.5%	2.0%
Specialist Industrial	291,844	4.1%	4.1%
Light Industrial	467,938	1.5%	22.1%
All Industrial	3,144,059	1.8%	5.2%

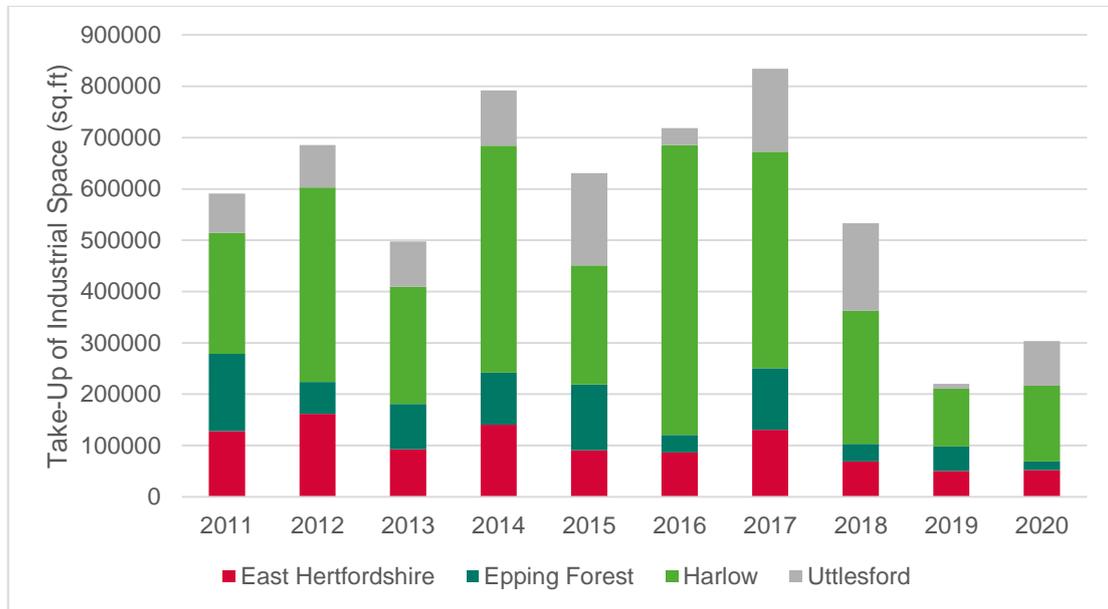
Source: CoStar

Leasing Activity

5.40 Across the PMA the average take-up of leased industrial space over the last 10 years has been 54,000 sq.m (580,600 sq.ft). Harlow has dominated industrial take-up, recording 52% of the PMA total. Uttlesford and East Hertfordshire have recorded 17% each, with Epping Forest 14%. Average take-up in Uttlesford has been 28,100 sq.m per annum.

5.41 As Figure 4.12 clearly shows, there has been a notable drop off in take-up over the last 3 years. This is likely to have been in part influenced by a constrained supply position. Take-up over this period has averaged just 33,000 sq.m across the 4 authorities.

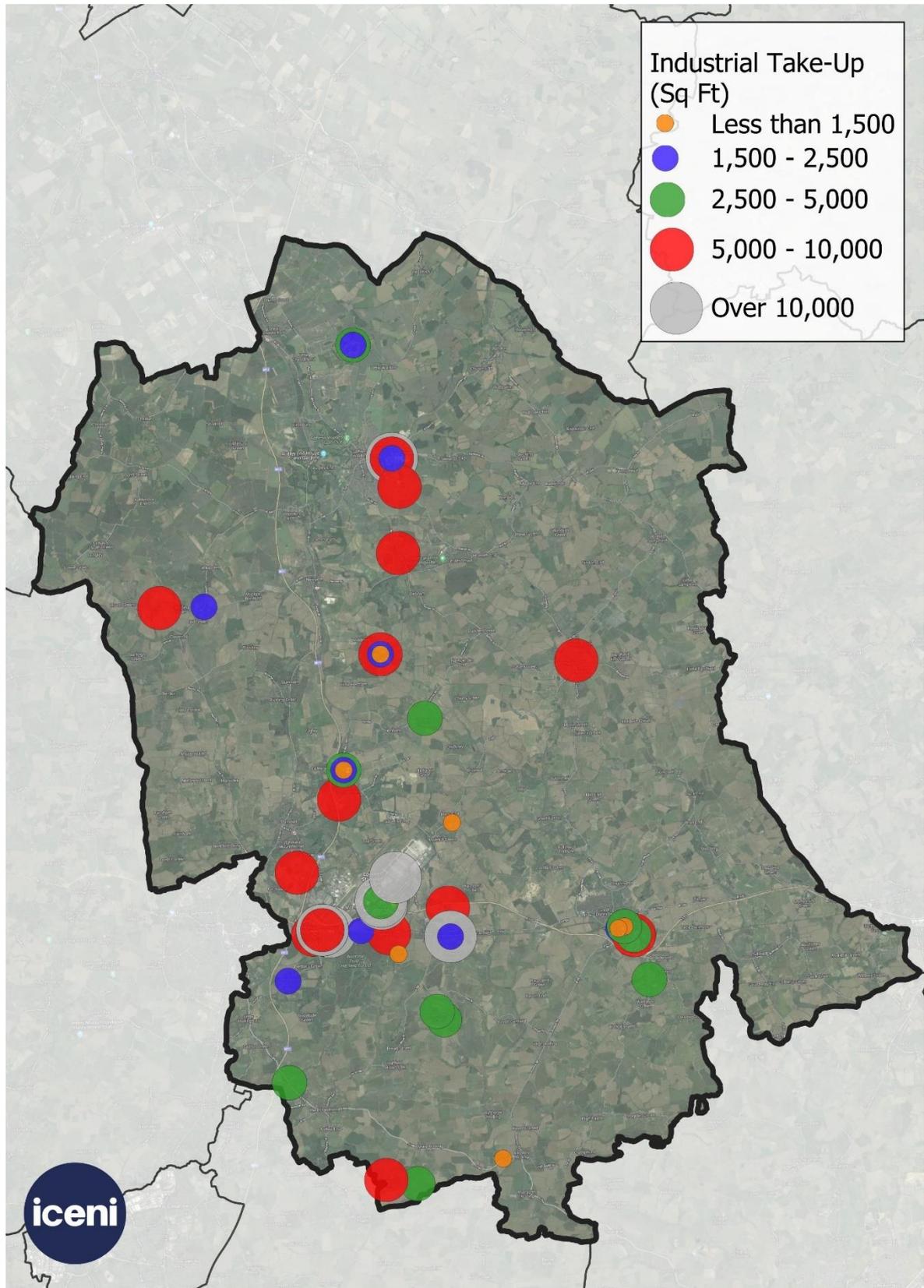
Figure 5.12: Industrial Take-Up – Property Market Area



Source: Icen analysis of CoStar data

5.42 The figure below shows the spatial distribution of industrial leasing activity in the District between 2015-20. The strongest cluster is around Stansted Airport and Takeley.

Figure 5.13: Industrial Take-Up in Uttlesford (2015-20)

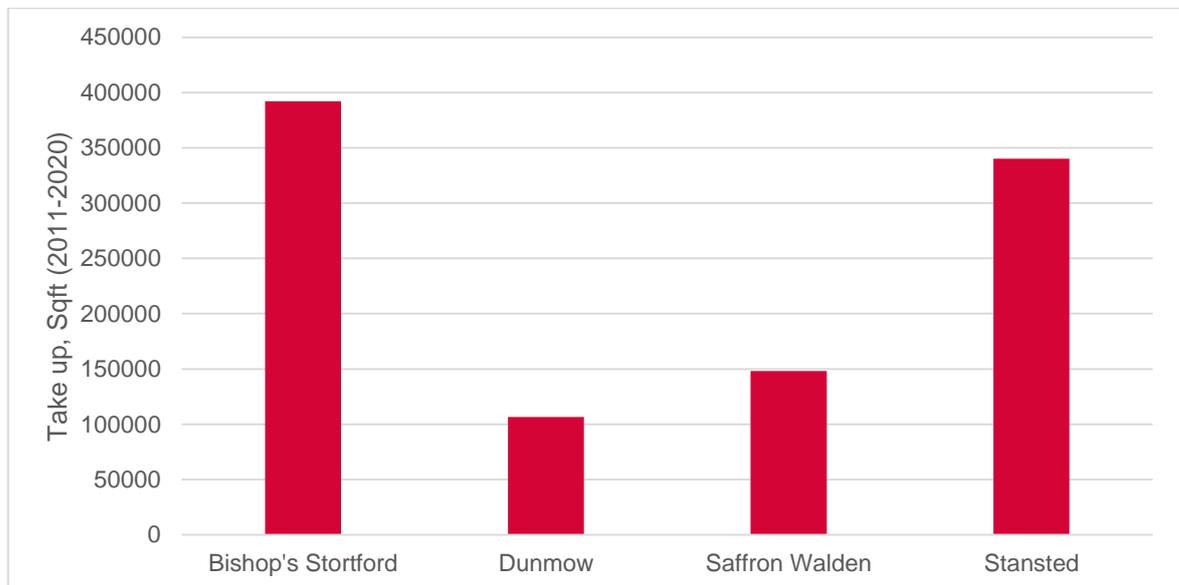


5.43 The chart below reports the take up by location (nearest town, all postcodes are in Uttlesford).

- 34% at 'Stansted' covering Taylors End Road / M11 Business Link (6% the latter)
- 39% at 'Bishop's Stortford' being the wider south west of the district
- 11% at Great Dunmow
- 15% Saffron Walden

5.44 Whilst CoStar will tend to miss off smaller rural transactions which do not register to the national database, this pattern suggests that the airport has a strong influence on industrial demand in the district, attracting at least 28% of transactions and potentially influencing many more.

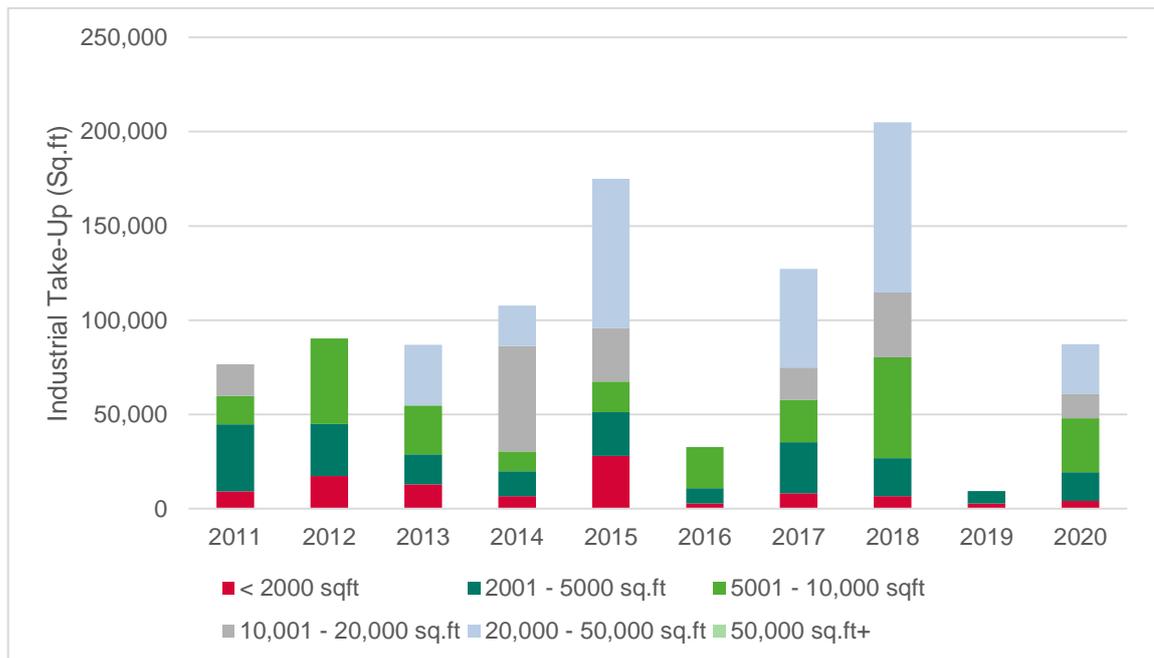
Figure 5.14: Industrial Take-Up by location – Uttlesford District



Source: Icen analysis of CoStar data

5.45 In terms of size band, it is evident from the figure below that there has been no take-up in the district of 'mid box' (50,000 – 100,000 sq.ft) or 'big box' industrial units (> 100,000 sq.ft) over the last decade. The largest units leased have been of around 35,000 sq.ft.

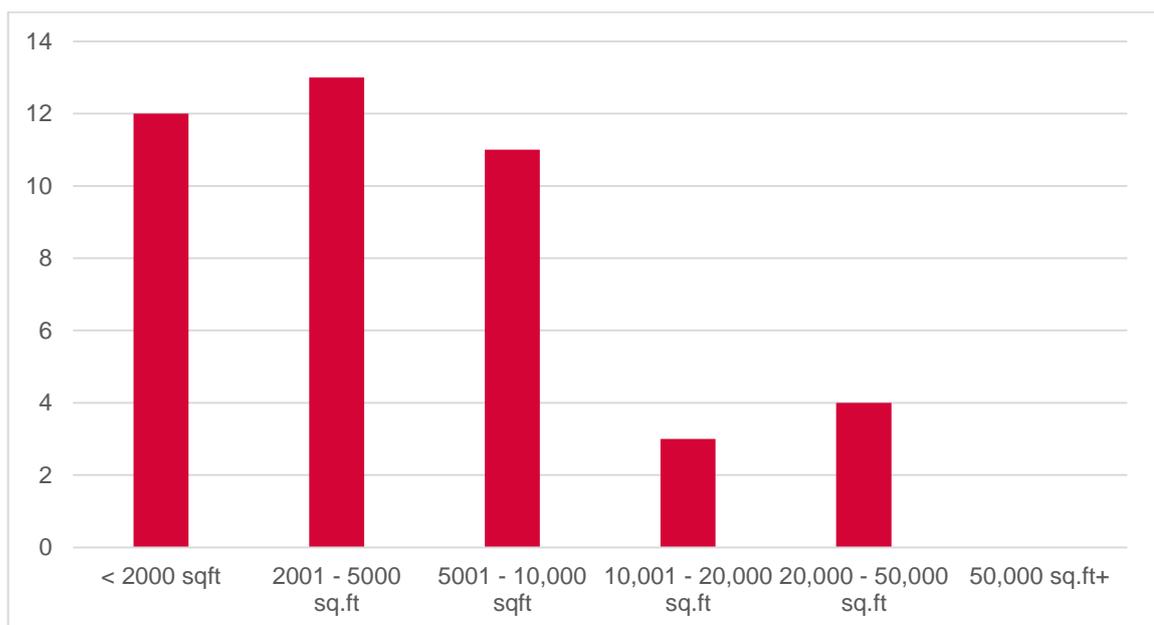
Figure 5.15: Industrial Take-Up by Size Band – Uttlesford District



Source: Icen analysis of CoStar data

5.46 The chart below shows the profile of leasing deals of different sizes. Activity is strongest for smaller units of < 10,000 sq.ft reflecting the focus of the economy on SMEs. However, leases of over 10,000 sq.ft units are rarer, but have driven overall take-up in the District. There has been no leasing activity of space over 50,000 sq ft in the District highlighting the lack of larger scale and strategic logistics space in the District.

Figure 5.16: Industrial Leasing Activity by Size Band – Uttlesford, 2018-20

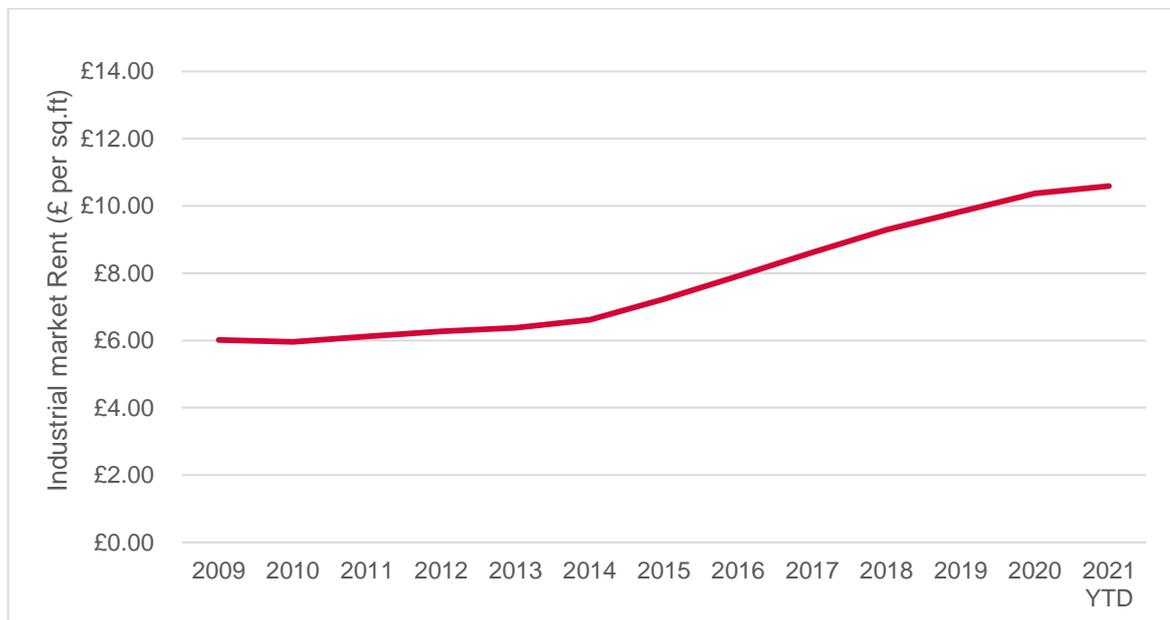


Source: Icen analysis of CoStar data

Industrial Rents

- 5.47 Market rents vary depending on the location and quality of the property, by CoStar record typical market rents of £10.35 psf for logistics space, £12.88 for light industrial and £8.88 psf for specialist industrial stock.
- 5.48 There has been relatively strong growth in industrial rents since 2014 as industrial supply has tightened.

Figure 5.17 Industrial Rents – Uttlesford



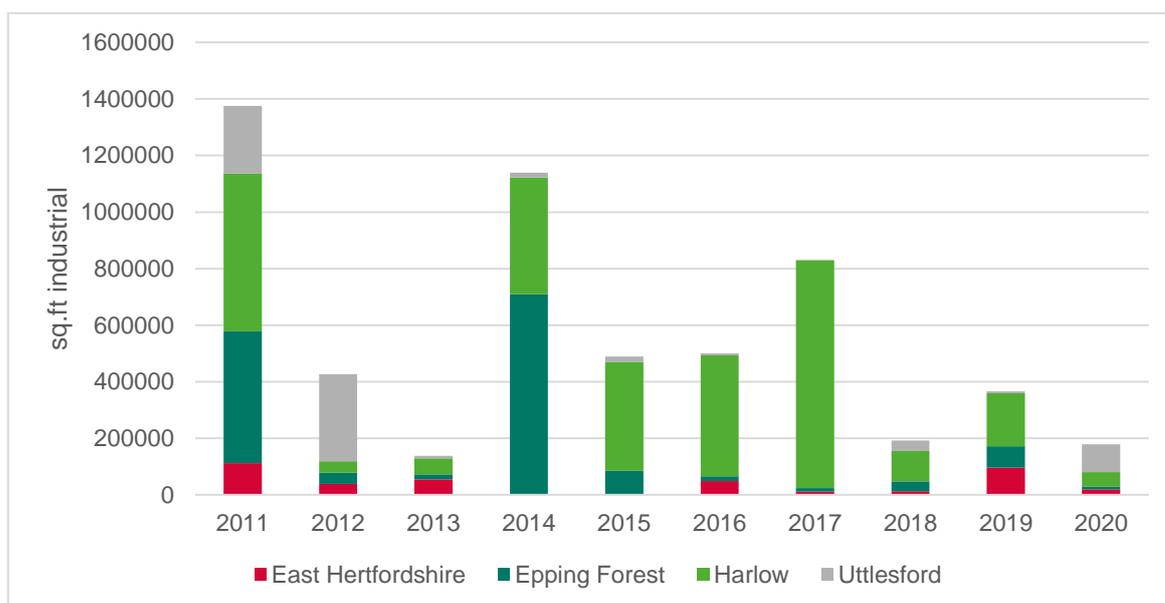
Source: IcenI analysis of CoStar data

- 5.49 Whilst it is typically expected that positive rental growth and declining availability results in new supply coming forwards, CoStar report just 1,500 sq.ft of industrial space underway in the District. The outlook therefore points to further rental growth in the short- term (next couple of years).

Freehold Activity

- 5.50 The level of freehold take-up is influenced by a number of larger deals, which saw much higher take-up across the PMA in 2011, 2014 and 2017. Uttlesford has accounted for a modest 7% of freehold take-up across the PMA since 2011 with 373,000 sq.ft (81,900 sq.m) of space being recorded as transacted, equivalent to an average 7605 sq.m per annum.

Figure 5.18: Industrial Freehold Transactions – PMA, 2011-20



Source: IcenI analysis of CoStar data

- 5.51 The focus of freehold deals in recent years has been on units of up to 22,000 sq.ft in Uttlesford; with the majority of deals for under 10,000 sq.ft of space.

Agent Feedback

- 5.52 IcenI has spoken to a number of commercially active local agents to understand current market conditions and gaps in supply. Coke Gearing notes a lack of industrial supply within the market in Uttlesford and more generally within 10 miles of Bishop’s Stortford with a 98% occupancy level within the industrial market. This is consistent with our findings from the CoStar data and our discussions with Mullucks. Demand outstrips supply and there is a need to bring forward new development.
- 5.53 Within a 10 mile radius of the Airport, Coke Gearing reports current market requirements for 1.8 million sq.ft of industrial space as at July 2021. There is demand for industrial space in a range of size bands including 30,000 – 40,000 sq.ft units from established manufacturing businesses in the District, together with larger requirements – including for units of 60,000 sq.ft, 70,000 sq.ft and 130,000 sq.ft. They report that they have just secured a letting to an Uttlesford occupier of a unit of 140,000 sq.ft in Braintree, who was unable to find suitable premises within the District. Mullucks appear more focused on smaller requirements of units of between 5,000 – 25,000 sq.ft.
- 5.54 Agents report a need to bring forward additional supply, particularly close to M11 Junction 8, which is the area of strongest occupier demand. The Saffron Malden market, in the north of the District, is tilted towards Cambridge and focused more towards R&D and bioscience activities; with industrial demand more limited influenced by the lack of decent access to the motorway.

6. BUSINESS SURVEY

6.1 An online business survey was undertaken over summer 2021 which received 83 responses from Uttlesford businesses. The findings of the survey which are of relevance to this study and economic development in Uttlesford are detailed below. It is noted that the majority of businesses, based on staff and turnover, were micro businesses.

Respondents

6.2 Over 60% of respondent businesses have been trading for over 10 years with lower numbers of respondents for lower trading times.

6.3 Businesses were asked if they operated online only, to which 11 % said yes.

6.4 The table below shows the split of type of premises occupied by the respondent businesses. It can be seen that the largest proportion of respondents work from home or were mobile. Around 18% of respondent businesses occupy offices and 12% occupy industrial space. This means that in total, around 30% of respondent businesses occupy former B Class floorspace.

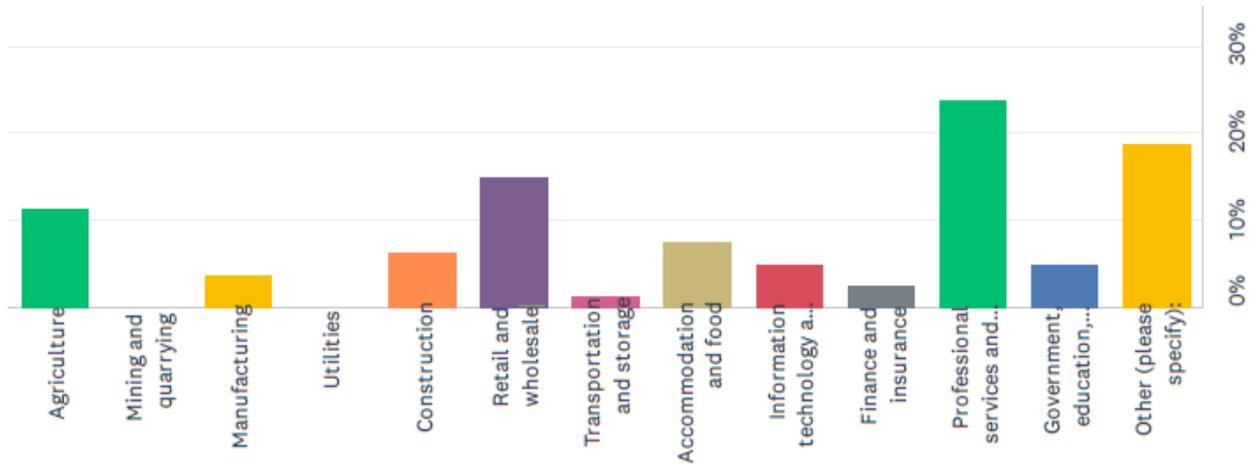
Table 6.1 What type of premises do you occupy?

ANSWER CHOICES	RESPONSES	
Industrial	12.33%	9
Distribution	0.00%	0
Retail	10.96%	8
Offices	17.81%	13
Restaurants	1.37%	1
Hotel/Conference Centre	0.00%	0
Community Building	4.11%	3
Agricultural	16.44%	12
No premises - Mobile/Work From Home	36.99%	27
TOTAL		73

6.5 As can be seen in the figure below, the largest proportion of respondent businesses felt they were in Professional services and business support (24%). However, over half of these businesses operated from a home (or were mobile), explaining the fact that only 18% of all businesses were office-based. Other traditionally office-based sectors made up a small proportion of respondents (5% in Information technology and communication, 3% in Finance and insurance). The second highest proportion of respondents classed themselves as Other (19%). However, on further inspection of the data it is likely that only around 8% of the respondents should fall within the other category. The third largest

sector is Retail and Wholesale at 15%. The 12% of respondents which occupy industrial premises are made up of businesses from a range of sectors but most undertake some manufacturing activities (based on their own description).

Figure 6.1 – Which of these categories best reflects the nature of your business?

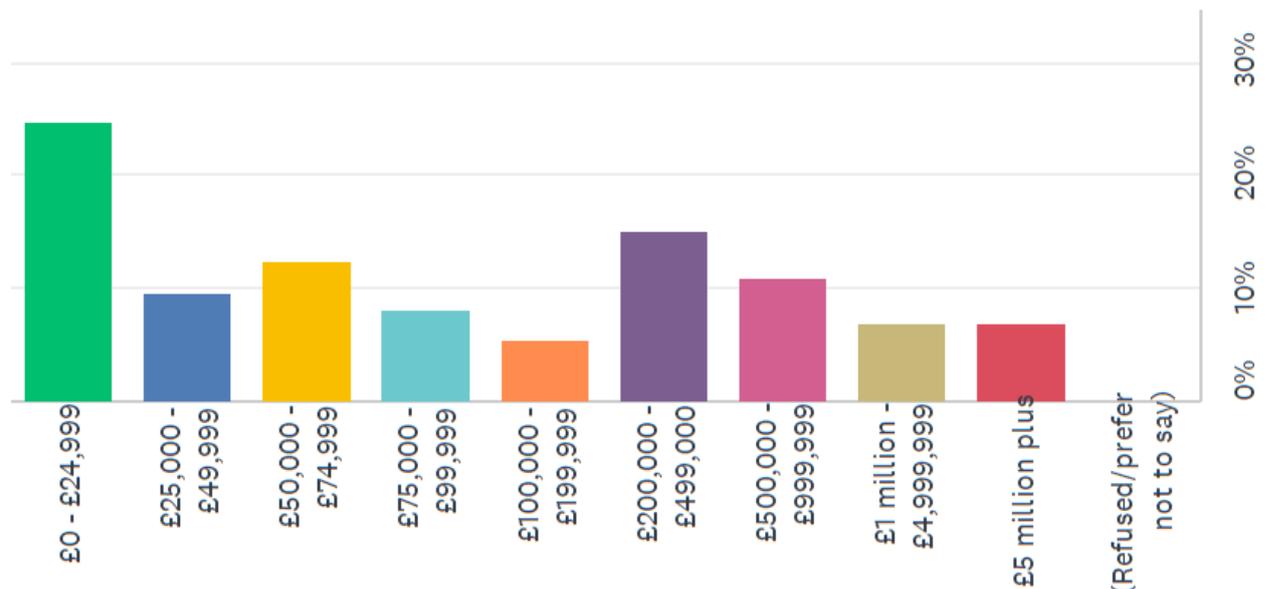


Business Size - Turnover and Employment

Turnover

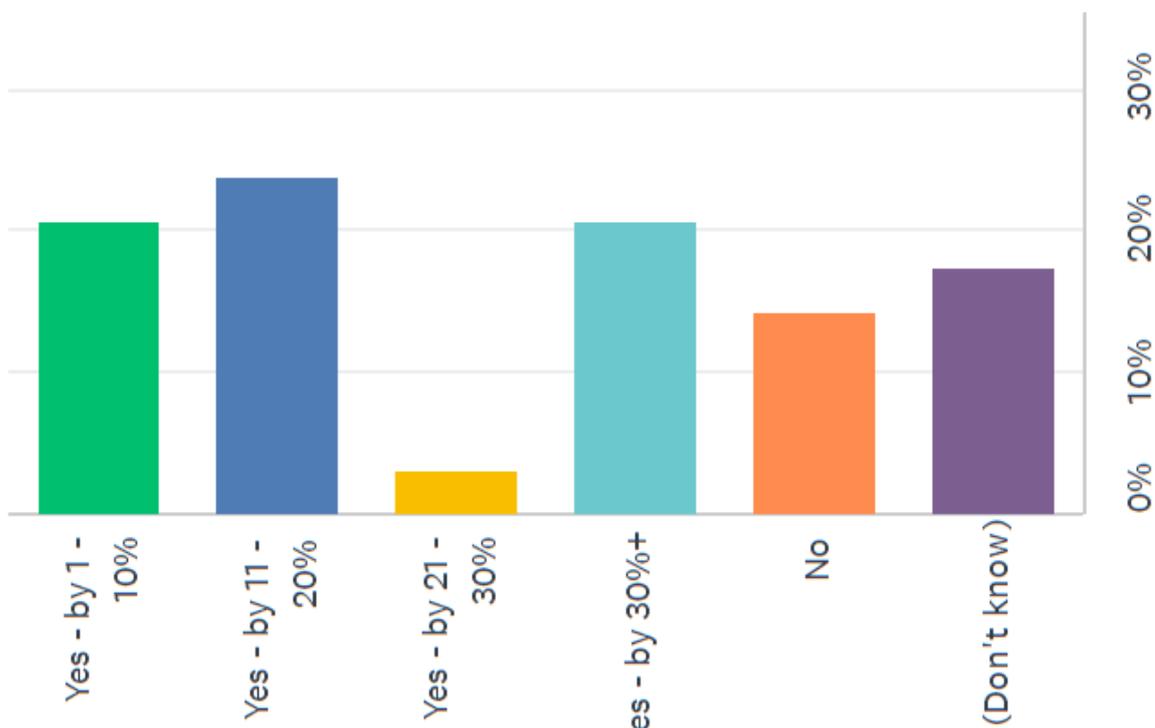
6.6 The figure below shows that the largest proportion (25%) of respondent businesses had a very low turnover of less than £25,000. Around 70% of the businesses with a turnover of less than £25,000 were based from a home or were mobile, and around 60% were in Accommodation and food, Retail and wholesale or Agriculture.

Figure 6.2 – What was your approximate annual turnover, pre-pandemic?



Around a third of the businesses surveyed said that they were looking to expand or diversify their business. The figure below shows how the businesses surveyed expected turnover to grow, on pre-pandemic levels, over the next 1-2 years. It can be seen that whilst only a third of businesses were looking to expand/diversify their business, around two thirds of the businesses which were able to answer expected some turnover growth in the next 1-2 years.

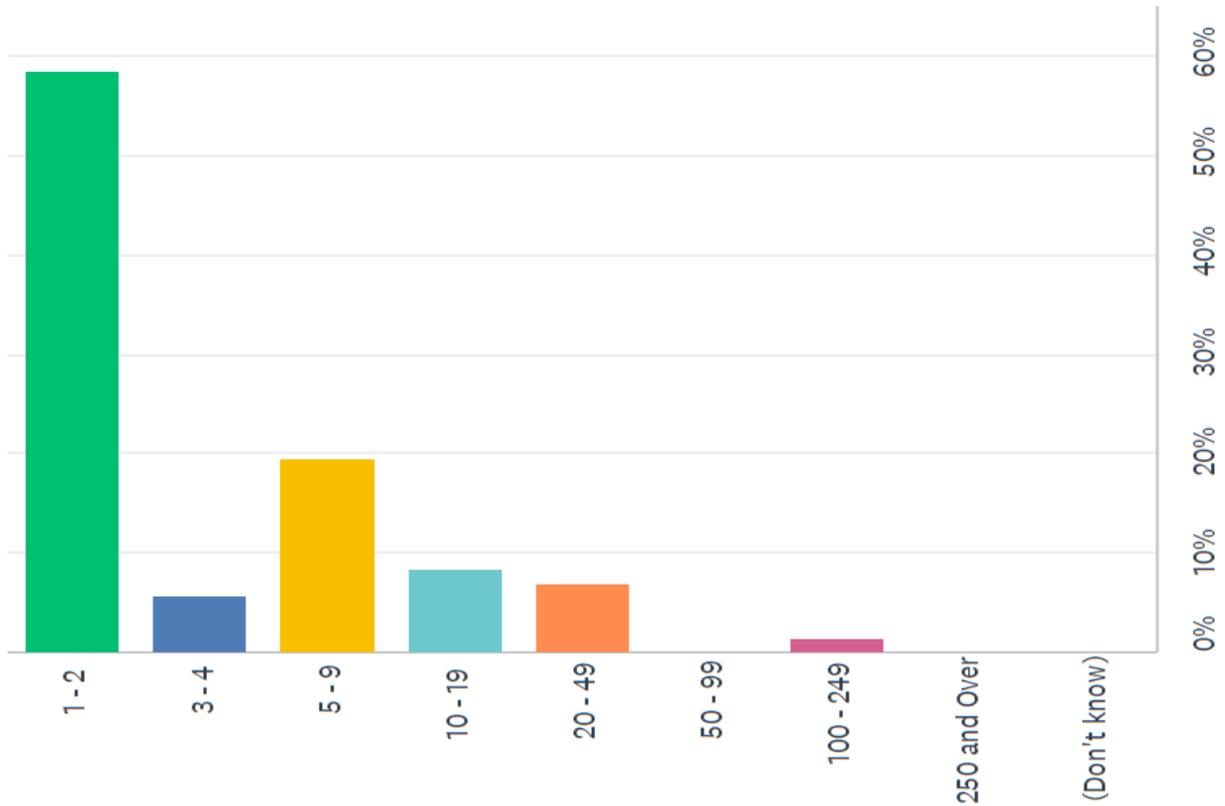
Figure 6.3 – Is your turnover* expected to grow in the next 1-2 years? (*relative to your average pre-pandemic turnover in 2019)



Employment

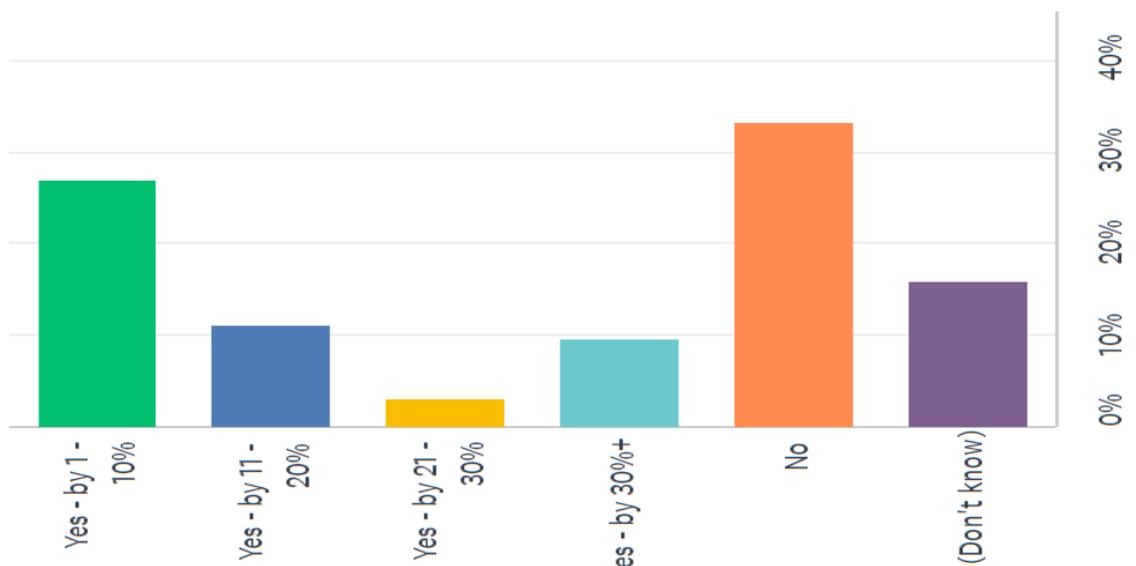
- 6.7 The figure below shows that over half (58%) of the respondent businesses had 1-2 employees. These businesses are spread across a wide range of sectors. Nearly 99% of respondent businesses had less than 50 employees with just one business with between 100 and 249 employees.
- 6.8 Around 15% of the respondent businesses employed apprentices. These businesses are spread across a wide range of sectors. They were all businesses with greater than 4 employees and over £75,000 in turnover (most of which had over £500,000 turnover).
- 6.9 Around 43% of the respondents stated that they intended to employ apprentices in the future. Of these, six had a turnover of less than £50,000 (five of which had turnover less than £25,000) and 10 had less than 5 employees.

Figure 6.4 – Including yourself, how many employees do you have?



6.10 The figure below shows by how much businesses felt they were likely to grow, in terms of employment, the next 1-2 years.

Figure 6.5 – Are staff numbers growing/expected to grow in the next 1-2 years?



6.11 Around half of the businesses which stated growth expectations thought they would grow by between 1 and 10% with the other half saying they would grow by between 11 and 30%.

Local Barriers to Growth

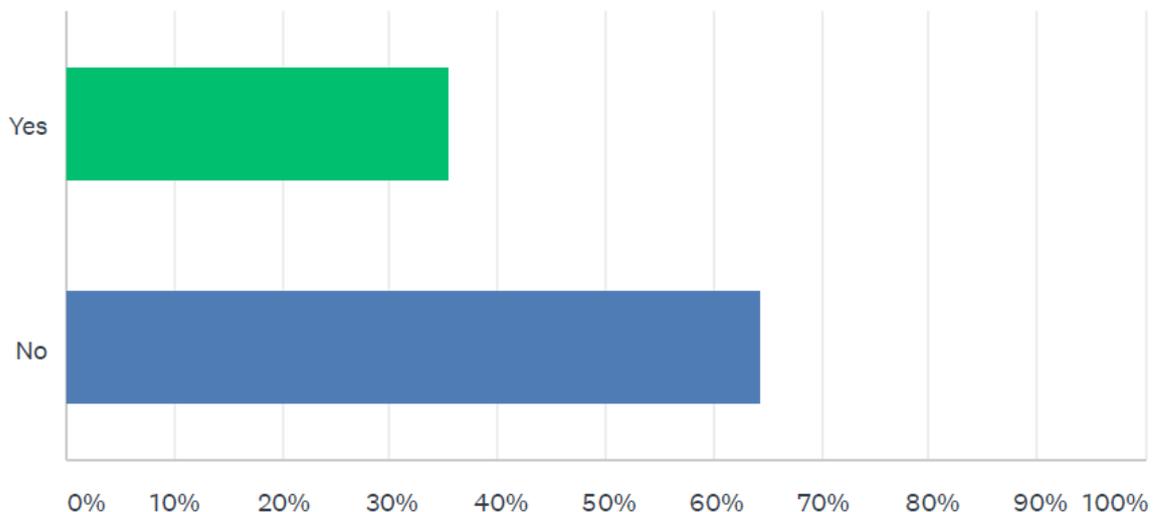
- 6.12 When asked about whether there were local barriers to business growth the following key themes arose – bearing in mind the limited sample survey.
- 6.13 A barrier to business growth was the **planning system/the planning authority** (Issues with planning were also mentioned by a further 2 businesses when asked for general comments at the end of the survey). It was suggested that getting planning permission was slow and inefficient. One business stated that there was a lack of engagement in planning and that the system was faceless. 4 out of the 7 businesses mentioning issues with the planning system were agricultural businesses. This issue should be investigated further and reflected in future planning policy and spatial strategy documents.
- 6.14 Linked to the issues around planning was the reported issue of **NIMBY'ism**. This was mentioned by two agricultural businesses. The other agricultural business also mentioned a **lack of rural/agricultural housing**– something which is likely to be related to an ability to gain planning permission. A general **lack of housing** was also mentioned by another business.
- 6.15 Five businesses mentioned that there was a **lack of suitable premises** in Uttlesford. One office-based company stated that they would like to purchase commercial premises which “is not really an option in Saffron Walden”. Issues around premises are analysed further below.
- 6.16 The other most frequently mentioned barrier to business growth was the **low supply of (skilled) staff**. One business to mention this was in the wholesale trade and specifically had shortages of lorry drivers and warehouse operatives. Another business with significant growth plans stated that they were likely to move out of the area due to ‘lack of resources’ and specifically mentioned staff and skilled staff. An agricultural business also mentioned the issue of getting suitable staff, but also accommodating them - linked to the lack of supply of agricultural housing mentioned above.
- 6.17 A **lack of funding/financial support** from local and central government was mentioned by 2 businesses – one agricultural and one design and manufacturing. A further business stated that there was a ‘total lack of local government and large business to engage the services of local micro businesses due to blocks on their procurement’.
- 6.18 Other barriers to growth mentioned more than once were; a lack of (free) parking in towns / parking problems; issues with roads / lack of road improvements; high tax (specifically business rates mentioned once); lack of customers; and a lack of quality internet coverage. One of the businesses to mention a ‘lack of broadband was an agricultural business’.
- 6.19 When asked ‘do you have any staffing issues or skills needs?’, around 20 out of the businesses surveyed responded affirmatively. Over half of these businesses cited problems getting

skilled/qualified staff. One business specifically referred to a lack of technically astute apprentices whilst another said it was difficult to get committed apprentices and another business empathised the need for trainees. One agricultural business stated that whilst they had a loyal workforce, getting (and accommodating) seasonal staff was an issue.

Impact of Technological and Other Change

- 6.20 The figure below shows that around a third of businesses surveyed felt they were being / would be impacted by technological change or changing ways of working. A number of the businesses stated that this was because of home working and it was noted that that better digital infrastructure is needed across Uttlesford to facilitate this. Recent commitments to improving digital connectivity in the District (including through the Digital Innovation Zone) should be built on in future planning policy and economic strategy.
- 6.21 Three businesses stated that they would be impacted by a move to the use of more digital technology. One company had already embraced this move. However, two companies suggested they needed a better website and online communications. One of these businesses said that there was very little support for micro businesses to transition to more digital forms of operation.
- 6.22 Two agricultural businesses felt that they would be / are being impacted to a transition to the use of electric vehicles including use of an electric agricultural robot.

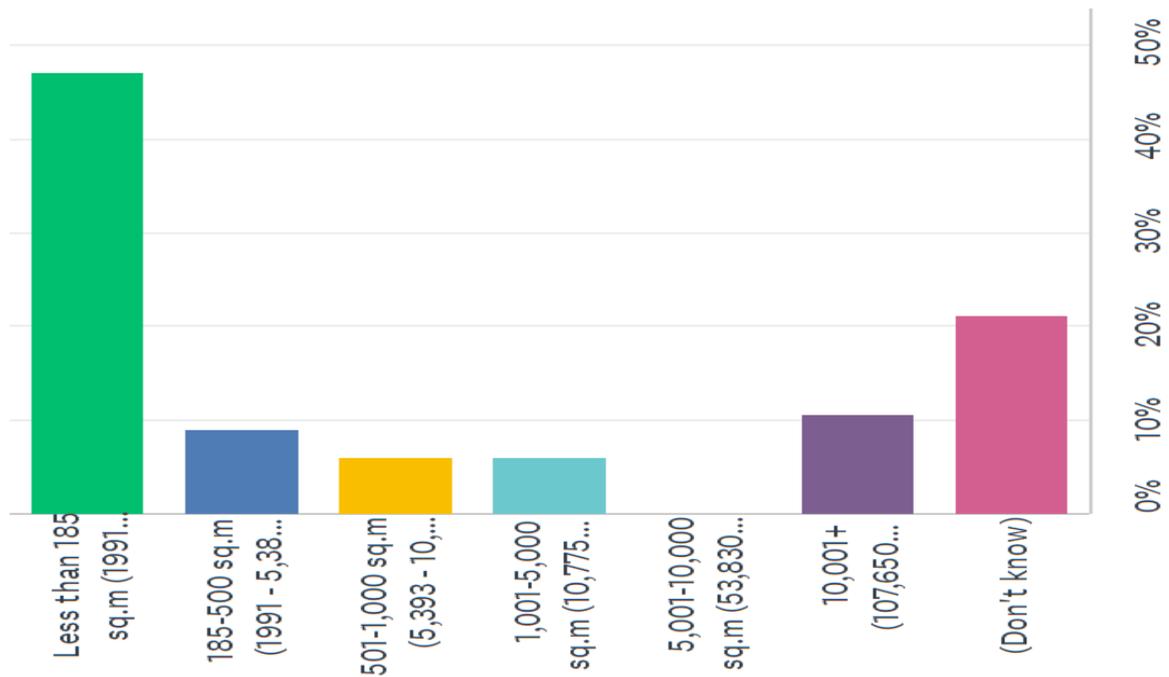
Figure 6.6 – Are there new technologies or ways of working that impact your business or business sector?



Premises

- 6.23 The figure below shows the split of premises by size. It can be seen that the majority of business who were able to respond had floorspace of less than 185 sqm. This proportion is higher for office-based businesses at around two thirds. On the other hand, industrial and distribution businesses are based in a mix of sizes of premises.

Figure 6.7 – What is the approximate floorspace/site size of your premises?



- 6.24 The table below provides information on the adequacy of existing premises. It can be seen that the around 40% of businesses think their premises meet their current and/or future needs and 35% think they meet current needs only. Of those finding the premises inadequate, around 12% are looking to relocate, of which 8% are looking to re-locate out of Uttlesford.

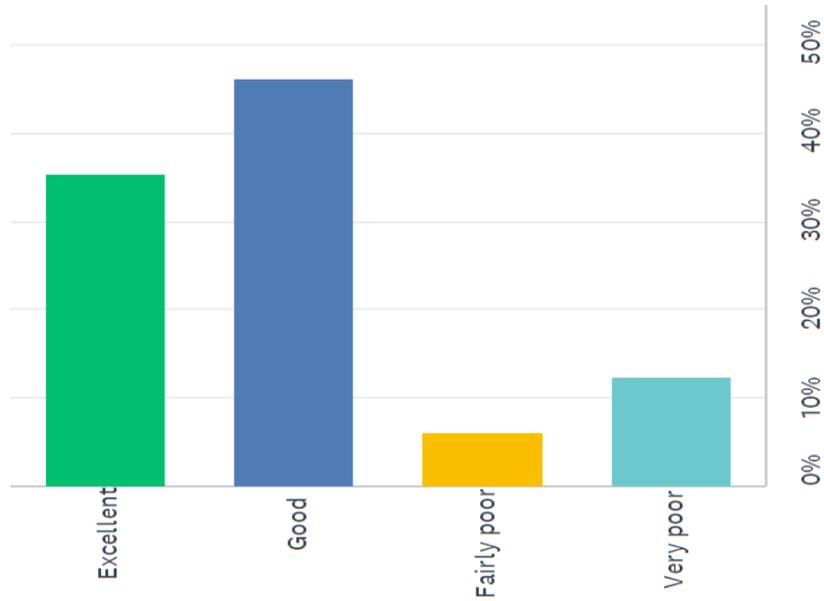
Table 6.2 Which of the following best answers how adequate your premises are for your needs?

ANSWER CHOICES	RESPONSES	
Yes they meet our current needs only	35.38%	23
Yes they meet our current and foreseeable future needs	40.00%	26
No they don't meet our current needs but we plan to remain	12.31%	8
No they don't meet our current needs and we are looking to relocate within Uttlesford	4.62%	3
No the don't meet our current needs and we are looking to relocate outside Uttlesford	7.69%	5
TOTAL		65

- 6.25 The figure below shows how good businesses felt the broadband speed and reliability was at their premises. Over 80% of respondent businesses felt the speed was excellent or good. However,

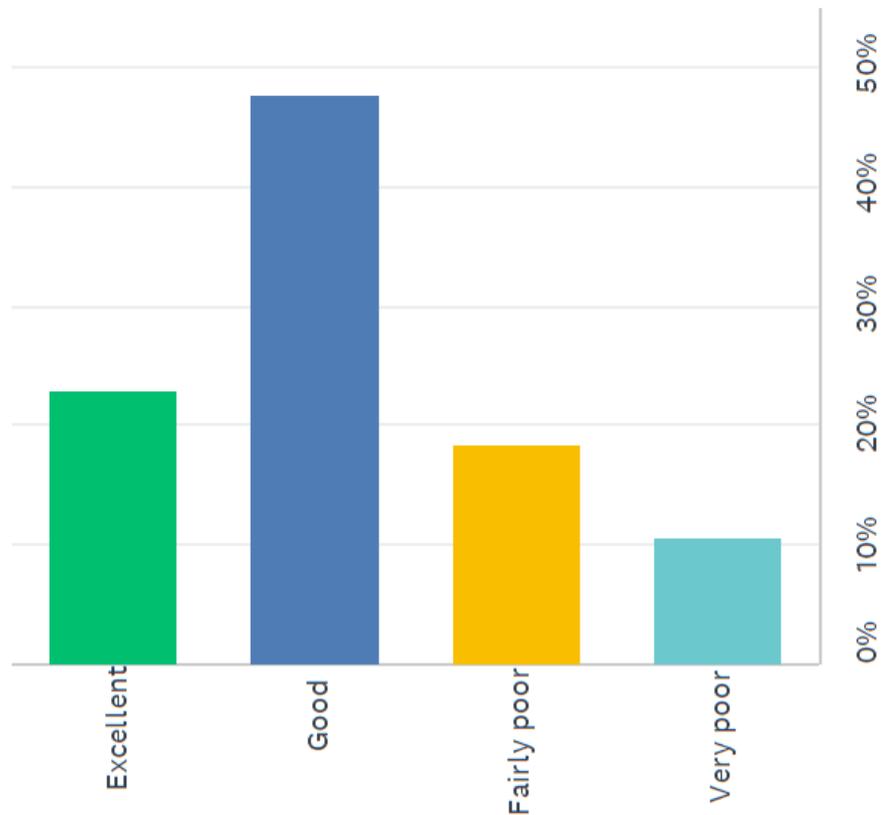
amongst those based at agricultural premises, around half felt their broadband connectivity was very poor.

Figure 6.8 – At your premises, how adequate is your broadband speed and reliability?



6.26 The figure below shows how good businesses felt mobile connection was at there premises. Around 70% of businesses felt mobile connection was good or very good.

Figure 6.9 – At your premises, how adequate is your 4G/5G speed and reliability?



6.27 Out of the 39 businesses which suggested a building/site specific factor was constraining business operation, 9 cited lack of space as the main/a factor in doing so. 2 out of 8 office-based businesses suggested a building/site specific factor was constraining business operation and 12 office-based businesses in total cited space as an issue. Accessibility (in terms of public transport, parking, and visibility from street) was also an issue for a significant number of office-based business who felt their premises were limiting operations.

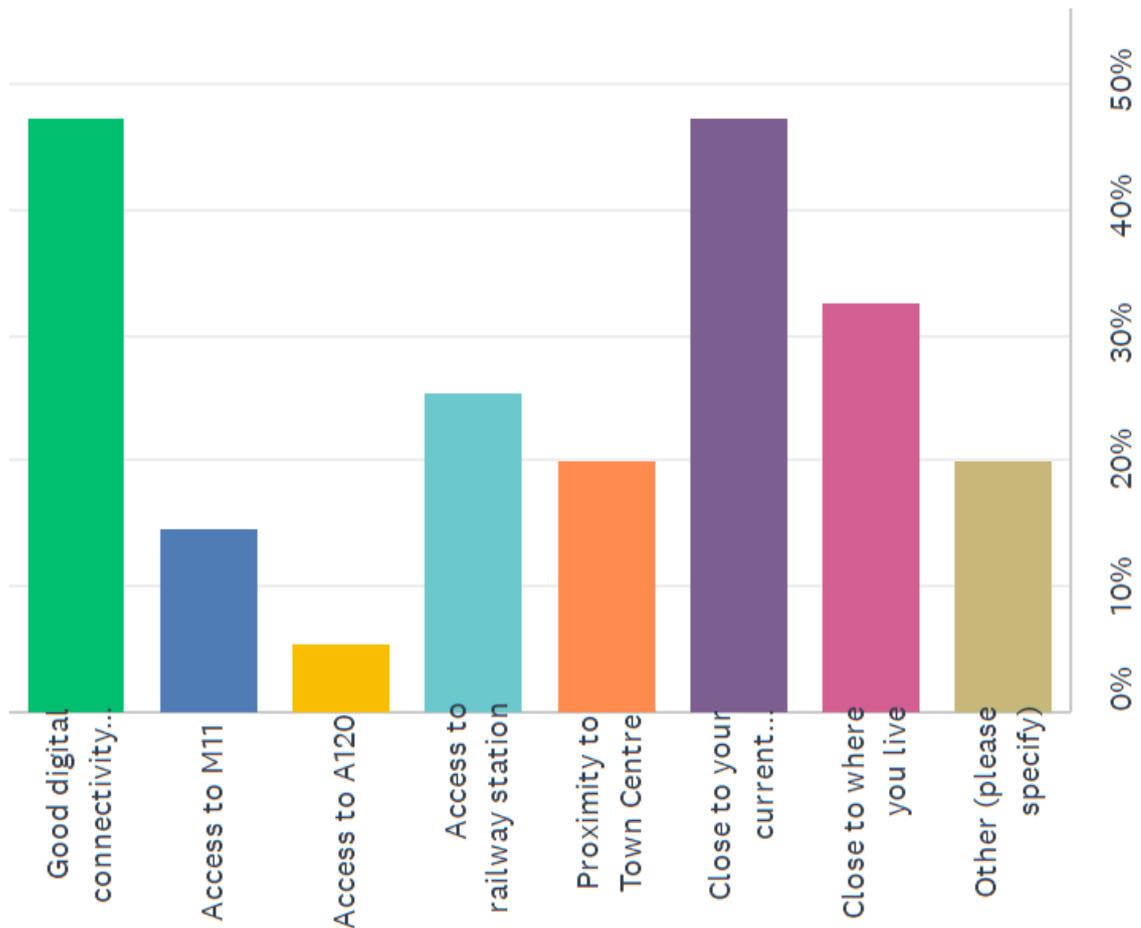
6.28 The table below shows that floorspace needs are varied but that need for smaller premises is generally higher. However, all businesses said that if they were to move that they would like their new premises to be about the same size or bigger.

Table 6.3 What sized floorspace do you need?

ANSWER CHOICES	RESPONSES	
Less than 185 sq.m (1991 sq.ft.)	24.56%	14
185-500 sq.m (1991 - 5,382 sq.ft.)	19.30%	11
501-1,000 sq.m (5,393 - 10,764 sq.ft.)	10.53%	6
1,001-5,000 sq.m (10,775 - 53,820 sq.ft.)	8.77%	5
5,001-10,000 sq.m (53,830 - 107,639 sq.ft.)	3.51%	2
10,001+ (107,650 sq.ft.) and above	7.02%	4
(Don't know)	26.32%	15
TOTAL		57

6.29 The figure below shows what the businesses surveyed deemed to be key factors when choosing the location of new premises. It can be seen that the most important factors were good digital connectivity and being close to their current location. Access to the M11 and A120 was not deemed important to many businesses. However, general road access may still be important.

Figure 6.10 – What would be the key factors influencing your choice of a new location site?



Location of Customers/Clients and Suppliers

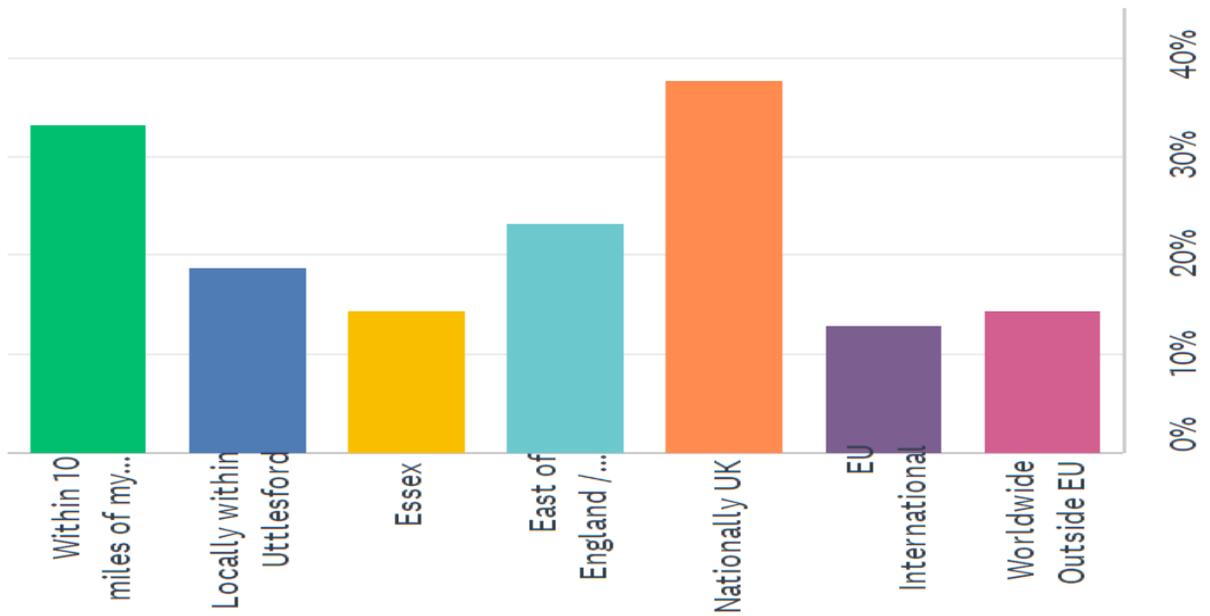
- 6.30 The table below indicates where the businesses surveyed sell goods/services based on the average proportion of customers businesses had in each location. It can be seen that on average most sales were to customers within 10 miles of respondent businesses premises. On average 14% of sales were to customers in the EU, and 23% of sales were to outside of the EU.

Table 6.4 Broadly, what proportion of your services/goods do you sell to customers in different areas?

Location of Customers	%
Within 10 miles of my premises	47
Locally within Uttlesford (but not within 10 miles)	35
Essex (but not within Uttlesford)	29
East of England / London (but not within Essex)	44
Nationally UK (But not within East of England/London)	43
International - EU (But not within UK)	14
International -Outside EU	23

- 6.31 The figure below shows the percentage of businesses which source a significant proportion of their service and goods from each of the locations listed. It can be seen that around a third of businesses have suppliers within 10 miles of their premises with a further 19% having suppliers somewhere else within Uttlesford.
- 6.32 Interestingly a large proportion of the businesses which both export their goods and services and use local suppliers (within 10 miles or within Uttlesford) are in the Professional services and business support sector (as well as the Retail and wholesale sector).

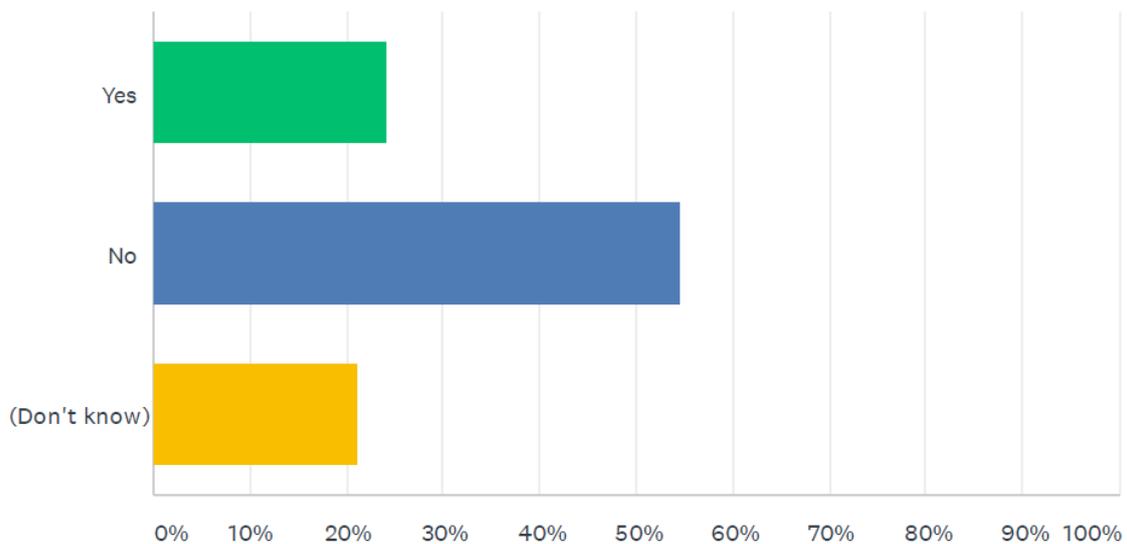
Figure 6.11 – Broadly, what proportion of your supply chain is in each area?



Relocation Plans

6.33 The figure below shows that over half of the respondent business were not looking to relocate in the next 5 years whilst around 20% did not know. Around a quarter of business surveyed did want to relocate in the next 5 years. The vast majority of businesses that were looking to re-locate were micro businesses. Around half of these were office based or had no premises. This suggests there is demand for small office space and light industrial space.

Figure 6.12 – Is the business looking to relocate in the next 5 years?



-
- 6.34 Out of the businesses wanting new premises, all said they would like them to be the same size or bigger, with around half saying they would like their premises to be a little bigger.
- 6.35 Nearly 40% of businesses surveyed stated they would consider intensification/expansion of their existing site. Between a third and half of these were currently in agricultural premises. This suggests that there is potential for growth of the rural economy.

Opinions on Uttlesford Commercial Property

- 6.36 Around 10-15 of the businesses surveyed said that there was **not enough or not enough quality/suitable space in Uttlesford**. Around half of these stated that the issue was an availability of any space with the other half stating issues with the availability of quality/suitable space.
- 6.37 One design and manufacturing company said that space is too large and more small properties with serviced rooms are needed. A creative professional services company stated that there was not enough micro business space for creatives who need to be able to spread work out. A small, currently homebased business stated that making the jump to a new premises was daunting with 'no way to test run ideas or business plans and is very risky' and suggest providing more flexible space that can be rented on a daily/weekly/monthly basis which would help 'so many gain traction and confidence to make the jump to a larger premise [or more permanent premises]'. Another, tech design and manufacture company stated that there was a lack of eco-friendly, A-rated space.
- 6.38 Around 7 of the businesses surveyed stated that commercial property in Uttlesford was **too expensive**. One states that, 'It's just too expensive for a micro business like mine and there are no tax breaks or incentives to move away from my office at home.'
- 6.39 Two businesses suggested that **the time taken to get planning permission was too slow** and another stated that planning rules needs to be more flexible to allow re-use of buildings. This was also identified as one of the key barriers to business growth in the District.
- 6.40 A farming businesses stated that they were looking to convert redundant agricultural buildings for commercial (and residential use) in response to very high demand for this type of space. They stated they would also like to build new premises (and have submitted options for the call for sites) which would 'offer additional benefits for the village'. Assuming other agricultural businesses are in a position to do the same (which was suggested when agricultural businesses were asked whether they would consider expansion) this suggests that there is potential for growth of the rural economy. However, another businesses stated that the roll out of rural broadband was slow. This could limit the growth and diversification of rural businesses.

Other comments

- 6.41 Throughout the survey, one business persistently highlighted a lack of support for micro-businesses (including in the other comments section). They feel that East Hertfordshire is much more active in supporting micro-businesses.

Summary and Conclusions

- 6.42 It should be noted that those responding don't necessarily reflect the District as a whole. Around 1.5-2% of businesses in Uttlesford responded to the survey 1.5-2% which is very low around means that the results could be impacted by sampling bias. However, around 83% of respondents were micro businesses which is just less than the percentage of micro-businesses in the District (~91%) and the sectoral split of respondents was representative of the District. Overall, the results should be treated with caution and should be used in conjunction with other evidence.

- 6.43 The findings of the business survey are summarised below. An assessment of how representative of the District each finding is likely to be is provided in italics.

- Traditionally office-based businesses tend to be home-based or mobile. *This is likely to be representative given the prominence of micro-enterprises in traditionally office-based sectors in Uttlesford and based on engagement with stakeholders regarding the need for small office space.*
- Most industrial premises-based businesses undertake some manufacturing type activities. *This is likely to be representative as this is the primary reason for occupying industrial premises.*
- Around 25% of businesses surveyed had a turnover of less than £25,000. Most of these were based from a home or were mobile, and around 60% were in Accommodation and food, Retail and wholesale or Agriculture. *It is likely to be a representative that most low turnover businesses are home-based or mobile (as these are micro-businesses often with 1 employees) and be in those sectors (given they are relatively low value).*
- Around a third of businesses surveyed said they were looking to expand or diversify and around two thirds expected their turnover to grow and all businesses expected employment numbers to grow. *It is uncertain whether this is likely to be representative but indicates an appetite for growth in the District which the Council should look to accommodate.*
- Around 15% of respondent businesses employed apprentices. *It is uncertain whether this is likely to be representative.*
- Key local barriers to growth include;

-
- Planning system/authority – *This was a recurring theme throughout the surveys and is therefore likely to be representative.*
 - NIMBY'ism – *It is uncertain whether this is likely to be representative but given the rural nature of Uttlesford and tensions between resident and business priorities it is reasonable.*
 - Lack of rural and agricultural housing (including for seasonal workers) – *Whether this is representative is uncertain given the fact that conversion to residential in agricultural areas is prominent in Uttlesford. However, a lack of affordable rural housing supply is more likely. Both should be tested by undertaking a housing needs assessment.*
 - Lack of suitable commercial premises (including those available to purchase) – *This is likely to be representative given our commercial market assessment identified low availability of industrial properties and a low availability of quality office properties.*
 - Low supply of skilled staff – *Uttlesford has a relatively skilled population, although it is likely that a significant proportion of skilled residents are out-commuters meaning that there may be a low supply of skilled staff for business within Uttlesford.*
- Around 10-15 of the businesses surveyed said that there was not enough or not enough quality/suitable space in Uttlesford. *This is likely to be representative given our commercial market assessment identified low availability of industrial properties and a low availability of quality office properties.*
 - Around 20 of the businesses surveyed had staffing and skills needs with a particular problem of getting skilled/qualified staff. *Uttlesford has a relatively skilled population, although it is likely that a significant proportion of skilled residents are out-commuters meaning that there may be a low supply of skilled staff for business within Uttlesford.*
 - Around a third of businesses surveyed felt they were being / would be impacted by technological change or changing ways of working. A key part of this issue was around the need for better digital technology and skills. Furthermore, digital connectivity would be the key factor for businesses if they were looking to choose new premises. *Our literature review identifies that there is a lack of digital connectivity in many parts of the district and digital skills are a key issue across the UK (and are likely to be even more so in rural areas which lack physical connectivity).*
 - Around a third of office-based business in Uttlesford were in premises of less than 185 sqm whilst industrial-based business are in a mix of premises sizes. *Our commercial market assessment identifies that Uttlesford's office market is focussed on very small space whilst Industrial is more mixed (but still on the smaller side).*

-
- Around 60% of businesses do not think their premises meet their current and/or future needs. *It is uncertain whether this finding is representative. However, for office space, this finding may be backed up by the fact that just 7% is of a high quality¹⁸.*
 - The need for smaller premises appears high in Uttlesford. All businesses said that that if they were to move that they would like their new premises to be about the same size or bigger. Our commercial market assessment identified. *Our commercial market assessment identifies that Uttlesford's office market is focussed on very small space whilst Industrial is more mixed (but still on the smaller side).*
 - Nearly 40% of businesses surveyed stated they would consider intensification/expansion of their existing site. *It is uncertain whether this finding is representative. However, in Iceni's experience, businesses often don't want to move but would like to expand and planning policy should accommodate this where possible.*
 - Around a quarter of businesses surveyed wanted to relocate in the next 5 years. A significant proportion of these were micro office-based/home-working businesses suggesting demand for small office space. *A demand for small office space is evidenced by our commercial market assessment.*
 - Around 7 of the businesses surveyed stated that commercial property in Uttlesford was too expensive. *Our commercial market assessment shows that industrial rents have risen sharply in recent years due to a lack of availability suggesting this finding may be representative for industrial property. Office rents have risen more gradually and are far lower than in neighbouring areas suggesting that this is less likely to be the case for offices, but may still be a significant issue.*

¹⁸ CoStar Star Rating 4-5.

7. ECONOMIC GROWTH: SECTORS AND DRIVERS

7.1 The *Uttlesford Economic Development Strategy and Action Plan 2018-21* (prepared by Uttlesford District Council in 2018) identifies a number of key sectoral groups for the District. These are as follows:

- the rural economy
- the visitor economy
- life sciences, research and innovation.

7.2 In addition, **activities linked directly or indirectly to Stansted Airport are effectively a fourth key sectoral group**; this embraces aviation, some advanced manufacturing and logistics/warehousing activities, as well as retail, hotel and other ancillary functions linked to a major airport. This sectoral group crosses over with the visitor economy. There is also crossover between the rural and visitor economies.

7.3 Furthermore, given Uttlesford's declaration of a climate and ecological emergency and the ability of Uttlesford's rural businesses to diversify (as detailed below), **the Green Economy is also likely to be a key for the District.**

7.4 This section of the report looks in more detail at the issues and opportunities related to some of these specific sectors, notably those of the rural, visitor, green and life sciences. Stansted Airport is dealt with separately in the following section.

The Rural Economy

7.5 For the purposes of this analysis rural areas are defined as all areas which are outside Built-up Areas (BUAs).

The Economic Make-up of Uttlesford's Rural Areas

7.6 An analysis of the business base (detailed above in the baseline review) shows that around 68% of Uttlesford's local business units are outside the key towns/areas of Birchanger (including Stansted Airport), Great Dunmow and Saffron Walden. Furthermore, 42% of medium and large enterprises are outside these key towns/areas.

-
- 7.7 Based on IDBR data¹⁹, around 26% of employment is in rural areas and 53% is outside of the key towns/areas of Birchanger (including Stansted Airport), Great Dunmow and Saffron Walden.
- 7.8 This data shows that rural areas and rural town/villages within Uttlesford accommodate a very significant portion of economic activity within the district. Given the fact that, at a national level, productivity in the rural economy is at least 16% less than the average²⁰, the rural economy can be a weakness but also offers great potential for economic growth.
- 7.9 Some 86% of local businesses in rural areas of Uttlesford are defined as micro (less than 10 persons in employment). This drives the stronger focus on micro-businesses across the District relative to the regional and national averages.
- 7.10 Rural areas of Uttlesford accommodate diverse economic activity. The largest employment sectors in these areas are Wholesale and retail (12.9%), Accommodation and food services (12.6%), Professional, scientific and technical activities (11.7%), Manufacturing (10.1%), Administrative and support service activities (10.1%) and Construction (9.3%).

Rural Diversification

- 7.11 Rural economies are changing. Based on commuting patterns, rural areas of Uttlesford are generally home to people who work elsewhere in the district or in other districts. These residents tend to be relatively well qualified and work in high order occupations. Since the onset of Covid-19, more of these types of people have moved to rural Uttlesford and are likely to continue to do so. Given this demographic, it is likely that number of micro-enterprises in these areas is likely to increase (potentially increasing the size of the already large Professional, scientific and technical services and other similar sectors).
- 7.12 At present business formation rates are modest and business survival rates are relatively low in the district. This suggests that more could be done to support businesses in Uttlesford, particularly micro-businesses based, many of which are based in rural areas.
- 7.13 There appears to be an opportunity to diversify and grow Uttlesford's Rural Economy, however more support may be needed. One potential solution may be to focus floorspace provision of small (potentially shared) units in rural areas which offer micro businesses an alternative to working from home, particularly in relation office type premises.

¹⁹ It is recommended that BRES data is used for analysis of employment numbers. However, BRES data is not available at BUA level.

²⁰ CLA/Rural Powerhouse, Supporters Briefing

-
- 7.14 There is also potential for growth of non-office-based sectors (e.g. manufacturing). Engagement with stakeholders revealed that there was a lack of workshop space (particularly incubator space for small businesses). This could be accommodated on farm premises and such units do exist although are of varying quality. Business survey respondents indicated they were looking to convert agricultural buildings to commercial (and/or residential) use. Whilst these premises can be beneficial for general space and start up space, they can also lack quality accommodation and services better located at business / industrial parks.
- 7.15 **Agri-tech, Agri-food** and Forestry-tech sectors may provide opportunity to deliver growth and support sustainable food production, maintain plant and animal health and support and enhance natural habitats.
- 7.16 The Essex Plant innovation Centre (EPIC) launched in 2019 as part of the University of Essex. EPIC's current projects include state-of-the-art robotics and AI for crop harvesting as well as developments in hydroponic systems and LED lighting for vertical farming. It is noted that the South East LEP has secured £18m for the agritech, food and drink sectors although this is focused in the Kent & Medway region. It is an initiative to drive innovation-led growth through UK Research and Innovation's flagship Strength in Places Fund. It will build upon more horticultural research undertaken at NIAB EMR in East Malling, Kent.
- 7.17 Directly north of Uttlesford, Greater Cambridge is host to the HQ of NIAB an independent, science-based crop research organisation, working across plant science, crop evaluation and agronomy. The centre includes offices, laboratories, growth room facilities and meeting rooms. The NIAB Seed Handling Unit (SHU) is located on the farm behind the HQ. Based near Soham in Cambridgeshire the Eastern Agri-Tech Innovation Hub includes a fully equipped laboratory, meeting room, office, field lab, and plenty of outdoor parking.
- 7.18 In April 2020 an appeal was dismissed for an AgriTech technology park in South Cambridgeshire, submitted originally 2017. This comprised of around 50 ha including 10ha of land for crop trials and up to 112,000 m² of employment floorspace with a mix agreed by condition of B1a office / B1b R&D / B1c light industrial - 92,000 m²; B1b laboratories - 11,800 m²; ancillary A3 / A5 - 2,000 m²; D1 - 3,000 m² D2 - 3,200 m².

The East of England is clearly an active area for Agritech and the above suggests there is further growth potential for the sector. Further specific feasibility research could be undertaken regarding this matter. *Agriculture, forestry and fishing*

-
- 7.19 Approximately 97% of land in Uttlesford is agricultural²¹, most of which is arable. Agriculture, forestry and fishing makes up 6.8% businesses in Uttlesford with a LQ of 1.6 when compared to the East of England and 1.7 when compared to England as a whole. Agriculture, forestry and fishing also has an employment based LQ of 2.1. This puts Agriculture, forestry and fishing in the top three most concentrated sectors in the district by both measures.
- 7.20 At the peak of Covid-19 furloughing (July 2020), 20% of Agriculture, forestry and fishing employments in the East of England and England as a whole were on furlough. This was much lower than the all economy averages for the region and England as a whole (30% and 32% respectively). By July the following year just 3% of Agriculture, forestry and fishing employments across England were on furlough compared to an average of 6% across all sectors. This suggests that the Agriculture, forestry and fishing sector was more resilient to the impacts of Covid-19 when compared to other sectors.
- 7.21 On the other hand, CE estimates/projections of employment by industry estimate that employment in Agriculture, forestry and fishing in Uttlesford fell from around 900 in 2019 to 500 in 2020. This is backed up by ONS Workforce Jobs data for the East of England which estimates that job in the sector fell from around 43,000 in June 2019 to 25,000 in June 2020 – a similar magnitude of decline. CE data did not estimate that there would be a recovery in Agriculture, forestry and fishing jobs in 2021 and projected that there would be no recovery in the future. Conversely, ONS Workforce Jobs data for the East of England estimates that in June 2021 Agriculture, forestry and fishing jobs reached 45,000, exceeding pre-Covid levels. This points to a strong recovery of the sector across the region which is also likely to have occurred/occur within Uttlesford.
- 7.22 Based on the data presented above, the future of the Agriculture, Forestry and Fishing in Uttlesford is uncertain. These uncertainties also exist at a national level due to changes in agricultural policy. Under the EU Common Agricultural Policy (CAP) the majority of agricultural subsidy was based on the amount of land a farmer farmed/owned²² - Direct Payments under the Basic Payment Scheme. The UK is now under an Agricultural Transition Period. Between now and 2027 the government will gradually introduce paying farmers for 'public goods' (environmental improvements and maintenance) under the Environmental Land Management (ELM) Scheme whilst gradually reducing Direct Payments. Government have guaranteed that the overall agricultural subsidy funding pot will remain at current levels until 2024 (the end of the current parliament).

²¹ Uttlesford District Council (2018). Uttlesford Economic Development Strategy 2018-2021.

-
- 7.23 In addition to the subsidy changes announced above, a new Farming Investment Fund will also be launched to support innovation and productivity by offering grants to pay for equipment, technology and infrastructure²³. There will also be increased investment in agricultural R&D.
- 7.24 Whilst farming and environmental groups have been broadly supportive of the new system of subsidies, farming groups are concerned about the speed of the transition period and the NFU called for a postponement of reductions to the Basic Payment Scheme planned for 2022 and 2023²⁴. The NFU believe that supply chain problems and labour shortages have made it hard for agricultural businesses to run effectively even before reductions in direct payments.
- 7.25 The National Food Strategy²⁵ states that it is not yet clear exactly how the money will be distributed making it hard for farmers to plan ahead. Furthermore, given current levels of funding are only guaranteed until 2024, if ELM payments are not sufficient for farmers to switch from conventional to sustainable farming practices they may farm more intensively to make up for lost revenue or stop farming. Finally, uncertainty regarding minimum food standards and tariffs in future trade deals may leave UK farmers unsure whether they will be undercut by those outside the UK.
- 7.26 The government states that, ‘the changes will be designed to ensure that by 2028, farmers in England can sustainably produce healthy food profitably without subsidy, whilst taking steps to improve the environment, improve animal health and welfare and reduce carbon emissions.’
- 7.27 The status of agricultural policy described above and that policy’s driving forces (productivity, climate change, the environment, food security), presents significant uncertainties, challenges and opportunities for the agricultural sector. In response, agricultural business will need to be plan ahead were possible, be responsive to threats and take advantage of opportunities to innovate. It is important that as a local authority, Uttlesford District Council, support them in doing this. Recommendations on how the Council can support agricultural (and other rural) businesses can be found in paragraphs 6.26 to 6.32 (below) and paragraph 10.7 of the Further Policy Development chapter.
- 7.28 Labour challenges also affect farming, as cited in the business survey and reported more widely in relation to the impact of the UK’s departure from the EU and the repatriation of European workers, causing increasing difficulty in recruiting general and seasonal workers, particularly given high local costs of living vs agricultural wages.

²³ <https://www.gov.uk/government/news/government-unveils-path-to-sustainable-farming-from-2021>

²⁴ <https://www.instituteforgovernment.org.uk/explainers/agriculture-subsidies-after-brexite>

- 7.29 **Digital connectivity** is vital in diversifying the rural economy - sectors such as the visitor economy need good internet to accommodate bookings and guests needs whilst connectivity is crucial in Professional, scientific and technical services as well as developing online marketing platforms for retail and manufacturing. Improving rural digital connectivity (broadband and mobile) is vital to the meeting many of the challenges and opportunities faced in the rural economy of Uttlesford. Quality mobile data coverage is required to allow in field innovations which can improve productivity and help meet climate and environmental policy requirements²⁶. More indirectly, better connectivity will help businesses – including farmers - plan find new markets, do taxes, apply for grants, collect data and relieve the need for travel. Farmers with superfast broadband are more likely to invest and expand and become more productive according to a recent NFU survey. Furthermore, two agricultural business surveyed recognised that they were needed to transition to more high tech forms of agriculture.
- 7.30 Uttlesford's Economic Development Strategy produced in 2018 stated that digital connectivity is particularly poor in rural parts of the district. In terms of broadband, business surveys backed this up – around half of businesses based at agricultural premises felt their broadband connectivity was very poor. However, Uttlesford is within the Digital Innovation Zone which aims to be the best connected are 'of its type' whilst installation of broadband is being pursued as part of the Covid Recovery Strategy for the district. **This push for digitalisation should be supported through planning policy and further emphasis should be placed on digitalisation in rural areas. More specifically, policies promoting on-farm mobile and broadband infrastructure (such as masts and fibre broadband) should be considered.** Dorset's "5G RuralDorset project" is a useful case study, being a 'ground-breaking' project to understand how next generation connectivity can help people live better, safer and more prosperous lives in rural communities, even in environments as sensitive as Dorset's UNESCO-designated world heritage coastline. The research and development project is contributing to the understanding of how 5G can be used to address some specific challenges – public safety, economic growth, food production and environmental – as well as create new opportunities in Dorset and rural communities across the UK. Emerging case studies are demonstrating the value in 5g in supporting a range of business including agriculture and aquaculture.
- 7.31 **In addition to providing digital infrastructure, it is vital to help ensure rural workers have the skills to use the technology.** This links to a need for wider skills development and the need for long-term skills programmes to help the rural economy innovate, become more productive and achieve better environmental outcomes.

²⁶ CLA Rural Powerhouse Supporters Briefing

-
- 7.32 Providing **sufficient housing and affordable housing in rural areas** is vital to unlocking the potential of rural businesses. The provision of affordable homes is particularly important (across the UK only 9% of houses in rural areas are affordable compared to 19% in urban areas) to retain/attract those who want to work in traditional rural industries such as farming. Two agricultural business survey respondents were concerned about the lack of affordable rural housing in Uttlesford. One agricultural business specifically stated that accommodating seasonal staff was difficult meaning more affordable rented accommodation (or other provision) for seasonal farm workers may also be required. **It is recommended that these particular housing needs are assessed when conducting Housing Needs Assessments and that if necessary local provisions are made to increase supply (for example by introducing permitted development rights for new affordable housing on rural exception sites).**
- 7.33 **As well as providing suitable and affordable rural housing, providing high quality rural services (transport, medical digital) is also vital to attracting and retaining the rural workforce.** One such service that is likely to be important is the provision of EV charging points. This will ensure rural economies remain resilient given the lack of public transport and policy to ban the sale of petrol/diesel cars by 2030. Furthermore, EV charging points can help support diversification, for example through growth of the visitor economy. Farms on the edge of rural villages are well placed to accommodate this infrastructure.
- 7.34 Despite potential issues around a lack of rural housing, there are concerns in Uttlesford that too many redundant farm buildings are being converted to residential use as this is more profitable than converting to other commercial uses. Furthermore, some business survey respondents mentioning issues with the planning system. **The potential need for more rural housing needs to be balanced with the need for commercial development and regeneration This balance should be informed by the findings of this employment needs study and the findings of past and future Housing Needs Assessments..**
- 7.35 There is a **need to allow farmers to modernise/replace buildings, expand and diversify, both from an economic and environmental sustainability perspective.** This need has been confirmed in Uttlesford through the business survey results which suggest that a significant number of business based at agricultural premises would consider intensification/expansion. From an environmental perspective, farmers may need to modernise and replace premises to increase resource efficiency and reduce GHG emissions whilst providing optimum conditions for livestock and crops. According to the NFU, blanket environmental requirements often mean that development is refused preventing farm-based businesses from becoming more environmentally friendly and generating green growth²⁷. . From an economic perspective, 65% of farm businesses rely on diversification, which is likely to require expansion and/or re-development of buildings. The NFU argue that local planning

²⁷ NFU – Levelling Up Rural Britain

policy should be rural-proofed by engaging the rural community and considering impacts on the rural economy and the environment. Further to this, they suggest that Development Orders and Right to Build Orders could be put in place to fast track farm building modernisation and replacement. **On the whole, local planning policy should be more flexible in order to better balance local amenity with the environmental and climate objectives and the needs of the rural economy.**

The Green Economy

7.36 In 2019, Uttlesford District Council declared a climate and ecological emergency and committed to achieving net-zero carbon status by 2030 and protecting and enhancing bio-diversity. In 2011, the Essex Local Economic Assessment reported that Uttlesford had roughly twice the levels of CO2 emissions per capita in comparison to the rest of Essex: the report stated that this was no doubt in part due to the presence of London Standard Airport in the south of the district.

7.37 Key issues for Uttlesford's green economy include:

- The 2018 report of the Essex Economic Commission identified sector strengths in low carbon and renewables in Uttlesford, however the report did not elaborate on this.
- In 2011, Essex had more than 600 companies operating within the environmental goods and services (EGS) sector employing roughly 10,000 people. This was identified as a county-level strength and it provides the backdrop for the development of the sector in Uttlesford.
- Uttlesford continues to have a locally significant land-based sector which ought to be a strength in relation to the key outcomes linked to the green economy. These could potentially provide a route to local produce and a more circular economy, helpful in relation to environmental objectives.
- High levels of CO2 emissions in Uttlesford may represent an opportunity for the development of alternative fuel sources and the adoption of innovative technologies. Working from home may also represent an opportunity to reduce carbon emissions through reduced car-based commuting (although the carbon balance will depend on the housing stock and the efficiency with which it can be heated)
- The draft Uttlesford Economic Recovery Plan outlines an intention to conduct research and commission specialist expertise into sectors that offer business growth opportunities, including the green economy.
- Essex is one of the sunniest counties in the UK with an average of 1,598 hours of sunshine per year compared to the national average of 1,373. Solar farms are currently under development at two sites near Thaxted and Saffron Walden.

- Jet Zero – there is an opportunity for Uttlesford, spearheaded by Stansted Airport, to lead the way on the government’s ambition to be carbon neutral in aviation by 2050.
- Construction, which is evidently a strength in Uttlesford, has a number of green economy related opportunities most notably in terms of retrofit of properties and new build using modern methods of construction. The retrofit agenda has been set back by the short lived green homes grants scheme by government, but is likely to remain a priority given the impact on overall carbon emissions and the move for example away from gas powered boilers.

7.38 It is recognised that ‘green jobs’ are often ill defined and broadly relate to any carbon reducing activity. Local authorities have a role to play in place shaping, transport policy, social housing and waste management.

The Visitor Economy

7.39 In 2018, Uttlesford’s visitor economy represented the second most important income strand for the district after retail spending. The district’s visitor economy is best understood in relation to two main elements.

7.40 One part is centred around the historic market towns of Saffron Walden, Great Dunmow and Thaxted as well as regionally and nationally important visitor attractions²⁸.

7.41 A second element is linked to London Stansted Airport. Within Uttlesford, many of the visitor-related amenities are linked to an international airport – hotels, car parks, conference facilities, etc. Because of the Airport, large numbers of international visitors – both business and leisure-related – pass through the district. The anticipated expansion of the airport (see preceding section) will increase direct and indirect employment growth related to the airport including the visitor economy.

7.42 Key strengths/opportunities for Uttlesford’s visitor economy include:

- Town centres in Saffron Walden and Great Dunmow are a draw for many shoppers and visitors - both offer a range of independent stores, cafes and service businesses.
- The quality of Uttlesford’s natural environment is high, and there are walking routes and wildlife sites.

²⁸ Saffron Hall, Audley End House, Bridge End Gardens, Fry Art Gallery, Audley End Railway, St Mary the Virgin Parish Church, Saffron Walden Museum, Priors’ Hall Barn, Gardens of Easton Lodge, Great Dunmow Maltings, Mountfitchet Castle and Toy Museum, St Mary’s Church Stansted, Hatfield Forest, Thaxted Morris Festival, Dunmow Flitch, St Botolph’s Saxon Church, Hadstock and Chickney St Mary’s

- Uttlesford has regionally and nationally important arts, heritage and cultural assets and around 3,700 listed buildings.
- Uttlesford benefits from two high quality tourism services - Visit Essex and Visit Cambridge & Beyond. There is also an award-winning Tourist Information Centre in Saffron Walden.
- Excellent strategic transport connections including road (M11), rail (West Anglia Mainline) and air links (London Stansted Airport).
- Uttlesford's proximity to Cambridge and London (both of which are international tourism destinations) presents a significant opportunity, particularly when linked to Uttlesford's historic assets.
- Future investment in Stansted Airport is expected to increase the volume of international visitors passing through the district and there is potential for better coordination between Stansted and the Uttlesford hospitality economic offer and opportunity.
- Working from home presents an opportunity for increased spend in local hospitality businesses.
- A strategic priority of the SELEP Economic Recovery and Renewal Strategy is to support the recovery, adaptation and growth of the visitor economy.

Life Sciences Research and Innovation

- 7.43 As noted in Appendix A 'Working Paper A: Literature Review', a key local economic driver in Uttlesford is Chesterford Research Park. This is highlighted by the historic employment data. Located in the north of the District, Chesterford Research Park provides laboratory and office space for biotechnology, pharmaceutical and technology R&D companies. Current occupiers include AstraZeneca, Cambridge Epigenetix, Microbotica and Oxford Nanopore Technologies.
- 7.44 Chesterford Research Park is working closely with Granta Park, Babraham Research Park and the Wellcome Trust Sanger Institute (in South Cambridgeshire) as part of the South East Cambridge Cluster. Cambridge and South Cambridgeshire form a world leading cluster of life sciences research institutes including Addenbrookes Hospital and Cambridge University. The evidence base for the Greater Cambridge authorities suggests a very positive outlook for the life sciences sector employment growth and floorspace requirements²⁹.

²⁹ <https://www.greatercambridgeplanning.org/media/1399/greater-cambridge-employment-land-and-economic-development-evidence-study-gl-hearn-nov2020.pdf>

-
- 7.45 The UK Innovation Corridor runs from London to Cambridge (and beyond) via Uttlesford. The Innovation Corridor is considered a dynamic ecosystem of “international businesses, maverick academics, ambitious start-ups, City finance and law firms”³⁰ cross-pollinating to accelerate their success. The UK Innovation Corridor Local Industrial Strategy Prospectus - a Local Industrial Strategy Prospectus for the UK’s leading tech region - was launched June 2019. There are six ‘asks’ which include *Promoting UKIC’s global leadership and excellence as the country’s key life sciences and agritech Corridor, uniquely able to compete with global competitors.*
- 7.46 Chesterford Research Park is Uttlesford’s most prominent R&D facility. The Park masterplan set out the potential for around 1m sqft for research and development uses of which approximately 300,000 sq ft of space is already occupied. Around 700,000 sqft or 65,000 sqm remains for construction of which some has planning permission. At a density of 36 sqm per FTE (GIA) this would support around 1,800 additional jobs direct. Based on growth in recent years in the sector (see preceding section) and high rates of demand for such accommodation it would be reasonable to expect that by the end of the Plan period the masterplan could have been developed in full. This would also support the out commuting pressures on the District’s workforce, providing higher wage employment and improving sustainability considering the proximity to Saffron Walden.

Issues relating to workforce skills

- 7.47 In general terms, there is increasing evidence of both labour and skills shortages which appear to be caused by the UK’s departure from the EU and the need to adjust to changing patterns of labour supply. Nationally, this is particularly apparent in low pay sectors / occupations. Within Uttlesford, activities linked to the ‘Stansted economy’ (especially routine airport functions and logistics activities) and the visitor economy may well be similarly affected. In relation to the rural economy, the agricultural and food processing sectors have also struggled to recruit and retain workers.
- 7.48 Over the medium-long term, these pressures may well lead to greater automation and, effectively, the substitution of capital for labour. The consequence could be a partial decoupling of GVA and employment growth. This in turn could shape demand for employment sites and premises – the expectation would be that firms may not seek to increase their footprint as they grow, but they may instead look for differently configured sites and premises.
- 7.49 In addition, there is much evidence to suggest that skills will need to be pivoted. There is some evidence to suggest demand for some occupations which did not exist a decade ago and commentators expect the pace of change to accelerate. A World Economic Forum report on ‘The future of skills and jobs’ observed that 65% of children entering primary school today will ultimately end up working in completely new job types that do not yet exist.

³⁰ <https://innovationcorridor.uk/about>

7.50 Across the key sectors which have been identified (rural economy; visitor economy; life sciences, research and innovation; and the 'Stansted economy'), the growth potential that exists in Uttlesford is – for the most part – dependent on an appropriate scale and mix of workforce skills.

7.51 An analysis completed by SELEP (undated, but it appears to predate Brexit) has identified key issues relating to workforce skills across the LEP area. In relation to Uttlesford's priority sectors, this suggests:

- For the visitor economy, there are already large numbers of vacancies across the area and the situation may well have been exacerbated by Brexit. There is a need for better language skills and a need to respond to structural changes within the sector.
- For professional, scientific and technical activities (including life sciences), there are large numbers of vacancies. There will also be a need for STEM (science, technology, engineering and mathematics) skills which are in short supply.
- Within the rural economy, the land based sector is also facing labour shortages and there will be a need to adapt to major changes post-Brexit
- For activities relating to Stansted Airport, the closest proxy from the SELEP analysis relates to 'transport and logistics'. This suggested vacancies in activities range from HGV drivers to forklift truck drivers, warehouse managers, etc., but a need also to anticipate the skills implications of robotics .

7.52 In addition, given the commitment to Net Zero, there is an overarching imperative to 'gear up' in relation to green skills. This imperative is cross-cutting and it relates to many different sectors – including construction and retrofitting, waste and recycling, digital and smart technology, transport and renewables. An analysis completed by MACE has suggested that demand for green skills is likely to rise rapidly over the next period. It will be important that skills providers work closely with local businesses to align existing provision to the changing imperatives for Net Zero. University of Essex, Anglia Ruskin University and Writtle University all have a key role to play, as do the various colleges of further education. Essex-wide, a Joint Stakeholder Action Plan is due for publication in December 2021 .

8. GROWTH OF STANSTED AIRPORT

The Airport and its Historic Growth

- 8.1 Stansted Airport served 3.1 million passengers in FY21 (April 2020-April 2021)³¹. This is an 88.5% reduction from FY20 (April 2019-April 2020) with 26.9 million passengers, and further reduction from a peak of over 28.4 million passengers in FY19 (April 2018-2019)³². This reflects the clear impact which Covid-19 has had on international travel.
- 8.2 Between the acquisition of the Airport by Manchester Airports Group (in 2013) passenger numbers increased from 17.8 million to 28 million in 2018 (before the onset of the Covid-19 pandemic) with associated growth in routes, airlines and employment. This means that before the onset of Covid-19, Stansted was the third busiest 'London' airport and fourth busiest in the UK overall³³. To support flights to over 200 destinations in over 40 countries, the Airport has 10,608 sqm of retail space (shops, restaurants and cafes).
- 8.3 Whilst, not facilitating particularly large volumes of cargo movements when compared to London's other airports, limited cargo capacity on long-haul passenger routes and the growth of online shopping during periods of lockdown led to a 31% increase in the volume of goods handled in FY21 compared to FY20¹.
- 8.4 Taking into account all activities at the Airport, it directly employed 13,000 people in 2018 (up from 10,200 in 2013). The Airport's operating company (Manchester Airport Group) employed an average of 1,655 FTE's at Stansted Airport in FY21, slightly down from 1,872 in FY20.
- 8.5 There have been previous phases of airport growth at Stansted. In 1985, permission was granted for the Airport (which was built in 1942 and extended in 1970) to be developed to accommodate 15 million passengers a year (over two phases). In 1991, a new terminal was opened to extend the Airport's physical capacity from two to eight million passengers a year and in 1999 the second phase of expansion was given the go ahead. In 2002, planning permission was granted to allow the expansion of the Airport to 25 million passengers a year and in 2008 the extension of the main terminal was completed. Subsequently, in 2008, permission was granted to increase the passenger limit to 35 million passengers per annum. As outlined above, growth to this maximum limit has not yet been achieved, pre-pandemic.

³¹ <https://www.magairports.com/media/1721/mahl-fy21-final-signed-12072021.pdf>

³² <https://www.magairports.com/media/1659/mahl-arfs-fy20.pdf>

³³ <https://www.stanstedairport.com/about-us/london-stansted-airport-and-mag/facts-and-figures/>

Planned and Forecast Growth

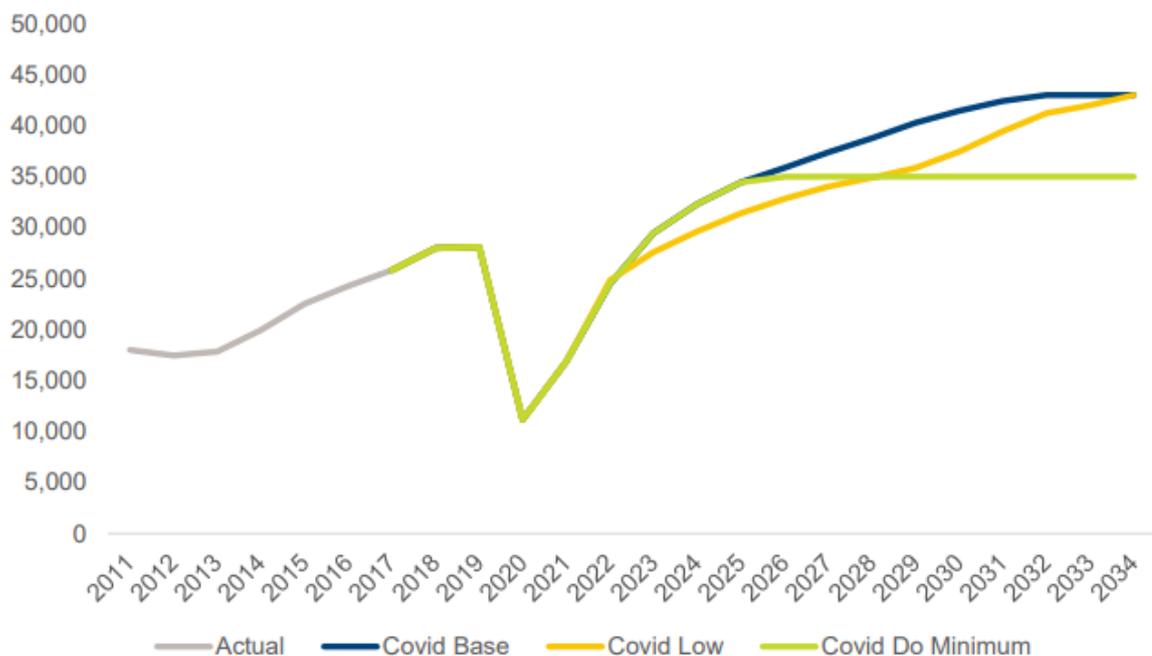
Planned Development

- 8.6 In May 2021, Stansted Airport secured planning consent (through appeal) for expansion to 43 million passengers per year. However, the existing limit of 274,000 aircraft movements is still in place and therefore the increase in passenger numbers will be accommodated by increasing the proportion of passenger flights (in relation to cargo flights) and a shift towards larger, next generation aircraft. To facilitate the increased passenger number limit, the planning consent includes provision for two new taxiway links to the runway and nine additional aircraft stands, together with highways improvements including at M11 Junction 8.
- 8.7 The Appeal decision notes that the planning consent provides airlines and other prospective investors, with greater certainty regarding the ability of Stansted to grow, secure long-term growth deals and expand their network – potentially including long-haul routes³⁴.

Forecast Passenger and Cargo Growth

- 8.8 Taking into account the impacts of Covid-19, MAG forecast that Stansted passenger numbers will grow to 35 million per year by 2027 and 43 million per year by 2032-34 if the above development described above goes ahead³⁵. In the Do Minimum case (without development and consent for over 35 million passengers per year), the Airport would reach 35 million passengers per year by 2027. The figure below, shows the forecast growth in passenger numbers without development in two cases (Covid Base and Covid Low) and in the Do Minimum case.

Figure 8.1 - Stansted Passenger Forecasts (000s)

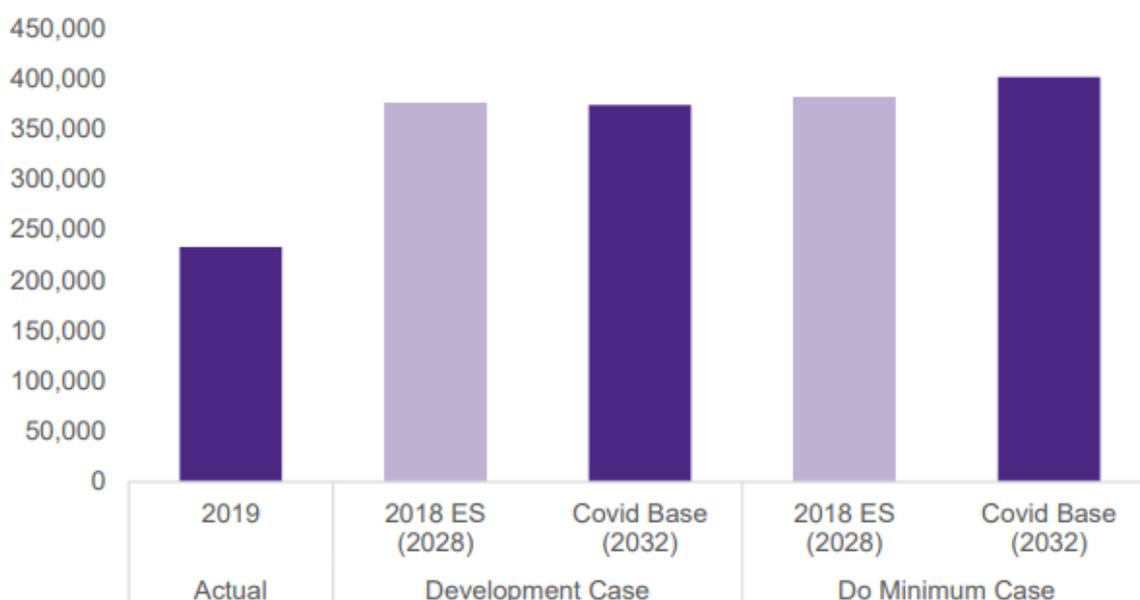


Source: Stansted Airport 35+ ES Addendum – Chapter 4 Aviation Forecasts

8.9 In the shorter-term, it is expected that it will take 3-4 years for passenger traffic to recover to levels seen before the pandemic³⁶. This is shorter than expected for other airports given the fact that it has less reliance on long-haul and business markets which are likely to see more prolonged recovery curves and (in the case of the business sector) structural change to working practices.

8.10 With development of the Airport, it is expected that cargo volumes will continue to grow, with forecast growth of 60% from 234k tonnes in 2019 to 375k tonnes in 2032. This is lower than that forecast in the Do Minimum case – 400k tonnes in 2032 – reflecting the shifting mix of flights. The figure below shows the tonnage of cargo handled at Stansted in the Development and Do Minimum case.

Figure 8.2 - Stansted Cargo Tonnage Forecasts (Tonnes)



Source: Stansted Airport 35+ ES Addendum – Chapter 4 Aviation Forecasts

8.11 The assumed split of flights in 2032 is 92% passenger (252,000), 5% cargo (15,000) and 7% other (e.g. private aviation).

8.12 The table below summarises the impact of the development of Stansted on passenger numbers, Air Transport Movements (ATMs) and cargo movements.

³⁴ Stansted is targeting further long-haul routes, building on the launch of the Dubai route, with China, the Middle East and North America being key markets

³⁵ [Report Template Blue \(hwa.uk.com\)](http://hwa.uk.com)

³⁶ The base assumption being the pandemic ends in in 2021, with a two year recovery (2022-23) to return to pre-pandemic traffic levels

Table 8.1 Summary of Impact of Stansted Development on Passenger and Cargo Levels

No Development (Do Minimum)	Passengers (mppa)	ATMs (000s)	Cargo (000 tonnes)
2019	28.3	200.4	233.1
2027	35.0	245.1	286.6
2032	35.0	251.6	401.7
Proposed Development (Development Case)			
2027	37.4	257.1	290.4
2032	43.0	274.0	373.6
Impact of Proposed Development			
2027	+2.4	+12.0	+3.8
2032	+8.0	+22.4	-28.1

Source: Stansted Airport 35+ ES Addendum – Chapter 11 Socio-economics

Forecast Employment and GVA Growth

8.13 As part of the 2020 ES Addendum Socio-economic chapters which provided evidence in the Planning Appeal for the development of Stansted, the operational employment (and GVA) impact resulting from the expansion of Stansted Airport has been estimated (for the year 2032, when passenger numbers are forecast to peak and plateau). This estimate is based on forecast passenger growth and employment productivity (taking into account future productivity increases).

8.14 Three main categories of employment were considered in the ES Addendum. These are;

Direct Employment, which is split into;

- Direct On-Airport Employment – those employed at the Airport
- Direct Off-Airport Employment – those employed in businesses whose activity is directly and solely related to Stansted Airport, but which are located outside the Airport boundary.

8.15 Alongside:

- Indirect Employment – employment in firms which are in the supply chain of businesses at the Airport during operation.
- Induced Employment – employment supported by the expenditure of those employed directly and indirectly.

- 8.16 A Study Area over which the employment and GVA impacts were assessed is determined in the ES Addendum. This covers 17 local authorities across the East of England and London, including Uttlesford.
- 8.17 Indirect and Induced Employment was calculated by applying a multiplier of 0.8 to the Direct Employment. This multiplier was determined to be appropriate by Optimal Economic based on a review of regional multiplier studies and impact studies in the UK including for Airport impact studies.
- 8.18 GVA was calculated by applying the GVA per person employed in the Study Area by the amount of employment.
- 8.19 The figure below sets out the expected levels of employed and GVA generated due to the operation of Stansted Airport both with and without development in the year 2032.

Table 8.2 Stansted Related Employment & GVA in Development / Do Minimum Cases, 2023

	Without Development (Do Minimum)		With Development (Development Case)	
	Employment	GVA, £m	Employment	GVA, £m
Direct on-airport	13,300	891.9	16,300	1,095.8
Direct off-airport	500	30.4	600	37.3
Indirect & induced	11,000	737.8	13,500	906.5
Total	24,700	1,660.2	30,300	2,039.6

Source: Stansted Airport 35+ ES Addendum – Chapter 11 Socio-economics

- 8.20 Based on the table above, the figure below sets out the effect of the development on Employment and GVA by the year 2032 – i.e. the additional impacts of the development. The ES Addendum assumes that no displacement of employment (and hence GVA) will occur.

Table 8.3 Additional Impact of Development on Stansted Related Employment & GVA, 2032

	Employment	GVA, £m
Direct On-Airport	3,000	203.9
Direct Off-Airport	100	6.9
Indirect and Induced	2,500	168.7
Total	5,600	379.5

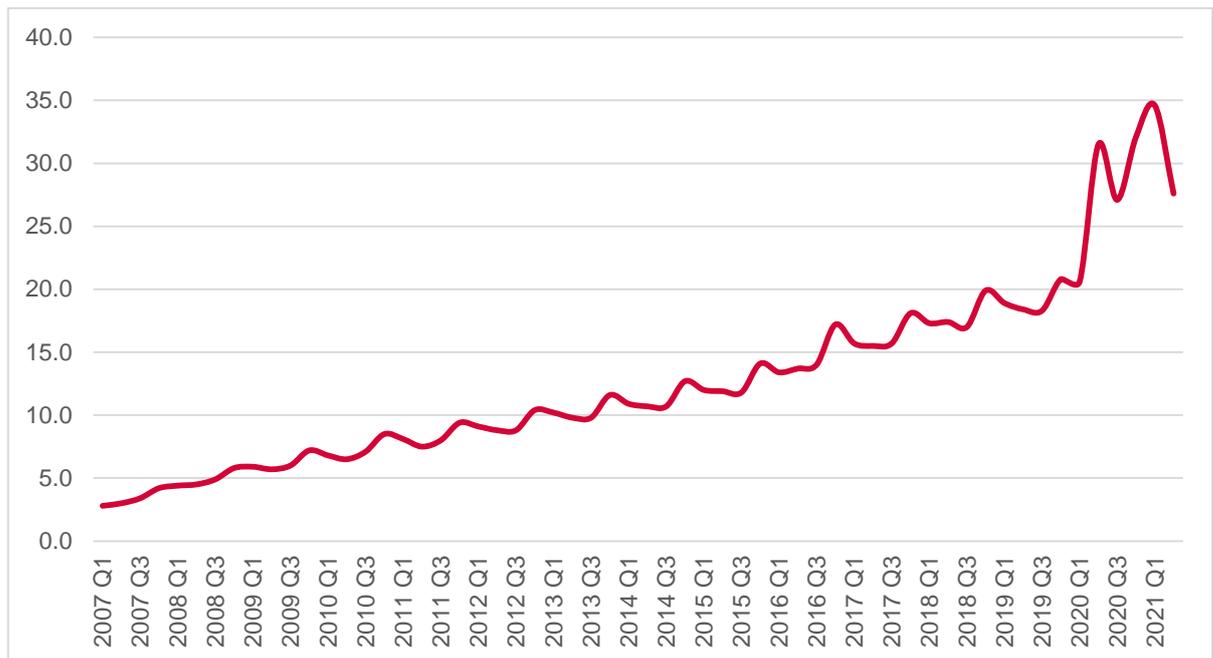
Source: Stansted Airport 35+ ES Addendum – Chapter 11 Socio-economics

-
- 8.21 All of the Direct On-Airport Employment will be within Uttlesford and therefore the Additional Direct **On-Airport Employment (3,000) could therefore be used to adjust the jobs forecast for the District.** However, as these jobs will be catered for by the planned Airport development, they will not require the allocation of further employment land.
- 8.22 It should be noted that Stansted's 2019 Airport Employee Travel survey suggests that 17.4% of those employed at the Airport reside within Uttlesford.
- 8.23 The Direct-Off Airport Employment was determined to come from businesses located within Uttlesford, East Hertfordshire and Harlow. Therefore, the Additional Direct Off-Airport Employment within Uttlesford could be used to adjust the jobs forecast for the District. However, the exact split of the location of this employment was not set out in the ES Addendum. Given the fact that not all of this employment will be within offices, industrial units or warehouses, and the fact that only 100 additional jobs are spread across three districts, it is likely that the amount of further employment land needed will be negligible.
- 8.24 The ES Addendum does not estimate the amount of Additional Indirect and Induced Employment which will be in Uttlesford. However, this is likely to be significant, especially given the fact that around 17% of those employed at the Airport are likely to reside within Uttlesford and a significant amount of their spending will take place within the District. This could equate to potentially 400-500 additional jobs. Much of this will be in consumer-related and service activities which do not directly require additional employment land.

Northside

- 8.25 The airport owners, Manchester Airports Group (MAG), have brought in a development partner – Columbia Threadneedle – to bring forward development of land at Northside, on the northern side of the Airport.
- 8.26 Around 2.1million sq.ft (200,000 sqm) of principally B8 warehousing development is envisaged, driven by sub-regional/ regional growth in demand for warehousing and logistics space, influenced by structural economic trends including the shift towards e-retailing. It is expected that the early phases of development will be targeted at 'big box' logistics exceeding 100,000 sqft and possibly much larger, although later phases could be smaller units. This reflects the target occupiers as being regional / national occupiers rather than meeting the needs of local businesses.
- 8.27 Whilst the 2005 Local Plan dictates that this site should be used for Aviation related activities, Stansted Airport's owner-operators don't believe that the site is required for this use and hence it is deemed appropriate that the site is not limited to this use.
- 8.28 The chart below sets out the shift in retail spending between physical retail space and e-retailing. This structural shift has evidently resulted in a growing take-up of warehousing space which has risen to historical highs, and the expectation is that further growth in internet sales could support further growth.

Figure 8.3: Internet sales as a % of total retail sales, Great Britain



Source: ONS

- 8.29 Iceni consider that whilst Uttlesford has historically seen minimal growth of 'big box' logistics uses, this reflects a lack of available supply. The locational attributes of this site – its proximity to the M11, ability to draw on labour from a number of surrounding towns, and proximity to London as a major market for goods – mean it would be commercially attractive for these types of activities.
- 8.30 Oxford Economics, for the scheme promoters, estimate that the scheme will deliver around **2,600 net additional jobs** with associated growth in GVA of £76.6, potentially phased from 2023-30. This suggests employment densities of around 80 sqm per FTE however larger units may be closer to 95 sqm per FTE whilst smaller units could be lower. There are also expected to be temporary construction job benefits of around 1,500 temporary jobs that are likely to involve trades from around the region.

Employment Summary

- 8.31 Overall the airport's plans could generate around 3,000 direct jobs by 2032. Iceni expects that these would be spread largely across Air and Land Transport and Business Support Services and to a lesser extent Warehousing and Postal.
- 8.32 Separately, the delivery of some 200,000 sqm of warehousing (with potential further phases) is expected to deliver around 2,600 net additional jobs by 2030.

9. ECONOMIC GROWTH OUTLOOK

9.1 This section considers the employment outlook for the District to 2039. These are developed from baseline forecasts acquired from Cambridge Econometrics for the period to 2019.

Forecasts

9.2 Appendix C 'Working Paper C: Insights from employment projections prepared by Cambridge Econometrics' identifies key messages from the baseline employment projections. These are:

- Comparison of the historic patterns of employment growth in Uttlesford to those observed across the East of England and the UK between 1984 and 2019 reveals that rates of growth in Uttlesford have been consistently higher, and this is expected to continue.
- Projected patterns of employment growth in Uttlesford over the next 20 years are expected to be lower than the rates of growth observed historically: in the four five-year periods between 2019 and 2039, rates of growth are not expected to exceed 1% per annum whilst from 1991 to 2019 the growth rate fluctuated but never fell below 1%.
- In 2019, the Warehousing and Postal was the largest sector by the percentage of total employment at 4,600 (8.5%). This was followed by Construction with total employment of 4,300 (8%), Business Support Services (3,800, 7%), Education (3,700, 7%) and Food and Beverage Services (3,500, 6.5%).
- Looking ahead over the next 20 years, the sectoral profile of employment is not projected to change very much. Construction is expected to be the largest sector in both 2029 and 2039 with 10.4% and 11.2% of total employment respectively. Warehousing and Postal, with expected employment of 4,800 (8.3% of total employment) is projected to be the second largest sector in 2029 just ahead of Food and Beverage Services in third (4,000 employment, 7.3%). In 2039, these positions are expected to reverse. Business Support Services and Education are expected to take the fourth and fifth spots in 2029 and 2039 with regards to the largest sectors by the proportion of total employment with 6.7% and 6.5%, and 6.5% and 6.3% respectively.

Table 9.1 Absolute Employment in Selected Sectors, 2009 - 2039

	2009	2019	2029	2039
Construction	4,000	4,300	6,000	6,800
Education	3,900	3,700	3,700	3,800
Warehousing and Postal	3,700	4,600	4,800	4,900
Retail Trade	3,500	3,200	3,200	3,300
Business Support Services	3,000	3,800	3,800	4,000

Food and Beverage Services	2,500	3,500	4,000	5,000
Total (all sectors)	42,500	53,900	57,500	61,200

Source: Cambridge Econometrics

Alternative outlooks

- 9.3 IcenI has also undertaken detailed examination of sector performance between 2001-19 and 2011-19 in terms of year on year absolute growth and the average growth rate. The fastest growing sectors in absolute terms from 2011-19 were Other Professional Services (including R&D), Warehouse and Postal and Land Transport (followed by Air Transport). Looking back from 2001-19, these were also the fastest growing sectors (alongside education). After discounting smaller sectors (including agriculture), these same sectors have the highest average growth rates (as well as absolute growth). This suggests that these have the potential to achieve strong growth in the future.
- 9.4 When applying the 2001-19 average growth rate to the 2019 employment position we see a significant difference by 2039 in the outcomes compared to that of the CE projections in some sectors. To account for the effect of high growth rates on smaller sectors, the growth rate has been (conservatively) quartered, and jobs lost 2019-21 pandemic have been discounted to adjust for lost growth in those years. The same exercise using 2001-19 and 2011-19 absolute annual average change comes to a similar albeit slightly higher figure for Other Professional Services (including R&D) whilst the outlook for Land transport is higher.

Table 9.2 Projections of 2001-19 'fast growth' sectors vs CE forecast

	2001	2011	2019	2040 (CE)	2040 (@25% 2001-19 growth rate)	Difference
Other Professional Services (including R&D)	800	1,200	3,200	3,800	5,800	2,000
Air Transport	2,600	1,300	2,600	3,100	3,600	500
Warehousing and Postal	2,800	3,800	4,600	4,900	5,100	200
Land Transport	1,000	1,700	3,500	3,000	3,700	700
Business Support Services	2,200	2,700	3,800	4,000	4,700	700
Total (all sectors)	38,400	43,800	53,900	61,500	65,700*	5,100*

Source: Cambridge Econometrics

* adjustment applied to fast growth sectors (those listed) only

- 9.5 When compared with the East of England outlook, we find that the largest differences in the CE outlook and the recent growth trends are in Business Support Services and Other Professional Services (inc R&D), as well as Education, Residential and Social Care, Head Offices and Management Consultancy.

-
- 9.6 Overall CE evidently sees notably slower growth in Business Support Services and Other Professional Services (which includes R&D) in the future compared to the past. The effect is more extreme in Uttlesford in relation to Other Professional Services (inc R&D). In Iceni's view it is likely that there is an **underestimation of the R&D sector potential** in the forecast outlook in particular, given the effect of a top down modelling technique and an inability to explore niche growth sectors such as the cluster at Chesterford in the forecast model. A similar issue is noted in the Greater Cambridge Employment Evidence³⁷.
- 9.7 It is also of note that the Air and Land Transport and Business Support Services (including car hire, cleaning, security and temping) and to a lesser extent Warehousing and Postal (which includes 'Support for Transportation' as identified by BRES) growth over the last 10 to 20 years will in part if not largely be influenced by Stansted Airport, both in direct and indirect employment terms. Their outlook may therefore be influenced by airport activities and prospects, discussed in the previous section.
- 9.8 Drawing on the overall analysis, there are a number of key factors to be considered which could lift the baseline forecasts to an alternative greater employment outcome. In order to draw this together we consider both the baseline forecasts and the planned development potential considered in previous sections of the report:
- Baseline (Cambridge Econometrics): growth of 7,600 jobs
 - Additional 2,600 warehouse related at Northside. In line with good practice³⁸, a level of displacement is assumed but this is low given there is little if any distribution of this nature in the district, so 25%, resulting in 1,950. This is presumed as additional to the baseline forecasts which report non strategic type warehouse employment.
 - Additional 1,800 R&D type jobs at Chesterford. In order to manage displacement effects these are instead of the 400 in the baseline forecast, not in addition.
 - Growth of 3,000 jobs at the airport (and 2,500 indirect / induced of which c.400 in Uttlesford). Based on the current profile of direct employment³⁹ at the airport, around 28% would be managerial / clerical, 10% security, 8% catering / cleaning and remainder in air cabin, pilot or other airside. CE reports baseline +500 jobs in Air Transport and +200 in Business Support. For the purposes of this exercise, it is considered reasonable to replace these 700 jobs with the 3,000 direct jobs growth, so +2,300 of which 20% Business Support and 50% Air Transport alongside a further 30% net additional in Professional services. There is uncertainty and little evidence related to the sector nature of the 400 indirect / induced jobs. For the

³⁷ <https://www.greatercambridgeplanning.org/media/1399/greater-cambridge-employment-land-and-economic-development-evidence-study-gl-hearn-nov2020.pdf>

³⁸ HCA Additionality Guide 2014

³⁹ STANSTED AIRPORT 35+ ES ADDENDUM P12

purpose of this exercise they are divided as net additional between Land transport, Retail, Accommodation, Food and beverage.

9.9 Taking into account the above, the full sectoral breakdown for the baseline and preferred growth scenario is set out below. The preferred scenario is recommended for policy planning purposes.

Table 9.3 Baseline and preferred employment forecasts ('000s)

	CE	CE baseline	Preferred scenario
	2019	2040	2040
Agriculture, forestry & fishing	0.9	0.5	0.5
Mining & quarrying	0.1	0.0	0.0
Manufacturing	3.2	2.6	2.6
Electricity & gas	0.0	0.0	0.0
Water, sewerage & waste	0.4	0.4	0.4
Construction	4.3	6.9	6.9
Motor vehicles trade	1.0	1.1	1.1
Wholesale trade	2.0	2.0	2.0
Retail trade	3.2	3.3	3.4
Land transport	2.7	3.0	3.1
Water transport	0.0	0.0	0.0
Air transport	2.6	3.1	3.7
Warehousing & postal	4.6	4.9	6.9
Accommodation	0.8	0.9	1.0
Food & beverage services	3.5	5.0	5.1
Media	0.5	0.5	0.5
IT services	1.0	1.2	1.2
Professional services (inc R&D)	7.6	8.6	10.4
Business support	3.8	4.0	4.2
Public Administration & Defence	1.5	1.7	1.7
Education	3.7	3.9	3.9
Health	1.4	2.2	2.2
Residential & social	2.3	2.5	2.5
Arts	0.7	0.9	0.9
Recreational services	0.6	0.7	0.7
Other services	1.4	1.5	1.5
Total	53.9	61.5	66.6

10. EMPLOYMENT LAND NEEDS

10.1 This section provides commentary on the future employment land needs by type from 2020 to 2040. It primarily considers the labour demand (baseline) scenarios provided by Cambridge Econometrics, as well as floorspace trends using VOA monitoring data. Consideration is also given to margins for flexibility, vacancy and replacement demand.

Floorspace Trend Model

10.2 Using data from the VOA, we have derived net change in floorspace trends to model a future trend based need. Three periods have been used based on an annualised average need on the last 5, 10 and 15 years change (using 3 yr rolling averages). For industrial, using the most recent trends sees a high growth in industrial floorspace due to recent increases. However for offices, historic growth has been followed by a period of little change.

Table 10.1 VOA trend forecast by historic period 2020/21-2040/41, sqm ('000s)

	Offices			Industrial		
	5yr	10yr	15yr	5yr	10yr	15yr
Uttlesford	-	-	20	220	60	60

Source: VOA

10.3 For completeness the sqm floorspace projections above have been converted to a land need on the following plot ratios:

- 0.3 for office and R&D uses;
- 0.4 for industrial uses; and
- 0.5 for warehouse / distribution floorspace.

Table 10.2 VOA trend forecast 2020/21-2040/41, ha

	Offices			Industrial		
	5yr	10yr	15yr	5yr	10yr	15yr
Uttlesford	-	-	7	49	13	13

Source: VOA

10.4 For the purpose of this exercise, IcenI considers the 2009/10 to 2019/20 (last ten years) to be the minimum period to consider for industrial modelling, as it incorporates a relatively stable period followed by a more recent faster growth period. For offices the same period is also recommended for use but under the caveat that planning for 'nil growth' is unlikely to accurately represent future needs.

- 10.5 VOA trends should not be considered in isolation as they mask the gains and losses occurring which may paint an important picture in their own right, as new workspace types replace older ones in existing or new locations. VOA records will also be influenced by space at Stansted airport, although a detailed breakdown of the make up of space is not readily available. As an alternative, the national property database CoStar has been drawn upon. Of note, CoStar reports 320,000 sqm of industrial space in Uttlesford (vs VOA 459,000 – differences are expected given different techniques in monitoring) of which 93,000 or 28% is at the airport (Taylor’s End).

Property Market Trend Model

Offices

- 10.6 Using data from CoStar, we can identify average net absorption (move ins) for office space as 19,300 sqft per annum from 2010-2020 or 1,800 sqm per annum. Projecting this forward to 2040 is 36,000 sqm of office requirement. However CoStar forecasts absorption at closer to 12,000 sqft or 1,100 sqm in the next 5 years, which may be more realistic in the future market. This would require 22,000 sqm over the next plan period.

Industrial

- 10.7 Using data from CoStar, we can identify net absorption (move ins) for industrial space as 100,750 sqft from 2010-2020 or 9,400 sqm per annum. Projecting this forward to 2040 is 188,000 sqm of industrial requirement. However CoStar forecasts absorption at closer to 20,000 sqft or 1,900 sqm in the next 5 years, which may be in part due to the constrained market. This would require 38,000 sqm over the next plan. Based on past transactions analysis some 28% is directly at the airport.

Table 10.3 CoStar trend forecast 2020/21-2040/41, sqm

	2010-20 ave p.a.	2040 needs from past trend	CoStar forecast 2021-26 ave pa.	2020-26 rolled forwards
Offices	1,800	36,000	1,100	22,000
Industrial	9,400	188,000	1,900	38,000

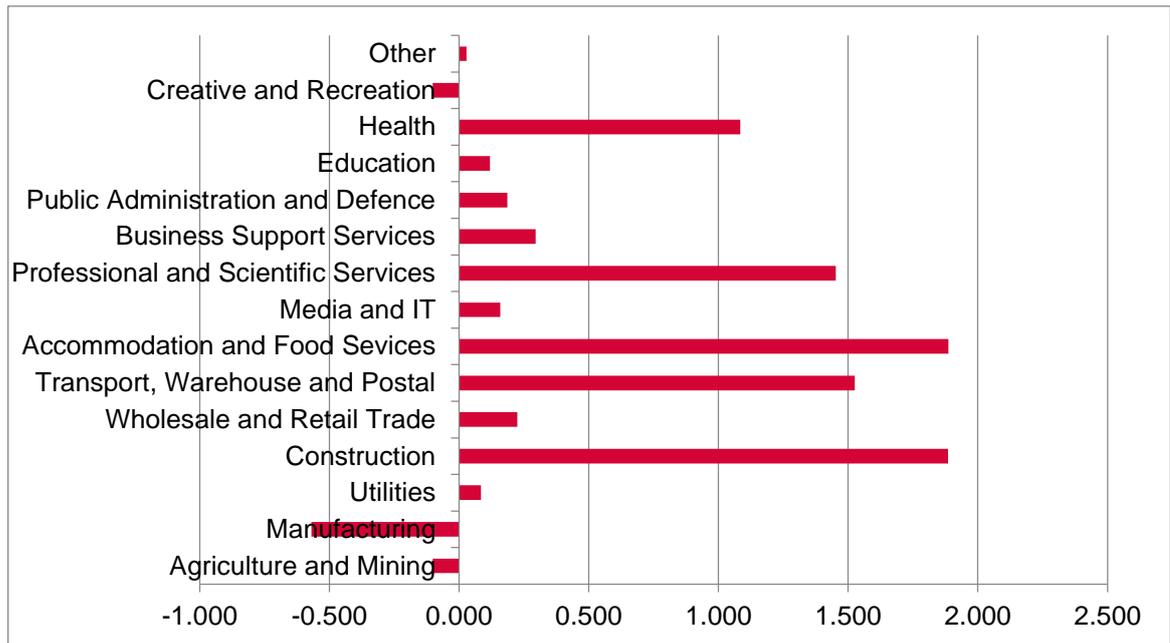
Source: CoStar

- 10.8 The above table indicates a considerable range most notably in the industrial outlook. The near-term industrial outlook as indicated by CoStar is perhaps unexpected in light of the strong market indicators in the property review section.

Labour Demand Model: Baseline

- 10.9 The baseline scenario considers the quantum of employment land required to support the growth of 8,160 jobs from 2021-39 shown in the Cambridge Econometrics **baseline** forecast. This is used as the floorspace requirements for the preferred growth scenario are already accounted for in other planned developments. The jobs change by sector is set out below:

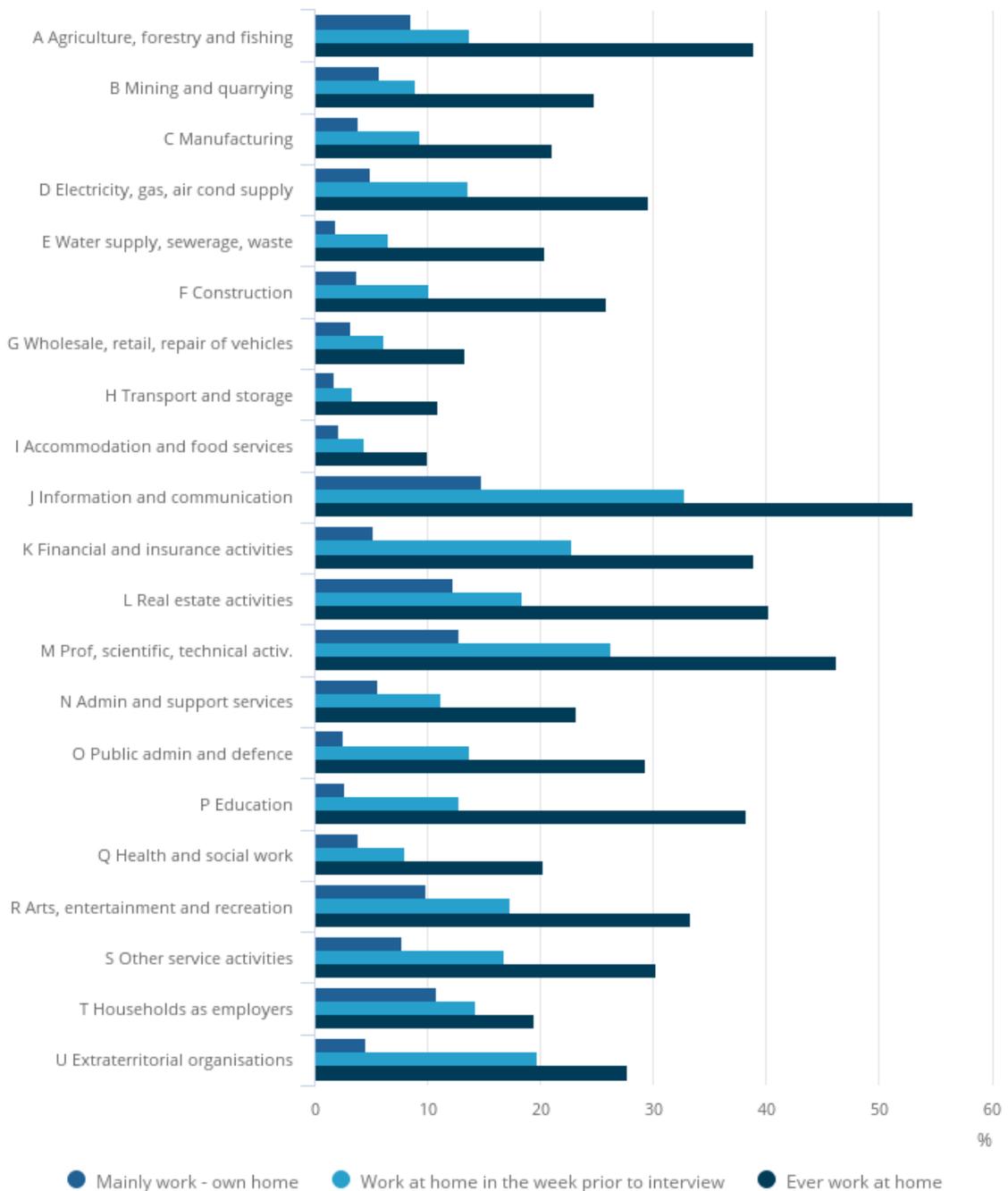
Figure 10-1: Uttlesford baseline employment change, 2021-2040



Source: Cambridge Econometrics, IcenI analysis

- 10.10 IcenI Projects has converted the forecasts for total employment by sector into forecasts for Full-Time Equivalent (FTE) employment by sector through analysis of the proportion of full- and part-time jobs in Uttlesford as of 2019 (BRES) on a 2 digit SIC sector by sector basis, aggregated up to the 45 sector forecast.
- 10.11 An adjustment has been made taking into account home working data based on 2019 as per the chart below. More recent data for 2020 during the pandemic shows increases of up to 70% home working particularly in office based sectors, however this level is not expected to continue indefinitely and is discussed further below.

Figure 10-2: Homeworking by sector 2019



Source: ONS

10.12 Icen Projects has considered the proportion of employment in each sector which is likely to take place in the various use classes.

10.13 To do this we have calibrated our standard model which relates sectors and use classes for the local economy through interrogation of the current composition of employment in key sectors. This provides an estimate of the proportion of FTE jobs in each sub-sector which are currently located on

each type of employment land (or other use class). The modelling assumes that this proportion will hold true moving forwards, which in reality will change.

10.14 This approach has been used to derive the following forecasts of net growth in FTE employment by use class over the plan period, relating to the district as a whole. This apportionment is then multiplied by the jobs growth in each sector, showing growth by class of employment. The table below sets out the 5-year band requirements. 2019-21 is included for context as it demonstrates a contraction that may allow for some employment reabsorption that would not require floorspace.

Table 10.1 FTE Job Growth by Use Class Sector, 2021-39: Baseline Scenario

Area	2019-21	2021-26	2026-31	2031-36	2036-40	2021-40
Offices Class E(g)(i)	-150	300	280	250	180	1,000
R&D Class E(g)(ii)	-180	120	110	110	80	430
Industrial Class E(g)(iii) / B2	-90	-150	-70	-70	-40	-330
Storage or distribution (Class B8)	30	100	60	60	40	260
Total of above	-390	370	380	350	260	1,360
Other sectors	-10	1,900	1,130	1,110	820	4,960

Source: Icen analysis of Cambridge Econometrics

10.15 To these figures we have applied employment densities taking account of the HCA Employment Densities Guide: 3rd Edition (2015). We have converted figures to provide employment densities for gross external floor areas on the following basis:

- Office: an average of 12 sq m NIA per employee based on a blend between business park, serviced office and general office floorspace and assuming that the gross external area of buildings is on average 25% higher than the net internal area – note that further sensitivity is run on this further below to take account of remote working practices;
- Research and development: an average of 38 sq m GEA per employee based on low density research premises and assuming that the gross external area of buildings is on average 25% higher than the net internal area;
- Light Industrial: an average of 49 sq m GEA per employee, assuming that the gross external area of buildings is on average 5% higher than the net internal area;
- General Industrial: an average of 38 sq m GEA per employee, assuming that the gross external area of buildings is on average 5% higher than the gross internal area;
- Warehouse/ Distribution: an average of 70 sq m GEA per employee.

10.16 Applying these employment densities to the forecasts of net growth in jobs in B-class activities, we can derive forecasts for net changes in employment floorspace. The breakdown by use class is shown below.

Table 10.2 Floorspace (sqm) requirements by Use Class 2021-40, Baseline

Area	2019-21	2021-26	2026-31	2031-36	2036-40	2021-40
Offices Class E(g)(i)	-2,300	4,500	4,100	3,700	2,700	15,100
R&D Class E(g)(ii)	-6,700	4,300	4,300	4,100	3,200	15,900
Industrial Classes E(g)(iii) / B2	-4,000	-6,400	-3,200	-2,900	-2,000	-14,500
Storage or distribution (Class B8)	2,200	7,000	4,400	4,300	2,700	18,400
Total of above	-10,900	9,400	9,700	9,200	6,600	34,900

Source: Icen analysis of Cambridge Econometrics

10.17 Icen has also considered a further sensitivity, reflecting changing working patterns that most particularly influence office needs. With the COVID-19 pandemic leading to most office based employees home working, it is likely that a greater rate of home working occurs in the future as a result, reducing the need for office floorspace. Whilst definitive evidence is yet to emerge, a sensitivity that reduces office need 30% is considered. Major corporates positions range from around 30% home working to complete flexibility⁴⁰.

10.18 The sensitivity also incorporates an adjustment for the 2019-21 period. In the case of offices and warehousing, there was a reported decline in this period followed by growth. Realistically the lost jobs can be reabsorbed without the need for new floorspace, so these are deducted from the 2021-26 requirements.

Table 10.3 Floorspace (sqm) requirements by Use Class 2021-40, sensitivity

Area	2019-21	2021-26	2026-31	2031-36	2036-40	2021-40
Offices Class E(g)(i)	-2,300	1,600	2,900	2,600	1,900	9,000
R&D Class E(g)(ii)	-6,700	4,300	4,300	4,100	3,200	15,900
Industrial Classes E(g)(iii) / B2	-4,000	-6,400	-3,200	-2,900	-2,000	-14,500
Storage or distribution (Class B8)	2,200	7,000	4,400	4,300	2,700	18,400
Total	-10,900	6,500	8,400	8,100	5,800	28,800

Source: Icen analysis of Cambridge Econometrics

10.19 To calculate the land requirements to support these net changes, we have applied the plot ratios as pervious.

⁴⁰ HSBC is cutting its global office space by 40%. Lloyds is cutting desk numbers by 20%. Alphabet, is developing a model where staff work three days in the office and two days from home. Facebook are allowing 'complete flexibility'.

10.20 This generates the following requirement for net additional land to support employment growth over the plan period:

Table 10.4 Labour demand net land (ha) requirements by Use Class 2021-40

Area	Baseline	Baseline sensitivity
Offices Class E(g)(i)	5.0	3.0
R&D Class E(g)(ii)	5.3	5.3
Industrial Classes E(g)(iii) / B2	-3.6	-3.6
Storage or distribution (Class B8)	3.7	3.7
Total	10.4	7.4

Source: Icen analysis of Cambridge Econometrics

10.21 The labour demand model therefore indicates a total net need range of between 7.4 and 10.4 ha of employment land need.

10.22 It is important to note that these are net changes that do not take of further matters such as a margin adjustment, which is considered further in this section below.

Comparing Labour Demand and Floorspace Trends

10.23 The table below compares the labour demand models, property models and the VOA floorspace trends for the 2021-41 period.

Table 10.5 Employment land needs 2021-2040, sqm

	Labour demand	Labour demand sensitivity	10yr VOA	CoStar historic	CoStar future
Office	15,100	9,000			
R&D	15,900	15,900			
Office and R&D	31,000	24,900	0	36,000	22,000
Industrial	-14,500	-14,500			
Warehouse	18,400	18,400			
Ind & warehouse	3,900	3,900	60,000	188,000	38,000
Total	38,800	32,700	60,000	224,000	60,000

Source: VOA / CE / Icen / CoStar

10.24 This is translated to land requirements below.

Table 10.6 Employment land needs 2020-2041, ha

	Labour demand	Labour demand sensitivity	10yr VOA	CoStar historic	CoStar future
Office	5.0	3.0			
R&D	5.3	5,3			
Office and R&D	10.3	8.3	0	12.0	7.3
Industrial	-3.6	-3.6			
Warehouse	3.7	3.7			
Ind & warehouse	0.1	0.1	13.3	41.8	8.4
Total	7.2	5.8	13.3	49.0	12.8

Source: VOA / CE/ IcenI / CoStar

10.25 Evidently there are substantial differences in the outcomes when looking across the model outcomes. These are most pronounced in relation to industrial needs. Before consideration of a preferred model further adjustments are made as below.

Margin and adjustments

10.26 To provide an indication of the potential gross need for employment land in this scenario, it may be appropriate to make some allowance for frictional vacancy within employment floorspace; and provide some margin within the supply of land to provide a choice of sites.

Future vacancy

10.27 We have assumed a need to achieve a 7.5% vacancy rate within the additional floorspace for needs outlined above (mid point between 5-10%), which is what we would consider reasonable in a functioning commercial property market. A level of vacant floorspace is necessary to support turnover and improvements to stock.

Current vacancy

10.28 It is also considered appropriate to make an allowance to increase the current vacancy levels which are at a historic low of 1.8% for industrial stock. To reach a minimum 5% vacancy the current stock of 459,000 sqm needs to increase by 14,700 or around 3.3 ha (adding 25% to the VOA trend for example). For office this is not considered to be required in the current market.

Safety / flexible margin

10.29 In identifying how much land to allocate for development, we however consider that it would be prudent to include a 'margin' to provide for some flexibility, recognising:

- The potential error margin associated with the forecasting process;
- To provide a choice of sites to facilitate competition in the property market;
- To provide flexibility to allow for any delays in individual sites coming forward.

10.30 We consider that it would be appropriate to make provision for a 'margin'. There are different approaches to identifying a margin, using either a number of years of past take up (ie completions, typically 5 years, or VOA trend) or a percentage of future need. Given VOA trend for offices is '0', as an alternative 10% of need is preferred for both industrial and office categories.

Replacement demand

10.31 Replacement demand is the requirement to replace historic stock that is falling out of functional use. Industrial and warehouse units in particular have a typical life of 30-40 years and need to be replaced thereafter, whilst offices tend to last longer and can be more readily refurbished. Therefore over time older industrial stock needs replacing. In markets where viability is weak or marginal, businesses can be trapped in old units that are unsuitable and inhibit growth. An alternative way of thinking about replacement demand is when industrial units or sites have been lost to other uses but not replaced – meaning business growth or choice is constrained. To understand what level of need this generates requires a detailed dataset on completions and losses by use class, which is not available.

10.32 Using market data we can draw inferences on replacement need. CoStar indicates 65% of the stock is pre 2000 and may need replacing by 2040, equivalent to 150,000 sqm. However this rate may be excessive given that many more rural businesses will rely successfully on older barn buildings or warehouses. It is therefore difficult to accurately define this level of need, however considering a replacement level of older stock of just 25% would add a further 37,400 sqm of industrial requirements.

Recommendations

10.33 The resulting summary of all needs elements is set out below.

Table 10.7 Employment land needs 2021-2040, sqm

	Labour demand	Labour demand sensitivity	10yr VOA	CoStar historic	CoStar future
Office	15,100	9,000			
R&D	15,900	15,900			
Office and R&D	31,000	24,900	0	36,000	22,000
Future Vacancy	2,300	1,900	0	2,700	1,650
Margin	2,700	2,300	0	3,600	2,200
Office Total	36,100	29,000	0	42,300	25,850
Industrial	-14,500				
Warehouse	18,400				
Ind & warehouse	3,900		60,000	188,000	38,000
Future vacancy	300		4,500	14,100	2,850
Margin	400		6,000	18,800	3,800
Current vacancy			14,500		
Industrial Total A	19,100		85,000	235,400	59,150
Replacement demand			37,400		
Industrial Total B	56,500		122,400	272,800	96,550

Source: VOA / CE (inputs) / Iceni / CoStar

10.34 This is summarised and translated to land requirements below.

Table 10.8 Employment land needs 2021-2040, ha

	Labour demand	Labour demand sensitivity	10yr VOA	CoStar historic	CoStar future
Office + R&D Total	12.0	9.7	0.0	14.1	8.6
Industrial Total A		4.2	18.9	52.3	13.1
Industrial Total B inc. R.D.		12.6	27.2	60.6	21.5

Source: VOA / CE (inputs) / Iceni / CoStar

10.35 The implication of the modelling is considered below.

Offices

10.36 The range for office needs is not substantial. It should be noted that both the VOA and CoStar will merge the office and R&D trends whereas in theory the labour demand model can separate these out. Given activity at Chesterford Research Park it is likely that R&D estimates are influencing the labour demand and CoStar models. Most activity for R&D takes places at Chesterford Research Park which already has a substantial provision via the masterplan and some permissions.

10.37 Although not displayed in the table above, the labour demand model for offices *excluding R&D* can be identified separately. This would lead to an office requirement of **11,900 - 19,000 sqm or 4.0 – 6.3 ha**. Conversely the R&D total is 19,000 sqm which is below the future capacity of Chesterford, however it has previously been noted that the forecasts are likely to underestimate the level of jobs growth potential in this sector.

-
- 10.38 IcenI therefore considers the labour demand based range of 4.0-6.3 ha is a reasonable provision for the office market.
- 10.39 It is of note that the 2017 West Essex and East Hertfordshire Assessment of Employment Needs by Hardisty Jones Associates Ltd, on behalf of Epping Forest District Council, East Herts Council, Uttlesford District Council and Harlow Council, recommended a need of 2-5 ha of office land needs for Uttlesford 2016-33 (17 years) understood to be including both office and R&D. Herein the central recommendation is 4.0-6.3 ha (19 years) so at the upper end of the previous study recommendations. The 2017 Aecom Uttlesford District Employment Land Review Update indicated a need of 12,900–21,100 sqm or 2.6 – 4.2 ha for 2016-33 (17 years) which again is comparable to the current requirement rate.

Industrial

- 10.40 The range for industrial needs is very varied.
- 10.41 In the first instance IcenI is cautious about the use of the labour demand modelling for future requirements for a range of factors but most notably because capital is a productivity driver for manufacturing and related businesses, rather than labour, therefore expanding premises to drive GVA growth is separate from jobs trends. This is compounded by the replacement demand factor noted above, i.e. the need for newer premises.
- 10.42 The VOA and CoStar trends are considered the most useful models for future industrial needs. CoStar manages a complex model predicting future net gains, however the outlook in their model does not accord with the property market feedback or historic position, which suggests it under estimates needs.
- 10.43 The preferred requirements are therefore either a roll forward of the CoStar historic net trend or the VOA trend, the former evidently higher than the later. The real requirement is likely to fall between the two. **The 18.9 ha should be considered as a minimum with 27.2 ha net being a pragmatic level of growth that facilitates new premises for business over the Plan period.** A more positive outlook would be up to a more substantial 43.9 ha, being the mid point between the VOA ten year trend and CoStar ten year trend, incorporating a replacement demand factor. This reflects that the vast majority of premises are essentially full and there is justification to support business growth through new allocations. The upper end of the CoStar range (60.6 ha) is not recommended due to uncertainties in the datasets and the potential influence of airside Stansted Airport related occupations which could potentially be at Northside. However, IcenI is of the view that the development at Northside should **not** be considered suitable supply for the general industrial needs established here, given the very large nature of units which, certainly for phase one, are large scale and strategic in nature and not relating to the historic and local development patterns.

-
- 10.44 The 2017 West Essex and East Hertfordshire Assessment of Employment Needs recommended a need of 22 ha of industrial land needs for Uttlesford 2016-33 or 1.3 ha per annum. Herein the central recommendation is for 27.2 ha for the 2021-40 period or a comparable 1.4 ha per annum. The more positive 43.9 ha is equivalent to 2.3 ha per annum which places greater emphasis on the increased demand for industrial premises in the area in recent years and would enable a potentially increased level of economic growth and productivity.
- 10.45 It is also of note that the 2017 report assumes a 40% rate of employment site reuse - which is not considered in the same way here, but it would be reasonable for the Council to allow for proportion of needs to be met in the same way (on existing sites) subject to reviewing monitoring and completions data. Factoring this element in essentially accounts for the difference between the 43.9 ha and the 27.2 ha herein (although this should be examined in more detail when monitoring data is available) again reinforcing that a net additional provision of 27.2 ha is appropriate.
- 10.46 The 2017 study also suggests a further 2,100 jobs are required to rebalance the labour market (section 4.5). Any provision for employment land above the 27.2 ha in Uttlesford could be considered to be supporting this requirement, meanwhile other FEMA authorities may be best placed to provide office type provision for this additional need should the market still require it at this time.
- 10.47 The 2017 Aecom Uttlesford District Employment Land Review Update indicated a need of 2.5 – 10.5 ha for 2016-33 (17 years). This is considered too low to reflect the long term needs of businesses in Uttlesford taking into account the current constraints in the market.

Qualitative needs

- 10.48 The following considerations are provided in terms of spatial and qualitative requirements:
- 10.49 Existing employment sites in the District are mainly catering for industrial premises (rather than office) - as the VOA analysis shows – and this is really the more substantive market. The office market is modest in scale, localised and focused on SME occupiers. There is little market for larger corporate offices.
- 10.50 Currently there is little in the way of larger firms/premises, and the economy is very focused on local SMEs businesses (outside of the airport). This is true of both the industrial and office markets, with the office market in particular focused particularly on small businesses.
- 10.51 In the short/medium-term the industrial market outlook is strong. Property agents report that attractive locations for new development will be those which are located close to / accessible from the M11 and A120, and which are at/ close to the main settlements as centres of population. This is supported by the historic transactions data, being focused at around Stansted, Great Dunmow and Saffron Walden. Vacancy rates overall are very low at 1.8% with a clear need to bring forward new space in markets across the district in the short-term.

-
- 10.52 Great Dunmow has the strong local industrial market with a range of local businesses. Across the industrial estates in the Town there is very limited vacant premises, and almost no vacant development land. Substantial residential growth is coming forwards, with a lot of consented residential development, and there is a need to bolster the employment role of the settlement to support sustainable development through managing commuting. We consider that the allocation of 5-10 ha or more of employment land would be justified.
- 10.53 Saffron Walden is the largest settlement. This is less well located with respect to the strategic road network. Nonetheless, given the size of the settlement there is limited existing employment land provision – with current provision focused on the Shire Hall Industrial Estate. The allocation of some additional land (c. 2-4 ha) would therefore be warranted through the Local Plan having regard to current provision and to support sustainable development.
- 10.54 There are then employment sites and premises located across a number of other settlements and villages, and in rural locations. Locations with a greater level of provision include Takeley and Elsenham; or Great Chesterford and Clavering (relative to their size). In contrast there is limited provision in some other settlements, such as Thaxted or Felsted. Historic take-up data shows a strong preference for industrial type business to be located up to 5 miles from Stansted where it can access the M11, population centres at Bishop's Stortford and supply chain and business benefits of Stansted Airport. The economic potential of the airport should not be underestimated and many if not most UK airports are able to catalyse industrial and business parks in their proximity. Further industrial and business space should be considered for allocation in this area, beyond Northside.
- 10.55 The office market is focused on SME businesses. Demand is more modest and the market generally slower than is the case for industrial. Proposals for major HQ office development at Trisail Towers, Gaunts End, have not come forwards in part due to the design and location of the scheme. However larger corporate office requirements are more likely to gravitate towards the region's larger / more established commercial centres. Harlow's growth may strengthen its role. Existing office schemes tend to therefore be smaller scale, and focused on providing for local SME businesses. The build-out of these has however been slow in some instances – with for instance further phases of development potential at Thremhall Park and Stansted Courtyard having extant consent.
- 10.56 Given competition from larger and more established centres in surrounding areas, we see limited role for corporate offices. The Council should however look to maintain a supply of good quality, SME space to support local business formation and growth. To do so may however require public sector intervention and support to overcome viability challenges. There is a greater density of schemes in the south of the District, including Thremhall Park, Stansted Courtyard and Sion Park. The Council could appropriately target provision initially at boosting provision in the main urban centres of Saffron Walden, Great Dunmow and Stansted Mountfitchet. There are a range of potential options to do so, including repurposing retail space.

-
- 10.57 Great Chesterford Research Park is somewhat unique and has developed as an important site for biology and life sciences, with a range of existing occupiers in this sectors on a secure site which is accessible from Cambridge and sits within the wider Cambridge/South Cambridgeshire bio-tech cluster. This is a key higher value sector with growth potential, with the (model-based) forecasts showing a modest need land which could be accommodated within the existing allocation. However there is a good case for the allocation of additional land at the site to provide larger plots which are capable of attracting investment from biotech businesses looking to establish a campus. There is the potential for international inward investment in this regard. There does not appear to be evidence indicating potential for R&D / life sciences growth outside of Chesterford, which in itself links strongly into the Greater Cambridgeshire life sciences cluster. Expansion of the existing park is considered to be the best opportunity to grow this sector in the district.
- 10.58 Industrial take-up in the District has been constrained by supply historically, with the lack of progress with local plans influencing this. This means recorded take-up is focused on smaller units influenced by the nature of development opportunities and profile of existing units. There is however wider, strategic sub-regional market demand for larger industrial and particularly warehousing/logistics premises at locations which are accessible from the strategic road network. Stansted Northside in particular provides the potential to accommodate a component of strategic (as opposed to local) demand which is over and above the forecast needs.
- 10.59 In more rural settlements, there is a case for some flexibility within the policy approach to allow the in situ expansion of existing businesses onto adjoining land where they out grow existing employment sites; and to facilitate employment redevelopment of redundant agricultural buildings.
- 10.60 The overall strategy for employment however needs to relate to the broad spatial development strategy for the District, with the potential for strategic development locations to deliver appropriate employment space alongside residential to support vibrant places, daytime population and sustainable travel. The scale and phasing of growth at strategic development locations will be influenced by their size and location. The employment strategy for such locations will need to evolve in an iterative way as the option generation and appraisal process develops and the preferred strategy emerges. It is however reasonable for a proportion of the district's employment needs to be met in these locations; alongside existing settlements which have an existing concentration of population, businesses and local services.

11. FURTHER POLICY DEVELOPMENT

11.1 This section considers the following matters:

- Best practice policy development in rural districts to support a strong rural economy
- The role of village and rural locations in meeting employment site needs.
- The role of neighbourhood plans in bringing forward employment land
- Planning policies that can widen the benefits of employment growth to surrounding communities
- Advice on the impact of market rents on businesses and models for provision of affordable business space that could be secured through planning policy.

Best practice policy development in rural districts to support a strong rural economy

11.2 Uttlesford is a primarily rural area. This is a straightforward reflection of its settlement morphology and the fact that its largest settlement, Saffron Walden, has a population of under 20,000 people. By definition therefore, Uttlesford has a largely rural economy and Uttlesford is rightly regarded as a rural district. However it is important to acknowledge that Uttlesford is well-connected – by road and rail to London and Cambridge; by road to Colchester and the east coast ports; and by air to destinations around the world. It also has an economic structure that does not differ greatly from that of areas with a stronger urban character: While Uttlesford has more micro businesses and both a land-based sector and a visitor economy, the bulk of employment is in sectors and businesses that are not intrinsically rural. Uttlesford differs therefore from ‘deeply rural’ districts – such as Torridge in Devon or perhaps North Norfolk – whilst sharing some of the same spatial attributes. ‘Best practice’ in relation to policy development in rural districts therefore needs to be understood in this context.

11.3 Various reviews of rural planning policy have been completed and elements of these are relevant to Uttlesford. The Scottish government, for example, published a comprehensive review of the evidence to inform the next iteration of Scotland’s National Planning Framework⁴¹. This considered, *inter alia*, how planning policy can support strong and vibrant rural communities and economies. It argued for a nuanced approach, based on a rural typology that needed to be quite granular and recognising that remote and sparsely populated areas have policy requirements that are quite

⁴¹ *Rural planning policy to 2050: Research to inform the preparation of NPF4* Report by Chris Dalglish (Inherit) and Angus Dodds, Debbie Mackay and Hannah Belford (Savills), published by the Scottish Government, January 2020

different from those surrounding better-connected rural areas. At one level this is self evident, but at another, it is important: the rural 'label' needs to be used with some reflection and care.

11.4 Some of the findings from the evidence review conducted for the Scottish Government are germane. Mirroring what has been observed in Uttlesford, it found that “*general changes to the rural economy, often associated with the decline in relative importance of the land based industries and the rise of the service sector, are creating challenges and opportunities across all rural areas. Small and micro businesses are more significant in a rural context than larger scale industries*”. Its recommendation in response was that “*Supporting small businesses to survive and grow is essential for rural areas. Particular recognition should be given to the retention and attraction of value-adding processes in rural areas*”.

11.5 What this means in practice will inevitably vary from place to place, but two suggestions resonate strongly with Uttlesford’s particular circumstances as described earlier in this report:

- First, there may well be a case for the greater provision of small business units. This reflects both the high incidence of microbusinesses across a broad spectrum of sectors, but also a concern that innovation needs to be encouraged. ‘Hubs’ of small business units could be part of the solution. In practice, schemes of this nature often struggle in terms of viability and consideration would therefore need to be given to *how* they might be delivered, which may well involve public intervention or management of such facilities, but their role can be important – both in direct and indirect (and possibly intangible) terms.
- Second – and related – the report for the Scottish Government argues for “*a more permissive approach allowing for the gradual expansion of home working activities across all rural areas until they reach a size where they can justify the cost of renting specific premises*”. It suggests further that “*live/work interlinked facilities should be catered for by the planning system in order to attract new incoming workers and business facilities that allow people to meet and collaborate*”⁴². There is evidence that Uttlesford has seen a growth in home working; this preceded the pandemic but has been accelerated by it. In this context, a proactive approach to live/work provision would appear to be consistent with the district’s economic ambitions.

11.6 More broadly, it is important to recognise that at a local level, there are very close inter-relationships between housing, local services and community viability – and the links between all three affect the vibrancy or otherwise of local rural economies. Therefore in seeking to design a policy to support a strong rural economy, consideration also needs to be given to these different dimensions. SQW completed a long term evaluation of Defra’s Rural Growth Network Pilot Initiative – a programme that was designed fundamentally to stimulate rural economic growth. One of the key findings from it was the importance of what might be described as ‘pre-enterprise support’ – i.e. building networks

⁴² Ibid. page 124

between individuals (often women) who might be interested in setting up a small business and giving them the confidence (and to some extent the tools) to do so. In truth, this was closer to a community-level intervention than a strictly economic one, as conventionally defined, yet it appeared to make an important difference. It effectively strengthened networks within communities which were, in some respects, the catalysts for economic activity and, prospectively, economic growth⁴³.

11.7 Finally, it is important to recognise that the two key sectors which have sometimes been synonymous with the rural economy also need appropriate and supportive policy frameworks:

- In relation to land-based activities, this means a policy framework that is supportive of both diversification (linked to the re-use of, for example, redundant farm buildings) and intensification/movement along the value chain (e.g. through the provision of small manufacturing/production sites).
- For the visitor economy, the issues are more complex, particularly given the links to the housing market. However the intention ought to be to support sustainable forms of tourism (particularly where there are (or could be) strong local supply chains) and to plan for an appropriate local infrastructure for the visitor economy (linking to town centres in Uttlesford in particular, but also recognising the significance of heritage attractions).

The role of neighbourhood plans in bringing forward employment land

11.8 Uttlesford has 9 designated Neighbourhood Plan Areas and 4 made Plans, although none appear to have allocated employment sites.

11.9 Neighbourhood Plans enable communities to take charge in deciding the future of the places where they live and work. They can be used as a tool to help identify suitable sites for employment land. The development of Neighbourhood Plans in Uttlesford provides an opportunity for the designated Neighbourhood Areas to include policies and allocations for employment land. There are numerous examples of adopted Neighbourhood Plans across the country that do this. This would typically be expected to protect or support local business providing services or employment particular to that area. The stakeholder engagement undertaken suggests there is an appetite to develop employment sites however, based on past experience, Iceni is also of the view that Neighbourhood Plans can in some instances seek to release employment land particularly where this enables housing development that might otherwise occur on greenfield sites. Overall, the contribution of Neighbourhood Plans to the employment land process is expected to be modest.

⁴³ Final evaluation of the Rural Growth Network Pilot Initiative – Final Report prepared by SQW, published by Defra May 2016

Planning policies that can widen the benefits of employment growth to surrounding communities

- 11.10 Planning policy can be applied to new developments where there are opportunities to provide apprenticeships or training thus raising skills and attainment and supporting people into higher paid employment, potentially connecting employers and employment opportunities to local schools, colleges, training organisations and voluntary services. It seems reasonable to include such policies as a matter of course to encourage local skills and employment development and should generate little burden on the developer / contractor.
- 11.11 There are a number of authorities in London and the South East that have effectively adopted example policies. Lambeth, Reading and Barnet have set out a policy requirement (as part of Section 106 planning obligation) to access employment opportunities created by the development. This includes creating apprenticeships, using local labour supply and providing training for young people – and where initiatives could not be met in developments, a financial contribution would be considered.
- 11.12 Each Council has created a supplementary planning document (SPD) outlining the context and justification of the requirement. The SPD requirements are outlined below.

London Borough of Lambeth

- 11.13 In order to address Lambeth's high out-of-work benefits, skills shortages and high youth unemployment, Lambeth Borough Council's Employment and Skills Planning Obligations SPD sets out the planning obligations which will be sought from developers:
- 11.14 Provision of apprenticeships for Lambeth residents aged under 25, with the expectation that one new apprentice would be capable of being generated by every 1,000 sqm of development or every 10 residential units provided,
- 11.15 Provision of employment opportunities in the end-user phase which have appropriate support to make them suitable for long-term unemployed Lambeth resident(s),
- 11.16 Provision for notification of job vacancies, arising from both construction and end-use occupation, to the council or any other agency nominated by the council;
- 11.17 Provision for delivery of bespoke pre-employment and skills training for Lambeth residents that will provide them with the skills to access the jobs that are being created.

Reading Borough Council

- 11.18 Reading Borough Council's Employment Skills and Training SPD recognises that the skills and education of the labour force is crucial to the economic viability, flexibility and competitiveness of the

local economy. The Council has a requirement for S106 planning obligations to develop a site-specific Employment and Skills Plan (ESP).

11.19 The ESP's should cover the following outcomes (both construction and end use phase):

- Number of apprenticeships,
- Employment and training initiatives,
- Training and work experience for younger people, including those who are not in employment, training or education,
- Best endeavours to maximise local labour;
- Local procurement agreement - potential for local businesses to be included in tender list.

London Borough of Barnet

11.20 Barnet's 'Delivering Skills, Employment, Enterprise and Training from Development through S106' SPD establishes the use of Local Employment Agreements (LEA) as a mechanism to deliver employment opportunities generated by construction and end uses jobs.

11.21 In the LEA, the developer is expected to set out its approach to forecasting job opportunities, notification of job vacancies, local labour target, jobs brokerage and skills training, apprenticeships and work experience, use of local suppliers and delivery of specific LEA targets.

Advice on the impact of market rents on businesses and models for provision of affordable business space that could be secured through planning policy.

11.22 The market analysis and business engagement undertaken by Icenii has identified a floorspace affordability issue in the office and employment market in Uttlesford particularly relating to better quality spaces. The workspace market can be difficult for micro-enterprise and SME's to enter. As noted elsewhere, there appears to be a role for the public sector in developing and managing smaller quality units which the market can find it difficult to achieve viably.

11.23 Affordable Workspace can be defined as workspace that has a rental value below the market rate (generally, 80% of the market rate or less). The lower rates mean that occupation tends to be feasible for small or start up enterprises. Therefore, by providing affordable workspace it can help local entrepreneurs and firms to have security and to be protected from rising rents and displacement.

11.24 London authorities and the GLA provide good examples of planning policies that seek to secure affordable workspace. These use Section 106 agreements in order to deliver affordable workspace. Examples are outlined below.

London Plan 2021

- 11.25 The London Plan includes policies to provide new affordable workspace based on evidence that the city is running short of industrial and lower-cost office space and disproportionately affecting micro firms and other SMEs.
- 11.26 Policy E2 (D) addresses this by securing a supply of space by needing to “consider the scope to provide a proportion of flexible workspace or smaller units suitable for micro, small and medium-sized enterprises” for larger commercial proposals above 2,500 sqm.
- 11.27 Policy E3 has an explicit focus on affordable workspace stating that “in defined circumstances.. planning obligations may be used to secure affordable workspace (in the B Use Class) at rents maintained below the market rate for that space.” Specific circumstances are required including where “affordable workspace would be necessary or desirable to sustain a mix of business or cultural uses which contribute to the character of an area” and that “Boroughs, in their Development Plans, should consider detailed affordable workspace policies in light of local evidence of need and viability.”

Islington Local Plan Strategic and development management policies (2019)

- 11.28 The provision of affordable workspaces in Islington is secured through the Section 106 agreements. The Council’s evidence has shown that the affordable workspace market has failed in Islington. Their intervention has reportedly secured 4,000 sqm of office and workshop space in commercial development now being let to local entrepreneurs and starts-ups at genuinely affordable rents.
- 11.29 Policy B4: Affordable workspace provides area specific guidance on where 10% of affordable workspace must be included for employment developments over 1,000 sqm, leased to the council for a peppercorn rent for 20 years and managed by a council approved Workspace Provider. Rental values for end occupiers will ultimately depend on the quality of space and its location. All proposals which provide affordable workspace must prepare an Affordable Workspace Statement.

Tower Hamlets Local Plan (2020)

- 11.30 The impact of permitted development rights and the general shortage of industrial property in the borough has disproportionality affected the ‘affordable’ end of the property market; including being attractive to local SME firms. Without explicit policy it is thought that it would be unlikely the borough could secure space below the market rent.
- 11.31 The local plan details in policy D.EMP2 that “4. Within major commercial and mixed-use development schemes, at least 10% of new employment floorspace should be provided as affordable workspace.”

12. SUMMARY AND RECOMMENDATIONS

12.1 The key findings and recommendations of the report are set out below:

Baseline

12.2 The evidence suggests that **Uttlesford has seen relatively rapid employment growth in recent years**, out performing surrounding areas in comparative terms.

12.3 The Covid-19 pandemic has affected the local economy in the short-term but the claimant count in Uttlesford – which stood at 4.4% in May 2021 – remains below regional and national averages.

12.4 The **largest sectors in Uttlesford** by the proportion of total employment in 2019 were: Transportation and Storage (19.6%), Professional, Scientific and Technical Services; and Wholesale and Retail Trade (both 10.9%). Other sectors that recorded greater than 5% of total employment included Accommodation and Food Service Activities (8.7%), Manufacturing, Administration and Support Services and Education (all of which accounted for 6.5%).

12.5 **Uttlesford is home to a high proportion of micro-enterprises** and a lower proportion of small, medium-sized and large enterprises when compared to the East of England and England as a whole. There are a lot of medium-sized enterprises in the Transportation and storage, Wholesale and retail trade, and Construction sector and Manufacturing in Uttlesford.

12.6 In terms of **spatial distribution**, Saffron Walden and Great Dunmow are home to just over a quarter of **business units** in Uttlesford. Rural areas accommodate nearly a third of units. Birchanger (including Stansted Airport) is home to 60% of large business units in Uttlesford. **Around a third of employment in Uttlesford is within Stansted Airport and its environs**. Around three quarters of employment in this area are in Transportation and storage and Accommodation and food services. **Rural areas and Small Towns/Villages accommodate around 40% of employment in Uttlesford**.

Property market

- 12.7 **Office** demand is focused generally on local SME businesses and particularly space of up to 20,000 sq.ft. The market is difficult at the time of writing (July 2021) influenced by Covid-19. It is reported that that outstanding requirements are all for small and medium-sized units, with little demand for larger HQ office space. Rents around Stansted Airport achieve around £19 psf which is below viable for speculative development. The new-build office scheme at Tristal Towers has been on the market for five years, but appears unlikely to come forwards in the short-term given viability challenges.
- 12.8 The local market in Saffron Walden is focused typically on units of 500 – 1,500 sq.ft.. Some inquiries from small businesses are reported, for satellite offices instead of commuting to London or Cambridge.
- 12.9 A lack of **industrial supply** is noted in Uttlesford and more generally within 10 miles of Bishops Stortford with a 98% occupancy level within the industrial market. Demand outstrips supply and there is a need to bring forward new development. Within a 10 mile radius of the Airport, agents report significant requirements. There is demand for industrial space in a range of small, medium and large size bands across the District including from established manufacturing businesses in the District. Additional supply is needed, particularly close to M11 Junction 8, which is the area of strongest occupier demand. Demand exists for smaller rural premises across the district and around the smaller towns and villages.

Business survey

- 12.10 The finding of the business survey (83 respondents) can be summarised as follows, reflecting those responding necessarily than the District as a whole:
- Around a third of businesses surveyed said they were looking to expand or diversify and around two thirds expected their turnover to grow and all businesses expected employment numbers to grow.
 - Key local barriers to growth include: Planning system; Lack of rural and agricultural housing (including for seasonal workers); Lack of suitable commercial premises (including those available to purchase); and Low supply of skilled staff.
 - Around a third of businesses surveyed felt they were being / would be impacted by technological change or changing ways of working. A key part of this issue was around the need for better digital technology and skills. Furthermore, digital connectivity would be the key factor for businesses if they were looking to choose new premises.
 - Around 60% of businesses do not think their premises meet their current **and/or** future needs.

- Around a quarter of businesses surveyed wanted to relocate in the next 5 years. A significant proportion of these were micro office-based/home-working businesses suggesting demand for small office and light industrial space.
- Around 10-15 of the businesses surveyed said that there was not enough or not enough quality/suitable space in Uttlesford. Around 7 of the businesses surveyed stated that commercial property in Uttlesford was too expensive.

The Rural Economy

12.11 This data shows that rural areas and rural town/villages within Uttlesford accommodate a very significant portion of economic activity within the district. There appears to be an opportunity to diversify and grow Uttlesford's Rural Economy.

- One potential opportunity may be to focus **floorspace provision of small (potentially shared) units in rural areas** which offer micro businesses an alternative to working from home, particularly in relation to office type premises. There is potential for growth of non-office-based sectors (e.g. manufacturing). Engagement with stakeholders revealed that there was a lack of workshop space (particularly incubator space for small businesses). This could be accommodated on farm premises and such units do exist although are of varying quality.
- **Agri-tech, Agri-food** and Forestry-tech sectors may provide opportunity to deliver growth and support sustainable food production, maintain plant and animal health and support and enhance natural habitats.
- **Digital connectivity** is vital in diversifying the rural economy - Uttlesford's Economic Development Strategy produced in 2018 stated that digital connectivity is particularly poor in rural parts of the district.
- Providing **sufficient housing and affordable housing in rural areas** is vital to unlocking the potential of rural businesses.
- There is a **need to allow farmers of modernise/replace buildings, expand and diversify, both from an economic and environmental sustainability perspective.**

The Green Economy

12.12 Key issues for Uttlesford's green economy include:

- Uttlesford continues to have a locally significant land-based sector which ought to be a strength in relation to the key outcomes linked to the green economy. These could potentially provide a route to local produce and a more circular economy, helpful in relation to environmental objectives.

- Essex is one of the sunniest counties in the UK with an average of 1,598 hours of sunshine per year compared to the national average of 1,373. Solar farms are currently under development at two sites near Thaxted and Saffron Walden.
- Jet Zero – there is an opportunity for Uttlesford, spearheaded by Stansted Airport, to lead the way on the government’s ambition to be carbon neutral in aviation by 2050.
- Construction, which is evidently a strength in Uttlesford, has a number of green economy related opportunities most notably in terms of retrofit of properties and new build using modern methods of construction. The retrofit agenda has been distorted by the short lived green homes grants scheme by government, but is likely to remain a priority given the impact on overall carbon emissions and the move for example away from gas powered boilers.

The Visitor Economy

- 12.13 In 2018, Uttlesford’s visitor economy represented the second most important income strand for the district after retail spending . The district’s visitor economy is best understood in relation to two main elements: One part is centred around the historic market towns of Saffron Walden, Great Dunmow and Thaxted as well as regionally and nationally important visitor attractions; A second element is linked to London Stansted Airport.

Life Sciences Research and Innovation

- 12.14 A key local economic driver in Uttlesford is Chesterford Research Park which provides laboratory and office space for biotechnology, pharmaceutical and technology R&D companies. Current occupiers include AstraZeneca, Cambridge Epigenetix, Microbotica and Oxford Nanopore Technologies.
- 12.15 Chesterford Research Park is Uttlesford’s most prominent R&D facility. The Park masterplan set out the potential for around 1m sqft for research and development uses of which approximately 300,000 sq ft of space is already occupied. Around 700,000 sqft or 65,000 sqm remains for construction of which some has planning permission. It would be reasonable to expect that by the end of the Plan period the masterplan could have been developed in full.

Stansted Airport

- 12.16 In May 2021, Stansted Airport secured planning consent (through appeal) for expansion to 43 million passengers per year. Additional Direct On-Airport **Additional employment of 3,000 is expected in the Plan period.** Potentially 400-500 additional jobs could be created through indirect and induced employment.

-
- 12.17 The airport owners, Manchester Airports Group (MAG), have brought in a development partner – Columbia Threadneedle – to bring forward development of land at **Northside**, on the northern side of the Airport. Around 2.1million sq.ft (200,000 sqm) of principally B8 warehousing development is envisaged. It is expected that the early phases of development will be targeted at ‘big box’ logistics exceeding 100,000 sqft and possibly much larger. This reflects the target occupiers as being regional / national occupiers rather than meeting the needs of local businesses. Oxford Economics, for the scheme promoters, estimate that the **scheme will deliver around 2,600 net additional jobs**.

Economic Growth outlook

- 12.18 IcenI has considered baseline forecasts by Cambridge Econometrics which report 61,500 jobs by 2040 from a start of 53,900 in 2019. Based on potential developments at Stansted Airport, Northside and Chesterford Research Park, IcenI is of the view that employment could reach 66,600 by 2040 and that this is a more realistic figure.

Employment Land Needs to 2040

- 12.19 **For offices** IcenI therefore considers a range of 4.0-6.3 ha is a reasonable provision for the office market based on a labour demand model and taking into account a discount for R&D premises growth.
- 12.20 For industrial 18.9 ha should be considered as a minimum with **27.2 ha net being a recommended pragmatic level of growth** that facilitates new premises for business over the Plan period. A more positive outlook would be up to a more substantial 43.9 ha. This reflects that the vast majority of premises are essentially full and there is justification to support business growth through new allocations. IcenI’s of the view that the development at Northside should **not** be considered suitable supply for the general industrial needs established here, given the very large nature of units which, certainly for phase one, are large scale and strategic in nature and not relating to the historic and local development patterns.
- 12.21 Great Dunmow has the strong local industrial market with a range of local businesses. We consider that the allocation of 5-10 ha or more of employment land would be justified.
- 12.22 Saffron Walden is the largest settlement. Given the size of the settlement there is limited existing employment land provision. The allocation of some additional land (c. 2-4 ha) would therefore be warranted through the Local Plan having regard to current provision and to support sustainable development.
- 12.23 There are then employment sites and premises located across a number of other settlements and villages, and in rural locations. Historic take-up data shows a strong preference for industrial type business to be located up to 5 miles from Stansted where it can access the M11, population centres at Bishop’s Stortford and supply chain and business benefits of Stansted Airport. The economic potential of the airport should not be underestimated and many if not most UK airports are able to

catalyse industrial and business parks in their proximity. Further industrial and business space should be considered for allocation in this area, beyond Northside.

- 12.24 Given competition from larger and more established centres in surrounding areas, we see limited role for corporate offices. The Council should however look to maintain a supply of good quality, SME space to support local business formation and growth. To do so may however require public sector intervention and support to overcome viability challenges. The Council could appropriately target provision initially at boosting provision in the main urban centres of Saffron Walden, Great Dunmow and Stansted Mountfitchet. There are a range of potential options to do so, including repurposing retail space.
- 12.25 Great Chesterford Research Park is somewhat unique and has developed as an important site for biology and lifesciences. There is a good case for the allocation of additional land to provide larger plots which are capable of attracting investment from biotech businesses looking to establish a campus. There is the potential for international inward investment in this regard.
- 12.26 In more rural settlements, there is a case for some flexibility within the policy approach to allow the in situ expansion of existing businesses onto adjoining land where they out grow existing employment sites; and to facilitate employment redevelopment of redundant agricultural buildings.
- 12.27 The overall strategy for employment however needs to relate to the broad spatial development strategy for the District, with the potential for strategic development locations to deliver appropriate employment space alongside residential to support vibrant places, daytime population and sustainable travel. The scale and phasing of growth at strategic development locations will be influenced by their size and location. The employment strategy for such locations will need to evolve in an iterative way as the option generation and appraisal process develops and the preferred strategy emerges. It is however reasonable for a proportion of the district's employment needs to be met in these locations; alongside existing settlements which have an existing concentration of population, businesses and local services.

Policy development

- 12.28 In terms of the rural economy, planning policy requires a nuanced approach. Supporting small businesses to survive and grow is essential for rural areas. Particular recognition should be given to the retention and attraction of value-adding processes in rural areas.
- 12.29 There may well be a case for the greater provision of small business units. 'Hubs' of small business units could be part of the solution. In practice, schemes of this nature often struggle in terms of viability and may require public sector support but their role can be important. Live/work interlinked facilities should also be considered by the planning system in order to attract new incoming workers and business facilities that allow people to meet and collaborate.

12.30 Planning policy through S106 can be applied to new developments where there are opportunities to provide apprenticeships or training thus raising skills and attainment and supporting people into higher paid employment, potentially connecting employers and employment opportunities to local schools, colleges, training organisations and voluntary services.

12.31 The market analysis and business engagement undertaken by Icení has identified a floorspace affordability issue in the office and employment market in Uttlesford particularly relating to better quality spaces. The workspace market can be difficult for micro-enterprise and SME's to enter. London authorities and the GLA provide good examples of planning policies that seek to secure affordable workspace. These use Section 106 agreements in order to deliver affordable workspace.

A1.NOTE ON BUSINESS DATA

A1.1 The Inter-Departmental Business Register (IDBR) provides details of UK enterprises for statistical purposes. An enterprise is a business or company and includes state-owned enterprises such as local councils. It is mainly drawn from Value Added Tax (VAT) and Pay As You Earn (PAYE) records from HMRC. The IDBR covers around 2.7 million enterprises in all sectors of the economy, but since its two main sources have thresholds, very small enterprises operating below these will, in most cases, not be included.

A1.2 Enterprise counts by size and sector covering all enterprises are available from BEIS, however this data is not available at a local authority level and therefore IDBR data has been used to assess the structure of the business base in Uttlesford.

A1.3 Data on the number of enterprises registered in a given geographical area by sector and size, which is sourced from the IDBR, is available to download from NOMIS. This data is rounded to the nearest five. The IDBR for Uttlesford has also been purchased which gives details of local units which are within the District. Local Units are individual sites that belong to an Enterprise. These often represent the whole enterprise but are sometimes just one site within an enterprise. For example, a supermarket chain may have more than one local unit within a district.

A1.4 When performing analysis at a district level, IDBR data downloaded from NOMIS has been used in order to allow for comparison with wider geographical areas. The IDBR of local units within Uttlesford has been used to assess the distribution of enterprises within Uttlesford.

Agenda Item 5

Committee: Local Plan Leadership Group

Date:

Title: Strategic Flood Risk Assessment update

Monday, 29
November 2021

Report Author Luke Mills, New Communities Senior Planning Officer

lmills@uttlesford.gov.uk

Summary

1. The purpose of this report is to provide an update on progress regarding the Strategic Flood Risk Assessment (SFRA), which will support the Local Plan. A Level 1 SFRA Report is appended.

Recommendations

2. That the Group notes the content of the Level 1 SFRA Report and its implications for plan-making.

Financial Implications

3. None.

Background Papers

4. The following papers were referred to by the author in the preparation of this report and are available for inspection from the author of the report.

Level 1 Strategic Flood Risk Assessment and appendices (Appendix A interactive mapping to follow)

Impact

- 5.

Communication/Consultation	The SFRA will be published alongside other evidence, to support the Regulation 18 consultation on the Draft Local Plan in Spring 2022.
Community Safety	The SFRA will help ensure that the Local Plan properly addresses flooding, based on a thorough understanding of risk.
Equalities	N/A
Health and Safety	N/A

Human Rights/Legal Implications	N/A
Sustainability	Addressing flood risk is an important part of achieving sustainable development.
Ward-specific impacts	All
Workforce/Workplace	N/A

Situation

6. The Level 1 SFRA has been prepared by the council's consultants, JBA. It provides a comprehensive and robust evidence base on flood risk issues, to support the production of the new Local Plan.
7. The SFRA ensures that the spatial strategy can be prepared on the basis of a sound understanding of flood risk issues. For example, development sites can be allocated in locations which are known to be at the lowest risk of flooding.
8. It should be noted that there may be no requirement for a Level 2 SFRA, which will only be necessary if the council considers that it needs to allocate land for development in areas at risk of flooding. The Level 1 SFRA indicates that the district is relatively unconstrained in terms of flood risk, such that it should be possible to allocate sites outside such areas.
9. In addition to supporting the allocation of development sites, the Level 1 SFRA provides recommendations on policy requirements (e.g. a drainage strategy for phased developments) and guidance on site-specific flood risk assessments which can be followed by developers and used as an assessment tool by planners considering individual planning applications.

Risk Analysis

10.

Risk	Likelihood	Impact	Mitigating actions
If the Council does not have an NPPF compliant evidence base, the plan could be found unsound.	2	4 – delays in adopting the Local Plan	Professional evidence developed in line with the NPPF and PPG. Local Plan risks are assessed and managed through the Local Plan project management process.

1 = Little or no risk or impact

2 = Some risk or impact – action may be necessary.

3 = Significant risk or impact – action required

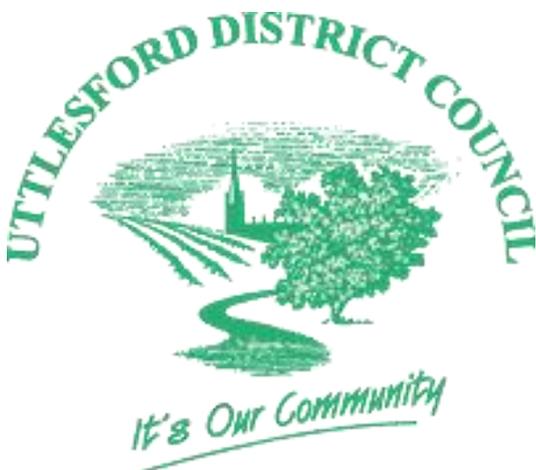
4 = Near certainty of risk occurring, catastrophic effect or failure of project.

Uttlesford District Council Level 1 Strategic Flood Risk Assessment

Final Report

November 2021

www.jbaconsulting.com



JBA Project Manager

Emily Jones
Pipe House
Lupton Road
Wallingford
OX10 9BS

Revision history

Revision Ref/Date	Amendments	Issued to
S3-P01 / 04 October 2021	Draft Report	Luke Mills, Uttlesford District Council
A1-C01 / November 2021	Amended following client comments	Luke Mills, Uttlesford District Council

Contract

This report describes work commissioned by Luke Mills, on behalf of Uttlesford District Council by an email dated 12th April 2021. Louise Goode, Emily Jones, Joanne Chillingworth, Alex Clark and Dularee Goonetilleke of JBA Consulting carried out this work.

Prepared by Louise Goode BSc MRes PhD
Analyst

Reviewed by Joanne Chillingworth BSc MSc MCIWEM C.WEM
Principal Analyst

Purpose

This document has been prepared as a Final Report for Uttlesford District Council. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

JBA Consulting has no liability regarding the use of this report except to Uttlesford District Council.

Acknowledgements

We would like to acknowledge the assistance of

- Uttlesford District Council
- Environment Agency
- Essex County Council
- Anglian Water and Thames Water; and
- Planners at the neighbouring authorities

Copyright

© Jeremy Benn Associates Limited 2021.

Carbon footprint

A printed copy of the main text in this document will result in a carbon footprint of 556g if 100% post-consumer recycled paper is used and 437g if primary-source paper is used. These figures assume the report is printed in black and white on A4 paper and in duplex.

JBA is aiming to reduce its per capita carbon emissions.

Executive summary

This report provides a comprehensive and robust evidence base on flood risk issues to support the production of the new Local Plan. This is a Level 1 Strategic Flood Risk Assessment (SFRA) and it will be used to inform decisions on the location of future development and the preparation of sustainable policies for the long-term management of flood risk.

Introduction

This Level 1 Strategic Flood Risk Assessment (SFRA) updates the 2016 Level 1 SFRA. This study will be used to inform decisions on the location of future development and the preparation of sustainable policies for the long-term management of flood risk and provides a comprehensive and robust evidence base to support the new Uttlesford District Council Local Plan. The key objectives are:

- To update the Council's 2016 SFRA, taking into account the most recent policy and legislation in the National Planning Policy Framework.
- To collate and analyse the latest available information and data for current and future (i.e. climate change) flood risk from all sources, and how these may be mitigated.
- To inform decisions in the emerging Local Plan, including the selection of development sites and planning policies.
- To provide evidence to support the application of the Sequential Test for the allocation of new development sites, to support the Council's preparation of the Local Plan.
- To provide a comprehensive set of maps presenting flood risk from all sources that can be used as evidence base for use in the emerging Local Plan.
- To provide advice for applicants carrying out site-specific Flood Risk Assessments and outline specific measures or objectives that are required to manage flood risk.

Summary of flood risk in Uttlesford District

- There are numerous recorded flooding incidents across the district. Areas include, but are not limited to, Ashdon, Clavering, Debden, Elsenham, Great and Little Chesterford, Great and Little Dunmow, Great Sampford, Hatfield Heath, Little Hallingbury, Little Walden, Newport, Saffron Walden, Swards End, Stansted Mountfitchet, Stebbing, Takeley and Thaxted. Sources of past flooding have been predominantly from main rivers, ordinary watercourses and surface water.
- There are three major river catchments within the Uttlesford district: Great Ouse, North Essex and Thames. The main rivers associated with fluvial flooding in the Great Ouse catchment are the River Cam and associated tributaries such as The Slade, Flufen Slade, Debden Water amongst others. Flooding occurs along the course of the rivers, mainly affecting Saffron Walden and Newport. The North Essex catchment has the River Chelmer, Pant, Can and Stebbing Brook amongst others. The Chelmer passes through areas such as Great Dunmow where there is greater risk. The Thames catchment's main rivers include the Stort, Roding, Stansted and Pincey Brook to name some. The main areas of fluvial flood risk are along the River Stort and Pincey Brook, near Stansted Airport and Stansted Mountfitchet. A large number of the rivers across the district flow through rural catchments with smaller villages. Overall, flood extents across the district are generally confined with little difference between Flood Zone 2 and 3, due to the narrow floodplains in the upper reaches with the district being home to the source of these rivers.

- Surface water risk largely follows the topography of the watercourses. There are a few areas where there are additional smaller flow paths, and minor areas of ponding. Surface water is also often impounded by roads or rail embankments, such as at Stansted Mountfitchet and the M11. Areas identified with high-risk surface water extents (30-year event) are Saffron Walden Clavering, Great Dunmow, Manuden, Radwinter, Takeley, Thaxted and Stansted Mountfitchet. Other areas within Uttlesford District that have been identified as having a surface water flooding problem through the flood history review include Little Hallingbury and Little Dunmow.
- Data from Anglian Water and Thames water shows that sewer flooding is limited and very localised.
- Areas at risk of flooding today are likely to become at increased risk in the future and the frequency of flooding will also increase in such areas as a result of climate change. Flood extents are likely to increase; in most locations, this may not be by very much as the floodplain topography is confined, but flood depth, velocity and hazard may have more of an impact due to climate change. It is recommended that the Council works with other Risk Management Authorities (RMAs) to review the long-term sustainability of existing and new development in these areas when developing climate change plans and strategies for the district.
- The JBA Groundwater Flood Risk Map shows that, in general, the majority of the Uttlesford District is not susceptible to groundwater flooding. However, there are areas where groundwater varies from 5m below ground level, to some areas where it is less than 0.025m below ground level. This appears to be in line with the flood extents of the River Stort, Stansted Brook, Bourne Brook, and the River Cam and its tributaries of Wicken Water, The Slade, Flufen Slade, Debden Water and an unnamed tributary. Therefore, along the course of these rivers and their surrounding floodplains, the risk of flooding from groundwater is relatively high. There are also smaller pockets of areas where groundwater is 0.5 – 5m below ground level along the River Chelmer and Pant.
- There are no canals in the Uttlesford District, therefore there is no risk of canal overtopping or breach.
- There is a potential risk of flooding from four reservoirs, both inside and outside the district boundary, but there are no records of flooding from reservoirs in the study area. The level and standard of inspection and maintenance required under the Reservoirs Act 1975 means that the risk of flooding from reservoirs is relatively low. However, there is a residual risk of a reservoir breach and this risk should be considered in any site-specific Flood Risk Assessments (where relevant).

How to use this report

Planners

The SFRA provides recommendations regarding all sources of flood risk in Uttlesford District, which can be used to inform policy on flood risk within the Local Plan. This includes how the cumulative impact of development should be considered.

It provides the latest flood risk data and guidance to inform the Sequential Test and provides guidance on how to apply the Exception Test. The Council can use this information to apply the Sequential Test to strategic allocations and identify where the Exception Test will also be needed.

The SFRA provides guidance for developers, which can be used by development management staff to assess whether site specific Flood Risk Assessments meet the required quality standard.

Developers

This SFRA provides guidance for the application of the Sequential and Exception Tests at a site level and for detailed site-specific Flood Risk Assessments.

For sites that are not strategic allocations, developers will need to use this SFRA to help apply the Sequential Test. For all sites, whether strategic allocations or windfall sites, developers will need to apply the Exception Test and use information in a site-specific Flood Risk Assessment to inform this test at planning application stage.

When assessing sites not identified in the Local Plan (windfall sites), developers should use evidence provided in this SFRA to apply the Sequential Test as well as providing evidence to show that they have adequately considered other reasonably available sites.

This is a strategic assessment and does not replace the need for site-specific Flood Risk Assessments where a development is either within Flood Zones 2 or 3 or greater than a hectare in Flood Zone 1. In addition, a Surface Water Drainage Strategy will be needed for all major developments in any Flood Zone to satisfy Essex County Council, the Lead Local Flood Authority (LLFA).

Developers can use the information in this SFRA, alongside site-specific research to help scope out what additional work will be needed in a detailed Flood Risk Assessment. To do this, they should refer to Chapter 5, Appendix A (Interactive PDF mapping) and Appendix B (Data sources used in the SFRA). At the planning application stage, developers may need to undertake more detailed hydrological and hydraulic assessments of the watercourses to verify flood extent (including latest climate change allowances, last updated by the Environment Agency in 2021), inform Masterplanning and prove, if required, whether the Exception Test can be passed. As part of the Environment Agency's updated guidance on climate change, which must be considered for all new developments and planning applications, developers will need to undertake a detailed assessment of climate change as part of the planning application process when preparing FRAs.

Developers need to ensure that new development does not increase surface water runoff from a site. Chapter 9 provides information on the surface water drainage requirements of Essex County Council as LLFA. Sustainable Drainage Systems should be considered at the earliest stages that a site is developed which will help to minimise costs and overcome any site-specific constraints.

Flood Risk Assessments will need to identify how flood risk will be mitigated to ensure the development is safe from flooding. In high-risk areas, the Flood Risk Assessment will also need to consider emergency arrangements, including how there will be safe access and egress from the site.

Any developments located within an area protected by flood defences and where the standard of protection is not of the required standard (either now or in the future) should be identified and the use of developer contributions considered to fund improvements.

Cumulative impacts

A cumulative impact assessment has been carried out which has identified which catchments in Uttlesford District are more sensitive to the cumulative impact of development and where more stringent policy regarding flood risk is recommended. Any development in these areas should seek to contribute to work that reduces wider flood risk in those catchments.

Neighbourhood plans

The SFRA provides information on the sources of flooding and the variation in the risk across the district, which organisations are involved in flood risk management and their latest strategic plans, current plans for major flood defences, the requirements for detailed Flood Risk Assessments and to inform the site selection process.

Neighbourhood planners can use this information to assess the risk of flooding to sites within their community, using Chapter 5, the sources of flooding in Uttlesford District and the flood mapping in the appendices. The SFRA will also be helpful for developing community level flood risk policies in high flood risk areas.

These maps highlight on a broadscale where flood risk from fluvial, surface water, groundwater and the effects of climate change are most likely. These maps are useful to provide a community level view of flood risk but may not identify if an individual property is at risk of flooding or model small scale changes in flood risk. Local knowledge of flood mechanisms will need to be included to complement this broadscale mapping. Similarly, all known recorded historical flood events for the district are listed in Section 5.1 and this can be used to supplement local knowledge regarding areas worst hit by flooding. Ongoing and proposed flood alleviation schemes planned by Essex County Council are outlined in Section 6.4 and Section 8.4 discusses mitigations, resistance and resilience measures which can be applied to alleviate flood risk to an area.

Contents

Executive summary	iv
1 Introduction	16
1.1 Purpose of the Strategic Flood Risk Assessment	16
1.2 Local Plan	16
1.3 Levels of SFRA	16
1.4 SFRA outputs	17
1.5 SFRA study area	17
1.6 Consultation	22
1.7 Use of SFRA data	22
1.8 Structure of this report	23
1.9 Understanding flood risk	24
1.9.1 Sources of flooding	24
1.10 Likelihood and consequence	25
1.11 Likelihood	26
1.12 Consequence	26
1.13 Risk	27
2 Flood risk policy and strategy	28
2.1 Roles and responsibilities for Flood Risk Management in Uttlesford District	28
2.2 Relevant legislation	30
2.3 Relevant flood risk policy and strategy documents	30
2.4 Key legislation for flood and water management	32
2.4.1 Flood Risk Regulations (2009)	32
2.4.2 Flood and Water Management Act (FWMA) 2010	32
2.4.3 Water Framework Directive & Water Environment Regulations	32
2.5 Key national, regional and local policy documents and strategies	33
2.5.1 The National Flood and Coastal Erosion Risk Management Strategy for England (2020) (FCERM)	33
2.5.2 Updated Strategic Flood Risk Assessment guidance	34
2.5.3 River Basin Management Plans (RBMP)	34
2.5.4 Flood Risk Management Plans (FRMP)	34
2.5.5 Catchment Flood Management Plans (CFMP)	34
2.5.6 Essex Local Flood Risk Management Strategy (ELFRMS)	35
2.5.7 Water Cycle Studies Phase 2	37
2.5.8 LLFAs, surface water and SuDS	38
2.5.9 Surface Water Management Plans (SWMP)	38
3 Planning policy for flood risk management	40
3.1 National Planning Policy Framework and Guidance	40
3.2 The risk-based approach	40
3.2.1 The Flood Zones	40
3.2.2 The Sequential Test	41
3.2.3 The Exception Test	43
3.2.4 Making a site safe from flood risk over its lifetime	45
3.3 Applying the Sequential Test and Exception Test to individual planning applications	45
3.3.1 Sequential Test	45
3.3.2 The Exception Test	46

4	Impact of climate change	48
4.1	Revised Climate Change Guidance.....	48
4.2	Applying the climate change guidance	48
4.3	Relevant allowances for Uttlesford District.....	48
4.4	Representing climate change in the Level 1 SFRA.....	49
4.5	Impact of climate change on flood risk.....	51
4.5.1	Impact of climate change on fluvial flood risk.....	51
4.5.2	Impact of climate change on surface water flood risk.....	52
4.5.3	Impact of climate change on groundwater flood risk	52
4.6	Adapting to climate change	52
5	Understanding flood risk in Uttlesford District.....	54
5.1	Historical flooding	54
5.2	Topography, geology, soils and hydrology	55
5.2.1	Topography	55
5.2.2	Geology	56
5.2.3	Soils	56
5.3	Hydrology	60
5.4	Fluvial flood risk.....	60
5.5	Surface water flooding.....	61
5.6	Sewer flooding.....	61
5.7	Groundwater flooding	62
5.8	Flooding from canals	65
5.9	Flooding from reservoirs	65
5.10	Flood Alert and Flood Warnings.....	66
5.11	Summary of flood risk in Uttlesford District	66
6	Flood alleviation schemes and assets	67
6.1	Asset management	67
6.2	Standards of Protection	67
6.3	Maintenance.....	68
6.4	Major flood risk management assets in the district	68
6.5	Future flood alleviation schemes	69
6.6	Actual and residual flood risk.....	69
6.6.1	Actual flood risk	69
6.6.2	Residual risk.....	70
6.6.3	Overtopping	71
6.6.4	Defence breach.....	71
7	Cumulative impact of development and strategic solutions	72
7.1	Introduction	72
7.2	Strategic flood risk solutions.....	72
7.2.1	Opportunities and projects in/ affecting Uttlesford District	73
7.3	Assessment of cross-boundary issues	76
Table 7-1: Summary of catchments that drain into the neighbouring Local Authorities from Uttlesford District ... 77		
7.4	Cumulative Impact Assessment	80
7.5	Cumulative Impact Methodology	81
7.5.1	Sensitivity to increases in flood flows.....	81
7.5.2	Growth in the area	81

7.5.3	Historic flood risk	81
7.5.4	Ranking the results.....	82
7.5.5	Assumptions.....	83
7.6	Cumulative Impact Assessment Outcomes	83
7.7	Planning Policy Recommendations	87
7.8	Water quality considerations	89
8	Flood risk management requirements for developers.....	90
8.1	Principles for new developments	90
8.1.1	Apply the Sequential and Exception Tests.....	90
8.1.2	Consult with statutory consultees at an early stage to understand their requirements.....	90
8.1.3	Consider the risk from all sources of flooding and that they are using the most up to date flood risk data and guidance	91
8.1.4	Ensure that the development does not increase flood risk elsewhere.....	91
8.1.5	Ensure the development is safe for future users	91
8.1.6	Enhance the natural river corridor and floodplain environment through new development	91
8.1.7	Consider and contribute to wider flood mitigation strategy and measures in the district and apply the relevant local planning policy	91
8.2	Requirements for site-specific Flood Risk Assessments.....	91
8.2.1	When is an FRA required?.....	91
8.2.2	Objectives of a site-specific FRA	92
8.3	Local requirements for mitigation measures	92
8.3.1	Site layout and design	92
8.3.2	Modification of ground levels.....	93
8.3.3	Raised floor levels	93
8.3.4	Development and raised defences	94
8.3.5	Developer contributions	94
8.3.6	Buffer strips.....	94
8.3.7	Making space for water	94
8.4	Resistance and resilience measures.....	94
8.5	Reducing flood risk from other sources	95
8.5.1	Groundwater	95
8.5.2	Surface water and sewer flooding.....	95
8.5.3	Reservoirs	96
8.6	Emergency planning.....	97
9	Surface water management and SuDS	99
9.1	Role of the LLFA and Local Planning Authority in surface water management.....	99
9.2	Sustainable Drainage Systems (SuDS)	99
9.3	Sources of SuDS guidance	99
9.3.1	C753 CIRIA SuDS Manual (2015)	99
9.3.2	Non-Statutory Technical Guidance, Defra (March 2015)	100
9.3.3	Non-statutory Technical Guidance for Sustainable Drainage Practice Guidance, LASOO (2016).....	100
9.3.4	Essex County Council Flood Risk Management Strategy.....	100
9.3.5	Essex County Council Surface Water Management Plans.....	100
9.3.6	Essex County Council SuDS Guidance	100

9.4	Other surface water considerations	100
9.4.1	Groundwater Vulnerability Zones.....	100
9.4.2	Groundwater Source Protection Zones (GSPZ)	100
9.4.3	Nitrate Vulnerable Zones.....	101
10	Summary and Recommendations	102
10.1	Recommendations.....	103
10.1.1	Recommendations from the cumulative impact analysis	104
Appendices.....		107
A	Interactive Flood Risk Mapping.....	107
B	Data sources used in the SFRA.....	108
C	SFRA User Guide.....	109
D	Flood Alerts and Flood Warnings	110
E	Flood history in the district.....	111
F	Summary of flood risk across the district.....	112

List of Figures

Figure 1-1: Uttlesford District Council study area	18
Figure 1-2: Neighbouring local authorities	19
Figure 1-3: Key Watercourses	21
Figure 1-4: Flooding from all sources	25
Figure 1-5: Source-Pathway-Receptor Model	26
Figure 3-1: The Sequential Test	42
Figure 3-2: Local Plan sequential approach to site allocation	43
Figure 3-3: The Exception Test	44
Figure 5-1: Topography of the district	57
Figure 5-2: Superficial geology of the district	58
Figure 5-3: Bedrock geology of the district	59
Figure 5-4: JBA Areas Susceptible to Groundwater Flooding map of the district	64
Figure 7-1: Topography of Uttlesford District study area showing cross-boundary main rivers	78
Figure 7-2: Topography of Uttlesford District study area showing cross-boundary catchments	79
Figure 7-3: Overview of the method used within the Cumulative Impact Assessment	80
Figure 7-4: Map showing the results of the cumulative impact assessment for each catchment within Uttlesford District	86

List of Tables

Table 2-1: Roles and responsibilities for Risk Management Authorities	28
Table 2-2: National, regional and local flood risk policy and strategy documents	31
Table 2-3 CFMP Policies	35
Table 2-4 CFMP Actions	35
Table 4-1: Peak river flow allowances for the Anglian and Thames River Basin Districts	49
Table 4-2: Peak rainfall intensity allowances for small and urban catchments	49
Table 5-1: Historic flooding incidents held by Essex County Council	54
Table 5-2: DG5 recorded incidents – Thames Water	62
Table 5-3: DG5 recorded incidents - Anglian Water	62
Table 5-4: Reservoirs with potential risk to Uttlesford District	66
Table 6-1: Grading system used by the Environment Agency to assess flood defence condition	68
Table 6-2: Locations shown in the 'EA AIMS' data set	69
Table 7-1: Summary of catchments that drain into the neighbouring Local Authorities from Uttlesford District	77
Table 7-2: Summary of datasets used in the cumulative impact assessment	82
Table 7-3: Ranking assessment criteria	82
Table 7-4: Assumptions of the cumulative impact assessment	83
Table 7-5: Percentage of properties in a catchment sensitive to increased surface water flood risk	84
Table 7-6: Number of recorded historic flooding incidents within a catchment	84
Table 7-7: Number of properties in a catchment sensitive to increased surface water flood risk	84
Table 7-8: Percentage of catchment covered by future planned development	85
Table 8-1: Available temporary measures	95

Abbreviations and definitions

Term	Definition
1D model	One-dimensional hydraulic model
2D model	Two-dimensional hydraulic model
AEP	Annual Exceedance Probability – The probability (expressed as a percentage) of a flood event occurring in any given year.
AStGwf	Areas Susceptible to Groundwater flooding
Brownfield	Previously developed parcel of land
CC	Climate change - Long term variations in global temperature and weather patterns caused by natural and human actions.
CDA	Critical Drainage Area - A discrete geographic area (usually a hydrological catchment) where multiple and interlinked sources of flood risk (surface water, groundwater, sewer, Main River and/or tidal) cause flooding in one or more Local Flood Risk Zones during severe weather thereby affecting people, property or local infrastructure.
CFMP	Catchment Flood Management Plan- A high-level planning strategy through which the Environment Agency works with their key decision makers within a river catchment to identify and agree policies to secure the long-term sustainable management of flood risk.
CIRIA	Construction Industry Research and Information Association
Cumecs	A measure of flow rate. One cumec is shorthand for cubic metre per second; also m ³ /s.
Defra	Department for Environment, Food and Rural Affairs
Design flood	This is a flood event of a given annual flood probability, which is generally taken as “fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year)”
DTM	Digital Terrain Model
DPD	Development Plan Document
EA	Environment Agency
EU	European Union
Exception Test	Set out in the NPPF, the Exception Test is a method used to demonstrate that flood risk to people and property will be managed appropriately, where alternative sites at a lower flood risk are not available. The Exception Test is applied following the Sequential Test.
FCERM	Flood and Coastal Erosion Risk Management
FEH	Flood Estimation Handbook
Flood defence	Infrastructure used to protect an area against floods as floodwalls and embankments; they are designed to a specific standard of protection (design standard).
Flood Map for Planning	The Environment Agency Flood Map for Planning (Rivers and Sea) is an online mapping portal which shows the Flood Zones in England. The Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences and do not account for the possible impacts of climate change.
Flood Risk Area	An area determined as having a significant risk of flooding in accordance with guidance published by Defra and WAG (Welsh Assembly Government).
Flood Risk Regulations	Transposition of the EU Floods Directive into UK law. The EU Floods Directive is a piece of European Community (EC) legislation to specifically address flood risk by prescribing a common framework for its measurement and management.

Floods and Water Management Act	Part of the UK Government's response to Sir Michael Pitt's Report on the Summer 2007 floods, the aim of which is to clarify the legislative framework for managing surface water flood risk in England.
FWA	Flood Warning Area
Fluvial Flooding	Flooding resulting from water levels exceeding the bank level of a River
FRA	Flood Risk Assessment - A site-specific assessment of all forms of flood risk to the site and the impact of development of the site to flood risk in the area.
FRM	Flood Risk Management
FRMP	Flood Risk Management Plan
FSA	Flood Storage Area
FWMA	Flood and Water Management Act
FWS	Flood Warning System
GI	Green Infrastructure – a network of natural environmental components and green spaces that intersperse and connect the urban centres, suburbs and urban fringe
Greenfield	Undeveloped parcel of land
Ha	Hectare
IDB	Internal Drainage Board
Indicative Flood Risk Area	Nationally identified flood risk areas based on the definition of 'significant' flood risk described by Defra and WAG.
JBA	Jeremy Benn Associates
LFRMS	Local Flood Risk Management Strategy
LIDAR	Light Detection and Ranging
LLFA	Lead Local Flood Authority - Local Authority responsible for taking the lead on local flood risk management
LPA	Local Planning Authority
m AOD	metres Above Ordnance Datum
Main River	A watercourse shown as such on the Main River Map, and for which the Environment Agency has responsibilities and powers
NFM	Natural Flood Management
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NRD	National Receptor Database
NRIM	National Reservoir Inundation Mapping
NVZs	Nitrate Vulnerability Zones
Ordinary Watercourse	All watercourses that are not designated Main River. Local Authorities or, where they exist, IDBs have similar permissive powers as the Environment Agency in relation to flood defence work. However, the riparian owner has the responsibility of maintenance.
PFRA	Preliminary Flood Risk Assessment
Pitt Review	Comprehensive independent review of the 2007 summer floods by Sir Michael Pitt, which provided recommendations to improve flood risk management in England.
Pluvial flooding	Flooding as a result of high intensity rainfall when water is ponding or flowing over the ground surface (surface runoff) before it enters the underground drainage network or watercourse or cannot enter it because the network is full to capacity.
RBMP	River Basin Management Plan

RFCC's	Regional Flood and Coastal Committee
Resilience Measures	Measures designed to reduce the impact of water that enters property and businesses; could include measures such as raising electrical appliances.
Resistance Measures	Measures designed to keep flood water out of properties and businesses; could include flood guards for example.
Return Period	Is an estimate of the interval of time between events of a certain intensity or size, in this instance it refers to flood events. It is a statistical measurement denoting the average recurrence interval over an extended period of time.
Riparian owner	A riparian landowner, in a water context, owns land or property, next to a river, stream or ditch.
Risk	In flood risk management, risk is defined as a product of the probability or likelihood of a flood occurring, and the consequence of the flood.
Risk Management Authority	Operating authorities who's remit and responsibilities concern flood and / or coastal risk management.
RoFfSW	Risk of Flooding from Surface Water (formerly known as the Updated Flood Map for Surface Water (uFMfSW))
Sequential Test	Set out in the NPPF, the Sequential Test is a method used to steer new development to areas with the lowest probability of flooding.
Sewer flooding	Flooding caused by a blockage or overflowing in a sewer or urban drainage system.
SFRA	Strategic Flood Risk Assessment
SoP	Standard of Protection - Defences are provided to reduce the risk of flooding from a river and within the flood and defence field standards are usually described in terms of a flood event return period. For example, a flood embankment could be described as providing a 1 in 100-year standard of protection.
SPD	Supplementary Planning Document
SPZ	(Groundwater) Source Protection Zone
Stakeholder	A person or organisation affected by the problem or solution or interested in the problem or solution. They can be individuals or organisations, includes the public and communities.
SuDS	Sustainable Drainage Systems - Methods of management practices and control structures that are designed to drain surface water in a more sustainable manner than some conventional techniques
Surface water flooding	Flooding as a result of surface water runoff as a result of high intensity rainfall when water is ponding or flowing over the ground surface before it enters the underground drainage network or watercourse or cannot enter it because the network is full to capacity, thus causing what is known as pluvial flooding.
SWMP	Surface Water Management Plan - The SWMP plan should outline the preferred surface water management strategy and identify the actions, timescales and responsibilities of each partner. It is the principal output from the SWMP study.
WFD	Water Framework Directive - Under the WFD, all waterbodies have a target to achieve Good Ecological Status (GES) or Good Ecological Potential (GEP) by a set deadline. River Basin Management Plans (RBMPs) set out the ecological objectives for each water body and give deadlines by when objectives need to be met.

1 Introduction

1.1 Purpose of the Strategic Flood Risk Assessment

“Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards.”.

(National Planning Policy Framework, paragraph 160)

JBA Consulting completed the first Level 1 Strategic Flood Risk Assessment (SFRA) for Uttlesford District Council in 2016.

The Council require an up-to-date SFRA in order to support the development of their Local Plan and future selection of site allocations, as well as for use for future development management and policy decisions. The SFRA will form part of the evidence base and provide the opportunity to bring together the latest flood risk datasets from all the relevant Risk Management Authorities (UDC, Essex County Council (ECC) as Lead Local Flood Authority (LLFA) and Highways Authority, Anglian Water and Thames Water and the Environment Agency (EA)).

This SFRA replaces the Level 1 SFRA published by the Council in 2016 and will be used to inform decisions on the location of future development and the preparation of sustainable policies for the long-term management of flood risk.

1.2 Local Plan

The Uttlesford District New Local Plan will update the local planning policy framework currently set by the Core Strategy (2013) and the Delivery Development Plan Document (DPD) (2019) and will look forward to at least 2036. The aim of the Local Plan is to establish a planning framework for future development, identifying how much land is available and where such land should be provided for new homes and employment, alongside associated infrastructure.

1.3 Levels of SFRA

The **Planning Practice Guidance** (PPG) identifies the following two levels of SFRA:

- **Level 1:** where flooding is not a major issue in relation to potential site allocations and where development pressures are low. The assessment should be of sufficient detail to enable application of the Sequential Test.
- **Level 2:** where land outside Flood Zones 2 and 3 cannot appropriately accommodate all necessary development, creating the need to apply the National Planning Policy Framework’s (NPPF) Exception Test. In these circumstances the assessment should consider the detailed nature of the flood characteristics within a Flood Zone and assessment of other sources of flooding.

This is a Level 1 SFRA with the aim of providing guidance to planners and developers on flood risk and to enable the application of the Sequential Test.

The key objectives are:

- Critically review and update the 2016 SFRA, taking into account the latest flood risk information and any updates to legislation and policy.
- Provide an individual flood risk analysis of the Areas of Search identified within the district as part of the Local Plan preparation.

- Provide mapping showing the Flood Zones for planning and flood risk from other sources in accordance with the provision of national flood risk guidance.

1.4 SFRA outputs

- Identification of policy and technical updates.
- Identification of any strategic flooding issues which may have cross boundary implications.
- Appraisal of all potential sources of flooding, including main river, ordinary watercourse, surface water, sewers, groundwater, reservoirs and canals.
- Review of historic flooding incidents.
- Reporting on the standard of protection provided by existing flood risk management infrastructure.
- Mapping showing distribution of flood risk across all Flood Zones from all sources of flooding including climate change allowances.
- Assessment of the potential increase in flood risk due to climate change.
- Flood Risk Assessment guidance for developers.
- Assessment of surface water management issues, how these can be addressed through development management policies and the application of Sustainable Drainage Systems.
- Recommendations of the criteria that should be used to assess future development proposals and the development of a Sequential Test and sequential approach to flood risk.
- Assessment of strategic flood risk solutions that can be implemented to reduce risks.

1.5 SFRA study area

Uttlesford District (Figure 1-1) is situated in the west of Essex County. Its main towns are Great Dunmow and Saffron Walden. The district is relatively rural but is under continuous development pressure as a consequence of the proximity to London, Stansted International Airport and development of the M11 corridor.

Figure 1-2 also shows the neighbouring Authorities surrounding Uttlesford District.

Uttlesford District is at the watershed of three major river catchments: Great Ouse (River Cam, The Slade, River Bourn); Thames (River Roding, Pincey Brook, River Stort, Bourne Brook, Stansted Brook, Ugley Brook), and North Essex (River Pant, River Chelmer, Stebbing Brook, River Ter, River Can). As a consequence, the SFRA will need to consider downstream impacts of development and land use change.

Many of the settlements across Uttlesford have experienced flooding in the past, including (but not limited to) Arkesden, Ashdon, Berden, Birchanger, Clavering, Debden, Elsenham, Great Chesterford, Great Dunmow, Great Sampford, Hadstock, Hatfield Heath, Hazelend, Hempstead, Henham, Howe Green, Littlebury, Little Hallingbury, Little Walden, Manuden, Newport, Quendon, Radwinter, Saffron Walden, Swards End, Stansted Mountfitchet, Stebbing, Takeley, Thaxted, Wendens Ambo, Ugley, White Roding, Wicken Bonhunt and Wimbish. Sources of past flooding have been predominantly from main rivers, ordinary watercourses and surface water.

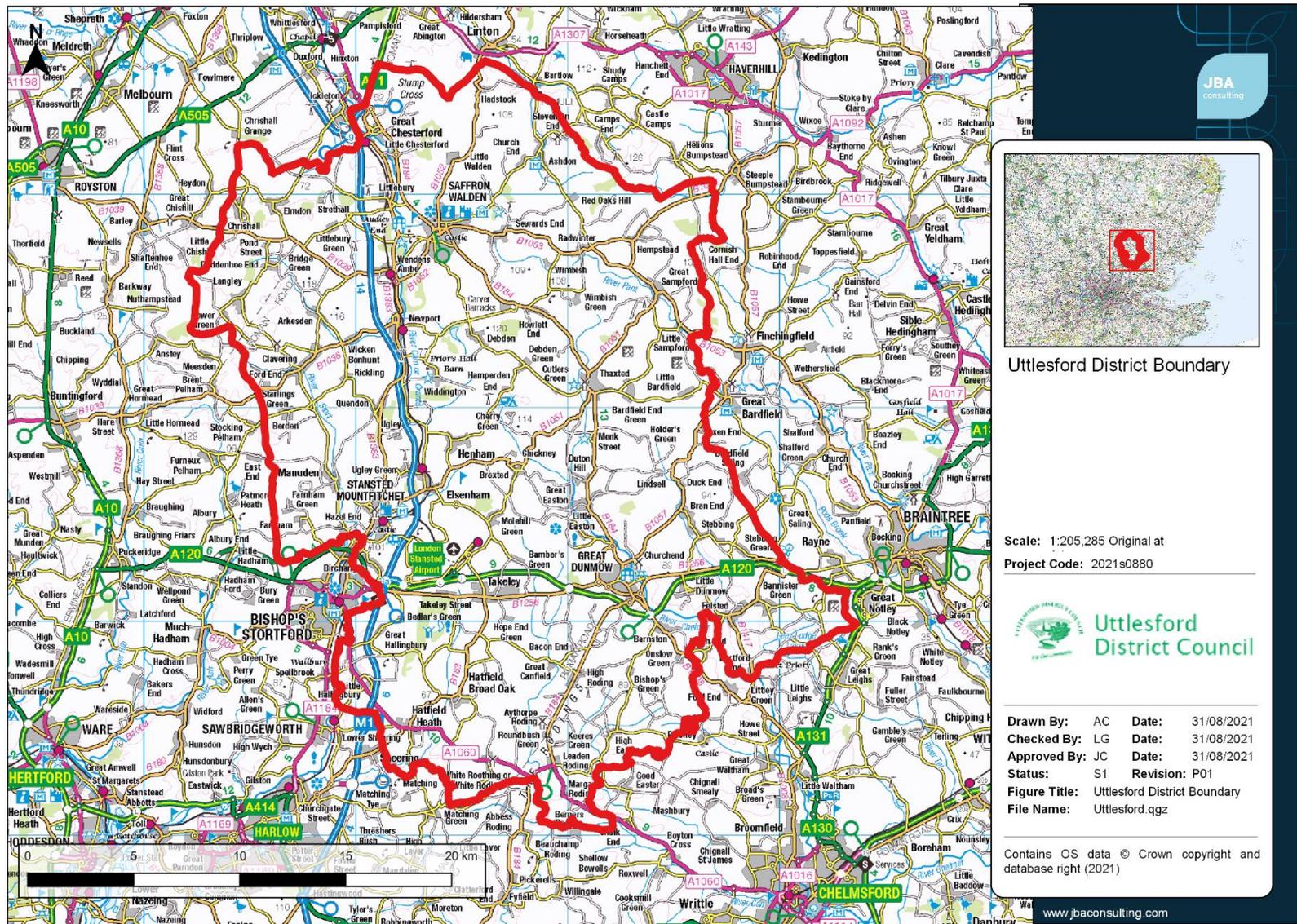


Figure 1-1: Uttesford District Council study area

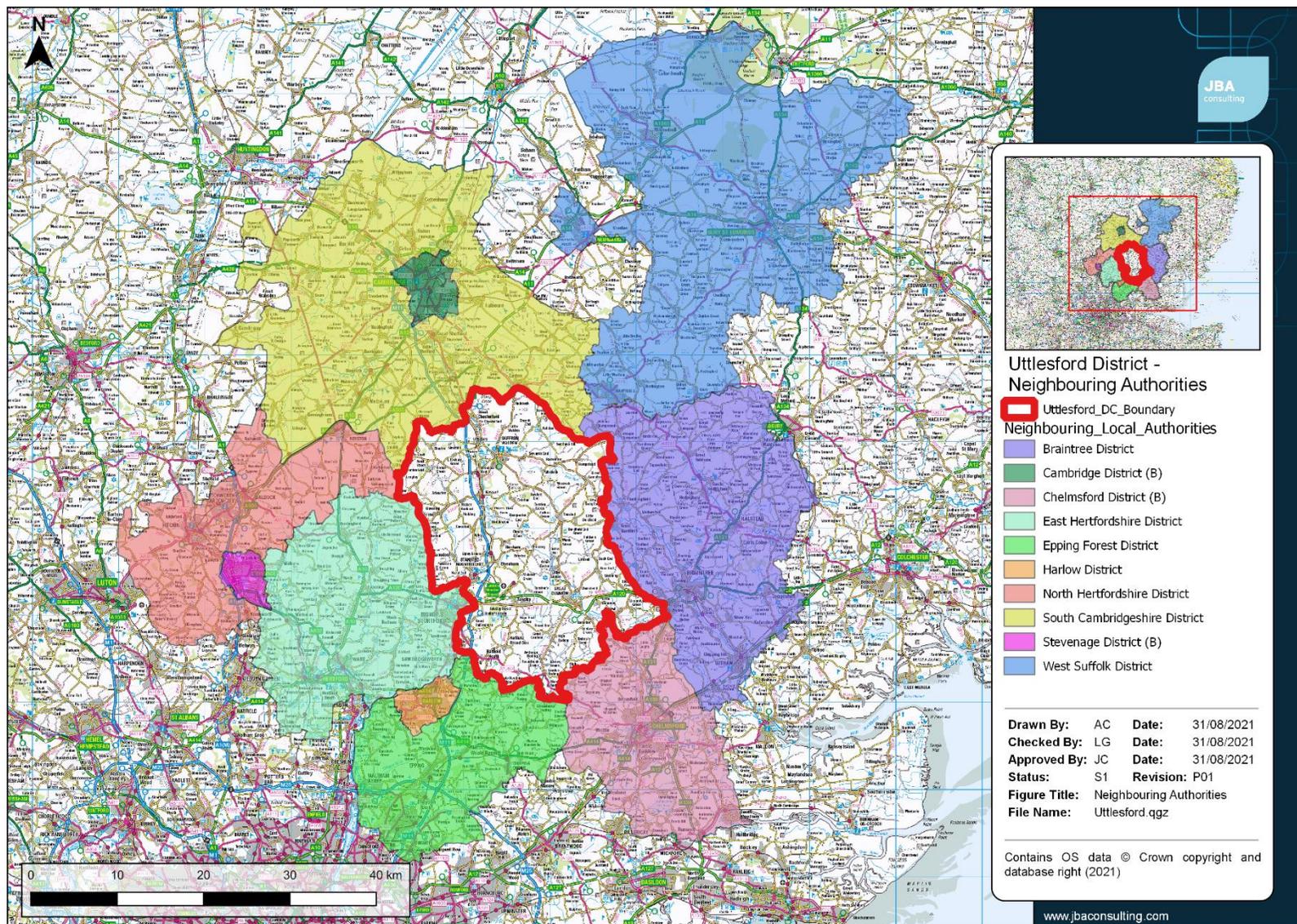


Figure 1-2: Neighbouring local authorities

Uttlesford District consists of a number of watercourses flowing away from the centre of the district to beyond its boundary. The principal watercourses in the Uttlesford District are:

- The River Cam (or Granta) in the north of the district
- The River Pant in the east of the district
- The River Chelmer and Stebbing Brook in the southeast of the district
- The River Roding, River Stort, Pincey Brook and Stansted Brook in the south and west of the district.

There are numerous tributaries to these watercourses including smaller Ordinary Watercourses and unnamed drains. A summary of the principal watercourses within the Uttlesford District are provided in Appendix A.

Uttlesford is one of the driest parts of the UK, with an average annual rainfall of 500 mm.

Figure 1-3 shows a map of the key watercourses within Uttlesford District.

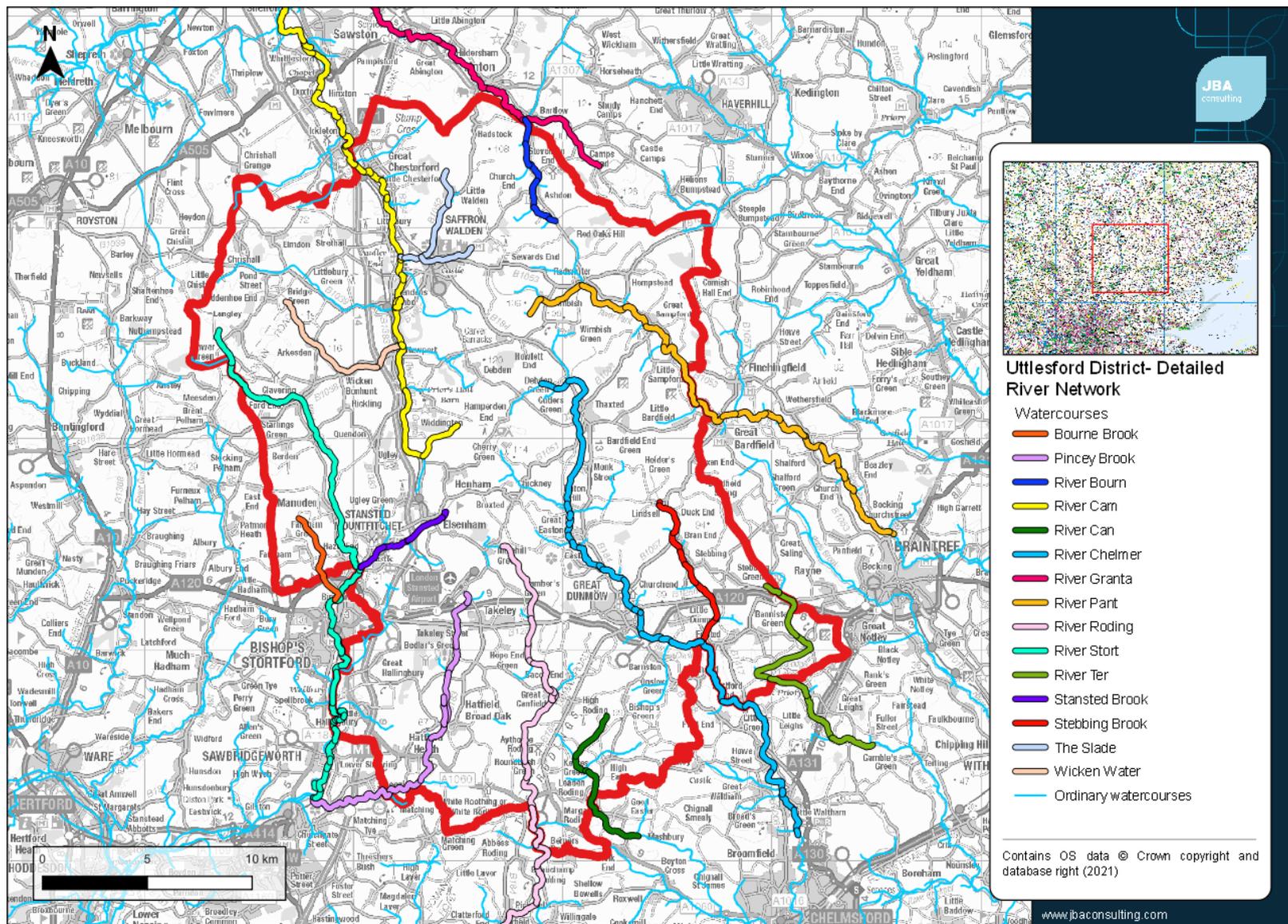


Figure 1-3: Key Watercourses

1.6 Consultation

The following parties (external to Uttlesford District Council) were consulted to inform the SFRA:

- Essex County Council
- Environment Agency
- Thames Water
- Anglian Water
- Essex Fire and Rescue Service
- Neighbouring authorities:
 - Braintree District
 - South Cambridgeshire District
 - North Hertfordshire District
 - East Hertfordshire District
 - Epping Forest District
 - Chelmsford District
 - Cambridge District, Harlow District and Stevenage District are also located nearby, enveloped within one or more of the neighbouring authorities above.

1.7 Use of SFRA data

Level 1 SFRAs are high-level strategic documents and do not go into detail on an individual site-specific basis. The primary purpose is to provide an evidence base to inform the Local Plan and any future flood risk policies.

Developers will still be required to undertake site-specific Flood Risk Assessments to support Planning Applications. Developers will be able to use the information in the SFRA to scope out the sources of flood risk that will need to be explored in more detail at site level.

Appendix C presents a SFRA User Guide, further explaining how SFRA data should be used, including reference to relevant sections of the SFRA, how to consider different sources of flood risk and recommendations and advice for Sequential and Exception Tests.

Key reference material such as external guidance documents/ websites are provided in **green** throughout the SFRA.

Advice to users has been highlighted in **amber boxes** throughout the document.

On the date of publication, the SFRA contains the latest flood risk information. Over time, new information will become available to inform planning decisions, such as updated hydraulic models (which then update the Flood Map for Planning), flood event information, new defence schemes and updates to policy and legislation. Developers should check the online **Flood Map for Planning** (<https://flood-map-for-planning.service.gov.uk/>) in the first instance to identify any major changes to the Flood Zones.

1.8 Structure of this report

Section	Contents	How to use
Executive Summary	Focuses on how the SFRA can be used by planners, developers and neighbourhood planners	Summarises the Level 1 findings and recommendations.
1. Introduction	<p>Provides a background to the study, the Local Plan stage the SFRA informs, the study area, the roles and responsibilities for the organisations involved in flood management and how they were involved in the SFRA</p> <p>Provides a short introduction to how flood risk is assessed and the importance of considering all sources</p> <p>Includes this table of the contents of the SFRA</p>	For general information and context.
2. Flood risk policy and strategy	Sets out the relevant legislation, policy and strategy for flood risk management at a national, regional and local level.	Users should refer to this section for any relevant policy which may underpin strategic or site-specific assessments.
3. Planning policy for flood risk management	<p>Provides an overview of both national and existing Local Plan policy on flood risk management</p> <p>This includes the Flood Zones, application of the Sequential Approach and Sequential/Exception Test process.</p> <p>Provides guidance for the Council and Developers on the application of the Sequential and Exception Test for both allocations and windfall sites, at allocation and planning application stages.</p>	Users should use this section to understand and follow the steps required for the Sequential and Exception Tests.
4. Impact of climate change	<p>Outlines the latest climate change guidance published by the Environment Agency and how this was applied to the SFRA</p> <p>Sets out how developers should apply the guidance to inform site specific Flood Risk Assessments</p>	This section should be used to understand the climate change allowances for a range of epochs and conditions, linked to the vulnerability of a development.
5. Understanding flood risk in Uttlesford District	Provides an overview of the characteristics of flooding affecting the study area and key risks including historical flooding incidents, flood risk from all sources and flood warning arrangements.	This section should be used to understand all sources of flood risk in the district, including where has flooded historically. This section may also help identify any data gaps, in conjunction with Appendix B.
6. Flood alleviation schemes and assets	Provides a summary of current flood defences and asset management and future planned schemes. Introduces actual and residual flood risk.	This section should be used to understand if there are any defences or flood schemes in a particular area, for further detailed assessment at site-specific stage.
7. Cumulative impact of development and strategic solutions	This section provides a summary of the catchments with the highest flood risk and development pressures, considers opportunities for strategic flood risk solutions and makes recommendations for	Planners should use this section to help develop policy recommendations for the cumulative impact of development.

	local planning policy based on these.	
8. Flood risk management for developers	Guidance for developers on Flood Risk Assessments, considering flood risk from all sources	Developers should use this section to understand requirements for FRAs and what conditions/ guidance documents should be followed, as well as mitigation options.
9. Surface water management and Sustainable Drainage Systems	An overview of Sustainable Drainage Systems, Guidance for developers on Surface Water Drainage Strategies, considering any specific local standards and guidance for Sustainable Drainage Systems (SuDS) from the Lead Local Flood Authority.	Developers should use this section to understand what national, regional and local SuDS standards are applicable. Hyperlinks are provided.
10. Summary and recommendations	Summarises sources of flood risk in the study area and outlines planning policy recommendations	Developers and planners should use this as a summary of the SFRA. Developers should refer to the Level 1 SFRA recommendations when considering requirements for site-specific assessments.
Appendices	<ul style="list-style-type: none"> • Appendix A: Interactive flood risk maps • Appendix B: Data sources used in the SFRA • Appendix C: SFRA User Guide • Appendix D: Flood Alert and Flood Warning Areas • Appendix E: Summary of flood risk across the district • Appendix F: Full history of flood risk across the district 	Planners should use these appendices to understand what data has been used in the SFRA, to inform the application of the Sequential and Exception Tests, as relevant, and to use these maps and tabulated summaries of flood risk to understand the nature and location of flood risk.

1.9 Understanding flood risk

This section provides useful background information on how flooding arises and how flood risk is determined.

1.9.1 Sources of flooding

Flooding is a natural process and can happen at any time in a wide variety of locations. It constitutes a temporary covering of land not normally covered by water and presents a risk when people and human or environmental assets are present in the area that floods. Assets at risk from flooding can include housing, transport and public service infrastructure, commercial and industrial enterprises, agricultural land and environmental and cultural heritage. Flooding can occur from many different and combined sources and in many different ways, as illustrated in Figure 1-4. Major sources of flooding include:

- Fluvial (rivers) - inundation of floodplains from rivers and watercourses; inundation of areas outside the floodplain due to influence of bridges, embankments and other features that artificially raise water levels; overtopping or breaching of defences; blockages of culverts; blockages of flood channels/corridors.
- Surface water - surface water flooding covers two main sources including direct run-off from adjacent land (pluvial) and surcharging of piped drainage systems (public sewers, highway drains, etc.)

- Groundwater - water table rising after prolonged rainfall to emerge above ground level remote from a watercourse; most likely to occur in low-lying areas underlain by permeable rock (aquifers); groundwater recovery after pumping for mining or industry has ceased.
- Infrastructure failure - reservoirs; canals; industrial processes; burst water mains; blocked sewers or failed pumping stations.

Different types and forms of flooding present a range of different risks and the flood hazards of speed of inundation, depth and duration of flooding can vary greatly. With climate change, the frequency, pattern and severity of flooding are expected to change and become more damaging.

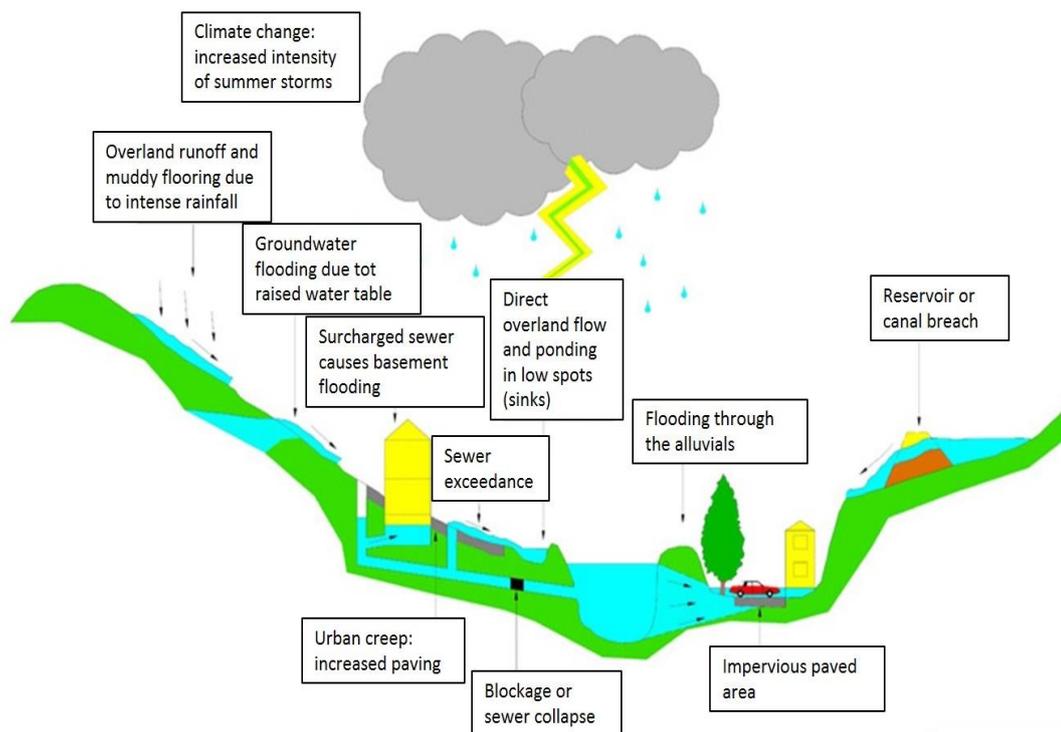


Figure 1-4: Flooding from all sources

1.10 Likelihood and consequence

Flood risk is a combination of the likelihood of flooding and the potential consequences arising. It is assessed using the source – pathway – receptor model as shown in Figure 1-5 below. This is a standard environmental risk model common to many hazards and should be the starting point of any assessment of flood risk. However, it should be remembered that flooding could occur from many different sources and pathways, and not simply those shown in the illustration below.

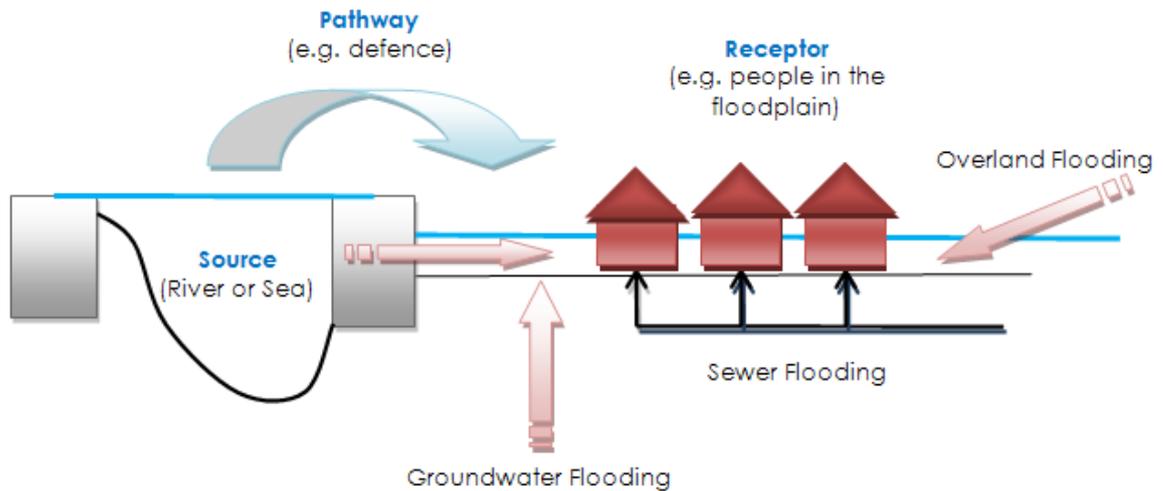


Figure 1-5: Source-Pathway-Receptor Model

The principal sources are rainfall and rivers; the most common pathways are rivers themselves, drains, sewers, overland flows, floodplains and defence assets (for example through overtopping or breach). Receptors can include people, their property and the environment. All these elements must be present for flood risk to arise. Mitigation measures have little or no effect on sources of flooding, but they can block or impede pathways or remove receptors.

The planning process is primarily concerned with the location of receptors, taking appropriate account of potential sources and pathways that might put those receptors at risk. It is therefore important to define the components of flood risk in order to apply this guidance in a consistent manner.

1.11 Likelihood

Likelihood of flooding is expressed as the percentage probability based on the average frequency measured or extrapolated from records over a large number of years. A 1% probability indicates the flood level that is expected to be reached on average once in a hundred years, i.e. it has a 1% chance of occurring in any one year, not that it will occur once every hundred years.

Considered over the lifetime of development, such an apparently low frequency or rare flood has a significant probability of occurring. For example:

- A 1% flood has a 26% (1 in 4) chance of occurring at least once in a 30-year period - the period of a typical residential mortgage
- And a 49% (1 in 2) chance of occurring in a 70-year period - a typical human lifetime

1.12 Consequence

The consequences of flooding include fatalities, property damage, disruption to lives and businesses, with severe implications for people (e.g. financial loss, emotional distress, health problems). Consequences of flooding depend on the hazards caused by flooding (depth of water, speed of flow, rate of onset, duration, wave-action effects, water quality) and the vulnerability of receptors (type of development, nature, e.g. age-structure, of the population, presence and reliability of mitigation measures etc). Flood risk is then expressed in terms of the following relationship:

Flood risk = Probability of flooding x Consequences of flooding

1.13 Risk

Flood risk is not static; it cannot be described simply as a fixed water level that will occur if a river overtops its banks or from a high spring tide that coincides with a storm surge. It is therefore important to consider the continuum of risk carefully. Risk varies depending on the severity of the event, the source of the water, the pathways of flooding (such as the condition of flood defences) and the vulnerability of receptors as mentioned above.

2 Flood risk policy and strategy

This section sets out the flood risk management roles and responsibilities for different organisations and relevant legislation, policy and strategy.

2.1 Roles and responsibilities for Flood Risk Management in Uttlesford District

There are different organisations that cover Uttlesford District that have responsibilities for flood risk management, known as Risk Management Authorities (RMAs). These are shown in Table 2-1 with a summary of their responsibilities.

It is important to note that land and property owners are responsible for the maintenance of watercourses either on or next to their properties. Property owners are also responsible for the protection of their properties from flooding as well as other management activities, for example by maintaining riverbeds/banks, controlling invasive species and allowing the flow of water to pass without obstruction. More information can be found in the Environment Agency publication '**Owning a Watercourse**' (2018).

When it comes to undertaking works to reduce flood risk, the Environment Agency and Essex County Council as LLFA have permissive powers and limited resources are prioritised and targeted to where they can have the greatest effect. Permissive powers mean that Risk Management Authorities are permitted to undertake works on watercourses but are not obliged.

Table 2-1: Roles and responsibilities for Risk Management Authorities

Risk Management Authority	Strategic Level	Operational Level	Planning role
Environment Agency	<ul style="list-style-type: none"> Strategic overview for all sources of flooding National Strategy Reporting and general supervision 	<ul style="list-style-type: none"> Main rivers (e.g. River Soar) Reservoirs 	<ul style="list-style-type: none"> Statutory consultee for development in Flood Zones 2 and 3
Essex County Council as Lead Local Flood Authority (LLFA)	<ul style="list-style-type: none"> Preliminary Flood Risk Assessment Local Flood Risk Management Strategy 	<ul style="list-style-type: none"> Surface Water Groundwater Ordinary Watercourses (consenting and enforcement) Ordinary watercourses (works) 	<ul style="list-style-type: none"> Statutory consultee for major developments
Uttlesford District Council as Local Planning Authority	<ul style="list-style-type: none"> Local Plans as Local Planning Authorities 	<ul style="list-style-type: none"> Determination of Planning Applications as Local Planning Authorities Managing open spaces under District Council ownership 	<ul style="list-style-type: none"> As left
Thames and Anglian Water	<ul style="list-style-type: none"> Asset Management Plans, supported by Periodic Reviews (business cases) Develop Drainage and Wastewater management plans 	<ul style="list-style-type: none"> Public sewers 	<ul style="list-style-type: none"> Non-statutory consultee
Highways Authorities <i>Highways England (motorways and trunk roads) Uttlesford District Council (for non-trunk roads)</i>	<ul style="list-style-type: none"> Highway drainage policy and planning 	<ul style="list-style-type: none"> Highway drainage 	<ul style="list-style-type: none"> Internal planning consultee regarding highways design standards and adoptions

2.2 Relevant legislation

The following legislation is relevant to development and flood risk in the Utlesford District:

- **Flood Risk Regulations (2009)** - these transpose the European Floods Directive (2000) into law and require the Environment Agency and LLFAs to produce Preliminary Flood Risk Assessments and identify where there are nationally significant Flood Risk Areas. For the Flood Risk Areas, detailed flood maps and a Flood Risk Management Plan is produced; this is done in a six-year cycle.
- **Town and Country Planning Act (1990), Water Industry Act (1991), Land Drainage Act (1991), Environment Act (1995), Flood and Water Management Act (2010)** – as amended and implanted via secondary legislation. These set out the roles and responsibilities for organisations that have a role in FRM.
- The **Land Drainage Act (1991, as amended)** and **Environmental Permitting Regulations (2018)** also set out where developers will need to apply for additional permission (as well as planning permission) to undertake works to an Ordinary Watercourse or Main River.
- The **Water Environment Regulations (2017)** – these transpose the European Water Framework Directive (2000) into law and require the Environment Agency to produce River Basin Management Plans (RBMPs). These aim to ensure that the water quality of aquatic ecosystems, riparian ecosystems and wetlands reaches 'good' status.
- Other environmental legislation such as the Habitats Directive (1992), Environmental Impact Assessment Directive (2014) and Strategic Environmental Assessment Directive (2001) also apply as appropriate to strategic and site-specific developments to guard against environmental damage.

2.3 Relevant flood risk policy and strategy documents

Table 2-2 summarises relevant national, regional and local flood risk policy and strategy documents and how these apply to development and flood risk.

Hyperlinks are provided to external documents. These documents may

- Provide useful and specific local information to inform Flood Risk Assessments within the local area.
- Set the strategic policy and direction for Flood Risk Management (FRM) and drainage – they may contain policies and action plans that set out what future flood mitigation and climate change adaptation plans may affect a development site. A developer should seek to contribute in all instances to the strategic vision for FRM and drainage in the district.
- Provide guidance and/or standards that informs how a developer should assess flood risk and/or design flood mitigation and SuDS.

Table 2-2: National, regional and local flood risk policy and strategy documents

Scale	Document, lead author and date	Information	Policy and measures	Development requirements	design	Next update due
National	Flood and Coastal Management Strategy (see section 2.5.1) (Environment Agency) 2020	No	Yes	No		Due to be reviewed in 2026
National	National Planning Policy Framework and Guidance (MHCLG) 2021 (see section 3.1)	No	No	Yes		-
National	Building Regulations Part H (MHCLG) 2010 (see section 2.5.8)	No	No	Yes		-
Regional	Anglian River Basin District Flood Risk Management Plan (Environment Agency) 2016 (see section 2.5.5)	Yes	Yes	No		2021/22
Regional	Anglian River Basin Management Plan (Environment Agency) 2016 (see section 2.5.3)	No	Yes	No		2021/22
Regional	Thames River Basin District Flood Risk Management Plan (Environment Agency) 2016 (see section 2.5.5)	Yes	Yes	No		2021/22
Regional	Thames River Basin Management Plan (Environment Agency) 2016 (see section 2.5.3)	No	Yes	No		2021/22
Regional	Drainage and Wastewater Management Plan (Thames and Anglian Water) due 2022/23	Yes	Yes	Yes		2022/23
Regional	Climate Change guidance for development and flood risk (see section 4.1) (Environment Agency) 2021	No	No	Yes		2021/22 for rainfall allowances
Local	Essex County Council – The Sustainable Drainage Systems Design Guide for Essex (see section 9.3.6) (ECC)	No	No	Yes		-
Local	Essex Local Flood Risk Management Strategy (ECC) 2018 (see section 2.5.6)	Yes	Yes	No		2022
Local	Uttlesford District Water Cycle Study (2017) (see section 2.5.7)	Yes	No	Yes		-

2.4 Key legislation for flood and water management

2.4.1 Flood Risk Regulations (2009)

The **Flood Risk Regulations 2009** translate the EU Floods Directive into UK law. The EU requires Member States to complete an assessment of flood risk (known as a Preliminary Flood Risk Assessment (PFRA)) and then use this information to identify areas where there is a significant risk of flooding. For these Flood Risk Areas, States must then undertake Flood Risk and Hazard Mapping and produce Flood Risk Management Plans.

The Flood Risk Regulations direct the Environment Agency to do this work for river, sea and reservoir flooding. LLFAs must do this work for surface water, Ordinary Watercourse and Groundwater flooding. This is a six-year cycle of work and the second cycle started in 2017.

The Flood Risk Regulations required Essex County Council (as the LLFA) to prepare and publish a PFRA on past and future flood risk from local sources of flooding. The 2011 **Essex County Council PFRA** reports on significant past and future flooding from all sources except from Main River and Reservoir, which are covered by the Environment Agency, and sub-standard performance of the adopted sewer network (covered under the remit of Thames Water and Anglian Water). The Regulations also require the LLFA to identify significant Flood Risk Areas. Of the ten national indicative Flood Risk Areas that were identified by the Environment Agency, there is one (Basildon) that falls within the administrative area of Essex County Council. However, this area does not fall within Uttlesford District. There was an update to this document in 2017, stating that there were no changes to the assessment of risk as established in the 2011 assessment.

2.4.2 Flood and Water Management Act (FWMA) 2010

The Flood and Water Management Act was passed in April 2010. It aims to improve both flood risk management and the way we manage our water resources.

The FWMA has created clearer roles and responsibilities and helped to define a more risk-based approach to dealing with flooding. This included the creation of a lead role for LAs, as LLFAs, designed to manage local flood risk (from surface water, ground water and ordinary watercourses) and to provide a strategic overview role of all flood risk for the EA.

The content and implications of the FWMA provide considerable opportunities for improved and integrated land use planning and flood risk management by LAs and other key partners. The integration and synergy of strategies and plans at national, regional and local scales, is increasingly important to protect vulnerable communities and deliver sustainable regeneration and growth.

2.4.3 Water Framework Directive & Water Environment Regulations

The purpose of the Water Framework Directive (WFD), which was transposed into English Law by the Water Environment Regulations (2003), is to deliver improvements across Europe in the management of water quality and water resources through a series of plans called River Basin Management Plans (RBMP), which were last published in 2015 and are currently being updated.

Uttlesford District lies within the Anglian River Basin District and Thames River Basin District.

2.5 Key national, regional and local policy documents and strategies

2.5.1 The National Flood and Coastal Erosion Risk Management Strategy for England (2020) (FCERM)

The **National Flood and Coastal Erosion Risk Management Strategy** for England provides the overarching framework for future action by all risk management authorities to tackle flooding and coastal erosion in England. The new Strategy has been in preparation since 2018. The Environment Agency brought together a wide range of stakeholders to develop the strategy collaboratively. The Strategy is much more ambitious than the previous one from 2011 and looks ahead to 2100 and the action needed to address the challenge of climate change.

The Strategy has been split into 3 high level ambitions: climate resilient places; today's growth, and infrastructure resilient in tomorrow's climate and a nation ready to respond and adapt to flooding and coastal change.

Measures include:

- Updating the national river, coastal and surface water flood risk mapping
- Improving the understanding of long-term investment needs for flood and coastal infrastructure,
- Trialling new and innovative funding models,
- Flood resilience pilot studies,
- Developing an adaptive approach to the impacts of climate change,
- Seeking nature-based solutions towards flooding and erosion issues,
- Integrating natural flood management into the new Environmental Land Management scheme,
- Considering long term adaptive approaches in Local Plans,
- Maximising the opportunities for flood and coastal resilience as part of contributing to environmental net gain for development proposals,
- Investing in flood risk infrastructure that supports sustainable growth,
- Aligning long term strategic planning cycles for flood and coastal work between stakeholders,
- Mainstreaming property flood resilience measures and 'building back better' after flooding,
- Consistent approaches to asset management and record keeping,
- Updating guidance on managing high risk reservoirs in light of climate change,
- Developing critical infrastructure resilience,
- Education, skills and capacity building, research, innovation and sharing of best practise measures,
- Supporting communities to plan for flood events,
- Develop world leading ways of reducing the carbon and environmental impact from the construction and operation of flood and coastal defences,
- Development of digital tools to communicate flood risk and transforming the flood warning service and increasing flood response and recovery support.

The Strategy was laid before parliament in July 2020 for formal adoption and published alongside a New **National Policy Statement for Flood and Coastal Erosion Risk Management**. The statement sets out five key commitments which will accelerate progress to better protect and better prepare the country for the coming years:

1. Upgrading and expanding flood defences and infrastructure across the country,
2. Managing the flow of water to both reduce flood risk and manage drought,
3. Harnessing the power of nature to not only reduce flood risk, but deliver benefits for the environment, nature, and communities,
4. Better preparing communities for when flooding and erosion does occur, and
5. Ensuring every area of England has a comprehensive local plan for dealing with flooding and coastal erosion.

2.5.2 Updated Strategic Flood Risk Assessment guidance

There was an update to the '**How to prepare a Strategic Flood Risk Assessment guidance**' in August 2019, which had some key additions to both Level 1 and Level 2 assessments. The Level 1 assessment is undertaken in accordance with this guidance.

2.5.3 River Basin Management Plans (RBMP)

Uttlesford falls partly within the **Anglian River Basin District RBMP** and the **Thames River Basin District RBMP** managed by the EA, both have been updated since the first cycle in 2009. The latest versions of both management plans were published in December 2015 and they are currently being updated, out for consultation. These plans highlight the importance of restoring wildlife and water quality, preventing deterioration of water health and quality whilst achieving effective flood risk management measures within the districts. The plans include an assessment of river basin characteristics, a review of the impact on human activity, statuses of water bodies, and an economic analysis of water use and progress since the first plan in 2009.

2.5.4 Flood Risk Management Plans (FRMP)

Flood Risk Management Plans are part of the six-year cycle of assessment, mapping and planning required under the Flood Risk Regulations. The Environment Agency led the development of the **Anglian FRMP** and **Thames FRMP** which were both published in 2016 and are currently being updated, out for consultation until January 2022. The FRMPs summarise the flooding affecting the area and describes the measures to be taken to address the risk in accordance with the Flood Risk Regulations.

2.5.5 Catchment Flood Management Plans (CFMP)

Catchment Flood Management Plans are a high-level strategic plan providing an overview of flood risk across each river catchment. The Environment Agency use CFMPs to work with other key-decision makers to identify and agree long-term policies for sustainable flood risk management. They aim to set policies for sustainable flood risk management for the whole catchment covering the next 50 to 100 years.

Uttlesford is part of three different Catchment Flood Management Plan areas written in 2009: the **Great Ouse CFMP**, the **Thames CFMP** and the **North Essex CFMP**. CFMPs split their catchments into sub areas with similar flood risk

management types and assign one of six policies to each sub area. Table 2-3 summarises the policy statements relating to Uttlesford for each CFMP.

Table 2-3 CFMP Policies

CFMP	Sub Area	Policy
Great Ouse	Bedford Ouse rural and eastern rivers	Policy 3 - Areas of low to moderate flood risk where we are generally managing existing flood risk effectively.
Thames	Towns and villages in open floodplain (north and west)	Policy 6 - Areas of low to moderate flood risk where we will take action with others to store water or manage runoff in locations that provide overall flood risk reduction or environmental benefits.
North Essex	Blackwater and Chelmer, upper reaches and coastal streams	Policy 2 - Areas of low to moderate flood risk where we can generally reduce flood management actions.

Action and objectives are then identified for each sub area based on the policy assigned. These actions have been summarised in Table 2-4. Despite the different policies, all areas have been identified as rural areas of low to moderate risk and therefore there are some common themes in the actions, most notably the need to work with LPAs to ensure that floodplain is protected from development, and to maintain or improve local flood warning services.

Table 2-4 CFMP Actions

CFMP	Policy	Summary of main actions
Great Ouse	Policy 3	Investigate opportunities to reduce levels of flood risk management on Main Rivers Continue with current levels of flood risk management on Ordinary Watercourses Improve flood warning service Work with partners to develop emergency response plans for critical infrastructure/transport Take opportunities to use mineral extraction sites to store water Investigate land use change Develop environmental enhancement projects to improve river state/habitats
Thames	Policy 6	Maintain existing capacity of the system Identify locations where storage of water could benefit communities Work with LPAs to retain the floodplain for flood storage and adapt the urban environment to flood risk Continue flood warning service Help local communities manage flood risk (e.g. flood resilience)
North Essex	Policy 2	Reduce flood risk management activities e.g. channel maintenance Investigate land use change Work with LPAs to reduce the number of properties in the floodplain Continue flood warning service and maintain flood warning infrastructure Work with partners to develop emergency response plans for critical infrastructure/transport

2.5.6 Essex Local Flood Risk Management Strategy (LFRMS)

The **Essex Local Flood Risk Management Strategy** was published in 2015 and updated in 2018. The Strategy sets out how Essex County Council will manage flood risk from surface water runoff, groundwater and ordinary watercourses for which they have a responsibility as LLFA and the work that other Risk Management Authorities are doing to manage flood risk in the district.

As the new National Strategy was published in 2020, LLFAs will need to update their Local Strategies so that they reflect how national objectives for flood risk management will be delivered locally.

The Strategy notes that the Council will seek to deliver sustainable drainage systems (SuDS) as part of new development in its roles as statutory consultee for major planning applications and non-statutory consultee for non-major planning applications.

The flood risk information in the PFRA has been used to prioritise areas of locally important flood risk and assigned them into three tiers in order to prioritise flood risk management actions (Tier 1 - more than 1,000 people at risk, Tier 2 - 500-1,000 people at risk and Tier 3 - less than 500 people at risk). Within Uttlesford, Saffron Walden has been identified as a Tier 2 area due to its surface water risk and flood history, and Clavering, Great Dunmow, Manuden, Radwinter, Takeley, Thaxted and Stansted Mountfitchet have been identified as Tier 3 areas.

Flood risk management actions included in the Local Flood Risk Management Strategy have been split into two categories, county-wide strategic actions and site level specific actions. County-wide strategic actions with the aim of following the guiding principles and meeting the overall objectives of this strategy and of the Environment Agency's national strategy, focus on:

- Improving understanding of local flood risk through Surface Water Management Plans (SWMPs) and recording and reporting flood incidents
- Adapting spatial planning policy to reflect local flood risk
 - Introduction of a robust Sustainable Drainage System (SuDS) framework (Essex County Council have produced a SuDS Design and Adoption Guide and put in place interim guidance on SuDS)
 - Inclusion of local flood risk concerns in all future Strategic Flood Risk Assessments
 - Provision of new guidance to supplement the NPPF provisions for flood risk Management
- Raising community awareness
- Establishing a working framework with other RMAs (Risk Management Authority) through Essex Partnership for Flood Management and collaborative working
- Providing a policy for regulation of works on Ordinary Watercourses including consenting and enforcement
- Proactively seeking funding to deliver capital works schemes
- Addressing the skills gap in Local Authorities through recruitment and training

Site-level specific management actions could be implemented within locally important flood risk areas in order to translate the aims of the overall strategic actions onto a local scale. These are to be mainly delivered by lower tier councils such as Uttlesford District Council and communities, supported by Essex County Council, and include:

- Implementing sustainable drainage and source control measures
- Managing overland flow paths
- Reviewing land management methods
- Reviewing asset management and maintenance methods
- Achieving wider environmental benefits

- Investigating local flooding issues and identify significant features
- Implementing surface water flood forecasting and flood warning
- Encouraging implementation of flood resilience measures and property protection schemes
- Establishing community flood groups

Since then, the strategy published in 2013 was updated in 2018. The Strategy has 9 objectives around making Essex a safe place to live and work; in terms of flood risk, this means informing people.

The strategy also has 7 measures on how they will achieve this:

- 1) Investigating floods – Investigation on what has happened in local flooding, providing access grants to local residents to protect their property.
- 2) Mapping local flooding – recording structures or features that form part of the local drainage system, including their ownership and condition for public viewing. This information can be used in flood modelling and future flood alleviation schemes.
- 3) Looking after watercourses – Management of planning and activities near or on ordinary watercourses to ensure drainage is still effective.
- 4) Planning for future floods – Flood modelling to prepare for future scenarios and see who is most likely to be affected by flooding. Carrying out PFRAs and a SWMP. They also highlight the need for emergency evacuation plans, keeping watercourses clear, safely diverting flood water and potential for new flood infrastructure.
- 5) Influencing new development and drainage – Ensuring there is a decrease in the risk of surface water flooding by providing advice on the management of surface water by the means of SuDS within developments with specific guidelines.
- 6) Building new flood defences – After identifying communities at risk of flooding, they will consider whether new flood defences provide a value for money solution and potential schemes to implement any plans.
- 7) Advice on applying for a community grant or a homeowner grant known as PRF schemes.

This document highlights a wide range of flood risk management functions.

2.5.7 Water Cycle Studies Phase 2

Water Cycle Studies (WCS) assist councils to select and develop sustainable development allocations in locations where there is minimal impact on the environment, water quality, water resources, infrastructure, and flood risk. WCS provide the required evidence, and an agreed strategy, to ensure that planned growth occurs within environmental constraints (and, where possible, contributes to environmental improvements), with the appropriate infrastructure in place in a timely manner so that planned allocations are deliverable. This is undertaken by identifying areas where there may be conflict between any proposed development, the requirements of the environment and by recommending potential solutions to these conflicts.

The Council has previously prepared a Stage 1 (Scoping and Outline Strategy) (2010) and Stage 2 (Detailed Strategy) (2012) WCS. The WCS is now out of date as it was prepared in relation to a previous Local Plan that did not proceed to adoption. However, it did highlight that there were potential constraints to

development related to sewer capacity or wastewater treatment in some areas, including Great Dunmow, Newport, Saffron Walden, Great Chesterford and Thaxted.

The latest WCS covering Uttlesford district is the **Uttlesford District Water Cycle Study** published in April 2018. This will assist the Council in selecting and developing sustainable development allocations where there is minimal impact on the environment, water quality, water resources, infrastructure and flood risk.

2.5.8 LLFAs, surface water and SuDS

The 2019 NPPF states that: 'Major developments should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate' (Para 165). When considering planning applications, local planning authorities should consult the LLFA on the management of surface water in order to satisfy that:

- The proposed minimum standards of operation are appropriate
- Through the use of planning conditions or planning obligations there are clear arrangements for on-going maintenance over the development's lifetime

Essex County Council's requirements for new developers on SuDS are set out on their website, alongside supporting documents. At the time of writing this SFRA, documents and policies relevant to SuDS and surface water in Uttlesford District are:

- **Local Flood Risk Management Strategy**
- **Essex County Council – The Sustainable Drainage Systems Design Guide for Essex**
- **The SuDS Manual (C753), published in 2007, updated in 2015**
- **DEFRA Non-statutory technical standards for sustainable drainage systems, 2015**
- **DEFRA National Standards for sustainable drainage systems Designing, constructing (including LASOO best practice guidance), operating and maintaining drainage for surface runoff, 2011**
- **Building Regulations Part H (MHCLG) 2010**

The 2021 NPPF states that flood risk should be managed "using opportunities provided by new development to reduce causes and impacts of flooding." As such, Uttlesford District Council expects SuDS to be incorporated on minor development as well as major development.

2.5.9 Surface Water Management Plans (SWMP)

A Surface Water Management Plan is a study to understand the flood risks that arise from local flooding. This is defined by the Flood and Water Management Act 2010 as flooding from risk from surface runoff, groundwater, and ordinary watercourses. SWMPs are led by a partnership of flood risk management authorities who have responsibilities for aspects of local flooding, including the LLFA, Local Authority, Sewerage Undertaker and other relevant authorities. The purpose of a SWMP is to identify what the local flood risk issues are, what options there may be to prevent them or the damage they cause and who should take these options forward. This is then presented in an Action Plan that the stakeholders and partners agree.

There are currently no SWMPs covering Uttlesford District. Saffron Walden has been identified by Essex County Council as a Tier 2 area, to be completed in the future. Clavering, Great Dunmow, Manuden, Radwinter, Takeley, Thaxted and Stansted Mountfitchet have been identified as Tier 3 areas. Any future SWMPs carried out for these areas must be considered by the Local Plan.

3 Planning policy for flood risk management

This section summaries national planning policy for development and flood risk.

3.1 National Planning Policy Framework and Guidance

The revised **National Planning Policy Framework (NPPF)** was published in July 2021, replacing the 2019 version. The NPPF sets out Government's planning policies for England. It must be taken into account in the preparation of local plans and is a material consideration in planning decisions. The NPPF defines Flood Zones, how these should be used to allocate land and flood risk assessment requirements, although the 2021 update states that the Sequential and Exception Tests aim to steer development towards areas of the lowest risk of flooding from any source of flooding (not just fluvial). The NPPF states that:

"Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards"

Planning Practice Guidance on flood risk was published in July 2021 and sets out how the policy should be implemented. **Diagram 1 in the NPPG** sets out how flood risk should be considered in the preparation of Local Plans.

3.2 The risk-based approach

The NPPF takes a risk-based approach to development in flood risk areas. A risk-based approach sets out requirements in a way that is proportionate to the risk present. Therefore, in the context of a strategic flood risk assessment, recommendations made are proportionate to the level of risk present on site. This risk-based approach informs the Sequential Test set out below.

3.2.1 The Flood Zones

The definition of the Flood Zones is provided below. The Flood Zones do not take into account defences. This is important for planning long-term developments as long-term policy and funding for maintaining flood defences over the lifetime of a development may change over time.

The Flood Zones do not take into account surface water, sewer or groundwater flooding or the impacts of canal or reservoir failure. They do not consider climate change. Hence there could still be a risk of flooding from other sources and that the level of flood risk will change over time during the lifetime of a development.

The Flood Zones are:

- **Flood Zone 1 – Low probability:** less than a 0.1% chance of river and sea flooding in any given year.
- **Flood Zone 2 – Medium probability:** between a 1% and 0.1% chance of river flooding in any given year or 0.5% and 0.1% chance of sea flooding in any given year.
- **Flood Zone 3a – High probability:** greater or equal to a 1% chance of river flooding in any given year or greater than a 0.5% chance of sea flooding in any given year. Excludes Flood Zone 3b.

- **Flood Zone 3b – Functional Floodplain:** land where water has to flow or be stored in times of flood. SFRA's identify this Flood Zone in discussion with the LPA and the Environment Agency. The identification of functional floodplain takes account of local circumstances. Only water compatible and essential infrastructure are permitted in this zone and should be designed to remain operational in times of flood, resulting in no loss of floodplain or blocking of water flow routes. It may be required to consider climate change on the functional floodplain; this would need hydraulic modelling to confirm extents and therefore it is recommended that this is considered in a Flood Risk Assessment and a suitable approach is agreed with the EA.

Important note on Flood Zone information in this SFRA

The Flood Zones (Flood Zone 2 and 3a) in the Appendix A Geo-PDFs are the same as those shown on the Environment Agency's '**Flood Map for Planning**' (which incorporates latest EA modelled data), where available.

The Environment Agency Flood Zones do not cover all catchments or ordinary watercourses with areas <3km². As a result, whilst the Environment Agency Flood Zones may show an area is in Flood Zone 1, there may be a flood risk from smaller watercourse not shown in the Flood Zones.

Functional floodplain (Flood Zone 3b) is identified as land which would flood with an annual probability of 1 in 20 years, where detailed hydraulic modelling exists. The 1 in 20-year defended modelled flood extents have been used to represent Flood Zone 3b, where available from the Environment Agency. For areas outside of the detailed model coverage, or where no outputs were available, Flood Zone 3a can be used as a conservative indication. Further work should be undertaken as part of a detailed site-specific Flood Risk Assessment to define the extent of Flood Zone 3b where no detailed modelling exists.

3.2.2 The Sequential Test

Firstly, land at the lowest risk of flooding from all sources, should be considered for development i.e land in Flood Zone 1 with no surface water or other sources of flood risk. In line with the NPPF, the impacts of climate change over the lifetime of the development should be taken into account when considering actual and residual flood risk. A test called the 'Sequential Test' is applied ensure land at lowest risk of flooding is considered first. Figure 3-1 summarises the Sequential Test. The LPA will apply the Sequential Test in determining their spatial strategy and potential site allocations as well as to any strategic allocations within their Local Plan. For all other developments, in Flood Zones 2 and 3 (or in Flood Zone 1 on land with other flooding/drainage issues), developers must supply evidence to the LPA, with a Planning Application, that the development has passed the test.

The Sequential Test should apply to all forms of flood risk and consider flooding issues at present and in the future, resulting from climate change. For example, a site may currently be within Flood Zone 1, but may not be suitable if it is at high risk of flooding in the future as a result of climate change¹.

The LPA should work with the Environment Agency to define a suitable area of search for the consideration of alternative sites in the Sequential Test. A local

¹ Planning Practice Guidance, Para 033, Reference ID: 7-033-20140306: <https://www.gov.uk/guidance/flood-risk-and-coastal-change#aim-of-Sequential-Test>

planning authority should demonstrate through evidence that it has considered a range of options in the site allocation process, using the Strategic Flood Risk Assessment to apply the Sequential Test and the Exception Test where necessary. This can be undertaken directly or, ideally, as part of the sustainability appraisal. Where other sustainability criteria outweigh flood risk issues, the decision-making process should be transparent with reasoned justifications for any decision to allocate land in areas at high flood risk in the sustainability appraisal report. The Sequential Test can also be demonstrated in a free-standing document, or as part of the Housing and Economic Land Availability Assessment.

Whether any further work is needed to decide if the land is suitable for development will depend on both the vulnerability of the development, the Flood Zone it is proposed for, and the risk to the site from other sources of flooding.

Table 2 of the NPPG defines the vulnerability of different development types to flooding. **Table 3 of the NPPG** shows whether, having applied the Sequential Test first, that vulnerability of development is suitable for that Flood Zone and where further work is needed.

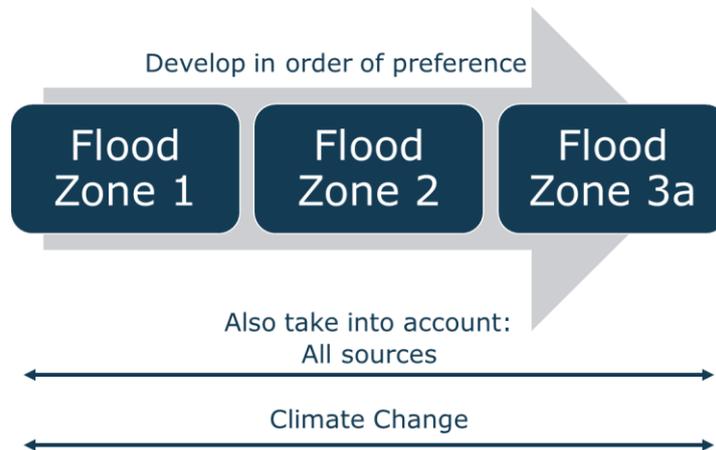


Figure 3-1: The Sequential Test

Figure 3-2 illustrates the Sequential and Exception Tests as a process flow diagram using the information contained in this SFRA to assess potential development sites against the EA's Flood Map for Planning flood zones and development vulnerability compatibilities.

It is the role of the Local Planning Authority to apply the Sequential Test to strategic allocations, for example sites allocated as part of the Local Plan. For sites not allocated in the Local Plan, the sequential test should be undertaken by the developer. In either case, it is recommended that Figure 3-2 is referred to as a guide for undertaking this. It should be noted that the 2021 NPPF indicates that the Sequential Test should apply to all forms of flood risk rather than just fluvial or tidal sources.

This is a stepwise process, but a challenging one, as a number of the criteria used are qualitative and based on experienced judgement. The process must be documented, and evidence used to support decisions recorded. In addition, the risk of flooding from other sources and the impact of climate change must be considered when considering which sites are suitable to allocate. The SFRA User Guide in Appendix C shows where the Sequential and Exception Test may be required for the datasets assessed in this SFRA, and how to interpret different levels of concern with the datasets, recommending what development might be appropriate in what situations.

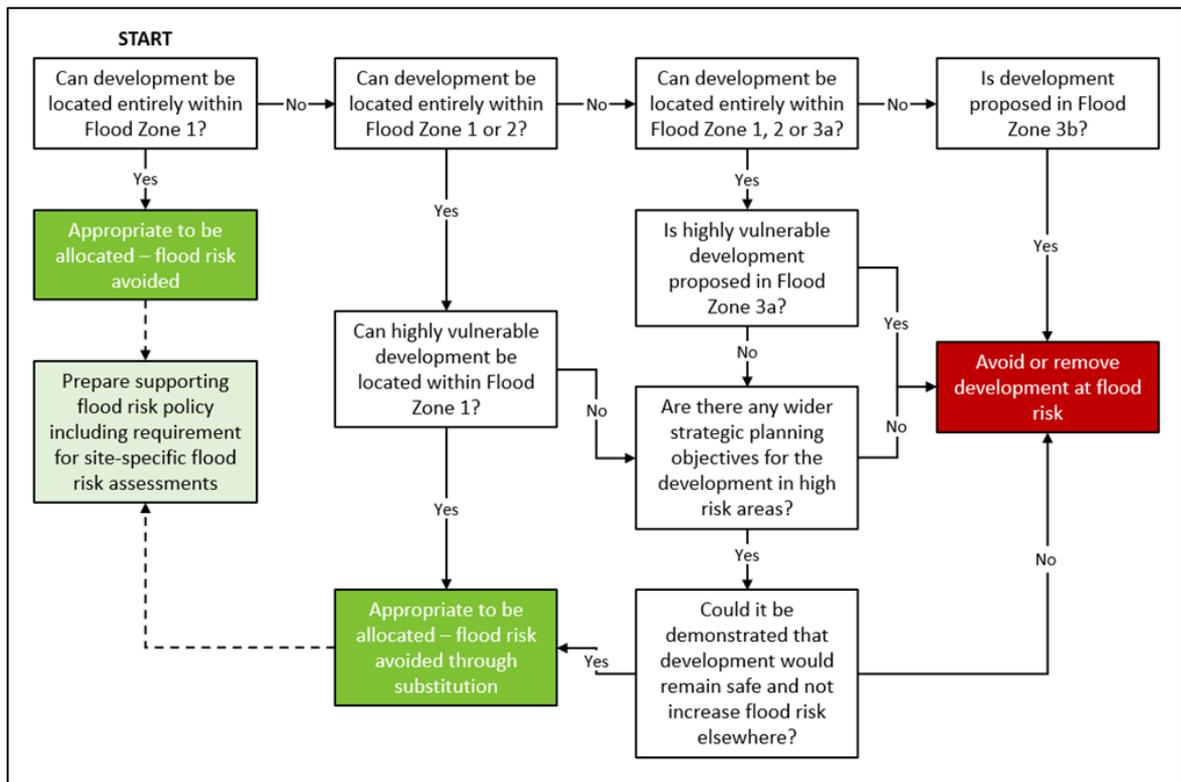


Figure 3-2: Local Plan sequential approach to site allocation

3.2.3 The Exception Test

It will not always be possible for new development to be allocated on land that is not at risk from flooding. To further inform whether land should be allocated, or Planning Permission granted, a greater understanding of the scale and nature of the flood risks is required. In these instances, the Exception Test will be required.

The Exception Test should only be applied following the application of the Sequential Test. It applies in the following instances:

- More vulnerable in Flood Zone 3a
- Essential infrastructure in Flood Zone 3a or 3b
- Highly vulnerable in Flood Zone 2 (this is NOT permitted in Flood Zone 3a or 3b)

Figure 3-3 summarises the Exception Test.

For sites allocated within the Local Plan, the Local Planning Authority should use the information in the Level 2 SFRA to inform the Exception Test. At planning application stage, the developer must design the site such that it is appropriately flood resistant and resilient in line with the recommendations in National and Local Planning Policy and supporting guidance and those set out in this SFRA. This should demonstrate that the site will still pass the flood risk element of the Exception Test based on the detailed site level analysis.

Following the application of the Sequential Test, where it is not possible to allocate development on sites at low risk of flooding, the Exception Test may be required to support the principle of development. The Level 2 SFRA considers this for strategic allocations, other sites should prepare an exception test and present this information to the Local Planning Authority for approval. This Level 1 SFRA can be used to scope the flooding issues that a site-specific FRA should look into in more detail to inform the Exception Test for windfall sites.

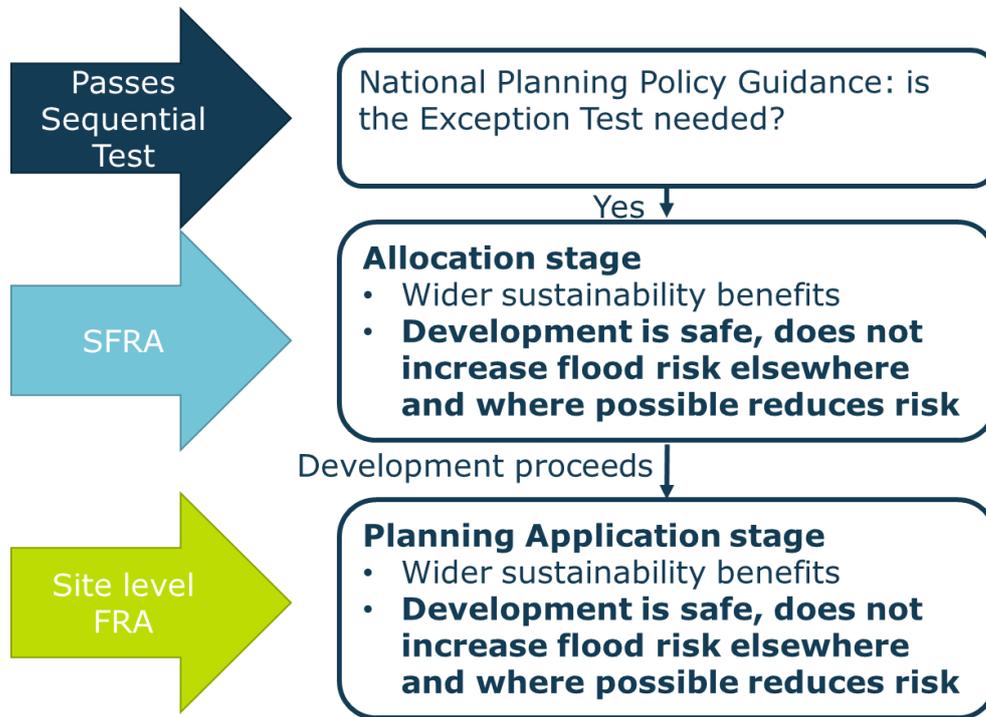


Figure 3-3: The Exception Test

There are two parts to demonstrating a development passes the Exception Test:

1. Demonstrating that the development would provide wider sustainability benefits to the community that outweigh the flood risk

Local planning authorities will need to consider what criteria they will use to assess whether this part of the Exception Test has been satisfied and give advice to enable applicants to provide evidence to demonstrate that it has been passed. If the application fails to prove this, the Local Planning Authority should consider whether the use of planning conditions and / or planning obligations could allow it to pass. If this is not possible, this part of the Exception Test has not been passed and planning permission should be refused.

At the stage of allocating development sites, Local Planning Authorities should consider wider sustainability objectives, such as those set out in Local Plan Sustainability Appraisals. These generally consider matters such as biodiversity, green infrastructure, historic environment, climate change adaptation, flood risk, green energy, pollution, health, transport etc.

The Local Planning Authority should consider the sustainability issues the development will address and how doing so will outweigh the flood risk concerns for the site, e.g. by facilitating wider regeneration of an area, providing community facilities, infrastructure that benefits the wider area etc.

2. Demonstrating that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

A Level 2 SFRA is likely to be needed to inform the Exception Test in these circumstances for strategic allocations. At Planning Application stage, a site-specific Flood Risk Assessment will be needed. Both would need to consider the actual and residual risk and how this will be managed over the lifetime of the development.

3.2.4 Making a site safe from flood risk over its lifetime

Local Planning Authorities will need to consider the actual and residual risk of flooding and how this will be managed over the lifetime of the development:

- The actual risk is the risk to the site considering existing flood mitigation measures. The fluvial 1% chance flood in any year event is a key event to consider because the National Planning Policy Guidance refers to this as the 'design flood' against which the suitability of a proposed development should be assessed and mitigation measures, if any, are designed.
- Safe access and egress should be available during the design flood event. Firstly, this should seek to avoid areas of a site at flood risk. If that is not possible then access routes should be located above the design flood event levels. Where that is not possible, access through shallow and slow flowing water that poses a low flood hazard may be acceptable.
- Residual risk is the risk that remains after the effects of flood defences have been taken into account and/ or from a more severe flood event than the design event. The residual risk can be:
 - The effects of an extreme 0.1% chance flood in any year event. Where there are defences this could cause them to overtop, which may lead to failure if this causes them to erode; and/or
 - Structural failure of any flood defences, such as breaches in embankments or walls.

Flood resistance and resilience measures should be considered to manage any residual flood risk by keeping water out of properties and seeking to reduce the damage it does, should water enter a property. Emergency plans should also account for residual risk, e.g. through the provision of flood warnings and a flood evacuation plan where appropriate.

In line with the NPPF, the impacts of climate change over the lifetime of the development should be taken into account when considering actual and residual flood risk.

3.3 Applying the Sequential Test and Exception Test to individual planning applications

3.3.1 Sequential Test

Uttlesford District Council, with advice from the Environment Agency, are responsible for considering the extent to which Sequential Test considerations have been satisfied.

Developers are required to apply the Sequential Test to all development sites, unless the site is either:

- A strategic allocation and the test has already been carried out by the LPA
- A change of use (except to a more vulnerable use)
- A minor development (householder development, small non-residential extensions with a footprint of less than 250m²); or

- A development in Flood Zone 1, unless there are other flooding issues in the area of the development (i.e. surface water, ground water, sewer flooding).

The SFRA contains information on all sources of flooding and taking into account the impact of climate change. This should be considered when a developer undertakes the Sequential Test, including the consideration of reasonably available sites at lower flood risk.

Local circumstances must be used to define the area of application of the Sequential Test (within which it is appropriate to identify reasonably available alternatives). The criteria used to determine the appropriate search area relate to the catchment area for the type of development being proposed. For some sites this may be clear e.g. school catchments, in other cases it may be identified by other Local Plan policies. For some sites e.g. regional distribution sites, it may be suitable to widen the search area beyond LPA administrative boundaries.

The sources of information on reasonably available sites may include:

- Site allocations in Local Plans
- Site with Planning Permission but not yet built out
- Strategic Housing and Economic Land Availability Assessments (SHELAA)/ five-year land supply/ annual monitoring reports
- Locally listed sites for sale

It may be that a number of smaller sites or part of a larger site at lower flood risk form a suitable alternative to a development site at high flood risk.

Ownership or landowner agreement in itself is not acceptable as a reason not to consider alternatives.

The SFRA User Guide in Appendix C shows where the Sequential and Exception Test may be required for the datasets assessed in the SFRA, and how to interpret different levels of concern with the datasets, recommending what development might be appropriate in what situations.

3.3.2 The Exception Test

If, following application of the Sequential Test it is not possible for the development to be located in areas with a lower probability of flooding, the Exception Test must then be applied if required (as set out in Table 3 of the NPPG). Developers are required to apply the Exception Test to all applicable sites (including strategic allocations).

The applicant will need to provide information that the application can pass both parts of the Exception Test:

- *Demonstrating that the development would provide wider sustainability benefits to the community that outweigh the flood risk*

Applicants should refer to wider sustainability objectives in Local Plan Sustainability Appraisals. These generally consider matters such as biodiversity, green infrastructure, historic environment, climate change adaptation, flood risk, green energy, pollution, health, transport etc.

Applicants should detail the suitability issues the development will address and how doing it will outweigh the flood risk concerns for the site e.g. by facilitating wider regeneration of an area, providing community facilities, infrastructure that benefits the wider area etc.

- *Demonstrating that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.*

The site-specific Flood Risk Assessment should demonstrate that the site will be safe, and the people will not be exposed to hazardous flooding from any source. The FRA should consider actual and residual risk and how this will be managed over the lifetime of the development, including:

- The design of any flood defence infrastructure
- Access and egress
- Operation and maintenance
- Design of the development to manage and reduce flood risk wherever possible
- Resident awareness
- Flood warning and evacuation procedures, including whether the developer would increase the pressure on emergency services to rescue people during a flood event; and
- Any funding arrangements required for implementing measures.

4 Impact of climate change

Climate change projections show an increased chance of warmer, wetter winters and hotter, drier summers with a higher likelihood of more frequent and intense rainfall. This is likely to make severe flooding happen more often.

The NPPF sets out that flood risk should be managed over the lifetime of a development, taking climate change into account. This section sets out how the impact of climate change should be considered.

4.1 Revised Climate Change Guidance

The Climate Change Act 2008 creates a legal requirement for the UK to put in place measures to adapt to climate change and to reduce carbon emissions by at least 80% below 1990 levels by 2050.

In 2018, the government published new UK Climate Projections (UKCP18). The Environment Agency has translated these projections into published **updated climate change guidance in 2021** on how allowances for climate change should be included in both strategic and site specific FRAs. The guidance adopts a risk-based approach considering the vulnerability of the development. However, it is anticipated that the Environment Agency's guidance will shortly be revised again to account for changes to peak rainfall allowances. At the time of writing this report, the updated peak rainfall allowances have not yet been released.

Developers should check on the government website for the latest guidance before undertaking a detailed Flood Risk Assessment.

4.2 Applying the climate change guidance

To apply the climate change guidance, the following information needs to be known:

- The vulnerability of the development – see the **NPPG**
- The likely lifetime of the development – in general 60 years is used for commercial development and 100 for residential, but this needs to be confirmed in an FRA
- The River Basin that the site is in – Uttlesford District is situated in the Anglian and Thames River Basin Districts
- The Management Catchment that the site is in – see the **guidance**
- Likely depth, speed and extent of flooding for each allowance of climate change over time considering the allowances for the relevant epoch (2020s, 2050s and 2080s)
- The 'built in' resilience measures used, for example, raised floor levels
- The capacity or space in the development to include additional resilience measures in the future, using a 'managed adaptive' approach

4.3 Relevant allowances for Uttlesford District

Table 4-1 shows the peak river flow allowances that apply in Uttlesford District for fluvial flood risk. Table 4-2 shows the peak rainfall intensity allowances that apply in Uttlesford District for small catchments (less than 5km²) and urban catchments for surface water flood risk. Catchments which are larger than 5km² or are rural should use Table 4-1 for peak rainfall intensity. Both the central and upper end allowances should be considered to understand the range of impact.

Table 4-1: Peak river flow allowances for the Anglian and Thames River Basin Districts

RBD	Catchment Management Basin	Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Anglian	Cam and Ely Ouse	Upper end	21%	22%	45%
		Higher central	7%	5%	19%
		Central	2%	-2%	9%
	Combined Essex	Upper end	27%	37%	72%
		Higher central	13%	16%	38%
		Central	7%	8%	25%
Thames	Roding, Bean and Ingrebourne	Upper end	31%	38%	64%
		Higher central	20%	21%	36%
		Central	15%	14%	26%
	Upper Lee	Upper end	23%	27%	59%
		Higher central	9%	7%	22%
		Central	3%	-1%	10%

Click for [Source](#)

Table 4-2: Peak rainfall intensity allowances for small and urban catchments

Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper end	10%	20%	40%
Central	5%	10%	20%

Click for [Source](#)

4.4 Representing climate change in the Level 1 SFRA

A pragmatic approach to climate change was proposed to the EA for the Uttesford L1 SFRA. As the centre of the authority area forms a catchment boundary for three major basins, this means the watercourses are in their headwaters where the topography is very confined, meaning generally narrow floodplains with little difference seen between FZ2 and FZ3 extents (climate change usually sits between these events).

It was proposed to the EA that no new climate change modelling would be carried out for the L1 SFRA based on the following justifications:

- For all EA models provided, there is at least one existing climate change model output, and for one model there are the three 2080s pre-July 2021 allowances.
- The majority of updated 2021 catchment climate change allowances are lowered (the only increase is Chelmer Upper End, though the focus for FRAs is now on the Central allowance in the new guidance).
- There is a minor difference between FZ3 and FZ2 extents. Modelling climate change would show minimal difference as the extents would fall between these scenarios – all watercourses are in their headwaters with confined topography, and therefore negligible difference would be seen in the mapping. This approach was agreed in the previous L1 SFRA, and allowances have since decreased further, meaning FZ2 is a conservative indication.
- Climate change flows in the 2016 L1 SFRA were compared and were contained within the 1,000-year event (FZ2) and now the flows are lower again with latest guidance.
 - *"The majority have a 'climate change' flood outline for the 100 year +20% event, with the exception of the two studies of the River Cam and its tributaries (including The Slade), which both used +25%. These outlines reasonably represent the 'Central' allowance for both river basin districts. Analysis of the 1,000-year flow estimation points for these studies (most studies usually include a 1000 year event) shows the average increase for each model is between +39% and +79% above the 100 year flows. These outlines can therefore be used as an approximation for the 'Upper end' estimate for most areas. The exception is the River Stort catchment, which is probably more representative of the 'Higher central' estimate. Following discussion with the Environment Agency it was decided to take a precautionary approach based on the assumption that the current Flood Zone 2 outline (1 in 1,000-year flood extent) represents a future Flood Zone 3a taking into account climate change."*
- The focus in the latest guidance for vulnerability of developments is on Central allowance. The previous 20% climate change covers majority of the models' Central allowances conservatively.
- The Council are not proposing to develop in areas of fluvial flood risk.

It was agreed that this approach is acceptable for the Upper Roding, Upper Middle Stort, Stort Tribs, Stansted Mountfitchet, Chelmer and Cam models. However, for the Blackwater model, concerns were raised as to whether the existing climate change runs were sufficient for the updated uplifts. Checks were undertaken on comparative flows to see whether the allowances were covered by the 0.1% AEP or 0.1% AEP + climate change event. Following checks, the 100-year +25%, +38% and +72% climate change uplifts were run and mapped for the Blackwater model only.

It was agreed with the Council that if new settlements/ significant urban extensions are proposed in flood risk areas, the Upper End allowance would be required to be modelled as part of a Level 2 SFRA. At time of writing, Uttlesford District Council are in the early stages of their 'call for site's process and, at present, do not believe development will occur in flood risk areas.

For any sites not covered by the EA's detailed modelling, Flood Zone 2 was used as an indicative climate change extent. This is appropriate given the Upper End climate change extents are often similar to the Flood Zone 2 extents.

The 1,000-year surface water extent can also be used as an indication of surface water risk, and risk to smaller watercourses, which are too small to be covered by the EA's Flood Zones.

Developers will need to undertake a more detailed assessment of climate change as part of the planning application process when preparing Flood Risk Assessments, using the percentage increases which relate to the proposed lifetime and the vulnerability classification of the development. In areas where no modelling is present, this may require development of a 'detailed' hydraulic model, using channel topographic survey. The EA should be consulted to provide further advice for developers on how best to apply the new climate change guidance.

Climate change mapping has been provided in Appendix A: GeoPDFs.

In summary, the climate change outputs on the GeoPDF maps for the SFRA may be from:

- 'Modelled climate change allowances': Climate change allowances previously modelled.
- 'Indicative Climate Change (FZ2)': Flood Zone 2, which is used outside of the areas covered by specific flood models and should be considered to be indicative.

It is important to note that although the flood extent may not increase noticeably on some watercourses, the flood depth, velocity and hazard may increase compared to the 100-year current-day event.

When undertaking a site-specific Flood Risk Assessment, developers should:

- Confirm which national guidance on climate change and new development applies by visiting [GOV.UK](https://www.gov.uk).
- Apply this guidance when deciding the allowances to be made for climate change, having considered the potential sources of flood risk to the site (using this SFRA), the vulnerability of the development to flooding and the proposed lifetime of the development. If the site is just outside the indicative climate change extents in this SFRA, the impact of climate change should still be considered because these may get affected should the more extreme climate change scenarios materialise.
- Refer to Chapter 8 which provides further details on climate change for developers, as part of the FRA guidance, and the SFRA User Guide in Appendix C.

4.5 Impact of climate change on flood risk

This section explores which areas of the district are most sensitive to increases in flood risk due to climate change. It should be noted that areas that are already at high risk will also become at increasing risk in future and the frequency of flooding will increase in such areas.

It is recommended that the Council works with other Risk Management Authorities to review the long-term sustainability of existing and new development in these areas when developing climate change plans and strategies for the district.

4.5.1 Impact of climate change on fluvial flood risk

Climate change modelled flood extents, where available (or Flood Zone 2 where no modelling exists) can be compared to the 100-year flood extent (Flood Zone 3a) for an indication of areas most sensitive to climate change.

In general, there is little difference across the district between Flood Zone 2 and 3 as the district forms a natural catchment watershed, meaning the watercourses are fairly narrow and confined topographically in their upper reaches.

Areas in the district most sensitive to fluvial impacts of climate change are settlements along the River Stort e.g. Clavering, Saffron Walden on the Slade and other areas are more rural with no properties.

4.5.2 Impact of climate change on surface water flood risk

In the absence of modelling surface water risk with climate change uplifts, the 1,000-year surface water flood extent can be used as an indication of climate change (as well as for smaller watercourses; some of which are not included in the Flood Zones).

In general, surface water risk across the district is generally low as the district forms a natural catchment watershed, meaning land steeply falls away from the centre and any surface water will run off and converge towards the watercourses, which are fairly narrow and confined topographically. Areas in the district most sensitive to changes between the 100-year and 1,000-year surface water extents are located away from the confined river floodplains, which show little difference between flood events. Also, areas where there are topographic impoundments, such as roads/ rail, where water can spread.

4.5.3 Impact of climate change on groundwater flood risk

There is no technical modelling data available to assess climate change impacts on groundwater. It would depend on the flooding mechanism, historic evidence of known flooding and geological characteristics, for example prolonged rainfall in a chalk catchment. Flood risk could increase when groundwater is already high or emerged, causing additional overland flow paths or areas of still ponding.

A high likelihood of groundwater flooding may mean infiltration SuDS are not appropriate and groundwater monitoring may be recommended.

4.6 Adapting to climate change

The NPPG Climate Change **guidance** contains information and guidance for how to identify suitable mitigation and adaptation measure in the planning process to address the impacts of climate change. Examples of adapting to climate change include:

- Considering future climate risks when allocating development sites to ensure risks are understood over the development's lifetime.
- Considering the impact of and promoting design responses to flood risk and coastal change for the lifetime of the development.
- Considering availability of water and water infrastructure for the lifetime of the development and design responses to promote water efficiency and protect water quality.
- Promoting adaptation approaches in design policies for developments and the public realm for example by building in flexibility to allow future adaptation if needed, such as setting new development back from watercourses; and
- Identifying no or low-cost responses to climate risks that also deliver other benefits, such as green infrastructure that improves adaptation, biodiversity and amenity, for example by leaving areas shown to be at risk of flooding as public open space.

- Considering the standard of protection of defences and sites for future development, in relation to sensitivity to climate change. The Council and developers will need to work with RMAs and use the SFRA datasets to understand whether development is affordable or deliverable. Locating development in such areas of risk may not be a sustainable long-term option, such as at the defence locations mentioned in Chapter 6.

It is recommended that the differences in flood extents from climate change are compared by the Council when allocating sites, to understand how much additional risk there could be, where this risk is in the site, whether the increase is marginal or activates new flow paths, whether it affects access/ egress and how much land could still be developable overall. Recommendations for development are made for the levels of risk in the SFRA User Guide in Appendix C.

5 Understanding flood risk in Uttlesford District

This chapter explores the key sources of flooding in the district and the factors that affect flooding including topography, soils and geology. The main sources of flooding are from watercourses, surface water and sewers.

This is a strategic summary of the risk in Uttlesford District. Developers should use this chapter to scope out the flood risk issues they need to consider in greater detail in a site-specific Flood Risk Assessment to support a Planning Application.

Appendix B contains a list of the sources of data used in the SFRA and the approach to using hydraulic model data to inform the mapping.

5.1 Historical flooding

Essex County Council's (LLFA) Historic Flooding Incidents and Asset Register includes recorded historical flood events within Uttlesford District. There is a history of documented flood events, with the main sources being fluvial and surface water. Table 5-1 highlights the most significant historic flood events. A full history of flooding incidents within the district is in Appendix F.

Table 5-1: Historic flooding incidents held by Essex County Council

Location	Date	Additional information recorded
Great Dunmow, Wimbish, Elmdon	23 July 2016	Persistent rain brought return of flooding to villages and a number of properties flooded.
Clavering, Berden, Manuden, Wimbish	23 November 2014	Persistent rain brought return of flooding to villages affected in February 2014.
Saffron Walden, Newport, Wendens Ambo, Debden, Stansted, Arkesden, Ashdon, Quendon, Henham, Stansted Mountfitchet.	7 February 2014	Widespread flooding through District (particularly north west).
Ashdon	14 June 2007	14 properties flooded and roads blocked.
Widespread across the district	January 2003	70 flood incidents reported for 1 st to 3 rd January
Clavering, Manuden, Stansted Mountfitchet, Great Chesterford, Littlebury, Newport, Saffron Walden, Little Walden, Great Dunmow, Ashdon	October 2001	Widespread flooding across the district. At least 95 flood incidents reported.
Ashdon	Summer 1987	48 properties including 21 residential properties flooded in 3 separate events.
Saffron Walden	19 September 1960	Police worked late into night placing warning traffic lights on flooded roads; houses in some villages completely covered by flood water

Location	Date	Additional information recorded
Saffron Walden	5 August 1917	3.08 inches of rain recorded in 2 hours caused much flooding.
Saffron Walden	10 November 1875	1.02 inches of rain fell in two to three hours during the night and resulted in flooding.

In addition to the Historic Flooding Incidents and Assets Register, Essex Fire and Rescue Service were contacted to provide their recorded flooding data, which contains the responses of the Fire and Rescue Service to incidents involving flooding or rescue from water within Uttlesford District. No additional information was provided.

5.2 Topography, geology, soils and hydrology

The topography, geology and soil are all important in influencing the way the catchment responds to a rainfall event. The degree to which a material allows water to percolate through it, the permeability, affects the extent of overland flow and therefore the amount of run-off reaching the watercourse. Steep slopes or clay rich (low permeability) soils will promote rapid surface runoff, whereas more permeable rock such as limestone and sandstone may result in a more subdued response. Uttlesford District covers an area approximately 641 km² and has a population of approximately 79,000 (2011 census). The largest urban areas within Uttlesford are Great Dunmow and Saffron Walden. Outside of the main towns the district is relatively rural with a number of dispersed villages. Map 2 gives an overview of the study area.

5.2.1 Topography

The topography and landscape of Uttlesford (Map 2) is a result of the region being located at the headwaters of three separate river catchments.

Uttlesford District is characterised by the highest elevations being through the centre of the northern half of Uttlesford between Stansted Mountfitchet and Saffron Walden. This forms part of the watershed between the Anglian and Thames River Basin Districts. These fall towards the lower-lying river valleys that all flow out of the district around the boundary. Elevations range from ~140m-100m AOD along central watershed, to 34m AOD in the north where the River Cam flows out of the district. The chalk hills in the northwest rise to 140m AOD and the land slowly falls in height towards the southeast where clay soils dominate. The land is cut by river valleys running north towards Cambridgeshire (River Cam (or Granta)), southeast towards the centre of the county (River Chelmer and River Pant), and south towards the Thames river basin (Pincey Brook, River Roding, River Stort and Stansted Brook). There are also a number of valleys formed by the tributaries to these Main Rivers. The valleys are steep, with the lowest elevations within the region located in the River Cam and River Chelmer valleys (approximately 35m AOD) and the highest area of the district, at the headwaters of the River Stort in the northwest of the district rising to approximately 147.0m AOD.

The topography of the district is shown in Figure 5-1.

5.2.2 Geology

The geology of the catchment can be an important influencing factor on the way that water runs off the ground surface. This is primarily due to variations in the permeability of the surface material and bedrock stratigraphy.

Superficial (at the surface) deposits in Uttlesford District, shown in Figure 5-3, consist of glacial sand and gravel in the river valley networks and widespread diamicton (till) deposits on the valley sides and higher elevations. Although diamicton commonly refers to unsorted glacial deposits, it can be formed by a number of processes including deposition by current and ancient river networks, landslides and debris flows.

The underlying geology in the Uttlesford District, shown in Figure 5-4, is split into two distinct regions. To the north of the region the bedrock is composed of White Chalk of Cretaceous age and to the south the bedrock is composed of the London Clay formation, a mixture of clay, silt, sand and gravel. There is band of Lambeth Group bedrock between the two main bedrock types within the district. Geology information can be viewed on the [British Geological Society website](#).

5.2.3 Soils

As a result of the superficial deposits the soils on the valley sides and higher elevations are loamy and clayey soils which suffer from impeded drainage. Within the river valleys of the district the soils are more freely draining loamy soils. Soil information can be viewed on the [Soilscapes website](#).

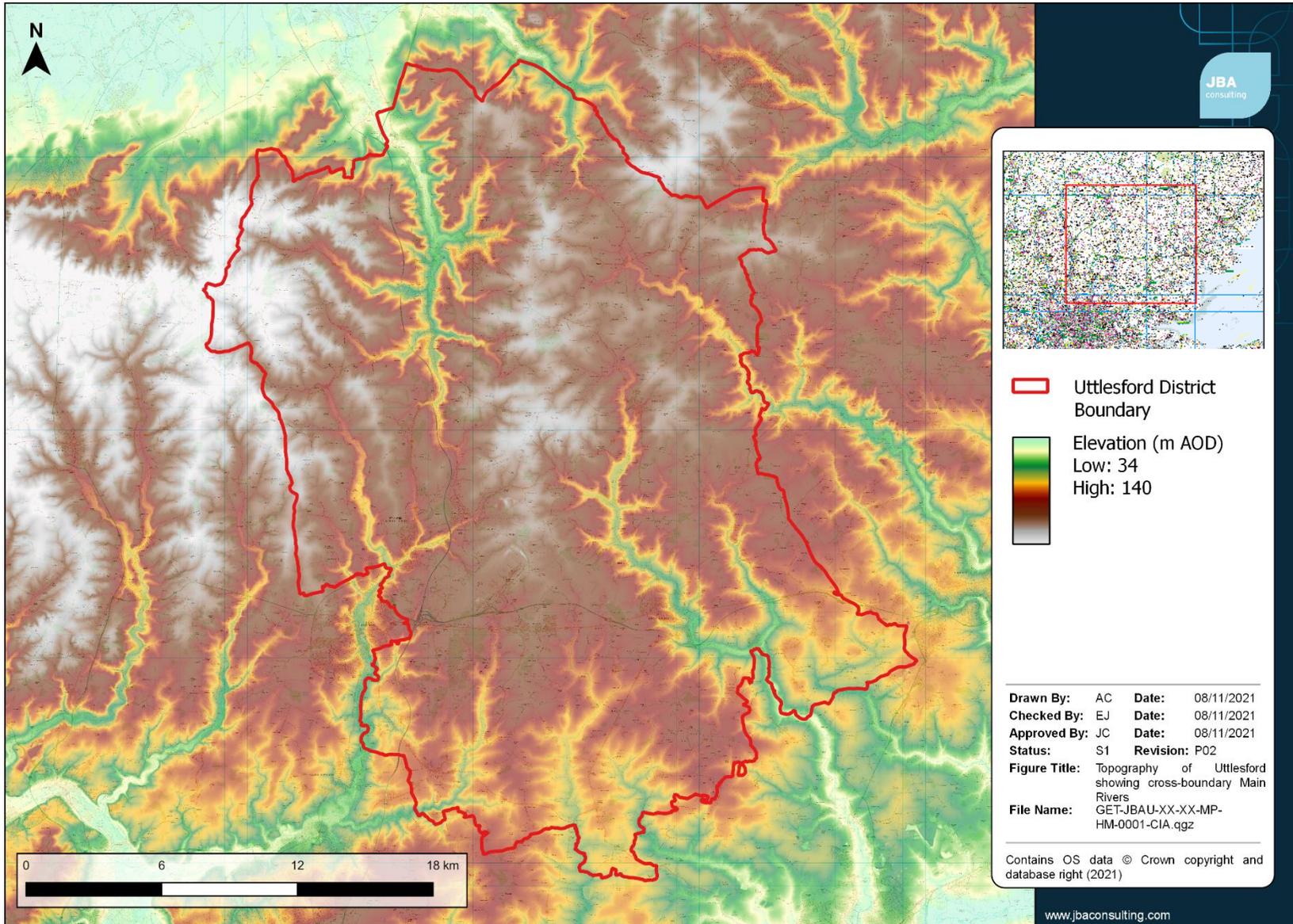


Figure 5-1: Topography of the district

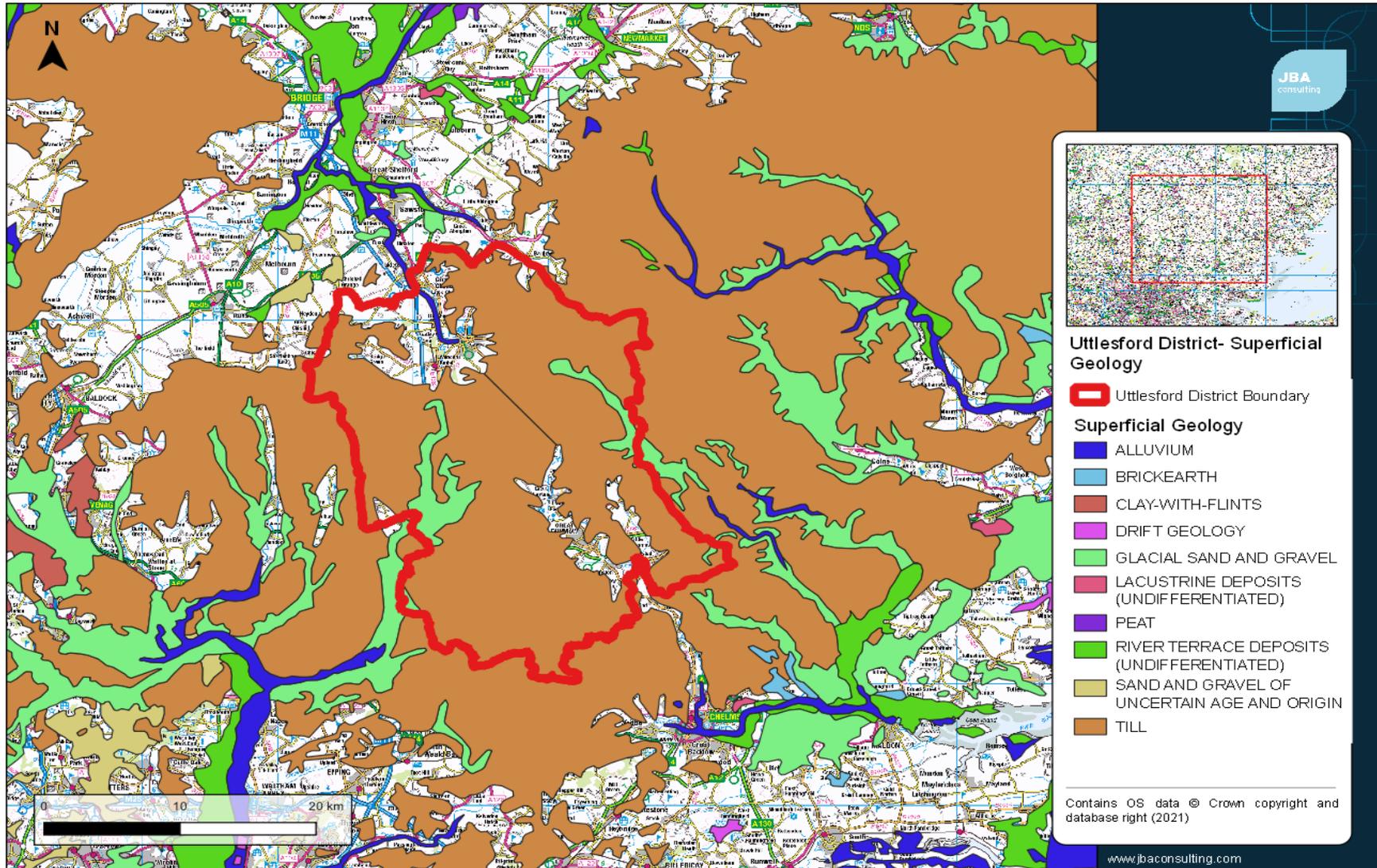


Figure 5-2: Superficial geology of the district

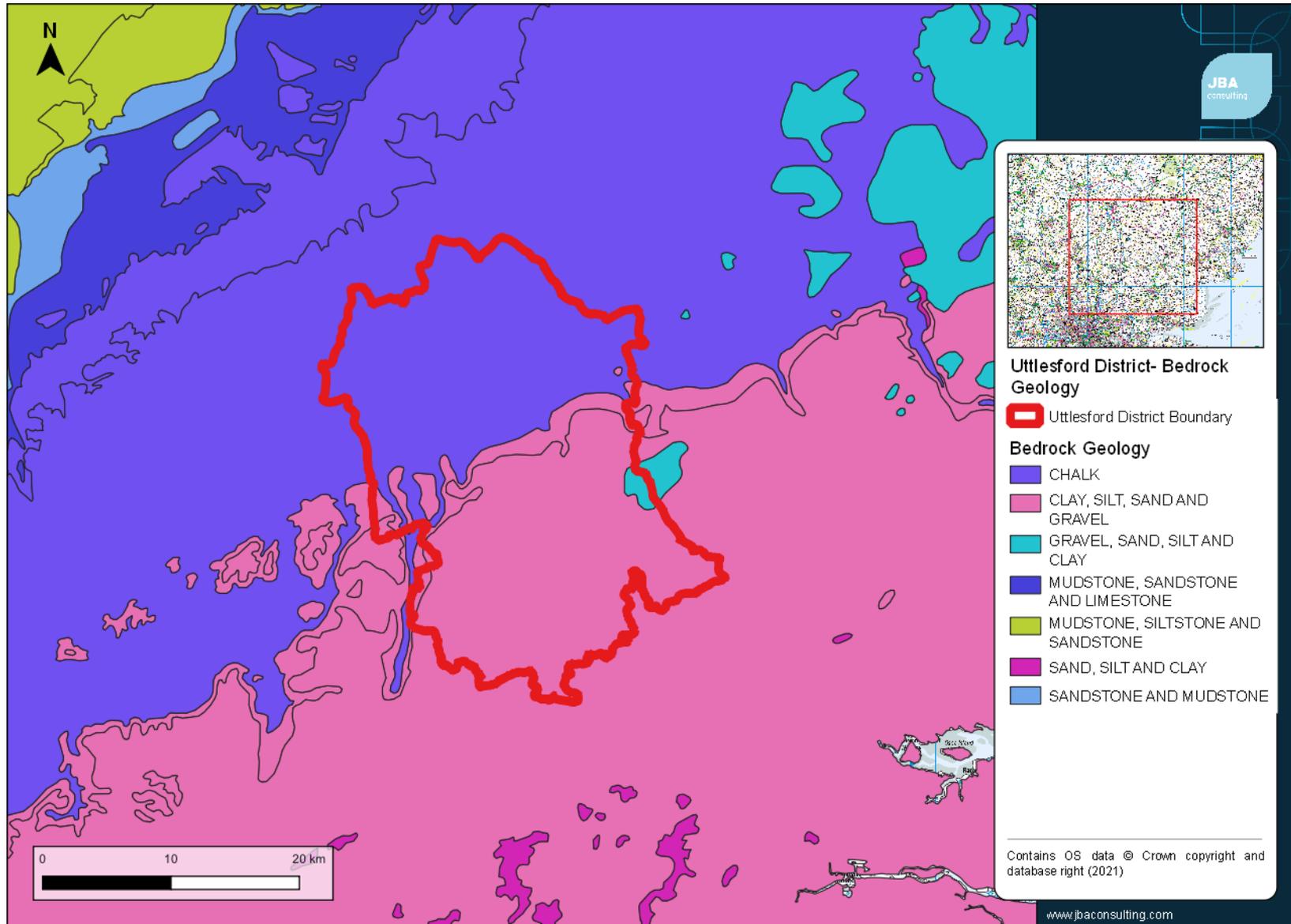


Figure 5-3: Bedrock geology of the district

5.3 Hydrology

Uttlesford District consists of a number of watercourses flowing away from the centre of the district to beyond its boundary. The principal watercourses in the Uttlesford District are:

- The River Cam (or Granta) in the north of the district
- The River Pant in the east of the district
- The River Chelmer and Stebbing Brook in the southeast of the district
- The River Roding, River Stort, Pincey Brook and Stansted Brook in the south and west of the district.

There are numerous tributaries to these watercourses including smaller Ordinary Watercourses and unnamed drains. A summary of the principal watercourses within the Uttlesford District are provided in Figure 1-3.

Uttlesford is one of the driest parts of the UK, with an average annual rainfall of 500 mm

5.4 Fluvial flood risk

The primary fluvial flood risk in the Uttlesford District belong in the three larger catchment areas: the Great Ouse in the North, the North Essex in the east, and the Thames catchment to the southeast of the district. Fluvial flood risk is shown by the Environment Agency Flood Zone maps.

In the Great Ouse catchment, the main source of fluvial flood risk arises from the River Cam (or Granta) and the River Slade. The River Cam flows south to north from the source near Widdington, where it converges with another tributary of the Cam near Granchester. These watercourses present a fluvial flood risk to larger towns and settlements such as Newport, Wendens Ambo, Audley End, Little Chesterford and Great Chesterford. The River Slade is a tributary to the River Cam and consists of three branches, of which their confluence is at Saffron Walden. The Slade is culverted within Saffron Walden and highly modified. Saffron Walden is one of the areas with the greatest fluvial flood risk within the district. Ordinary watercourses in the Great Ouse catchment include Wicken Water, River Bourn, Fulfen Slade and Debden Water.

Within the North Essex catchment there are several Main Rivers, however the River Chelmer, Pant and Stebbing Brook are the main sources of fluvial flood risk within the area. The River Chelmer flows south from its source near Debden Green to Chelmsford, where it meets the River Can. It flows through the urban areas of Thaxted, Great Easton, Mill End, Little End, Great Dunmow and Little Dunmow. The River Pant flows towards the northwest and southwest towards Braintree where it becomes the River Blackwater. It passes through mostly smaller towns and villages in more rural areas, such as Radwinter and Great and Little Sampford. The Stebbing Brook flows north to south from Lindsell and converges with the River Chelmer at Little Dunmow. The River Pant and Stebbing Brook are also a source of flood risk in the area; however, the consequences of flooding are low as people and properties are located in smaller towns and villages throughout the rural area.

In the Thames catchment the watercourses that present the highest flood risk are the River Stort, Stansted Brook, Ugley Brook and Pincey Brook. The area of the most flood risk is Stansted Mountfitchet as it is where the Stansted and Ugley Brooks converge. Downstream, they converge with the River Stort and Bourne Brook where it flows through Bishop's Stortford in the district of East Hertfordshire. Here, the risk of fluvial flooding is high and regularly also floods upstream in the undeveloped floodplain in Uttlesford District. There are several

other Main Rivers in this catchment, but the risk of fluvial flooding they present to small communities is mostly along the River Roding and Pincey Brook.

5.5 Surface water flooding

Surface water runoff (or 'pluvial' flooding) is most likely to be caused by intense downpours e.g. thunderstorms. At times the amount of water falling can completely overwhelm the drainage network, which is not designed to cope with extreme storms. The flooding can also be complicated by blockages to drainage networks, sewers being at capacity and/ or high-water levels in watercourses that cause local drainage networks to back up.

The Environment Agency Risk of Flooding from Surface Water mapping (RoFSW) shows that a number of communities are at risk of surface water flooding. The mapping shows that surface water predominantly follows topographical flow paths of existing watercourses or dry valleys and can pond in low-lying areas. Whilst in the majority of cases the risk is confined to roads, there are notable prominent run-off flow routes around properties, e.g. properties situated at the foot of surrounding hills. The RoFSW mapping for Uttlesford District can be found on the Geo-PDF mapping in Appendix A.

5.6 Sewer flooding

Sewer flooding occurs when intense rainfall/river flooding overloads sewer capacity (surface water, foul or combined), and/or when sewers cannot discharge to watercourses due to high water levels.

Sewer flooding can also be caused by blockages, collapses, equipment failure or groundwater leaking into sewer pipes.

Since 1980, the Sewers for Adoption guidelines mean that new surface water sewers have been designed to have capacity for a rainfall event with a 1 in 30 chance of occurring in any given year, although until recently this did not apply to smaller private systems. This means that sewers will be overwhelmed in larger rainfall and flood events. Existing sewers can also become overloaded as new development adds to the surface water discharge to their catchment, or due to incremental increases in roofed and paved surfaces at the individual property scale (urban creep). Sewer flooding is therefore a problem that could occur in many locations across the study area.

Historical incidents of flooding are detailed by Thames Water and Anglian Water through their DG5 Register. This database records incidents of flooding relating to public foul, combined or surface water sewers and displays which properties suffered flooding. For confidentiality, this data has been supplied on a 4-digit postcode basis. The DG5 register from Thames Water and Anglian Water are shown in Table 5-2 and Table 5-3, respectively.

These outputs indicate areas that may be affected from surface water and sewer flooding, should sewers exceed their capacity and discharge (particularly if this happens due to intense rainfall overwhelming the system). It will also help to identify flooding hotspots, where there is limited capacity, and help inform future schemes and mitigation.

Table 5-2: DG5 recorded incidents – Thames Water

Postcode area	Register Type		Grand Total
	Internal flooding to property	External flooding to property/areas	
CB114	0	2	2
CM226	0	1	1
CM227	1	1	2
CM232	2	0	2
CM233	1	0	1
CM235	1	8	9
CM248	2	11	13
CM6 1	0	1	1
Grand Total	7	24	31

Table 5-3: DG5 recorded incidents - Anglian Water

Postcode area	Register Type		Grand Total
	Internal flooding to property	External flooding to property/areas	
CB1 1	8	3	11
CB1 2	7	8	15
CB1 3	2	27	29
CB1 7	0	1	1
CB1 8	1	8	9
CB1 9	0	14	14
CB10 1	4	11	15
CB10 2	0	26	26
CB11 3	3	17	20
CB11 4	1	15	16
Grand Total	26	130	156

The Thames Water DG5 indicates a total of 31 recorded flood incidents in Uttlesford District. The more frequently flooded postcodes are CM24 8, and CM23 5. The Anglian Water DG5 indicates a much higher number, with 156 recorded flood incidents. The incidents are spread across the district, but the most frequently flooded postcodes are CB1 3 and CB10 2. It is important to recognise the DG5 does not contain information about properties and areas at risk of sewer flooding caused by operational issues such as blockages. Also, the register represents a snapshot in time and will get outdated with properties being added to the register following rainfall events, whilst risk will be reduced in some locations by capital investment in increasing the capacity of the network. As such the summary of the DG5 in this report is not a comprehensive 'at risk register'.

5.7 Groundwater flooding

In general, less is known about groundwater flooding than other sources. Groundwater flooding can be caused by:

- High water tables, influenced by the type of bedrock and superficial geology
- Seasonal flows in dry valleys, which are particularly common in areas of chalk geology
- Rebounding groundwater levels, where these have been historically lowered for industrial or mining purposes
- Where there are long culverts that prevent water easily getting into watercourses

Groundwater flooding is different to other types of flooding. It can last for days, weeks or even months and is much harder to predict and warn for. Monitoring does occur in certain areas, for example where there are major aquifers or when mining stops.

The JBA Detailed Groundwater Flood Map (5m resolution) for Uttlesford District was obtained for this SFRA, and provided in the Geo-PDFs in Appendix A. In high-risk areas, a site-specific risk assessment for groundwater flooding may be required to fully inform the likelihood of flooding. The categories are as follows in Table 5-34.

The **British Geological Survey** provides further information on groundwater flooding on their website.

Table 5-4: Groundwater flood hazard classification

Groundwater head difference (m)*	Gridcode	Class Label
0 to 0.025	4	Groundwater levels are either at or very near (within 0.025m) of the ground surface. Within this zone there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots.
0.025 to 0.5	3	Groundwater levels are between 0.025m and 0.5m below the ground surface. Within this zone there is a risk of groundwater flooding to surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally.
0.5 to 5	2	Groundwater levels are between 0.5m to 5m below the ground surface. There is a risk of flooding to subsurface assets but surface manifestation of groundwater is unlikely.
>5	1	Groundwater levels are at least 5m below ground surface. Flooding from groundwater is not likely.
N/A	0	No risk. This zone is deemed as having a negligible risk from groundwater flooding due to the nature of the local geological deposits.

*Difference is defined as ground water surface in mAOD minus modelled groundwater table in mAOD.

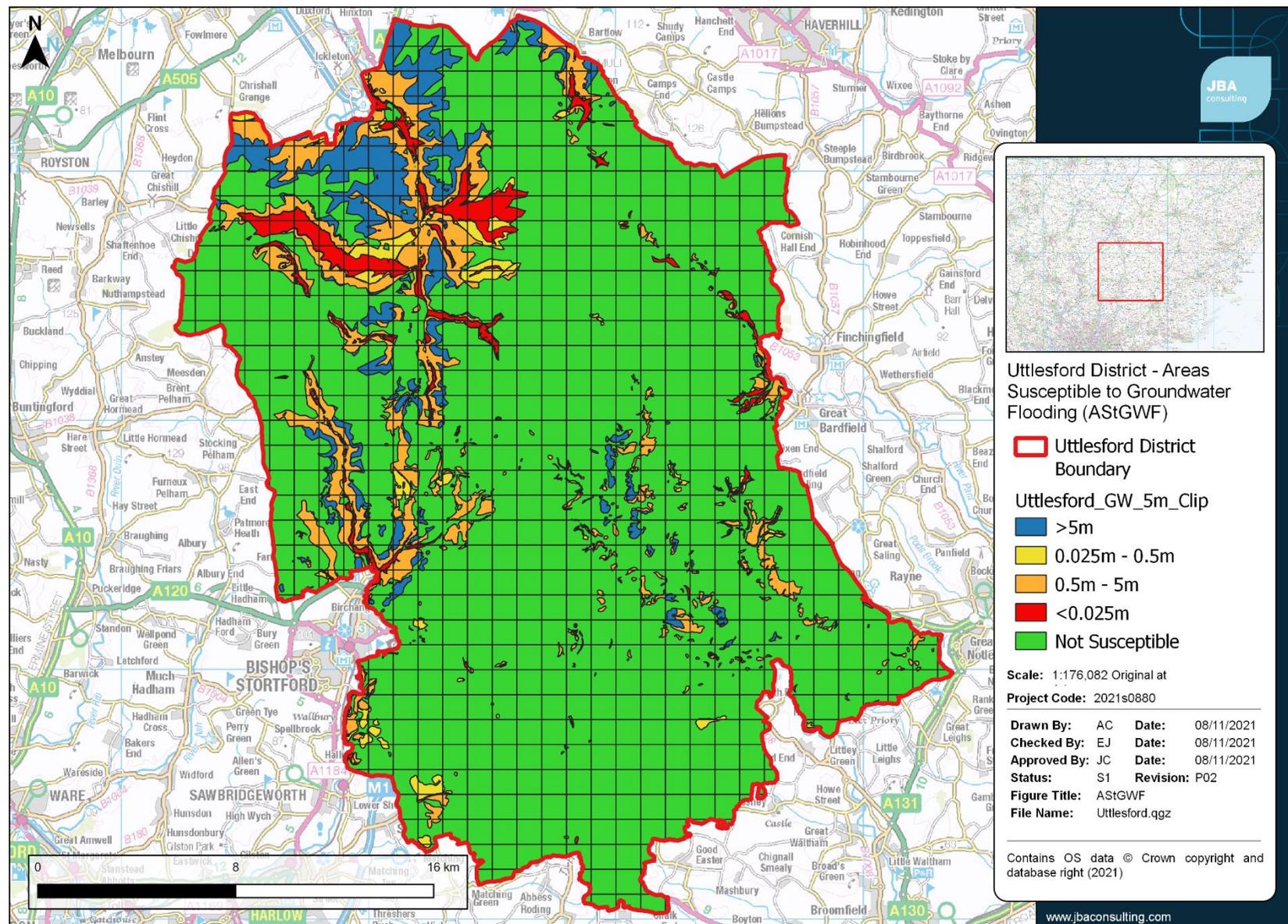


Figure 5-4: JBA Areas Susceptible to Groundwater Flooding map of the district

5.8 Flooding from canals

Canals are regulated waterbodies and are unlikely to flood, unless there is a sudden failure of an embankment or a sudden ingress of water from a river in areas where they interact closely. Embankment failure can be caused by:

- Culvert collapse
- Overtopping
- Animal burrowing
- Subsidence/ sudden failure e.g. collapse of former mine workings
- Utility or development works close or encroaching onto the footings of a canal embankment.

Flooding from a breach of a canal embankment is largely dictated by canal and ground levels, canal embankment construction, breach characteristics and the volume of water within the canal that can discharge into the lower lying areas behind the embankment. The volume of water released during a breach is dependent on the pound length (i.e. the distance between locks) and how quickly the operating authorities can react to prevent further water loss, for example by the fitting of stop boards to restrict the length of the canal that can empty through the breach, or repair of the breach. The Canal and River Trust monitor embankments at the highest risk of failure.

There are no canals in the Uttlesford district and therefore there is no risk of canals overtopping or breaching.

5.9 Flooding from reservoirs

Reservoirs with an impounded volume greater than 25,000 cubic metres are governed by the **Reservoir Act 1975** and are on a register held by the Environment Agency. The level and standard of inspection and maintenance required by a Supervising Panel of Engineers under the Act means that the risk of flooding from reservoirs is very low.

Flooding from reservoirs occurs following partial or complete failure of the control structure designed to retain water in the artificial storage area. Reservoir flooding is very different from other forms of flooding; it may happen with little or no warning and evacuation will need to happen immediately. The likelihood of such flooding is difficult to estimate but is extremely low compared to flooding from other sources. It may not be possible to seek refuge upstairs from floodwater as buildings could be unsafe or unstable due to the force of water from the reservoir breach or failure.

The Environment Agency hold mapping showing what might happen if reservoirs fail. Developers and planners should check the **Long-Term Risk of Flooding website** before using the reservoir data shown in this SFRA to make sure they are using the most up to date mapping. Existing or new hydraulic models in locations where there are reservoirs should represent the effect of reservoirs, for example the attenuation effect on flood response, which will either be represented in the hydrology or as part of the model itself.

The current **flood warning information service** mapping shows that there are no reservoirs located within Uttlesford District but there are four outside the district that could cause flooding within the district. Section 8.7.3 provides further considerations for developing in the vicinity of reservoirs.

Table 5-4: Reservoirs with potential risk to Uttlesford District

Reservoir	Northings and eastings	Reservoir owner	Local Authority Area	Is the reservoir within the study area?
Hanningfield Reservoir	573370, 198417	Essex and Suffolk Water	Essex	No
Abberton Reservoir	597655, 218341	Essex and Suffolk Water and Northumbrian Water Group	Essex	No
Ardleigh Reservoir	603179, 228303	Anglian and Affinity Water	Essex	No
King George's and William Girling's Reservoirs	536996, 195239	Thames Water	Enfield	No

5.10 Flood Alert and Flood Warnings

The Environment Agency is the lead organisation for providing warnings of river flooding. Flood Warnings are supplied via the Flood Warning System (FWS) service, to homes and business within Flood Zones 2 and 3.

There are currently 10 Flood Alert Areas (FAA) and 7 Flood Warning Areas (FWAs) covering Uttlesford District. Flood Alerts are issued when there is water out of bank for the first time anywhere in the catchment, signalling that 'flooding is possible', and therefore Flood Alert Areas usually cover the majority of Main River reaches. Flood Warnings are issued to designated Flood Warning Areas (i.e. properties within the extreme flood extent which are at risk of flooding), when the river level hits a certain threshold; this is correlated between the FWA and the gauge, with a lead time to warn that 'flooding is expected'.

A list of the Flood Alert and Flood Warning Areas is available in Appendix D. A map of the Flood Alert Areas and Flood Warning Areas is included in the Geo-PDF mapping in Appendix A.

5.11 Summary of flood risk in Uttlesford District

A table summarising all sources of flood risk to key settlements in Uttlesford District can be found in Appendix E, with the full history in Appendix F.

6 Flood alleviation schemes and assets

This section provides a summary of existing flood alleviation schemes and assets in the Uttlesford District. Planners should note the areas that are protected by defences where further work to understand the actual and residual flood risk through a Level 2 SFRA may be beneficial. Developers should consider the benefit they provide over the lifetime of a development in a site-specific Flood Risk Assessment.

6.1 Asset management

Risk Management Authorities hold databases of flood risk management and drainage assets:

- The Environment Agency holds a national database that is updated by local teams
- The LLFA holds a database of significant local flood risk assets, required under Section 21 of the Flood and Water Management Act (2010)
- Highways Authorities hold databases of highways drainage assets, such as gullies and connecting pipes
- Water Companies hold records of public surface water, foul and combined sewers, the records may also include information on culverted watercourses.

The databases include assets RMAs directly maintain and third-party assets. The drainage network is extensive and will have been modified over time. It is unlikely that any RMA contains full information on the location, condition and ownership of all the assets in their area. They take a prioritised approach to collecting asset information, which will continue to refine the understanding of flood risk over time.

Developers should collect the available asset information and undertake further survey as necessary to present an understanding of current flood risk and the existing drainage network in a site-specific Flood Risk Assessment.

6.2 Standards of Protection

Flood defences are designed to give a specific Standard of Protection (SoP), reducing the risk of flooding to people and property in flood prone areas. For example, a flood defence with a 100-year SoP means that the flood risk in the defended area is reduced to at least a 1% chance of flooding in any given year.

Over time the actual SoP provided by the defence may decrease, for example due to deterioration in condition or increases in flood risk due to climate change. The understanding of SoP may also change over time as RMAs undertake more detailed surveys and flood modelling studies.

It should be noted that the Environment Agency's on-going hydraulic modelling programme may revise flood risk datasets and, as a consequence, the standard of protection offered by flood defences in the area may differ from those discussed in this report.

Developers should consider the standard of protection provided by defences and residual risk as part of a detailed FRA.

6.3 Maintenance

The Environment Agency and local authorities have permissive powers to maintain and improve Main Rivers and Ordinary Watercourses, respectively. There is no legal duty to maintain watercourses, defences or assets and maintenance and improvements are prioritised based on flood risk. The ultimate responsibility for maintaining watercourses rests with the landowner.

Highway authorities have a duty to maintain public roads, making sure they are safe, passable and the impacts of severe weather have been considered. Water companies have a duty to effectually drain their area. What this means in practise is that assets are maintained to common standards and improvements are prioritised for the parts of the network that do not meet this standard e.g. where there is frequent highway or sewer flooding. Essex County Council as LLFA have permissive powers and limited resources are prioritised and targeted to where they can have the greatest effect.

There is potential for the risk of flooding to increase in areas where flood alleviation measures are not maintained regularly. Breaches in raised flood defences are most likely to occur where the condition of a flood defences has degraded over time. Drainage networks in urban areas can also frequently become blocked with debris and this can lead to blockages at culverts or bridges.

Developers should not assume that any defence, asset or watercourse is being or will continue to be maintained throughout the lifetime of a development. They should contact the relevant RMA about current and likely future maintenance arrangements and ensure future users of the development are aware of their obligations to maintain watercourses.

Formal structural defences are given a rating based on a grading system for their condition. A summary of the grading system used by the Environment Agency for condition is provided in Table 6-1.

Table 6-1: Grading system used by the Environment Agency to assess flood defence condition

Grade	Rating	Description
1	Very good	Cosmetic defects that will have no effect on performance
2	Good	Minor defects that will not reduce the overall performance of the asset.
3	Fair	Defects that could reduce the performance of the asset.
4	Poor	Defects that would significantly reduce the performance of the asset. Further investigation required.
5	Very Poor	Severe defects resulting in complete performance failure.

Source: Condition Assessment Manual – Environment Agency 2006

6.4 Major flood risk management assets in the district

The Flood Map for Planning contains information on 'Areas Benefiting from Defences' (ABD). This shows areas that benefit from the defences that provide a SoP of at least a 100-year river flood event. It does not show areas that benefit from protection for more frequent events. There are no areas in the Uttlesford District shown to be benefiting from defences in the EA's 'ABD' mapping.

However, the Environment Agency 'AIMS' flood defence dataset gives information on all flood defence assets within the district. The following locations benefit from flood defences at a lower (or unknown) standard of protection in the Uttlesford District.

Table 6-2: Locations shown in the 'EA AIMS' data set

Watercourse	Location	Type	Design SOP	Condition Rating
River Stort	Bishops Stortford	Embankment	1000	3
River Stort	Manuden	Embankment	20	3
River Stort	Clavering	Embankment	100	3
River Stort	Gaston Green	Embankment	20	3
River Stort	Spellbrook	Embankment	5	4
River Stort	Clavering	Wall	5	3

6.5 Future flood alleviation schemes

The Environment Agency provided a list of future schemes which would reduce flooding within Uttlesford District as part of the 2016 SFRA. These schemes were:

1. Stansted Mountfitchet Flood Alleviation Scheme - an initial assessment of combined pluvial and fluvial flooding within Stansted Mountfitchet was ongoing.
2. Clavering and Manuden Flood Alleviation Scheme - the issue is an undersized culvert causing the river to surcharge; therefore, a proposed solution is to increase culvert capacity or attenuate high flows.
3. Takeley - Frequent blocking of a culvert was to be remedied by installing a new screen and de-culverting

No information regarding future flood alleviation schemes in the Cambridgeshire and Bedfordshire or Essex Norfolk and Suffolk Environment Agency areas was received. For the latest information on the schemes, contact the Environment Agency.

Essex County Council have recently completed an upgrade to trash screens on the River Slade to reduce flood risk. The project also includes a Phase 2 involving the repair of culverted sections of the watercourse. Essex County Council have also delivered a leaky dam scheme in Thaxted and are working with UDC to upgrade the trash screens here.

6.6 Actual and residual flood risk

A Level 2 SFRA (for strategic allocations) or developer site-specific Flood Risk Assessment will need to consider the actual and residual flood risk due to the presence of flood and drainage assets in greater detail.

6.6.1 Actual flood risk

This is the risk to the site considering existing flood mitigation measures and any planned to be provided through new development. Note that it is not likely to be acceptable to allocate developments in existing undefended areas on the basis that they will be protected by developer works, unless there is a wider community benefit that can be demonstrated.

The assessment of the actual risk should take into account that:

- The level of protection afforded by existing defences might be less than the appropriate standards and hence may need to be improved if further growth is contemplated.
- The flood risk management policy for the defences will provide information on the level of future commitment to maintain existing standards of protection. If there is a conflict between the proposed level of commitment and the future needs to support growth, then it will be a priority for this to be reviewed.
- The standard of safety must be maintained for the intended lifetime of the development. Over time the effects of climate change will erode the present-day standard of protection afforded by defences and so commitment is needed to invest in the maintenance and upgrade of defences if the present-day levels of protection are to be maintained and where necessary, land secured and safe-guarded that is required for affordable future flood risk management measures.
- By understanding the depth, velocity, speed of onset and rate of rise of floodwater it is possible to assess the level of hazard posed by flood events from the respective sources.

6.6.2 Residual risk

Residual risk is the risk that remains after the effects of flood risk infrastructure have been taken into account. It is important that these risks are quantified to confirm that the consequences can be safely managed. The residual risk can be:

- The effects of a larger flood than defences were designed to alleviate (the 'design flood'). This can cause overtopping of flood banks, failure of flood gates to cope with the level of flow or failure of pumping systems to cope with the incoming amount of water.
- Failure of the defences or flood risk management measures, such as breaches in embankments or walls, failure of flood gates to open or close or failure of pumping stations.

It is the responsibility of the developer to fully assess flood risk, propose measures to mitigate it and demonstrate that any residual risks can be safely managed.

This SFRA does not assess the probability of failure other than noting that such events are very rare. However, in accordance with NPPF, all sources of flooding need to be considered. If a breach or overtopping event were to occur, then the consequences to people and property could be high. Developers should be aware that any site that is at or below defence level, may be subject to flooding if an event occurs that exceeds the design capacity of the defences, or the defences fail, and this should be considered in a detailed Flood Risk Assessment.

The assessment of residual risk should take into account:

- The flood hazard, depth and velocity that would result from overtopping or breach of defences. Flood gate or pumping station failure and/ or culvert blockage (as appropriate). The Environment Agency can provide advice at site-specific development level for advice on breach/ overtopping parameters for flood models.
- The design of the development to take account of the highest risk parts of the site e.g. allowing for flood storage on parts of the site and considering the design of the development to keep people safe e.g. sleeping accommodation above the flood level.

- A system of warning and a safe means of access and egress from the site in the event of a flood for users of the site and emergency services.

6.6.3 Overtopping

The risk from overtopping of defences is based on the relative heights of property or defence, the distance from the defence level and the height of water above the crest level of the defence. The Defra and Environment Agency **Flood Risks to People**

(http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2321_3437_TRP.pdf) guidance document provides standard flood hazard ratings based on the distance from the defence and the level of overtopping.

Any sites located next to defences or perched ponds/ reservoirs, may need overtopping modelling or assessments at the site-specific FRA stage.

6.6.4 Defence breach

A breach of a defence occurs when there is a failure in the structure and a subsequent ingress of flood water.

Where defences are present, risk of breach events should be considered as part of the site-specific flood risk assessment. Flood flows from breach events can be associated with significant depths and flow velocities in the immediate vicinity of the breach location and so FRAs must include assessment of the hazards that might be present so that the safety of people and structural stability of properties and infrastructure can be appropriately taken into account. Whilst the area in the immediate vicinity of a breach can be subject to high flows, the whole flood risk area associated with a breach must also be considered as there may be areas remote from the breach that might, due to topography, involve increased depth hazards.

Considerations include the location of a breach, when it would occur and for how long, the depth of the breach (toe level), the loadings on the defence and the potential for multiple breaches. There are currently no national standards for breach assessments and there are various ways of assessing breaches using hydraulic modelling. Work is currently being undertaken by the Environment Agency to collate and standardise these methodologies. It is recommended that the Environment Agency are consulted if a development site is located near to a flood defence, to understand the level of assessment required and to agree the approach for the breach assessment.

7 Cumulative impact of development and strategic solutions

This section provides a summary of the catchments with the highest flood risk and development pressures and then makes recommendations for local planning policy based on these.

7.1 Introduction

Under the NPPF, strategic policies and their supporting Strategic Flood Risk Assessments (SFRAs), are required to 'consider cumulative impacts in, or affecting, local areas susceptible to flooding' (para.156), rather than just to or from individual development sites.

When allocating land for development, consideration should be given to the potential cumulative impact of the loss of floodplain storage volume, as well as the impact of increased flows on flood risk downstream. Whilst the loss of storage for individual developments may only have a minimal impact on flood risk, the cumulative effect of multiple developments may be more severe.

All developments are required to comply with the NPPF and demonstrate they will not increase flood risk elsewhere. Therefore, providing developments comply with the latest guidance and legislation relating to flood risk and sustainable drainage, in theory they should not increase flood risk downstream.

Catchments within the study area that have the potential to influence existing flood risk issues in neighbouring Local Authorities were identified, as well as catchments in the study area that may be influenced by development in catchments in neighbouring Local Authorities. Historic flood incidents, the current and predicted increase in surface water flood risk to properties and cross boundary issues in each catchment were assessed to identify the catchments at greatest risk.

Local planning policies can also be used to identify areas where the potential for development to increase flood risk is highest and identify opportunities for such new development to positively contribute to decreases in flood risk downstream.

To understand the impact of future development on flood risk in Uttlesford District, catchments were identified where development may have the greatest impact on flood risk, and where further assessment would be required within a Level 2 Strategic Flood Risk Assessment (SFRA) or site-specific Flood Risk Assessment (FRA). The potential change in developed area within each catchment and communities sensitive to increased risk of surface water flooding, alongside evidence of historic flooding incidents were considered to identify catchments at the highest risk. Where catchments have been identified as sensitive to the cumulative impact of development, the assessment concludes with recommended strategic planning policy suggestions to manage the risk.

7.2 Strategic flood risk solutions

Uttlesford District Council have a vision set forth in their Local Plan for the future management of flood risk and drainage in the district. This concerns flood risk management, alongside wider environmental and water quality enhancements. Strategic solutions may include upstream flood storage, integrated major infrastructure/ FRM schemes, new defences, and watercourse improvements as part of regeneration and enhancing green infrastructure, with opportunities for natural flood management and retrofitting sustainable drainage systems. The Essex Local Flood Risk Management Strategy, Anglian Flood Risk Management Plan and Thames Flood Risk Management Plan set out specific actions for the district.

Chapter 2 sets out the strategic plans that exist for the district. The list below summarises the key outcomes these are seeking to achieve. This vision needs to be delivered by new development alongside retrofitting and enhancing green infrastructure and flood defence schemes in the existing developed area.

The strategic policy vision from the CFMP and RBMPs focus on re-naturalising watercourses, safeguarding the floodplains and the encouraging collaboration and creating new partnerships to reduce the risk of flooding and to enhance the natural environment. Within Uttlesford District, strategic solutions encourage development to:

- Use sustainable flood storage and mitigation schemes to store water and manage surface water runoff in locations that provide overall flood risk reduction as well as environmental benefits.
- Restore Peat Bogs to help reduce peak time runoff and overall peak water levels.
- In areas where flood risk is being managed effectively, there will be a need in the future to keep pace with increasing flood risk as a result of climate change.
- Promote partnership working with all relevant stakeholders in the Anglian and Thames River Basins. This includes working with land managers and farmers to reduce soil erosion from intensively farmed land.
- Assess long-term opportunities to move development away from the floodplain and create green river corridors through Uttlesford District.
- Identify opportunities to use areas of the floodplain to store water during high flows, to reduce long term dependence on engineered flood defences located both within the district and outside the district.
- Safeguard the natural floodplain from inappropriate development.
- Where possible, land management change should be used to reduce run-off rates from the development whilst maintaining or enhancing the capacity of the natural floodplain to retain water. Land management and uses that reduce runoff rates in upland areas should be supported.
- Development should maintain conveyance of watercourses through hamlets and villages, to help reduce the impact of the more frequently experienced floods and to improve the natural environment.
- Use SFRAs to inform future development and minimise flood risk from all sources.
- Implement upstream catchment management e.g. slow the flow and flood storage schemes could be implemented in upper catchments to reduce flooding downstream and across neighbouring authority boundaries; and
- Promote and consider SUDS at the earliest stage of site development.

7.2.1 Opportunities and projects in/ affecting Uttlesford District

Roding, Beam and Ingrebourne (RBI) Catchment Partnership:

The RBI Catchment Partnership is co-hosted by Thames21 and the Thames Chase Trust. It is a collaboration between relevant partners to deliver projects that will improve the health of the area's rivers and wetland environments. It consists of three separate tributary catchments to the River Thames; the River Roding, River Beam and, the most relevant to Uttlesford District, the River Ingrebourne.

Their key objectives are:

- To improve opportunities for recreation across the catchment and in turn raise awareness to a more sustainable use of this resource and ensure it is valued and appreciated.
- To manage flood risk and sustainable drainage; improve connectivity, manage Invasive Non-Native Species (INNS) and litter.
- To improve the way in which water is captured and managed; and to reduce nutrients in our watercourses.
- To work with land managers to improve habitats, and the way in which people can access their rivers and associated green spaces.
- To work with land managers; businesses and funding bodies to create inward investment opportunities for the Roding, Beam & Ingrebourne Catchment.

The partnership has created an **interactive map** that details of a range of project data that is being collated and opportunities for improvements across the catchment, including de-culverting and weir removals, natural flood management studies and pollution control schemes.

River Lea Catchment Partnership:

The River Lea Catchment Partnership is co-hosted by Thames21, the Herts & Middlesex Wildlife Trust, and Groundwork. It is a collaboration between relevant partners to deliver projects that will improve the health of the area's rivers and wetland environments. The Partnership covers the River Lea catchment and its tributaries, of which the River Ash and River Stort are the most relevant to Uttlesford District.

The partnership has created interactive maps for each tributary/ catchment (**Ash, Stort**) that details of a range of project data that is being collated and opportunities for improvements including water quality improvements, weir removals, natural flood management studies and community engagement.

Cam & Ely Ouse (CamEO) Catchment Partnership:

The CamEO Catchment Partnership is co-hosted by Thames21, the Herts & Middlesex Wildlife Trust, and Groundwork. It is a collaboration between relevant partners to deliver projects that will improve community engagement, land use, water resources, and the health of rivers and groundwater. The Partnership covers the River Lea catchment and its tributaries, of which the River Ash and River Stort are the most relevant to Uttlesford District.

Their key objectives are:

- Encourage community-led management of river catchments by empowering local decision making.
- Farming and land use sectors contribute to, and benefit from, healthy ecosystems.
- Maintain and restore healthy-functioning, biodiverse and resilient ecosystems, and increase 'natural capital' understanding.
- Mitigate the impact of Invasive Non-Native Species (INNS).
- Improve strategic co-operation at the catchment scale in order to maximise resources and facilitate more effective delivery.
- Ensure there is enough water of sufficient quality to support the needs of the environment and wider society.

Combined Essex Catchment Partnership:

The Combined Essex Catchment Partnership is co-hosted by the **Essex Rivers Hub** (which is in-turn hosted by the Essex Wildlife Trust) and the Environment Agency. It is a collaboration between relevant partners to deliver projects that will improve water quality and availability, reduce agricultural pollution, improve navigation and community engagement, biodiversity and land use. The Partnership covers the combined areas of previous catchment partnerships, as well as other catchments relevant to Uttlesford District, such as the River Can, River Chelmer, River Pant and River Ter.

The Essex Forest Initiative:

The Essex Forest Initiative launched in November 2019 with a five-year commitment to plant 375,000 trees across Essex. The scheme is part of wider efforts by Essex County Council to tackle climate change, reduce carbon, promote environmentally friendly infrastructure and protect green spaces.

Uttlesford Nature Recovery Network:

The Uttlesford Nature Recovery Network is collating local knowledge of environmental project work, environmental volunteering and general local environmental knowledge across the district. This is due to be used as evidence base for the review of Uttlesford Districts' natural habitats within the upcoming Local Plan.

Aubrey Buxton Nature Reserve

Aubrey Buxton Nature Reserve is owned by the Essex Wildlife Trust and is located in the Stansted Brook catchment near Stansted Mountfitchet. This reserve contains some of the county's rarest and uncommon species, including Common Spotted-Orchids, Black Poplar, Adder's Tongue Fern, Lesser Lady's Mantle and Great Crested Newts. Circular paths run through the woods and around the ponds, providing ample opportunities to appreciate the wildlife of the area. Natural Flood Management techniques could be encouraged here to aid flood storage and slow surface water flows.

Rushy Mead Nature Reserve

Rushy Mead Nature Reserve is owned by the Essex Wildlife Trust and is located in the Great Hallingbury Brook catchment near Bishop's Stortford. This reserve contains some of the county's rarest species including a strong population of Water Voles. Meandering paths run through the reserve, past dense reedbeds and through mature woodland, providing ample opportunities to appreciate the wildlife of the area. Natural Flood Management techniques could be encouraged here to aid flood storage and partnership working would allow the continued conservation of the Water Voles.

Shadwell Wood Nature Reserve

Shadwell Wood Nature Reserve is owned by the Essex Wildlife Trust and is located in the Granta catchment close to the River Bourn near Ashdon and Saffron Waldon. This reserve contains some of the county's rarest species including Oxlip, Wood Violets, Wood Anemones, Early Purple Orchids, Common Spotted Orchids, Meadowsweet and Sanicle. Numerous circular paths run through the wooded reserve, providing ample opportunities to appreciate the wildlife of the area. Natural Flood Management techniques could be encouraged here to aid flood storage.

Hatfield Forest

Hatfield Forest is owned by the National Trust is located in the Pincey Brook catchment near Takeley. This forest is a designated National Nature Reserve and

SSSI for Butterflies, Beetles and dragonflies, as well as being home to over 4000 species of wildlife including mammals such as Fallow Deer and Muntjac, insects, birds, >650 species of fungi and >320 wildflower species. Large scale Natural Flood Management techniques could be encouraged here to aid flood storage as well as increase instream habitats.

7.3 Assessment of cross-boundary issues

The topographic characteristics of the district are dictated by chalk hills that rise in the northwest, creating the watershed between three separate river catchments. Valleys of the Rivers Cam (or Granta) run north into Cambridgeshire, Rivers Chelmer and Pant flow southeast, and the River Roding, River Stort, Stansted Brook and Pincey Brook flow south towards the Thames River basin. Uttlesford District has boundaries with the following local authority areas:

- Braintree District
- Chelmsford District
- East Hertfordshire District
- Epping Forest District
- North Hertfordshire District
- South Cambridgeshire District

Although Uttlesford District does not have a direct boundary with the following local authority areas, watercourses originating within the district flow through them, and they share surrounding boundaries with some of the neighbouring authorities named above:

- Cambridge District
- Stevenage Borough
- West Suffolk District

Overall flow direction means that the neighbouring authorities of Braintree, Chelmsford, East Hertfordshire, Epping Forest and South Cambridgeshire have the potential to be affected in terms of flood risk by Uttlesford District. Future development both within and outside Uttlesford District can have the potential to affect flood risk to existing communities and surrounding areas, depending on the effectiveness of SUDS and drainage implementation.

Consequently, there are a number of catchments and sub-catchments that exist within Uttlesford District where future development may impact flood risk in the neighbouring local authorities outlined above, particularly where there are existing flood risk issues. Figure 7-2 summarises which catchments drain out of Uttlesford District, where the impact of flood risk downstream should be assessed when considering development. The sources of data used to inform the existing flood risk issues to properties in neighbouring local authorities can be found in Appendix B.

Uttlesford District's new Local Plan is currently being prepared alongside the evidence base and the flood risk and sustainable drainage policies in the adopted Local Plan (January 2005) have therefore not yet been updated to ensure compliance with the NPPF.

The following Local Plans have been adopted by neighbouring local authorities and include policies relevant to flood risk and drainage:

- **Braintree District's Local Plan** 2013 – 2033
- **Chelmsford District's Local Plan** 2013 - 2036

- **East Hertfordshire District's Local Plan** 2011 - 2033
- **Epping Forest District's Local Plan** 2011-2033
- **North Hertfordshire District's Local Plan** 2011 - 2033
- **South Cambridgeshire District's Local Plan** 2018 - 2031
- **Cambridge District's Local Plan** 2018 - 2031
- **Stevenage Borough's Local Plan** 2011 - 2031
- **West Suffolk District's Local Plan** (currently being updated)

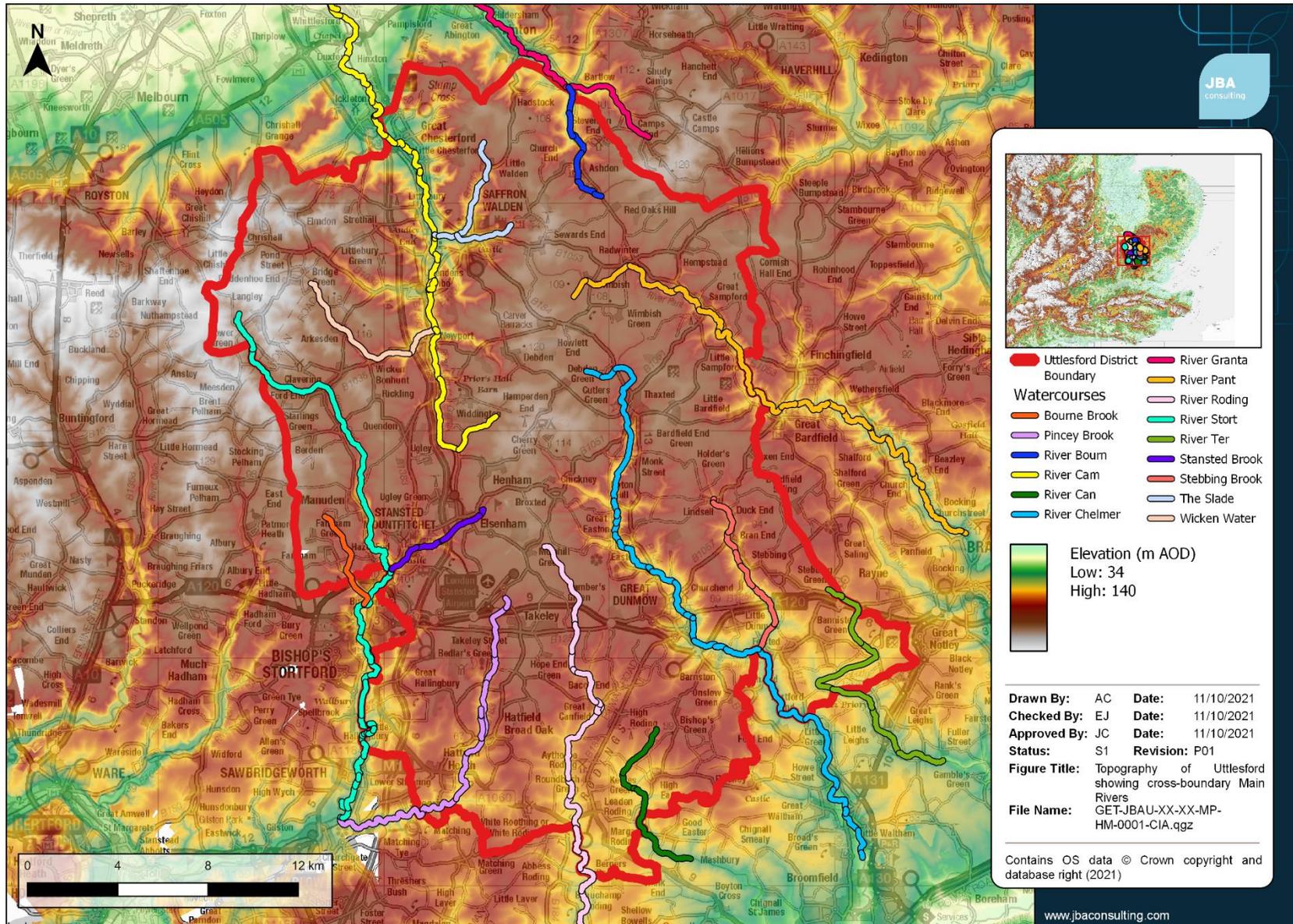
Table 7-1: Summary of catchments that drain into the neighbouring Local Authorities from Uttlesford District

Catchment		Neighbouring downstream authority
River Cam	(U/S Newport)	South Cambridgeshire
	(Newport to Audley End)	
	(Audley End to Stapleford)	
Slade (Tributary of River Cam)		
Wendon Brook (Tributary of River Cam)		
Wicken Water (Tributary of River Cam)		
Debden Water (Tributary of River Cam)		
Granta (Tributary of River Cam)		
Un-named Watercourse (Tributary of River Cam)		
Bumpstead Brook		
Toppesfield Brook		
River Pant		
River Ter		Chelmsford
River Chelmer	(U/S Gt Easton)	
	(Gt Easton - River Can)	
Stebbing Brook (Tributary of River Chelmer)		
River Can		
Upper Roding (to Cripsey Brook)		Epping Forest
Pincey Brook		
Stort and Navigation, B Stortford to Harlow		East Hertfordshire
Little Hallingbury Brook		
Stanstead Brook		
Stort (at Clavering)		
Stort and Bourne Brook		

Internal centralised districts of Cambridge (within South Cambridgeshire) and Harlow (with Epping Forest and bordering East Hertfordshire) are also drained into by the Rivers Cam and Stort respectively.

Policy recommendations with regards to managing the cumulative impact of development have been made in Section 7.7 and Chapter 10. This will help to ensure there is no incremental increase in flood risk both within and downstream of Uttlesford District.

Figure 7-1: Topography of Uttlesford District study area showing cross-boundary main rivers



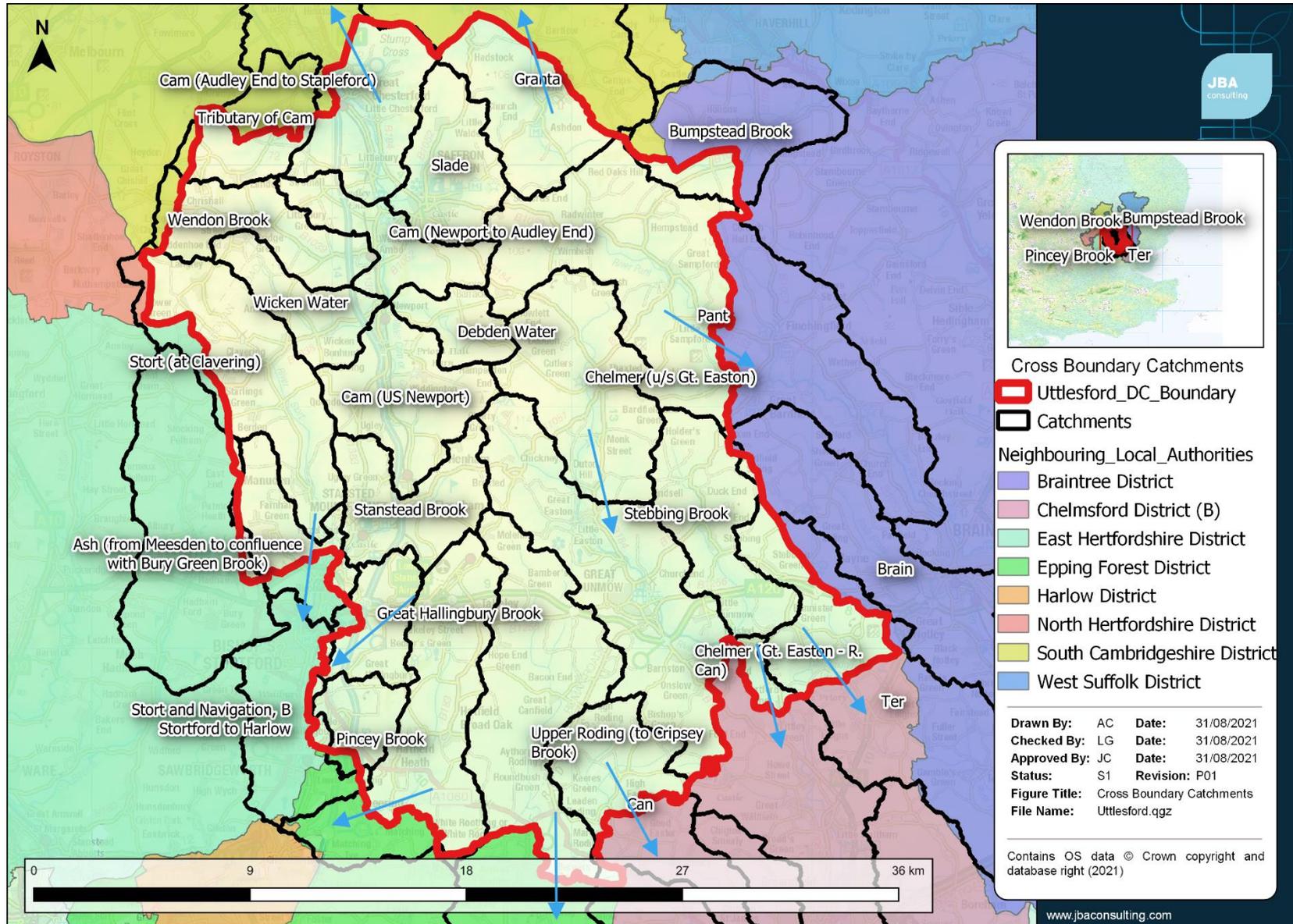


Figure 7-2: Topography of Uttlesford District study area showing cross-boundary catchments

7.4 Cumulative Impact Assessment

To assess the cumulative impact of development across the study area, the surface water flood risk in each catchment was assessed along with evidence of historic flooding incidents. Potential change in developed areas within each catchment from neighbouring authorities was also considered, but no development sites within Uttlesford District were included in the assessment. Analysis of this data facilitated the identification of catchments at the greatest risk of cumulative impacts of an increase in impermeable area within the catchment.

Figure 7-3 shows the methodology used and Table 7-2 summarises the datasets used within the Uttlesford District cumulative development scenario.

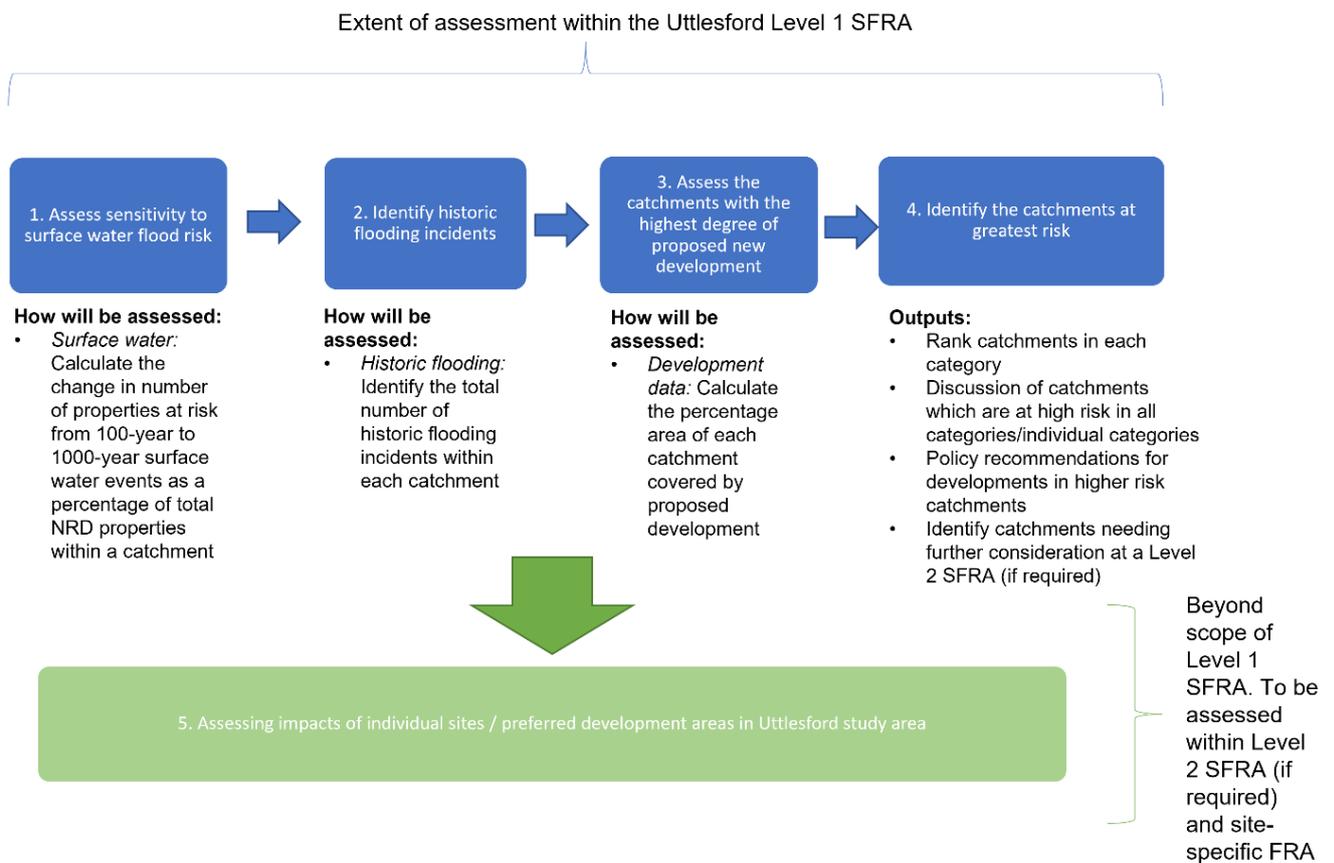


Figure 7-3: Overview of the method used within the Cumulative Impact Assessment

7.5 Cumulative Impact Methodology

7.5.1 Sensitivity to increases in flood flows

This is the measure of the increase in the number of properties at risk of surface water flooding in a 1 in 100-year event to a 1 in 1,000-year event. It is an indicator of where local topography makes an area more sensitive to increases in flood risk that may be due to any number of reasons, including climate change, new development etc. It is not an absolute figure or prediction of the impact that new development will have on flood risk.

The National Receptor Database (NRD) dataset 2014 was used to identify all properties within the Uttlesford District study area.

This data was intersected with the 1,000-year and 100-year surface water flood extents separately to determine the number of properties in each catchment, in each surface water flood extent. The difference between the two values was then taken as a percentage of the total number of properties within the catchment to allow comparison between catchments of different sizes.

7.5.2 Growth in the area

Development sites in neighbouring authorities were assessed as part of this CIA; however, the risk from neighbouring districts' development proposals is negligible as no watercourses flow into Uttlesford. Neighbouring authorities' sites were only assessed against risk from Uttlesford District.

Development within Uttlesford District has the potential to affect flood risk in neighbouring authorities, especially if there are existing flood risk issues. The River Cam drains out of Uttlesford District and through South Cambridgeshire into Cambridge City centre for example.

Areas for future proposed development were received from Uttlesford District Council. The area of new development within each catchment was expressed as a percentage of the total catchment area to determine the potential for increase in flood risk as a result of new development.

7.5.3 Historic flood risk

Historic flood risk was determined using data from Essex County Council. The local Fire and Rescue Service were approached but were unable to provide any additional data at the time of the study. Each point represents a location where it is known there has been at least one flood event (however, the nature and scale of these flood events varies significantly).

Attribute data for each Incident Recording System data point includes the:

- Time
- Date
- Location (grid reference and street name)
- Description of incident

Data was manually filtered to include only incidents where a property was recorded to have flooded internally. A count of each historical flood incident was conducted for each catchment to determine the historic flood risk of the catchments.

A summary of the datasets used to calculate the historic flood risk and the sensitivity to increases in flood flows for each catchment is shown in Table 7-2.

Table 7-2: Summary of datasets used in the cumulative impact assessment

Dataset	Coverage	Source of data	Use of data
Catchment Boundaries	Uttlesford study area	Water Framework Directive Catchments	Surface Water and Development Flood Risk
National Receptor Database (2014)	Uttlesford study area	Environment Agency	Assessing the number of properties at risk of surface water flooding within each catchment
Risk of Surface Water Flooding Mapping	Uttlesford Study Area	Environment Agency	Assessing the number of properties at risk of surface water flooding within each catchment
Future development areas	Uttlesford study area	Uttlesford District Council,	Assessing the impact of proposed future development on risk of flooding.
Historic Flooding Incidents	Uttlesford study area	Essex County Council, Uttlesford District Council	Assessing incidences of historic flooding within the Uttlesford study area.

7.5.4 Ranking the results

The results for each assessment were ranked into High, Medium and Low risk as shown in Table 7-3 below.

Table 7-3: Ranking assessment criteria

Flood risk ranking	% of properties at increased risk of SW flooding	Total number of data points in the UDC Historic Flooding Incidents Register	% Area of Catchment Covered by new development
Low risk	<4%	<10	<1%
Medium risk	4 to 7%	10 to 30	1 to 10%
High risk	>7%	>30	>10%

The ranking results were combined from all three assessments to give an overall High, Medium and Low ranking for all catchments within the district. Each ranking was then totalled to give a final combined ranking, this was done twice, once without the inclusion of Uttlesford DC's proposed development site data (to gain a current baseline), and once including the site data, to provide the development impact ranking. Ranking delineations were given at natural breaks in the results.

However, where a '% properties sensitive to increased risk' figure significantly surpassed catchments ranked higher in the final ranking, those individual results were considered, and the overall ranking increased accordingly (River Can and River Ash increased from Medium to High). This is due to the scale of the catchments in relation to properties at risk.

7.5.5 Assumptions

The assumptions made when conducting the cumulative impact assessment are shown in Table 7-4.

Table 7-4: Assumptions of the cumulative impact assessment

Assessment aspect	Assumption made	Details of limitation in method	Justification of method used
Surface water flood risk	Total number of properties flooded	Assumption that all properties have been included in the 2014 NRD dataset. It may not include all new build properties.	This was the most up to date and accurate data available.
Historic Flooding incidents	Total number of historic events and severity of flooding	Only flooding incidents recorded that could be georeferenced with XY coordinates to produce GIS files. Each point represents a location where it is known there has been at least one flood incident. The severity of the historic flooding event relating to the point has not been considered, just the total number of points within each catchment where there has been a flood incident.	GIS data provided the most accurate results for the location of historic flooding incidents in Uttlesford District and neighbouring authorities.

The results of the assessment and policy recommendations can be found Chapter 7.6 and Chapter 10.

7.6 Cumulative Impact Assessment Outcomes

The assessment was conducted on the Water Framework Directive (WFD) River Catchments.

The results of the cumulative impact assessment can be summarised to give a rating of Low, Medium, or High risk for each catchment. The rating of each catchment or sub-catchment in each of these assessments were combined to give an overall ranking.

Table 7-5 shows the catchments identified as high risk due to the increased risk of surface water flooding and

Table 7-6 shows the highest risk catchments based on the number of historic flooding incidents recorded.

Table 7-5: Percentage of properties in a catchment sensitive to increased surface water flood risk

Catchment	Properties sensitive to increased surface water flood risk (%)
Stort (at Clavering)	10.24
Wicken Water	9.97
Bumpstead Brook	8.55
Fiddlers Brook	8.24
Chelmer (u/s Gt. Easton)	7.49
Higher Laver Brook	7.16
Debden Water	7.11

Table 7-6: Number of recorded historic flooding incidents within a catchment

Catchment	No. of historic incidents
River Slade	89
River Chelmer (Gt Easton – R. Can)	46
Upper Roding (to Cripsey Brook)	43
River Pant	39
River Brain	39
River Stort (at Clavering)	39

As can be seen from the above tables, there are catchments that are at high risk in both categories. However, the percentage increase of properties sensitive to surface water flood risk figures shown in Table 7-5 are minor when compared to the number of properties at risk. For example, the River Stort (at Clavering) is ranked highest risk with 10.24%, but this only equates to 850 properties, whereas the River Can, which ranks 32nd for increased surface water risk with only 1.43%, actually equates to 8526 properties sensitive to increased surface water risk. Table 7-7 shows the number of properties in each catchment sensitive to increased surface water flood risk and Table 7-8 shows the percentage of the catchments covered by future planned development.

Table 7-7: Number of properties in a catchment sensitive to increased surface water flood risk

Catchment	No. of properties sensitive to increased surface water flood risk
Stort and Navigation, B Stortford to Harlow	595
Stort and Navigation, Harlow to Lee	530
River Brain	419
Chelmer (Gt. Easton – R. Can)	376
River Slade	212
Stort and Bourne Brook	206
River Pant	176

Table 7-8: Percentage of catchment covered by future planned development

Catchment	Area of catchment for development (%)
Little Hallingbury Brook	28.27
Stanstead Brook	25.95
River Cam (Audley End to Stapleford)	17.42
River Slade	15.21
Great Hallingbury Brook	14.98
Pincey Brook	11.15

As can be seen from the above tables, there are catchments that are at high risk in both categories.

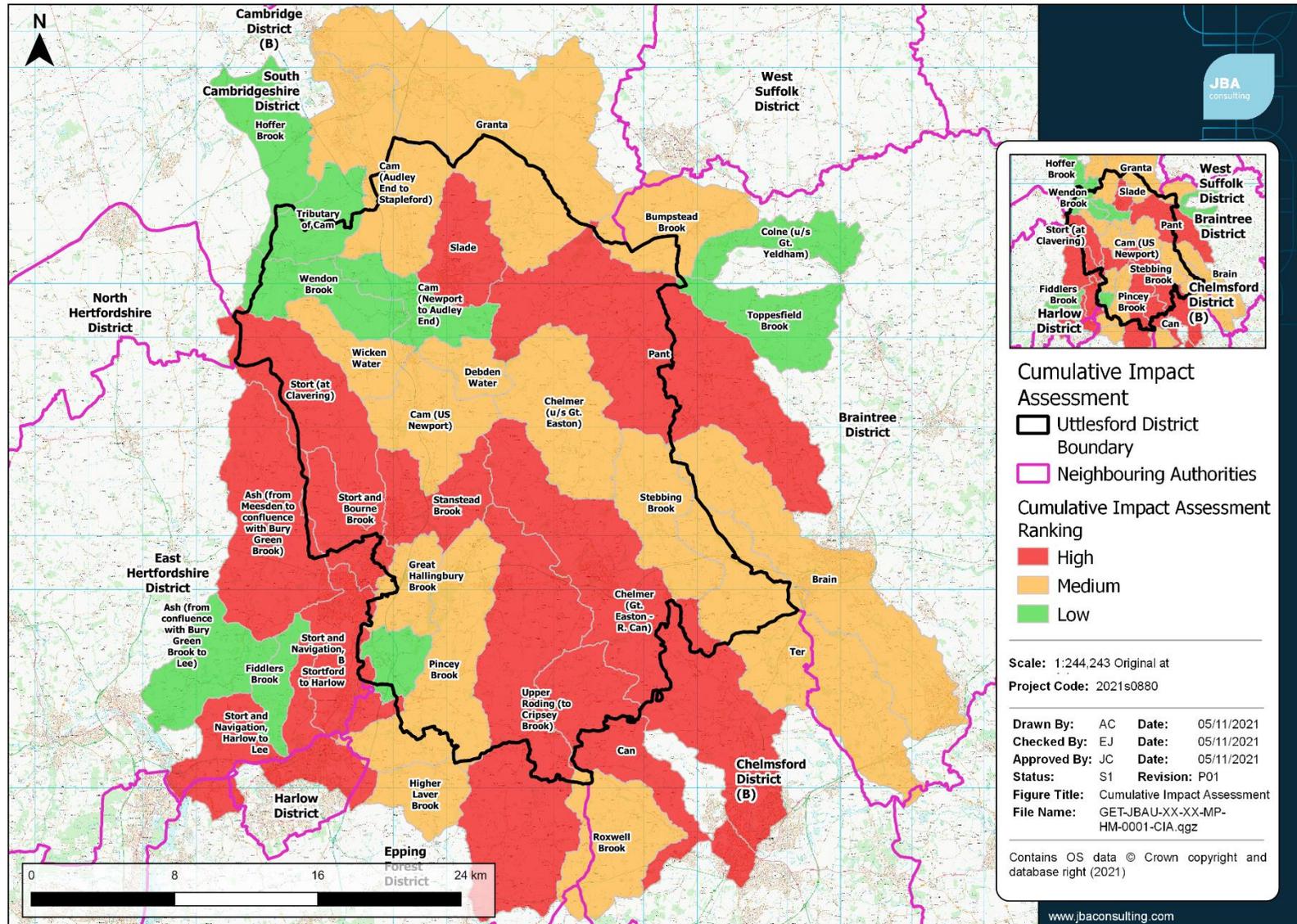
Figure 7-4 shows a map of catchments within Uttlesford District and identifies the highest risk catchments which are the most sensitive to the cumulative impacts of development.

Eleven catchments are identified as highest risk (Red), these are:

- Stort and Navigation, Harlow to Lee
- Stort (at Claverling)
- Stort and Navigation, B Stortford to Harlow
- Chelmer (Gt. Easton – R. Can)
- Upper Roding (to Cripsey Brook)
- Stort and Bourne Brook
- River Pant
- River Slade
- Stanstead Brook
- River Can*
- River Ash (from Meissen to confluence with Bury Green Brook)*

* Escalated from Medium to High Risk on account of the catchments' high percentage of new development area coverage ranking (28.27%, ranked 1st; and 25.95%, ranked 2nd respectively) in that individual ranking assessment.

Figure 7-4: Map showing the results of the cumulative impact assessment for each catchment within Uttlesford District



A further fourteen catchments that fall within or partially within Uttlesford District have been identified as at medium risk (Amber) which include:

- Chelmer (u/s Gt. Easton)
- Brain
- Bumpstead Brook
- Pincey Brook
- Stebbing Brook
- Wicken Water
- Ter
- Granta
- Higher Laver Brook
- Cam (Audley End to Stapleford)
- Cam (US Newport)
- Roxwell Brook
- Great Hallingbury Brook
- Debden Water

The remaining nine catchments within Uttlesford District are identified as at a low risk (Green) from the impacts of cumulative development:

- Fiddlers Brook
- Wendon Brook
- Little Hallingbury Brook
- Toppesfield Brook
- Tributary of Cam
- Colne (u/s Gt. Yeldham)
- Ash (from confluence with Bury Green Brook to Lee)
- Hoffer Brook
- Cam (Newport to Audley Brook)

7.7 Planning Policy Recommendations

The following recommendations have been made for catchments which have been identified as high-risk which flow from predominantly rural areas into neighbouring districts with significant urban areas, including the Rivers Chelmer, Stort, Pant and Upper Roding.

1. That a Level 2 SFRA or detailed local area Strategic Drainage Study be undertaken or commissioned to consider further how the cumulative effects of potential peak rates and volumes of water from development sites would impact on peak flows, duration of flooding and timing of flood peaks on receiving watercourses. Such studies could be used to justify greater restrictions/ enforce through local planning policy development site runoff rates and volumes specific to each catchment that are over and above those required by National and Local SuDS Standards. They could also identify where there are opportunities with allocated sites to provide off-site betterment e.g. online/ offline flood storage and where land should be safeguarded within proposed site allocations to fulfil this purpose.

2. Where appropriate, that the opportunity for Natural Flood Management in rural areas in support of Measure 6 of the **Local FRM Strategy (2018)**, SuDS retrofit in urban areas (supporting Measure 5) and river restoration should be maximised in these catchments (Measure 3).
3. Developers should explore through site-specific FRAs opportunities to provide wider community flood risk benefit through new developments in support of Measure 5 of the Local FRM Strategy (2018). Measures that can be put in place to contribute to a reduction in flood risk downstream should be considered. This may be either by provision of additional storage on site e.g. through oversized SuDS, natural flood management techniques, green infrastructure and green-blue corridors, and/or by providing a Partnership Funding contribution towards any flood alleviation schemes. Consultation on the site-specific requirements should be undertaken with Essex County Council as LLFA and the Environment Agency at the earliest opportunity.
4. Developers should contribute to community flood defences where appropriate outside of their red line boundary in these catchments to provide wider benefits and help offset the cumulative impact of development.
5. That the LLFA and other RMAs should use this information to inform a long-term pipeline of flood alleviation studies and schemes to help inform points 2. to 5. above.
6. A Surface Water Drainage Strategy will be required for all developments within these catchments, regardless of development size.

Due to cross-boundary considerations, policy recommendations for these high-risk catchments also include:

1. Uttlesford District Council should work closely with the councils of Chelmsford District, Braintree, Epping Forest District, Harlow District and East Hertfordshire District to ensure that runoff is attenuated through the upper catchments through SuDS implementation to minimise and mitigate flood risk downstream. This could include opportunities for Natural Flood Management techniques in the upper catchment and the installation of storage areas to attenuate water and slow flows downstream.

The following policies are applicable to catchments across the district that have received a medium-risk or low-risk rating in the Cumulative Impact Assessment in order to minimise cumulative impacts:

1. Uttlesford District Council should work closely with neighbouring Local Authorities to develop complementary local planning policies for catchments that drain out of Uttlesford District into and/ or through other local authorities in order to minimise cross boundary issues of cumulative impacts of development.
2. Developers should incorporate SuDS and provide details of adoption, ongoing maintenance and management on all development sites. Proposals will be required to provide reasoned justification for not using SuDS techniques, where ground conditions and other key factors show them to be technically feasible. Preference will be given to systems that contribute to the conservation and enhancement of biodiversity and green infrastructure in the district where practicable.
3. Essex County Council as LLFA will review Surface Water Drainage Strategies in accordance with their local requirements for major and non-major developments. These should consider all sources of flooding to

ensure that future development is resilient to flood risk and does not increase flood risk elsewhere.

7.8 Water quality considerations

In addition to cross-boundary issues regarding flood risk, there are also cross-boundary issues relating to water quality. Development or changes to land management practises in the upper catchments of watercourses that flow across boundaries from Uttlesford District can potentially impact on the quality of watercourses within the neighbouring authorities. Development should consider the quality of the water that is released from sites and the impact it may have on the water quality on any receiving waterbodies.

Future development should ensure there is no adverse impact on the quality of watercourses within the Council administrative area or neighbouring districts. Any impacts identified should then be considered in relation to the WFD Ecological, Hydromorphological and Chemical Status of the waterbody and the status objectives. Opportunities to improve the status of watercourses should also be considered. Information can be viewed at the Environment Agency [Catchment Data Explorer](#) website.

8 Flood risk management requirements for developers

This section provides guidance on site-specific Flood Risk Assessments (FRAs). These are carried out by (or on behalf of) developers to assess flood risk to and from a site. They are submitted with Planning Applications and should demonstrate how flood risk will be managed over the development's lifetime, considering climate change and vulnerability of users.

The report provides a strategic assessment of flood risk within the district of Uttlesford. Prior to any construction or development, site-specific assessments will need to be undertaken so all forms of flood risk and any defences at a site are considered in more detail. Developers should, where required, undertake more detailed hydrological and hydraulic assessments of watercourses to verify flood extents (including latest climate change allowances), to inform the sequential approach within the site and prove, if required, whether the Exception Test can be satisfied.

A detailed Flood Risk Assessment (FRA) may show that a site, windfall² or other, is not appropriate for development of a particular vulnerability or even at all. The Sequential and Exception Tests in the NPPF apply to all developments and an FRA should not be seen as an alternative to proving these tests have been met.

8.1 Principles for new developments

8.1.1 Apply the Sequential and Exception Tests

Developers should refer to Section 3 for more information on how to consider the Sequential and Exception Tests. For allocated sites, Uttlesford District Council should use the information in this SFRA to apply the Sequential Test. For windfall sites a developer must undertake the Sequential Test, which includes considering reasonable alternative sites at lower flood risk. Only if it passes the Sequential Test should the Exception Test then be applied if required. The Sequential and Exception Tests in the NPPF apply to all developments and an FRA should not be seen as an alternative to proving these tests have been met.

Developers should also apply the sequential approach to locating development within the site. The following questions should be considered:

- can risk be avoided through substituting less vulnerable uses or by amending the site layout?
- can it be demonstrated that less vulnerable uses for the site have been considered and reasonably discounted? and
- can the site layout be varied to reduce the number of people, the flood risk vulnerability or the building units located in higher risk parts of the site?

8.1.2 Consult with statutory consultees at an early stage to understand their requirements

Developers should consult with the Environment Agency, Uttlesford District Council, Essex County Council as LLFA, Anglian Water and Thames Water at an early stage to discuss flood risk including requirements for site-specific FRAs, detailed hydraulic modelling and drainage assessment and design.

² 'Windfall sites' is used to refer to those sites which become available for development unexpectedly and are therefore not included as allocated land in a planning authority's development plan.

8.1.3 Consider the risk from all sources of flooding and that they are using the most up to date flood risk data and guidance

The SFRA can be used by developers to scope out what further detailed work is likely to be needed to inform a site-specific Flood Risk Assessment. At a site level, developers will need to check before commencing on a more detailed Flood Risk Assessment that they are using the latest available datasets. Developers should apply the 2020 Environment Agency climate change guidance and ensure the development has taken into account climate change adaptation measures.

8.1.4 Ensure that the development does not increase flood risk elsewhere

Chapter 9 sets out these requirements for taking a sustainable approach to surface water management. Developers should also ensure mitigation measures do not increase flood risk elsewhere and that floodplain compensation is provided where necessary.

8.1.5 Ensure the development is safe for future users

Consideration should first be given to minimising risk by planning sequentially across a site. Once risk has been minimised as far as possible, only then should mitigation measures be considered. Developers should consider both the actual and residual risk of flooding to the site, as discussed in section 3.

Further flood mitigation measures may be needed for any developments in an area protected by flood defences, where the condition of those defences is 'fair' or 'poor', and where the standard of protection is not of the required standard.

8.1.6 Enhance the natural river corridor and floodplain environment through new development

Developments should demonstrate opportunities to create, enhance and link green assets. This can provide multiple benefits across several disciplines including flood risk and biodiversity/ ecology and may provide opportunities to use the land for an amenity and recreational purposes. Development that may adversely affect green infrastructure assets should not be permitted. Where possible, developers should identify and work with partners to explore all avenues for improving the wider river corridor environment. Developers should open up existing culverts and should not construct new culverts on site except for short lengths to allow essential infrastructure crossings.

8.1.7 Consider and contribute to wider flood mitigation strategy and measures in the district and apply the relevant local planning policy

Wherever possible, developments should seek to help reduce flood risk in the wider area e.g. by contributing to a wider community scheme or strategy for strategic measures, such as defences or natural flood management or by contributing in kind by mitigating wider flood risk on a development site. More information on the contribution developers are expected to make towards achieving the wider vision for FRM and sustainable drainage in the district can be found in Chapter 7.3. Developers must demonstrate in an FRA how they are contributing towards this vision.

8.2 Requirements for site-specific Flood Risk Assessments

8.2.1 When is an FRA required?

Site-specific FRAs are required in the following circumstances:

- Proposals of 1 hectare or greater in Flood Zone 1.

- Proposals for new development (including minor development such as non-residential extensions, alterations which do not increase the size of the building or householder developments and change of use) in Flood Zones 2 and 3.
- Proposals for new development (including minor development and change of use) in an area within Flood Zone 1 which has critical drainage problems (as notified to the LPA by the Environment Agency).
- Where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding.

An FRA may also be required for some specific situations:

- If the site may be at risk from the breach of a local defence (even if the site is actually in Flood Zone 1)
- Where evidence of historical or recent flood events have been passed to the LPA
- In an area of significant surface water flood risk.

8.2.2 Objectives of a site-specific FRA

Site-specific FRAs should be proportionate to the degree of flood risk and the scale, nature and location of the development. Site-specific FRAs should establish:

- Whether a proposed development is likely to be affected by current or future flooding from any source.
- Whether a proposed development will increase flood risk elsewhere.
- Whether the measures proposed to deal with the effects and risks are appropriate.
- The evidence, if necessary, for the local planning authority to apply the Sequential Test; and
- Whether, if applicable, the development will be safe and pass the Exception Test.

FRAs should follow the approach recommended by the NPPF (and associated guidance) and guidance provided by the Environment Agency and Uttlesford District Council. Guidance and advice for developers on the preparation of site-specific FRAs include:

- **Standing Advice on Flood Risk** (Environment Agency)
- **Flood Risk Assessment for Planning Applications** (Environment Agency) ; and
- **Site-specific Flood Risk Assessment: CHECKLIST** (NPPF PPG, Defra)

Guidance for local planning authorities for reviewing Flood Risk Assessments submitted as part of planning applications has been published by Defra in 2015 – **Flood Risk Assessment: Local Planning Authorities.**

8.3 Local requirements for mitigation measures

8.3.1 Site layout and design

Flood risk should be considered at an early stage in deciding the layout and design of a site to provide an opportunity to reduce flood risk within the development.

The NPPF states that a sequential, risk-based approach should be applied to try to locate more vulnerable land use away from flood zones to higher ground, while more flood-compatible development (e.g. vehicular parking, recreational space) can be located in higher risk areas. Whether parking in floodplains is appropriate will be based on the likely flood depths and hazard, evacuation procedures and availability of flood warning.

Waterside areas, or areas along known flow routes, can act as green infrastructure, being used for recreation, amenity and environmental purposes, allowing the preservation of flow routes and flood storage, and at the same time providing valuable social and environmental benefits contributing to other sustainability objectives. Landscaping should ensure safe access to higher ground from these areas and avoid the creation of isolated islands as water levels rise.

8.3.2 Modification of ground levels

Any proposal for modification of ground levels will need to be assessed as part of a detailed flood risk assessment.

Modifying ground levels to raise the land above the required flood level is an effective way of reducing flood risk to a particular site in circumstances where the land does not act as conveyance for flood waters. However, care must be taken as raising land above the floodplain could reduce conveyance or flood storage in the floodplain and could adversely impact flood risk downstream or on neighbouring land. Raising ground levels can also deflect flood flows, so analyses should be performed to demonstrate that there are no adverse effects on third party land or property.

Compensatory flood storage should be provided, and would normally be on a level for level, volume for volume basis on land that does not currently flood but is adjacent to the floodplain (in order for it to fill and drain). It should be in the vicinity of the site and within the red line of the planning application boundary (unless the site is strategically allocated). Guidance on how to address floodplain compensation is provided in Appendix A3 of the CIRIA Publication C624.

Where proposed development results in a change in building footprint, the developer should ensure that it does not impact upon the ability of the floodplain to store or convey water and seek opportunities to provide floodplain betterment.

Raising levels can also create areas where surface water might pond during significant rainfall events. Any proposals to raise ground levels should be tested to ensure that it would not cause increased ponding or build-up of surface runoff on third party land.

8.3.3 Raised floor levels

If raised floor levels are proposed, these should be agreed with Uttlesford District Council and the Environment Agency. The minimum Finished Floor Level (FFL) may change dependent upon the vulnerability and flood risk to the development.

The Environment Agency advises that minimum finished floor levels should be set 600mm above the 100-year plus climate change peak flood level, where the new climate change allowances have been used (see Chapter 4 for the climate change allowances). An additional allowance may be required because of risks relating to blockages to the channel, culvert or bridge and should be considered as part of an FRA.

Allocating the ground floor of a building for less vulnerable, non-residential, use is an effective way of raising living space above flood levels. Single storey buildings such as ground floor flats or bungalows are especially vulnerable to rapid rise of water (such as that experienced during a breach). This risk can be

reduced by use of multiple storey construction and raised areas that provide an escape route.

Similarly, the use of basements should be avoided. Habitable uses of basements within Flood Zone 3 should not be permitted, whilst basement dwellings in Flood Zone 2 will be required to pass the Exception Test. Access should be situated 300mm above the design flood level and waterproof construction techniques used.

8.3.4 Development and raised defences

Construction of localised raised floodwalls or embankments to protect new development is not a preferred option, as a residual risk of flooding will remain. Compensatory storage must be provided where raised defences remove storage from the floodplain.

Where development is located behind, or in an area benefitting from defences, the residual risk of flooding must be considered.

8.3.5 Developer contributions

In some cases, and following the application of the Sequential Test, it may be appropriate for the developer to contribute to the improvement of flood defence provision that would benefit both proposed new development and the existing local community. Developer contributions can also be made to maintenance and provision of flood risk management assets, flood warning and the reduction of surface water flooding (i.e. SuDS).

8.3.6 Buffer strips

The provision of a buffer strip to 'make space for water', allows additional capacity to accommodate climate change and ensure access to the watercourse, structures and defences is maintained for future maintenance purposes. It also enables the avoidance of disturbing riverbanks, adversely impacting ecology and having to construct engineered riverbank protection.

Building adjacent to riverbanks can cause problems to the structural integrity of the riverbanks and the building itself, making future maintenance of the river much more difficult.

8.3.7 Making space for water

The PPG sets out a clear aim in Flood Zone 3 to create space for flooding by restoring functional floodplain. Generally, development should be directed away from these areas.

All new development close to rivers should consider the opportunity to improve and enhance the river environment. Developments should look at opportunities for river restoration and enhancement as part of the development. Options include backwater creation, de-silting, in-channel habitat enhancement and removal of structures. When designed properly, such measures can have benefits such as reducing the costs of maintaining hard engineering structures, reducing flood risk, improving water quality and increasing biodiversity. Social benefits are also gained by increasing green space and access to the river.

8.4 Resistance and resilience measures

The consideration of resistance and resilience measures should not be used to justify development in inappropriate locations.

Having applied planning policy, there will be instances where developments, such as those that are water compatible and essential infrastructure are permitted in

high flood risk areas. The above measures should be considered before resistance and resilience measures are relied on. The effectiveness of these forms of measures are often dependant on the availability of a reliable forecasting and warning system and the use of back up pumping to evacuate water from a property as quickly as possible. The proposals must include details of how the temporary measures will be erected and decommissioned, responsibility for maintenance and the cost of replacement when they deteriorate. Available resistance and resilience measures are shown in Table 8-1.

Table 8-1: Available temporary measures

Measures	Description
Permanent barriers	Permanent barriers can include built up doorsteps, rendered brick walls and toughened glass barriers
Temporary barriers	Temporary barriers consist of moveable flood defences which can be fitted into doorways and/or windows. The permanent fixings required to install these temporary defences should be discrete and keep architectural impact to a minimum. On a smaller scale, temporary snap on covers for airbricks and air vents can also be fitted to prevent the entrance of flood water.
Community resistance measures	These include demountable defences that can be deployed by local communities to reduce the risk of water ingress to a number of properties. The methods require the deployment of inflatable (usually with water) or temporary quick assembly barriers in conjunction with pumps to collect water that seeps through the systems during a flood.
Flood resilience measures	These measures aim to ensure no permanent damage is caused, the structural integrity of the building is not compromised and the clean up after the flood is easier. Interior design measures to reduce damage caused by flooding can include electrical circuitry installed at a higher level and water-resistant materials for floors, walls and fixtures.

8.5 Reducing flood risk from other sources

8.5.1 Groundwater

Groundwater flooding has a very different flood mechanism to any other and so many conventional flood mitigation methods are not suitable. The only way to fully reduce flood risk would be through building design (development form), ensuring floor levels are raised above the water levels caused by a 1 in 100-year plus climate change event. Site design would also need to preserve any flow routes followed by the groundwater overland to ensure flood risk is not increased downstream.

Infiltration SuDS can cause increased groundwater levels and subsequently may increase flood risk on or off a site. Developers should provide evidence and ensure that this will not be a significant risk.

8.5.2 Surface water and sewer flooding

Developers should discuss public sewerage capacity with the water utility company at the earliest possible stage. It is important that a Surface Water Drainage Strategy (often done as part of a Flood Risk Assessment) shows that

this will not increase flood risk elsewhere, and that the drainage requirements regarding runoff rates and SuDS for new development are met.

If residual surface water flood risk remains, the likely flow routes and depths across the site should be modelled. The site should be designed so that these flow routes are preserved and building design should provide resilience against this residual risk.

When redeveloping existing buildings, the installation of some permanent or temporary floodproofing and resilience measures could protect against both surface water and sewer flooding. Non-return valves prevent water entering the property from drains and sewers. Non-return valves can be installed within gravity sewers or drains within a property's private sewer upstream of the public sewerage system. These need to be carefully installed and must be regularly maintained.

Consideration must also be given to attenuation and flow ensuring that flows during the 100-year plus climate change storm event are retained within the site if any flap valves shut. This should be demonstrated with suitable modelling techniques.

8.5.3 Reservoirs

As discussed in Section 5.9, the risk of reservoir flooding is extremely low. However, there remains a residual risk to development from reservoirs which developers should consider during the planning stage:

- Developers should contact the reservoir owner for information on:
 - the Reservoir Risk Designation
 - reservoir characteristics: type, dam height at outlet, area/volume, overflow location
 - operation: discharge rates / maximum discharge
 - discharge during emergency drawdown; and
 - inspection / maintenance regime.
- The EA online Reservoir Flood Maps contain information on the extents, depths and velocities following a reservoir breach (note: only for those reservoirs with an impounded volume greater than 25,000 cubic metres are governed by the Reservoir Act 1975). Consideration should be given to the extent, depths and velocities shown in these online maps.
- The GOV.UK website on **Reservoirs: owner and operator requirements** provides information on how to register reservoirs, appoint a panel engineer, produce a flood plan and report an incident.
- Additional information on reservoirs can be requested, from the EA, through the public register. Further information is on the **GOV.UK website**.

Developers should use the above information to:

- Apply the sequential approach to locating development within the site.
- Consider the impact of a breach and overtopping, particularly for sites proposed to be located immediately downstream of a reservoir. This should consider whether there is sufficient time to respond, and whether in fact it is appropriate to place development immediately on the downstream side of a reservoir.

- Assess the potential hydraulic forces imposed by sudden reservoir failure event and check that that the proposed infrastructure fabric could withstand the structural loads.
- Develop site-specific Emergency Plans and/ or Off-site Plans if necessary and ensure the future users of the development are aware of these plans. This may need to consider emergency drawdown and the movement of people beforehand, similar to the response to the Toddbrook Reservoir incident in Whaley Bridge, Derbyshire, 2019.

8.6 Emergency planning

Emergency planning covers three phases: before, during and after a flood. Measures involve developing and maintaining arrangements to reduce, control or mitigate the impact and consequences of flooding and to improve the ability of people and property to absorb, respond to and recover from flooding. National Planning Policy takes this into account by seeking to avoid inappropriate development in areas of flood risk and considering the vulnerability of new developments to flooding.

The 2019 NPPF requires site level Flood Risk Assessments to demonstrate that

"d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan."

Certain sites will need emergency plans:

- Sites with vulnerable users, such as hospitals and care homes
- Camping and caravan sites
- Sites with transient occupants e.g. hostels and hotels
- Developments at a high residual risk of flooding from any source e.g. immediately downstream of a reservoir or behind raised flood defences
- Situations where occupants cannot be evacuated (e.g. prisons) or where it is safer to remain "in-situ" and / or move to a higher floor or safe refuge area (e.g. at risk of a breach).

Emergency Plans will need to consider:

- The characteristics of the flooding e.g. onset, depth, velocity, hazard, flood borne debris
- The vulnerability of site occupants.
- Structural safety
- The impact of the flooding on essential services e.g. electricity, drinking water
- Flood warning systems and how users will be encouraged to sign up for them
- Safe access and egress for users and emergency services
- How to manage the consequences of events that are un-foreseen or for which no warnings can be provided e.g. managing the residual risk of a breach.

- A safe place of refuge where safe access and egress and advance warning may not be possible, having discussed and agreed this first with emergency planners. Proposed new development that places an additional burden on the existing response capacity of the Councils will not normally be appropriate.

The LLR Prepared provides Emergency Planning relevant information that is both general and flood specific. This includes practical advice before, during and after flooding has occurred including, preparation, understanding warnings, actions to limit exposure to risk and recovery.

Further information is available from:

- **The National Planning Policy Guidance**
- **2004 Civil Contingencies Act**
- **DEFRA (2014) National Flood Emergency Framework for England**
- **FloodRe**
- The Environment Agency and DEFRA's **Standing Advice for FRAs**
- Essex County Council's **"Emergency Flood Advice"**
- Environment Agency's **"How to plan ahead for flooding"**
- Sign up for **Flood Warnings** with the Environment Agency
- The **National Flood Forum**
- **GOV.UK** - Make a Flood Plan guidance and templates

9 Surface water management and SuDS

This chapter provides guidance and advice on managing surface water runoff and flooding.

9.1 Role of the LLFA and Local Planning Authority in surface water management

As the LLFA, Essex County Council are the statutory planning consultee on the management of surface water. They provide technical advice on surface water drainage strategies and designs put forward for major development proposals, to ensure that onsite drainage systems are designed in accordance with the current legislation and guidance.

When considering planning applications, Essex County Council will provide advice to the Planning Department on the management of surface water. As LPA, Uttlesford District Council should satisfy themselves that the development's proposed minimum standards of operation are appropriate and ensure through the use of planning conditions or planning obligations, that there are clear arrangements for on-going maintenance over the lifetime of the development.

It is essential that developers consider sustainable drainage at an early stage of the development process – ideally at the master-planning stage. To further inform development proposals at the master-planning stage, pre-application submissions are accepted by Uttlesford District Council. This will assist with the delivery of well designed, appropriate and effective SuDS.

9.2 Sustainable Drainage Systems (SuDS)

Sustainable Drainage Systems (SuDS) are designed to maximise the opportunities and benefits that can be secured from surface water management practices.

SuDS provide a means of dealing with the quantity and quality of surface water and can also provide amenity and biodiversity benefits. Given the flexible nature of SuDS they can be used in most situations within new developments as well as being retrofitted into existing developments. SuDS can also be designed to fit into most spaces. For example, permeable paving could be used in parking spaces or rainwater gardens as part of traffic calming measures.

It is a requirement for all new major development proposals to ensure that sustainable drainage systems for management of runoff are put in place. Likewise, minor developments should also ensure sustainable systems for runoff management are provided. The developer is responsible for ensuring the design, construction and future/ongoing maintenance of such a scheme is carefully and clearly defined, and a clear and comprehensive understanding of the existing catchment hydrological processes and current drainage arrangements is essential.

9.3 Sources of SuDS guidance

9.3.1 C753 CIRIA SuDS Manual (2015)

The C753 CIRIA SuDS Manual (2015) provides guidance on planning, design, construction and maintenance of SuDS. The manual is divided into five sections ranging from a high-level overview of SuDS, progressing to more detailed guidance with progression through the document.

9.3.2 Non-Statutory Technical Guidance, Defra (March 2015)

Non-Statutory Technical guidance provides non-statutory standards on the design and performance of SuDS. It outlines peak flow control, volume control, structural integrity, flood risk management and maintenance and construction considerations.

In February 2021, Defra published its **research project** to review and recommend updates to the Non-Statutory Technical guidance. The proposals have not yet been adopted but would bring the standards in line with current best practice according to the construction industry research and information association (CIRIA) SuDS Manual.

9.3.3 Non-statutory Technical Guidance for Sustainable Drainage Practice Guidance, LASOO (2016)

The Local Authority SuDS Officer Organisation produced their **practice guidance** in 2016 to give further detail to the Non-statutory technical guidance.

9.3.4 Essex County Council Flood Risk Management Strategy

Essex County Council's Flood Risk Management Strategy (FRMS) sets out the aims and actions to reduce the impact of local flooding across the area. The FRMS focuses upon local flooding including man-made drainage systems, ordinary watercourses and surface water risk.

9.3.5 Essex County Council Surface Water Management Plans

Essex County Council have completed several Surface Water Management Plans (SWMP) across the county. They aim to understand the risk from local flood sources and outline a long-term action plan to manage these risks. *A SWMP has not been completed within the UDC area.*

9.3.6 Essex County Council SuDS Guidance

Essex County Council provide comprehensive guidance to the design and implementation of SuDS through their **online SuDS Design Guide**. The website provides detailed guidance on the planning, design and delivery of SuDS for developers, designers and consultants. Additional information can be found environment and planning section of Essex County Council's website.

9.4 Other surface water considerations

9.4.1 Groundwater Vulnerability Zones

The Environment Agency published new groundwater vulnerability maps in 2015. These maps provide a separate assessment of the vulnerability of groundwater in overlying superficial rocks and those that comprise of the underlying bedrock. The map shows the vulnerability of groundwater at a location based on the hydrological, hydro-ecological and soil properties within a one-kilometre grid square.

The groundwater vulnerability maps should be considered when designing SuDS. Depending on the height of the water table at the location of the proposed development site, restrictions may be placed on the types of SuDS appropriate to certain areas. Groundwater vulnerability maps can be found **on Defra's interactive mapping**.

9.4.2 Groundwater Source Protection Zones (GSPZ)

The Environment Agency also defines Groundwater Source Protection Zones (GSPZs) near groundwater abstraction points. These protect areas of

groundwater used for drinking water. The GSPZ requires attenuated storage of runoff to prevent infiltration and contamination. GSPZs can be viewed on [DEFRA's Magic Map](#).

Uttlesford District is located outside of a Groundwater Source Protection Zone.

9.4.3 Nitrate Vulnerable Zones

Nitrate Vulnerable Zones (NVZs) are areas designated as being at risk from agricultural nitrate pollution. Nitrate levels in waterbodies are affected by surface water runoff from surrounding agricultural land entering receiving waterbodies. The level of nitrate contamination will potentially influence the choice of SuDS and should be assessed as part of the design process.

Uttlesford District comprises a Surface Water NVZ. The area is covered by the following NVZs:

- Ely and Ouse
- Lower Stour
- River Chlemer
- Colne
- Roding (Cripsey Brook to Loxford Water)
- Lee
- Stansted Mountfichet
- Anglian Chalk
- Clavering
- Sandlings and Chelmsford

NVZs can be viewed on the [Environment Agency's website](#).

10 Summary and Recommendations

- There are numerous recorded flooding incidents across the district. Areas include but are not limited to Ashdon, Clavering, Debden, Elsenham, Great and Little Chesterford, Great and Little Dunmow, Great Sampford, Hatfield Heath, Little Hallingbury, Little Walden, Newport, Saffron Walden, Swards End, Stansted Mountfitchet, Stebbing, Takeley and Thaxted. Sources of past flooding have been predominantly from main rivers, ordinary watercourses and surface water.
- The main rivers associated with fluvial flooding are the Great Ouse catchment are the River Cam and associated tributaries such as The Slade, Flufen Slade, Debden Water amongst others. Flooding occurs along the course of the river mainly affecting Saffron Walden and Newport. The North Essex catchment has the River Chelmer, Pant, Can and Stebbing Brook amongst others. The Chelmer passes through areas such as Great Dunmow where there is greater risk. The Thames catchment's main rivers include the Stort, Roding, Stansted and Pincey Brook to name some. The main areas of fluvial flood risk are along the River Stort and Pincey Brook, near Stansted Airport and Stansted Mountfitchet. A large number of the rivers across the district flow through rural catchments with smaller villages.
- Surface water risk largely follows the topography of the watercourses. There are a few areas where there are additional smaller flow paths, and minor areas of ponding. Surface water is also often impounded by roads or rail embankments, such as at Stansted Mountfitchet and the M11. Areas identified with high-risk surface water extents (30-year event) are Saffron Walden Clavering, Great Dunmow, Manuden, Radwinter, Takeley, Thaxted and Stansted Mountfitchet. Other areas within Uttlesford that have been identified as having a surface water flooding problem through the flood history review include Little Hallingbury and Little Dunmow.
- Data from Anglian Water and Thames water shows that sewer flooding is limited and very localised.
- Areas at risk of flooding are likely to become at increasing risk in the future and the frequency of flooding will increase in such areas as a result of climate change. Flood extents will increase; in some locations, this may not be by very much, but flood depth, velocity and hazard may have more of an impact due to climate change. It is recommended that the Council works with other Risk Management Authorities to review the long-term sustainability of existing and new development in these areas when developing climate change plans and strategies for the district.
- The JBA risk of flooding from groundwater map shows that, in general, the majority of the Uttlesford District is not susceptible to groundwater flooding. However, there are areas where groundwater varies from 5m below ground level, to some areas where it is less than 0.025m below ground level. This appears to be in line with the outlines of the River Stort, Stansted Brook, Bourne Brook, and the River Cam and its tributaries of Wicken Water, The Slade, Flufen Slade, Debden Water and an unnamed tributary. Therefore, along the course of these rivers and their surrounding floodplains, the risk of flooding from groundwater is relatively high. There are also smaller pockets of areas where groundwater is 0.5 – 5m below ground level along the River Chelmer and Pant.
- There are no canals in the Uttlesford District, therefore there is no risk of canal overtopping.
- There is a potential risk of flooding from four reservoirs, all outside the district boundary. There are no records of flooding from reservoirs in the study area. The level and standard of inspection and maintenance required under the Reservoirs Act 1975 means that the risk of flooding from reservoirs is relatively low. However,

there is a residual risk of a reservoir breach, and this risk should be considered in any site-specific Flood Risk Assessments (where relevant).

10.1 Recommendations

Reduction of flood risk through site allocations and appropriate site design

- To locate new development in areas of lowest risk, in line with the Sequential Test, by steering sites to Flood Zone 1. If a Sequential Test is undertaken and a site at flood risk is identified as the only appropriate site for the development, the Exception Test shall be undertaken.
- After application of the Exception Test, a sequential approach to site design will be used to reduce risk. Any re-development within areas of flood risk which provide other wider sustainability benefits will provide flood risk betterment and made resilient to flooding.
- Identification of long-term opportunities to remove development from the floodplain and to make space for water.
- Ordinary watercourses not currently afforded flood maps should be modelled to an appropriate level of detail to enable a sequential approach to the layout of the development.
- Ensure development is 'safe', dry pedestrian egress from the floodplain and emergency vehicular access should be possible for all residential development. If at risk, then an assessment should be made to detail the flood duration, depth, velocity and flood hazard rating in the 1 in 100-year plus climate change flood event, in line with FD2320.
- Raise residential and commercial finished floor levels 600mm above the 1 in 100-year plus climate change flood level. Protect and promote areas for future flood alleviation schemes.
- Safeguard functional floodplain from future development.
- Identify opportunities for brownfield sites in functional floodplain to reduce risk and provide flood risk betterment.
- Identify opportunities to help fund future flood risk management through developer contributions to reduce risk for surrounding areas.
- Seek opportunities to make space for water to accommodate climate change.

Promote SuDS to mimic natural drainage routes to improve water quality

- SuDS design should demonstrate how constraints have been considered and how the design provides multiple benefits e.g. landscape enhancement, biodiversity, recreation, amenity, leisure and the enhancement of historical features.
- Planning applications for phased developments should be accompanied by a drainage strategy, which takes a strategic approach to drainage provision across the entire site and incorporates adequate provision for SuDS within each phase.
- Use of the SuDS management train to prevent and control pollutants to prevent the 'first flush' polluting the receiving waterbody.
- SuDS are to be designed so that they are easy to maintain, and it should be set out who will maintain the system, how the maintenance will be funded and should be supported by an appropriately detailed maintenance and operation manual.

Reduce Surface Water Runoff from New Developments and Agricultural Land

- Space should be provided for the inclusion of SuDS on all allocated sites and outline proposals
- Promote biodiversity, habitat improvements and **Countryside Stewardship schemes** to help prevent soil loss and to reduce runoff from agricultural land.

Enhance and Restore River Corridors and Habitat

- Assess condition of existing assets and upgrade, if required, to ensure that the infrastructure can accommodate pressures/flows for the lifetime of the development.
- Natural drainage features should be maintained and enhanced.
- Identify opportunities for river restoration/enhancement to make space for water.
- A presumption against culverting of open watercourses except where essential to allow highways and/or other infrastructure to cross, in line with CIRIA's Culvert design and operation guide, (C689) and to restrict development over culverts.
- There should be no built development within 8m from the top of a watercourse or Main River for the preservation of the watercourse corridor, wildlife habitat, flood flow conveyance and future watercourse maintenance or improvement.

Mitigate Against Risk, Improved Emergency Planning and Flood Awareness

- Work with emergency planning colleagues and stakeholders to identify areas at highest risk and locate most vulnerable receptors.
- Exceedance flows, both within and outside of the site, should be appropriately designed to minimise risks to both people and property.
- For a partial or completely pumped drainage system, an assessment should be undertaken to assess the risk of flooding due to any failure of the pumps to be assessed. The design flood level should be determined if the pumps were to fail; if the attenuation storage was full, and if a design storm occurred.
- An emergency overflow should be provided for piped and storage features above the predicted water level arising from a 100-year rainfall event, inclusive of climate change and urban creep.
- Consideration and incorporation of flood resilience measures up to the 1 in 1,000-year event.
- Ensure robust emergency (evacuation) plans are produced and implemented for major developments.
- Increase awareness and promote sign-up to the Environment Agency Flood Warnings Direct (FWD) within Uttlesford District.

10.1.1 Recommendations from the cumulative impact analysis

The following recommendations have been made for catchments which have been identified as high-risk which flow from predominantly rural areas into neighbouring districts with significant urban areas, including the Rivers Chelmer, Stort, Pant and Upper Roding.

1. That a Level 2 SFRA or detailed local area Strategic Drainage Study be undertaken or commissioned to consider further how the cumulative effects of potential peak rates and volumes of water from development sites would impact on peak flows, duration of flooding and timing of flood peaks on receiving watercourses. Such studies could be used to justify greater restrictions/ enforce through local planning policy development site runoff rates and volumes specific to each catchment that are over and above those required by National and Local SuDS Standards. They could also identify where there are opportunities with allocated sites to provide off-site betterment e.g. online/ offline flood storage and where land should be safeguarded within proposed site allocations to fulfil this purpose.
2. Where appropriate, that the opportunity for Natural Flood Management in rural areas in support of Measure 6 of the **Local FRM Strategy (2018)**, SuDS retrofit in urban areas (supporting Measure 5) and river restoration should be maximised in these catchments (Measure 3).
3. Developers should explore through site-specific FRAs opportunities to provide wider community flood risk benefit through new developments in support of Measure 5 of the Local FRM Strategy (2018). Measures that can be put in place to contribute to a reduction in flood risk downstream should be considered. This may be either by provision of additional storage on site e.g. through oversized SuDS, natural flood management techniques, green infrastructure and green-blue corridors, and/or by providing a Partnership Funding contribution towards any flood alleviation schemes. Consultation on the site-specific requirements should be undertaken with Essex County Council as LLFA and the Environment Agency at the earliest opportunity.
4. Developers should contribute to community flood defences where appropriate outside of their red line boundary in these catchments to provide wider benefits and help offset the cumulative impact of development.
5. That the LLFA and other RMAs should use this information to inform a long-term pipeline of flood alleviation studies and schemes to help inform points 2. to 5. above.
6. A Surface Water Drainage Strategy will be required for all developments within these catchments, regardless of development size.

Due to cross-boundary considerations, policy recommendations for these high-risk catchments also include:

1. Uttlesford District Council should work closely with the councils of Chelmsford District, Braintree, Epping Forest District, Harlow District and East Hertfordshire District to ensure that runoff is attenuated through the upper catchments through SuDS implementation to minimise and mitigate flood risk downstream. This could include opportunities for Natural Flood Management techniques in the upper catchment and the installation of storage areas to attenuate water and slow flows downstream.

The following policies are applicable to catchments across the district that have received a medium-risk or low-risk rating in the Cumulative Impact Assessment in order to minimise cumulative impacts:

1. Uttlesford District Council should work closely with neighbouring Local Authorities to develop complementary local planning policies for catchments that drain out of Uttlesford District into and/ or through other local authorities in order to minimise cross boundary issues of cumulative impacts of development.

2. Developers should incorporate SuDS and provide details of adoption, ongoing maintenance and management on all development sites. Proposals will be required to provide reasoned justification for not using SuDS techniques, where ground conditions and other key factors show them to be technically feasible. Preference will be given to systems that contribute to the conservation and enhancement of biodiversity and green infrastructure in the district where practicable.
3. Essex County Council as LLFA will review Surface Water Drainage Strategies in accordance with their local requirements for major and non-major developments. These should consider all sources of flooding to ensure that future development is resilient to flood risk and does not increase flood risk elsewhere.

Appendices

A Interactive Flood Risk Mapping

B Data sources used in the SFRA

C SFRA User Guide

D Flood Alerts and Flood Warnings

E Flood history in the district

F Summary of flood risk across the district

Offices at

Coleshill
Doncaster
Dublin
Edinburgh
Exeter
Glasgow
Haywards Heath
Isle of Man
Limerick
Newcastle upon Tyne
Newport
Peterborough
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
Warrington

Registered Office
1 Broughton Park
Old Lane North
Broughton
SKIPTON
North Yorkshire
BD23 3FD
United Kingdom

+44(0)1756 799919
info@jbaconsulting.com
www.jbaconsulting.com
Follow us:  

Jeremy Benn Associates Limited

Registered in England 3246693

JBA Group Ltd is certified to:
ISO 9001:2015
ISO 14001:2015
ISO 27001:2013
ISO 45001:2018



Appendix B - Data sources used in the SFRA

1 Historical Flooding

Essex County Council as Lead Local Flood Authority provided details of historical flooding events and hotspots in the district; Essex Fire and Rescue were also contacted but at the time of the draft report submission, information had not been received. The Environment Agency's Historic Flood Map is also presented in Appendix A: GeoPDF Mapping. Section 5.1 documents historic flooding records obtained.

2 Fluvial flooding

2.1 Flood Zones 2 and 3a

Flood Zones 2 and 3a, as shown in Appendix A mapping, show the same extent as the online Environment Agency's Flood Map for Planning (which incorporates latest modelled data), where available. Over time, the online mapping is likely to be updated more often than the SFRA, so SFRA users should check there are no major changes in their area.

2.2 Flood Zone 3b (the Functional Floodplain)

Flood Zone 3b, as shown in Appendix A mapping, has been compiled for the study area as part of this SFRA and is based on the 5% AEP (1 in 20-year chance of flooding in any given year) or 4% AEP (1 in 25-year chance of flooding in any given year) extents produced from Environment Agency detailed hydraulic models (see Figure B-1 for model coverage).

For areas not covered by detailed EA models, a precautionary approach should be adopted for Flood Zone 3b with the assumption that the extent of Flood Zone 3b would be equal to Flood Zone 3a. If development is shown to be in Flood Zone 3a (or Flood Zone 3b derived from 2D generalised modelling), further work should be undertaken as part of a detailed site-specific Flood Risk Assessment to define the extent of Flood Zone 3b.

If the area of interest is in an area that has seen some major changes to the extent of the Flood Zones, having checked the online mapping, developers will also need to remap Flood Zone 3b as part of a detailed site-specific Flood Risk Assessment.

3 Climate change

Section 4.4 of the Main Report outlines the approach to climate change in the SFRA. Detailed Environment Agency hydraulic models were obtained, and the existing climate change allowances were used, alongside Flood Zone 2 as a proxy for climate change. In general, as the watercourses are headwaters with steep confined floodplain topography, there is little difference between the Flood Zones extents, and therefore climate change extents would sit between these as they uplift on Flood Zone 3a (100-year event). The new allowances have also decreased in all but one scenario compared to the 2016 previous allowances.

Table 4-1 in the Main Report reflects the latest July 2021 revised guidance on which percentage uplifts apply to which catchment management basin for the 2080s epoch.

4 Hydraulic Model Coverage

Figure B-1 shows the existing EA model coverage, used to inform FZ3b and climate change extents.

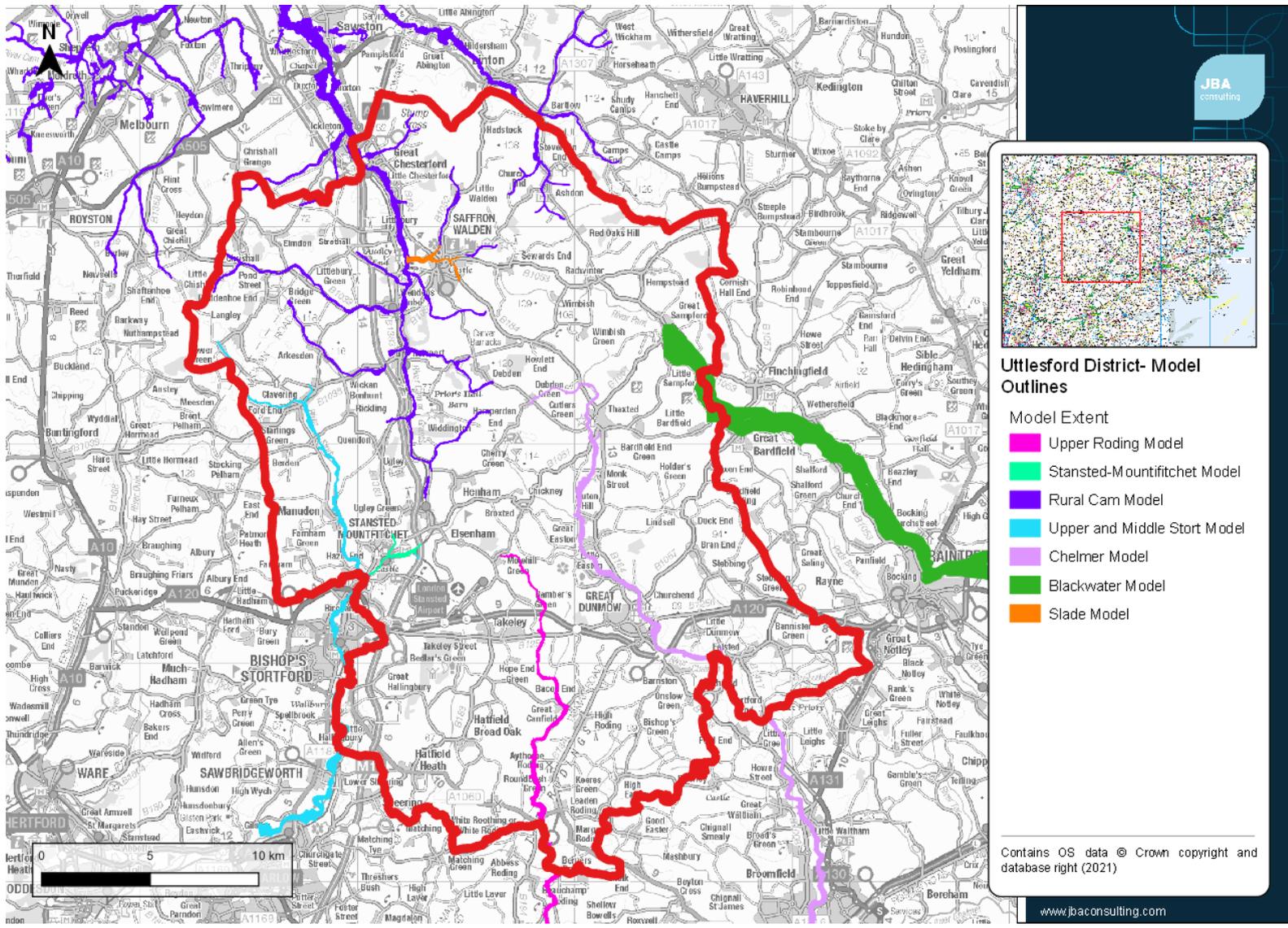


Figure B-1: Existing hydraulic modelling coverage

5 Surface water

Mapping of surface water flood risk in study area has been taken from the Risk of Flooding from Surface Water (RoFfSW) maps published online by the Environment Agency. These maps are intended to provide a consistent standard of assessment for surface water flood risk across England and Wales in order to help LLFAs, the Environment Agency and any potential developers to focus their management of surface water flood risk.

The RoFfSW is derived primarily from identifying topographical flow paths of existing watercourses or dry valleys that contain some isolated ponding locations in low lying areas. They provide a map which displays different levels of surface water flood risk depending on the annual probability of the land in question being inundated by surface water (Table B-1).

Table B-1: RoFfSW risk categories

Category	Definition
High	Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%)
Medium	Flooding occurring as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
Low	Flooding occurring as a result of rainfall of between 1 in 1,000 (0.1%) and 1 in 100 (1%) chance in any given year.

Although the RoFfSW offers improvement on previously available datasets, the results should not be used to understand flood risk for individual properties. The results should be used for high level assessments such as SFRA for local authorities. If a site is indicated in the Environment Agency mapping to be at risk from surface water flooding, a more detailed assessment should be considered to more accurately illustrate the flood risk at a site-specific scale.

6 Groundwater

In comparison to fluvial flooding, current understanding of the risks posed by groundwater flooding is limited and mapping of flood risk from groundwater sources is in its infancy. Groundwater level monitoring records are available for areas on Major Aquifers; however, for lower lying valley areas, which can be susceptible to groundwater flooding caused by a high-water table in mudstones, clays, and superficial alluvial deposits, very few records are available. Additionally, there is increased risk of groundwater flooding where long reaches of watercourse are culverted as a result of elevated groundwater levels not being able to naturally pass into watercourses and be conveyed to less susceptible areas.

Mapping of groundwater flood risk has been based on the Areas Susceptible to Groundwater Flooding (AStGWF) dataset and a 5m resolution JBA Groundwater map. The modelling for JBA's mapping involves simulating groundwater levels for a range of return periods (including 75, 100 and 200-years). Groundwater levels are then compared to ground surface levels to determine the head difference in metres. The JBA Groundwater Map categorises the head difference (m) into five feature classes based on the 100-year model outputs which are outlined in Table 6-1.

Table 6-1 JBA Groundwater flood risk map categories

Flood depth range during a 1% AEP flood event	Groundwater flood risk
Groundwater levels are either at or very near (within 0.025m of) the ground surface	Within this zone there is a risk of groundwater flooding to both surface and subsurface assets. Groundwater may emerge at significant rates and has the capacity to flow overland and/or pond within any topographic low spots.
Groundwater levels are between 0.025m and 0.5m below the ground surface	Within this zone there is a risk of groundwater flooding to both surface and subsurface assets. There is the possibility of groundwater emerging at the surface locally.
Groundwater levels are between 0.5m and 5m below the ground surface	There is a risk of flooding to subsurface assets, but surface manifestation of groundwater is unlikely.
Groundwater levels are at least 5m below the ground surface	Flooding from groundwater is not likely.
No risk	This zone is deemed as having a negligible risk from groundwater flooding due to the nature of the local geological deposits.

It is important to note that the modelled groundwater levels are not predictions of typical groundwater levels. Rather they are flood levels i.e. groundwater levels that might be expected after a winter recharge season with 1% AEP, so would represent an extreme scenario.

It should be noted that the JBA Groundwater Flood Map is suitable for general broad-scale assessment of the groundwater flood hazard in an area but is not explicitly designed for the assessment of flood hazard at the scale of a single property. In high-risk areas a site-specific risk assessment for groundwater flooding is recommended to fully inform the likelihood of flooding.

The AStGWF dataset is a strategic-scale map showing groundwater flood areas on a 1km square grid. It shows the proportion of each 1km grid square, where geological and hydrogeological conditions indicate that groundwater might emerge. It does not show the likelihood of groundwater flooding occurring and does not take account of the chance of flooding from groundwater rebound. This dataset covers a large area of land, and only isolated locations within the overall susceptible area are actually likely to suffer the consequences of groundwater flooding.

The AStGWF data should be used only in combination with other information, for example local data or historical data. It should not be used as sole evidence for any specific flood risk management, land use planning or other decisions at any scale. However, the data can help to identify areas for assessment at a local scale where finer resolution datasets exist.

Section 5.7 of the Main Report explains groundwater flooding.

7 Sewers

Historical incidents of flooding are detailed by Thames Water and Anglian Water through their Hydraulic Flood Risk Registers (HFRR). The HFRR database records

incidents of flooding relating to public foul, combined or surface water sewers and displays which properties suffered flooding.

Section 5.6 of the Main Report presents this data. At the time of draft report submission, Thames Water data had been received but no data had been received from Anglian Water.

8 Reservoirs

The risk of inundation because of reservoir breach or failure of reservoirs within the area has been mapped using the outlines produced as part of the National Inundation Reservoir Mapping (NIRIM) study, and are shown online on the Long-Term Risk of Flooding website at the time of publication. The Environment Agency are currently updating their national reservoir flood maps and SFRA users should check there are no major changes to the reservoir maps before relying on the mapping in the SFRA. Section 5.9 of the Main Report presents the reservoirs affecting Uttlesford District.

9 Flood Defences

The Environment Agency supplied the location of all flood defences within the district in their AIMS database, including information relating to the type of flood defence and their standard of protection. The Areas Benefitting from Defences shapefile was also considered. Chapter 6 of the Main Report provides information on flood defences and schemes.

10 Overview of supplied data

Overview of supplied data for the Uttlesford District SFRA from stakeholders is as follows:

Source of flood risk	Data used to inform the assessment	Data supplied by
Historic (all sources)	Historic Flood Map Recorded Flood Outlines Hydraulic Modelling Reports	Environment Agency
	Historic Flooding Incidents and Assets Register	Uttlesford District Council, Essex Fire and Rescue
Fluvial (including climate change)	Blackwater (2016) 1D-2D (ISIS-TUFLOW) Hydraulic Model (HM) Cam Phase 2 (2012) 1D-2D (ISIS-TUFLOW) HM Cam Rural (2014) 1D-2D (ISIS-TUFLOW) HM Chelmer (2020) 1D-2D model (ISIS-TUFLOW) HM Stansted Mountfitchet (2015) 1D-2D (ISIS-TUFLOW) HM Stort Tributaries (2015) – 1D-2D (ISIS-TUFLOW) HM Upper and Middle Stort (2010) 1D-2D (ISIS-TUFLOW) HM Upper Roding (2016) 1D-2D (ISIS-TUFLOW) HM	Environment Agency

Source of flood risk	Data used to inform the assessment	Data supplied by
	Flood Map for Planning Flood Zones	Environment Agency
Surface Water	Risk of Flooding from Surface Water dataset	Environment Agency
Sewers	Hydraulic Flooding Risk Register (HFRR)	Thames and Anglian Water
Groundwater	Areas Susceptible to Groundwater Flooding dataset Bedrock geology/superficial deposits datasets (online dataset)	Environment Agency
Reservoir	National Inundation Reservoir Mapping (Long term flood risk map)	Environment Agency
Flood Defences	Location and description of flood defences	Environment Agency
Cross-boundary impacts	Neighbouring authority sites and Local Plan information, to help assess cross-boundary impacts and the cumulative impact assessment	Braintree District South Cambridgeshire District North Hertfordshire District East Hertfordshire District Epping Forest District Chelmsford District
Other datasets	Partner Data Catalogue: <ul style="list-style-type: none"> - Source Protection Zones - National Receptor Database - Aquifer Designation Maps - Areas Susceptible to Groundwater Flooding - Detailed River Network - Flood Alert Areas - Flood Warning Areas - Flood Maps for Planning - Groundwater Vulnerability - Historic Flood Map - Risk of Flooding from Rivers and Sea 	Environment Agency (via UDC)

Flood risk source/ information source	Relevant sections of this SFRA	Result	Level of concern	Recommendations	Sequential and Exception Tests
Fluvial (Flood Zones)	5 - Understanding the risk in Uttlesford District	Significant proportion (e.g. greater than 50%) of site in Flood Zones (2 and 3)	High	Residential development on a site in this zone is unlikely to be appropriate unless the site is in an area benefitting from defence and can be made safe for the intended lifespan.	Sites in these categories should be explicitly addressed in a Sequential Test and may require preparation of further evidence to substantiate that Exception Test can be satisfied. Evidence from a Level 2 SFRA is required to demonstrate that the principle of development is supported.
		A proportion (e.g. less than 50%) of site in Flood Zones (2 and 3)	Medium	Residential development may be appropriate, sequential approach should be applied to avoid developing in flood zones as far as reasonable. Parts of the site within flood zone 1 should also be reviewed against the criteria described below.	
		Site located in Flood Zone 1	Medium	Residential development is probably appropriate in this zone, however catchments <3km ² in area are not covered by the Environment Agency Flood Zones and there may be a risk of flooding from small watercourses and/or other sources. These should be considered in conjunction with the DRN data and data on other sources of flooding. The surface water data in particular often highlights areas at risk of flooding from these smaller watercourses.	
Fluvial - Climate change	4 - Impact of climate change 5 - Understanding the risk in Uttlesford District	Significant proportion (e.g. greater than 50%) of site at risk of flooding from the future 1% AEP event	High	Residential development is unlikely to be appropriate unless the site is in an area benefitting from defence. Consideration should be given to the Standard of Protection of existing defences in relation to future climate change and any other measures necessary to provide appropriate standards of protection to proposed development.	Sites in these categories should be explicitly addressed in a Sequential Test and may require preparation of further evidence to substantiate that Exception Test can be satisfied. Evidence from a Level 2 SFRA is required to demonstrate that the principle of development is supported.
		A proportion (e.g. less than 50%) of site at risk of flooding from the future 1% AEP event	Medium	Residential development may be appropriate, sequential approach should be applied to avoid developing in the areas at risk of flooding as much as reasonable. Consideration should be given to the Standard of Protection of any defences in relation to future climate change and the commitment to deliver the required standards.	
		Site not at risk of flooding from the future 1% AEP event	Medium	Residential development is probably appropriate in this risk area, however this will depend on the present-day fluvial risk - refer to fluvial flood zone recommendations	

Flood risk source/ information source	Relevant sections of this SFRA	Result	Level of concern	Recommendations	Sequential and Exception Tests
Fluvial - Climate change proxy	4 - Impact of climate change 5 - Understanding the risk in Uttlesford District	Significant proportion (e.g. greater than 50%) of site at risk of flooding from the 0.1% AEP event when used as a proxy for climate change	High	Residential development is unlikely to be appropriate unless the site is in an area benefitting from defence. Consideration should be given to the Standard of Protection of existing defences in relation to future climate change and any other measures necessary to provide appropriate standards of protection to proposed development.	Sites in these categories should be explicitly addressed in a Sequential Test and may require preparation of further evidence to substantiate that Exception Test can be satisfied. Evidence from a Level 2 SFRA (including detailed modelling of the impact of climate change) is required to demonstrate that the principle of development is supported.
		A proportion (e.g. less than 50%) of site at risk of flooding from the 0.1% AEP event when used as a proxy for climate change	Medium	Residential development may be appropriate, sequential approach should be applied to avoid developing in the areas at risk of flooding as much as reasonable. Consideration should be given to the Standard of Protection of any defences in relation to future climate change and the commitment to deliver the required standards.	
		Site not at risk of flooding from the 0.1% AEP event when used as a proxy for climate change	Low	Residential development is likely to be appropriate based on this criterion.	
Surface Water	5 - Understanding the risk in Uttlesford District	Significant proportion (e.g. >50%) of site is affected by surface water flooding (across all three surface water events)	High	Development on a site in this risk area is unlikely to be appropriate unless measures (including drainage) are in place to control overland flow.	Evidence may be required from a Level 2 SFRA to demonstrate that the principle of development is supported
		A proportion (e.g. <50%) of site is affected by surface water flooding (across all three surface water events)	Medium	Development may be appropriate and consultations should be held with the Lead Local Flood Authority.	
		No risk of surface water flooding	Low	Development is likely to be appropriate based on this criterion.	

Flood risk source/ information source	Relevant sections of this SFRA	Result	Level of concern	Recommendations	Sequential and Exception Tests
Surface Water - Climate change	4 - Impacts of climate change 5 - Understanding the risk in Uttlesford District	Significant proportion (e.g. greater than 50%) of site at risk of surface water flooding from the future 1% AEP event	High	Development on a site in this risk area is unlikely to be appropriate unless measures (including drainage) are in place to control overland flow.	Evidence may be required from a Level 2 SFRA to demonstrate that the principle of development is supported
		A proportion (e.g. less than 50%) of site at risk of surface water flooding from the future 1% AEP event	Medium	Development may be appropriate and consultations should be held with the Lead Local Flood Authority.	
		Site not at risk of surface water flooding from the future 1% AEP event	Low	Development may be appropriate in this risk area, however this will depend on the present-day flood risk - refer to surface water recommendations	
Surface Water - Climate change proxy	4 - Impacts of climate change 5 - Understanding the risk in Uttlesford District	Significant proportion (e.g. greater than 50%) of site at risk of surface water flooding from the 0.1% AEP event when used as a proxy for climate change	High	Development on a site in this risk area is unlikely to be appropriate unless measures (including drainage) are in place to control overland flow.	Evidence may be required from a Level 2 SFRA (including detailed modelling of the risk from climate change) to demonstrate that the principle of development is supported
		A proportion (e.g. less than 50%) of site at risk of surface water flooding from the 0.1% AEP event when used as a proxy for climate change	Medium	Development may be appropriate and consultations should be held with the Lead Local Flood Authority.	
		Site not at risk of surface water flooding from the 0.1% AEP event when used as a proxy for climate change	Low	Development is likely to be appropriate in this risk area.	
Groundwater	5 - Understanding the risk in Uttlesford District	Historic records of groundwater flooding within or near a site	Medium	The effect of this will depend on the location and historic evidence of known problems - a site-specific FRA should consider overland flow paths once groundwater has emerged. It is unlikely that infiltration SuDS will be appropriate and groundwater monitoring should be recommended.	
		Risk of flooding from groundwater is not negligible	Medium	Development might be appropriate but a site-specific FRA should consider groundwater risk. A high likelihood may mean infiltration SuDS are not appropriate and groundwater monitoring should be recommended.	
		Negligible risk of flooding from groundwater	Low	Development is likely to be appropriate in this risk area, however as groundwater datasets are generally produced nationally it is recommended that ground investigations are carried out and reported on within a site-specific FRA where this is required (known to be a problem locally).	
	5 - Understanding the risk in	Maximum risk of flooding from reservoir inundation (is greater than 2m depth or 2m/s velocity)	High	Development on a site in this risk area might not be appropriate - this will be heavily dependent on the state of repair of the dam and the long term commitment to its management and maintenance. If development is considered, the local authority Emergency Planning team should be consulted to confirm that proposals can be safely implemented.	Level 2 SFRA required to provide evidence that the

Flood risk source/ information source	Relevant sections of this SFRA	Result	Level of concern	Recommendations	Sequential and Exception Tests
Reservoir inundation	5 - Understanding the risk in Uttlesford District	Maximum risk of flooding from reservoir inundation (is less than 2 m depth or 2 m/s velocity)	Medium	Risk of flooding from reservoirs should not rule out development as the likelihood of reservoir breach is low, however risk should still be considered by the developer at site-specific FRA stage and an emergency plan is likely to be required. The local authority Emergency Planning team should be consulted.	principle of development is supported
		No risk of reservoir inundation	Low	Development is likely to be appropriate in this risk area.	
Historic flood map	5 - Understanding the risk in Uttlesford District	Any part of site within historic flood extents	Medium	Sites located in areas that have historically flooded might be appropriate for development; however, further investigation will be required regarding the severity and frequency of the historic flooding and accuracy of the historic flood extent. This should be used alongside other information in the Level 1 SFRA to decide whether the site is appropriate for allocation. Technical work will be required to inform this at the site-specific FRA stage.	
		No risk of historic flooding	Low	Development is likely to be appropriate based on this criterion.	
Canal network	5 - Understanding the risk in Uttlesford District	Site within 100m of a Canal	Medium	Development might be appropriate in areas at risk of flooding from canals (unless the flood risk is fluvial and meets the criteria above). However, the risk should be considered by the developer at site- specific FRA stage and an emergency plan may be required. The Canal and Rivers Trust should be contacted to request information on overtopping and breach locations which could affect the site.	
		Site not within 100m of a Canal	Low	Development is likely to be appropriate based on this criterion.	
Detailed River Network	Appendix A mapping and 1 - watercourse maps	Any part of site within 20m of a watercourse (from the Detailed River Network dataset)	Medium	Sites located within 20m of the DRN line might be appropriate for development. Where the DRN goes through or adjacent to a site, the Flood Zones and surface water map should also be considered to further determine the effect on development. Where the DRN is located away from a site and land slopes down towards the site, development may be less appropriate than a site where land slopes down towards the watercourse and away from the site.	
		Site not within 20m of a watercourse (from the Detailed River Network dataset)	Low / Medium	Development is likely to be appropriate in this risk area, however not all watercourses are mapped on the Detailed River Network dataset, smaller drains may not be mapped and may need to be considered along with flood risk from other sources.	
Areas benefitting from defence	6 - Flood alleviation schemes and assets	Any part of the site is within an area benefiting from defence	Advisory	Development in this risk area is normally appropriate in principle, however, the performance of formal defences and residual flood risk will need to be considered and consideration given to the commitment and contributions required to maintain the appropriate standard of protection.	Level 2 SFRA required to provide evidence that the principle of development is supported
		The site is not in an area benefiting from defence	Low	Development is likely to be appropriate in this risk area if there is no risk of flooding from other sources on the site. See other recommendations if there is any risk of flooding.	

Flood risk source/ information source	Relevant sections of this SFRA	Result	Level of concern	Recommendations	Sequential and Exception Tests
Cumulative impacts	7 - Cumulative impact of development and strategic solutions	High - Any part of the site is within a High Cumulative Impact Zone	Medium	Development could be considered as appropriate, however, specific planning policy recommendations may need to be formulated. Drainage and flood risk reduction opportunities will probably need to be considered further within these catchments that may have financial and/or land take implications for the site and allay concerns of existing communities potentially at risk.	Level 2 SFRA may be required to provide evidence that the principle of development is supported
		Medium - Any part of the site is within a Medium Cumulative Impact Zone (unless the site is also within a High Zone)	Low / Medium	Development is likely to be appropriate in these risk areas, however if a Medium score has been identified based on a high amount of development then specific planning policy recommendations may need to be formulated. Drainage and flood risk reduction opportunities may need to be considered further within these catchments that may have financial and/or land take implications for the site.	
		Low - Any site not partially or fully within either High or Medium Cumulative Impact Zones	Low	Development is likely to be appropriate in this risk area.	

Appendix D - Flood Alert and Flood Warnings

Flood Alert Areas

Flood Alert Code	Flood Alert Name	Watercourse/s	Coverage
062WAF51PinceyBk	Pincey Brook from Takeley to Harlow	Pincey Brook	The Pincey Brook and its tributaries from Takeley to Harlow including Hatfield Broad Oak, Hatfield Heath and Sheering
051WAFEF6D	The lower River Chelmer	River Chelmer	The River Chelmer from the A138 at Chelmsford to Langford, the River Ter from A120 at Stebbing Green to Boreham, and the brooks around Sandon
052WAFUPCAM	Upper River Cam in Essex and Cambridgeshire	River Cam	River Cam from Newport to Whittlesford including the Slades
051WAFEF6BC	The Rivers Wid and Can	River Wid, River Can	The River Wid from Brentwood, to and including Writtle, and the River Can at Chelmsford
051WAFEF5	The Rivers Pant, Blackwater and Brain	Pant, Blackwater, Brain	The Rivers Pant and Blackwater from, Great Bardfield to Langford including Braintree, and the River Brain from, Black Notley to Witham
062WAF54UpRoding	Upper Roding	River Roding	The Upper River Roding including Molehill Green, Dunmow, Ongar, Fyfield, High Ongar and Stapleford
052WAFGRANTA	River Granta in Essex and Cambridgeshire	River Granta	River Granta from Linton to Babraham
051WAFEF1	The upper Stour and surrounding tributaries	Stour, Stour Brook, Bumpstead Brook	The upper Stour and surrounding tributaries, at Little Yeldham, Steeple Bumpstead, Haverhill, Kedington, Glemsford and Brockley, to and including, Sudbury
051WAFEF6A	The upper River Chelmer	Chelmer	The River Chelmer from Great Dunmow to Rivermead campus and the Industrial Estate in Chelmsford
062WAF51Stort	River Stort and Stansted Brook catchment	River Stort, Stansted Brook	The River Stort, Stansted Brook and their tributaries from Clavering to Hoddesdon including Stanstead Mountfitchet, Bishops Stortford, Sawbridgeworth and Harlow

Flood Warning Areas

Flood Warning Code	Flood Warning Name	Watercourse/s	Coverage
051FWFEF6A	The River Chelmer from Churchend to the Rivermead Industrial Estate in Chelmsford	River Chelmer	The River Chelmer from Churchend, through Great Dunmow, Hartford End, Howe Street and Little Waltham to the Rivermead Industrial Estate in Chelmsford
052FWFUCNL	River Cam at Henham, Newport and Littlebury	River Cam	Old Mead Road in Henham, North Hall Road in Quendon, London Road, Station Road, High Street, Bridge End, Willow Vale, Bury Water Lane, Belmont Hill and Cambridge Road in Newport, Duck Street in Wendons Ambo, Mill Lane and Walden Road in Littlebury
051FWFEF1A	Bumpstead Brook through Steeple Bumpstead to New England	Bumpstead Brook	Bumpstead Brook from Helions Bumpstead through Steeple Bumpstead and Broad Green to New England
062FWF51Bishop	River Stort at Bishops Stortford	River Stort	The River Stort at Bishops Stortford including Spellbrook
062FWF51Claverin	River Stort at Clavering and Manuden	River Stort	The River Stort at Clavering and Manuden
052FWFUCSW	Slades at Saffron Walden	River Cam	Thaxted Road, Peaslands Road, Farmadine, Radwinter Road, East Street, Hill Street, Gold Street, Cross Street, Market Walk, Market Row, George Street, High Street, Bartletts, Abbey Lane, Primes Close, Park Lane, Freshwell Street and Bridge Street
052FWFUCLCW	River Cam at Little Chesterford, Great Chesterford and Whittlesford	River Cam	High Street in Little Chesterford, Manor Lane, Newmarket Road and London Road in Great Chesterford, Church Street and Mill Lane in Ickleton, Hinxtion Hall and Mill Lane in Hinxtion, Mill Lane in Duxford and Mill Lane in Whittlesford

Appendix E – Summary of flood risk in Uttlesford District

The table below summarises the areas where there are notable flood risks within the district.

Area	Fluvial flood risk	Existing defences	Surface water flood risk	JBA detailed groundwater flood risk map grid code					Reservoir inundation risks	Key historic, recorded flood events
				4	3	2	1	0		
<p>The Great Ouse Catchment / North</p> <p>Saffron Walden, Newport, Debden, Greater Chesterford, Little Chesterford, Ashdon, Radwinter</p>	<p>The River Cam (or Granta) has its source near Widdington and continues as an Ordinary Watercourse for 4km. The Main River receives several tributaries, such as the Debden Water, Flufen Slade and The Slade. The Flood Zones of these rivers are generally confined in the low-lying floodplains of the river. However, it is a source of flood risk along its course for the settlements of Saffron Walden, Newport, Audley End, Little Chesterford and Great Chesterford. In Saffron Walden, the areas with the greatest flood risk due to expanse of the built-up area are the B1053, Audley Road and East Street, and near the convergence of the River Slade to the Cam/Granta as the Flood Zone expands out into the floodplain. Much of the Slade is heavily culverted here. The Flood Zones expand out further as the floodplain widens to the north of the whole catchment, affecting Greater Chesterford at the boundary of the Uttlesford district boundary spilling out onto South and Church Streets. In areas where rivers converge, such as the Debden Water with the River Cam/Granta, flood risk is also greater.</p> <p>The River Bourn, and the eastern tributaries of the River Cam, including Wicken Water, are mostly surrounded by smaller hamlets and towns amongst a rural setting such as Ashdon. The Flood Zones are mostly confined to the banks the narrow floodplain, so the risk is less here.</p>	None	<p>In the 30-year (high-risk) event, surface water follows the extent of the Flood Zones in most of the catchment, confined to the banks of the rivers due to the upland catchment topography. Surface water extents extend further than the Flood Zones, where water runs off higher ground, naturally flowing down to lower topography finding the tributaries. In more urbanised areas, such as Saffron Walden, surface water flow paths are present along some roads and streets. For example, it flows south from the main Slade tributary, towards Audley End Road along Saxon Way. This path then continues further south across Newport Road towards Rowntree Way. In other less built-up areas, such as Newport and Greater Chesterford surface water is generally confined to the river floodplains due to the confined topography, only flooding minorly on some of the smaller surrounding streets.</p> <p>There are flow paths that continue to converge towards the river floodplain network, and they flow mostly across rural land where there are topographic lows. There are several small, isolated ponds of surface water across the catchment. Although there is some impoundment of surface water along roads across the whole catchment, the surface water risk is fairly low.</p>	✓	✓	✓	✓	✓	<p>Flood warning information service (GOV.UK): There are no reservoirs at risk of overtopping near or in this catchment.</p>	<p>Historic and recorded flooding incidents held by Essex County Council (LLFA):</p> <ul style="list-style-type: none"> 2001 – Saffron Walden, Little Walden, Great Dunmow, Ashdon, Great Chesterford, Newport 2003 – Catchment wide flooding affecting all areas in first column 2007 – Ashdon 2009 – Ashdon 2009 – Saffron Walden 2014 – Saffron Walden, Debden, Newport, Ashdon 2017 – Saffron Walden
<p>North Essex Catchment/ East</p> <p>Thaxted, Great Easton, Mill End, Little End, Great Dunmow, Little Dunmow, Great Sampford</p>	<p>The River Chelmer flows south through the district down towards Chelmsford out of the district. It flows through the settlements of Thaxted, Great Easton. Here Flood Zones 2 and 3 are mostly confined to the banks of the river and floodplains, only affecting roads that cross it. It flows south towards Mill End and Great and Little Dunmow. Great Dunmow has the highest flood risk as it is the largest built-up settlement, affecting parts of the B1057, and Braintree Road; however, most of the residential areas are to the east and are less affected by flooding. The Stebbing Brook is predominantly surrounded by rural land and smaller villages. Flood risk becomes greater where it converges with the River Chelmer just south of the district boundary.</p> <p>The River Pant flows southwest towards Braintree out of the district. It flows by and near mostly</p>	None	<p>In the 30-year (high-risk) event, surface water follows the extent of the Flood Zones in most of the catchment, confined due to the steeper narrow topography. Surface water extents extend further than Flood Zones by flowing off nearby hills and converging towards unnamed tributaries and to some pond networks off the River Chelmer. In Thaxted, the surface water flow continues along the smaller tributary through the town and flows along Copthall Lane. In Great Dunmow, surface water extends out of bank down the B1256 and Woodland Park Drive affecting some of the built-up areas. Significant impoundment of water exists along the A120. Little Dunmow is located north of the confluence of the River Chelmer and Stebbing Brook, and there are several surface water flow paths</p>	✓	✓	✓	✓	✓	<p>Flood warning information service (GOV.UK): There is a pond near the laundry cottage at Little Easton with an inundation pathway that flows south along the River Chelmer. It is confined to the banks of the river and does not affect any properties.</p>	<p>Historic and recorded flooding incidents held by Essex County Council (LLFA):</p> <ul style="list-style-type: none"> 2001 – Great Dunmow, Thaxted, Great Sampford 2003 – Catchment wide flooding affecting all areas in first column 2009 – Great Dunmow 2012 – Little Dunmow and Great Dunmow 2014 – Thaxted 2016 – Great Dunmow

	<p>smaller hamlets and towns amongst a rural setting, such as Ashdon. The Flood Zones are mostly confined to the narrow floodplain, so the risk is less here.</p>		<p>that converge here from flow paths along the smaller streets and Station Road.</p> <p>Along the River Pant, surface water extends further around the Flood Zones, particularly near Great Sampford. There are flow paths that continue to flow towards the river floodplain network and Flood Zones, and they flow mostly across rural land where there are topographic lows, particularly along Stebbing Brook. Although there is some impoundment of surface water along roads across the whole catchment, the surface water risk is fairly low.</p>							
<p>Thames Catchment/ South East</p> <p>Stansted Mountfitchet, Elsenham, Takeley, Clavering, Little Hallingbury, Manuden</p>	<p>The River Stort flows south passing Clavering, towards the southeast of the district. It converges with the Stansted Brook (a tributary of the Stort) just southeast of Stansted Mountfitchet. Along the Stort, the Flood Zones are mostly contained in bank, with some places where Flood Zone 2 extends on the floodplain of the river, where there are a number of small villages and roads here. There is an increased risk of flooding near Stansted Mountfitchet as it is the largest built-up area along this river, particularly around High Lane, the train station and train line.</p> <p>Along the Pincey Brook, the Flood Zones are quite expansive at the northern-most end, in between Takeley and Stansted Airport affecting the A120 (although the surrounding area is not very urbanised here), then also further south near Hatfield Broad Oak. Otherwise, most of the Flood Zone is surrounded by rural areas and smaller villages.</p> <p>The River Roding flows south out of the district, where Flood Zones 2 and 3 and generally confined to the narrow floodplain. It flows by and near mostly smaller hamlets and towns amongst a rural setting. The Bourne Brook is a small tributary and flows south; again Flood Zones are confined to the floodplain of the river and surrounded by smaller hamlets, so the risk is low.</p>	None	<p>In the 30-year (high-risk) event, surface water follows the extent of the Flood Zones in most of the catchment, confined to the river floodplains due to the narrow topography. Across the district, surface water flows extend further than Flood Zones from flowing from higher ground towards the course of smaller tributaries, for example off the Bourne Brook. There is some surface water impoundment along the train line (extending to Elsenham) and Silver Street in Stansted Mountfitchet. Further south, there is high-risk water impoundment along the A120 near Pincey Brook, and across the district. There is also impoundment along the built-up areas of Stansted Airport and along the runways. To the south-eastern area of the district, there is impoundment of surface water along the M11, where it has been channelled down the banks of the River Stort. Although there is some impoundment of surface water along roads across the whole catchment, the surface water risk is fairly low.</p>	✓	✓	✓	✓	✓	<p>Flood warning information service (GOV.UK): There is an inundation pathway that flows from a series of ponds near Takeley down the Pincey Brook out of the district. It is confined to the banks of the river and does not affect any properties.</p>	<p>Historic and recorded flooding incidents held by Essex County Council (LLFA):</p> <ul style="list-style-type: none"> • 2001 – Clavering, Stansted Mountfitchet, Elsenham, Takeley, Hatfield Heath. • 2002 – Clavering • 2003 - Catchment wide flooding affecting all areas in first column • 2009 – Stansted Mountfitchet • 2009 – Stansted Mountfitchet • 2012 – Little Hallingbury • 2014 – Stansted Mountfitchet and Clavering

Appendix E - Flood history in the district

Sources of flood event data

Records of local flooding incidents have been collected from a range of sources and used to inform the SFRA. These sources of information are summarised below:

Source	Data	Description	When provided/ updated?
Environment Agency (North East Thames)	Stort Modelling and Mapping Flood Risk Hydraulic Modelling and Mapping Final Technical Report ¹	Environment Agency hydraulic modelling and mapping study undertaken for the Upper and Middle Stort.	2010
Environment Agency (North East Thames)	Flood Data Recording Reports	Flood recording sheets for flood events between February 2010 and January 2015 on the River Roding.	Feb 2010 - Jan 2015
Essex CC	Preliminary Flood Risk Assessment ²	High level overview of flood risk from surface water, groundwater and Ordinary Watercourses across Essex. Flood risk data and records of historic flooding were collected from a number of local and national sources.	2011, updated 2017
Essex CC	Lead Local Flood Risk Management Strategy ³	High level strategy to understand and manage local (surface water, Ordinary Watercourse and groundwater) flood risk within Essex.	2013, updated 2018
Essex CC	Flood incidents	Excel spreadsheet of historical incidents of flooding within the Uttlesford District.	Oct 2001 - Jul 2014
Essex CC	Fire service flood incidents	Excel spreadsheet of incidents of flooding the fire service has dealt with within the Uttlesford District.	Jun 2009 - February 2010
Essex CC	Flood investigation reports	Flood investigation reports for Thaxted ⁴ , Lower Road Little Hallingbury ⁵ and Old Mead Lane Henham ⁶ , Saffron Walden and Great Dunmow respectively.	2015, 2013 and 2013, 2016, 2017 respectively
Uttlesford DC	Uttlesford Strategic Flood Risk Assessment ⁷	The first SFRA Uttlesford produced in 2008.	March 2008
Environment Agency	Historic Flood Map	A GIS layer showing areas of Historic flooding	2021

¹ Halcrow Group Ltd (March 2010) Stort Modelling and Mapping Flood Risk Hydraulic Modelling and Mapping Final Technical Report

² Essex County Council (January 2011) Preliminary Flood Risk Assessment Final Report

³ Essex County Council (February 2013) Lead Local Flood Risk Management Strategy

⁴ Essex County Council (July 2015) Flood Investigation Report Thaxted

⁵ Essex County Council (July 2015) Flood Investigation Report Lower Road, Little Hallingbury

⁶ Essex County Council (April 2013) Flood Investigation Report Old Mead Lane, Henham

⁷ Uttlesford District Council (March 2008) Strategic Flood Risk Assessment

Source	Data	Description	When provided/ updated?
Uttlesford DC	Uttlesford Water Cycle Study - Stage 1: Scoping and Outline Strategy ⁸	Document to ensure water supply, wastewater collection and wastewater treatment infrastructure in the district can accommodate the required growth levels whilst minimising flood risk.	2010, updated 2018
Uttlesford DC	Uttlesford Water Cycle Study - Stage 2: Detailed Strategy ⁹	Document to ensure water supply, wastewater collection and wastewater treatment infrastructure in the district can accommodate the required growth levels whilst minimising flood risk.	2012
Internet	Flood Mapping Study of River Bourn in Ashdon.	Study of River Bourn and its tributaries through Ashdon village.	2008
Internet	Newspaper reports of flood events	Online reports of historic flood events in Uttlesford.	2014

Flood event data records

⁸ Uttlesford District Council (January 2010) Uttlesford District Council Water Cycle Study Stage 1: Scoping and Outline Strategy

⁹ Uttlesford District Council (November 2012) Uttlesford District Council Water Cycle Study Stage 2: Detailed Strategy

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
10 November 1875	The Slade	Saffron Walden	Uttlesford SFRA ¹⁰	1.02 inches of rain fell in two to three hours during the night and resulted in flooding.
5 August 1917	The Slade	Saffron Walden	Uttlesford SFRA ¹¹	3.08 inches of rain recorded in 2 hours caused much flooding.
1947	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon ¹²	No details available.
19 September 1960	The Slade	Saffron Walden	Uttlesford SFRA	Police worked late into night placing warning traffic lights on flooded roads; houses in some villages completely covered by flood water. 'Remarkable' rainfall in Framlingham, Suffolk of 1.5 inches in 45 minutes.
1968	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon	Was due to 'freak' storm
1978	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon	No details available.
19 June 1987	River Bourne	Ashdon	Uttlesford SFRA / Flood Mapping Study of River Bourn in Ashdon	Heavy storm over 40mm in 1 hour. 22 properties including 9 residential properties flooded.
29 July 1987	River Bourne	Ashdon	Uttlesford SFRA / Flood Mapping Study of River Bourn in Ashdon	Heavy storm after prolonged rainfall. 17 properties including 8 residential properties flooded.
25 August 1987	River Bourne	Ashdon	Uttlesford SFRA / Flood Mapping Study of River Bourn in Ashdon	Persistent rainfall. 9 properties including 4 residential properties flooded.
9 October 1987	River Bourne	Ashdon	Uttlesford SFRA / Flood Mapping Study of River Bourn in Ashdon	40mm of rainfall in two days. 11 properties including 5 residential properties flooded. Road at Knox End flooded.
19 November 1987	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon	Minor property flooding
1993	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon	No details available

¹⁰ Uttlesford District Council (March 2008) Strategic Flood Risk Assessment / JBA (2007) River Slade Standard of Protection Study. On behalf of the Environment Agency.

¹¹ Uttlesford District Council (March 2008) Strategic Flood Risk Assessment

¹² JBA Consulting (October 2008) Flood Mapping Study of River Bourn in Ashdon. On behalf of Uttlesford District Council.

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
August 1998	Ordinary Watercourse	Henham	Old Mead Lane Flood Investigation Report ¹³	The most severe flooding incident to occur along Old Mead Lane was in August 1998 when four properties were flooded internally. Since then [until April 2013] it has been suggested that there have been a further 4 or 5 flood incidents although these haven't led to all four properties being flooded internally. Flooding occurs due to overtopping of an Ordinary Watercourse which follows Old Mead Lane along its northern side flowing East to West. Upstream flows are contributed to by field drainage ditches draining the surface water from arable use farmland and Old Mead Lane and properties along it. Photographic evidence supplied by residents of the 1998 flood incident shows Old Mead Road disappearing under a channel of fast flowing water where flood water has overtopped the Ordinary Watercourse. It has been reported that during flood incidents much of Old Mead Lane becomes consumed by flood water along with at least four properties during the most severe events.
2000	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon	No details available
1 May 2000	Groundwater	Debden Green	PFRA ¹⁴	Water in pit in garden
October 2001	Confluence River Stort / Stickling Green Brook	Clavering	River Stort hydraulic modelling report ¹⁵	Floods at High Street and properties at The Druce; Properties at right bank of the River Stort immediate south of High Street Back of Sewage Works
	River Stort	Manuden	River Stort hydraulic modelling report	Properties at upstream and downstream Pinchpools Road including school, Cock Farm and the Hall
	Ugely Brook	Stansted Mountfitchet	River Stort hydraulic modelling report	Back up from culvert inlet and floods at properties and commercial premises at Lower Street (B1351)/Gall End Lane
	Stansted Brook	Stansted Mountfitchet	River Stort hydraulic modelling report	Elms Farm south of Railway Line (East of Church Road)
	Cam and Granta	Great Chesterford, Littlebury and Newport	Uttlesford SFRA ¹⁶	3 properties and 4 garages affected in Great Chesterford. 4 properties in Littlebury affected. 4 properties in Newport affected.
	The Slade	Saffron Walden and Little Walden	Uttlesford SFRA ^{Error! Bookmark not defined.}	19 properties affected in Saffron Walden, 5 properties affected in Little Walden
	River Chelmer	Great Dunmow	Uttlesford SFRA ^{Error! Bookmark not defined.}	10 Houses flooded. Riverside Close no. 2-7, water level 51.159m AOD Churchend no.1-2 The Six Bells and Falcons, water level 53.084 and 53.223m AOD
	River Bourne	Ashdon	Uttlesford SFRA	18 properties affected

¹³ Essex County Council (April 2013) Flood Investigation Report Old Mead Lane, Henham

¹⁴ Essex County Council (January 2011) Preliminary Flood Risk Assessment Final Report

¹⁵ Halcrow Group Ltd (March 2010) Stort Modelling and Mapping Flood Risk Hydraulic Modelling and Mapping Final Technical Report

¹⁶ Uttlesford District Council (March 2008) SFRA / Black and Veatch (2005) River Chelmer Strategy Study. Hydraulic Modelling of the River Chelmer: Thaxted to Beeleigh Falls. for the EA.

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
21 October 2001	Unknown	Ashdon, Birchanger, Debden, Elsenham, Great Chesterford, Great Dunmow, Great Sampford, Hatfield Heath, Hazelend, Hempstead, Howe Green, Little Walden. Manuden, Monk Street., Newport, Saffron Walden, Stansted Mountfitchet, Stebbing, Thaxted, Wendens Ambo, White Roding, Wimbish Green	Flood incident spreadsheet	71 flood incidents reported. Locations widespread across the district.
21 October 2001	River Bourne	Ashdon	Flood Mapping Study of River Bourn in Ashdon	Post flood survey done by the Environment Agency. This event was 3 inches higher than previous highest recorded (June 1987) 93mm rainfall over two days 20/21.
22 October 2001	Unknown	Arkesden, Ashdon, Birchanger, Chrishall, Clavering, Debden, Great Dunmow, Great Chesterford, Great Sampford, Hadstock, Hempstead, Henham, Littlebury, Lt. Walden, Manuden, Radwinter, Saffron Walden, Stebbing, Swards End, Takeley, Stansted Mountfitchet, Thaxted, White Roding, Wicken Bonhunt, Wimbish.	Flood incident spreadsheet	95 flood incidents reported. Locations widespread across the district.
2002	River Stort	Clavering and Langley Lower Green	Uttlesford SFRA	Post flood reports have been compiled by the Environment Agency Hatfield.
30 July 2002	Unknown	Saffron Walden	Flood incident spreadsheet	3 flood incidents reported (Saxon Way and Bridge Street, Saffron Walden; Bridge End, Newport)
3 August 2002	Unknown	Saffron Walden	Flood incident spreadsheet	7 flood incidents reported (Saxon Way and High Street, Saffron Walden; Bridge End, Newport; Commercial properties on King Street and George's Hill St, Saffron Walden)
5 August 2002	Unknown	Saffron Walden & Debden	Flood incident spreadsheet	2 flood incidents reported (High St, Debden and Limefields Saffron Walden)
9 September 2002	Unknown	Gt Chesterford, Henham, Saffron Walden	Flood incident spreadsheet	7 flood incidents reported (South St, Great Chesterford; Weekly News, Saffron Walden; Rowntree Way and Hargrave Close Saffron Walden)
18 October 2002	Unknown	Saffron Walden	Flood incident spreadsheet	1 flood incident reported (Whiteshot Way)
12 November 2002	Unknown	Arkesden, Manuden & White Roding	Flood incident spreadsheet	8 flood incidents reported (Wicken Road, Arkesden, The Street Manuden and Church Lane, White Roding)

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
1 January 2003	Unknown	Molehill Green, Henham, Lt. Canfield, Newport, Wicken Bonhunt,	Flood incident spreadsheet	6 flood incidents reported (Brown End Road, Molehill Green; Old Mead Lane, Elsenham; Stortford Road, Lt. Canfield; Bridge End, Newport and The Meads, Wicken Bonhunt).
2 January 2003	Unknown	Arkesden, Berden, Clavering, Debden, Duddenhoe End, Elmdon, Felsted, Great Dunmow, Great Easton, Great Hallingbury, Great Sampford, Henham, Littlebury, Manuden, Newport, Radwinter, Rickling Green, Saffron Walden, Swards End, Stansted Mountfitchet, Takeley, Thaxted, White Roding, Wimbish Lower Green and Wimbish	Flood incident spreadsheet	61 flood incidents reported. Locations widespread across the district.
3 January 2003	Unknown	Berden, Debden and Stebbing	Flood incident spreadsheet	3 flood incidents reported (White House Farm, Berden; High Street Debden and Mill Lane, Stebbing)
15 January 2003	Unknown	Ugley	Flood incident spreadsheet	1 flood incident reported (Old School House, Ugley)
14 June 2007	River Bourne	Ashdon	Uttlesford SFRA Flood Mapping Study of River Bourn in Ashdon	Affected Church Hill Road (not shown to be in Flood Zone 3) 76mm of rainfall in two days. 14 properties flooded and roads blocked. Severe disruption and more severe than recent past events. David Green, Clerk to the parish council recorded for the 2007 event: "I received a call at approximately 1900 to say the Village Hall had started to flood and that it was being bailed out. I rang the UDC Emergency response number at approx 1940 to request sandbags. The call was returned at approx 2000 by the Emergency Planning Officer. The police were also notified at this time about the flooding of the Ashdon/Radwinter Road. By this time, it had stopped raining and the river was rising fast. It started to break its banks and cause serious flooding of the Village Hall at 2100 at which time the sandbags had arrived. The river continued to rise and completely surrounded the Village Hall, Crown Hill was severely flooded and was impassable. The village was completely cut off due to flooding at Bartlow, Steventon End, Plumtree Grove and the bridge at Ridgeons on the Ashdon Road. The water peaked and started to recede at approx 21:30." The houses at Water End were flooded to waist depth and at 6 Church Hill it is believed that water reached the highest level in 35 years.
February 2009	River Bourne	Ashdon	Uttlesford WCS - Stage 1	A fluvial flood event in June 2007 in Ashdon (UDC have since confirmed that a similar fluvial flood event took place here as recently as February 2009)

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
15 June 2009	Unknown	Great Chesterford	Fire service incident spreadsheet	Great Chesterford Primary School. Flooding within school affecting electrics.
26 June 2009	Unknown	Saffron Walden	Fire service incident spreadsheet	3 flood incidents reported. High Street, Saffron Walden, a manhole cover come up and flooding in the street. High Street, Saffron Walden, flooding by computer system. Hatherley Elderly Peoples Home, Chaters Hill, Saffron Walden.
7 July 2009	Unknown	Great Dunmow	Fire service incident spreadsheet	3 flood incidents reported. Two residential properties on Willow Road (Flooding due to rain into garages; Flooding in garden) and one property on Stacey Court, Great Dunmow (flooding entering back door).
9 July 2009	Unknown	Stansted Mountfitchet	Fire service incident spreadsheet	1 flood incident reported. Spencer Close. Flooding affecting electrics. Pumping required.
29 January 2010	Unknown	Stansted Mountfitchet	Fire service incident spreadsheet	1 flood incident reported. Cambridge Road. Flooding in cellar and affecting electrics. Pumping required.
28 February 2010	Unknown	Broxted	Fire service incident spreadsheet	1 flood incident reported. The Maltings, Broxted. Car stuck in flood water. Rescue or evacuation from water.
11 October 2011	Groundwater	Hatfield Broad Oak	PFRA	Clay and London Clay Drainage problem
April 2012	Ordinary Watercourse	Henham	Old Mead Lane Flood Investigation Report	The most recent flood [as of April 2013] incident (along Old Mead Lane) affecting at least one property internally took place in April 2012.
3 May 2012	Possible blocked ditch	Saffron Walden	Flood incident spreadsheet	2 flood incidents reported (Summerhill Road). Letters sent to landowners regarding ditch clearance.
15 May 2012	Ordinary Watercourse	Tilty	Flood incident spreadsheet	1 flood incident reported (Abbeygates). Outbuildings and cellar flooded.
16 May 2012	Ordinary Watercourse	Chrishall	Flood incident spreadsheet	1 flood incident reported (The Red Cow pub). Flooding foundations of extension to pub. Highways maintenance was subsequently carried out.
28 May 2012	Surface water, possibly blocked ditches	Little Dunmow	Flood incident spreadsheet	1 flood incident reported (New Key, The Street). 1 residential property affected. Letters sent to landowners.
14 July 2012	Possibly runoff from fields	Little Hallingbury	Flood incident spreadsheet	1 flood incident reported (The Thatch, Lower Road). Property flooded on 4 separate occasions since 2005 (2 internally). Flood investigation carried out.
	Surface water	Little Hallingbury	Lower Road Flood Investigation Report ¹⁷	Flooding at this location has led to the internal flooding of at least one property on more than one occasion, the most recent incident occurred on July 14th 2012. Following heavy and prolonged rainfall events, surface water is observed flowing off a field and onto the A1060 Lower Road. Surface water then ponds at the low point in the highway before it reaches a depth where it overtops the kerb line and spills into adjacent property.
20 July 2012	Ordinary Watercourse	Henham	Flood incident spreadsheet	1 flood incident reported (Old Mead Lane). 4 properties affected with 5 properties affected (not clear if internal) regularly in heavy storm event. Flood investigation carried out.
1 November 2012	Unknown	Great Dunmow	Flood incident spreadsheet	1 flood incident reported (Beaumont House, Beaumont Hill).

¹⁷ Essex County Council (July 2015) Flood Investigation Report Lower Road, Little Hallingbury

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
2 August 2013	Highway culvert blocked	Duton Hill	Flood incident spreadsheet	1 flood incident reported (Brick House Farm, Cherry Street). Outhouses flooded.
31 January 2014	Highway	Arkesden	Flood incident spreadsheet	1 flood incident reported (Sextons, Arkesden). Driveway flooded
7 February 2014	Surface water	Rickling Green	Flood incident spreadsheet	1 flood incidents reported (Brick Kiln Lane). Internal flooding reported. 1 residential property affected.
	Unknown	Saffron Walden		1 flood incidents reported (Lavender Fields). Internal flooding reported. 1 residential property affected.
	Ditch unable to cope with amount of water	Henham		1 flood incidents reported (The Willows, Old Mead Lane). Flooding of garage with signs of salt deposits on conservatory tiles but water did not enter. 3 residential properties affected.
	Unknown	Wicken Bonhunt		1 flood incidents reported (Wisbey Cottage). Flooding to garden and walkway.
	Surface water	Arkesden		1 flood incidents reported (Sextons). Internal flooding reported.

	<p>River Stour, River Cam, The Slades and surface water</p>	<p>Saffron Walden, Newport, Wendens Ambo, Debden, Stansted Mountfitchet, Arkesden, Ashdon, Quendon, Henham,</p>	<p>Cambridge news¹⁸</p>	<p>"Residents in flats in Saffron Walden had to be rescued by a fire service boat as heavy overnight rain caused flooding. Firefighters were called out early this morning to assist with rescuing residents affected by flood waters in Saffron Walden. At 5am today, crews from Saffron Walden, Harlow and Waltham Abbey were called to 20 flats on Radwinter Road affected by flood waters. Firefighters rescued eight adults, including two disabled people from a ground floor flat, two children and two dogs from The Spike flats. Crews used the rescue boat to assist the residents to safety by 8am. Just before 12pm today, an 84-year-old disabled man had to be rescued from his car which got stuck in 12 inches of flood water on Ashdon Road, Saffron Walden.</p> <p>A number of schools have been closed because of flooding including: Saffron Walden County High School (SWCHS), Newport Free Grammar School, Newport Primary, Clavering Primary and Rickling Primary. SWCHS students have been assembled in Saffron Hall and the Boatman Centre until they can return home safely.</p> <p>Since 4am this morning Essex fire crews have dealt with at least 70 incidents involving flood waters in the Saffron Walden area. Crews have been pumping water from flooded homes and rescuing motorists trapped in flood water in Saffron Walden, Newport, Wendens Ambo, Debden, Stansted Mountfitchet, Arkesden, Ashdon, Quendon and Henham.</p> <p>In Saffron Walden, there was severe flooding on Elizabeth Way - where a car was almost completely underwater - Thaxted Road, Radwinter Road and Victoria Avenue.</p> <p>Parts of the Audley End Miniature Railway is also under water and ducks are swimming on the fairy walk in the woods.</p> <p>In Newport, roads have been closed due to severe flooding and a vehicle was trapped in flood water under a railway bridge.</p> <p>Severe flooding has affected the M11 around Stansted Mountfitchet after the motorway was closed northbound following a multi-vehicle accident. Flooding has also resulted in Elsenham being cut off and shops in Lower Street, Stansted Mountfitchet, being flooded.</p> <p>The Queens Head pub in Stansted Mountfitchet was also flooded. Elsenham Golf's course is also closed, though the driving range, gym and restaurant remain open.</p> <p>The Environment Agency has issued two flood warnings and several alerts for rivers across Essex.</p> <p>A spokesman for the police said "many minor roads and some major routes" had been affected by high water and urged drivers to avoid using such roads "whenever possible".</p> <p>A fire service spokesman said its crews had rescued a number of people trapped by flooding, pumped water from flooded homes and rescued motorists trapped in flood water."</p>
--	---	---	------------------------------------	--

¹⁸ Cambridge News (07/02/14). Accessed at <http://www.cambridge-news.co.uk/UTTLESFORD-FLOODS-Residents-rescued-homes-schools-closed-Saffron-Walden-area/story-22381892-detail/story.html> on 30/09/2015.

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
	River Stour, River Cam, The Slades and surface water	Saffron Walden, Newport, Wendens Ambo, Debden, Stansted Mountfitchet, Arkesden, Ashdon, Quendon and Henham.	BBC news - Essex ¹⁹	"Thousands of pupils were sent home and residents rescued by boat after heavy rain in Essex caused flooding. The occupants of 20 flats in Radwinter Road, Saffron Walden, were helped to safety by fire crews. The service received more than 200 calls about flooding from people in the north and west of the county. Flood warnings for five rivers - the Stour, Brook, Chelmer, Colne and Box were issued by the Environment Agency. Amanda Jane Richards, of Saffron Walden, said: "All the fields are under water"... "A lot of the roads are so badly flooded they are shut, so basically we can't get out of the village." A number of schools were closed because of flooding including Clavering Primary School near Saffron Walden, Newport Free Grammar, Newport Primary and the 2,000-pupil Saffron Walden County High School. Soldiers from Carver Barracks at Wimbish were sandbagging properties affected by flooding just outside Saffron Walden. The authority said in "preparation for the potential of further flooding over the weekend" it would be checking culverts in the area and removing any debris it finds. A fire service spokesman said its crews had rescued a number of people trapped by flooding, pumped water from flooded homes and rescued motorists trapped in flood water. The areas affected were in been in the north-west of the county and crews had been to incidents in Saffron Walden, Newport, Wendens Ambo, Debden, Stansted Mountfitchet, Arkesden, Ashdon, Quendon and Henham."
	Surface water	Rickling Green	Flood incident spreadsheet	1 flood incidents reported (Brick Kiln Lane). Internal flooding reported. 1 residential property affected.
10 March 2014	Surface water	Webdons Ambo	Flood incident spreadsheet	1 flood incidents reported (Old Rectory Cottage). Internal flooding. 5 residential and 1 commercial property affected.
19 March 2014	Unknown	Manuden	Flood incident spreadsheet	1 flood incidents reported (The Street)
27 July 2014	Unknown	Thaxted	Flood incident spreadsheet	1 flood incidents reported (Barnards Field). Not internal flooding, flooded garden and garage. 1 commercial property affected.

¹⁹ BBC News - Essex (7 February 2014). Accessed online at <http://www.bbc.co.uk/news/uk-england-esssex-26082119> on 30/09/2015.

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
28 July 2014	Ordinary Watercourse and surface water	Thaxted	Thaxted Flood Investigation Report ²⁰	Thaxted has experienced flooding on several occasions, with the most significant event experienced in recent years taking place on 28th July 2014. During this event a very large storm led to flooding in excess of 10 properties. The majority of flooding was centred on two areas in the town, to the north and the east. In the north of the town the source of flooding was from the Ordinary Watercourse running from north to south, whilst in the east of the town the source was reportedly runoff from the fields. Anecdotal evidence from residents suggested that in some locations floodwaters reached in excess of 20-30cm within residential properties and caused substantial damage, resulting in some residents requiring temporary alternative accommodation.
23 November 2014	River Stort	Clavering, Berden, Manuden, Wimbish	Herts & Essex Observer ²¹	"Persistent heavy rain today [23/11/14] has brought a return of flooding to villages that were badly affected by the great deluge on February 7. Earlier today the Environment Agency issued a flood warning - meaning flooding is expected and immediate action is required - for the River Stort at Clavering, but this has since been downgraded to a flood alert - meaning flooding is possible, be alert. Elsewhere, the stream along the main road into Berden has burst its banks and flooded the road, Manuden is flooded as a result of a blocked pipe in Mallows Green Road and the road from Saffron Walden to Thaxted is flooded by Wimbish."
23 June 2016	River Cam/The Slade	Great Dunmow, Wimbish, Elmdon	Flood Investigation Report	Heavy rainfall caused flooding to houses in the locations mentioned. Number of properties recorded to be confirmed.
18 and 19 July 2017	Surface Water	Saffron Walden	Flood Investigation Report	Approximately 10 properties experienced internal flooding causing several residents to be temporarily relocated, the flooding was reported to be up to 120mm deep. Flooding reported to be due to predominantly an overland flow with one location identifying with a localised watercourse. Locations include Gabriel Street, St Johns Close, Debden Street (x2), Shepherd Way, Ashdon Road, Castle Street, Abbey Lane (x2).
Not specified	Ugley Brook	Stansted Mountfitchet	Uttlesford SFRA	Backing up from culverted section affects Gall End Lane and Lower Street.
Not specified	Tributary of River Pant	Great Sampford	Uttlesford SFRA	Properties in Sparepenny Lane South, Parsonage Farm Lane, Watson's Close, and Monk's Corner affected.
Not specified	River Stort	Maunden	Uttlesford SFRA	Properties in The Street, Pinchpools Road, Watts Yard, and Mallows Green Road affected.
Not specified	Cam and Wicken Water	Newport	Uttlesford SFRA	Properties in Water Lane, Cambridge Road, White Horse Lane, and the sewerage works affected. Properties at the back of Bury water Cottages affected.
Not specified	The Slade	Saffron Walden	Uttlesford SFRA	Properties in Bridge End, Friends Walk, St John's Close and Rowntree Way affected.
Not specified	Stansted Brook	Stansted Mountfitchet	Uttlesford SFRA	Properties at either end of Blythwood Gardens, and properties in Lower Street affected.
Not specified	Tributary of Pincey Brook	Takeley	Uttlesford SFRA	Properties in Roseacres, South Road, Jack's Lane and Warren Close affected.

Date	Watercourse / Type of flooding	Town / village affected	Source	Details of flood event
Not specified	Tributary of River Chelmer	Thaxted	Uttlesford SFRA	Properties in Copthall Lane and Mill Lane/Dunmow Road affected.
Not specified	Cam	Great Chesterford	Uttlesford SFRA	Properties in Cambridge Road, Ickleton Road, Walden Road, Sewerage Pumping Station and Playing Field affected.
Not specified	Tributary of Cam	Elsenham	Uttlesford SFRA	Properties in Old Mead Road affected.
Not specified	River Stort	Clavering	Uttlesford SFRA	Properties in The Druce, High Street, Middle Street, and Colehill Lane affected.
Not specified	Unknown	Saffron Walden, Stansted Mountfitchet and Newport	Dunmow Broadcast ²²	<p>Three Uttlesford roads labelled flooding 'hotspots' are among those set to benefit from portion of £1m emergency fund</p> <p>Elizabeth Way in Saffron Walden, Lower Street in Stansted Mountfitchet and the area near the railway bridge on Cambridge Road, in Newport, have all been identified following a hastily arranged meeting of councillors and officers.</p> <p>Uttlesford District Council has yet to confirm the final five but, according to the chairman of Stansted Parish Council, three are set in stone and two more will be finalised tomorrow.</p> <p>Action will also be taken to clear culverts, empty and jet gullies and remove debris.</p>

²⁰ Essex County Council (July 2015) Flood Investigation Report Thaxted

²¹ Herts & Essex Observer (23 November 2014). Accessed online at <http://www.hertsandessexobserver.co.uk/pictures/Flood-warning-River-Stort-deluge-heavy-rain/pictures-24628348-detail/pictures.html> on 30/09/2015.

²² Dunmow Broadcast (13 February 2014). Accessed online at http://www.dunmowbroadcast.co.uk/news/three_uttlesford_roads_labelled_flooding_hotspots_are_among_those_set_to_benefit_from_portion_of_1m_emergency_fund_1_3320242 on 30/09/2015.

Agenda Item 6

Committee: Local Plan Leadership Group

Date:

29 November 2021

Title: Development Options Process

Report Author: Stephen Miles, Local Plans and New Communities Manager

smiles@uttlesford.gov.uk

Summary

1. This report describes the process for identifying development options for evaluation in the emerging local plan.

Recommendations

2. That the Group note the process for identifying development options and the next steps in this local plan work.

Financial Implications

3. The preparation of the local plan described in this report is provided for in the approved local plan budget of the Council.

Background Papers

- Uttlesford Local Plan Project Initiation Document (PID)
- Uttlesford Local Development Scheme (LDS)

Impact

Communication/Consultation	The local plan timetable is in three stages for people to make representations on the draft local plan.
Community Safety	No impact
Equalities	Forthcoming policies will be subject to an Equalities and Health Impact Assessment (EqHIA)
Health and Safety	No impact
Human Rights/Legal Implications	Preparation of a local plan is a statutory duty. It needs to meet legal tests and comply with regulations.

Sustainability	Forthcoming policies will need to meet the sustainability objectives of the Council and the Local Plan will be subject to a Sustainability Appraisal.
Ward-specific impacts	All
Workforce/Workplace	No impact

Situation

4. On 29 April 2021 the Local Plan Leadership Group agreed a methodology and work programme for preparation of the new Uttlesford Local Plan which set out a five step process of Strategic Land Availability Assessment (SLAA). This report describes the sixth step in the process, the generation of development options (often referred to as 'reasonable alternatives').
5. The preparation of a local plan is required to follow the requirements of the National Planning Policy Framework in order to be found 'sound'. One of the fundamental requirements is that the provisions in a local plan can be:

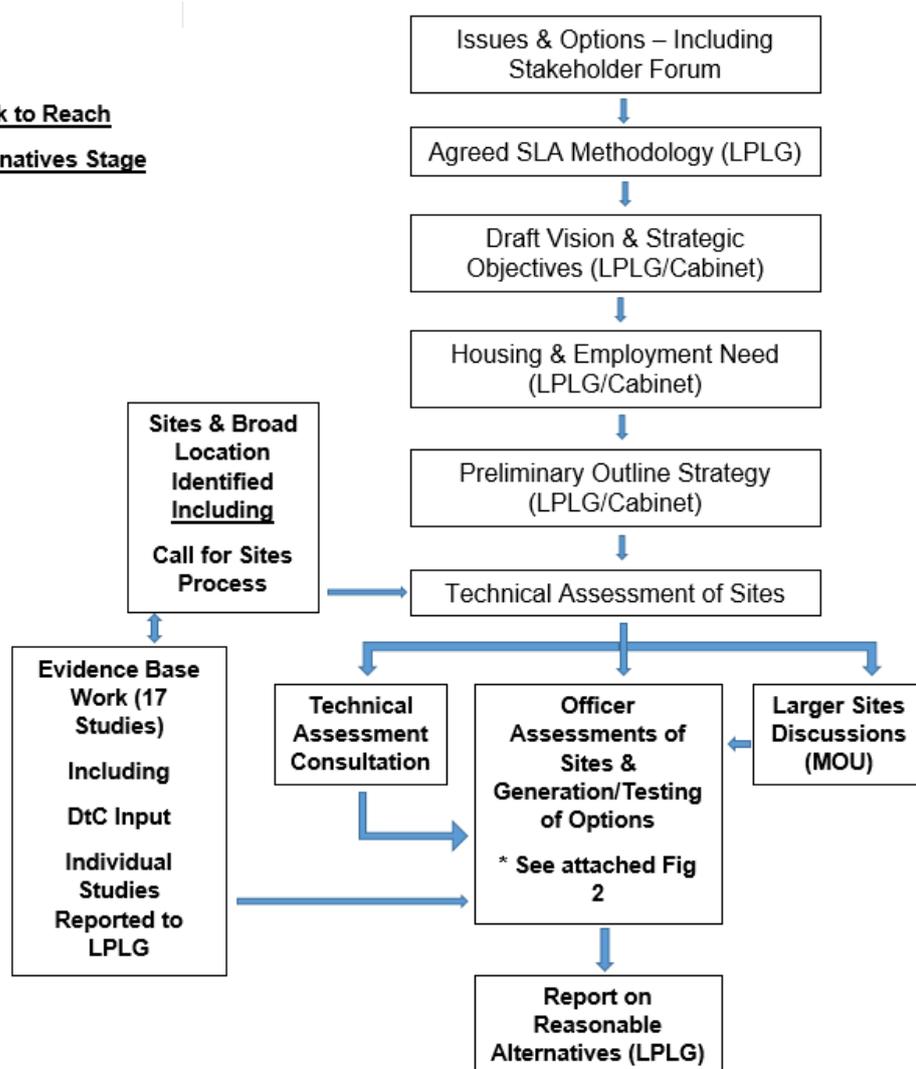
***Justified** –an appropriate strategy, taking into account the reasonable alternatives, and based on proportionate evidence;* (ref Para 35 NPPF).
6. Officers are currently preparing a report to the next meeting of the Local Plan Leadership Group setting out the development options to be considered further. It is important to note that at this stage these options are only for evaluation using the evidence base that supports the local plan work. **The Council is absolutely committed to preparing a local plan based on sound and robust evidence and the development options stage is a vital part of the approach.**
7. The identification of development options is informed by the local plan work carried out to date which is summarised in the following diagram:

Fig. 1

SLAA Process

Summary of Work to Reach

Reasonable Alternatives Stage



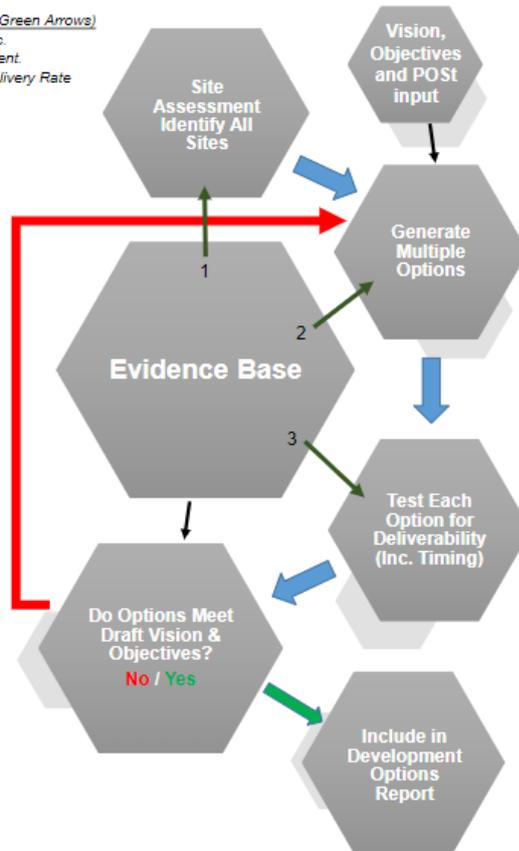
8. The Local Plan Leadership has already considered reports on the Issues and Options, Draft Vision and Objectives, Housing and Employment Need and the Preliminary Outline Strategy. The Technical Assessment of Sites (which is essentially a factual summary of site constraints) has been published and Town/Parish Councils and site promoters are currently being consulted to confirm the accuracy of the work. In addition, discussions have been taking place with the developers and promoters of larger sites.

9. All this evidence is being drawn together, along with various consultant reports to generate development options for further evaluation. The process for preparing the options is summarised in the following diagram:

Fig. 2
 SLAA Process
 Officer Generation of Reasonable Alternatives

Key:

Evidence Base Studies Being Considered (Green Arrows)
 Arrow 1 - Including Landscape, Heritage etc.
 Arrow 2 - Settlement Hierarchy & Employment.
 Arrow 3 - Infrastructure Needs & Market Delivery Rate



10. The result of this process will be a report to the Local Plan Leadership Group with several development options. Each option will be based on strategic themes because the plan needs to comprise a spatial strategy that delivers the overall local plan vision (rather than being simply a collection of disparate individual sites).
11. The Deliverability testing is an important element in the process. From past experience it is clear that Examination Inspector will need to be satisfied that sufficient land has been provided for housing and employment (in the case of housing this is described as meeting the Objectively Assessed Housing Need) – para 35 in the NPPF) and that this is delivered across the whole plan period. In the withdrawn local plan there was a significant reliance on new communities which only delivered dwellings in the second half of the plan period and the Inspectors highlighted this as a matter of concern.
12. The Local Plan Leadership Group will be requested to make comments on the proposed development options so that officers can then move to the next stage in the process to complete the evaluation of the options. The results of that work will then be brought back to the Group with recommendations for a preferred strategy, as part of the Regulation 18 Stage of the Local Plan

process. The Regulation 18 version of the Local Plan will then be subject to extensive public consultation.

Risk Analysis

11.

Risk	Likelihood	Impact	Mitigating actions
That the local plan is found unsound at Examination and/or fails to meet the Council's objectives due to: - a flawed Reasonable Alternatives process; and/or - development options being chosen without robust evidence.	3 - Medium risk given the constraints within Uttlesford and the complexity of the process.	4 - Failure to adopt the new local plan would significantly damage the reputation of the Council and the possibility of unacceptable development coming forward in the absence of an up to date adopted plan.	The methodology and process set out in this report are intended to support the Council's objectives and to substantially reduce the risks of an unsound plan.
That the identification of Reasonable Alternatives is delayed	3 – Medium risk given that there are a range of options to be considered	3 – A significant delay would impact on the project timetable which seeks to submit the Regulation 19 local plan to PINS before a Government December 2023 deadline	The methodology and process set out in the report seek to support the prompt identification of Reasonable Alternatives.

1 = Little or no risk or impact

2 = Some risk or impact – action may be necessary.

3 = Significant risk or impact – action required

4 = Near certainty of risk occurring, catastrophic effect or failure of project.

■