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Sustainability Appraisal (SA) of the Uttlesford Local Plan

SA Report (Draft)

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1 Introduction

1.1 Background

1.1.1 AECOM is commissioned to undertake Sustainability Appraisal (SA) in support of the emerging Uttlesford Local Plan ("the Plan"), which is being prepared by Uttlesford District Council.

1.1.2 Once adopted, the Plan will set the strategy for growth and change for the District up to 2041, allocate sites to deliver the strategy and establish policies against which planning applications will be determined.

1.1.3 SA is a mechanism for considering and communicating the effects of an emerging plan, and alternatives, with a view to minimising adverse effects and maximising the positives. SA is required for local plans.[1]

1.2 SA explained

1.2.1 It is a requirement that SA is undertaken in-line with the procedures prescribed by the Environmental Assessment of Plans and Programmes Regulations 2004.

1.2.2 In-line with the Regulations, a report (known as the **SA Report**) must be published for consultation alongside the draft plan that presents an appraisal of "the plan and reasonable alternatives". The report must then be taken into account, alongside consultation responses, when finalising the plan.

1.2.3 More specifically, the SA Report must answer the following **three questions**:[2]

- What has Plan-making / SA involved **up to this point?**
  - including appraisal of 'reasonable alternatives'
- What are the SA findings **at this stage?**
  - i.e. in relation to the draft plan
- What are **next steps?**

1.3 This SA Report

1.3.1 The final draft ('proposed submission') version is currently published under Regulation 19 of the Local Planning Regulations, such that representations can be made ahead of the plan being submitted to the Government and subjected to an Examination in Public (EiP) overseen by the Planning Inspectorate.

1.3.2 As such, this is the formally required SA Report. It is published alongside the Local Plan in order to inform representations and subsequent plan finalisation as part of the EiP (see discussion of 'next steps').

Structure of this report

1.3.3 Each of the three questions introduced above is answered within a discrete 'part' of the report.

1.3.4 Before answering the first question there is a need to further set the scene by setting out the scope of the plan (Section 2) and the scope of the SA (Section 3).

Commenting on this report

1.3.5 This report can be referenced as part of representations on the Local Plan and/or comments can be made specifically on any part of this report. Further guidance is provided below, including under 'next steps'.

[1] Since provision was made through the Planning and Compulsory Purchase Act 2004 it has been understood that local planning authorities must carry out a process of Sustainability Appraisal alongside plan-making. The centrality of SA to Local Plan-making is emphasised in the National Planning Policy Framework (NPPF, 2021). The Town and Country Planning (Local Planning) Regulations 2012 require that an SA Report is published for consultation alongside the 'Proposed Submission' plan document.
[2] See **Appendix I** for further explanation of the regulatory basis for presenting certain information within the SA Report.

2 The plan scope

2.1 Introduction

2.1.1 The aim here is to briefly introduce the: context to plan preparation, including the national context of planning reform; the plan area (ahead of more detailed discussion of key issues elsewhere in the report); the plan period; and the objectives that are in place to guide plan preparation (the 'plan scope').

2.2 Context

2.2.1 A key point to note, by way of context, is that **the adopted Local Plan** dates from 2005, such that it is out-of-date. Since 2005, national planning-related legislation and policy has changed many times, including with the introduction of the National Planning Policy Framework (NPPF) in 2012 and, of course, there have been wide ranging significant changes to the local planning context.

2.2.2 A central requirement of the NPPF is that all local authorities must maintain an up-to-date plan. Where the local plan is out of date the presumption in favour of sustainable development applies, which means that the Council has limited potential to defend against unwanted planning applications. The authority might refuse a planning application only for that application to be granted permission at appeal by a Planning Inspector who applies 'the presumption' (or 'tilted balance') in favour of development.

2.2.3 There has been wide-spread 'planning by appeal' of this nature in Uttlesford over recent years, and there are wide-ranging down-sides. Development can essentially tend to come forward in a relatively piecemeal way, without strategic consideration to factors such as infrastructure capacity, new strategic infrastructure delivery, place-making and the environment. Also, it is important to say that fighting appeals is costly.

2.2.4 In this light, there is now considered to be an urgent need to adopt a new Local Plan. With an up-to-date Local Plan development will occur in a coordinated way that delivers significant benefits to communities over-and-above simply new homes, and it will be possible to confidently refuse unwanted applications. Also, in 2023 the Government wrote to the Council setting out the need to adopt a Local Plan or otherwise face "intervention", i.e. a situation whereby the Government intervenes in respect of plan preparation.

2.2.5 Secondly, by way of context, it is important to note that **a Local Plan was submitted in 2019** but later withdrawn following concerns being raised by the appointed Planning Inspectors. Similarly, the District had a Local Plan rejected by Planning Inspectors in 2014. Focusing the 2019 withdrawn plan, the Inspectors' letter is available on the Council website, setting out key concerns including:

- Reliance on three large garden communities, all associated with significant constraints and infrastructure requirements which, whilst to some extent unavoidable in the context of garden communities, generates a need for detailed work ahead of a conclusion that the site is suitable, viable and able to deliver in the plan period. Related to this, a concern was that the effect of allocation would be to decide the spatial strategy for growth within the District over a period of time extending far beyond the plan period. The Inspectors stated: *"In particular, we are not persuaded that there is sufficient evidence to demonstrate that the Garden Communities, and thus the overall spatial strategy, have been justified."*
- Insufficient supply from small and medium-sized sites and, in turn, in sufficient supply of new homes in the early years of the plan: *"In order to arrive at a sound strategy, we consider that as a primary consideration, the Council would need to allocate more small and medium sized sites that could deliver homes in the short to medium term and help to bolster the 5-year housing land supply"… This would have the benefit of providing… the earlier provision of more affordable housing. It would also… allow for a less steeply stepped housing trajectory… The proposed stepped trajectory, which arises from the strategy's reliance on the Garden Communities, would result in a worsening affordability problem..."*
- The SA Report included insufficient evidence to demonstrate that all reasonable alternatives had been duly considered (i.e. subjected to appraisal and consultation).[3] The Inspectors stated: *"We believe that the key decisions to be made on the future of the… spatial strategy need to be taken by the Council, in consultation with local residents. The most effective and transparent way to do this would be through the preparation of a new plan, based on a robust SA…"*

[3] The NPPF requires that plans are: *"Justified – an appropriate strategy, taking into account the reasonable alternatives, and based on proportionate evidence."*

2.3 The plan area

2.3.1 Located in north west Essex, Uttlesford also borders Hertfordshire, Cambridgeshire and Suffolk. The M11 and associated rail corridor is a key link, including to Cambridge, which is a national growth area.

2.3.2 Stansted Airport is England's third or fourth busiest airport and is the single largest employer in the East of England. The airport is located within Uttlesford District, but the largest nearby settlement is Bishop's Stortford, which is within Hertfordshire. Airport-related traffic is a key issue locally.

2.3.3 Junction 8 of the M11, which links to the airport, is one of just two M11 junctions locally. As well as serving the airport and Bishop's Stortford, Junction 8 links to the A120 corridor, which is a strategic corridor linking to Braintree and Colchester via Great Dunmow (Uttlesford's second largest settlement) and Takeley.

2.3.4 Junction 9 is then located close to the northern extent of the District, serving a rural part of Essex and Hertfordshire, but importantly linking to East Anglia (Norwich) via the A11. The village of Great Chesterford is located close to Junction 9, and there is also a train station here linking to Cambridge.

2.3.5 Saffron Waldon is located approximately 5km to the south of M11 J9 and is the District's largest settlement. It is a rural market town not served by an A-road, and with a train station located at nearby Audley End.

2.3.6 Three final broad areas to discuss, by way of introduction are:

- The railway corridor – to the south of the aforementioned stations at Great Chesterford and Audley End (near Saffron Walden) there are stations at Stansted Mountfitchet (the District's third largest settlement), Elsenham (associated with particularly extensive recent and committed growth); and Newport (a smaller settlement, but still falling within the second tier of the District's settlement hierarchy).
- South of the A127 corridor – Hatfield Heath is a second tier settlement here, located on the District's only other A-road (the A1060). However, land here falls within the London Metropolitan Green Belt, such that 'exceptional circumstances' must be demonstrated in order to justify growth.
- Central / eastern Uttlesford – distant from the two main road corridors, is a deeply rural area, with Thaxted a crucial service centre. The far northwest, along the border with Hertfordshire, is also very rural, as is the far south east, although Chelmsford is not far by minor roads.

2.3.7 Further key characteristics include:

- Population – the population grew by 15% over the ten years to 2021 (compared to 6.6% growth for England, although Cambridge notably grew by 17.6%) and there has been ongoing growth since 2021, plus and there is very extensive committed growth. The proportion of people aged 65 and over increased by 36% in the ten years to 2021, with the figure now at 20.2%. Uttlesford is the 8th least deprived local authority in England, and the median house price in 2022 was £459,000, which is 67% above the national average. The District has the highest car ownership in Essex; 38% of households own 2+ cars.
- Historic environment – extensive areas are highly constrained, with the District containing 3,700+ listed buildings (around a third of those in Essex), 38 Conservation Areas and various other nationally designated areas/assets. By way of an example, Saffron Walden is a renowned example of a well-preserved medieval market town, strongly associated with the river Cam and the Audley End Estate.
- Landscape and the natural environment – the District is mainly associated with the dip slope of the chalk ridge that stretches across England from the southwest to Norfolk. In turn, the land mostly dips to the southeast, with waterways draining to the Essex Estuaries. However, Newport, Saffron Walden and Great Chesterford are associated with the upper reaches of the River Cam, which drains to the Wash. Key assets include chalk streams (a globally rare habitat) and Hatfield Forest, which is nationally renowned and, in turn, suffers from problematic levels of recreational pressure. There are no sites internationally designated for biodiversity within or in close proximity to the District, nor any nationally designated landscapes; however, there are 14 nationally designated Sites of Special Scientific Interest (SSSIs). Another key constraint is very extensive high quality (grade 2) agricultural land.
- Stansted Airport – gained planning permission (at appeal) in 2021 to expand from 35mppa to 43mppa, along with associated improvements to the road infrastructure and sustainable transport obligations. The expectation is that expansion will deliver 5,000 new jobs and see the airport's economic contribution double to £2 billion annually. As part of the committed expansion, in 2023 planning permission was granted to expand the terminal building. As well as a need to manage traffic movements, there is a need to capitalise on the airport as a multi-modal transport hub.

2.4 The plan period

2.4.1 The Local Plan is likely to be adopted in 2026 and must cover a period of 15 years from plan adoption (although NPPF para 22 also encourages a longer term perspective). The plan period start date is 2021 as this is the base date for evidence studies. As such, the plan period is from from 2021 to 2041.

2.4.2 A significant amount of development has already come forward since the start of the plan period ('completions') and a very high quantum of development has planning permission such that it will come forward in the early years of the plan ('commitments'). As such, the role of the Local Plan is essentially to identify new supply, including via allocations, to bolster the committed supply and ensure a robust supply of development land, as measured against need / the defined requirement, across the entire plan period as far as possible (noting that NPPF para 69 allows for flexibility in respect of latter years).

2.5 Plan objectives

2.5.1 The following objectives are in place to guide plan-making:

- Minimise the **environmental impact** of development.
  - Plan for the climate and ecological emergency, avoid or mitigate the environmental impacts from development, including reducing energy usage and embodied carbon of new builds.
  - Protect high-quality landscapes by ensuring new development conserves and enhances landscape assets and achieves high quality design standards.
  - Protect and preserve the natural environment, have full regard to the Essex Local Nature Recovery Strategy. Protect and maximise opportunities for biodiversity net gain and the enhancement of Uttlesford's natural capital assets, including soils, woodlands, hedges and ponds to capture and store carbon as well as providing for appropriate access for health and recreational benefits, together with effective multifunctional Green Infrastructure. Protect and restore the natural ecology and health of the Districts chalk streams and rivers.
  - Protect Uttlesford's water resources by delivering developments that efficiently use local resources, prioritise water resilience, use the latest sustainable consumption techniques and avoid abstraction of chalk aquifers that adversely affects Chalk Rivers and Streams. Ensure new development is resilient to the impacts of climate change including flooding, drought and heatwaves.
  - Pro Protect the best and most versatile agricultural land whilst balancing the needs for local nature recovery, rural employment and diversification.
  - Protect and enhance the historic environment, including protecting and enhancing the significance of heritage assets and their settings, including archaeology.
- Recognise and support the **economic opportunities** in the district.
  - Recognise the influential role of the district's employment offer, including the international gateway of Stansted Airport, including the Northside development and the research and development offer at Great Chesterford Research Park, by embracing the planned expansion, whilst seeking to maximise their sustainability and infrastructure need.
  - Foster sustainable economic development opportunities. By promoting a strong, diverse, resilient, sustainable, and competitive economy. And supported with a range of rewarding employment and learning opportunities and a multi- skilled workforce in a range of sectors including tourism, high-tech, biotech, research and development, aviation, sustainable agricultural and rural business.
  - Allocate sufficient land to accommodate the identified development need.
- Provide adequate and timely **infrastructure** to support development.
  - Help sustain existing and deliver new local community facilities, education, sport, leisure, open space, health and retail through development to promote healthy, sustainable and safe communities.
  - Meet the identified housing needs, including provision for specialist and supported housing needs (e.g., elderly/disabled) and ensure that an appropriate contribution of affordable housing is met.
  - Prioritise increased opportunities for high-quality and safe travel by public transport and active travel encouraging modal shift away from the car.

3 The SA scope

3.1 Introduction

3.1.1 The scope of the SA refers to the breadth of sustainability issues and objectives that are taken into account as part of the assessment of reasonable alternatives and the emerging plan. It does not refer to the scope of the plan (discussed above) or the scope of reasonable alternatives (discussed below, in Part 1).

3.1.2 The aim here is to introduce the reader to the *broad scope* of the SA. Further information is presented in a Scoping Report (2021; N.B. includes settlement-specific information). However, it is important to note that the Scoping Report does not aim to define the SA scope comprehensively. Rather, there is a need for flexibility to respond to the nature of the emerging plan / reasonable alternatives and latest evidence.

3.2 Consultation on the scope

3.2.1 The Regulations require that: *"When deciding on the scope and level of detail of the information that must be included in the Environmental Report [i.e. the SA Report], the responsible authority shall consult the consultation bodies"*. In England, the consultation bodies are the Environment Agency, Historic England and Natural England.[4] As such, these authorities were consulted on the SA scope in 2021. Comments were also sought through the Draft Plan / Interim SA Report consultation in 2023 (discussed further below).

3.3 The SA framework

3.3.1 The primary outcome of scoping is a list of topics/objectives that can then be utilised as a 'framework' under which to structure appraisal work (i.e. appraisal of "the plan and reasonable alternatives"). The aim is to ensure that appraisal is well-targeted, concise and engaging. The SA framework is presented below.

***Table 3.1**: The SA framework*

Topic	Objective
Accessibility	Ensure good access to existing and planned community infrastructure whilst retaining and protecting settlement identities and rural values.
Biodiversity	Maintain and enhance the extent and quality of biodiversity and geodiversity sites and networks within and surrounding the District. Account for recreational pressure on internationally and nationally designated sites as a key issue.
Climate change adaptation	Increase resilience to the effects of climate change, including increased flooding, droughts and heatwaves. Explore options for natural flood risk management.
Climate change mitigation	Reduce per capita (i.e. per person) contribution to climate change, with a focus on both built environment and transport emissions.
Communities, equality, inclusion and health	Support high quality living environments and strong communities, including good relations fostered between people and groups. Support healthy lifestyles for all groups, reducing health inequalities and delivering positive outcomes, including via access to services/facilities and green infrastructure / open space (including with a focus on key groups such as people with restricted mobility and low-income households) and enabling active travel.
Economy and employment	Grow a sustainable and inclusive economy, building upon strengths and opportunities and increasing long-term economic resilience.
Historic environment	Conserve and enhance valued assets, including their setting, and also conserve / enhance historic character at a range of scales.

[4] In-line with Article 6(3) of the SEA Directive, these bodies were selected because *'by reason of their specific environmental responsibilities, [they] are likely to be concerned by the environmental effects of implementing plans and programmes.'*

Topic	Objective
Homes	Provide for housing needs as far as possible, increase access to high-quality housing of the right type and tenure, including affordable housing.
Land, soils and resources	Ensure the efficient and effective use of land, including accounting for the grade of productive agricultural land.
Landscape	Protect and enhance the character and quality of the diverse landscapes at a range of scales, e.g. river valleys, chalk influenced landscapes, ancient farmed landscapes, wooded landscapes and settlement gaps. Support strategic green / blue infrastructure, including long distance walk/cycle routes.
Transport	Promote modal shift away from the private car and reduce the need to travel, whilst protecting residents and the natural environment from the impacts of congestion, air pollution and noise pollution. Preserve areas of rural tranquillity.
Water	Protect and enhance water quality, including by careful consideration of wastewater treatment capacity, and recognising existing issues of water courses not achieving target status. Account for water resource / supply constraints in the context of increasing demand and the importance of water levels for habitats.

3.4 Integrating equalities and health

3.4.1 The SA framework has been designed to integrate both health and equalities considerations, with a view to the SA process integrating Equalities Impact Assessment (EqIA) and Health Impact Assessment (HIA).

3.4.2 In particular, see discussion under the "Communities, equality, inclusion and health" heading within **Section 9**, which presents and appraisal of the Local Plan as a whole.

3.4.3 Further points to note are:

- **EqIA** – the Equality Act 2010 (the Act) introduced a Public Sector Equality Duty, which covers the following protected characteristics: age, disability, gender re-assignment, marriage / civil partnership, pregnancy, maternity, ethnicity, religion/belief, sex and sexual orientation. Under the Duty the Council must, in the exercise of its functions, have due regard to the need to: eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act; advance equality of opportunity between people who share a protected characteristic and those who do not; and foster good relations between people who share a protected characteristic and those who do not. EqIA is often used by public sector organisations to demonstrate how this duty has been met. However, there are no procedural requirements specific to EqIA over-and-above those relating to SA, hence integrating EqIA simply involves ensuring that the SA scope has a good focus on equality matters.
- **HIA** – addressing the determinants of good health is increasingly a focus of local plan-making, e.g. a recent study on *Integrating Health into Local Plans* identified five key themes: Healthy neighbourhood design; Healthy housing; Healthier food environments; Natural and sustainable environments; Healthy transport. HIA is a tool for integrating health-related considerations in local plan-making. As per EqIA, there are no procedural requirements specific to HIA over-and-above those for SA, hence integrating EqIA simply involves ensuring that the SA scope has a good focus on health determinants.
- **Limitations** – for plans such as the Uttlesford Local Plan (less so plans that deal with urban areas), it can be a challenge to confidently identify and evidence a causal link between key strategic choices on the one hand and both equalities and health-related issues/outcomes on the other. In particular, this is the case because the plan focuses on detailed matters relating to development management only to a limited extent, leaving considerable flexibility for matters to be explored in detail at subsequent stages of the planning process. However, there is nonetheless a range of key strategic choices to explore from both an equalities and a health perspective, including relating to meeting development needs, spatial strategy and site selection.

Part 1: What has plan-making / SA involved up to this stage?

4 Introduction to Part 1

4.1 Overview

4.1.1 Work on the Local Plan began in 2020, following withdrawal of the previously submitted plan. Since then work has been ongoing to gather evidence and explore issues, opportunities, options etc. A milestone was reached in 2023 with a Draft Local Plan published for consultation alongside an Interim SA Report.

4.1.2 The focus here, within Part 1, is not to relay the entire 'story' of the plan-making/SA process, nor to provide a comprehensive 'audit trail' of steps taken. Rather, the aim is to report work undertaken to examine **reasonable alternatives** ahead of the current 'publication' stage. Specifically, the aim is to:

- explain the reasons for selecting the alternatives dealt with - see **Section 5**
- present an appraisal of the reasonable alternatives - see **Section 6**
- explain the Council's reasons for selecting the preferred option - see **Section 7**

4.2 Reasonable alternatives in relation to what?

4.2.1 The legal requirement is to examine reasonable alternatives (RAs) taking account of *"the objectives and geographical scope of the plan"* (see Section 2). Following discussion of the plan objectives with UDC officers, it was determined appropriate to focus on the **spatial strategy**, i.e. providing for a supply of land, including by allocating sites (NPPF paragraph 68), to meet objectively assessed development needs whilst also delivering on wider plan objectives. A key outcome of 'spatial strategy-making' is a **key diagram**.

4.2.2 Establishing a spatial strategy / key diagram is clearly a primary objective of the Local Plan. As such, it is reasonable to focus on exploring alternatives (see Sections 5 and 6) so as to inform a final decision on the preferred spatial strategy (see Section 7) and to inform the current consultation.[5]

4.2.3 The decision was made to refer to the alternatives as "**growth scenarios**".

What about site options?

4.2.4 Whilst individual site options generate a high degree of interest, they are not RAs in the context of most local plans, because they are not mutually exclusive, i.e. the aim of plan-making is not to select just one site for allocation. Rather, the objective is to allocate a *package* of sites, hence RAs should be in the form of alternative *packages* of sites. Nonetheless, consideration is naturally given to the merits of site options as part of the process of establishing reasonable growth scenarios – see Sections 5.3 and 5.4.

Is the focus on housing sites?

4.2.5 Establishing a supply of land to meet housing needs is typically a focus of attention, but local plans are also tasked with meeting wider development needs. This includes needs in respect of employment land, which is a key consideration for Uttlesford. The discussion presented below is somewhat housing-led, but employment land issues / options are considered throughout, and a summary is presented in Section 5.5.

What about other aspects of the plan?

4.2.6 As well as establishing a spatial strategy, allocating sites etc, the local plan must also establish policy on thematic district-wide issues, as well as site-specific policies to guide decision-making at the planning application stage. Broadly speaking, these can be described as development management (DM) policies.

4.2.7 However, it is a challenge to establish DM policy alternatives that are genuinely reasonable.[6] Consideration was given to possible reasonable DM policy alternatives; however, on balance, it was determined appropriate to focus attention only on appraising the emerging preferred options (Section 9). Comments on reasonable DM policy alternatives were sought through the consultation in 2023.

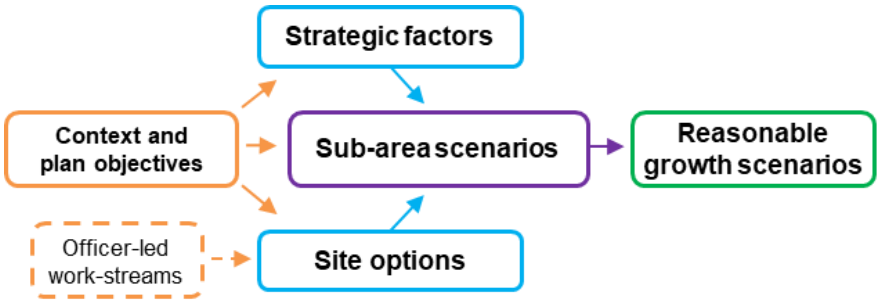
[5] It was also considered appropriate to focus on 'spatial strategy' given the potential to define "do something" alternatives that are meaningfully different, in that they will vary in respect of 'significant effects' (mindful that SA must focus on significant effects).
[6] To be 'reasonable' alternatives must be meaningfully different to the extent that it is possible for an appraisal to differentiate between them in terms of significant effects. Also, it is important to bear in mind that 'no policy' is not a reasonable alternative to 'a policy'. This is because 'no policy' is the baseline (and so cannot lead to significant effects *on the baseline*).

5 Defining growth scenarios

5.1 Introduction

5.1.1 The aim here is to discuss the process that led to the definition of reasonable growth scenarios. To reiterate, reasonable growth scenarios equate to the formal **reasonable alternatives**.

Figure 5.1: *Establishing reasonable growth scenarios*



Structure of this section

5.1.2 This section explains a process to define reasonable growth scenarios as follows:

- **Section 5.2** – explores **strategic factors** (issues / opportunities / options) that are a 'top down' input.
- **Section 5.3** – considers individual **site options** that are 'bottom up' input ('building blocks').
- **Section 5.4** – explores growth options and scenarios for **sub-areas**.
- **Section 5.5** – combines sub-area scenarios to form borough-wide **reasonable growth scenarios**.

A note on limitations

5.1.3 It is important to emphasise that this section does not aim to present an appraisal of reasonable alternatives. Rather, the aim is to describe the *process* that led to the definition of reasonable alternatives for appraisal. This amounts to a relatively early step in the plan-making process which, in turn, has a bearing on the extent of evidence-gathering and analysis that is proportionate, also recalling the legal requirement, which is to present an *"**outline** of the reasons for selecting alternatives…"* [emphasis added].

5.2 Strategic factors

Introduction

5.2.1 The aim of this section of the report is to explore strategic issues, opportunities and options with a bearing on the definition of reasonable growth scenarios. Specifically, this section of the report explores:

- Quantum – *how many* new homes are needed (regardless of capacity to provide them)?
- Spatial strategy – broadly *where* is more / less suited to growth and what *types* of growth are supported?

Quantum

5.2.2 This section sets out the established Local Housing Need (LHN) figure for the District, before exploring arguments for the Local Plan providing for a quantum of growth either above or below LHN.

Background

5.2.3 A central tenet of the plan-making process is the need to **A)** establish housing needs; and then **B)** develop a policy response to those needs. The Planning Practice Guidance (PPG) explains (emphasis added):

"Assessing housing need is the first step in the process of deciding how many homes [to plan for]..."

5.2.4 With regards to (A), the NPPF (2023) is clear that **LHN** should be calculated on the basis of an *"assessment conducted using the standard method"* other than in *"exceptional circumstances"*.

5.2.5 With regards to (B), many local authorities will respond to assessed LHN by providing for LHN in full or, in other words, setting the housing **requirement** *at* LHN and identifying a **supply** through policies sufficient to deliver this housing requirement on an annual basis over the plan period (which will invariably necessitate a supply 'buffer' to mitigate against the risk of unforeseen delivery issues). However, under certain circumstances it can be appropriate to set a housing requirement that *departs* from LHN.

Uttlesford's Local Housing Need (LHN)

5.2.6 A three-step standard method for calculating LHN was first published by the Government in 2017, and then a fourth step was added in 2020 (the 'cities uplift'), but this does not apply to Uttlesford.[7]

5.2.7 There have also been some notable changes to guidance in respect of the data that should be utilised as an input to the standard method, since the method was first introduced. Specifically, following a consultation in late 2018, the PPG was updated to require that the household growth projections used as an input to the method must be the 2014-based projections, rather than more recent household projections (with reasons set out clearly at paragraph 5 of the PPG on housing needs assessment). Updates to the PPG in late 2020 confirmed this approach and this approach was also reconfirmed in December 2022.

5.2.8 The standard method derived LHN for the District is currently **675 dwellings per annum** (dpa), or 13,500 homes in total over the plan period. This is a 'capped' figure, meaning that Step 3 of the standard method ("Capping the level of any increase") does apply. The uncapped figure is 729 dpa, and it should be noted that the PPG states: "*Where the minimum annual local housing need figure is subject to a cap, consideration can still be given to whether a higher level of need could realistically be delivered."*

5.2.9 With regard to Step 2 (adjustment for affordability), this involves accounting for the latest (2023) ratio of median workplace earning (i.e. the median earnings of those who work in Uttlesford) to median house price, which is 12.18%. This latest ratio is a notable drop from 2022, when it stood at 13.85, and results in a drop to Uttlesford's standard method LHN figure. The ratio has not been this low since 2014, but it should be noted that the ratio was at 10% as recently as 2011.

Is it reasonable to explore setting the housing requirement at a figure below LHN?

5.2.10 Paragraph 11 of the NPPF states: *"… strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas, **unless**: i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area; or ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."* [emphasis added]

5.2.11 Uttlesford is overall not heavily constrained by NPPF *"policies… that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area"*. The London Metropolitan Green Belt constrains the southern part of the District, and SSSIs are a significant constraint (including Hatfield Forest). However, there are extensive parts of the District that are relatively unconstrained in the terms described by the NPPF.

5.2.12 For this reason alone the possibility of setting the housing requirement at a figure below LHN can be ruled out as 'unreasonable'. Also, there is a need to consider constraints to growth affecting Uttlesford not only in an absolute sense, but also relative to neighbouring areas that would come under pressure to provide for unmet need from Uttlesford.

5.2.13 Furthermore, there are many positive arguments in favour of providing for LHN. As part of this, it is important to recognise that meeting housing need is important not only in and of itself, but also due to highly significant secondary benefits, for example in terms of supporting communities, health and wellbeing, strategic infrastructure delivery and the local economy.

5.2.14 This position – that growth scenarios that would necessitate setting the housing requirement at a figure below LHN are unreasonable – was taken at the Regulation 18 Draft Plan / IIA Report stage in 2023, and few if any significant concerns were raised with this approach through the consultation.

[7] See gov.uk/guidance/housing-and-economic-development-needs-assessments.

Is it reasonable to explore setting the housing requirement at a figure above LHN?

5.2.15 There are four key reasons for considering the possibility of setting the housing requirement above LHN.

Local housing need

5.2.16 As discussed above, the 'uncapped' LHN figure for Uttlesford is higher than the figure derived from the standard method (which involves applying a cap).

Affordable housing need

5.2.17 This is quite high locally, and the PPG states: *"An increase in the total housing figures included in the plan may need to be considered where it could help deliver the required number of affordable homes."* However, the Local Housing Needs Assessment (LHNA, 2024) explains:

"Despite the level of need being high in relation to the Standard Method, it is not considered that this points to any requirement for the Council to increase the Local Plan housing requirement due to affordable needs. The link between affordable need and overall need is complex… it must be remembered that many of those picked up as having an affordable need are already in housing (and therefore do not generate a net additional need for a home) – indeed removing households from the modelling who are already in accommodation reduces the need to 221 per annum. That said, the level of affordable need does suggest the Council should maximise the delivery of such housing at every opportunity."

Unmet housing need from elsewhere

5.2.18 The NPPF states: "*Strategic policy-making authorities should establish a housing requirement figure for their whole area, which shows the extent to which their identified housing need (**and any needs that cannot be met within neighbouring areas**) can be met over the plan period. The requirement may be higher than the identified housing need if, for example, it includes provision for neighbouring areas, or reflects growth ambitions linked to economic development or infrastructure investment."* [emphasis added]

5.2.19 The fact that the District is located at the edge of the London Metropolitan Green Belt serves as a reason to remain alive to the possibility of unmet need from the south, including recognising that the London Plan does not provide for London's housing need in full (i.e. there is unmet need). It is also the case that a number of Green Belt authorities to the north of London are generating or are considering generating unmet need, although this is more to the northwest rather than to the northeast / along the M11 corridor.

5.2.20 However, the simple fact is that there has been no clear request made from the Greater London Authority, nor any local authority more constrained by Uttlesford by the London Metropolitan Green Belt, that Uttlesford give detailed consideration to providing for unmet needs arising from their area. Equally, it is the case that no authority has approached Uttlesford regarding the possibility of providing for their unmet needs on the basis of constraints other than the Green Belt (including Essex Coastal authorities).

5.2.21 Focusing on East Herts and the Essex authorities to the south of Uttlesford, a key point to note is that Harlow is a tightly bounded urban authority. However, in 2017 a Memorandum of Understanding was signed by Uttlesford, Harlow, Epping Forest and East Herts agreeing that Uttlesford would provide for its locally arising needs only, i.e. would not make provision for Harlow's unmet need. Harlow (2020), Epping Forest (2023) and East Herts (2018) then subsequently adopted Local Plans, and the outcome was not to generate unmet need, including on account of Harlow Gilston Garden Town (16,000 homes) to the north of Harlow. None of the three authorities have made significant progress on a local plan review, hence it is not possible to speak of future unmet need risk with any confidence. However, it is recognised that a precautionary and proactive approach means remaining alive to the possibility of future unmet need. As part of this, it is also recognised that Bishops Stortford is a constrained town. However, East Herts includes significant land beyond the Green Belt, and is the District is working collaboratively with the four other north east and central Hertfordshire authorities in respect of long term growth strategy.

5.2.22 Finally, there is a need to consider Greater Cambridge, to the north. A key study exploring 'Employment Land, Economic Development and Relationship with Housing' was published in January 2023 setting out a recommendation that, whilst standard-method directed LHN is 1,769 dpa, the authorities should *"consider planning for 2,463 dwellings per annum to support… jobs growth."* This is an ambitious strategy, but the latest situation, as reported on the Local Plan website, is that the plan is paused on account of unresolved major issues in respect of water supply, wastewater treatment, transport and national planning reforms (also the Government's strategic direction for growth in the Cambridge area).

5.2.23 In this light there is uncertainty regarding the potential to adopt a plan that provides for 2,463 dpa. However, whether this serves to indicate a significant risk of unmet need to be provided for in Uttlesford is a separate question, and whether any risk is a matter for the *current* Uttlesford Local Plan is another question still. The *next* Uttlesford Local Plan – to be adopted in c.2030/31 – will be better placed to support any strategic growth ambitions for Cambridge, subsequent to work to address strategic constraints.

5.2.24 Regardless, it is evidently the case that the Uttlesford Local Plan must be prepared mindful of the need to deliver new homes to support jobs and economic growth in Greater Cambridge, including mindful that a new Cambridge South Station will soon open that is very well linked to Uttlesford. The Network Rail website explains that the aim is to "*support the vitally important biomedical campus and serve a growing community of science and health care specialists, employees and hospital visitors.*"

Economic development or infrastructure investment

5.2.25 There is a lack of clarity nationally regarding whether any such uplift should be made as part of objectively establishing LHN or as a subsequent a policy choice. Regardless, there is no case for an uplift in the Uttlesford context. The Uttlesford LHNA (2024) explains that under Standard Method LHN:

"As a final test on exceptional circumstances, the Standard Method projection was used to look at potential changes to the resident labour supply and the number of additional jobs that might be supported. Overall, it was projected the labour supply would increase by around 25% over the 2024-41 period and that this could support around 13,000-14,200 additional jobs – this is higher than the job growth forecast by the 2023 Employment Need Assessment (10,600 additional jobs in the 2022-41 period) and therefore does not point to a need to plan for housing in addition to the Standard Method."

5.2.26 It is recognised that a number of consultation responses received from the development industry suggest a need to account for higher jobs growth associated with Stansted Airport, but this was factored into the Employment Need Assessment (2023), and there is a need to recognise a trend towards demand for industrial and warehousing land close to Stansted more so than (higher jobs density) office space. Also, there is the potential to respond to a need to support growth at Stansted through spatial strategy – i.e. by weighting growth in proximity to Stansted – as well as through total growth quantum, as discussed below.

Conclusion on housing quanta options

5.2.27 The **high level** discussion above serves to suggest that, in addition to a focus on growth scenarios that would enable the housing requirement to be set at **LHN** (675 dpa), there is also a need to remain open to the possibility of setting the housing requirement at a figure **above LHN**.

5.2.28 However, the high level case for setting the housing requirement above LHN is not strong (including, and most notably, because no neighbouring authority has requested that Uttlesford make provision for unmet housing need), which serves as a reason to rule-out scenarios that aim to support a housing requirement well-beyond LHN (e.g. >10%). With regards to growth scenarios that would necessitate setting the housing requirement at a figure below LHN, such scenarios can be ruled out at this stage in the process.

5.2.29 The question of precise quanta figures to reflect across the growth scenarios is returned to within **Section 5.5**, subsequent to consideration of broad distribution, site options and sub-area scenarios.

Box 5.1: *A note on employment land need*

The Employment Land Review (ELR, 2024) provides the following summary of the recommendations set out in the Employment Needs Update (ENU, 2023) in respect of residual needs to be provided for by the Local Plan:

- R&D: 25,000 sq.m to be met at Chesterford Research Park;
- Office: 3.2-6.5 ha – windfall can provide general local requirements, in addition to a 3-5ha allocation;
- Industrial: There is a significant supply shortfall within 10 miles of Bishops Stortford (99.6% occupancy). Having accounted for commitments including Northside,[8] there is a residual need for 30.4ha, which breaks down as 5-10ha at Great Dunmow, up to 5ha at Saffron Walden and 15ha in the vicinity of Stansted.

[8] 61.9ha at Stansted Business Park to provide 195,100 sq.m of commercial floorspace, predominantly B8, B2 and E(g); see UTT/22/0434/OP. It is anticipated to generate around 3,000 jobs, but timings remain uncertain.

Broad spatial strategy

Introduction

5.2.30 This is the second of two sections examining 'strategic factors' of relevance to the matter of defining reasonable growth scenarios for the Local Plan. The aim is to explore broad distribution issues / options as well as the question of broad growth typologies that are supported, e.g. strategic versus non-strategic.

Focus of this section

5.2.31 There is a wide range of important 'broad spatial strategy' factors with a bearing on reasonable growth scenarios. This is particularly the case for Uttlesford, as a large District that is relatively free from headline constraints (NPPF footnote 7) and with good transport links to key areas including London and Cambridge. Also, there are wide-ranging broad spatial strategy factors that stem from locally established objectives and aspirations, not least in respect of achieving net zero carbon emissions district-wide by 2030.

5.2.32 The following list of evidence-gathering workstreams informing Local Plan-making provides a further indication of the breadth of issues/opportunities that could potentially be discussed here:

- Housing
- Employment
- Retail
- Gypsy and Travellers
- Infrastructure
- Transport
- Landscape
- Green infrastructure
- Hatfield Forest, LWSs
- Flood risk
- Water
- Viability
- Leisure and sports
- Air quality
- Green Belt

5.2.33 There is the potential to explore all of these matters within the sections of this report that follow. However, it is considered appropriate to focus this section on a specific fundamentally important question: *Is it reasonable to consider a focus on large garden communities as per the withdrawn plan?*

Is it reasonable to consider a focus on new settlements?

5.2.34 As discussed above (Section 2), the District submitted a Local Plan in 2019, only to then withdraw the plan in 2020 after the appointed Planning Inspectors raised a series of concerns, particularly in respect of the proposed focus on three large new settlements. By way of further context, it is also important to note that one of the three previously proposed new settlements (West of Braintree) was also being taken forward via a separate joint plan by the North Essex Authorities (NEA), such that the Uttlesford Inspector's Report (2020) did not reach detailed conclusions. However the NEA Inspector's report was then published in December 2020, finding the West of Braintree proposal to be "not justified or deliverable".

5.2.35 The current situation is that there is an urgent need to adopt a Local Plan, for reasons that are introduced above (Section 2). Essentially, there is an urgent need for a plan-led approach to housing and jobs growth. This serves as an argument against a focus on new settlements, given that any new settlement allocation through a local plan requires a large amount work, which would take time (and, of course, resources).

5.2.36 Furthermore, the current situation is that the 'numerical' argument for a focus on large new settlements is not strong. This reflects three factors: 1) after having accounted for supply from completions since the start of the plan period, sites with planning permission and a windfall assumption, the quantum of new supply to be identified through the Local Plan is *at most* ~6,000 homes; 2) it is essential that a good proportion of this supply comes from small and medium sized sites; and 3) there are a range of settlement-specific arguments for growth via urban extensions (as discussed in Section 5.4).

5.2.37 In **conclusion**, there is a high level case to rule out any large garden community, as follows: 1) there is a need to avoid a rushed plan that would be at risk of failing; 2) time is of the essence for the Uttlesford Local Plan, and hence there is a need to avoid undue delay; and 3) there is a weak numerical argument.

5.2.38 Also, it should also be noted that Local Plans must be reviewed every five years, such that work to consider new settlement options could begin in perhaps 2026, prior to adoption of a new Local Plan in 2031 and potentially delivery of one or more new settlements in the mid-2030s. It is fully acknowledged that there is a national and local case to be made for garden communities, including new settlements.

5.2.39 The next Local Plan will also have the benefit of building upon an up-to-date plan, which will make the process easier and increase potential to effectively explore new settlement options. This is in contrast to the current plan, which is setting out to remedy issues created a lack of plan-led growth over many years.

5.3 Site options

Introduction

5.3.1 The aim of this section is to introduce the long list of available site options feasibly in contention for allocation and the work that has been undertaken to appraise and 'sift' site options, in order to arrive at a manageable shortlist that can then be a focus of work to explore sub-area scenarios in Section 5.4.

5.3.2 To recap, this is a 'bottom-up' workstream undertaken as a component of the wider process of defining reasonable alternative (RA) growth scenarios for appraisal and consultation (see Figure 5.1).

5.3.3 This section covers: The Housing and Economic Land Availability Assessment (HELAA); Officer-led site-sifting and assessment; and Garden community options.

HELAA

5.3.4 The starting point for the HELAA was a long list of over 400 site options identified from a range of sources. The HELAA assesses these sites finding that the vast majority are 'available, achievable and suitable' such that they are deliverable (potentially able to deliver within five years) or developable (potentially able to deliver later in the plan period). Of these, ~ 1 in 4 has planning permission. Focusing only on sites without permission, the combined *theoretical* capacity of the deliverable/developable sites is well over 100,000 homes, which is obviously many times more homes than needed under any reasonable scenario.

Officer-led site-sifting and assessment

5.3.5 Taking the 300+ non-permitted deliverable/developable HELAA sites as a starting-point, the **first step** involved sifting-out 'non-strategic' sites unable to deliver 100 homes (either alone or in combination with another site or sites). The approach is to focus on the allocation of 'strategic' sites only through the local plan has been reached on balance, including on the basis of responses to the Draft Plan consultation in 2023 and subsequent discussions with Town and Parish Councils. It reflects a view that:

- Key settlements and local rural service centres – the Local Plan aims to deliver on local objectives for all nine of these settlements through strategic allocations, in so far as possible. In turn, there is no strategic case for non-strategic allocations at these settlements, also recognising considerable non-strategic completions and commitments. Furthermore, each of the Town and Parish Councils will be able to consider the possibility of non-strategic allocations through forthcoming neighbourhood plans.

  Having said this, there are barriers to allocating strategic sites at Great Chesterton, Hatfield Heath and Thaxted, such that the question of making one or more non-strategic allocations through the Local Plan does arise. However, in practice each of these settlements is also associated with barriers to non-strategic allocations. Matters are discussed in Section 5.4, but in short: schools capacity is an issue at Great Chesterton and Thaxted; whilst Hatfield Heath is within the London Metropolitan Green Belt.

- Larger villages – it is recognised that there is a need to take steps through the Local Plan to ensure that all eight of the larger villages see an appropriate quantum of growth over the plan period. The NPPF encourages local authorities to *"identify opportunities for villages to grow and thrive, especially where this will support local services"*, and there are known issues locally around housing affordability and maintaining bus services, plus maintaining viable numbers at rural primary schools is an issue nationally.

  As such, each of the larger villages has been examined in order to establish: A) the appropriate number of homes for the plan period; B) completions and commitments; and, in turn, C) a residual figure. The outcome is an understanding that all eight larger villages would ideally see further homes within the plan period over-and-above completions and commitments. However, two of these villages are constrained by Green Belt, and there are not exceptional circumstances to justify Green Belt release.

  In turn, there is a need for non-strategic allocations at six larger villages. However, in each case it has been established that the village in question is ready and willing to prepare a neighbourhood plan to deliver the allocation(s) required. This is an appropriate mechanism for making non-strategic allocations, albeit this will mean a delay of perhaps up to two years before the allocations are in place.

  The implication is that the Local Plan need not concern itself with allocating non-strategic sites at larger villages but does need to assign the six non-Green Belt larger villages a housing requirement and demonstrate confidence that the requirements will be met. This is discussed further in Section 5.4.

5.3.6 The **second step** was to sift-out sites not associated with a settlement falling within one of the top two tiers of the settlement hierarchy (other than garden community options; discussed below). None of the lower tier settlements are suited to a strategic allocation, given: A) relatively high car dependency; B) none are known to be associated with a clear case for strategic growth (e.g. to deliver a primary school); and C) the lack of a 'numerical argument' as per the case against garden communities (see Section 5.2).

5.3.7 The remaining site options (strategic sites associated with a higher order settlement plus new settlement options) were then subjected to assessment of development related constraints and opportunities, as reported in the Site Selection Topic Paper (SSTP) that is available at the current time.

5.3.8 All of these site options are discussed in Section 5.4, informed by the officer-led assessment.

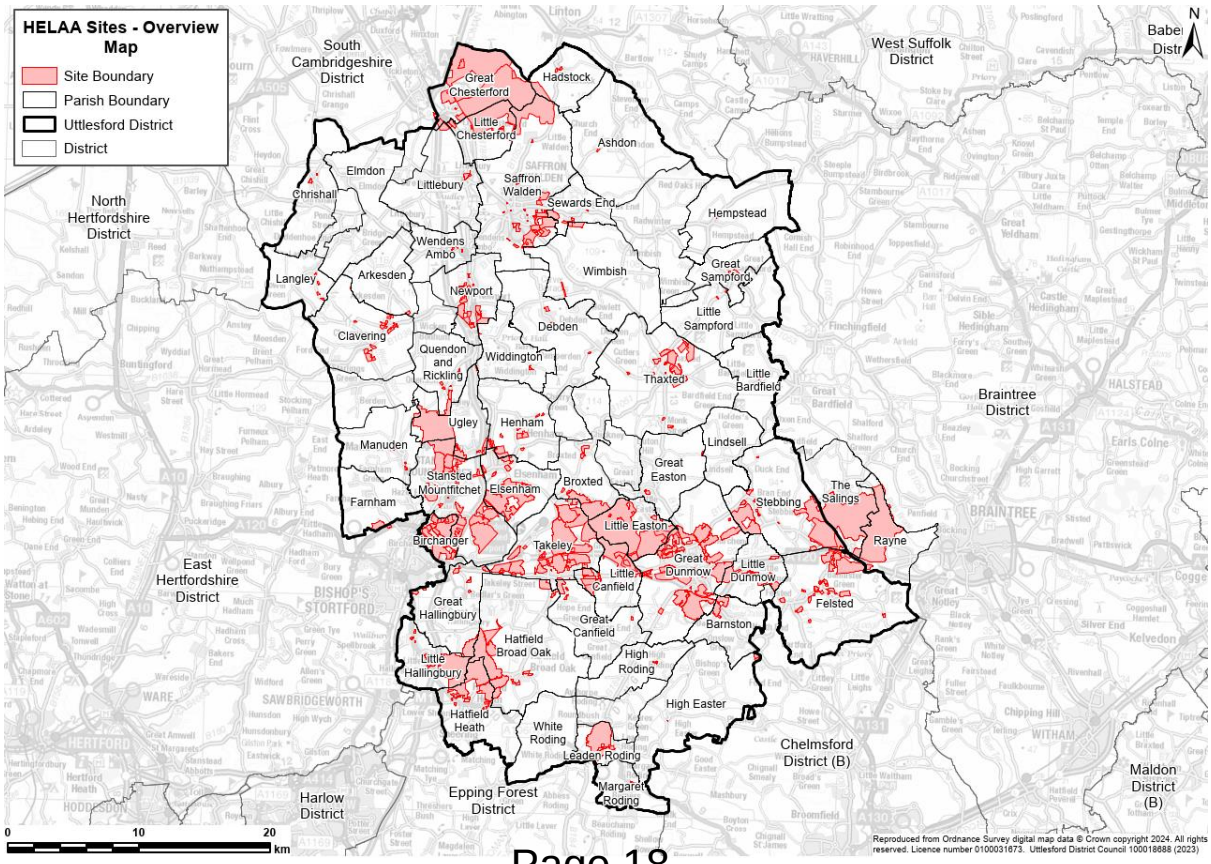
Garden community options

5.3.9 As discussed in Section 5.2, there is little strategic argument for giving further detailed consideration to new settlement options at the current time, particularly larger options. This was the position taken in 2023, when preparing the Draft Local Plan / ISA Report, and it is even more so the case now, given the imperative or progressing the Local Plan, as understood on the basis of the December 2023 "intervention letter". However, that is not to say that options need not be discussed further. It is still appropriate to give proportionate consideration to options on their merits, for the reasons set out in Section 5.2.

5.3.10 Figure 5.2 shows all site options considered through the HELAA, and from this figure it is apparent where land has been submitted that could conceivably deliver a new settlement, namely: 1) Great Chesterford; 2) North of Stansted Mountfitchet; 3) several locations along the A120 corridor between Birchanger and Great Dunmow; 4) the eastern extent of the District / west of Braintree; and 5) north of Hatfield Heath (also perhaps Leadon Roding). These new settlement options are being actively promoted to greatly varying extents, and it should be noted that two of the options being promoted most actively are two of the three new settlement options that featured in the withdrawn local plan, namely the option to the north of Great Chesterford ('North Uttlesford') and the option to the west of Great Dunmow ('Easton Park'). It is important to account for the degree of active promotion, given the work involved with progressing a new settlement.

5.3.11 Further targeted and proportionate discussion is presented in Section 5.4.

***Figure 5.2**: All site options considered through the HELAA*



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5.4 Sub-area scenarios

Introduction

5.4.1 Discussion has so far focused on A) 'top down' considerations of housing quantum and broad distribution issues / options; and B) 'bottom-up' consideration of site options. The next step is to consider each of the District's sub-areas in turn, exploring growth options, including growth from sites allocated in combination.

What sub-areas?

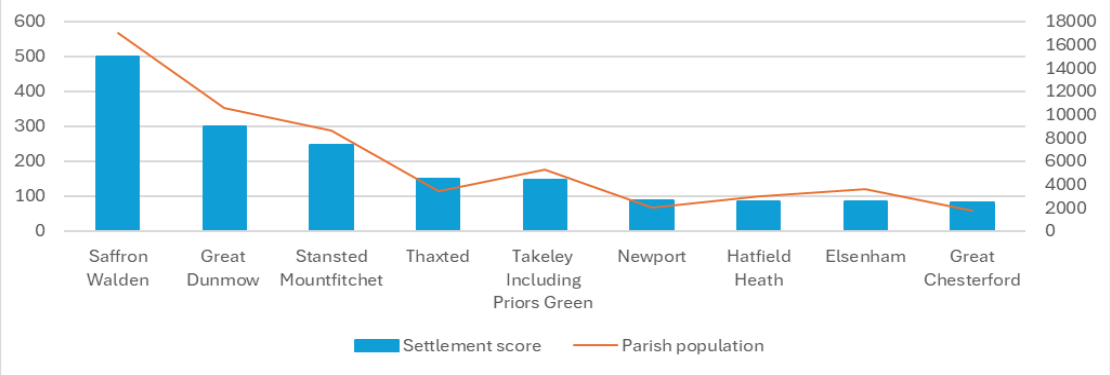
5.4.2 In the Uttlesford context is clearly the case that each of the higher order settlements warrants being considered in turn, with a final discussion then dealing with 'the rest of the District'.

5.4.3 Hence sub-areas are as follows:

- Key Settlements (Saffron Walden, Great Dunmow and Stansted Mountfitchet)
- Local Rural Centres (Thaxted, Takeley, Newport, Hatfield Heath, Elsenham and Great Chesterford)
- Larger villages

5.4.4 Settlements are discussed in order of 'service score', as set out in the Settlement Hierarchy Study (2024).

***Figure 5.3**: Key findings of the Settlement Hierarchy Study (2024)*



Methodology

5.4.5 The aim is to conclude on reasonable 'sub-area scenarios' that need to be taken forward to Section 5.5 of the report, where sub-area scenarios are combined in order to arrive at reasonable growth scenarios.

5.4.6 The aim is *not* to present a formal appraisal of reasonable alternatives. Accordingly, the discussions are systematic only up to a point, with extensive application of discretion and planning judgment. The aim is not to discuss all site options to precisely the same level of detail, but rather to focus attention on those *judged to be more marginal*, i.e. where the question of whether or how to take the option forward is more finely balance. This aligns with the legal requirement to explain reasonable alternatives in "outline" terms.

5.4.7 For each sub-area, the first task is to introduce the key strategic issues and opportunities, and the level of recent and committed growth. The primary task is then to place non-committed sites / site combinations in a broad sequential order of preference. As part of this, reliance is placed on officer-led site assessment work discussed above and a range of other sources of available evidence.

5.4.8 It is naturally the case that site options low down the order of preference can be discussed relatively briefly where it is the case that better performing sites would together a quantum of homes in line with what would be required under a reasonable high growth scenario, given:

- clear arguments for distributing growth broadly in line with the settlement hierarchy (see Figure 5.3); and
- understanding of the total quantum of homes needed from 'new supply' district-wide (*max* ~6,000).

5.4.9 Each section ends by concluding on reasonable growth scenarios to progress to Section 5.5. This inevitably involves applying a degree of pragmatism, i.e. there is a need to avoid progressing too many sub-area scenarios to Section 5.5, in order to aid the final step in the process (defining growth scenarios).

Saffron Walden

5.4.10 Saffron Walden is comfortably the highest order centre in the District and so is well-suited to receiving a good proportion of growth over the plan period. The town is located in the north of the District, in relative proximity to Cambridge, and is located along the M11 / rail corridor (and, in turn, the River Cam corridor).

5.4.11 However, M11 Junction 9 is ~7km distant and the train station is ~3km to the west of the town. There is also an inherent transport constraint, with no A-road link or orbital routes / bypasses to the town centre. As well as inherent transport challenges, there is a clear heritage constraint (including given traffic through the historic town centre) and the town is surrounded by a valued rolling chalk influenced landscape.

5.4.12 The Chesterford Research Park is located to the north of Saffron Walden, where there is an opportunity for significant investment and growth. Also, the Wellcome Genome Campus is located adjacent to M11 Junction 9 (within South Cambs), with consent for up to 150,000m^2 of employment floorspace and up to 1,500 homes. Further significant employment growth to the south of Cambridge can also be anticipated.

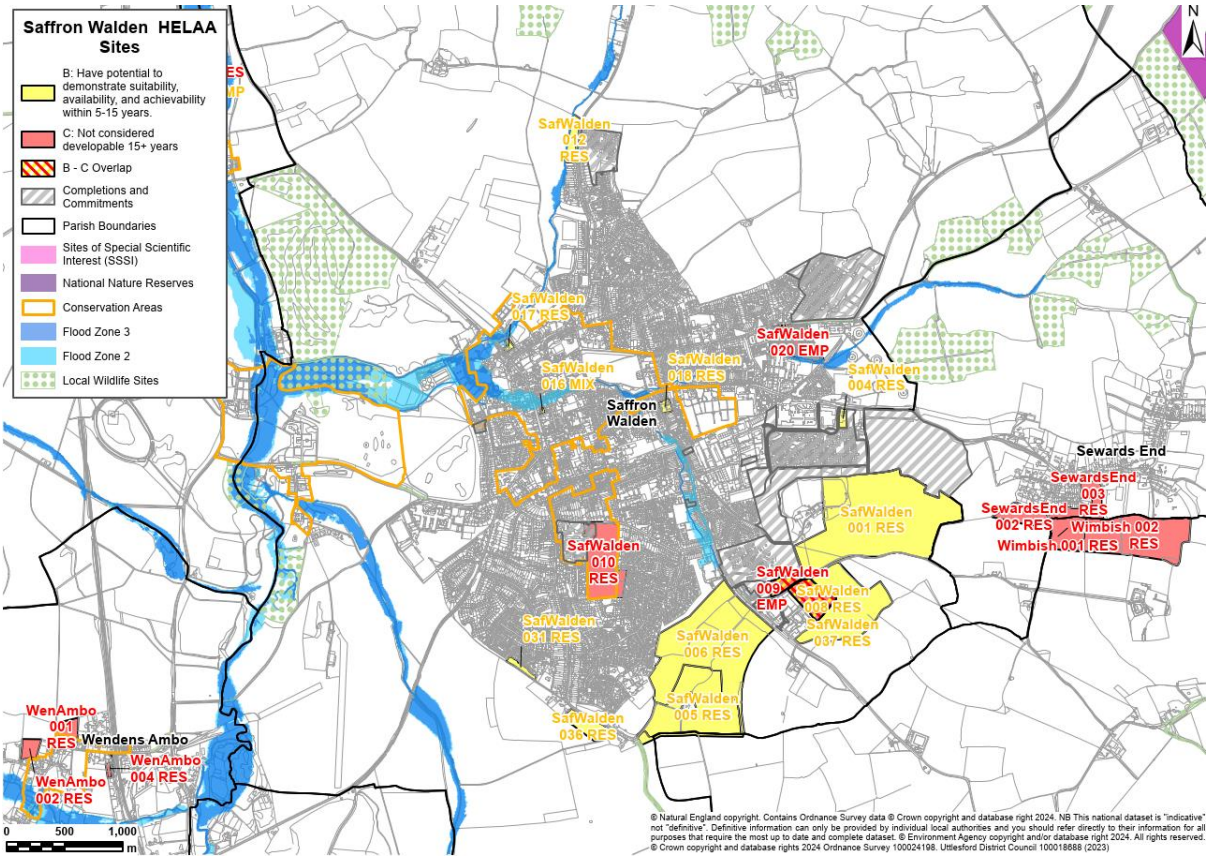
5.4.13 **Completions** since the start of the plan period were quite low, but **commitments** are fairly high: 1,020 homes as of April 2023. In total, completions and commitments amount to 7% of the population, which is mid-ranking when compared to the other higher order settlements discussed within this section.[9]

5.4.14 Additionally, there was a significant amount of expansion in the years preceding the start of the plan period, and there is a general perception that **infrastructure** provision alongside growth has been sub-optimal.

5.4.15 The **HELAA sites** at Saffron Walden are shown below alongside completions and commitments. It can be seen that there are extensive completions and commitments to the east of the town. Also, by way of orientation, it should be noted that the western part of Site 006 was permitted in 2023 (UTT/22/3258/PINS).

5.4.16 After having discounted non-strategic sites (see Section 5.3), attention focuses on land to the **east and south east**. There are six sites here, stretching from the Debden Road in the south, via the Thaxted Road (B184) to the Sewards End / Radwinter Road (B1053) in the north.

***Figure 5.4**: HELAA sites at Saffron Walden*



[9] N.B. figures for completions and commitments by settlements will be updated prior to publication.

5.4.17 A logical starting point is the two central sites **adjacent to the north of Thaxted Road (B184)**. In particular, a starting point is Site 008/9, which was allocated in the Draft Plan (2023) to deliver Saffron Walden's established need for industrial land (3ha), but was subsequently granted planning permission for 55 homes by the Planning Inspectorate (UTT/23/3112/PINS).

5.4.18 Moving on to the other sites located in the northern sector, i.e. **between the two B-road corridors**, there is a clear case for considering the three sites in combination, including with a view to maximising the infrastructure delivery opportunity, not least in terms of road connectivity between the B-road corridors. There is an established opportunity for a new distributor road, e.g. suited to HGVs alongside safe cycling.

5.4.19 These sites would be less-well contained in topographical terms than the committed sites to the west. However, there is the potential to draw upon topography to contain growth, particularly given a proposal to deliver adjacent raised land to the east as a large country park. This was identified as a possibility within the Draft Plan (2023) and then detailed work has been undertaken subsequently through a SANG and Country Park Study (2024). Also further detailed masterplanning work has been completed.

5.4.20 The final two sites to consider are located to the **south of Thaxted Road (B184)**. Topography is a key consideration here, with the land rising to the south, towards a high point within the southern-most site (Site 005). In this light, it is the northern-most site (Site 006) that is clearly preferable, plus this site is better-connected in transport terms. Also, Site 005 is associated with a listed farmhouse and a footpath.

5.4.21 Focusing on Site 006, it should be noted that the western part of this site gained permission for 170 homes in 2023 (UTT/22/3258/PINS). This was subsequent to the cutoff date for preparing the Draft Local Plan.

5.4.22 With regards to growth scenarios, a starting point is the position taken at the **Draft Plan stage (2023)**. Specifically, the preferred approach was to support comprehensive growth to the east and southeast, comprising: A) all of the sites between the B-road corridors; and B) Site 006 to the south of Thaxted Road.

5.4.23 Also, a lower growth scenario was formally examined that omitted Site 006 (i.e. Site 006 was a 'variable').

5.4.24 With regards to Site 005, this was ruled out / not progressed to the RA growth scenarios, but it was highlighted as 'noted' in Figure 5.15 of the ISA Report (2023). This was particularly with a view to flagging the possibility of more comprehensive growth at Saffron Walden aimed at securing an eastern bypass. However, no consultation response was received from the landowner through the consultation in 2023.

5.4.25 **At the current time**, there is considered to be a strong argument for broadly taking forward the preferred approach from the Draft Plan stage as a 'constant' across the RA growth scenarios. The strategy for Saffron Walden generated relatively limited objection through the consultation in 2023, and the County Council is strongly supportive of strategic growth that is able to deliver a new primary school, recognising that this will also serve the recent / permitted urban extensions to the east of Saffron Walden.

5.4.26 Also, it is the case the higher growth scenario was broadly found to perform well through the appraisal in 2023 (N.B. it featured in four of the five growth scenarios appraised, reflecting a view that the decision to test a lower growth scenario was marginal). Having said this, one of the benefits of higher growth in 2023 was thought to be around delivering new secondary schools capacity within Site 006 and, in this respect, the situation has moved on, in that there is now less certainty that additional capacity is needed, and there is thought likely to be capacity for the existing secondary school to expand if needed (although this is a detailed matter subject to further feasibility work following the plan; the plan can ensure contingencies via support for new capacity at Stansted Mountfitchet and Takeley, as discussed further below).

5.4.27 The new proposed approach to growth is a notable evolution from that proposed in the Draft Plan, including given the 'loss' of Site 008/9 as an employment site. Also, and to reiterate, the plan is now being prepared with an understanding that the western part of Site 006 has permission for 170 homes.

5.4.28 However, the new proposed approach remains broadly similar to that from 2023. Taking the sites in turn:

- At Site 001 the current proposal is broadly as per 2023, including a primary school. It should be noted that the permitted site adjacent to the north was included as a proposed allocation in the Draft Plan.
- The main question is around land uses within: A) the remaining non-permitted part of Site 006; and B) Site 007. Both of these sites are owned by the Audley End Estate, plus the Estate owns the two fields adjacent to the east of Site 007, which are now being considered for delivery of the first phase of a future country park, as discussed within the Country Parks and SANG Study (2024). N.B. this would be in addition to appropriate green space within the allocation.

5.4.29 Latest understanding is that the required industrial land will be provided for within Site 007, which will mean that the remaining unpermitted part of Site 006 is primarily used to deliver new residential, along with two areas of green space on raised land at the southern extent of the site. To reiterate, land for secondary school capacity is no longer required.

5.4.30 Overall, there is now little question that the remaining unpermitted part of Site 006 must feature within the plan, including as it is owned by the Audley End Estate, who are now also set to deliver employment land and the first phase of what could become a country park (plus part of a new distributor road, which was always known to be the case). However, there is a notable surface water flood risk constraint here.

5.4.31 The remaining outstanding question is around comprehensive growth with a long term perspective, with a view to realising benefits and avoiding sub-optimal development 'creep' (see map of topography here). Concerns regarding sub-optimal piecemeal development were discussed in the Interim SA Report (2023), and the situation now is even more stark, with two parts of the previous proposed allocation now permitted.

5.4.32 In this regard, it is noted that Site 005 is owned by a developer and that the Audley End Estate own further land to the east and south east of Site 006. However, no 'more comprehensive' growth scenario can currently be identified as developable; hence Saffron Walden is progressed to Section 5.5 as a constant.

5.4.33 As a final point, it is recognised that there are inherent transport (and related air quality) challenges affecting Saffron Walden. These matters are discussed further in Section 9 of this report, but one point to note here – in support of the conclusion to hold constant the emerging proposed approach to growth at Saffron across the RA growth scenarios – is the conclusion of the Sustainable Transport Study (2024) that there is "significant potential for a drastic mode shift" away from the private car. Coordinated and comprehensive growth could help to deliver infrastructure in support of this ambition.

***Table 5.1**: Saffron Walden growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenarios		Homes	Employment land
1)	Strategic growth to the east and southeast	879*	~3ha

N.B. a primary reason for this figure being reduced relative to 2023 is the permission (170 homes) within Site 006.

Great Dunmow

5.4.34 Great Dunmow is located in the south of Uttlesford, on the A120 corridor and near equidistant between Braintree to the east and Bishops Stortford to the west. It is a historic settlement associated with the River Chelmer corridor and the intersection of north-south and east-west historic routes (Roman Roads). However, Great Dunmow has expanded well-beyond the linear historic core area, including in the direction of bypass roads. As can be seen from the historic mapping, the town was historically located to the west of the River Chelmer, with the small village/hamlet of Church End to the east, straddling the river corridor.

5.4.35 High recent and committed growth is a key feature of Great Dunmow, and it is also important to note that the Local Plan withdrawn in 2020 proposed two garden communities in the vicinity of Great Dunmow (discussed further below). The Town Council website explains recent and committed growth locations, and another map is available on the Little Easton Parish Council website. Both maps show extensive recent and committed sites (also, in the latter case, a previously proposed garden community), but both maps are out of date as they do not show Land East of Highwood Quarry, which is located to the west of Great Dunmow and which gained permission at appeal for 1,200 homes in 2023 (UTT/21/1708/OP).

5.4.36 Growth has delivered strategic infrastructure; however, as per Saffron Walden, there is a concern that piecemeal growth in the absence of an up-to-date local plan has led to infrastructure capacity issues and opportunities missed. There have recently been challenges delivering a new secondary school.

5.4.37 **Completions** since the start of the plan period and **commitments** are both very high. In total, completions and commitments totalled 2,777 homes as of April 2023, which amounts to 26% of the population (10,624 as of the 2021) and, as discussed, there have been significant permissions post April 2023.[9]

5.4.38 The **HELAA sites** at Great Dunmow are shown below. By way of orientation, it is important to note that the 'white' land adjacent to the west of the town is committed / under construction. Also, the 'white land' at the very southeast extent of the map is set to deliver a solar farm and a community woodland.

5.4.39 The first point for consideration is **new settlement options**, albeit the strategic case is weak in the context of the current local plan, as discussed in Section 5.3.

5.4.40 The primary option for consideration is to the **west of Great Dunmow**, where Site 004MIX is now a committed site for 1,200 homes (as discussed) but was previously proposed as the eastern extent of a much larger new settlement known as Easton Park - see Figure 5.5. The remaining part of the previously proposed Easton Park scheme (i.e. land to the west of the East of Highwood Quarry site) is still being promoted, and comprises the former Easton Park estate (cleared for a WWII airfield, as discussed here).

5.4.41 Three further figures are presented below in order to explain the situation:

- Figure 5.6 is the concept masterplan for Easton Park (up to 10,000 homes between Great Dunmow and Takeley) submitted to the Council by the site promoter in 2021 (includes East of Highwood Quarry).
- Figure 5.7 is the land use strategy for East of Highwood Quarry.
- Figure 5.8 is an 18th Century map showing the East of Highwood Quarry site adjacent to Easton Park.

5.4.42 The Easton Park site excluding Land East of Highwood Quarry is associated with a range of significant constraints, including relating to biodiversity (High Wood SSSI and related smaller woodlands, including ancient woodland and others designated as a County Wildlife Site) and the historic environment (investigated in detail as part of the examination of the withdrawn local plan). There are also clear transport connectivity challenges, including in respect of M11 Junction 8 and the viability and ultimately deliverability of a Bus Rapid Transport (BRT) scheme, or otherwise transformative public transport connectivity, recognising the lack of rail connectivity (albeit the nearby airport is a public transport hub).

5.4.43 Matters were explored in detail in the Inspectors' letter that reached conclusions on the withdrawn local plan (2020; see from paragraph 100), and it should be noted that whilst upgrades to M11 Junction 8 are ongoing, Road Investment Strategy (RIS) 3 is still forthcoming (due in 2024, as discussed here).

5.4.44 Finally, it should be noted that the potential to deliver Easton Park as a major new country park has been identified through the Country Parks and SANG Study (2024) – see Figure 5.9. This could deliver major benefits in terms of avoiding recreational pressure on Hatfield Forest, and it is also important to note that the country park would encompass High Wood SSSI, which can be seen on the figures below, and risks otherwise being encompassed by development or infrastructure on all sides. The SSSI is in 'unfavourable' condition, although this is understood to be primarily as a result of deer grazing/browsing. The SSSI is currently inaccessible, and so there could feasibly be some merit in exploring accessibility options, including noting that was formally associated with an avenue leading to Easton Park to the north (there is ruined gatehouse at the southern extent of the wood, adjacent to the B1256 / A130 junction.

5.4.45 The other two new settlement options are being less actively promoted, but still warrant brief consideration:

- South of Great Dunmow – this was *not* a proposed new settlement in the withdrawn local plan (2020), but the latest situation is that a 134 ha site has been submitted as available (Site 007), plus Site 006 is available to the east. There is potentially a degree of landscape capacity in this area, given the potential for growth to be contained within the valley of Martel's Brook, the site would be well-placed to deliver employment land and the potential to deliver community facilities to the benefit of Barnston (a small village with limited historic sensitivity) is of note. However, the A120 is a clear barrier to effective connectivity with Great Dunmow, and a key area of land south of the A120 junction is not available.
- East of Great Dunmow – the withdrawn local plan (2020) proposed to allocate the western part of a larger garden community known as West of Braintree, the bulk of which would have been located within Braintree District, and which was proposed to be allocated though a Joint Plan prepared by the North Essex Authorities (NEA). However, the Inspectors for the withdrawn Uttlesford Local Plan raised some concerns – particularly in respect of the viability and deliverability of a BRT scheme – and then the allocation was deleted by the Inspector for the NEA Joint Plan in December 2020 (as discussed above). Clearly it is for Braintree District to take the lead on any further consideration of a new settlement here and, in this respect, Braintree District adopted a Local Plan in 2022 and the review is at an early stage. The promoter did not submit a consultation response to the Uttlesford Draft Plan consultation in 2023.

***Figure 5.5**: HELAA sites at Great Dunmow*

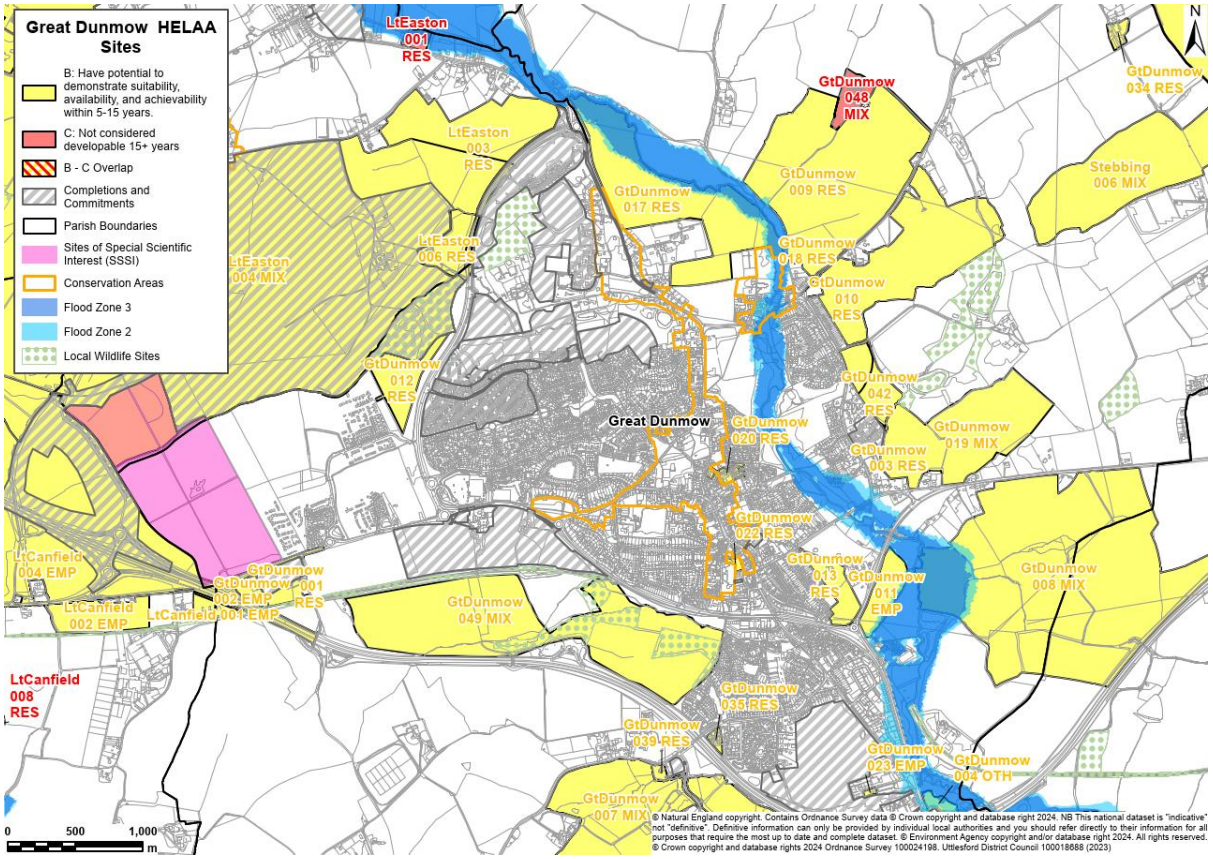


***Figure 5.6**: Easton Park (including Land East of Highwood Quarry) site promoter's concept plan (2021)*

***Figure 5.7**: Land East of Highwood Quarry land use strategy (from application UTT/21/1708/OP)*

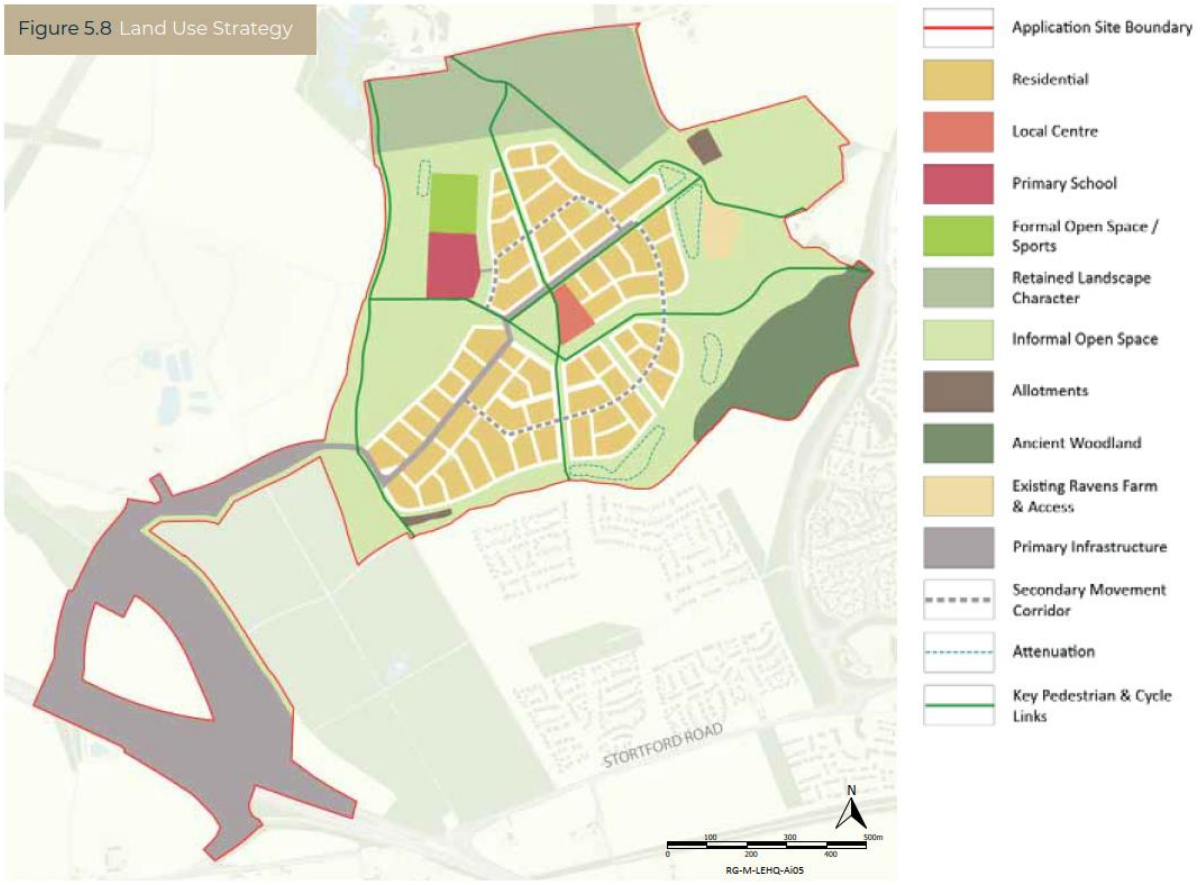
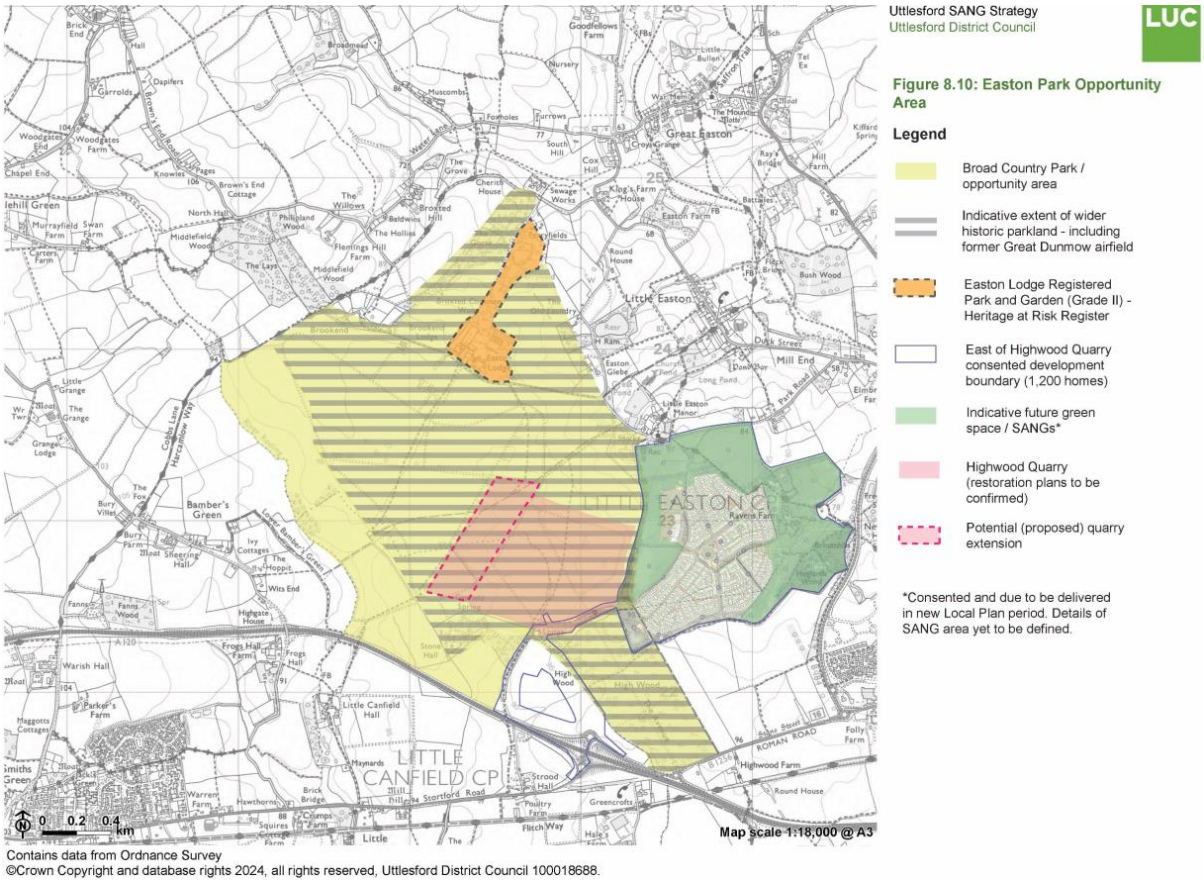


***Figure 5.8**: Land East of Highwood Quarry site location on 18th Century map (from application UTT/21/1708/OP)*

***Figure 5.9**: Easton Park Country Park Opportunity Area*



5.4.46 There are three broad strategic **expansion** options to consider.

5.4.47 Beginning with land to the **north** of Great Dunmow, there are two options here, both of which are considered to perform relatively poorly, namely: A) expansion beyond the B184, in the direction of Little Easton; and B) expansion east of the B1008.

5.4.48 With regards to (A), there is potentially a degree of landscape capacity given the potential to draw upon the Chelmer Valley for containment. However, the site would risk coalescing Great Dunmow with historic Little Easton / Mill End. The site would also relate poorly to the adjacent Land East of Highwood Park (discussed above), given extensive proposed greenspace proposed at the northeast extent of the site (see Figure 5.6). The site might alternatively be considered for a country park (discussed below).

5.4.49 With regards to (B), the Interim SA Report (2023) explained:

"… land here does relate well to Great Dunmow; however, there is significant historic environment constraint, given conservation areas to the west (Great Dunmow) and to the east (Church End) and also given an adjacent scheduled monument and potential archaeology within the site. There is also clear landscape constraint given views across the Chelmer Valley from the B1008. The option of a stand-alone strategic urban extension here can be ruled-out as unreasonable; however, this land parcel does warrant further consideration, ahead of plan finalisation, including potentially in combination with the option of strategic expansion in the vicinity of Church End (discussed below)."

5.4.50 However, the status of this site has now evolved considerably, following a consultation response received in 2023 proposing to make the majority of the site available as accessible greenspace and also to deliver a care home (in addition to standard residential homes). This option is considered to perform strongly, particularly because in-combination with Site 009 – which was a preferred option at the Draft Plan stage and is discussed below – it would deliver comprehensive new green infrastructure, which is a matter that has been explored in detail through the Country Parks and SANG Study (2024). It is also fair to say that the site relates quite well to the settlement edge when viewed in isolation, particularly noting a housing site under construction for 125 homes to the north west and a committed site for 200 homes to the west (see Town Council map). However, it is recognised that there is a strong historic environment sensitivity associated not only with the two conservation areas, but also Parsonage Farm to the south.

5.4.51 Moving to the **east**, Site 009 would deliver a strategic urban extension to Church End and was a preferred option for 869 homes at the Draft Plan stage, although the option of non-allocation was also explored in detail through the appraisal of RA growth scenarios in the ISA Report. There are a range of issues and constraints, including inherent transport and historic environment challenges. However, work in 2023 showed an opportunity to deliver a comprehensive scheme that delivers benefits beyond new homes.

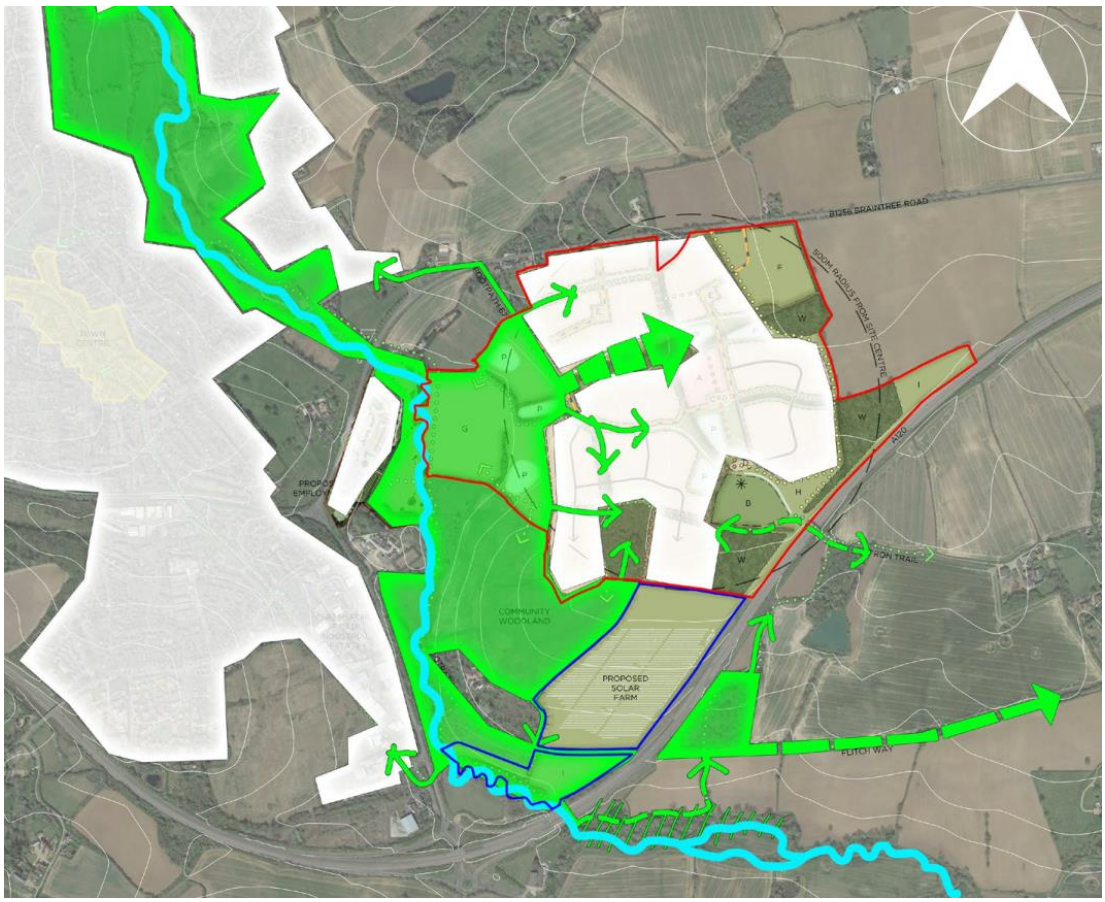
5.4.52 At the current time, there remains support for the site, in light of the consultation held in 2023, and because subsequent (and ongoing) detailed masterplanning has served to highlight the potential to adjust the scheme in such a way that issues are better addressed, and opportunities realised. In particular, the new proposal is for the eastern ~40% of the site to deliver strategic open space which, in combination with new strategic open space within the eastern part of Site 009 to the west (discussed above), would mean that the new community is flanked by new strategic open space on near-two sides.

5.4.53 Finally, to the **southeast**, the promoters of Site 008 have submitted vision documents over a number of years. The site was not allocated in the Draft Plan, nor did it feature in the RA growth scenarios at that time, but it was 'noted' in the ISA Report (2023) as a site potentially warranting further consideration. Understanding in 2023 was that the site would deliver 1,300 homes and a community hub (with a primary school), plus 2ha of the proposed built form was highlighted as "potential employment".

5.4.54 Latest understanding on the basis of the consultation response received in 2023 is broadly similar, except that employment land is no longer proposed as an option. A key issue is that the site would be poorly linked to Great Dunmow, after having taken steps to avoid an extensive flood risk zone, and also noting that land to the south comprises a community woodland and land proposed for a solar farm (ref. UTT/23/2136/FUL). Also, parcels of land between the site and Great Dunmow are unavailable that might otherwise assist with connectivity, including historic Dunmow Park (although the south west part of the Park comprises HELAA Site 013). Figure 5.10 is taken from a superseded vision document (2021) but quite effectively highlights the issue of proposed built form being notably separated from Great Dunmow.

5.4.55 On balance, at this stage there is considered to be merit in exploring this site further through the appraisal of RA growth scenarios, as discussed further below.

***Figure 5.10**: Site promoter's landscape concept plan for SE Great Dunmow (2021)*



5.4.56 One final strategic urban extension option is located to the **southwest**, but this is considered to perform relatively poorly, in comparison to the northeast/east and southeast expansion options discussed above.

5.4.57 This is partly because the site was only submitted for the first time in 2023, and its scale and location is such that it would be a challenge to introduce to the plan without further consultation under Regulation 18. Also, there are clear challenges around the need to cross the Flitch Way, which is a country park and long distance cycle route (and a study was completed in 2023 exploring cycle connectivity options, which did not account for this proposed scheme). Also, there are considerable onsite constraints, particularly in the form of locally designated woodland (shown in figures presented above and below), but also in the form of an associated stream corridor. Furthermore, High Wood SSSI is in very close proximity.

5.4.58 Overall, the eastern part of the site is quite heavily constrained, and so the landowner (also the land owner of the majority of the committed land to the north) might reconsider proposals for this area, ideally whilst retaining the proposal to provide land for a new primary school (the current proposal is for between 500 and 700 homes). Finally, there is a need to consider implications for the permitted sites to the north (ideally the whole area would have been considered comprehensively) and it is generally the case that there is a very high level of current and forthcoming growth to the west of Great Dunmow (which also potentially calls into question when this site would be delivered).

***Figure 5.11**: Site promoter's concept plan for SW Great Dunmow (2023)*

5.4.59 As a final step, there is a need to briefly consider **smaller site options**, albeit there is very little strategic case for this in the context of Great Dunmow, where there is an established need to focus growth with a view to delivering new infrastructure. Smaller options are focused to the east of the town, bar Site 013, which comprises the western extent of Dunmow Park, and is clearly constrained in heritage terms.

5.4.60 Taking the sites to the east of the town in turn, from north to south:

- Sites 010 and 018 – these form part of the strategic allocation option discussed above. There would be clear opportunities missed in terms of delivering new community, transport and green infrastructure.
- Site 042 – the southern part of the site benefits from a resolution to grant planning permission for 32 self / custom build homes(UTT/22/2035/FUL), which would extend a recently delivered scheme adjacent to the southwest. There are clear historic environment sensitivities on account of an adjacent Grade II listed windmill, and there is no reason to suggest potential to deliver an extended strategic scale scheme.
- Sites 003 and 019 – there is a pending planning application for 51 homes at the western extent of this area (UTT/24/0213/FUL), and there is also planning permission here for 31 self / custom build homes. An extended scheme would not relate well to the settlement edge, and this is rising land visible from the Braintree Road, plus there is a public footpath through the site linking to Stebbing.

5.4.61 Finally, it should be noted that Sites 042, 003 and 019 are in the same land ownership (also, the same landowner was involved with the recently delivered adjacent scheme). A single consultation response was received covering these sites in 2023 (ref. 3995), promoting the land for 400 homes, although few details were provided, and there were no commitments made regarding new infrastructure.

5.4.62 The situation across these sites, to the east of Great Dunmow, serves to highlight the importance of taking a strategic approach to growth whereby benefits are realised over-and-above new homes, including with a view to addressing what is widely perceived to be an infrastructure deficit affecting Great Dunmow as a result of non-plan-led housing growth over a number of years.

***Figure 5.12**: Figure from application UTT/24/0213/FUL (Site 003) also showing the recently delivered scheme to the west and a site to the north with a resolution to grant permission (southern part of 042)*

5.4.63 In **conclusion**, whilst the ISA Report (2023) explored both the emerging preferred approach and a reasonable alternative approach involving no strategic allocation, at the current time this reasonable alternative is ruled out as unreasonable. It was not shown to have particular merit through the appraisal, nor through the consultation in 2023. At this stage in the process it would represent a major departure from the previous strategy, e.g. perhaps calling into question delivery of a secondary school at Takeley.

5.4.64 However, there is still considered to be a strong strategic argument for exploring RA growth scenarios at Great Dunmow, given the recent and ongoing experience of sub-optimal piecemeal growth and, in turn, the importance of delivering strategic growth in such a way maximises infrastructure and wider benefits. Also, there are historic environment and landscape constraints, and public transport connectivity is an issue, with no train station and relatively poor bus connectivity (Sustainable Transport Study, 2024).

5.4.65 On balance, in addition to the emerging proposed approach which involves strategic expansion to the northeast / east (Sites 017 and 009 respectively) it is reasonable to also explore a scenario involving an alternative focus of growth to the southeast (Site 008), as well as a scenario involving both a focus of growth to the southeast (Site 008) and the smaller site to the northeast (Site 017). It is recognised that there is also a feasible scenario involving Site 009 to the east only (as per the Draft Plan, 2023), but this scenario is not progressed to Section 5.5 on balance (given a need to minimise the number of scenarios).

5.4.66 No other omission sites stand-out as being 'of note' at the current time, i.e. in the context of the current Local Plan (given the strategic factors discussed in Section 5.2). However, it is recognised that further consideration will need to be given to option of Easton Park through the next Local Plan.

5.4.67 Also, it is recognised that there is feasibly the possibility of allocating all three of the sites progressed to Section 5.5, namely Sites 009 and 017 to the northeast / east and Site 008 to the southeast. Also, as part of this, consideration could also feasibly be given to the intervening collection otherwise set to come forward in a piecemeal fashion (Sites 042, 003 and 019). The potential for comprehensive planning for the eastwards expansion of Great Dunmow might be envisaged, achieving benefits over-and-above what is being achieved via committed expansion to the west, and recognising that all land to the east of Great Dunmow is quite sensitive in landscape terms (see the Landscape Sensitivity Study, 2021). As part of this, the potential for comprehensive planning for green/blue infrastructure along the River Chelmer corridor might be envisaged, stretching from land to the northwest of Great Dunmow via Church End to SE Great Dunmow and potentially beyond (noting the Flitch Way and Saffron Way).

5.4.68 However, this would call into question work that has been undertaken regarding infrastructure capacity, including road infrastructure. There is a need to proceed with caution regarding planning for the A120, including with a focus on public and active transport, and awaiting certainty on M11 J8 upgrades is part of this. Another consideration is waste-water treatment (see the Stage 2 Water Cycle Study, 2024).

5.4.69 In light of the above, there are two reasonable growth scenarios, which are set out below.

5.4.70 Finally, with regards to **employment land**, the current proposed approach is a modest evolution from the proposal at the Draft Plan stage. Specifically, whilst the proposal in 2023 was to allocate the two fields to adjacent to the west of the A120 junction at High Wood (west of Great Dunmow), namely Site Lt Canfield 004EMP, for a total of 15 ha industrial and logistics land against a need figure of 5-10 ha, the new proposal is to additionally allocate a small field to the east of the junction, with a view to 18 ha of industrial/logistics land and also a mobility hub (discussed further below). Also, the effect of allocating the additional field would be to link more effectively to existing employment land nearby to the southeast.

5.4.71 The site comprises the southern extent of the Easton Park new settlement option (Figure 5.5) and is constrained by a Grade II listed building associated with a former entrance to Easton Park, as well as a public footpath and a stream corridor. The ISA Report flagged the possibility of supporting only the part of the site closest to the A120 junction (also mindful of maintaining a strong landscape gap to Takeley), and this remains a possibility given the identified need for new industrial/logistics land at Great Dunmow. However, the proposed allocation met with limited objection through consultation in 2023, and there is clear merit in a comprehensive scheme. On balance, only one employment land scenario is progressed.

Table 5.2: Great Dunmow growth scenarios (new supply only) progressed to Section 5.5

Progressed scenarios		Homes	Employment
1)	Strategic growth to the northeast (Site 017) and east (Site 009)	917	18ha site to the west (Little Canfield Parish)
2)	Strategic growth to the southeast (Site 008)	1,250	
3)	Strategic growth to the northeast (Site 017) and southeast	1,453	

Stansted Mountfitchet

5.4.72 Stansted Mountfitchet is a smaller settlement than Great Dunmow, but there is a secondary school and a leisure centre (located at the southeast extent of the settlement), and the settlement is ultimately placed in the top tier of the settlement hierarchy (Key Settlement) by the Settlement Hierarchy Study (2024).

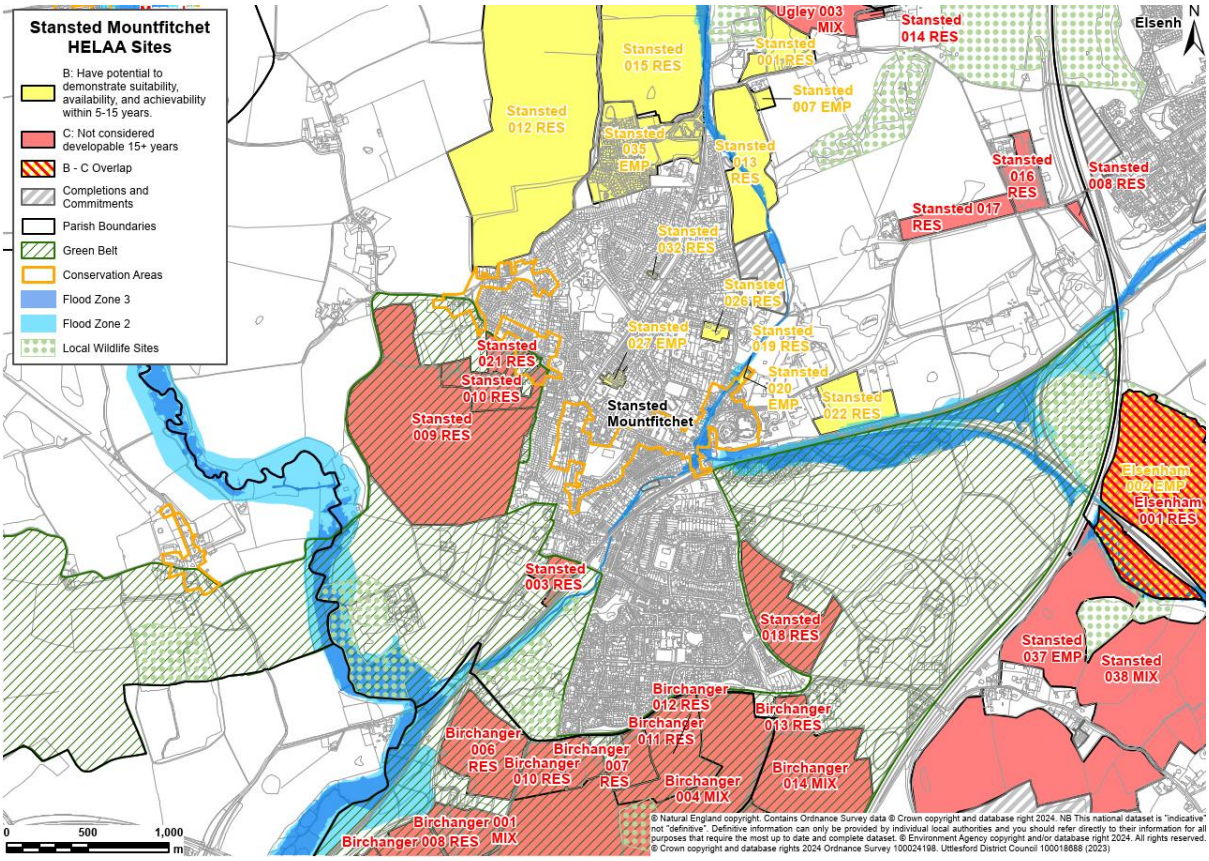
5.4.73 The village also benefits from a train station as well as very good links to Bishops Stortford and Stansted Airport, where there is extensive employment. Another strategic consideration is close links to Elsenham, to the east, where there is very high committed growth from sites that have gained permission ahead of the Local Plan and, in turn, in a somewhat piecemeal fashion leading to infrastructure challenges. M11-bound traffic associated with growth at Elsenham is a further consideration.

5.4.74 With regards to strategic constraints to growth, the key point to note is that the southern half of the settlement edge is constrained by the Green Belt. There are feasible growth options here, including land sites/land with good accessibility credentials. However, demonstrating the 'exceptional circumstances' necessary to justify Green Belt release would clearly be very challenging, given other options for growth at Stansted Mountfitchet itself and elsewhere within the District outside of the Green Belt.

5.4.75 **Completions** since the start of the plan period and **commitments** (as of April 2023) are both very low in comparison to other higher tier settlements. However, there was notable growth prior to the start of the plan period – most recently to the north and, prior to that, to the south (c.2010).[9]

5.4.76 The **HELAA sites** at Stansted Mountfitchet are shown below. By way of orientation, the railway line runs west to east through the centre of the settlement, whilst the M11 is to the east, with Stansted Airport and Elsenham beyond. Also, Site 035EMP is under construction for a residential-led scheme.

***Figure 5.13**: HELAA sites at Stansted Mountfitchet*



5.4.77 From the figure above it is clear that strategic expansion options are focused to the **north** of the settlement and, in particular, attention focuses on Site 015 RES, which was a proposed allocation at the Draft Plan consultation stage for 250 homes. There remains support for this scheme, in light of the consultation, and the current situation is that the applicant is consulting locally ahead of a planning application, with an initial proposal for 350 homes in 2023, and the latest proposal being for 270 homes (see here and here).

5.4.78 It is unfortunate that the scheme would represent phase two of an urban extension that might alternatively have been planned for comprehensively. However, a key point to note is that a large area of land is proposed to be made available as strategic greenspace at the northern extent of the site, which could play an important role in terms of defining the northern extent of the settlement and would link quite effectively to the wider countryside, noting public rights of way and the proximity of valued areas to the east.

5.4.79 The other key site for consideration is then Site 012, known as West of Pennington Lane. This site was not a proposed allocation at the Draft Plan stage (2023), but it was examined closely through the appraisal of RA growth scenarios at that stage. Section 5.4 of the ISA report explained:

"A key consideration here [north of SM, west of the B1351) is the need to deliver a strategic scale scheme able to deliver a primary school, as there is understood to be a need for a new primary school at Stansted Mountfitchet (the existing school could be expanded, but this would not be an ideal solution).

This being the case, there is a strategic case in support of the max growth option in this area, which would deliver ~550 homes. A combined scheme would include an area of strategic greenspace at its northern extent in order to prevent northward 'sprawl' of what is already a linear settlement. Also, there would be the potential to enhance Pennington Lane as a historic route linking to an extensive bridleway network.

However, there is also a need to consider a focus of growth to the east of Pennington Lane, which is much better contained in landscape terms (see rising land to the west of Pennington Lane here). This might involve either A) no growth to the west of Pennington Lane; or B) only modest growth to the west of Pennington Lane, directly adjoining the settlement edge. With regards to (B), a small site has been proposed within the wider site, but this does not align well with the existing field boundaries."

5.4.80 In short, a key motivation for exploring the option of a more comprehensive scheme involving growth to the west of Pennington Lane (Site 012) in addition to growth to the east (Site 015) *was* a desire to secure a new primary school. However, in this regard the situation has now moved on, including on the basis of increased confidence regarding potential to deliver a new primary school at nearby Elsenham. Site 015 includes flexibility to potentially deliver a primary school, as per the County Council's recommendation.

5.4.81 There is also quite a strong argument for drawing upon Pennington Lane to define the settlement edge and, in turn, an overall strong argument for ruling out Site 012 at this stage.

5.4.82 Finally, it is noted that an application for 168 homes on part of Site 012 was dismissed at appeal in 2023 (UTT/20/2121/OP), and that the landowner promoted only this part of the site through the consultation in 2023 (ref. 3452). The site is being promoted by Bloor Homes, as per land to the east of Pennington Lane (both the site under construction and Site 015) and also Site 013 discussed below. The consultation response suggests that higher growth at Stansted Mountfitchet could allow for "comprehensive" growth.

5.4.83 Moving to the **northeast**, Site 013 was a proposed allocation in the Draft Plan (2023) in combination with a site adjacent to the south. However, that site now has planning permission (UTT/22/0457/OP). It is recognised that Site 013 would be delivered as a separate non-strategic scheme (i.e. it would not link with the site permitted site to the south; this risk was flagged in 2023), such that it's allocation would amount to an exception to the rule of allocating strategic sites through the Local Plan (see Section 5.3). However, it is considered to be a strongly performing site, particularly given good links to the centre of Stansted Mountfitchet and the train station, and limited concerns were raised through consultation in 2023. One point to note is the proposal to deliver a new active travel route along High Lane and Lower Street.

5.4.84 Having said this, it is recognised that this is a somewhat complex site split by a stream corridor, with a clear need for early commitment regarding how to treat land to the north of the stream corridor (given sensitivities beyond and noting Site 015).[10] As such, a slight concern is that no consultation response was received from the site promoter in 2023 in respect of this site (although the promoter did reference this site as part of a consultation response focused on Land West of Pennington Lane, as discussed).

[10] The Environment Agency notably commented in 2023: *"There has been previous exploration into Natural Flood Management in the upper reaches of the Ugley Brook Catchment. There is opportunity for this to be included and explored on the site."*

5.4.85 Next there is a need to briefly consider two **non-strategic sites** shown in Figure 5.13. Beginning with Site 022 (southeast), this site was not actively promoted through the consultation in 2023 and the site contributes to views across the Stansted Brook valley (albeit including the railway line) on the approach to the Stansted Mountfitchet Conservation Area. Turning to Site 001 (northeast), this site does not relate well to the settlement edge, and no consultation response was received in 2023. The ISA Report (2023) presented a discussion of comprehensively planning for land from Pennington Lane to Site 013 via this site (including with a focus on green/blue infrastructure),[11] but there is no clear option at the current time.

5.4.86 Next there is also a need to briefly consider one specific **Green Belt** site option. Specifically, discussions were held in early 2024 to consider the option of a 150 home scheme on Site 018, at the southeast edge of the village. It was recognised that there was a unique opportunity to secure significant 'planning gain' (see discussion here), but this was not considered sufficient to warrant taking the site forward, given the high bar of 'exceptional circumstances' and the question of total growth quantum at Stansted Mountfitchet.

5.4.87 The matter is discussed on the Parish Council website, which describes the scheme as "effectively an extension of the development at Elms Farm". However, the recent Elms Farm development to the north is not adjacent (but is in the same landownership), which serves to highlight the importance of taking a strategic approach to any expansion of the village to the southeast.

5.4.88 Finally, there is a need to consider the option of a **new settlement** to the north of Stansted Mountfitchet, within Site Ugley 003, which is located directly to the north of Site 015 (as shown on Figure 5.13, above). The site, which is known as Bollington Hall Farm, was not a proposed allocation at the Draft Plan stage (2023) but was considered closely through the appraisal of RA growth scenarios (but only under one of the five scenarios appraised, namely the highest growth scenario, serving to indicate that the decision to explore this option through the RA growth scenarios was marginal). The ISA Report explained:

"The site promoters suggest a garden community of 2,200 – 3,600 homes, to include a secondary school. However, transport connectivity would be an issue for a scheme of this scale and there is no clear need for a secondary school here (plus there is generally limited strategic case to be made for a large garden community…). The potential for a small garden community to be well-located within the landscape can be envisaged (e.g. south of the Halcramow Way), and new homes could be concentrated in relative proximity to Stansted Mountfitchet and Elsenham train stations. A smaller scheme would also serve to reduce regarding traffic through Ugley Green, where there is heritage constraint. As such, it is considered appropriate to assume that any garden community here would be of a smaller scale (e.g. 1,500 homes). Importantly, there is no reason assume that the scheme might expand further in the longer term (or plan with 'one eye' on this option of an expanded / larger scheme, with commensurate evidence requirements)."

5.4.89 The site promoters then submitted a consultation response proposing a 1,500 home scheme (ref. 4006). However, there was no further detail proposed regarding implications of a reduced scheme for masterplanning and addressing issues / realising opportunities. It is also noted that there is an emphasis on heritage, with the headline conclusion that a reduced scheme for 1,500 homes would be sub-optimal.

5.4.90 In **conclusion**, at this stage there is considered to be just one reasonable growth scenario that warrants being progressed, which is broadly the preferred approach from the Regulation 18 Draft Plan stage. Whilst detailed work was undertaken to explore RA growth scenarios in 2023 (see the ISA Report), this was predicated on a view that there were significant challenges locally around primary school capacity.

5.4.91 Having said this, it is recognised that the combination of a good local offer and very good transport connectivity serves as an argument for higher growth. Also, the other key driver of work in 2023 to explore higher growth was a general desire to ensure comprehensive growth and, in turn, avoid the risk of sub-optimal piecemeal expansion in the long term with opportunities missed to secure investment in new/upgraded infrastructure (e.g. community, transport and green/blue) and this is still considered to be an important consideration at Stansted Mountfitchet that warrants an ongoing focus.

[11] The ISA Report explained: *"This is potentially an option that warrants further consideration, with a view to securing a new primary school and ensuring a rounded built form (without breaching Pennington Lane). However, in addition to the barrier of land not currently being available, there are wider constraints to delivering this option, relative to: historic environment – there are two Grade II listed buildings along Alsa Lane in this area, one of which is located within Site 001, plus there are other buildings within clear historic character, and the lane itself has a strong historic character (historic mapping shows an area of parkland); biodiversity and landscape – there is a considerable amount of priority habitat in this area, including two County Wildlife Sites (one of which is accessible as a nature reserve), plus an ancient woodland is nearby; landscape – there are views across the stream valley, towards the woodland, from High Lane; and employment / commerce – part of the land not currently available currently comprises an auction room, a garden centre and a rifle range (the Rifle range is a former quarry and a new CWS)."*

5.4.92 As a very final point at Stansted Mountfitchet, there is a question-mark around expansion of the secondary school given Green Belt constraint. This is explored further in Section 9 of this report.

Table 5.3: Stansted Mountfitchet growth scenarios (new supply only) progressed to Section 5.5

Progressed scenarios		Homes	Employment
1)	Strategic growth to the north plus non-strategic site to the northeast	325	-

Thaxted

5.4.93 Thaxted is a notably smaller settlement than those discussed above but is marginally the largest of the Local Rural Centres, as defined in the Settlement Hierarchy Study (2024). Thaxted has a notably high 'settlement score' relative to its population (see Figure 5.3), which potentially suggests a growth opportunity. However, Thaxted is unique amongst the Key Settlements and Local Rural Centres in that it does not lie along either the M11 or A120 corridors. It is a notably rural village and also constrained.

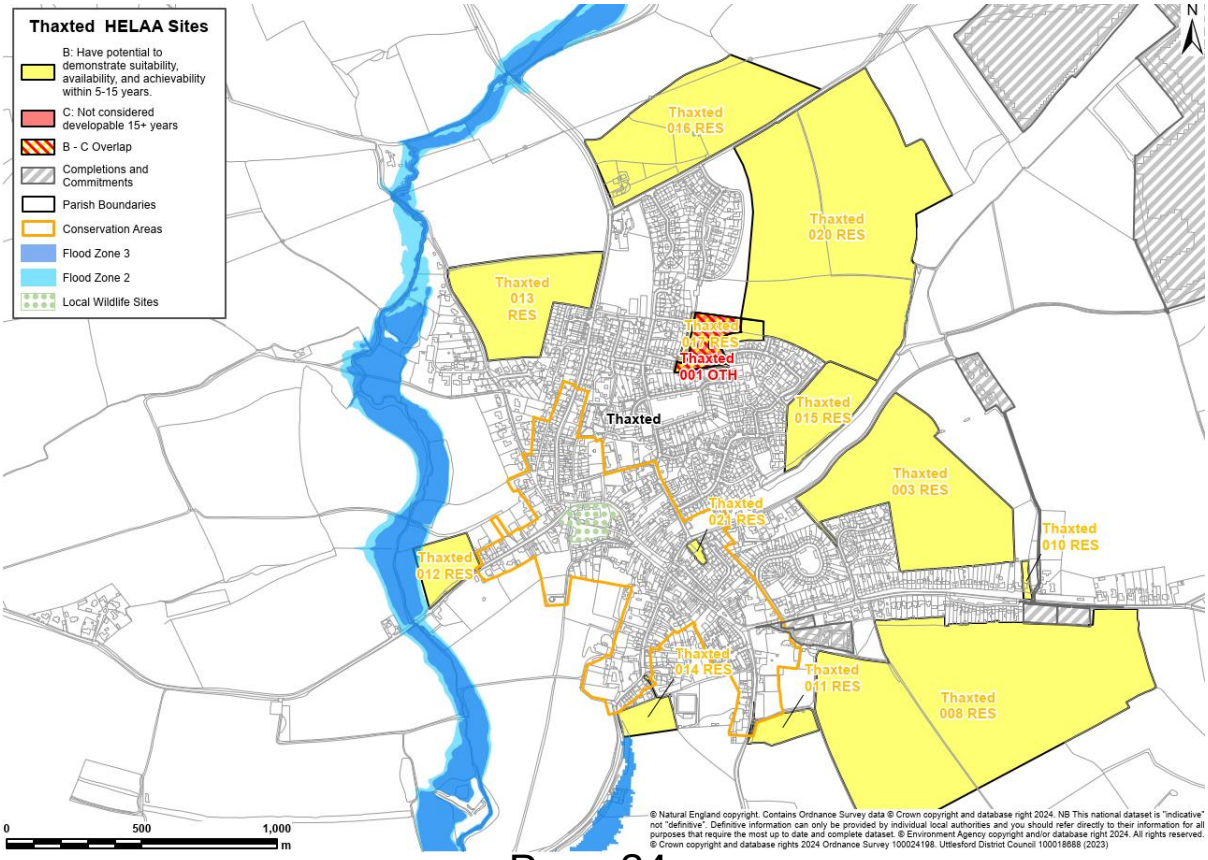
5.4.94 The medieval core includes seven Grade I listed buildings, and Grade II* listed Thaxted Windmill is also an important landmark to the west. The village has expanded beyond the designated conservation area to the north and east, but overall retains a very strong historic character linked to the surrounding chalk influenced landscape, as experienced from the roads through the village (also the Harcamlow Way).

5.4.95 The rural nature of the village means that car dependency is unavoidably high, and it is important to note that there is no secondary school (with Thaxted near equidistant between secondary schools at Saffron Walden, Newport, Stansted Mountfitchet and Great Dunmow). However, an hourly bus service links Thaxted to Saffron Walden and Great Dunmow between Mon-Sat, and a further hourly bus service runs through Thaxted via Debden between Saffron Walden and Stansted Airport on Mon-Sat.

5.4.96 **Completions** since the start of the plan period and **commitments** are fairly low. However, there has been some housing growth over the past decade (a scheme to the north and another to the north east).[9]

5.4.97 The **HELAA sites** at Thaxted are shown below (N.B. the committed site to the northeast is a solar farm).

***Figure 5.14**: HELAA sites at Thaxted*



5.4.98 Landscape sensitivity serves as a clear argument against the sites located to the **north** and to the **west**. One point to note is a recently refused application for 67 homes on Site 013 (UTT/22/2900/OP).

5.4.99 This leaves options for expansion: to the **east** (either side of Copthall Lane) and to the **south east**.

5.4.100 Of these two options, it is the option of expansion to the **east** that is judged to be preferable. There is the potential for a comprehensive scheme here, to include a primary school, including because land to the north east is in public sector ownership, and expansion here is preferable in built form and landscape terms. The site to the south east does not draw upon a field boundary at its southern extent and is prominent in the landscape from Bardfield Road (the route to/from Braintree) on the approach to Thaxted. Growth to the east is also potentially marginally preferable in terms of linking to the village centre. Finally, expansion to the south east could lead to pressure for further growth to the west, such that built form links to the B184, which would give rise to concerns in respect of impacts to the conservation area.

5.4.101 With regards to the nature of scheme that might be supported to the east, masterplanning work has been completed that suggests the potential for comprehensive growth across this sector, i.e. between the B-road in the north (B1051 Great Sampford Road) and the homes on Bardfield Road in the south. Copthall Lane could be utilised as an active travel corridor; however, a constraint is the strong surface water flood channel and green corridor along the northern edge of the lane. There is the potential to deliver a primary school adjacent to the current north east edge of Thaxted.

5.4.102 However, the scale of growth involved (489 homes in total) could create a challenge from a viability perspective. Specifically, whilst 1fe school on a 2fe site would be viable, the County Council's preference is 2fe schools. Also, Site 001 OTH is proposed as a nature reserve, which is a barrier to connectivity in respect of the northern-most HELAA site, which is where the primary school is proposed. Having said this, there could be a footpath through the site. A final point to note is a pending planning application for 49 homes on Site 015 (UTT/21/1836/OP).

5.4.103 Finally, with regards to **non-strategic sites**, it is noted that the site promoter of Site 014 was the only site promoter at Thaxted to submit a consultation response in 2023, proposing the site for 10-12 homes. The site is sensitive on account of views from the B1051 on the approach to the Thaxted Conservation Area, and it is also noted that access is constrained. However, as a small site this could be one that is suited to consideration by a review of the Thaxted Neighbourhood Plan, with a view to making provision for locally arising needs / maintaining village vitality without giving rise to issues in respect of school capacity.

5.4.104 In **conclusion**, whilst the Draft Local Plan proposed a strategic allocation to the east the County Council raised a significant concern regarding the proposed 1fe primary school (with land available for a future expansion). Also, there is a degree of concern regarding aircraft noise, recognising that the Local Plan must avoid directing growth to locations that could lead to increased tensions between residents and Stansted's operation including noted the committed expansion.

5.4.105 As such, and given sever primary school capacity constraints, the emerging proposed approach is to not allocate any sites for strategic growth at Thaxted, nor to assign the village a housing requirement that must then be met by allocation of non-strategic sites through a neighbourhood plan.

5.4.106 Nonetheless, it is considered reasonable to continue to test the option of a strategic allocation (as per the Draft Plan proposal) through the appraisal of reasonable alternative growth scenarios. This reflects a view, amongst other things, that there is a clear need to support growth at Thaxted with a view to meeting locally arising housing needs (including small family housing and affordable housing), maintaining village services and facilities (including bus services) and more generally maintaining village vitality. The only other feasible scenario is higher growth in order to increase confidence around viability of delivering a 2fe primary school; however, it is very difficult to envisage any such scenario given constraints to growth.

***Table 5.5**: Thaxted growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenario		Homes	Employment land
1)	Nil strategic growth (or NP housing requirement)	-	-
2)	Strategic expansion to the east	489	-

Takeley

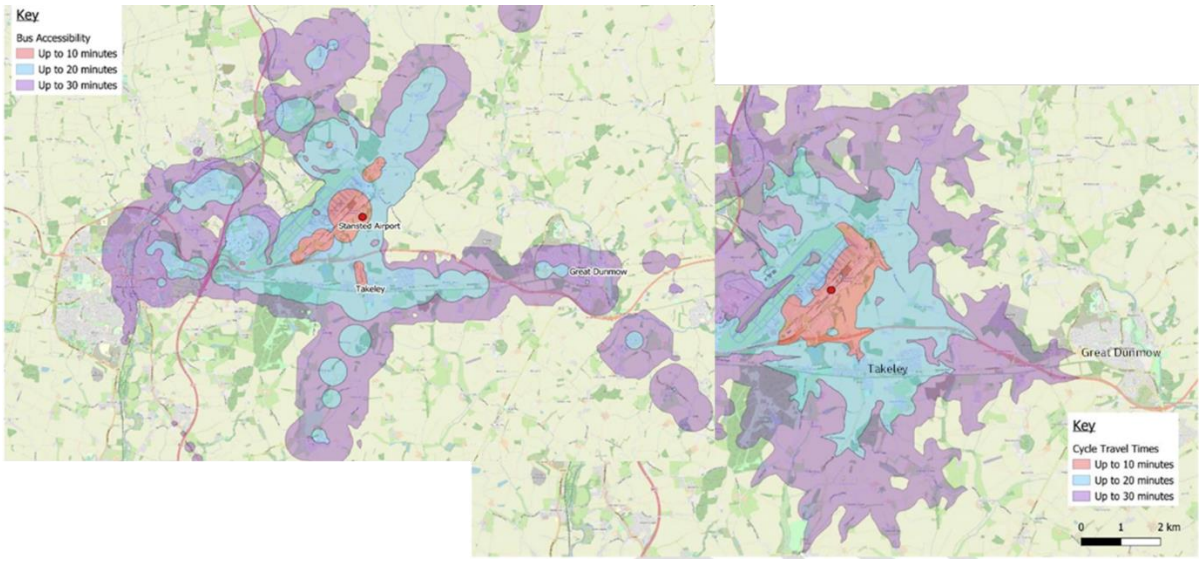
5.4.107 Figure 5.3 records Takeley as having a settlement score similar to Thaxted but a notably higher population as of 2021, plus it is important to note that the population has increased since 2021 and will increase further as a result of committed growth (which is delivering somewhat limited community infrastructure).

5.4.108 Takeley was a key focus of growth within the Draft Local Plan (2023) despite being a settlement located in the second tier of the settlement hierarchy and not benefiting from a train station. Significant levels of local concern were raised through the consultation. However, strategic arguments for supporting higher growth remain, including: A) proximity and links to Stansted Airport, which is a key employment hub and transport interchange (see Figure 5.15); B) an opportunity to deliver a local centre and a secondary school as a focal point for the village; and C) the A120 bypass to the north, which could define a new northern extent to the village. The settlement is also well-linked to both Bishops Stortford and Great Dunmow, and work has been underway to explore strategic transport upgrades along the A120 / B1256 corridor, including a new mobility hub alongside improved links to Stansted and improvements to the Flitch Way.[12]

5.4.109 However, there are a range of challenging constraints to growth, notably in terms of:

- Historic environment – the central Smiths Green area is associated with a strong historic character, and was recently designated as a conservation area. It is also important to note that a historic lane (and cycle route) links through Smiths Green to Bamber's Green to the north (north of the A120) via Grade I listed Warish Hall, which is also a scheduled monument. There is also sporadic historic character along the B1256 (a Roman Road) stretching from Takeley Street to Little Canfield (see historic mapping).
- Biodiversity – first and foremost, there is a need to note the proximity of Hatfield Forest, which has already been introduced above as highly sensitive to increased recreational pressure. Also, Priors Wood ancient woodland CWS is a significant constraint to growth, including recognising its value within a wider wooded landscape, with a position between Hatfield Forest to the west and High Wood SSSI to the east. There is also a notable concentration of woodland priority habitat within the central part of Takeley.
- The Stansted Airport Countryside Protection Zone (CPZ) – is an existing designation that has a clear purpose and is widely valued. The designation had a strong influence on the previous two withdrawn versions of the local plan; however, at the current time a detailed study has been undertaken showing the potential for strategic growth to come forward in an amended way – relative to the Draft Plan stage – in a way that maintains the integrity of the CPZ. See further discussion below.

***Figure 5.15**: Existing bus and cycle connectivity to Stansted Airport public transport hub*



[12] It is recognised that the potential for comprehensive transport solutions / enhancements along the A120 / B1256 are limited at the current time, but early steps can be taken with long term aspirations in mind. Focusing on a new mobility hub at the A120 junction east of Takeley, this opportunity is discussed within the Sustainable Transport Study (2023), with reference to another study that defined tiers of mobility hub (there would also be a lower tier hub within any strategic site at Takeley). Mobility hubs are *"designed to host public transport alongside shared transport modes and active travel facilities… with the possibility of seamless switches and improved links between different layers of transport such as the core public transport network and shared services. They raise the profile and visibility of the range of shared and other sustainable travel modes, which provides a new status and appeal, with the associated benefits of reduction in car use."*

5.4.110 **Completions** since the start of the plan period and **commitments** are significant (762 homes in total, as of April 2023) but considerably lower than at Great Dunmow. However, there has been significant growth over recent years, with satellite imagery from 20 years ago showing the settlement primarily located to the west of Smith's Green (a historic cross-roads).[9]

5.4.111 Strategic expansion to the east delivered a second primary school for the village in c.2010, and recent/ ongoing office development has provided employment (plus a committed office scheme could deliver a GP surgery). However, the general view is that infrastructure delivery has been sub-optimal.

5.4.112 The **HELAA sites** at Takeley are shown below across two maps, one centred on Takeley Parish and the other centred on Little Canfield Parish. By way of orientation, a key point to note is that the committed sites to the west are set to deliver new strategic greenspace to define the western edge of the village (see Figure 5.18), also accounting for a sensitive historic bridleway and an isolated Grade I listed church.

5.4.113 The Draft Plan proposed **comprehensive growth** to the north of the village, to include a new secondary school that could also serve Great Dunmow. This was discussed within the ISA Report (2023) as the only option reasonably in contention (i.e. Takeley was a 'constant'), because of: A) a clear strategic case for growth; B) a need to avoid further piecemeal growth; and C) no other realistic options for strategic growth.

5.4.114 In respect of there being 'no other realistic options for strategic growth', elaborating on this point:

- The possibility of strategic growth to the north of the A120 is mentioned as a possibility within Section 5.3, above. However, the landowners submitted a consultation response in 2023 (ref. 3283) promoting only the southern part of the land in question. The proposal is for residential and employment land, but there are very few further details provided. For a range of reasons, including the CPZ designation and the need to consolidate built form / deliver a local centre at Takeley, this option performs relatively poorly.
- The possibility of a large new settlement to the East of Takeley ('Easton Park') is also discussed above as a long term option but is not an option for this current local plan. Even if it were feasible to delay the Uttlesford Local Plan to explore this option with a view to possible allocation (which it is not) a new secondary school here could be much delayed relative to the option of a new school at Takeley, plus the opportunity to consolidate built form / deliver a local centre at Takeley would be missed.

***Figure 5.16**: HELAA sites at Takeley (Takeley Parish)*

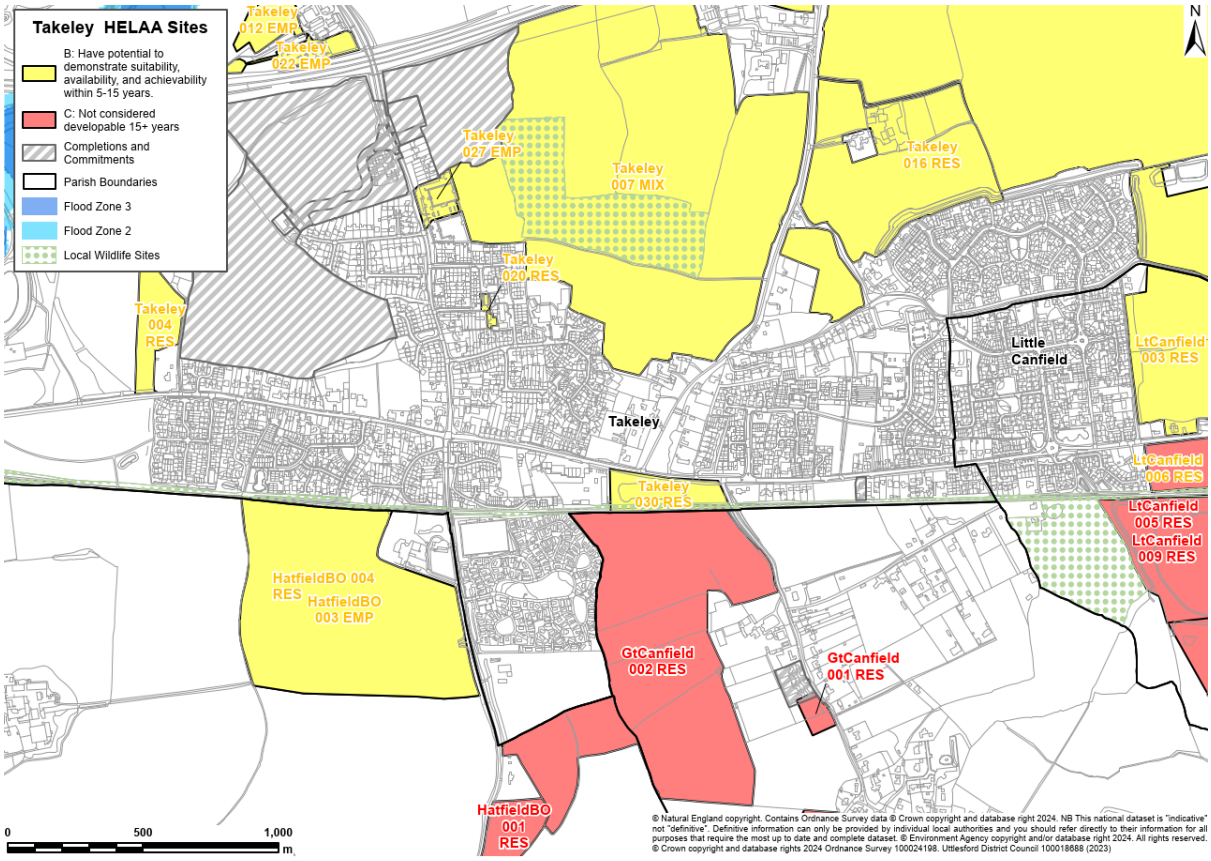
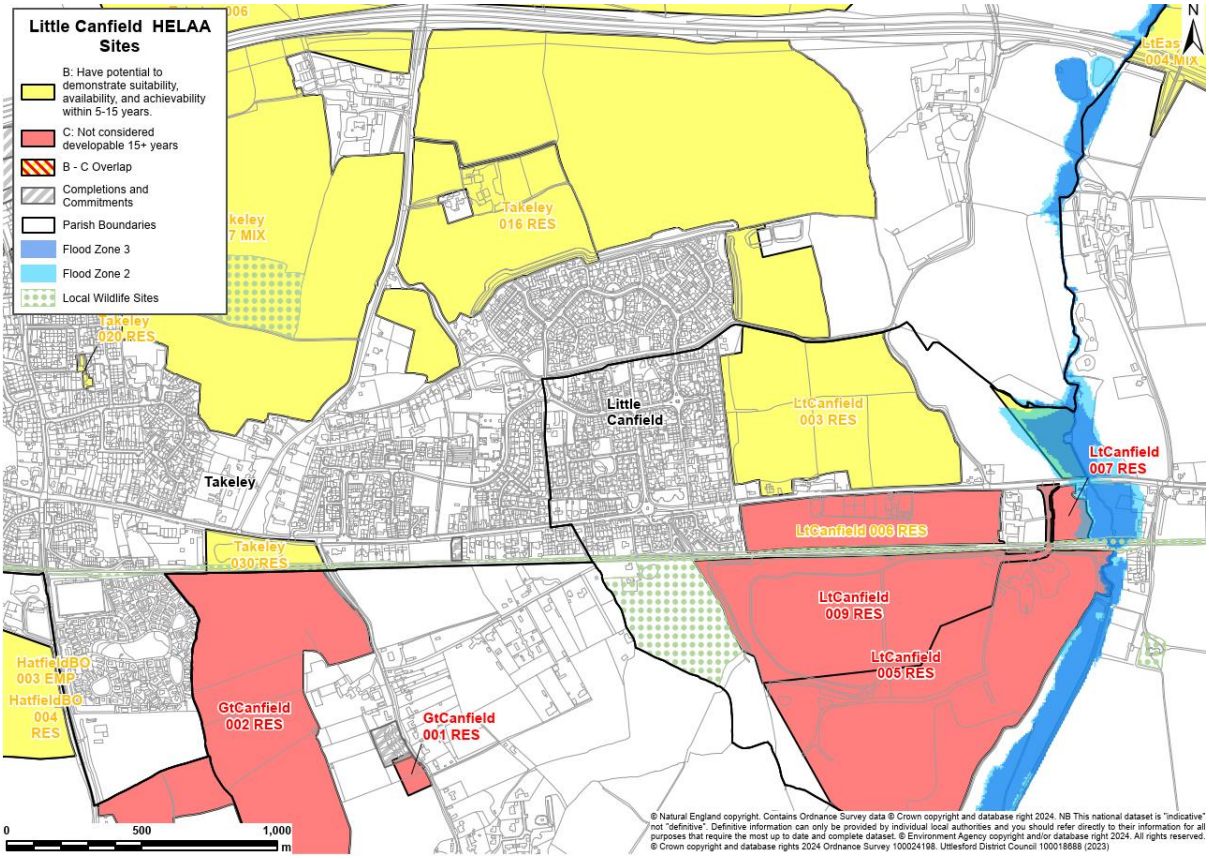


***Figure 5.17**: HELAA sites at Takeley (Little Canfield Parish)*



5.4.115 Focusing on the option of strategic growth to the **north of the village**, the Draft Plan proposal generated a considerable level of objection from local residents through the consultation in 2023, and concerns have continued to be raised since the time of the consultation, with Takeley a focus of several meetings of the Local Plan Panel. Concerns mainly relate to the CPZ designation, but also transport / traffic concerns, including recognising growth elsewhere along the A120 / B1256 corridor (and recognising that issues with the A120 can cause traffic to divert along the B1256).

5.4.116 In this light, a considerable amount of work has been undertaken explore options for strategic expansion to the north of Takeley. This has not only resulted in a proposal to extend the CPZ designation to include land to the southwest of Takeley, as discussed (also see the CPZ Study, 2024), but also a considerable adjustment to the configuration of proposed growth to the north of the village.

5.4.117 The new proposed approach is shown at a high level in Figure 5.18 and in detail in Figure 5.19. The new proposed approach represents a major improvement on the proposal from 2023, in particular:

- The new strategic greenspace mitigates concerns around the CPZ (albeit a road will still pass through the Smiths Green area) and recreational pressure[13] on Hatfield Forest (also supporting the functioning of priors wood as a component of a wider wooded landscape).
- The new proposed schools area is preferable from a perspective of avoiding close proximity to the A120. Also, it will assist with defining the eastern extent of the village. In this latter regard, it is important to note that Takeley is notably associated with raised ground, with land descending towards stream sensitive corridors to both the west and east, hence there is a need to avoid 'sprawl'.
- Opportunities to enhance 'sustainable transport' connectivity to Stansted Airport and also with Braintree and Great Dunmow have been confirmed through recent work, as discussed further in Section 9.

N.B. framework plans as per Figure 5.19 are available for all of the current proposed growth locations.

[13] Detailed work has been undertaken to ensure new strategic greenspace accords with the standards expected by Natural England in the case of Strategic Alternative Natural Greenspace (SANG), which is employed extensively across the country as a means of mitigating the impacts of recreational pressure associated with housing growth on internationally designated sites.

5.4.118 The final option for discussion here is HatfieldBO 004, located to the **southwest** of Takeley, specifically to the south of the Flitch Way and west of the B183. The site promoters submitted a consultation response in 2023 (ref. 3152), explaining that whilst the site had previously been proposed for 275 homes and a primary school, the current proposal is for a 100 home scheme on part of the site. It is recognised that the Landscape Sensitivity Study (2021) shows land to the south of Takeley to be less sensitivity than land to the north; however, there are heritage sensitivities associated with this site (which are a focus of the consultation response). Also, and regardless, there is a clear case for strategic rather than further piecemeal growth at Takeley, and for containing the village to the north of the Flitch Way, noting that the adjacent development comprises park homes and noting the new CPZ proposal.

***Figure 5.18**: Conclusion of the CPZ Study (2024) also showing growth locations*

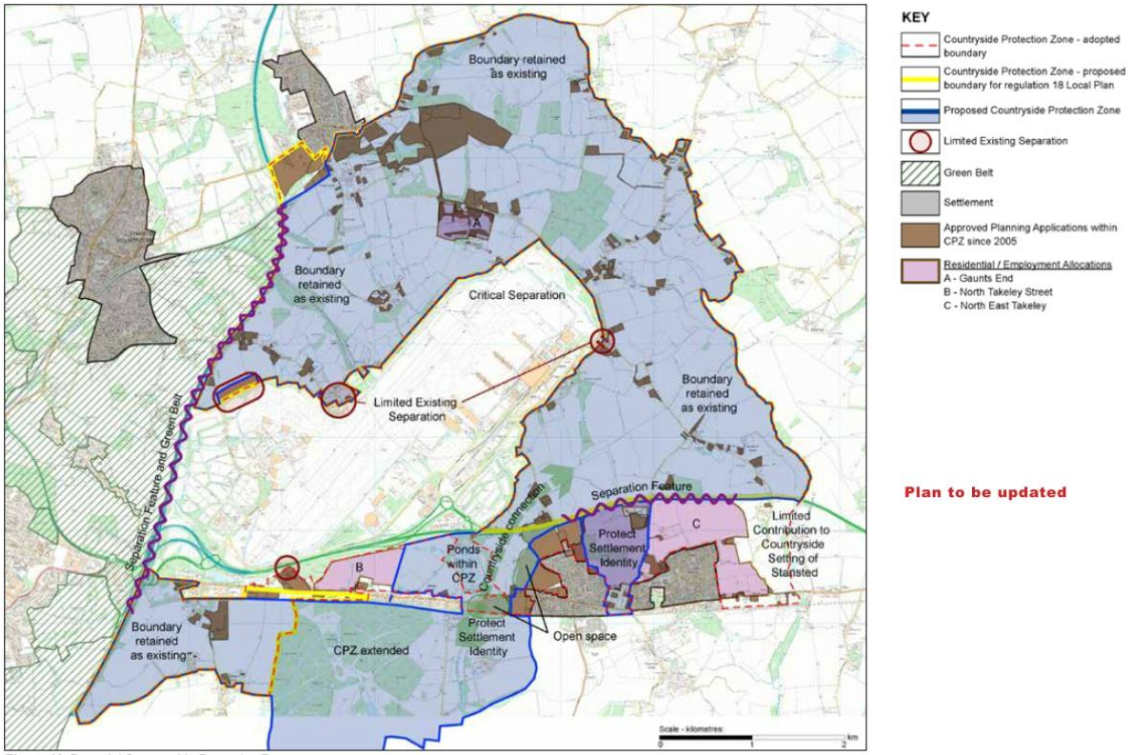
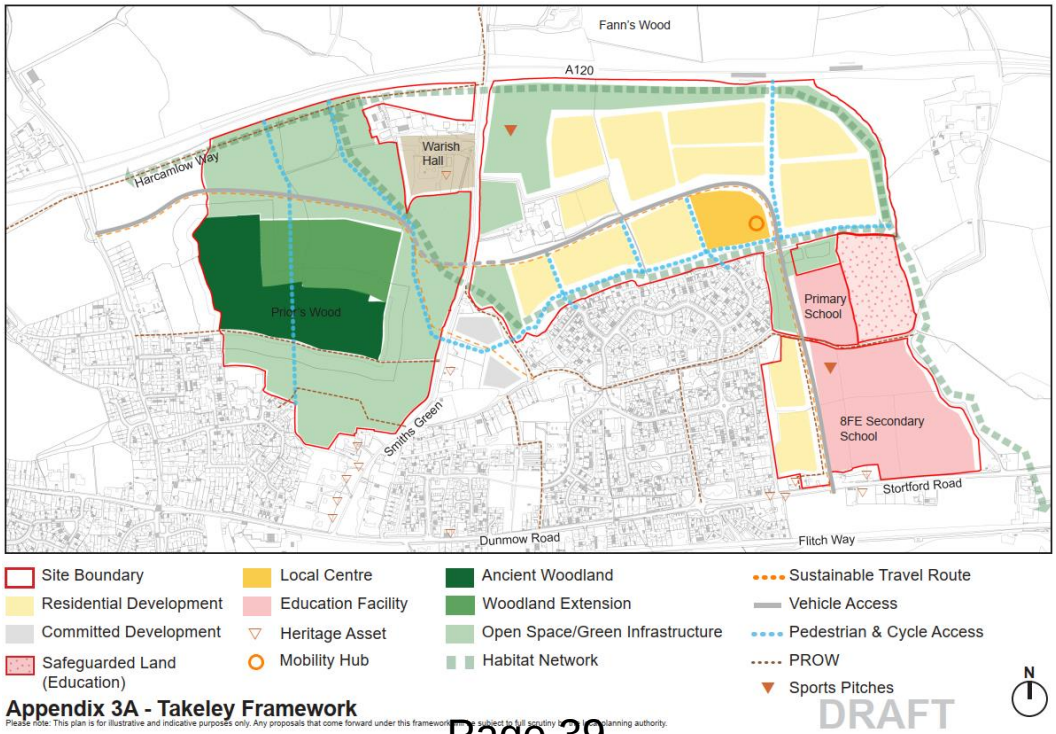


***Figure 5.19**: The new proposed CPZ boundary also showing growth locations*



5.4.119 Finally, there is a need to discuss **employment land**, which is an important consideration at Takeley given proximity to the Stansted and the M11. The Draft Plan (2023) proposed a site for 15ha of industrial and logistics land at Takeley Street (see Figure 5.18), and the ISA Report (2023) gave this site detailed attention. There are clear sensitivities, and some notable concerns were then raised through consultation, including relating to: access onto / traffic generation on the B1256; close proximity to Takeley Street, where there are 23 listed buildings (although overall limited historic character due to modern infill); and proximity to Hatfield Forest SSSI / National Nature Reserve (and potential links via an important stream corridor).

5.4.120 The proposed the new proposed approach is to support 18 ha of industrial and logistics land within the site (the total area of which is 27 ha). However, work has been undertaken to revise proposals aimed at mitigating concerns, including by masterplanning with a view to strategically targeted new green/blue infrastructure. Natural England has not objected regarding potential impacts to Hatfield Forest (noting that the scheme would not generate significant recreational pressure, which is the key 'impact pathway').

5.4.121 The other key sensitivity is the CPZ designation. However, there is confidence that the site can be removed from the CPZ without undue effects, assuming that the fields adjacent to the east (which could feasibly link to the A120) are included in the CPZ in the long term. This is clearly important in terms of maintaining a landscape gap to Takeley, which is expanding to the west, as discussed.

5.4.122 Overall, this is a sensitive site for new industrial land, but also one that performs very strongly in terms of a desire to support new industrial land in close proximity to Stansted and the M11. Also, the reality is that there are not considered to be any reasonable alternative approaches that might be taken to meeting the requirement to deliver 15 ha of new industrial land in the vicinity of Stansted.[14] There could be flexibility to consider a reduced scheme, noting that the current proposal (18 ha) exceeds the requirement for this area (15ha), and also noting that the proposed industrial and logistics allocation at Great Dunmow is large and somewhat 'faces' Takeley and Stansted; however, there is also a need to make best use of the site.

5.4.123 In **conclusion**, as per the conclusion reached in 2023, it is reasonable to progress only one growth scenario to Section 5.5, namely support for strategic growth to the north of Takeley (plus new industrial land at Takeley Street). It is recognised that the Draft Plan proposals generated significant local concerns, but detailed work has been undertaken to address these concerns, and the strategic case for growth at Takeley remains very clear. The proposed approach to growth clearly warrants ongoing scrutiny (equally, the proposed industrial land allocation), but it is not possible to envisage a reasonable growth scenario involving nil or low growth at Takeley, mindful of objectives at the Takeley scale, at the A120 corridor scale and at the District scale (e.g. a new secondary school at Takeley could ease pressure at Saffron Walden).

5.4.124 It is recognised that Natural England requested consideration of alternative scenarios for Takeley though the consultation response received in 2023, but we respectfully suggest there are no *reasonable* alternative growth scenarios in light of the discussion above (also see the appraisal in Section 9).

***Table 5.4**: Takeley growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenario		Homes	Employment land
1)	Strategic expansion to the north	1,546	18ha site to the west (Takeley Street)

Newport

5.4.125 Newport is located in the north of Uttlesford, to the south of Saffron Walden. Newport has a lower 'service score' than Takeley and Thaxted (see Figure 5.3) but benefits from a train station (25 minutes to Cambridge) and a secondary school. The village is distant from an M11 junction and not on an A-road.

5.4.126 The village has a strong medieval core associated with a confluence of valleys (the upper reaches of the River Cam) and associated transport route, and the village has expanded beyond the conservation area solely to the west. The M11 is located to the west and could serve to contain expansion of the settlement.

[14] See further discussion within the Employment Land Site Selection Topic Paper (2024). There is a cluster of small site options to the north of Takeley (Parsonage Road), but this area is sensitive from a CPZ perspective, plus the intention is to enhance this road as a cycle route. Also, there is a site adjacent to M11 J8, but a scheme was recently refused by PINS (UTT/23/0950/PINS).

5.4.127 **Completions** since the start of the plan period and **commitments** are relatively low (155 homes in total, as of April 2023), and it appears there was limited housing growth over the preceding c.20 years.[9]

5.4.128 There is some secondary school capacity, but primary school capacity is an issue. This led to a proposal at the Draft Plan stage (2023) to propose strategic expansion to the west and to the southeast, including with a focus on securing new primary school capacity. However, the County Council then raised concerns regarding the potential for the primary school to expand to accommodate this level of growth. Also, traffic modelling highlighted issues with the proposed approach of strategic expansion to the west and, whilst there could be a technical solution, this would have viability implications. In turn, a viable solution could necessitate additional growth, which would generate significant tensions with various constraints.

5.4.129 This all leads to an argument for a lower growth strategy for the village. Also, the latest understanding is that the Parish Council is very keen to take forward the task of allocating sites through a Neighbourhood Plan, and it is likely a plan could be 'made' prior to Local Plan adoption (see https://www.nqrplan.org/).

5.4.130 Specifically, whilst the proposal at the Draft Plan was for allocations totalling 412 homes, the new proposal is a 300 home housing requirement. This level of growth should still support expansion of the primary school. However, if growth is dispersed across smaller sites, then this could be made more challenging.

5.4.131 In **conclusion**, there is only one reasonable growth scenario for Newport, which is to assign a housing requirement of 300 homes to be taken forward through the neighbourhood plan. The ISA Report (2023) presented detailed discussion of the various site / growth options at Newport, but that discussion need not be repeated here. It need only be said that there is quite an important strategic choice regarding expansion to the west (the previous Draft Plan approach) versus expansion to the east (breaking with the existing built form; the railway as a barrier to movement; rising land associated with long distance footpaths; the train station in proximity) versus further linear expansion to the north (a risk of 'sprawl').

***Figure 5.20**: HELAA sites at Newport*

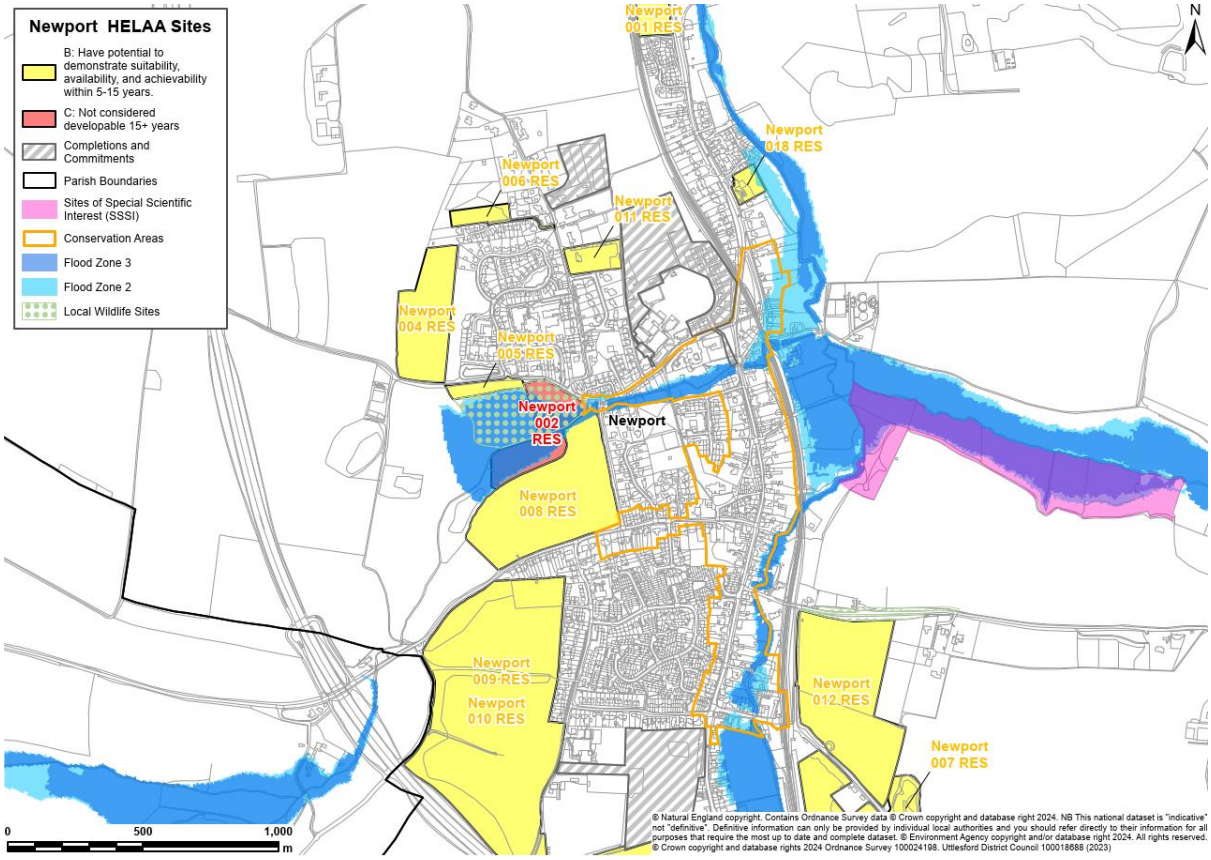


***Table 5.5**: Newport growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenario		Homes	Employment land
1)	Neighbourhood plan housing requirement	300	-

Hatfield Heath

5.4.132 Hatfield Heath is constrained by the London Metropolitan Green Belt, and there are not known to be any particular development related opportunities, beyond meeting locally arising housing needs and maintaining village viability / vitality. Completions and commitments are low (42 homes in total, as of April 2023), and historic satellite imagery shows very low housing growth over the c.20 years preceding the start of the plan period. However, the village is well-linked by road to both Bishops Stortford and Harlow.

5.4.133 The village has overall relatively low historic environment sensitivity, with no designated conservation area and few listed buildings, but there is a clear historic character linked to the central heath (see historic mapping). There is a dispersed built form that might benefit from consolidation, but there is no clear development opportunity that would deliver benefits to override the Green Belt constraint.

5.4.134 Two modest sized sites are being actively promoted (**Site 005/006** and **Site 008**), and both do benefit from a degree of containment in landscape terms, but both are constrained in biodiversity terms (specifically, both sites are shown by the national dataset to comprise priority habitat, albeit the accuracy of this data is limited, and neither site is designated as a Local Wildlife Site). Site 008 appears to be the better contained site in Green Belt terms but is potentially more sensitive in biodiversity terms (on the basis that the national dataset indicates heathland priority habitat), plus footpaths cross the site. For information submitted in support of these two sites see consultation responses 3994 and 3775 from 2023.

5.4.135 Finally, it should be noted that there is a **new settlement option** to the north of the village. However, land here is not very well connected in transport terms, and there would be a clear concern regarding impacts to Hatfield Forest. A new settlement here would link to Harlow and Bishops Stortford, so could feasibly be reconsidered in the future should there be a need for growth to support these settlements. A vision document (dating from 2021) was submitted as part of the consultation in 2023 (ref. 3162).

5.4.136 In **conclusion**, there is only one reasonable scenario involving no strategic allocation, as per 2023. There is no potential to demonstrate the 'exceptional circumstances' necessary to justify release of land from the Green Belt for development at Hatfield Heath, given growth options outside of the Green Belt; limited strategic case for growth at Hatfield Heath; and limitations and constraints affecting the available sites.

***Figure 5.21**: HELAA sites at Hatfield Heath*

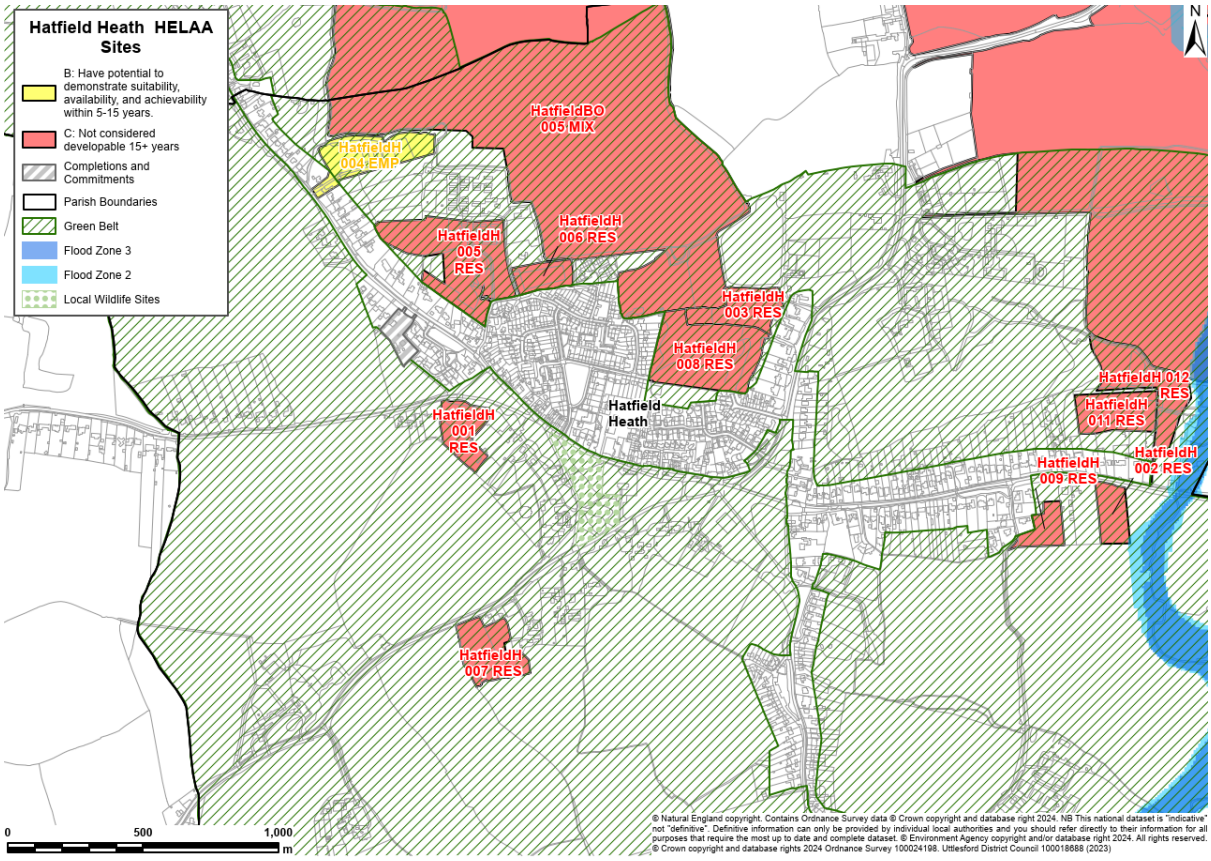


***Table 5.6**: Hatfield Heath growth scenarios (new supply only) progressed to Section 5.5*

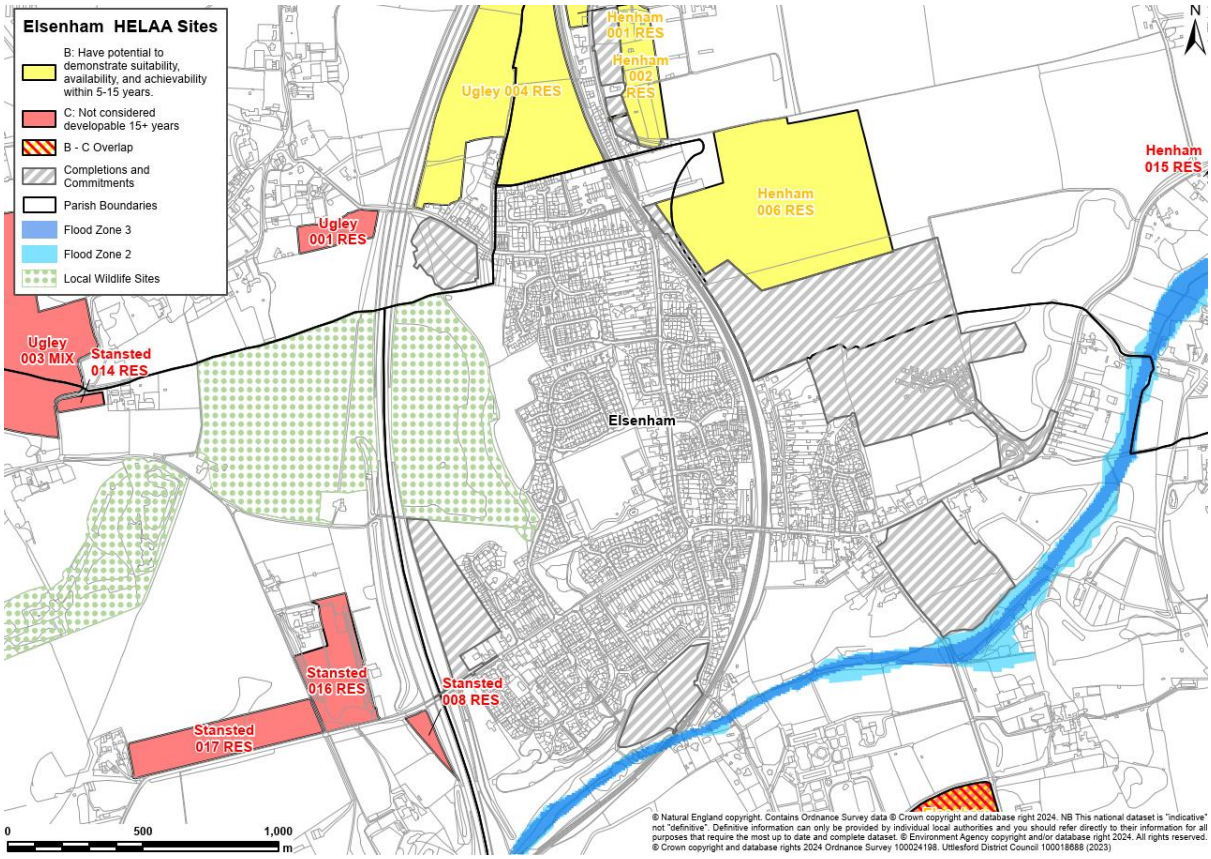
Progressed scenario		Homes	Employment land
1)	Nill growth (bar windfall)	-	-

Elsenham

5.4.137 Elsenham benefits from a train station and good links to Stansted Mountfitchet and Stansted. There is also notably low historic environment constraint, and fairly limited constraint in wider respects. However, the level of completions and commitments is very high, with the village set to see transformative change.

5.4.138 The **HELAA sites** at Elsenham are shown below. By way of orientation, it should be noted that the bulk of Site 006 is permitted, as is 'white' land to the west and to the southeast.

***Figure 5.22**: HELAA sites at Elsenham*



5.4.139 Understanding at the Draft Plan stage (2023) was that there were no available uncommitted strategic growth options. However, it was then recognised that an area of uncommitted land exists comprising the northeastern part of **Site Henham 006**. This site is notably unconstrained, benefits from very close proximity to the train station and its allocation will significantly improve the potential to deliver a new primary school within the permitted part of Site Henham 006. One consideration is the sensitive wooded landscape to the east of Elsenham, including Elsenham Woods SSSI, but there is no reason to suggest that an additional 110 home scheme here (to the east of the village) gives rise to significant concerns.

5.4.140 In light of the above discussion, there is little if any strategic case for exploring further strategic growth options at Elsenham. However, there is a need to note **Site Ugley 004**, where there is a current planning application for 240 homes (UTT/24/0543/OP). This site is constrained on account of the adjacent railway line and M11, there is surface water flood risk (the development proposal includes land raising and quite extensive SuDS) and it is also noted that the field boundaries are present are shown on historic mapping. However, the key consideration is perhaps the lack of a strategic argument for further growth at Elsenham.

5.4.141 Finally, there is a need to consider **employment land**, and specifically the future of the Water Circle Estate at Gaunt's End. The situation is complicated here, but the first thing to say is that this is quite a long established small industrial / logistics estate. The second point to note is that permission was granted in 2012 on land to the east for a ~2-3 ha new office scheme (Trisails; UTT/1473/11/FUL) and some work has begun on the scheme. The permitted scheme formed part of wider vision for the estate. However, this vision is now unviable, recognising recent changes to the market for out-of-town office floorspace, and given the committed Stansted Northside scheme. Whilst there is demand for office space, this is for smaller units, and perhaps company satellite offices, rather than HQ space.

5.4.142 Full details of the proposed approach are set out in the Employment Land Site Selection Topic Paper. However, in brief, the proposal now is to allocate 5 ha of land in the east of the Estate (including land previously permitted for the Trisails scheme) for office space, in the hope that this will stimulate a revised office scheme to come forward. However, it is recognised that there is considerable uncertainty, with market demand at the estate seemingly focused more on logistics (e.g. see here).

5.4.143 This is an appropriate location at which to meet the need for office space in the vicinity of Stansted, and logistics growth is not supported for reasons including a rural road network. As such, the Local Plan aims to shape the future of this site, and equally is setting out to meet need/demand for logistics elsewhere.

5.4.144 In **conclusion**, there is only one reasonable scenario for Elsenham. This conclusion was also reached in 2023, although since that time the proposed approach has evolved significantly.

***Table 5.7**: Elsenham growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenario		Homes	Employment land
1)	Uncommitted part of Site 006	110	5ha at Gaunt's End

Great Chesterford

5.4.145 Great Chesterford is the smallest of the settlements under consideration here (as a potentially location for strategic growth). The village is located at the northern extent of the District, adjacent to the River Cam and M11 Junction 9. There is a train station and the journey to Cambridge is ~15 minutes. There are also strategic employment sites in close proximity, and the potential for further strategic employment growth to the southeast of Cambridge, within both South Cambridgeshire and Uttlesford, can be anticipated.

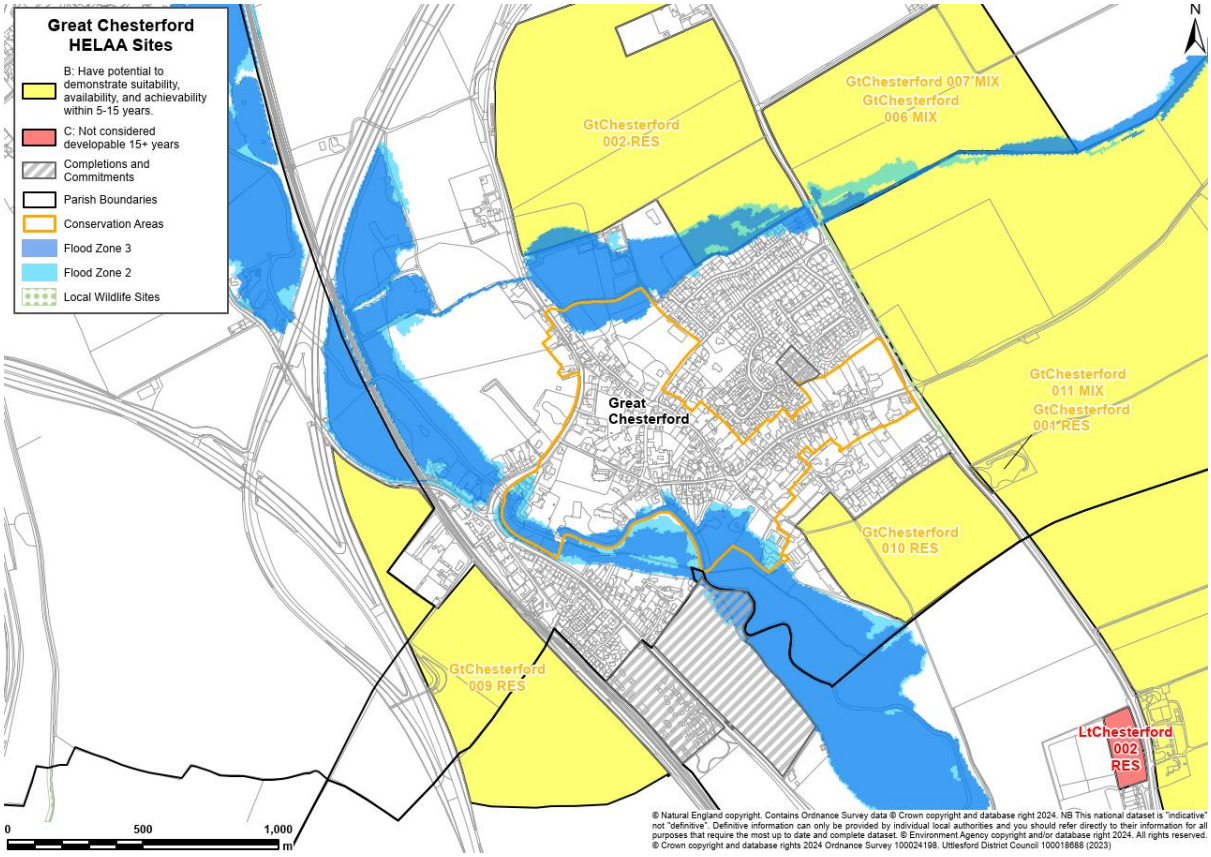
5.4.146 Focusing on strategic employment sites, of particular note is Chesterford Research Park, which is located in Uttlesford, and provides laboratory and office space for biotechnology, pharmaceutical and technology R&D companies. Current occupiers include AstraZeneca, Isogenica, Microbiotica and Biomodal. Chesterford Research Park is Uttlesford's most prominent R&D facility, has planning permission to expand further, and the owner has expressed an intention to expand further still over the plan period. The Park masterplan sets out the potential for around 100,000 sqm for research and development uses of which approximately 30,000 sqm of space is already built and occupied, and 31,500 has planning permission.

5.4.147 In this light there is a strategic argument for growth at Great Chesterford. However:

- Historic environment constraint is high, both in terms of the village conservation area and also given an adjacent scheduled monument comprising a Roman town and fort plus cemeteries. There are five scheduled monuments in total surrounding the village, with the primary site located to the north west (see map here), plus there is extensive wider land known to be of archaeological value.
- Landscape sensitivity is high (west of the B184, with is a clear focus of attention).
- The water environment is sensitive, including as the River Cam is in poor ecological condition.
- There is a significant primary school constraint to growth, with the existing primary school small and unable to expand. The County Council has identified the need for a 2.1ha site for a new 2fe primary school and would be unwilling to support a smaller school.

5.4.148 **Completions** and **commitments** total 229 homes, as of April 2023, which is amounts to a significant level of growth, given an existing population of 1,776 (2021). Historic satellite imagery indicates that there was some modest housing growth in the years preceding the start of the plan period.[9]

***Figure 5.23**: HELAA sites at Great Chesterton*



5.4.149 Whilst there is a clear case for considering strategic growth options, in practice there are very limited if any options. Attention naturally focuses on land to the west of the B184, given the existing settlement form (relating to the river / rail corridor) and the need to avoid breaking into an open and expansive chalk influenced landscape to the east. However, in this area:

- **North** of the village – feasibly has potential to deliver a strategic scheme to include a new primary school. However, Historic England has raised significant concerns. A planning application for 350 homes and a heritage park (no primary school) was recently refused (UTT/22/2997/OP). The site promoters briefly responded to the consultation in 2023 (ref 973), criticising the decision not to progress this site to the RA growth scenarios, but did not respond to the concerns raised, e.g. primary school capacity.
- **West** of the village – land is available to the west of the railway line; however, it has not been possible to conclude the potential for good/safe road access, including because access would need to be through land that falls within South Cambridgeshire District. Also, it is important to note that the Icknield Way passes through the site, although there might be an enhancement opportunity. The site promoters submitted a response in 2023 (ref 667) stating that work to explore access is soon to be undertaken.
- **East** of the village – land here relates well to the village edge; however, there is landscape sensitivity here, with the site in the foreground of extensive views across the Cam Valley, as experienced from the Walden Road (B184). Regardless, the latest situation is that the land is not available for development.

5.4.150 The final matter for consideration is then the option of a **new settlement**, which was previously proposed through the withdrawn local plan (2020). Historic environment, landscape and transport constraints were considered in detail by the Inspectors' letter (2020), for example the Inspectors concluded: *"Presently, the proposed Garden Community at North Uttlesford is not justified by the historic heritage evidence available and we share Historic England's views that there is a possibility that it is not a suitable location for the development proposed due to its impact on the significance of heritage assets."*

5.4.151 In this light, and given the strategic context discussed in Section 5.2, the option of a new settlement was ruled out as unreasonable in 2023, but the site promoters then submitted a detailed representation (ref 1127), including a detailed 'technical note' criticising the decision taken. The latest proposal is for a 1,500 home garden community, but with a long term aspiration to deliver 4,500 homes as per the scheme previously allocated in the withdrawn local plan – see Figures 5.24 and 5.25.

5.4.152 It is recognised that the inability to currently identify any strategic growth locations at Great Chesterford (where, as discussed, there is a strategic case for growth) does serve as a reason in favour of exploring the option of a new settlement. Also, it is recognised that the site would relate very well to key employment locations, most notably the Wellcome Genome Campus – where there is consent for up to 150,000m^2 of employment floorspace and up to 1,500 homes – but also Chesterford Research Park (which is proposed for expansion, as discussed below), Granta Park, and Babraham Research Campus.

5.4.153 However, the site is not without its issues, for example terms of: transport connectivity (given the lack of a train station and a need to carefully consider capacity at M11 Junction 9 and the A11 Stump Cross junction; see the Stump Cross Study, 2024) and in in landscape terms (there is a need to question the merit of growth on raised / rising chalk influenced land given the extent of growth opportunity on low lying / flat land south of Cambridge, which is also a transport consideration, from a cycling perspective).

5.4.154 More fundamentally though, there is no strategic case for supporting a new settlement through the current Local Plan, for the reasons given in Sections 5.2 and 5.3. Whilst the decision was taken to explore a new settlement option through the RA growth scenarios in 2023 (at Ugley), this was for specific reasons around school capacity, and the option was not found to perform well through appraisal or through consultation.

5.4.155 Also, there was support for testing this option because of the potential to deliver a small garden community option without any expectation of future expansion, which is not the case for a garden community north of Great Chesterford. Here any decision to support a 1,500 home garden community would have to be made in the knowledge of a likely tripling in size of the garden community in the long term, with implications for evidence-gathering (as discussed in Section 2 of this report). For example, it is noted that the consultation response explains that a 4,500 home community would enable delivery of a secondary school, but there is no discussion of secondary school considerations in respect of a smaller scheme, e.g. 1,500 or 3,000 homes. Also, there would be a need for much detailed work around transport infrastructure. More broadly, there would be a need to engage closely with Greater Cambridge, which would likely be challenging given the current situation regarding progressing the Greater Cambridge Local Plan. It is clearly the case that any significant growth here needs to be considered in the context of planning for both Uttlesford and Greater Cambridge and, in this light, the next Uttlesford Local Plan will be well placed to explore options.

5.4.156 The following from the Inspectors' letter of 2020 serves to highlight the scale of the task involved:

"In general terms we are concerned about the lack of evidence before us to enable us to conclude these [garden communities] are sound. Whilst we realise it is the Council's intention to lay down much of the detail of the proposed Garden Communities in further Development Plan Documents (DPDs), following the adoption of the plan, it is this examination which must determine whether the Garden Community proposals are properly justified and realistically developable. This is of major importance in this case given the large scale and long-term nature of the Garden Community developments, combined with the fact that they would be the primary source of housing in the district for the next 30 to 40 years."

5.4.157 Finally, with regards to **employment**, the proposal is broadly unchanged from the Draft Plan stage, namely to support an 18 ha expansion to Great Chesterford Research Park (over-and-above land already with permission). This is a thriving research park well-related to the Greater Cambridge area and well-positioned to attract significant international investment.

5.4.158 However, this is a rural location such that transport connectivity is an inherent issue (albeit there is a frequent shuttle bus service from Great Chesterford Station). The allocation will enable realisation of the landowner's masterplan vision, but there are a number of detailed masterplanning issues for ongoing consideration, and the effect of allocation will be an oversupply of R+D employment land district-wide.

5.4.159 In **conclusion**, there is no potential for a strategic allocation for housing, nor is there a clear basis for assigning a housing requirement to the Parish Council, given the primary school capacity issue along with a lack of non-strategic site options. With regards to employment land, there is strong support for the proposed expansion with a view to contributing to a nationally significant R+D cluster, notwithstanding that the site is located in a rural area, and the effect of allocation will be to generate an oversupply that could lead to problematic commuting patterns. It is recognised that growth at Chesterford Research Park serves as a reason for giving ongoing consideration to strategic growth options in this part of the District, as does links to South Cambs and Cambridge. The next Local Plan will be well placed to explore options.

***Figure 5.24**: Two garden community site boundary options plus wider context including NP designations*

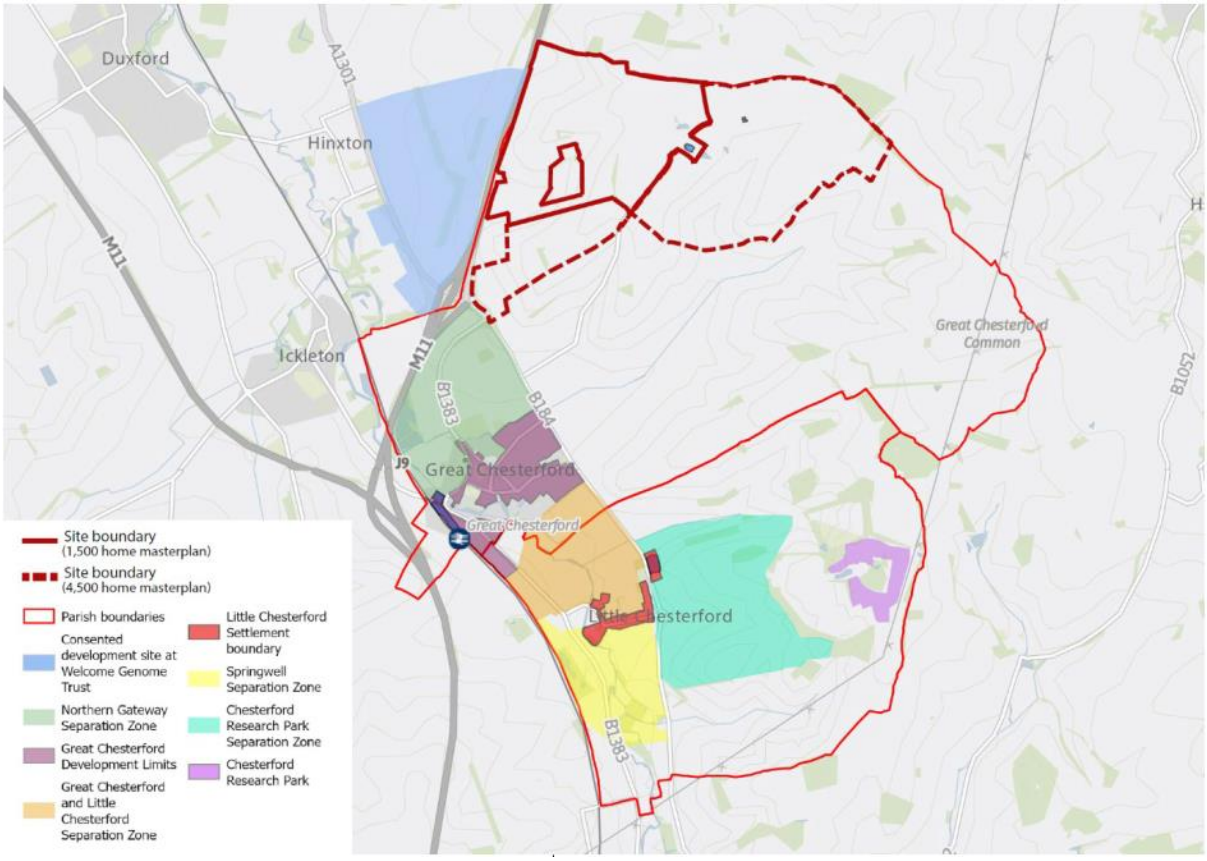


***Figure 5.25**: Concept masterplan for a 1,500 home garden community (4,500 homes would use entire site)*

***Table 5.8**: Great Chesterford growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenario		Homes	Employment land
1)	Nill growth (bar windfall)	-	Comprehensive expansion of Chesterford Research Park

Larger villages

5.4.160 As already introduced in Section 5.3, the aim is to assign housing requirements to larger villages, with non-strategic allocations then made through neighbourhood plans.

5.4.161 The proposal at the Draft Plan stage was to deliver 1,000 homes via non-strategic allocations at larger villages. However, the new proposed approach is to support **600 homes**, reflecting:

- The number of larger villages has decreased, in light of the latest Settlement Hierarchy Study (2024).
- A range of concerns were raised by parish councils through the consultation in 2023.
- The number of homes set to be delivered by sites with planning permission in the plan period is now understood to be significantly higher than was the case in 2023 (most notably because of the Land East of Highwood Quarry site, which gained permission at appeal for 1,200 homes in 2023). The implication is that the overall number of homes that need to be delivered via allocations within the plan period decreases. In turn, there is a clear argument for reducing the number of homes required to be delivered via non-strategic allocations at larger villages.

5.4.162 There are **eight larger villages**, but two of these are located in the Green Belt, and there are no exceptional circumstances to warrant nonetheless assigning these villages a housing requirement.

5.4.163 The table below presents the proposed approach to distributing the 600 homes figure across the six settlements. The methodology is unchanged from the Draft Plan stage and is explained in full within a separate topic paper available at the current time. In summary, the methodology firstly involves accounting for three factors, namely: 1) population; 2) the 'services score' established through the Settlement Hierarchy Study (2024); and 3) a desire to distribute homes across the villages fairly evenly. Secondly, there is a check on the capacity of HELAA sites, and if there is insufficient capacity then the HELAA capacity is applied to 'cap' the housing requirement and the shortfall redistributed across other villages.

5.4.164 The outcome is that: A) Felsted is assigned a relatively higher housing requirement, on account of having comfortably the highest population and service score: B) Debden is assigned a relatively low housing requirements, on account of having comfortably the lowest population and a low (but not the lowest) service score along with 'capped' potential to allocate sites on account of limited HELAA capacity; and C) the other three villages are assigned broadly similar housing requirements because, as it transpires, there is not much to differentiate them, in terms of population and service score.

***Table 5.9**: The proposed approach to growth across the larger villages*

Larger village (non-Green Belt)	Total housing requirement for the plan period	Completions and commitments	Residual requirement
Felsted	320	216	104
Clavering	199	77	122
Henham	181	60	121
Stebbing	171	62	109
Hatfield Broad Oak	141	26	115
Debden	78	49	29
Total			**600**

5.4.165 With regards to changes since the Draft Plan stage (2023), the first point to reiterate is that five villages are no longer assigned a requirement on account of being moved to the smaller villages tier of the settlement hierarchy, in light of the new Settlement Hierarchy Study (2024). It is recognised that some (but not all) are located in quite rural areas, perhaps most notably High Easter in the far south of the District, and that two are located in the north of the District, in the vicinity of Newport and Thaxted, where there is now set to be lower growth relative to the Draft Plan stage. However, in none of the cases is there a clear argument for growth in order to deliver benefits (e.g. maintaining local services/facilities) over-and-above simply providing for locally arising housing needs, which is something that could be addressed through any future neighbourhood plan allocations or potential applications for rural exception sites.

5.4.166 The second point to note is that for seven of the eight of the larger villages assigned a housing requirement at the current time the requirement is very similar to that assigned at the Draft Plan stage. Debden is the exception, where the requirement is now notably lower, but it is difficult to envisage assigning a higher requirement, given limited HELAA capacity. It is recognised that there will be the potential to identify additional available sites through the Neighbourhood Plan, but it would not be safe to assume that this will result in significant additional capacity. Debden is located between Newport, Saffron Walden and Thaxted, and it can be envisaged that the village primary school received pupils from these larger settlements, such that there is limited reason to assume any concerns regarding maintaining the school roll.

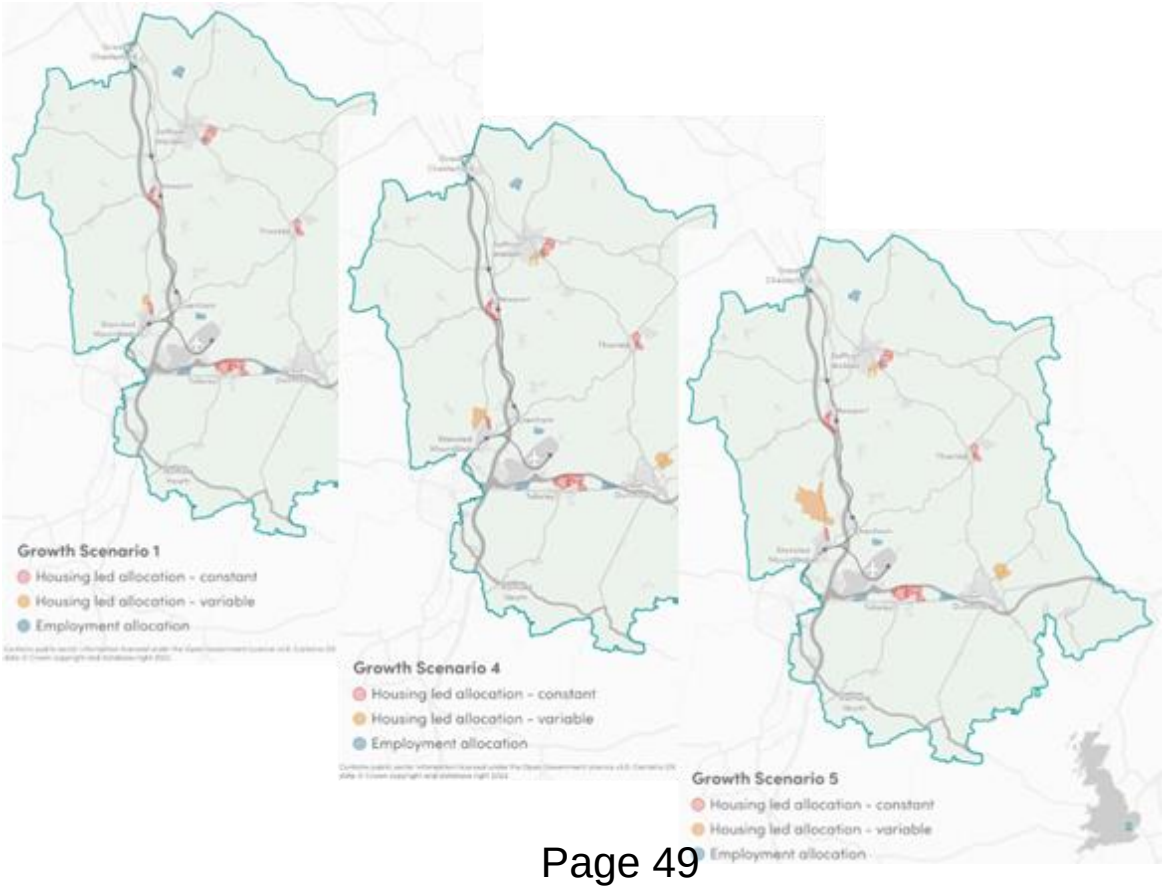
5.4.167 In **conclusion**, there are not considered to be any reasonable alternative approaches in respect of supply from non-strategic allocations at the larger villages. The proposed approach is considered to strike an appropriate balance between supporting growth at villages in line with the NPPF (including to meet locally arising needs, support village vitality and the rural economy, and also to support SME builders) whilst also weighting growth to higher order settlements in line with accessibility, transport and decarbonisation objectives. It is recognised that there is an ongoing national switch-over to electric vehicles, but EVs are not without their issues, including in terms of greenhouse gas emissions, air pollution and traffic congestion / road safety. Also, there is some uncertainty regarding the timing / pace of the national switch-over.

5.4.168 Overall, there is little case to be made for assigning housing requirements to additional villages, and whilst there is the possibility of modestly adjusting the housing requirements assigned to the six larger villages listed in the table above - e.g. by 100 homes either way - it would be difficult to comment meaningfully on the implications of this through appraisal and consultation. If anything, there would be greater potential to decrease the requirements across the six villages modestly (on a pro rata basis), given the strategic context, namely a residual need for the Local Plan to identify supply from allocations for at most 6,000 homes and given the breadth of strategic site supply options at higher order settlements, as discussed.

***Table 5.10**: Large villages growth scenarios (new supply only) progressed to Section 5.5*

Progressed scenario		Homes	Employment land
1)	Housing requirements assigned to six villages	600	-

***Figure 5.26**: Select RA growth scenarios from 2023; all now unreasonable in light of the discussion above*



5.5 Reasonable growth scenarios

5.5.1 The final step was to **combine sub-area scenarios** introduced above into district-wide reasonable growth scenarios, also accounting for: completions since the start of the plan period = 980 homes; permissions between the start of the plan period ('commitments') = 7,673 homes; and a windfall allowance = 1,540 homes. The total supply from these sources (completions, commitments and windfall) is 10,193 homes.

5.5.2 Combining sub-area scenarios to form RA growth scenarios is a straightforward process in light of Section 5.4, which identifies a strategic choice between growth scenarios at just two sub-areas. Specifically, at Great Dunmow there are three growth scenarios, and at Thaxted there are two, which leads to **six district-wide RA growth scenarios** – see Table 5.11.

5.5.3 These would involving providing for a total quantum of homes ranging between LHN + 10% and LHN + 18%, which is considered to be a reasonable range of growth quanta to test. To reiterate the discussion presented in Section 5.2, LHN is 675 dpa or 13,500 homes over the plan period.

5.5.4 Under the lowest growth scenario the housing requirement would certainly be set at LHN, with a 10% supply buffer, whilst under the highest growth scenario there would be flexibility to consider a requirement set modestly above LHN (or, alternatively, a housing requirement at LHN with a supply buffer of 18%).

5.5.5 Also, under all of these scenarios there would be a good trajectory of supply over time, in that there would be good potential to provide for a housing requirement set at LHN on an annual basis over the entire plan period, i.e. there would be no need for a 'stepped trajectory'. Under all scenarios the identified supply falls below LHN over the final five years, but supply will be boosted through at least one Local Plan Review.

5.5.6 This approach of ruling out scenarios that would risk generating unmet need is an evolution from the equivalent position in 2023 (see Section 5.5 of the ISA Report). It reflects latest understanding regarding reasonable sub-area scenarios (as discussed above) combined with an understanding that the level of completions and commitments is now significantly higher, relative to the position in 2023.

5.5.7 There is no pressure to explore higher growth scenarios, i.e. scenarios with a total supply in excess of LHN +18%, and it is very difficult to identify other sites that might come into contention. Table 5.12 lists some additional omission sites (i.e. options that do not feature in the RA growth scenarios) that perhaps come into contention; however, in each case there is considered to be a strong argument for 'non-support' given the discussion of strategic, settlement-specific and site-specific considerations presented above.

5.5.8 With regards to further omission sites, it is fair to flag the option of a 1,500 home new settlement north of Great Chesterford. However, there is no potential to allocate this site within the current local plan, including noting that the aspiration is to expand the scheme to 4,500 homes. There will be the opportunity to revisit new settlement options, likely to include this site, through a Local Plan Review.

5.5.9 Similarly, the plan could feasibly be delayed allowing for further work to be undertaken in respect of growth options at certain settlements, including Saffron Walden, but there is no clear reason to suggest that this would be a fruitful exercise, and there is an urgent need to progress the Local Plan (as discussed).

5.5.10 Finally, with regards to 'other options' that could feasibly boost supply but which are ruled out on balance, it is also difficult to see any potential to boost the housing requirement assigned to Newport, or potential to assign a housing requirement to either Thaxted or Great Chesterford. There could be the possibility of a modest boost to the requirements assigned to the six larger villages listed in Table 5.9 (above) but appraising any such scenario would not allow for meaningful comparisons with the proposed approach.

5.5.11 In conclusion, on the basis of the discussion presented across Section 5 read as a whole, the following RA growth scenarios presented below are considered to represent the current reasonable alternatives:

- Scenario 1 – Constants plus strategic growth to the NE of Great Dunmow
- Scenario 2 – Scenario 1 plus strategic growth to the east of Thaxted
- Scenario 3 – Constants plus strategic growth to the SE of Great Dunmow
- Scenario 4 – Scenario 3 plus strategic growth to the east of Thaxted
- Scenario 5 – Constants plus strategic growth to the SE of Great Dunmow plus low growth to the NE
- Scenario 6 – Scenario 5 plus strategic growth to the east of Thaxted

***Table 5.11**: The reasonable alternative growth scenarios*

Supply component	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Completions, permissions & windfall	10,193	10,193	10,193	10,193	10,193	10,193
Larger villages allowance	900	900	900	900	900	900
Takeley	1,546	1,546	1,546	1,546	1,546	1,546
Saffron Walden	879	879	879	879	879	879
Stansted Mountfitchet	325	325	325	325	325	325
Elsenham	110	110	110	110	110	110
Great Chesterford	0	0	0	0	0	0
Hatfield Heath	0	0	0	0	0	0
Great Dunmow	**917**	**917**	**1,250**	**1,250**	**1,453**	**1,453**
Thaxted	0	**489**	0	**489**	0	**489**
Total	**14,870**	**15,359**	**15,203**	**15,692**	**15,406**	**15,895**
% above LHN (13,500)	**10**	**14**	**13**	**16**	**14**	**18**

***Table 5.12**: Summary of site options*

Category	Description	Sites
1	**Proposed allocations** that are a **constant** across the growth scenarios now, and were also at Reg 18.	All proposed allocations bar those below
2	**Proposed allocations** that are a **constant** across the scenarios now but were a variable at Reg 18.	South Saffron Walden; North Stansted Mountfitchet
3	**Proposed allocations** that are a **variable** across the RA growth scenarios now.	East and NE Great Dunmow
4	**Omission sites** that feature (as a **variable**) in the RA growth scenarios.	SE GD, East of Thaxted
5	**Omission sites** that do not feature in the RA growth scenarios now (i.e. are a **constant**) but did at Reg 18.	Ugley GC; West Pennington Lane
6	**Omission sites at Newport** which were explored at Reg 18 and will now be reconsidered through the NP.	West/SW Newport; SE Newport
7	**Other omission sites 'noted'** as part of SA work at either Reg 18 or 19 but not progressed to the RA growth scenarios.	Sites at Great Chesterford; Great Chesterford GC (1,500); South-south Saffron Walden; NE Stansted Mountfitchet; North Elsenham.
8	**Two notable large garden community options** that could be reconsidered through a Local Plan Review	Great Chesterford GC (4,500); Easton Park
9	**Other omission sites** that could deliver a **strategic** scheme and are developable in the HELAA but not perform poorly in light of plan-making.	All other strategic site options
10	**Other omission sites** that could deliver a **non-strategic** scheme and are developable in the HELAA.	All non-strategic site options

6 Growth scenarios appraisal

6.1 Introduction

6.1.1 Having defined reasonable alternatives in the form of six growth scenarios, the next step is to present an appraisal under the 'SA framework' (see Section 3).

Appraisal methodology

6.1.2 The appraisal is presented under 13 headings – one for each of the topics that together comprise the SA framework (see Section 3), before a final section presents and overview 'matrix'. Under each heading, the aim is to: **1)** rank the scenarios in order of performance (with a star indicating best performing); and then **2)** categorise the performance in terms of 'significant effects' using red / amber / light green / green.[15]

6.1.3 It is important to be clear that there is a need to make significant assumptions, e.g. around scheme masterplanning, infrastructure delivery etc. The appraisal aims to strike a balance between exploring and explaining assumptions on the one hand whilst, on the other hand, ensuring conciseness and accessibility.

6.1.4 A final key methodological point to note is in respect of growth quantum. It is not always appropriate to simply conclude a preference for lower growth (Scenario 1) from an environmental perspective, despite the fact that housing growth inevitably leads to environmental impacts. This reflects a view that: A) if housing need is not provided for in Uttlesford it would only have to be provided for elsewhere in a constrained sub-region; and B) if there is an insufficient 'supply buffer' over-and-above the housing requirement then the supply would risk falling below the housing requirement in practice, leading to a risk of the District being subject to the presumption in favour of sustainable development.

6.2 Appraisal findings

6.2.1 The appraisal is presented under 13 headings – one for each of the topics that together comprise the SA framework – before a final section presents conclusions, including a summary appraisal matrix.

Accessibility (to community infrastructure)

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
1	4	2	5	3	6

6.2.2 Schools capacity has been a key 'driver' of spatial strategy and site selection, as discussed in Section 5.4. This is inherently challenging on account of a 'chicken and egg' situation whereby the County Council seeks certainty on growth locations before undertaking detailed work in respect of schools capacity whilst, from an Uttlesford Local Plan perspective, there is a need for understanding of schools capacity issues / opportunities to inform thinking in respect of spatial strategy and site selection. However, consulting on a full Draft Local Plan under Regulation 18 (2023) provided a key opportunity to explore issues and options.

6.2.3 Secondary school capacity at Saffron Walden is one key consideration, which is discussed in further detail in Section 9 (because Saffron Walden is a constant / not a variable across the RA growth scenarios that are a focus of the appraisal here), but in summary: there may transpire to be no major concerns, but support for a new secondary school at Takeley acts as a contingency to minimise any residual concerns.

6.2.4 Focusing on the variable growth locations:

[15] **Red** indicates a significant negative effect; **amber** a negative effect of limited or uncertain significance; **light green** a positive effect of limited or uncertain significance; and **green** a significant positive effect. No colour indicates a neutral effect.

- Great Dunmow – under all scenarios growth at Great Dunmow would support delivery of a new secondary school at Takeley (notwithstanding the level of existing committed growth at Great Dunmow, including Land East of Highwood Quarry, and the forthcoming new secondary school west of Great Dunmow, which will replace an existing school). The differentiating factor is primary school capacity, with it being the case that Scenario 3 sees an additional 500+ homes relative to Scenario 1, but still only one primary school (as per Scenario 1). It is not clear there would be significant concerns; however, there is a need to recall the general context of wishing to ensure a strong focus on delivering new community infrastructure capacity alongside new homes at Great Dunmow, given the experience of recent years, which is one of new homes being delivered in a somewhat uncoordinated way that has been sub-optimal in terms of infrastructure capacity.
- Thaxted – as discussed, the County Council does no support new primary schools below 2fe for reasons of viability, even where the land is provided to enable schools to expand to 2fe. This being the case, there is a need to flag a concern with the scenarios that would see strategic growth at Thaxted (as per the Draft Plan proposal from 2023). However, there is a degree of uncertainty, recognising that there would be an opportunity to direct further growth to Thaxted through a Local Plan Review within five years. If it could be assumed that the Review will be able to allocate further growth at Thaxted to support a 2fe school, whilst also avoiding constraints etc (which are extensive), then concerns could be allayed. Another consideration is potentially growth at villages surrounding Thaxted, where residents might choose to send children to primary school in Thaxted, but this is likely not a significant consideration.

  Also, with regards to implications of growth at Thaxted for secondary school capacity, there are not thought to be any clear implications, noting that the village is equidistant between several schools (existing and planned/proposed).

6.2.5 Aside from matters relating to schools capacity, there are also wider considerations in respect of accessibility to community infrastructure (existing and new). At Great Dunmow, and argument in support of growth is good potential to walk to a town centre, but the option of growth to the South East (Scenarios 3 to 5) is thought to perform less well in this regard (although, as a larger site, there could be greater potential to deliver new community infrastructure). At Thaxted, there is thought to be a clear argument for growth aimed at maintaining the viability and vitality of the village centre and also maintaining bus services.

6.2.6 In **conclusion**, leaving aside the question of primary school capacity at Thaxted, all of the growth scenarios are strongly supported from a perspective of delivering new homes in such a way that there is good access to community infrastructure for new and existing residents, essentially by aligning with the settlement hierarchy and realising opportunities to focus growth in order to deliver new and upgraded infrastructure. This is in the context of an infrastructure deficit that has arisen due to the prolonged period without an up-to-date local plan and where there has been speculative and piecemeal development.

6.2.7 As such, significant positive effects are concluded for Scenarios 1 and 3, and 'moderate or uncertain' positive effects for Scenario 5. Matters are discussed further in Section 9 (where there is a focus on all settlements, as opposed to just those that are a variable across the growth scenarios).

6.2.8 The Thaxted primary school issue is significant, but there is an element of uncertainty, and it is only an issue for one settlement (i.e. one of the nine highest order settlements), hence the conclusion is 'neutral' effects on balance (albeit recognising and argument for predicting negative effects).

Biodiversity

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
1	1	2	2	2	2

6.2.9 The Interim SA Report (2023) was able to predict that the Draft Local Plan would result in 'moderate or uncertain' positive effects on the biodiversity baseline, which is an important starting-point for the appraisal at the current time, recognising limited adjustments to strategy / sites. Furthermore, since the 2023 a considerable amount of further work has been undertaken focused on delivering green and blue infrastructure benefits, including through adjustments to concept masterplans at strategic sites and also through a focus on planning for country parks and SANG (see the Country Parks and SANG Study, 2024).

6.2.10 Matters in respect of the plan as a whole are discussed further in Section 9, but focusing on the growth locations that are a variable across the RA growth scenarios:

- Great Dunmow – there is a preference for a focus of growth to the northeast, but this is potentially somewhat marginal. Focusing on growth to the northeast, the proposed developable area is notably unconstrained, and there is an established opportunity to deliver new strategic greenspace in such a way that there are significant enhancements to the River Chelmer corridor, and potentially also the ancient woodland cluster to the south (Markshill Wood). With regards to the site to the southeast:
  - Constraint – onsite is higher, specifically a network of mature / historic field boundaries that do appear likely to contribute to connectivity between small woodland patches / copses within the site and beyond (although the proposal is to integrate these as part of onsite green and blue infrastructure)
  - Enhancement opportunity – has not been explored in detail, but could perhaps be of similar strategic significance, noting that this is at or close to the point where the Chelmer meets other stream corridors, and also noting the community woodland adjacent to the south.
  - Quantum – there is also a need to note that the site to the southeast is a considerably larger site, and there are SSSI woodlands in relative proximity (with highly valued small, scattered woodlands being a characteristic feature of the south of Uttlesford). However, there are no clear concerns in this regard.
- Thaxted – biodiversity is not considered to be a major issue here. Copthall Lane is strongly associated with a surface water flood channel and a green corridor that links to woodlands to the north east of the village. However, the two closest woodlands are neither ancient woodlands nor designated as a CWS. There is also the context of West Wood SSSI to the northeast, which is accessible and managed as a nature reserve by Essex Wildlife Trust. However, the wood would be ~1.5km distant, and it is difficult to foresee recreational pressure being a major concern. The SSSI is in favourable condition.

6.2.11 A final consideration is total growth quantum district-wide. In particular, it is fair to highlight that under higher growth scenarios there would be reduced risk of unplanned growth and/or there could be some flexibility to provide for modest unmet need from elsewhere within a constrained subregion (e.g. biodiversity constraint potentially increases in the direction of the Essex coast). However, it is not clear that this is a significant consideration. Also, it is important to note that higher growth would give rise to a need to revisit the Habitats Regulations Assessment (HRA) work that has been undertaken in support of the Local Plan (including noting that Great Dunmow and Thaxted are both located towards the east of the District, i.e. in the direction of the Essex coast). The HRA Report concludes as follows:

"The Habitats sites, considered within the Appropriate Assessment for impact pathways that could not be screened out at the Test of Likely Significant Effects stage were: Blackwater Estuary (Mid Essex Coast Phase 4) SPA & Ramsar, and Essex Estuaries SAC. Impact pathways considered were atmospheric pollution, recreational pressure, water quality, and water quantity, level and flow. Of which recreational pressure was brought forward for appropriate assessment. For recreational pressure it was determined that adherence to the Essex Coast RAMS SPD would be sufficient to prevent adverse effects on the Habitats sites. Overall AECOM concluded that there are no adverse effects on Habitats sites as a result of the Uttlesford Local Plan."

6.2.12 In **conclusion**, there is a marginal and uncertain preference for a focus of growth to the northeast of Great Dunmow. With regards to significant effects, there is a case for now predicting 'significant' positive effects on account of the amount of work that has been undertaken since the Draft Plan stage in respect of planning for biodiversity and green/blue infrastructure. However, there a high bar to reach before 'significant' positive effects can be predicted with confidence (particularly ahead of the forthcoming Essex Local Nature Recovery Strategy, LNRS, which will identify strategic priorities for intervention). Also, it is recognised that there are still certain sensitivities and potentially uncertainties, including in respect of growth in proximity to Hatfield Forest. As such, 'moderate or uncertain' positive effects are predicted.

Climate change adaptation

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
=	=	=	=	=	=

6.2.13 A key consideration is the need to avoid development – in particular new homes – encroaching on fluvial flood risk zones, given worsened flood risk under climate change scenarios. Surface water flood risk is another consideration, but this can often be dealt with through masterplanning and sustainable drainage systems (SuDS). Another consideration is development impacting on water flows and, in turn, down-stream flood risk; however, it is difficult to pinpoint issues ahead of detailed work, and it is typically the case that SuDS can be implemented to ensure no net worsening of run-off rates, and often a betterment.

6.2.14 It is overall the case that flood risk is not a major issue for the Local Plan, given the growth locations under consideration (see further discussion in Section 9). However, there are some flood risk considerations in respect of the growth locations that are a variable across the RA growth scenarios:

- Great Dunmow – the proposed location for strategic growth to the southeast (Scenarios 3 to 6) is strongly associated with the River Chelmer corridor / flood risk zone. There would, of course, be good potential to avoid fluvial flood risk zones, but there could be pressure to encroach on the flood risk corridors (mindful of a need to make allowances for increased flood risk under climate change scenarios), with a view to a scheme that links most effectively to the town centre. Also, there is a series of notable/significant surface water flood risk zones passing through the site. These do follow field boundaries, such that they could likely be integrated effectively as part of green blue / infrastructure, but these could still act as a constraint to effective masterplanning.

  With regards to the two sites that would together deliver strategic growth to the northeast under Scenarios 1 and 2, the smaller site to the west appears to be subject to low flood risk constraint, whilst the site to the east is associated with a series of three or four surface water flood risk channels (see the available mapped data here). There is also a need to note that the new built form would be upstream of Church End and Great Dunmow, although there appears to be very few properties within the current flood risk zone downstream and, in any case, there is no reason to suggest any concerns in respect of increased downstream flood risk (given potential for effective SuDS). Indeed, it could feasibly be the case that options for strategic flood storage could be explored, in order to deliver a flood risk betterment.

- Thaxted – a consideration is the aforementioned surface water flood risk channel adjacent to Copthall Lane, east of Thaxted, noting that village centre is downstream. However, there is little reason to suggest any significant concern, given potential for effective onsite SuDS.

6.2.15 Other than flood risk it is a challenge to identify climate change adaptation considerations – of relevance to this appraisal of growth scenarios – that are not more appropriately dealt with under other headings.

6.2.16 In **conclusion**, it is difficult to differentiate between the two main competing growth locations at Great Dunmow, whilst at Thaxted there is a degree of surface flood risk constraint, but it is not possible to conclude that this is in any way significant. At Great Dunmow it is recognised that the Level 2 Strategic Flood Risk Assessment (SFRA) has concluded that: *"Development is likely to be able to proceed if… Development is steered away from… the small flow paths/areas of surface water ponding are incorporated and considered within the development design."* However, there remains an element of uncertainty regarding the extent to which this will be the case, i.e. the extent to which surface water flood risk will be a constraint to effective masterplanning. Also, it is important to recall that equivalent assessment work has not been undertaken for the site to the southeast of Great Dunmow (also, the Environment Agency has not been consulted on this site, in that it did not feature in the Draft Plan in 2023, nor in the RA growth scenarios that were a focus of appraisal in the Interim SA Report). As such, and taking a precautionary approach, it is appropriate to flag a 'moderate or uncertain' negative effect across all of the scenarios. See further discussion in Section 9.

Climate change mitigation

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
2	2	2	1	2	2

6.2.17 The primary consideration here is per capita built environment emissions, given the potential to cover matters relating to transport emissions under other topic headings.

6.2.18 Strategic growth locations can give rise to an opportunity over-and-above smaller developments, given economies of scale and also the possibility of delivering a mix of uses onsite, which can feasibly support one or more heat networks. Strategic growth locations can also give rise to an opportunity to deliver 'smart energy systems' that link heat networks / heat pumps, solar PV, power consumers and battery storage. Also, it is simply the case that large sites will generate a high degree of attention and scrutiny, and housebuilders will often be keen to demonstrate good practice or even exemplar development.

6.2.19 However, the relationship between scale and decarbonisation opportunity is not clear-cut, e.g. because strategic sites often have to deliver costly infrastructure upgrades. Also, heat networks are technically challenging to deliver, and practice is not well advanced nationally, with a clear opportunity currently only seen to exist where there is very high density development and/or a good mix of uses (to allow heat to be shared across the course of the day) and/or a source of waste or ambient heat that can be drawn upon.

6.2.20 A further consideration, in respect of built environment decarbonisation, is a case for directing growth to locations that benefit from strong **viability**, with a view to ensuring funding for decarbonisation measures and potentially delivering net zero development (recognising competing funding priorities).

***Box 6.1**: Defining net zero development*

Another important consideration is around ensuring that 'net zero development' is carefully defined. There are perhaps three key points to make. Firstly, any approach to net zero development must align with the energy hierarchy, which means a primary focus on efficiency ('fabric first') followed by onsite renewable heat/power generation, with offsetting of residual needs that cannot be met onsite (over the course of a year) only as a last resort. Secondly, there are two broad approaches to calculating net zero and evaluating proposals, namely 1) the methodology applied under the Building Regulations; and 2) an energy-based approach. The two approaches are compared and contrasted in a recent report here.[16] Thirdly, it is important to be clear that the focus of discussion above is in respect of 'operational' energy/carbon, i.e. the energy used / carbon emitted as a result of the development's occupation / use. Additionally, there is a crucial need to consider the 'whole life cycle' of a development, to include to the emissions associated with construction, maintenance, retrofitting and demolition (often referred to simply 'embodied' carbon or emissions).

6.2.21 In light of these points, there is potentially a decarbonisation argument for the higher growth scenarios, given: A) development viability is broadly quite high across Uttlesford, and this is notably the case at Thaxted; B) the sites at Great Dunmow do not generate concerns around fragmented land ownership, which can be a barrier to deliverability and, in turn, affect development viability; C) at Thaxted there are three landowners, but the main landowner is the county council, which is a 'positive' from a perspective of wishing to deliver net zero development to exacting standards (see definition above) alongside affordable housing, infrastructure delivery etc; and C) the SE Great Dunmow site (Scenarios 3 to 6) would deliver a considerable concentration of growth to include a good mix of uses onsite (feasibly to include employment), which would give rise to economies of scale (with benefits for scheme viability and, in turn, the potential to deliver an ambitious net zero development) and it could also feasibly be the case that opportunities to draw ambient heat from the River Chelmer to feed heat into a heat network could be explored (albeit this is unlikely to be a viable option; similarly, there is no suggestion of drawing electricity from the adjacent committed solar farm, recognising that the solar farm will feed the national grid).

[16] Under the Building Regulations methodology the question for any given planning application is the extent to which the development can improve on a Target Emissions Rate (TER), measured in percentage terms up to a possible 100% improvement. The energy based methodology involves scrutiny in absolute terms, measured in terms of kWh /m2/yr. It has wide-spread support amongst specialists, including due to the simple fact that actual 'as built' performance can be monitored using a smart meter. However, on 13th December 2023 a Written Ministerial Statement was released which appears to prohibit its use in local plans.

6.2.22 In **conclusion**, it is fair to flag support for concentrated growth at Thaxted and concentrated growth at SE Great Dunmow from a built environment decarbonisation perspective, because both growth locations appear to be very well suited to delivering net zero development to exacting standards (to include with operational net zero delivered onsite, i.e. without recourse to offsetting).

6.2.23 With regards to significant effects, whilst all scenarios would undoubtedly see an improvement on the baseline (a situation whereby growth continues to come forward but in a less well-planned way, and without stringent development management policy in place such that Building Regs apply by default), there is a need to reach conclusions mindful of established objectives and targets, including the local 2030 net zero target, which amounts to a high bar to reach before predicting positive effects of any significance.

6.2.24 It is recognised that the District is strongly committed to stringent development management policy aimed at achieving net zero development (to an exacting standard, to include net zero achieved onsite). However, it is not possible to be entirely certain that this will prove to be viable in all cases, hence there is a need to take steps through spatial strategy and site selection aimed at maximising the opportunity.

6.2.25 In this light, it is considered appropriate to flag 'moderate or uncertain' negative effects across the growth scenarios, as per the conclusion reached in the Interim SA Report (2023). Certain of the sites are associated with a theoretical opportunity (to deliver net zero development to an exacting standard), but there are few if any firm commitments, or details regarding site-specific opportunities to be realised.

6.2.26 In this regard, it is important to note that none of the scenarios involve a focus on large-scale strategic growth locations akin to the previously withdrawn local plan (2020), or what is proposed at Harlow and Gilston Garden Town (~10,000 homes, e.g. where detailed masterplanning work has been completed and where a Design Review Panel is in place to scrutinise developer proposals), or what might be anticipated in the future in the Greater Cambridge area. Finally, there is a need to note that much work on masterplanning and infrastructure planning has been undertaken since 2023, including with a focus on addressing local community concerns, and it is conceivable that this will have some implications for development viability and, in turn, the ability to deliver net zero developments to an exacting standard.

Communities, equality, inclusion and health

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
4	☆ 1	5	2	6	3

6.2.27 The aim here is to discuss factors other than in respect of 'Accessibility'. There are wide-ranging such considerations, including recalling the focus on equality and health considerations, which makes it inherently difficult to reach clear and concise conclusions.

6.2.28 At the Regulation 18 stage, the ISA Report (2023) focused on: place-making, high quality design and beauty; neighbouring uses (e.g. proximity to the M11 or A120); green and blue infrastructure; access to the countryside; active travel; traffic congestion; green belt; Countryside Protection Zone (CPZ); village vitality; relative deprivation; rural deprivation and isolation; and Gypsies And Travellers.

6.2.29 The conclusion at the Regulation 18 stage was that perhaps the primary issue was around the matter of further growth at Great Dunmow, given the extent of recent and committed growth at the town. Specifically, the appraisal favoured a scenario that would see nil growth at Great Dunmow via new allocations. A contextual factor, discussed as part of the appraisal in 2023, was an understanding that the previous withdrawn local plan (2020) involved a clear strategy of focusing growth at three large new settlements in order to avoid further growth at existing settlements as far as possible.

6.2.30 However, at the current time concerns in respect of further growth at Great Dunmow are reduced. Relatively limited concerns were raised through consultation, and a considerable amount of work has been undertaken to explore how to bring forward strategic expansion to the northeast of the town in such a way that community benefits are maximised. This is most notably via new strategic green and blue infrastructure, but it is also important to note the new proposal to bring forward a new care home.

6.2.31 Nonetheless, there remains an element of concern regarding the scale of growth at Great Dunmow and the extent to which this is 'good growth' focused on delivering benefits to the town beyond new homes. In this light there is a case for favouring Scenarios 1 and 2, which would deliver fewer homes but potentially similar infrastructure benefits. However, on the other hand, there is considerable uncertainty regarding precisely what benefits could be delivered by a strategic expansion to the southeast.

6.2.32 A more significant factor for consideration through this current appraisal is considered to be the matter of supporting growth at Thaxted. This has already been a focus of discussion above, with a view to flagging a specific concern regarding primary school capacity. However, putting this specific issue to one side (see discussion above regarding a possible route to boosting confidence around viability of a new school) there is a clear 'communities' argument for supporting housing growth at Thaxted.

6.2.33 Whilst there has been some housing growth over recent years and decades, this in combination with committed housing growth is fairly low, and house prices are high (~£535,000, which is ~£100,000 more than the average for the District), hence it is possible to foresee a situation whereby newly forming households struggle to buy or rent locally. Also, there are the related matters of delivering affordable housing and also maintaining village services and facilities and the vitality of the village centre.

6.2.34 It is recognised that the matter of housing growth to meet local needs and deliver wider community benefits is a focus of the adopted Neighbourhood Plan, which for example explains:

"Community services (healthcare; education; roads; recreation; etc) are generally operating at capacity and whilst plans are being made for expansion, the scope for this is limited by physical and budgetary constraints. New schools, new roads and new community buildings can only be developed with funding generated by very major house building programmes which would in turn destroy the intrinsic character of the local environment and its historical context. Thaxted is too important to be overwhelmed and destroyed by new development around its perimeter. The principal issue therefore is what form of development can Thaxted accommodate?

It is apparent that the impact of further large scale housing development on the land surrounding the centre would have disastrous consequences for the village and the setting of both the Conservation Area and key heritage assets. The village has been under pressure from developers proposing inappropriate schemes which would bring no benefits and only damage what already exists. This Plan has to prevent that type of development."

6.2.35 The Neighbourhood Plan then goes on to explain: *"A Housing Needs Survey was also commissioned and this was undertaken by the Rural Communities Council of Essex (RCCE) who assessed housing needs based on questionnaire responses. The principal conclusion was that in fact, there was limited demand from the local community for additional housing."* This then feeds into an objective to guide thinking around new development, namely that it must be "*of a scale and nature such that they do not impact on the town's character, surrounding countryside and tourism potential."*

6.2.36 However, the plan was finalised in 2018, and the situation may have evolved since that time. For example, the Uttlesford Local Housing Need Assessment (LHNA, 2024) presents a range of evidence, including around the population of Uttlesford aged over 65 having increased by 32.1% between 2012 and 2022. Also, over a similar period, the number of homes owned outright and the number of rented homes increased at a much higher rate than the number of homes owned with a mortgage.

6.2.37 In this light it is considered to flag a 'communities' benefit to supporting strategic growth at Thaxted, assuming that the primary school issue could be addressed, and notwithstanding historic environment and landscape constraints to growth at the village, as discussed further below.

6.2.38 In **conclusion**, there is support for growth Thaxted and at Great Dunmow there is marginal support for a focus of growth to the northeast.

6.2.39 With regards to significant effects, there is a need to factor-in wide-ranging considerations associated with all of the other proposed growth locations / the wider spatial strategy (recalling that some settlements are notably not assigned growth), which is a task for Section 9. For example, and in particular, there is a need to factor-in latest proposals for Takeley, where significant concerns regarding the proposed growth strategy were raised through the consultation in 2023. Overall, as discussed in Section 9, there is now considered to be strong support for the spatial strategy, with a notably improved picture since the Draft Plan stage (2023). Under Scenario 2, which would see growth see strategic growth at Thaxted alongside a new primary school, it is considered appropriate to flag a particularly strongly performing strategy.

Economy and employment

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
2	2	1	1	1	1

6.2.40 Employment land supply is broadly held constant across the scenarios and, as discussed in Section 9, under all scenarios the proposal is to provide for identified employment land needs with a significant 'buffer' to account for uncertainties and any unforeseen delivery issues.

6.2.41 One factor for consideration here is the possibility of delivering new employment land as part of a strategic urban extension to the southeast of Great Dunmow. However, as discussed in Section 5.4, whilst this has been flagged as a possibility by the site promoter in the past, it is no longer discussed as an option. The land in question is reasonably well suited to employment land in terms of road connectivity. However, landscape would be a constraint, and the effect could be to increase the argument for considering the overall scheme as a new settlement linked to Great Dunmow, more so than an urban extension.

6.2.42 With regards to Thaxted, it is recognised that housing growth could support the rural economy, particularly noting that Thaxted is a very rural settlement (there is a need to travel at least ~5km in any direction before reaching another village, with the nearest larger village). However, there is no clear evidence to suggest that this is a significant factor to the extent that it would be appropriate to differentiate the alternative scenarios, also noting cross-over with the appraisal findings presented above under 'Communities'.

6.2.43 In **conclusion**, there is very strong support for the proposed strategy for accommodating employment land needs under all scenarios (as discussed in Section 9). With regards to differentiating between the growth scenarios, whilst highly uncertain, it is considered appropriate to flag the possibility of delivering new employment land at the site to the southeast of Great Dunmow. As a contextual factor it can also be suggested that growth in employment land at Great Dunmow has perhaps not kept pace with housing growth over recent years and decades. However, there is some committed employment land, and the current proposal is to allocate a significant new site for industrial and logistics uses to the west of the town, as previously proposed in the Draft Local Plan (2023) and as discussed further in Section 9.

Historic environment

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
3	4	1	3	2	3

6.2.44 This is a key growth-related issue locally. The withdrawn local plan's focus on three large garden communities gave rise to significant historic environment concerns, however, there are also clear sensitivities associated with a strategy that focuses growth at the existing higher order settlements.

6.2.45 The equivalent appraisal work in 2023, as reported in the Interim SA Report published at that time, flagged a notable degree of concern associated with a focus of growth to the northeast of Great Dunmow and also with the option of strategic growth to the east of Thaxted. Concerns were also raised through the consultation, and then subsequently detailed Heritage Impact Assessment (HIA) work was undertaken.

6.2.46 Beginning with **Thaxted**, the village is clearly very sensitive in historic environment terms, with the medieval core containing seven Grade I listed buildings, and Grade II* listed Thaxted Windmill is also an important landmark to the west. The village has expanded beyond the designated conservation area to the north and east, but overall retains a very strong historic character linked to the surrounding chalk influenced landscape, as experienced from the roads through the village (also the Harcamlow Way).

6.2.47 The sites in question are subject to limited *immediate* constraint. However, there is a need to consider impacts to the landscape setting of the conservation area, and also likely high car-dependency which in turn, will generate traffic impacts, particularly through the Thaxted Conservation Area (southward journeys) but also through Saffron Walden (northward journeys).

6.2.48 Historic England did not object to the proposed allocation through the consultation in 2023. However, there was a request to "be clearer in defining land within the allocations which would be inappropriate for development owing to the church's views." Subsequently, HIA work was undertaken for the largest component of the site proposed for allocation in the Draft Local Plan (Site 020), concluding:

"This area is considered to have the potential to contain archaeological remains which would be adversely affected by any development within the site and could also affect the settings of the Thaxted Conservation Area and the Grade I listed Church of St John the Baptist.

It is anticipated that the site could accommodate limited development so long as appropriate design measures were implemented and an appropriate programme of archaeological investigation and recording was carried out."

6.2.49 Other specific concerns raised by the HIA included:

- Development could disrupt views of the spire of the Grade I Church of St John the Baptist, reducing the visibility of the church within the wider landscape.
- Large-scale development could result in an influx of traffic using Newbiggin Street/Watling Street/Town Street through the centre of the conservation area, detracting from the historic nature of the area.
- Development along the higher ground of the northern edge of the site would be prominent within the setting of the listed buildings to the north and would detract from their setting.
- Development could remove the tranquil rural setting of Copthall Lane through its visual impact and through increased levels of noise and light in the area.

6.2.50 With regards to **Great Dunmow**, the following statement was made in the Interim SA Report (2023):

"… there is a clear concern regarding impacts to the Church End Conservation Area, which is associated with a characteristic position in the landscape. As well as risks of impacts to the setting of the Conservation Area, which includes a Grade I listed church and also a Grade II listed house (located directly on the B1057), there is also a need to consider the impact of increased traffic. A further consideration is the notable density of historic farms / farmsteads within the rural landscape to the north and east of Church End. This includes Crouches Farm, where the farmhouse is Grade II listed, although the potential for historic buildings to be retained as a focal point of a new community can be envisaged.*

Overall, there is clearly a need for further work to confirm ways of avoiding and mitigating impacts, although it is important to note that early work to date includes a strong focus on green and blue infrastructure enhancements, including with a view to enhancing access to the historic river corridor and also ensuring that expansion of Church End is well contained in the landscape."

6.2.51 Subsequently, Historic England raised a "significant concern" through the consultation (with this being the only proposed allocation for which a significant concern was raised). In turn, the Council has undertaken detailed work to adjust the strategy for growth to the northeast of Great Dunmow, as discussed in Section 5.3, which has included a major focus on delivering new strategic green and blue infrastructure, but also the addition of an additional development parcel to the west of the River Chelmer (Site 017), which is itself subject to historic environment constraint.

6.2.52 The revised approach to growth to the northeast of Great Dunmow was then subjected to HIA, with two separate HIAs undertaken for the two component HELAA sites, namely Site 009 to the east of the River Chelmer (the site previously proposed in the Draft Local Plan) and Site 017 to the west (the new site).

6.2.53 Focusing on Site 009, the HIA conclusion is as follows:

"Development within the site has the potential to directly affect known and previously unidentified archaeological remains within the site and could also affect the setting of the nearby scheduled monuments and listed buildings, the Church End Conservation Area and the northern part of the Great Dunmow Conservation Area and the ancient woodland of Markshill Wood.

Some parts of the site may be able to accommodate development, but large-scale development would have an adverse effect upon the setting of the Parsonage Farm scheduled monument and the Church End and Great Dunmow Conservation Areas. Adverse effects upon the setting of the nearby scheduled monuments and listed buildings could be reduced through implementation of design measures.

Due to the open and less wooded nature of the northern block of the site, as well as the topography of the site and its visibility in views from Parsonage Down and the Church of St Mary the Virgin, it is unlikely that the adverse effects upon the setting of the two conservation areas could be completely mitigated.

The southern block, however, due to its closer proximity to modern development and the lower level of its western end, may be more able to accommodate development if appropriate design measures were implemented to protect the ancient woodland to the east and the listed buildings to the west...

6.2.54 Specific concerns raised then include:

- Development within the site could erode the dispersed rural character of the listed buildings along the B1057 (The Broadway)
- Development within the site could affect the isolated rural character of the listed building at Marks Farm and could disturb archaeological remains associated with the moated site at Marks Farm.
- New development could become visually prominent in the view looking east that incorporates the Church End Conservation Area. This could detract from the setting of the church and its prominence in views.
- New development could become visually prominent in view looking east from Parsonage Down in the northern part of the Conservation Area. This could reduce the open character and countryside setting of this part of the conservation area.

6.2.55 With regards to Site 017, the HIA concludes:

"Development within the site has the potential to directly affect known and previously unidentified archaeological remains within the site, including those of the scheduled monument of the Square and circular barrows 260m south-east of Parsonage Farm, and could also affect the setting of the nearby scheduled monument of Parsonage Farm moated site and listed buildings, the Church End Conservation Area and the northern part of the Great Dunmow Conservation Area.

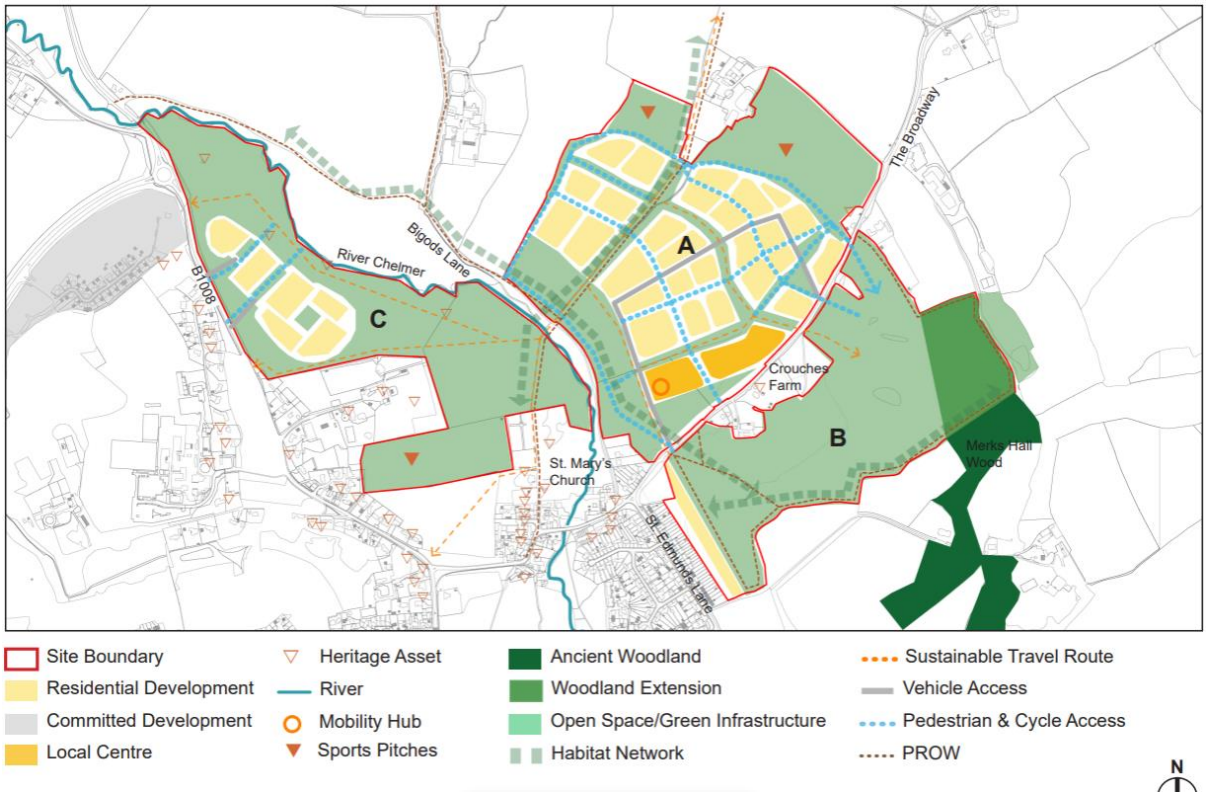
Some parts of the site may be able to accommodate development, but large-scale development would have an adverse effect upon the setting of the Parsonage Farm scheduled monument, Grade II listed buildings adjacent to the site, and the Church End and Great Dunmow Conservation Areas. Adverse effects upon the setting of the scheduled monuments and listed buildings could be reduced through implementation of design measures. Due to the open nature of the site, as well as its topography and visibility in views from Parsonage Down and towards the Church of St Mary the Virgin, it is unlikely that the adverse effects upon the setting of the two conservation areas could be completely mitigated. Utilising small-scale development within the site would allow the rural setting of the area to be maintained and limit the additional noise and traffic created."

6.2.56 Overall, it is clear that there are residual concerns around historic environment impacts, albeit these are reduced on account of the work that has been undertaken on masterplanning and planning for strategic green and blue infrastructure, plus there will be the potential avoid and mitigate impacts at the planning application stage. In particular, it is important to note that the proposal is now to concentrate built form to the east of the river corridor (Site 009) within the more constrained "northern block". With regards to Site 017 to the west of the river corridor, it seems likely that the proposed location for built form does amount to "small-scale development within the site [that] would allow the rural setting of the area to be maintained and limit the additional noise and traffic created". However, there is a degree of uncertainty on this point.

6.2.57 Finally, there is a need to consider the option of alternatively directing strategic growth to the southeast of Great Dunmow, albeit recognising that Historic England has not been consulted on this site (as it was not a proposed allocation in 2023, nor did it feature in the RA growth scenarios at that time) and it has not been subjected to HIA. In short, the site is subject to limited constraint, at the very least relative to the option of growth to the northeast, and potentially in also in absolute terms. There are few concerns regarding impacts to designated assets, there would be significantly reduced concerns regarding traffic through a conservation area, and historic mapping shows this area to be notably rural. However, there is quite a dense network of historic field boundaries, and one other consideration is Dunmow Park to the west, which would become somewhat enveloped, as opposed to marking the southeast extent of the town.

6.2.58 In **conclusion**, the approach to growth at Great Dunmow and Thaxted are the two key historic environment considerations for the Local Plan, particularly in light of latest work to avoid historic environment constraints/concerns at Takeley (as discussed in Section 9). The historic environment constraint at Great Dunmow is potentially significant, but it will be for Historic England to comment further on the extent to which the latest proposals – in terms of masterplanning, site-specific policy and district-wide development management policy – serve to appropriately mitigate concerns. On balance, it is also considered appropriate to flag the risk of a 'moderate or uncertain' negative effect for those growth scenarios involving strategic growth at Thaxted, but there is some uncertainty in this regard.

***Figure 6.1**: The concept masterplan for NE Great Dunmow (also showing listed buildings)*



Homes

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
6	5	4	3	2	1

6.2.59 All scenarios perform well because, as discussed in Section 5, all would involve a level of supply that allows for the housing requirement to be set at LHN along with a generous supply buffer (i.e. a situation whereby the supply exceeds the total housing requirement over the course of the plan period).[17] Also, under all scenarios the supply would be somewhat front-loaded, which is supported, recognising that there will be the potential to boost supply in the latter years of the plan period (as things stand, the supply drops below the annualised housing requirement in the final five years) through a Local Plan Review.

6.2.60 Under the higher growth scenarios (particularly Scenario 6) supply would exceed the housing requirement to such an extent (particularly in the first ten years of the plan period) that there would be flexibility to boost the housing requirement in response to locally arising affordable housing needs and/or in response to unmet need from elsewhere, which is obviously strongly supported from a pure 'housing' perspective.

[17] A generous supply buffer is important from a perspective of ensuring that supply does not dip below the annualised housing requirement at any point in the plan period (which could lead to a risk of being subject to the presumption in favour of sustainable development, albeit the effect of this would likely be to address the situation by allow for additional homes to be delivered).

6.2.61 In wider respects there is limited potential to confidently differentiate between the growth scenarios, recognising that the matter of locally arising housing needs at Thaxted has already been discussed above. It is also worth noting that the Thaxted sites are likely to benefit from strong deliverability credentials and strong development viability, such that there would be confidence regarding delivery timescales and also the potential to deliver a policy compliant quota of affordable housing (alongside meeting wider policy requirements / delivering on wider objectives, e.g. net zero development).

6.2.62 At Great Dunmow development viability is not as strong, and there is also a need to consider the extent of committed growth to the west of Great Dunmow (i.e. there could feasibly be issues around market saturation leading to delayed delivery and or impacting development viability). In this regard, it is also important to note that the southeast would involve a larger quantum of growth and there is understood to be a single landowner, which could assist with ensuring strong development viability would mean good potential to negotiate planning gain. It could also possibly be the case that there is less need to deliver costly road upgrades (but this is highly uncertain; see further discussion below). However, there are no particular concerns regarding strategic growth to the northeast of the town, in light of the viability work that has been undertaken in support of the Local Plan and recognising that there has been close liaison with the landowners involved, both through the consultation in 2023 and through subsequent discussions.

6.2.63 A final consideration is Gypsy and Traveller accommodation needs. The ISA Report (2020) explained:

"… this may prove to be a key matter for consideration at the next stage of plan-making, pending the outcome of an updated needs assessment... A number of the strategic sites that feature across the growth scenarios could potentially be suited to providing a site, but this is a factor that ideally needs to feed in early at the masterplanning stage, e.g. with a view to ensuring good road access, and a degree of separation or seclusion from the 'bricks and mortar' community. Also, it is important to recognise that there are strategic arguments for stand-alone sites for Gypsies and Travellers (including from a delivery perspective), and there can also be reasons for supporting expansion of existing sites.

Every effort must be made to meet needs, as poor accommodation can be a barrier to maintaining the traditional way of life, can lead to tensions with settled communities and contributes to acute issues of relative deprivation, with Travellers tending to experience very poor outcomes in terms of health, education and a range of other indicators (see www.gypsy-traveller.org/our-vision-for-change)."

6.2.64 At the time of writing assessment work has been partially completed to understand the needs that are being generated from the 20 existing sites in the District (most of which are very small). Specifically, the assessment identifies a need for 18 pitches over the next five years, which is a key time horizon. Supply has been identified to meet this need, as discussed further in Section 9. However, the Government's Planning Policy on Traveller Sites (PPTS, 2023) also requires provision for longer term needs.

6.2.65 With regards to longer term needs, it is noted that none of the emerging proposed strategic allocations include provision for Gypsy and Traveller pitches. The only other point to note here is that the southeast Great Dunmow strategic site option could potentially be quite well-suited to delivering a Gypsy and Traveller site, noting the amount of land that is available / under the control of the site promoter, and also noting good access to the strategic road network.

6.2.66 In **conclusion**, there is a clear need to rank the scenarios in order of total growth quantum. All of the scenarios perform well, particularly Scenario 6, but there it would not be appropriate to predict 'significant' positive effects ahead of certainty in respect of providing for Gypsy and Traveller accommodation needs.

Land, soils and other resources

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
1	2	1	2	1	2

6.2.67 Uttlesford is associated with notably high quality agricultural land, in the national context. Specifically, the nationally available dataset (available at magic.gov.uk) shows the great majority of the District to comprise **grade 2 quality agricultural land**, where grade 1 quality land is that which is of the best quality nationally.

6.2.68 There are also areas of grade 3 quality land associated with the main river valleys, including a significant area in the vicinity of Great Dunmow. However, this does not give rise to the potential to differentiate between the growth scenarios with confidence. This is because the national dataset is very low resolution and also low accuracy, in the sense that it does not differentiate between land that is of grade 3a quality (which the NPPF defines as 'best and most versatile') and that which is of grade 3b quality.

N.B. there is also a second agricultural land quality dataset available at magic.gov.uk, which reflects the outcomes of field surveying and hence is highly accurate. However, the dataset is very patchy (submitted as part of planning applications), with no data available for either Great Dunmow or Thaxted.

6.2.69 In **conclusion**, whilst it would not be appropriate to flag a concern with higher growth, recognising that Uttlesford's neighbouring local authorities are similarly constrained by high quality agricultural land, it is considered appropriate to flag a preference for a lower growth strategy at Thaxted, given that the village is strongly associated with grade 2 agricultural land. There is also an argument for maximising growth at Great Dunmow (Scenarios 5 and 6), and it is noted that the site to the southeast is strongly associated with the River Chelmer corridor, along which runs a band of lower quality (grade 3) agricultural land; however, on balance the scenarios are not differentiated in this regard.

6.2.70 With regards to significant effects, the conclusion reached on balance is 'moderate or uncertain' negative effects. There is an argument for predicting 'significant' negative effects; however, it is important to reiterate that grade 2 quality agricultural land is quite wide-spread across the wider sub-region, with the western part of East Hertfordshire (around Stevenage) the nearest broad area associated with extensive lower quality (grade 3) land. There is also extensive grade 3 quality land in South Essex, including the majority of Brentwood District and the southern part of Chelmsford District.

Landscape

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
=	=	=	=	=	=

6.2.71 Whilst there are no nationally designated landscapes, landscape character and capacity/sensitivity is a key issue locally, and one that has been explored through recent character and sensitivity studies.

6.2.72 Focusing on the three variable growth locations (NE Great Dunmow, SE Great Dunmow, east of Thaxted), the Landscape Sensitivity Study (2023) assigns 'moderate-high' sensitivity to all three areas, such that it is difficult to differentiate between them with any confidence. Further considerations are:

- NE Great Dunmow – with regards to the main proposed development area to the east of the River Chelmer, this is a somewhat open and expansive landscape with limited features within the landscape to contain growth, and the new proposal to concentrate development to the north of the B1057 does nothing to allay concerns regarding containment. In particular, the concern is future development creep to the northwest along the Chelmer Valley, noting the nearby historic farmstead.

  With regards to the smaller proposed development parcel to the west of the river, this land is relatively well-related to the settlement edge (see Figure 6.1, above). However, it does seem likely that there will be impacts to long distance views across the river valley, as experienced from the B1008. However, on the other hand, the effect of development (certainly across both sites in combination; also potentially under Scenarios 5 and 6, which would see just development to the west of the river) would be to significantly increase accessibility to the river corridor which, in turn, would support appreciation of the river corridor and its close historic association to with Great Dunmow and Church End.

- SE Great Dunmow – this is relatively steep land strongly associated with the river corridor. On the one hand, the topography combined with other features in the landscape generates confidence regarding long-term containment, i.e. the potential to deliver comprehensive growth with low risk of sprawl. However, on the other hand, the land is visible from the B1256 Braintree Road, and could well be quite widely appreciated as contributing to the landscape setting of Great Dunmow. Also, and importantly, the Saffron Way long distance trail passes through the centre of the site.

- Thaxted – is overall quite sensitive in landscape terms, but there is a degree of landscape capacity to the east. Copthall Lane, which is located centrally within the proposed broad growth location, is associated with a shallow valley (also a strong surface water flood corridor and green corridor), which assists with landscape containment. There is also wider potential to draw upon topography and strong features within the landscape for containment, although this is less the case to the north east.

6.2.73 In **conclusion**, at Great Dunmow there is an argument for favouring growth to the northeast, but this is uncertain, including taking a long-term perspective, and so it is considered appropriate to conclude that the two options perform broadly on a par. With regards to Thaxted, it is recognised that there is a landscape constraint to growth here, but the constraint has also been to some extent reflected in the strong conclusions reached above under the historic environment heading. As such, and on balance, it is considered appropriate to rank the performance of the alternatives broadly on a par.

6.2.74 With regards to significant effects, there is a need to additionally factor-in landscape constraints affecting the growth locations that are a constant across the scenarios, which are a focus of appraisal in Section 9. On the one hand significant work has been undertaken to reduce concerns since the Draft Plan consultation stage (2023), including major adjustments to the proposed configuration of growth north of Takeley, work to contain growth locations with new strategic greenspace at Saffron Walden and Stansted Mountfitchet and the decision (as discussed in Section 5.4) to significantly adjust the strategy in respect of Newport. However, on the other hand, certain inherent sensitivities remain, including at Saffron Walden (including accounting for a possible future link road extending to the south of the town). There is also the broad context of well-established local concerns regarding urban extensions, which resulted in the 'garden communities' strategy was at the core of the pervious withdrawn Local Plan. On balance, it is considered appropriate to flag 'moderate or uncertain' negative effects, as per the conclusion reached in 2023.

Transport

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
1	2	1	2	2	3

6.2.75 Beginning with **Thaxted**, whilst there is some transport merit to the option of growth to the east of the village in terms of delivering and supporting village services and facilities (such that they can be accessed by residents via walking and cycling), and also maintaining bus services, an overriding consideration is that Thaxted is a rural village associated with high car dependency (e.g. with secondary schools 6 – 10 km distant). Also, there are concerns with junction capacity in the village centre, with the Transport Topic Paper published in 2023 explaining: *"The [B184 / B1051 / Orange Street] junction suffers significant delays as a result of the Local Plan growth and will require an integrated highway scheme in order to mitigate the impact. … the junction exceeds its operational capacity and delays increase significantly..."*

6.2.76 With regards to **Great Dunmow**, arguments for and against growth from a transport perspective are more nuanced. On the one hand, the town centre has a good offer, and the town as a whole has a good service score (see Figure 5.2; albeit Great Dunmow's score is not much higher than that for Stansted Mountfitchet, where there is also a train station). Also, Great Dunmow is understood to be generally quite a 'walkable' town. However, on the other hand, the village has quite poor public transport accessibility and, whilst cycling to employment locations to the west is a possibility, it is likely not a particularly attractive option for many (at least ahead of new infrastructure). Comparing and contrasting the two broad growth options:

- Walking and cycling – the option of growth to the southeast could involve new homes concentrated slightly closer to the town centre. However, there is less certainty regarding the potential for safe and attractive walking and cycling routes than is the case for the option of growth to the northeast.
- Road transport including busses – it does appear likely that the option of growth to the southeast is preferable, given easier access to the strategic road network. Detailed work has been undertaken to explore bus connectivity options in support of growth to the northeast (see the A120 Study, 2024), but these all involve indirect routes with implications for journey times. It seems likely that a new community to the southeast would have good access to existing bus stops along the B1256 with numerous services and, in turn, good potential to access destinations both to the west (Tesco, Takeley, Stansted, Bishops Stortford) and to the east (Braintree) by bus, and there might be potential to support enhanced services.

The figures below aim to supplement this discussion of the alternative growth locations at Dunmow, with Figure 6.2 serving to highlight good walking and cycling connectivity between Church End and the town centre (and beyond) and Figure 6.3 highlighting existing bus services along the main road corridor.

Finally, it should be noted that the A120 Corridor Study (2024) presents alternative options for bus routes to serve northeast Great Dunmow, including dependent on whether or not it is possible to upgrade the bridge at Church End. The current Transport Topic Paper (2024) concludes: *"A new local bus service could be created that links both housing allocations and could connect to the town centre and the Tesco superstore. The infrastructure requirements… service routing and frequency would need to be explored further…"* Overall, it seems clear that there are some uncertainties around the bus connectivity options.

6.2.77 In light of the above discussion, there is reason to suggest a transport preference for growth concentrated at SE Great Dunmow. However, there is also a need to factor-in that this would be a considerably larger scheme. On the one hand, this could mean additional funds being made available to fund 'sustainable transport' interventions, such as enhancements to the Flitch Way (also, the Uttlesford LCWIP highlights an aspiration for a new cycle route along the B1256). However, on the other hand, there could be implications for the traffic modelling work that has been undertaken in support of the Local Plan, both at the scale of Great Dunmow and also potentially looking more widely along the A120 corridor.

6.2.78 With regards to traffic impacts at the Great Dunmow scale, it should be noted that previous transport modelling undertaken in 2023 assuming a higher quantum of growth flagged concerns, as reported in the Transport Topic Paper (2023) and the ISA Report (2023). For example, the Topic Paper (2023) explained:

"*The modelling outputs highlight that even before development comes forward through the Local Plan that the M11 J8 and Dunmow South and East Intersections in particular, will be subject to increasing levels of delay [including from Chelmsford traffic]. The Local Plan will add to the level of demand on the corridor but only marginally when compared to other increases as a result of committed developments and expansion of operations at Stansted Airport and would be expected to be even less when the lower quantum of growth is tested. The interventions proposed to mitigate the increases in travel demand across Uttlesford are all schemes that would be delivered on the local road network and not the SRN. [However]… These will still have an impact on the A120… in terms of reducing demand [on the A120]. Whilst there is clearly a need for a long term solution to address delays which occur at M11 J8, the key driver for this is not the Local Plan. In this respect no proposed scheme has been identified. It is anticipated that when a solution has been determined, Local Plan development sites would contribute a commensurate amount towards the costs of the scheme....*

6.2.79 However, the current Transport Topic Paper (2024) concludes the following on the basis of up-to-date modelling that accounts for latest proposals in respect of quantum and location of growth at the town:

"The additional demand generated due to the Local Plan allocations is relatively modest. However, as this demand is being introduced onto a network which is already operating at its limits, the delays at junctions will be compounded... The proposed interventions to mitigate the impact of the Local Plan sites are successful in alleviating many of the most acute 'pinch points' at Great Dunmow. Junction entry widening and signalisation schemes will help to provide more capacity and regulate the flow of traffic. However, the approach to mitigating the impact of the Local Plan is not focused on the provision of increasing highway capacity. The wider transport strategy to support the Plan, of which this is part, prioritises the provision of greater travel choice and realistic alternatives to the car. In this respect, the interventions can result in longer delays on the network in places, particularly where new traffic signals incorporate green phases for pedestrians. Notwithstanding this approach, the measures to be taken forward will enable the junctions on the highway network to function relatively efficiently in the future."

6.2.80 In **conclusion**, whilst there is a fairly clear transport case to be made against strategic growth at Thaxted, this case is of limited significance. As for Great Dunmow, the choice between the two alternative growth locations is finely balanced in transport terms. There is a case for preferring growth to the southeast in theory. However, in practice there is also a need to give weight to the fact that a considerable amount of work has been undertaken in support of the option of focusing growth to the northeast, and the outcome of this work is a conclusion that the option of growth here is suitable in transport terms, in that it aligns with wide-ranging established strategic transport objectives. As such, at Great Dunmow it is considered appropriate to flag a concern only with high growth (Scenarios 5 and 6). Whilst the additional growth would be modest, there is a need to proceed with caution in respect of growth along the A120 corridor ahead of the next Uttlesford Local Plan, when it is considered likely that there will be good potential to consider strategic transport solutions, e.g. a Rapid Transit System (as previously suggested) or similar.

6.2.81 With regards to significant effects, it is now considered appropriate to reach more positive conclusions than was the case in 2023. This is in light of the amount of detailed work that has been undertaken in respect of masterplanning (with a transport focus) and through technical studies. The Transport Topic Paper (2024) summarises technical studies as follows: Local Plan Sustainable Transport (ITP, 2024); Local Cycling and Walking Infrastructure Plan (PJA, 2024); A120 Corridor Study (Essex Highways, 2024); Shared Transport in New Developments (CoMoUK, 2024); Model Outputs: Saffron Walden (Tetra Tech, 2024); Model Outputs: A120 Corridor (Tetra Tech, 2024); Stump Cross Assessment (Tetra Tech, 2024).

***Figure 6.2**: The LCWIP network at Great Dunmow*

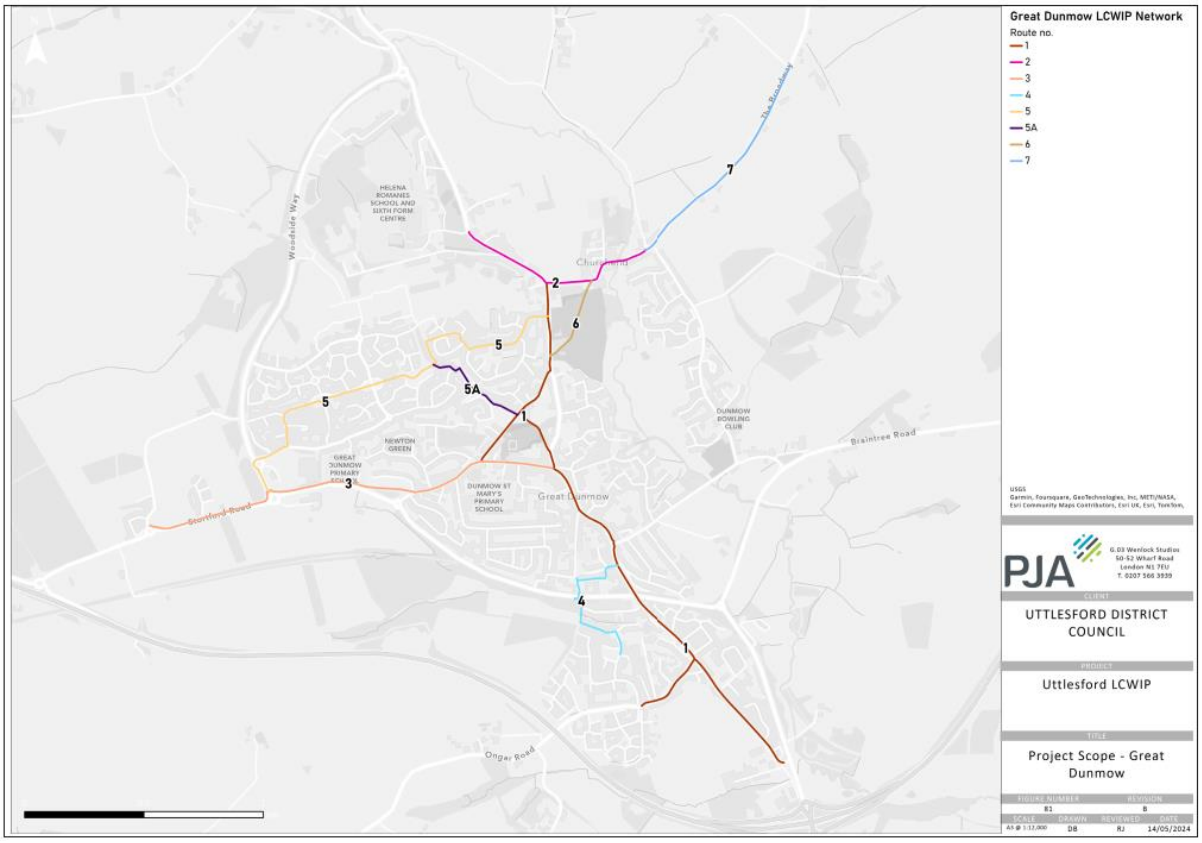
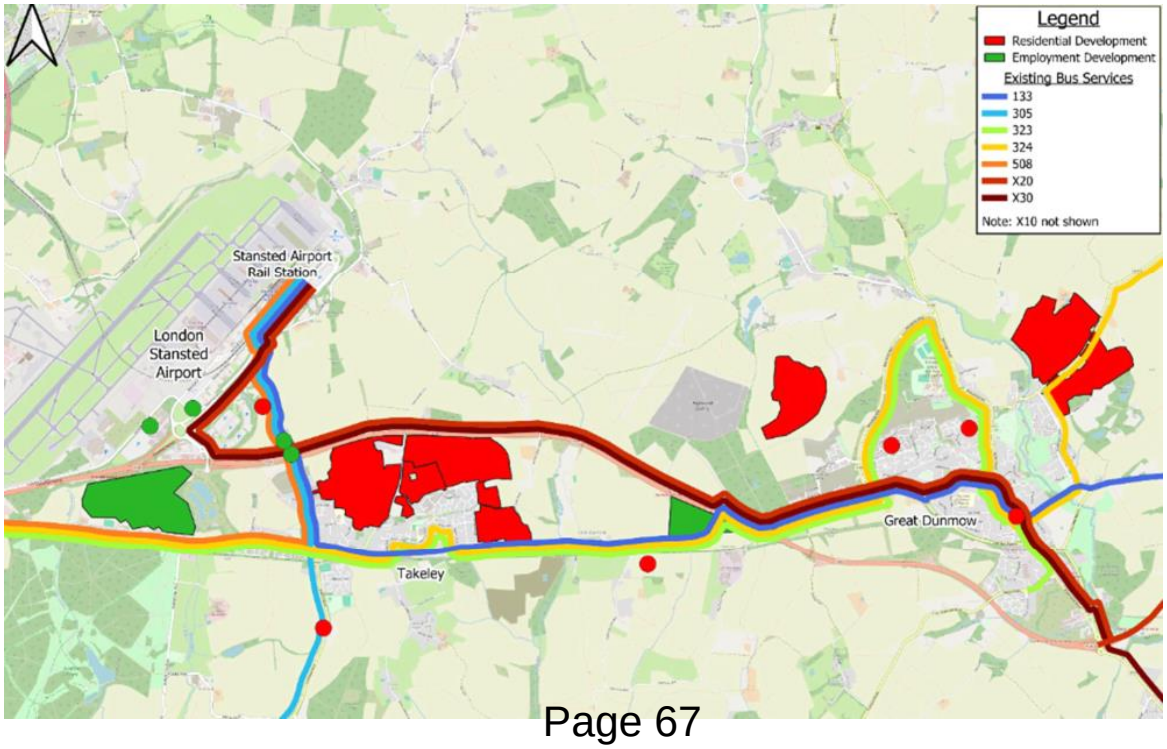


***Figure 6.3**: Existing bus routes along the A120 (also showing key allocations and commitments as of 2023)*



Water

Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
1	2	3	4	5	6

6.2.82 The Uttlesford Water Cycle Study Stage 2 (WCS, 2024) explores a range of considerations, but it appears that a key issue is capacity at wastewater treatment works (WwTWs).

6.2.83 Under the Wastewater Treatment heading, the study concludes (emphasis added):

"A capacity assessment was undertaken by JBA comparing the future flow from each WwTW… with the permit limit. Eight of the WwTWs in the study area are expected to be close to or exceeding their permit during the Local Plan period. An increase in the permit limit, and / or upgrades to treatment capacity may be required at these WwTWs in order to accommodate planned growth.

It is important that when planning upgrades at WwTW that the full quantum of growth, including from neighbouring LPAs is taken into account. Population estimates within Anglian Water's Drainage and Wastewater Management Plan suggest that they may have underestimated growth within the catchments of ***Great Dunmow*** *and Saffron Walden WwTWs.*

There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows..."

6.2.84 Also, there is a need to read the above alongside the conclusion under the Water Quality. This is because: *"An increase in the discharge of effluent from [WwTW] because of development and growth in the area in which they serve can lead to a negative impact on the quality of the receiving watercourse."*

6.2.85 Under this heading the Stage 2 WCS (2024) reaches the following conclusion:

"The modelling indicates the growth during the Local Plan period could result in a significant deterioration (10% or over or deterioration in class) in water quality at five WwTWs (Takeley, Great Easton, ***Great Dunmow****, Debden and Great Chesterford). In all cases, this deterioration could be prevented by improvements in treatment.*

The modelling also looks at whether growth during the Local Plan period could prevent good ecological status being achieved in the future. The results showed that growth alone will not prevent good ecological status being prevented in the future should improvements in upstream water quality be made, except for Takeley, where environmental capacity could be a constraint to growth.

An additional modelling scenario was run where the additional demand from growth expected to be served by Takeley WwTW was applied to Bishops Stortford WwTW rather than Takeley WwTW… Transfer of additional flow from commitments and allocations around Takeley and Great Dunmow to Bishops Stortford may be possible providing agreement from Thames Water that there is sufficient capacity at the WwTW to receive additional flow. Where a WwTW is shared with a neighbouring authority, coordination of growth plans in collaboration with Thames Water and Anglian Water is essential to ensure that infrastructure is in place prior to development to prevent a breach of the environmental permit."

6.2.86 Also, there is a need to consider the analysis presented under the "Environmental Impact" heading within the Stage 2 WCS (2024). A key conclusion here is as follows:

"Water quality modelling has predicted a significant deterioration in the river adjacent to four SSSIs within Uttlesford [as a result of wastewater discharges]. At two of these sites, deterioration could be prevented by improvements in treatment upstream. At Little Hallingbury Marsh SSSI and Thorley Flood Pound SSSI, deterioration could not be prevented, and the predicted deterioration in BOD remains at 11%… Further investigation may be required on these sites… This is a cumulative impact of growth in both Uttlesford and East Hertfordshire with 90% of the growth coming from East Hertfordshire..."

6.2.87 In this light, it is clear that there is a challenge at Great Dunmow (a variable across the RA growth scenarios) and at Takeley (a constant). However, the water companies have not raised serious concerns through consultation (namely Anglian Water in the case of Great Dunmow, and both Anglian Water and Thames Water in the case of Takeley, as the village is located on the border between the two water company areas, as discussed above). The Stage 2 WCS (2024) goes on to explain:

"Where new infrastructure or upgrades to existing infrastructure may be required, engagement between UDC and the water company is required... Grampian conditions may be sought by the water company should development be in advance of the necessary infrastructure."

6.2.88 With regards to Thaxted, it is not a focus of the study as it is not an emerging proposed location for growth, but there are not known to be any particular concerns in respect of wastewater treatment / water quality. No concerns were raised by the Stage 1 WCS (2023), at which time growth at Thaxted was assumed.

6.2.89 Finally, the Stage 2 WCS (2024) presents an important discussion water resources, including with a focus on the implications of low groundwater levels for chalk streams (which are fed by groundwater). The outcome is a series of recommendations for achieving very high levels of water efficiency, which will have cost implications for developers (as discussed in the Study). Specifically, the recommendations are: Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford; Require all new non-residential buildings achieve BREEAM "Outstanding" for water; Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study. By way of context, the Study also explains: *"Within Greater Cambridge, the Environment Agency are objecting to planning applications due to concerns over future water resource availability. A target of 80l/p/d is being explored by the planning authority."*

6.2.90 In **conclusion**, there are some water-related constraints to growth locally. These are likely not as significant as those affecting Greater Cambridge, but other neighbouring local authority areas may be less constrained. As such, it is appropriate to rank the RA growth scenarios in order of total growth quantum, albeit concerns are likely associated with growth at Great Dunmow much more so than at Thaxted.

6.2.91 Finally, with regards to significant effects, there is a need to recognise that there are concerns with certain growth locations that are a constant across the RA growth scenarios. This is most notably the case for Takeley, plus there is a need to consider growth at those settlements associated with chalk stream catchments (e.g. recalling that whilst the quantum of growth supported at Newport is reduced at the current time, relative to the Draft Plan stage, the quantum of growth at Elsenham is increased).

6.2.92 The conclusion for most scenarios is 'moderate or uncertain' effects, recognising that limited concerns were raised through the Draft Plan consultation in 2023. However, it is appropriate to flag a risk of significant negative effects for the highest growth scenario.

6.3 Growth scenarios appraisal summary

6.3.1 The summary appraisal matrix below shows a very mixed picture, serving to highlight that the choice between the RA growth scenarios is potentially quite finely balanced. Scenarios 1 and 3 are found to be the best performing scenarios under the highest number of sustainability topic headings and these two scenarios are also associated with the most predicted positive effects.

6.3.2 However, it does not *necessarily* follow that either Scenario 1 or Scenario 3 is the best performing or 'most sustainable' scenario overall. This is because the appraisal is undertaken without any assumptions made regarding the degree of importance, or 'weight' in the decision-making process, that should be attributed to each of the sustainability topics (and, as part of this, it cannot and should not be assumed that the sustainability topics have equal weight). Under several topic headings there are scenarios that outperform Scenarios 1 and 3, and the Council, as decision-makers, might choose to give particular weight to one or more of these topics. Also, it is important to recognise that considerable simplifying assumptions are made within the appraisal in order to reach overall conclusions under any given topic heading, including in terms of the weight attributed to specific issues/impacts. Adjusted assumptions could quite easily lead to adjusted overall conclusions and, in turn, an adjustment to the overall picture shown in the matrix below.

6.3.3 Having made the above overarching comments, the following bullet points summarise appraisal findings under each of the sustainability topic headings in turn:

- **Accessibility (to community infrastructure)** – a clear focus of the strategy is directing growth broadly in line with the settlement hierarchy and in response to community infrastructure capacity issues and opportunities, most notably by supporting delivery of several new schools, including to address existing issues. However, the County Council does not support a new school at Thaxted, because the concern is that the school would be unable to expand to two form entry and so could struggle to remain viable. Finally, at Great Dunmow there is a fairly clear preference for focusing growth to the northeast.
- **Biodiversity** – there is a marginal / uncertain preference for focusing growth at NE Great Dunmow. There is a clear biodiversity opportunity here, given the potential to target new strategic green and blue infrastructure in such a way that supports existing biodiversity priority areas. There could be a similar opportunity at SE Great Dunmow (River Chelmer corridor), but this is less certain, and there is a degree of onsite constraint. An ambitious approach to Biodiversity Net Gain is assumed under all scenarios.
- **Climate change adaptation** – the primary consideration here is flood risk and, in this regard, all three of the sites that are a variable across the RA growth scenarios (NE Great Dunmow, SE Great Dunmow, East Thaxted) are subject to a notable degree of surface water flood risk.
- **Climate change mitigation** – focusing on built environment decarbonisation, it is fair to flag a degree of support for NE Great Dunmow as a larger site in single land ownership, such that there is minimal reason to assume that development viability would be a constraint to delivering net zero carbon development to an exacting standard (to include net zero achieved onsite). However, this is marginal and uncertain. With regards to significant effects, the conclusion reflects the stretching nature of decarbonisation targets. It is not possible to conclude built environment decarbonisation has been a primary 'driver' of strategy and site selection (but transport decarbonisation has, as discussed below).
- **Communities, equality, health** – there are a very wide range of factors, but the rank of preference reflects: A) support for growth at Thaxted, with a view to maintaining village services, facilities and retail, maintaining bus services and generally maintaining village vitality, e.g. noting high house prices and notwithstanding the Neighbourhood Plan's support for restricting housing growth; and B) a preference for NE Great Dunmow, as this would involve lower growth without necessarily compromising on infrastructure delivery (or wider objectives, e.g. housing mix). With regards to (B), this is in the context of very high recent and committed growth at Great Dunmow, much of which being speculative in nature.
- **Economy and employment** – established needs for new employment land would be provided for under all six scenarios (i.e. the approach to employment land is held constant). There is feasibly the possibility of delivering some modest new employment land at SE Great Dunmow, but this is not currently proposed by the site promoter. If possible, it could prove well-targeted from and employment land perspective but could create challenges in terms of effective masterplanning (linking new homes to the town centre).
- **Historic environment** – this is a key constraint district-wide, and also affecting two of the three growth locations that are a variable across the scenarios. The appraisal reflects a view that SE Great Dunmow is relatively unconstrained, but there is some uncertainty ahead of consulting with Historic England.
- **Homes** – all scenarios perform well because they make good provision for local housing need (LHN) over the plan-period as a whole (once account is taken of the potential to boost supply in the latter years of the plan period through a Local Plan Review). Nonetheless, there is still support – from a pure housing perspective – for the highest growth scenario, which could allow for the housing requirement to be set at a figure modestly above LHN, e.g. aimed at boosting affordable housing supply. With regards to significant effects, the issue is provision for longer term Gypsy and Traveller accommodation needs.
- **Land and soils** – high quality agricultural land is a significant constraint to growth across the sub-region; however, there is a concentration of slightly lower quality (grade 3) quality land at Great Dunmow.
- **Landscape** – all three of the variable growth locations are subject to notable degree of constraint. There is an argument to suggest that SE Great Dunmow is most constrained, e.g. noting the Saffron Way.
- **Transport** – the first point to note is that there is a transport argument against supporting strategic growth at Thaxted, as a rural village, although this is not entirely clear cut. Great Dunmow is not an ideal location for growth from a transport perspective, but an extensive amount of work has been undertaken to understand issues and opportunities associated with strategic growth to the NE, broadly concluding that this is a suitable location for growth from a transport perspective. SE Great Dunmow is clearly better linked to the strategic road network (supportive of bus connectivity) but would be notably separated from the urban edge by the river corridor, Dunmow Park, employment land and the B1256.
- **Water** – there are some outstanding concerns regarding wastewater treatment along the A120 corridor, including at Great Dunmow, hence there is a clear case for cautioning against higher growth.

***Table 6.1**: The reasonable growth scenarios – summary appraisal findings*

Topic	Scenario 1: GD low Thax low	Scenario 2: GD low Thax high	Scenario 3: GD med Thax low	Scenario 4: GD med Thax high	Scenario 5: GD high Thax low	Scenario 6: GD high Thax high
	Rank of preference (numbers) and categorisation of effects (shading)					
Accessibility	1	4	2	5	3	6
Biodiversity	1	1	2	2	2	2
Climate change adaptation	=	=	=	=	=	=
Climate change mitigation	2	2	2	1	2	2
Communities, equality, health	4	1	5	2	6	3
Economy and employment	2	2	1	1	1	1
Historic environment	3	4	1	3	2	3
Homes	6	5	4	3	2	1
Land and soils	1	2	1	2	1	2
Landscape	=	=	=	=	=	=
Transport	1	2	1	2	2	3
Water	1	2	3	4	5	6

7 The preferred approach

7.1.1 The following text was provided to AECOM by UDC officers:

"The preferred scenario is **Scenario 1**, which the appraisal shows to perform reasonably well relative to the alternatives, clearly supporting a conclusion that it is "an appropriate strategy" (NPPF para 35). At Great Dunmow, it is recognised that the choice between growth to the northeast and growth to the south east is quite finely balanced, but the site to the southeast does not relate well to the settlement edge and growth to the northeast will deliver valuable new strategic green and blue infrastructure. Also, the site to the southeast is considerably larger but would likely deliver little in the way of additional infrastructure. At Thaxted there is a clear case for growth, other than in respect of the primary school viability issue, and notwithstanding this is a rural village with high car dependency. However, the primary school capacity issue is understood to be a barrier to growth that cannot be overcome, in the context of the current Local Plan (but it is important to recall that there will be a Local Plan Review within five years, which could potentially direct further growth to Thaxted, to assist with school viability). With regards to higher growth, the preferred scenario is considered to represent a suitably proactive approach to both housing and employment growth, and there have been few calls for higher growth other than from the development industry. However, the Council will remain open to evidenced reasons in support of higher growth."

Part 2: What are the appraisal findings at this stage?

8 Introduction to Part 2

8.1.1 The aim of this part of the report is to present an appraisal of the Proposed Submission Local Plan as a whole, as currently published under Regulation 19 of the Local Planning Regulations.

8.1.2 In practice, the aim is to appraise the following two broad components of the plan together:

1. The proposed **growth strategy** as understood from the Key Diagram (Figure 8.1)

   This is Scenario 1 as previously appraised in Section 6. However, whilst the appraisal in Section 6 focused on aspects of the strategy that are a variable across the scenarios appraised (total growth quantum, Great Dunmow, Thaxted), the aim of the appraisal below is to consider the plan as a whole (i.e. to additionally appraise aspects of the strategy held constant across the Section 6 scenarios).

2. The proposed suite of **development management (DM) policies**

   These are the district-wide, area-specific and site-specific policies that aim to support the growth strategy and generally manage growth and change in the District. The plan distinguishes between 'core' and 'development management' policies, but DM policy is an appropriate overarching term.

Appraisal methodology

8.1.3 Appraisal findings are presented across 13 sections below, with each section dealing with a specific sustainability topic. For each sustainability topic the aim is to discuss the merits of the Local Plan, as a whole, before reaching an overall conclusion on significant effects.

8.1.4 Specifically, the regulatory requirement is to "identify, describe and evaluate" significant effects taking into account the available evidence and also mindful of wide-ranging effect characteristics, e.g. 'long term'.

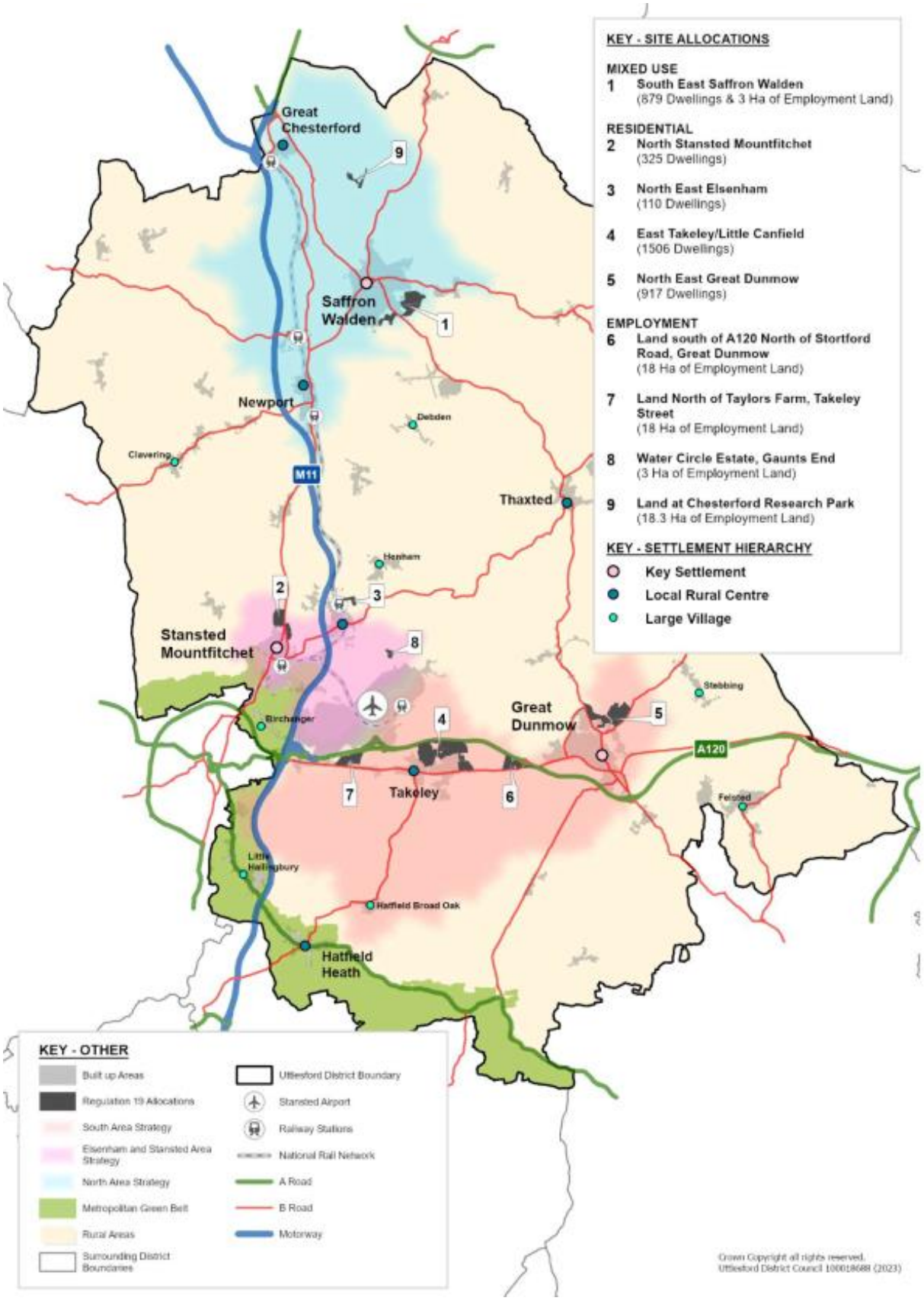
8.1.5 Also, significant effects are defined as follows:

- An effect is a predicted change to the baseline situation, which is not simply a snap shot of the current situation, but also a projection of the current situation in the absence of the Local Plan. As part of this, there is a need to recognise that housing growth locally would continue in the absence of the Local Plan. Also, neighbouring local authorities might have to consider providing for Uttlesford's unmet need.
- The significance of any given effect is judged taking into account not only the magnitude of the predicted change to the baseline situation but also established objectives and targets (e.g. the District has a 2030 net zero target date, such that there is a need to achieve a rapid decarbonisation trajectory).

8.1.6 Every effort is made to predict effects accurately. However, this is inherently challenging given the high-level nature of the Local Plan. The ability to predict effects accurately is also limited by knowledge gaps in respect of the baseline (both now and in the future). In light of this, there is a need to make considerable assumptions regarding how the Local Plan will be implemented and the effect on particular 'receptors'.

8.1.7 Finally, it should be noted that the objective of arriving at conclusions on significant effects means that the focus of the appraisal is primarily on the growth strategy. There is relatively limited potential for DM policies to generate significant effects, either alone or in combination. This conclusion is reached including on the basis that there is considerable leeway at the planning application stage in respect of applying DM policies.

***Figure 8.1**: The Draft Local Plan Key Diagram*



9 Appraisal of the Local Plan

9.1 Introduction

9.1.1 Set out below is an appraisal of the Draft Local Plan as a whole. The appraisal takes the form of 13 narrative discussions – one for each of the topic headings that together comprise the SA framework.

9.2 Accessibility (to community infrastructure)

Growth strategy

9.2.1 The conclusion reached in Section 6 is that there is strong support for the proposed growth strategy. This is essentially because the package of allocations has been selected with a strong focus on: A) distributing growth in line with the settlement hierarchy; and B) delivering community infrastructure (in the context of an infrastructure deficit that has arisen due to the prolonged period without an up-to-date local plan).

9.2.2 With regards to **Great Dunmow**, the appraisal in Section 6 supports the proposed focus of growth to the northeast of the town, as it will deliver a local centre including a primary school, along with very well-targeted new strategic green and blue infrastructure. With regards **Thaxted**, the appraisal is supportive of the decision not to support growth beyond windfall, given the primary school constraint at the village.

9.2.3 Taking the other higher order settlements in turn:

- **Saffron Walden** – the proposed eastern urban extension will deliver a new primary school, which is strongly supported as it will also serve the recent and committed housing sites adjacent to the west.

  With regards to secondary school capacity there are some uncertainties and, in turn, there is a degree of risk. However, the school itself has undertaken detailed work and concluded that there is capacity to expand and, as discussed in Section 5.4, the Local Plan sets out to minimise risk by delivering new secondary school capacity at Takeley (including safeguarded land for a future expansion) and also by safeguarding land for an extension to the secondary school at Stansted Mountfitchet (although this land is within the Green Belt, which could act as a constraint to constructing school buildings). An ideal solution might involve a new secondary school at Saffron Walden, in light of the concerns raised by the County Council, but there is no potential to deliver this through the current Local Plan (see Section 5.4). It should also be noted that the previous proposal at the Draft Plan stage (2023) was to deliver a new sixth form centre within the urban extension, but this is not a preferred solution (albeit schools do operate across multiple sites elsewhere) and removing this requirement should assist with masterplanning and scheme viability, recognising that there is also a new requirement to deliver employment land relative to the Draft Plan stage (given the 'loss' of the previous employment allocation; see Section 5.4).

- **Stansted Mountfitchet** – as discussed in Section 5.4, there is no longer a clear need to deliver a primary school, but the proposal is to retain flexibility to deliver a school if necessary (in line with a recommendation made by the County Council). Any new school would likely be within an adjacent site currently under construction by the same developer (see https://bloorhomes-stansted.co.uk/). The new proposed allocation would deliver quite limited new community infrastructure itself but would deliver new strategic green and blue infrastructure. Also, it is important to note that Stansted Mountfitchet is suited to growth from an 'accessibility' perspective on account of its service score (see Figure 5.3, above) and train station. As discussed in Section 5.4, there is feasibly an alternative growth location that has considerable merit from an accessibility perspective, but it is ruled out on the grounds of Green Belt.

- **Takeley** – the situation is broadly unchanged from that reported at the Draft Plan stage, which is that there is strong support for strategic growth at Takeley to deliver a new secondary school as part of a new local centre (to also include a primary school) that will act as a focal point for the village. Significant adjustments have been made the concept masterplan since the Draft Plan stage, which are a focus of discussion below, but there are limited implications for 'accessibility' objectives. The new proposal is to significantly weight growth to towards the east of Takeley (i.e. towards the Priors Green part of Takeley), which is less than ideal in terms of allowing all Takeley residents good access to the local centre, and also in terms of focusing growth where there is strongest connectivity to Stansted Airport (a major employment and transport hub). However, there are no significant concerns in this regards, recognising that Stansted is very close (~15 minutes by bus and ~20 minutes cycling).

- **Newport** – as discussed in Section 5.4, there is a clear case for the new proposed approach – which is to assign the village a 300 home housing requirement to be taken forward by a Neighbourhood Plan, rather than to allocate sites for a 400 home urban extension – from a perspective of ensuring capacity at the village primary school (albeit, on the other hand, Newport benefits from a secondary school with some capacity and also a train station). A potential concern is that growth could be somewhat dispersed across smaller sites such that opportunities to negotiate delivery of new or upgraded community infrastructure (potentially to the benefit of the existing community, i.e. 'planning gain') could be missed. However, in practice, it is not known what approach to growth will be taken by the Neighbourhood Plan, and whatever is proposed will be subject to consultation, examination and referendum.
- **Hatfield Heath** – the proposal is not to support any growth at the village bar windfall, which was also the proposal at the Draft Plan stage. This approach reflects the Green Belt constraint affecting the village, but it is also the case that there are no clear community infrastructure issues, nor options for delivering strategic growth at the village with a focus on delivering infrastructure / planning gain.
- **Elsenham** – the new proposed approach is to allocate a site for 110 homes, which is strongly supported from an accessibility perspective, as it will significantly assist with delivering a new primary school within the existing permitted site to the south. Also, the proposed allocation is near-adjacent to the train station.
- **Great Chesterford** – the proposal is not to support any growth at the village bar windfall, which was also the proposal at the Draft Plan stage. There is an established need to deliver a new primary school at the village, but all of the available options are subject to significant constraints or barriers to delivery.
- **Larger villages** – the method for deciding housing requirements for larger villages accounts for the village settlement score and, in this way, weights growth to those larger villages where is the ability to meet some day-to-date needs within the village. The approach has been adjusted in light of consultation responses from Parish Councils and the County Council, and there are not known to be any significant concerns in respect of village primary schools reaching capacity or (and perhaps more pertinently) not being able to maintain the school roll. There is also a need to consider that parents can choose to send children to a school that is not the most local. For example, and notably, Debden is assigned a low growth strategy (due to a lack of sites) which could theoretically generate a concern regarding viability of the village primary school, but in practice the village is quite close to three higher order settlements (Saffron Walden, Newport and Thaxted) with primary school capacity issues (at least in the short term).

Development management policy

9.2.4 Recognising the challenges associated with securing infrastructure alongside growth, a key policy is Core Policy 5 (**Providing Supporting Infrastructure and Services**), which explains:

"All new development will be required to provide for the necessary on-site and, where appropriate, off-site infrastructure requirements arising from the proposal. Infrastructure requirements will be delivered directly by the developer and/ or through an appropriate financial contribution prior to, or in conjunction with, new development. Where appropriate, developers will be expected to collaborate..."

9.2.5 The latter point on collaboration is important, as there are numerous instances of where this will be necessary in order to secure key infrastructure. It is also important to note that the policy goes on to present detailed guidance on the approach that will be taken to addressing development viability issues.

9.2.6 The policy also ends by discussing a proposed **Community Infrastructure Levy (CIL)**:

"The Council's Delivering Infrastructure Strategy will include both a CIL Charging Schedule and a Supplementary Planning Document for Section 106 agreements that will provide more detail about its approach to securing developer contributions.

Upon adoption of the CIL Charging Schedule, CIL will be used to pool developer contributions towards a wide range of new and improved infrastructure necessary to delivery new development.

Where not covered by the CIL Charging Schedule, infrastructure and services, including provision for their maintenance, should be delivered directly by the developer...

Infrastructure and services will be sought through the negotiation of planning obligations, conditions, levy, undertaking and/ or other agreement as secured through the planning permission, to mitigate the direct impacts of development and secure its implementation."

9.2.7 Given the extent of infrastructure required in support of growth – including transport infrastructure, community infrastructure, green infrastructure and utilities – taken into account alongside wider policy asks of developers including in respect of net zero, biodiversity net gain, water efficiency and Hatfield Forest recreational pressure mitigation, it will be very important that a CIL Charging Schedule is adopted.

Conclusion

9.2.8 There is strong support for the proposed growth strategy, given a clear focus on directing growth broadly in line with the settlement hierarchy and in response to community infrastructure issues and opportunities, most notably by supporting delivery of new schools, including to address existing issues. However, there remain some outstanding issues, namely: A) an element of residual risk in respect of secondary school capacity at Saffron Walden; B) unresolved primary school issues at Thaxted and Great Chesterford (which can be revisited through a Local Plan Review). Also, there is a degree of uncertainty regarding primary school capacity at Newport ahead of a Draft Neighbourhood Plan, but latest understanding is that the school can expand to accommodate the 300 home housing requirement, and the Neighbourhood Plan represents and opportunity to explore options with a view to maximising benefits to the village.

9.2.9 With regards to DM policy, a key question is whether their combined effect will impact development viability to the extent that there is a need to compromise on community infrastructure objectives. There is no reason to suggest that this will be the case, in light of the Viability Study (2024) and consultation / discussions with site promoters, but the Viability Study explains that viability is tighter at Great Dunmow and Takeley than is the case for other proposed growth locations. Overall, it is now possible to predict a more positive conclusion than was the case at the Draft Plan stage (2023), given how the plan has been iterated via consultation, engagement with key partners and detailed technical work.

9.2.10 Overall, it is now appropriate to predict a **significant positive effect** on the baseline (which is a situation whereby housing growth continues without a plan, with suboptimal community infrastructure outcomes).

9.3 Biodiversity

Growth strategy

9.3.1 The conclusion reached in Section 6 is that there is a good degree of support for the proposed growth strategy. This is essentially because: A) sites are mostly subject to limited constraint; B) there is a very strong focus on delivering targeted new strategic green and blue infrastructure; and C) the firm proposal is to take an ambitious approach to biodiversity net gain (BNG). In particular, the appraisal in Section 6 explains there is support for the proposed approach to growth at **Great Dunmow**. With regards to **Thaxted**, there is no particular biodiversity argument in favour of the decision not to allocate.

9.3.2 Looking across the settlements where the proposed approach to growth is a constant across the growth scenarios appraised in Section 6, it is **Takeley** that warrants being a particular focus of attention, from a biodiversity perspective. The Interim SA Report (2023) explained:

"… the site itself is constrained by Priors Wood (ancient woodland CWS), as well as other onsite priority woodland habitat. Also, there is a need to avoid increased recreational pressure on nearby Hatfield Forest SSSI as far as possible. The Forest is not internationally designated, and is managed as a National Nature Reserve, but Natural England have significant concerns regarding the impact of recreational pressure. Concerns are reduced on account of the extent of green infrastructure proposed to be delivered onsite, which ties in with the need to avoid/mitigate historic environment impacts. As part of the GI strategy there will also be a need to consider recreational pressure on Priors Wood."

9.3.3 However, any concerns are now considerably allayed, on account of the significant changes that have been made to the concept masterplan (Figure 5.18), plus work that has been undertaken through the Countryside and SANG Study (2024). Specifically, the new proposal is to focus growth entirely within the eastern part of the site, with the western part delivered as strategic green infrastructure. This is strongly supported in biodiversity terms, as this is where the biodiversity constraint and opportunity is focused, plus the effect should be to divert a good proportion of recreational pressure away from Hatfield Forest. This is particularly the case as the proposal is to deliver the new greenspace to SANG (Suitable Alternative Natural Greenspace) standards. SANG is an established mechanism for mitigating the impacts of housing growth-related recreational pressure on internationally designated sites, but Natural England supports the terminology also being used in the context of mitigating impacts on nationally designated Hatfield Forest.

9.3.4 Finally, with regards to Takeley, there are three further points to note.

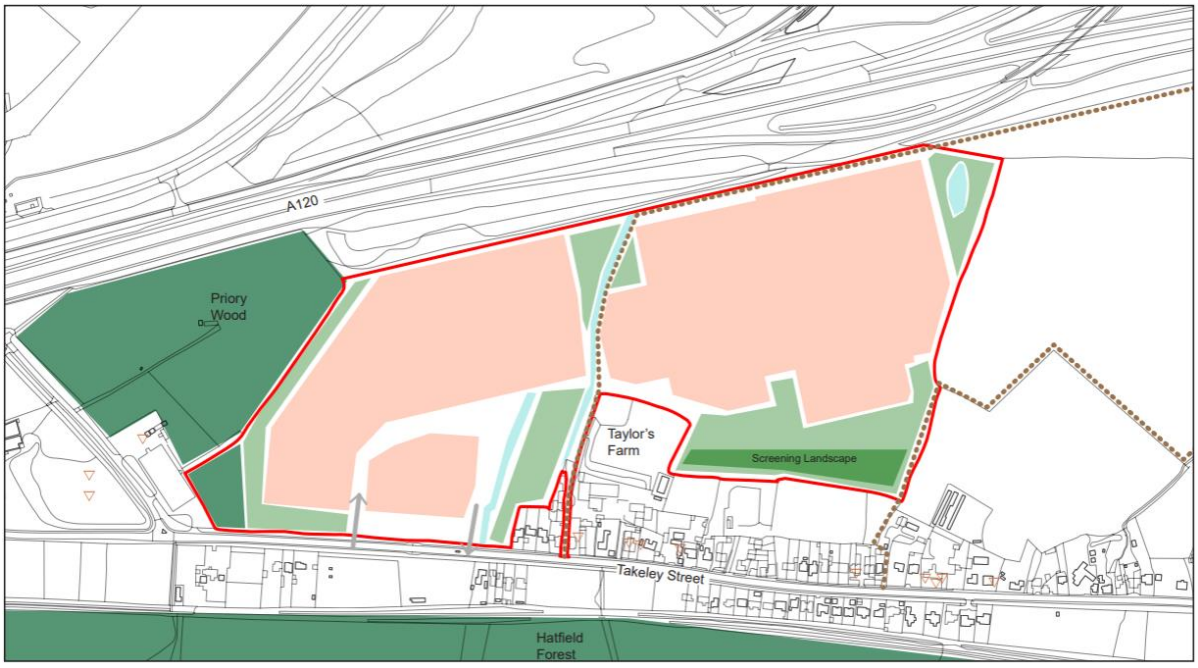
9.3.5 Firstly, the proposed employment allocation to the west (Takeley Street) is constrained given very close proximity to Hatfield Forest, adjacent ancient woodland and a stream corridor passing through the site that links strongly to Hatfield Forest. The ISA Report (2023) explained:

"There is a need for further work, but it is currently not clear that this gives rise to a particular concern, assuming that the scheme would generate very limited recreational pressure, given that the land in question seemingly includes limited onsite habitat (bar mature hedgerows) and recognising that air quality impacts are very localised, i.e. problematic concentrations of air pollution occur only in close proximity to roads. However, it is recognised that the land in question falls in-between Hatfield Forest and other ancient woodlands in the wider landscape, including Priory Wood CWS, which is adjacent to the west of the site.

Also, historic mapping shows further woodland in the area, including through the site in question, with the former woodland associated with a surface water flood channel that could indicate a degree of hydrological connectivity. A final point to note is the proposal for 15 ha of employment land within a 27 ha site, such that there should be scope to address concerns via masterplanning and habitat creation."

9.3.6 However, Natural England has not raised an objection (as discussed in Section 5.4) and work has been undertaken to adjust the masterplan, including a proposal to deliver a small area of new woodland within the site boundary – see Figure 9.1. Having said this, the new proposal is to support 18 ha of employment land, rather than 15 ha as previously proposed in 2023. Overall, it is fair to say that the proposed extent and configuration of built form within the site boundary could warrant ongoing scrutiny from a perspective of wishing to buffer the ancient woodland to the west along with the stream corridor through in centre.

***Figure 9.1**: Concept master plan for proposed employment allocation north of Takeley Street*



9.3.7 Secondly (maintaining a focus on Takeley), there is a need to note that Takeley is has a unique position within the landscape, in that it is located on raised ground, with shallow valleys / stream corridors to the west and to the east that are associated with a degree of biodiversity and historic environment constraint. In this regard, there is support for the new proposal to locate the primary and secondary schools at the eastern extent of the proposed strategic allocation (North Takeley), as this should serve to contain the extent of the village and so reduce concerns regarding future development creep / sprawl downhill.

9.3.8 Finally, with regards to Takeley, the Countryside and SANG Study (2024) discusses the possibility of a major new country park between Takeley and Great Dunmow. This could have major benefits in terms of minimising recreational pressure on Hatfield Forest, and also avoiding concerns regarding development enveloping High Wood SSSI in the long term (discussed in Section 5.4). However, it is also important to note that this land is being promoted for a new settlement (Easton Park), as discussed in Section 5.

9.3.9 Looking across the remaining settlements, there is limited biodiversity constraint to further growth east of **Saffron Walden**, with no priority habitat in the vicinity, and given good potential to integrate field boundaries (notably along Tiptofts Lane) as part of green infrastructure. However, there is a need for ongoing consideration of the sensitive water environment, recognising that the Cam is a Chalk Stream and in poor ecological condition. This matter is explored in a Water Cycle Study (2024), which is discussed further below. Natural England commented in 2023: *"The high ammonia sensitivity in the Chelmer and phosphate sensitivity in the Cam, Pincey Brook and Stort need to be reviewed further in the stage 2 WCS."*

9.3.10 Final settlement and site-specific considerations are as follows:

- **Stansted Mountfitchet** – the equivalent appraisal in 2023 focused on a previous allocation to the east that now has planning permission. The main proposed allocation to the north is subject to limited biodiversity constraint, but the small site to the east is closely associated with a stream corridor. There might be potential to enhance the corridor with a focus on biodiversity and wider ecosystem services.
- **Newport** – the new proposal is to assign the village a 300 home housing requirement, rather than to allocate sites, as per the previous proposal in the Draft Local Plan. This is broadly supported from a biodiversity perspective. The ISA Report (2023) commented as follows regarding the proposed allocations at that time: *"… the northern-most of the two proposed allocations is adjacent to Wicken Water, which is a chalk stream. There could well be the potential to avoid issues and potentially deliver an enhancement to the stream corridor (there is already a footpath), but this could have implications for site capacity. The site to the south is associated with several mature and historic field boundaries."* However, one point to note is that a focus of growth to the west of the village would have meant directing growth away from Debden Water SSSI to the east of the village.
- **Debden** – is a notable example of a larger village assigned a housing requirement. Specifically, Debden is assigned a notably low housing requirement, on account of limited site availability. This is potentially supported from a biodiversity perspective, given nearby (and downstream) Debden Water. However, this is a marginal consideration, as there is likely good potential to avoid concerns through site selection.
- **Little Canfield employment site** – located between Takeley and Great Dunmow, this site is in close proximity to High Wood SSSI, and there is a stream corridor through the centre of the site that potentially links to the SSSI to some extent. However, it is difficult to suggest any major concerns.

Development management policy

9.3.11 Focusing on the south of Uttlesford, which is a key area of sensitivity, the policy on green and blue infrastructure in the **South Uttlesford Area** sets out that: *"Contributions will be sought towards the relevant strategic projects (including their enhancement and on-going management costs) identified in the Uttlesford Green and Blue Infrastructure Strategy, including:*

the creation of a country parkland at Church End, Great Dunmow of not less than 30 ha will stretch in continuous public open space from the north, near to Marks Farm, around the eastern edge by Merks Hill Wood, and along the River Chelmer… and westwards across Parsonage Downs to the B184 road into Great Dunmow. It should be designed to Natural England SANG criteria…, and

the creation of public open space of not less than 17ha in area in the western part of the Takeley development site… to be designed in accordance with SANG criteria. It will incorporate the proposed sustainable travel route for bus, cycle and walking. Recognising also its potential for biodiversity net gain, it will be designed to protect and enhance the heritage settings of Warish."

9.3.12 Also relevant to the South of Uttlesford, the policy on the natural environment requires: "*Where appropriate… contributions from proposed residential developments will be secured towards recreational mitigation measures and Priority Habitat enhancement/ connectivity at Hatfield Forest SSSI...."*

9.3.13 In the north of Uttlesford a key issue is chalk streams, hence the policy on **watercourse protection and enhancement** sets out a need to ensure a 15m buffer to water courses. It is noted, however, that the policy no longer includes a particular focus on chalk streams, and the proposal from the Draft Local Plan stage to require certain applicants to submit a Chalk Stream Impact study is removed. The amended approach is with a view to aligning with the consultation response received from Natural England.

9.3.14 Similarly, policy wording in respect of development impacts to groundwater levels in chalk stream areas (aquifers) has been adjusted, with the new policy wording: *"Development must not lead to a reduction in groundwater levels or reduced flows in any water courses including the chalk streams."*

9.3.15 Finally, applying district-wide will be the Core Policy on Biodiversity, which sets out a requirement for developments to secure a 20% biodiversity net gain (**BNG**), i.e. a requirement in excess of the legislative minimum 10% net gain. Whilst this is unchanged from the Draft Plan stage, there has been a considerable amount of work undertaken to evidence this policy approach, and set the foundations for its successful implementation, particularly in terms of achieving well-targeted offsite habitat creation / enhancement in such a way that: A) it is well-targeted from a biodiversity perspective (ahead of an Essex Local Nature Recovery Strategy); and B) it is deliverable, in that there is not an undue burden placed on the development industrial or the Council. In short, there is a need to carefully consider how the 'gains' will be achieved in order to allow developments to demonstrate a 'net gain' despite onsite losses.

9.3.16 The BNG Study (2024) concludes:

"The district… has enormous potential for nature recovery, through habitat regeneration and creation, with rapidly emerging and supportive Farmer Cluster networks and similar agricultural diversification instruments providing capacity to deliver significant biodiversity gains through BNG… The 20% biodiversity net gain target is considered deliverable and achievable within Uttlesford District, and does not affect the viability of new developments… The unique combination of characteristics found within Uttlesford District, including low biodiversity levels, significant habitat losses and species extinctions and the practicable means for the delivery of significant biodiversity gain, represent a seminal opportunity to put Lawton's principles into practice through the requirement of 20% Biodiversity Net Gain."

9.3.17 This is very positive, however, there is a need for ongoing consideration of "the practical means" for delivering gains. Whilst heavy reliance on agricultural diversification instruments may be appropriate in the Uttlesford context, there is also a need to consider the role of 'habitat banks' i.e. specific large-scale areas managed for habitat creation/enhancement in order to generate a steady stream of credits (with a high degree of confidence) that can then be purchased by developers need to demonstrate offsite gains.

Conclusion

9.3.18 There is a strong focus on avoiding biodiversity constraints and realising opportunities, particularly though new strategic green and blue infrastructure (see the Countryside and SANGs study, 2024), although there is a need for further scrutiny of the proposed employment allocation at Takeley Street, and broadly a need for ongoing scrutiny of the potential in-combination impacts of growth along the A120 corridor, particularly given Hatfield Forest and High Wood SSSIs. Also, there is strong support for the detailed work that has been undertaken to evidence that a 20% BNG requirement is both viable and deliverable (without undue administrative burden). There is a case for now predicting 'significant' positive effects, recognising that the baseline situation is one whereby develop continues to come forward but in a relatively unplanned way. However, there a high bar to reach before 'significant' positive effects can be predicted with confidence (particularly ahead of the forthcoming Essex Local Nature Recovery Strategy, LNRS). In conclusion, a **moderate or uncertain positive effect** is predicted.

9.4 Climate change adaptation

Growth strategy

9.4.1 The appraisal of growth scenario 1 presented in Section 6 aims to flag a degree of concern regarding flood risk (the key climate change adaptation consideration) ahead of further consultation with the Environment Agency. The appraisal in Section 6 focuses on NE Great Dunmow, as that site is a variable across the RA growth scenarios, but also accounts for a degree of flood risk affecting other sites.

9.4.2 Focusing on **Great Dunmow**, the primary concern here is surface water flood risk, as there will clearly be good potential for built form to avoid the fluvial flood risk zone associated with the River Chelmer. Having said this, there is also a need to confirm that it will be possible to avoid fluvial flood risk affecting the sewer network (a recommendation that is set out in the Stage 2 Water Cycle Study, 2024).

9.4.3 Focusing on surface water, it is recognised that the Level 2 Strategic Flood Risk Assessment (SFRA) has concluded that: *"Development is likely to be able to proceed if… Development is steered away from… the small flow paths/areas of surface water ponding are incorporated and considered within the development design."* However, there remains an element of uncertainty regarding the extent to which surface water flood risk will be a constraint to effective masterplanning.

9.4.4 The other key sites for consideration are the two near adjacent allocations to the north / northeast of **Stansted Mountfitchet**, both of which are closely associated with the Ugley Brook fluvial flood risk zone, and this is similarly the case for a committed site adjacent to the south (previously a proposed allocation in 2023; discussed in Section 5.4). Furthermore, there is a need to note that the centre of Stansted Mountfitchet is downstream, with a number of properties located in the flood zone. However, there will be good potential to avoid built form in the flood risk zone, and to deliver Sustainable Drainage Systems (SuDS) in order to ensure no increased downstream flood risk; for example, SuDS proposals are shown at: https://bloorhomes-stansted.co.uk/. The Environment Agency notably commented in 2023: *"There has been previous exploration into Natural Flood Management in the upper reaches of the Ugley Brook Catchment. There is opportunity for this to be included and explored on the site."*

9.4.5 The final settlement to consider, from a flood risk perspective, is **Saffron Walden**, where there are two significant surface water flood channels associated with the proposed allocation, with one located to the north of Thaxted Road and the other to the south. To the north, this flood risk channel can clearly be integrated as part of a green/blue infrastructure strategy with relative east. However, the flood risk channel to the south runs parallel to Thaxted Road, and so is likely to act as a constraint to brining forward housing in this area. The recently permitted site adjacent to the west includes a focus on green/blue infrastructure to immediately to the south of Thaxted Road, as can be seen within the Design and Access Statement.

9.4.6 Finally, it is noted that both of the proposed **employment allocations** along the A120 corridor are bisected by stream corridors. However, in each case there is good potential to avoid and buffer the stream corridor (important not only from a flood risk perspective), plus employment land is less vulnerable to flooding.

9.4.7 The above discussion focuses on flood risk, but it is recognised that there are also wider climate change adaptation (and resilience) considerations that are of relevance to local plan-making, including minimising **overheating risk**. However, it is difficult to comment on the merits of the growth strategy with any certainty in terms of overheating risk or any other wider climate change adaptation considerations (over-and-above points made more appropriately under other topic headings. For example, it is recognised that climate change adaptation is a reason for planning with a strong focus on biodiversity, community resilience and protecting high quality agricultural land. The key point to note here is that the plan does include quite a strong focus on supporting **larger-scale strategic sites**, where it can be anticipated that there will be a degree of focus on climate change resilience/adaptation as part of master planning and design work at the planning application stage. As part of this, strategic sites will certainly tend to support effective planning for green and blue infrastructure, which is an important climate change resilience/adaptation consideration, including given links to biodiversity, flood risk and overheating risk. Furthermore, in practice it is the case that the Local Plan has a strong focus on ensuring that green and blue infrastructure planning opportunities are fully realised, as evidenced through the Country Parks and SANG Study (2024).

Development management policy

9.4.8 With regards to policies on **flood risk** and **SuDS**, these been updated including in response to comments received from the Environment Agency. However, the policies include limited local specificity.

9.4.9 There are a number of policies that are supportive of climate change adaptation objectives, including those discussed above under 'Biodiversity' and below under 'Water'. A key policy for discussion here is the Core Policy on **Overheating**, which is mostly unchanged from the Draft Plan stage and requires:

"All development proposals, including outline applications, must demonstrate how the cooling hierarchy has been integrated into design decisions, via the Climate Change & Sustainability Statement. Major development proposals (full or detailed reserved matters) are encouraged to use the following CIBSE (Chartered Institute of Building Service Engineers) standards: TM52 for non-residential development; TM59 for residential development."

Conclusion

9.4.10 In conclusion, a **neutral effect** is predicted, as per 2023. Whilst the appraisal of RA growth scenarios concludes a slight concern with the growth strategy in terms of surface water flood risk, this conclusion is quite marginal, and concerns are allayed once detailed account is taken of proposed concept masterplans and DM policy. Having said this, proposed concept masterplans at Saffron Walden, Great Dunmow and Stansted Mountfitchet warrant ongoing scrutiny from a flood risk perspective (with a focus both on avoiding any increased flood risk and realising any opportunities for strategic flood water attenuation).

9.5 Climate change mitigation

Growth strategy

9.5.1 The appraisal of growth scenario 1 presented in Section 6 focuses on built environment decarbonisation and aims to raise the possibility of an increased focus on sites benefiting from strong development viability – and, in turn, good potential to deliver net zero development to an exacting standard, to including without having to rely on offsetting – given the challenging nature of national and local decarbonisation targets.

9.5.2 There is little potential to comment on the merits of the proposed growth strategy over-and-above the discussion presented in Section 6. With regards to Takeley, there is support for a strategic scale scheme that will achieve economies of scale (with benefits for development viability), however, there are numerous competing objectives / priorities here – e.g. around maximising green infrastructure provision and delivering community and transport infrastructure – that could feasibly conflict with net zero ambitions.

Development management policy

9.5.3 The proposed policy approach is broadly unchanged from 2023, at which time the appraisal presented in Section 9 of the ISA Report was very strongly supportive – see Box 9.1.

***Box 9.1**: Commentary on proposed net zero carbon development policy from 2023*

The proposed development management policy framework is very strong and reflects the outcomes of a considerable amount of detailed work. This is a very live topic at the current time, and ambitious decarbonisation focused policies have scrutinised closely as part of a number of local plan examinations over the course of recent months. The proposed policy framework is considered to represent cutting edge best practice; however, there is a need to ensure a focus on conciseness and accessibility, to the benefit both of planning applicants and also interested members of the public seeking to understand the role of the Local Plan in terms of contributing to the District's ambitious 2030 net zero target.

In particular, the policy on **net zero operational carbon development** reflects a cutting-edge best practice approach to securing net zero development. The proposal is to require application the 'energy-based' approach to scrutinising performance and ultimately demonstrating net zero. This approach involves scrutiny of development proposals in absolute terms, specifically in terms of 'energy use intensity' (kWh /m^2/yr). The energy-based approach has wide-spread support amongst specialists, including due to the simple fact that actual 'as built' performance can be monitored using a smart meter.

With regards to the specifics of the proposed approach, there is a clear focus on aligning with the energy hierarchy, which means a primary focus on efficiency ('fabric first') followed by onsite renewable heat/power generation, with offsetting of residual needs that cannot be met onsite (over the course of a year) only as a last resort. In turn, the clear aim is to secure *onsite* net zero operational carbon.

Beyond operational built environment emissions, there is also a need to consider non-operational emissions, with the term 'embodied' emissions typically used as an intuitive shorthand. This is a focus of the policy on **embodied carbon**, which again is considered to represent cutting-edge best practice.

The policy requires a tiered approach whereby:

"All development proposals must demonstrate, through the Climate Change & Sustainability Statement, what measures have been taken to reduce embodied carbon content as far as possible. Where it is proposed to demolish a building, this should be justified e.g., in relation to..."

Major new-build proposals should identify the steps taken to reduce the building or overall development's impact on embodied carbon e.g., regarding its design and building materials...

Proposals for large scale new-build developments (e.g. 100 dwellings…) must submit a Whole Life Carbon Assessment that demonstrates the following targets have been met…"

Taken together, the two policies reflect a highly ambitious approach, and it is also noted that the policies have been developed in light of work undertaken recently by Essex County. However, there will be a need for ongoing scrutiny of viability implications – when taken into account alongside other infrastructure and policy requirements – and there is also a need to consider the practical challenges associated with applicants demonstrating compliance with the policy. The energy based approach is gaining traction nationally, and benefits from being relatively easy to understand and implement, but it currently remains the case that an alternative methodology is a requirement under the Building Regulations.

9.5.4 Since consultation on the Draft Local Plan in 2023 there has been considerable ongoing debate nationally regarding the potential to require standards that are more stringent than those required under the Building Regulations and, in particular, the potential to set policy that requires the energy-based approach to calculating and reporting energy use / emissions. On one side of this argument are those with concerns about undue impacts to development viability and/or creation of a variable and confusing policy environment nationally. However, ultimately there remains very strong support for the proposed policy approach, from climate change mitigation / decarbonisation perspective. With regards to potential concerns around a confusing policy environment for applicants and those wishing to scrutinise applications, there is a strong argument to suggest that the energy based approach is intuitive in a way that the Building Regulations Methodology (see summary in the December 2023 WMS) is not.

9.5.5 Finally, there is a need to consider the policy on **renewable energy infrastructure**, which sets out criteria to be used when determining applications for renewable energy (electricity) generation, with particular policy support for *"community-led schemes with evidence of community support along with local energy sharing schemes, and battery storage."* The policy has been adjusted to ensure clarity on greenfield solar farms, with the policy now focused on ensuring clarity on how the site will be restored once electricity generation operations have ceased. The ISA Report (2023) flagged this as a key issue given that solar farms are a key form of energy infrastructure locally and in the context of high quality agricultural land.

Conclusion

9.5.6 The conclusion is as per the ISA Report (2023): *"… a **neutral effect** is predicted on the baseline, accounting for established objectives, in particular… achieving net zero by 2030. As discussed, there is very strong support for the proposed development management policy framework; however, this will require further scrutiny… and there is also a need to recognise that the national policy context – in respect of requiring net zero development (onsite as far as possible) – is potentially subject to change. In turn, it is important to ensure that there is not undue reliance placed on development management policy, and that 'no regrets' actions are taken through spatial strategy and site selection, ensuring that growth is focused in such a way as to maximise the potential for built environment decarbonisation."*

9.6 Communities, equality, inclusion and health

Growth strategy

9.6.1 The appraisal in Section 6 is supportive overall of the proposed growth strategy, albeit recognising that there are many different factors potentially 'pulling in different directions'. A concern is raised with the proposed nil / low growth strategy for **Thaxted**, but this is potentially unavoidable, and there will be the potential to revisit the matter through a Local Plan Review. With regards to **Great Dunmow**, the appraisal in Section 6 notes that there is a 'communities' argument for limiting growth, due to the extent of recent and committed piecemeal housing growth. However, on balance, the appraisal supports the proposed strategy of delivering an urban extension to the northeast of the town to include a primary school, local centre, care home and very extensive and well-located strategic green and blue infrastructure.

9.6.2 Rather than considering remaining settlements in turn, the following bullets consider issues in turn:

- **Place-making, high quality design and beauty** – growth at scale can, in theory, lead to an opportunity, particularly if delivered in line with garden community principles. Opportunities can often be missed in practice; however, there is a high degree of confidence in the Uttlesford context, particularly because concept masterplans were published for consultation at the Regulation 18 stage and then subsequently have been refined / iterated including in response to consultation responses received. This is considered to represent very good practice, i.e. this level of work on concept masterplanning is not common practice.

  Also, it is important to note that a range of technical studies have fed into concept masterplans, including studies looking at sustainable transport opportunities (walking, cycling and bus connectivity) and strategic green and blue infrastructure opportunities (see the Country Parks and SANG Study, 2024).

  For example, in respect of Great Dunmow, the vision is as follows: "*The proposed allocations… seek to deliver around 917 dwellings in a new neighbourhood to the east of Church End and at nearby Parsonage Downs… structured around extensive parkland and linking the site through quality open space provision… provide public access and amenity to new and existing residents, along with a local centre of community uses and small retail and/or small business units."*

- **Green and blue infrastructure** – the ISA Report (2023) explained that *"this has been a key driver of the emerging strategy / work to define growth scenarios, informed by Green Infrastructure Study (2023)"* and then subsequently further detailed work has been undertaken, as has been discussed.

  In particular, in light of the Country Parks and SANG Study (2024) there is now very strong support for the proposed new strategic green and blue infrastructure at Great Dunmow and Takeley, including from a perspective of supporting communities objectives. There is also strong support for the proposed new strategic greenspace at Stansted Mountfitchet which, whilst relatively peripheral to the settlement, will link well to the wider countryside – with Manuden and the Stort Valley to the west and valued woodlands to the east – and will serve to define the northern extent of the settlement very effectively.

  Also, there has been new work to consider options for a new country park at Saffron Walden, and the proposed growth strategy should be supportive of realising this objective, but there remains an element of uncertainty. A new country park to the east could prove well located and could certainly play a role in terms of defining the eastern extent of the town, but other locations for a country park could perhaps also be considered, recalling the importance of long term strategic planning at Saffron Walden.

- **Access to the countryside** – the District is generally well served by a network of public rights of way linking settlements to high quality countryside, including river corridors, ancient woodlands and historic rural villages. However, there is some variability, in terms of access to the countryside, such that growth-related opportunities might be explored. For example, there are woodlands / woodland complexes where improved accessibility might be sought, and opportunities for improving access along river/stream corridors. The key opportunities appear to be along the A120 corridor (Bishops Stortford ➔ Hatfield Forest ➔ Takeley ➔ Little Canfield / High Wood / former Easton Park ➔ Great Dunmow ➔ Felsted.

  A related consideration is recreational cycling in the countryside, and one consideration in this regard is support for new employment land, with associated traffic, at Gaunt's End and at Chesterford Research Park. Both are rural sites associated with minor roads/lanes that are likely popular with cyclists.

- **Active travel** – this is a focus of discussion under other headings, but also warrants mention here, as access to active travel infrastructure (linking to key destinations) is important for good health, and new / upgraded infrastructure is a key means of achieving 'planning gain' to the benefit of existing community. The District has a very good existing network, most notably along the and in the vicinity of Stansted (already considered a transport hub, and with the potential for this role to be significantly enhanced), and this network has been a key factor influencing site selection. Along the A120 there is a considerable opportunity to support and encourage active travel, hence there is support for a focus of growth here.

  Also, Saffron Walden is described within the current transport evidence base as having "significant potential for a drastic mode shift" away from the private car, reflecting the fact that the town currently exhibits high car dependency. This is important from a health perspective given the health benefits of active travel, but also because there are some concerns regarding **air quality** in the town. Specifically, whilst a town centre AQMA was revoked in 2024 (having been declared in 2012), there is nonetheless an inherent concern regarding pollution from high levels of traffic through the historic town centre. In this light, and in the context of no clear means of delivering a town centre bypass, there is a considerable focus at the current time on delivering the Saffron Walden Air Quality Project, which *"seeks to pilot sustainable modes of transport and encourage active travel within the town."* Matters are discussed further below, but broadly speaking the strategic growth should assist with the project objectives, in terms of delivering targeted new infrastructure and potentially funding for initiatives such as car sharing. Whilst an ideal situation might be comprehensive growth with a very long term perspective, aimed at delivering comprehensive transport solutions for the town (e.g. looking ahead to designing roads for driverless cars), the current proposed strategy for Saffron Walden is a suitably proactive step forward.

- **Countryside Protection Zone (CPZ)** – the designation is highly valued by residents, and significant concerns were raised regarding impacts to the CPZ through the consultation in 2023, most notably concerns regarding strategic growth to the north of Takeley and employment land at Takeley Street. Subsequently, detailed work was undertaken, concluding that there is potential to accommodate the proposed allocations in a way that maintains the CPZ designation and, in turn, the long-established status of Stansted Airport as an airport in the countryside. The new strategy is presented in Figure 5.17, and central to this is protection afforded to maintaining the openness of land directly to the north of the village, to the west of Smiths Green Lane, which is particularly important from a CPZ perspective, as well as extending the CPZ to the south to afford new protection to land to the southwest of Takeley.

Overall, there is support for taking a comprehensive approach to growth in this area now, rather than risking further piecemeal growth over coming years, and also noting that land is being actively promoted for strategic growth to the north of the A120, i.e. between Takeley and the airport. However, it is recognised that the matter of long term planning for employment land between M11 J8 and the Stansted Airport junction of the A120 warrants ongoing scrutiny from a CPZ perspective.

- **Green Belt** – warrants mention here as another designation typically highly valued by residents. There is no proposal for Green Belt release; however, within Section 5.4 there is discussion of possible Green Belt release at Stansted Mountfitchet and at Hatfield Heath. There is a 'communities' argument for release at Stansted Mountfitchet, but this is somewhat limited, such that ultimately the conclusion reached is that there are not 'exceptional circumstances' to justify Green Belt release. At Hatfield Heath there is no clear strategic communities case for Green Belt release, having taken account of the available sites, but this is nonetheless a matter that warrants ongoing consideration.
- **Village vitality** – as discussed in Section 5.4, levels of recent completions and committed growth vary significantly across the villages. Low recent/committed growth can suggest support for strategic growth, in that: a lack of new housing can contribute to an ageing population and suppressed household formation; the national trend towards online retail is putting strain on local and neighbourhood centres; rural primary schools can struggle to maintain school rolls, including due to a recent period of low birth rates; and rural bus services can tend to be at risk. Equally, if significant growth has come forward, or is coming forward, in a relatively unplanned way (e.g. as a result of sites gaining planning permission at appeal) then there can be an argument for supporting plan-led growth in order to deliver new infrastructure, e.g. (and notably) schools capacity. In respect of the former point, Thaxted and Hatfield Heath are the local rural centres of note (also Great Chesterford, but here there is some recent and committed growth, as discussed in Section 5.4, plus there is committed growth nearby in South Cambs), plus there is a need to note two larger villages not assigned a housing requirement due to Green Belt (also Debden, which is assigned a low housing requirement on account of limited land availability). In respect of the latter point, Elsenham is the primary example, hence there is strong support of the new proposed approach of supporting a 110 home allocation that will help to deliver a new primary school.
- **Neighbourhood planning** – supporting neighbourhood planning led by town and parish councils is clearly important from a communities perspective, and this is a matter that has been the focus of detailed work prior and subsequent to the Draft Plan consultation (2023). As well as the matter of assigning housing requirements to larger villages, the key point to note is the new proposed approach of assigning a housing requirement to Newport (a local rural centre), with allocations then to be made through a Neighbourhood Plan, as opposed to the previous approach of allocating sites for strategic growth.
- **Neighbouring uses** – an issue in constrained areas can be pressure to direct new homes to locations adjacent to main roads and railways where there is degree of air and noise pollution. Noise pollution is typically reflected in house prices, but there can be impacts not accounted for by the market. However, in this regard, the concerns are now reduced relative to the Draft Plan stage, when the ISA Report flagged some concerns with: Newport (proposed allocations at the time were adjacent to the M11, but the latest proposal is to delegate the task of allocating to the Neighbourhood Plan); Thaxted (an issue here is the defined Standard noise contours, but the new proposal is not to assign nil growth); and Takeley (the new concept masterplan moves the school to a location further from the A120).
- **Traffic congestion** – directing growth in order to minimise traffic congestion is often a key issue for existing communities. Matters are discussed further below, under the 'Transport' heading, but it is fair to say that there are inherent challenges along the A120/B1256 corridor (Great Dunmow and Thaxted), plus Saffron Walden is constrained on account of traffic not being able to bypass the historic town centre, and there are also understood to be challenges at Stansted Mountfitchet, including on account of housing growth at Elsenham. Focusing on the A120/B1256 corridor, one point to note – from a communities and health perspective – is the number of homes / communities located directly on the B1256, both at Takeley and Takeley Street, and it is recognised that environmental quality along the road corridor is already an issue, including because of HGV traffic.

  Another consideration is 'rat-running' along rural lanes and through rural communities, but concerns are perhaps not as great in the Uttlesford context as elsewhere (specifically locations with a higher density of access points to the strategic road network). One consideration is presumably Cambridge-bound traffic from Great Dunmow choosing to route via Thaxted and Saffron Walden rather than via the M11.

  Road safety is a related issue. However, at the current time it is not possible to pinpoint any particular concerns. HGV traffic from new employment land along the B1256 is potentially one consideration.

- **Relative deprivation** – there are no particular pockets of relative deprivation within Uttlesford that might potentially be addressed via spatial strategy / site selection. However, there are large towns (also Cambridge) surrounding Uttlesford that are associated with significant relative deprivation. This serves as an argument for remaining alive to the possibility of providing for any unmet housing needs that might arise, and also ensuring a cross-border focus (including cross-county) when planning for infrastructure.
- **Rural deprivation** – is likely to be an issue to some extent in the more deeply rural parts of the District, distant from the main transport corridors. Focusing on the larger villages, the suitability of supporting 600 homes across eight villages (over-and-above completions and commitments) is discussed within Section 5.4, including from a perspective of seeking to: maintain villages services/facilities; provide for locally arising housing needs; and more generally maintain village vitality. Overall, there is no clear basis for questioning 600 homes 'larger village allowance', nor the approach that has been taken for distributing this figure between villages. Also, it is important to note that the neighbourhood plans that will take forward the larger village allowance can choose to over-provide in order to deliver on local objectives. Equally, it is the case that smaller villages can bring forward neighbourhood plans that make allocations to deliver on local objectives if they so wish (albeit Green Belt constrains two smaller villages).
- **Housing and accommodation** – a wide range of considerations are discussed under the 'Housing' heading, including providing for specialist needs, including Gypsy and Traveller accommodation needs.

Development management policy

9.6.3 Numerous policies have broadly positive implications. The following are of particular note:

- Policy on **noise** – sets out a range of detailed requirements, which are important in the context of Stansted Airport and also noise pollution from the M11and A120.
- Policy on **movement and management of freight** – sets out that submitted Freight Management Strategies should *"ensure the prioritisation of the use of the Strategic Road Network and minimise the use of the rural network and that encourage the movement of freight by sustainable modes whilst minimising negative impact of freight trips on local communities."*
- Policy on **good design outcomes and process** – development will be supported where proposals can clearly demonstrate compliance with appropriate national policy and guidance in respect of Design, especially the most up-to- date version of the Uttlesford Design Code(s), and the Essex Design Guide. Proposals must clearly demonstrate how ten defined characteristics are addressed.

  The policy also sets out specific requirements for:

  – Major Development – *"submit Masterplans and Design Codes… undertake appropriate Community Engagement that informs the proposals from an early stage in accordance with [guidance]."*

  – Schemes of 100 dwellings or more – *"make use of a Design Review as early in the process as possible. The Uttlesford Quality Review Panel is the preferred approach, but the Essex Design Review Panel, or a Building for a Healthy Life assessment… are also acceptable options."*
- Policy on **planning for health** – requires a Health Impact Assessment for major development.

A note on equality and health considerations

9.6.4 With regards to **equality**, and specifically the implications of the Local Plan for those with protected characteristics under the Equality Act 2010 (where the protected characteristics are age, disability, gender re-assignment, marriage / civil partnership, pregnancy, maternity, ethnicity, religion/belief, sex and sexual orientation), key objectives include: avoiding and supporting those at risk from unlawful discrimination, harassment and victimisation and other prohibited conduct; advancing equality of opportunity between people who share a protected characteristic and those who do not; and fostering good relations between people who share a protected characteristic and those who do not.

9.6.5 Key benefits of the Local Plan in these respects include: Providing for housing/accommodating needs, ensuring access to community infrastructure, green infrastructure and employment opportunities, providing options for convenient transport / movement and delivering high quality place-making.

9.6.6 However, the same could be said of many local plans nationally, i.e. it is difficult to highlight particular issues/opportunities or impacts that are specific to the Uttlesford Local Plan. It can often be the case that attention can reasonably focus on addressing pockets of relative deprivation, with a view to supporting equality-related objectives, but it is difficult to pinpoint pockets of relative deprivation in the Uttlesford context. What is clear though is that communities are facing a range of challenges, as discussed above, and within these communities facing challenges there will be those with protected characteristics. For example, communities facing challenges include: communities at higher order settlements that have seen unplanned growth leading to infrastructure deficits; rural communities with high house prices; and Gypsy and Traveller communities unable to meet their accommodation needs in suitable locations.

9.6.7 Taking steps to address key 'communities' issues such as these through the Local Plan should mean that the plan is supportive of equality objectives in the widest sense, and no significant equality-related concerns are known to have been raised through as part of the plan-making process.

9.6.8 Finally, with regards to **health**, the discussion in Section 3 has established that key objectives are: healthy neighbourhood design; healthy housing; healthier food environments; natural and sustainable environments; and healthy transport. For the most part, these are factors that are a strong focus of the appraisal here, under the 'Communities' heading, and/or under other topic headings. However, it is recognised that this is less the case for the objective of ensuring 'healthier food environments'. In this regard there is considered to be relatively limited scope for the Local Plan to deliver benefits. However, it is noted that proposed Core Policy 66: Planning for Health and Wellbeing requires that Health Impact Assessments include a focus on: *"[making] it easier for people to make healthier food choices by promoting access to fresh, healthy and locally sourced food, for example by providing opportunities for food growing, for example by the inclusion of allotments."*

Conclusion

9.6.9 Whilst the equivalent appraisal in 2023 predicted a neutral effect, it is now considered appropriate to predict a **moderate or uncertain positive effect**, given how the plan has been adjusted to respond to communities issues raised through the consultation, including via the completion of detailed technical work such as the CPZ Study (2024). In 2023 there was a degree of uncertainty regarding how local communities would respond to a plan focused on urban extensions (in the context of the previous withdrawn Local Plan, which focused on new settlements), and a particular concern was raised regarding Great Dunmow; however, these concerns are now reduced. As part of this, the importance of needing to 'get a plan in place' in order to put an end to problematic piecemeal growth and avoid the risk of Government intervention (which would reduce the influence of communities on plan-making) has clarified. However, there is a new concern raised at the current time in respect of low growth at Thaxted.

9.7 Economy and employment

Growth strategy

9.7.1 The appraisal in Section 6 is strongly supportive of the proposed growth strategy. Specifically, this is the case because the plan allocates new sites that respond in full to the employment land needs established through the Employment Needs Update (2023), which are summarised in Box 5.1. Furthermore, the plan sets out to protect existing employment land in accordance with the Employment Land Review (2024).

9.7.2 The table below presents a summary of the district-wide need/supply position.

***Table 6.1**: Employment land need and supply*

Supply	Office and R&D (ha)	Industrial (ha)
Completions and permissions (exc. Northside)	TBC	
New strategic allocations		
Total		
Above/below need		

9.7.3 Specific considerations include:

- Great Chesterford Research Park – supporting delivery of the vision in full will result in a significant R+D over-supply, which in theory gives rise to concerns around in-commuting. However, in practice the Research Park relates very closely to Greater Cambridge, which is a national focus for R+D growth.
- Saffron Walden – there is an element of uncertainty regarding delivery of industrial/logistics land to meet the locally arising need identified through the Employment Needs Update (2023). Specifically, this is the case because the location previously identified as suitable for employment has now been permitted for housing by the Planning Inspectorate. However, there is no clear basis to question deliverability.
- Gaunt's End (Water Circle Estate) – the situation here is complex, as discussed in Section 5.4. This is the sole proposed allocation for offices, but there is a clear element of uncertainty regarding deliverability. This does not necessarily give rise to major concerns given inherent uncertainties in respect of the market demand / need for new office space, in the context of few if any reasonable alternative locations for office development reasonably in contention for allocation, as discussed in the Employment Land Site Selection Topic Paper (2024) and given policy support for windfall applications.
- A120 corridor – both of the proposed allocations for industrial and logistics space are considered well-located in terms of aligning with employment land objectives. In particular, the site at Takeley Street benefits from close proximity to the M11, and the site that is allocated in order to meet the need arising from Great Dunmow also has the benefit of being located on the Stansted / M11 side of the town. Both appear to have very strong delivery credentials, although both are associated with onsite and nearby constraints, and there is a need to consider local and in-combination traffic impacts. The Viability Assessment (2024) discusses how development viability can be challenging for employment sites, but concerns are allayed where the sites have strong credentials in terms of predicted future revenues associated with their operational use. Nonetheless, there is a need for ongoing scrutiny of the costs associated with brining these sites forward in a way that mitigates environmental and traffic concerns.

  A priority is ensuring a strategic long-term approach to employment land in proximity to Stansted, avoiding the risk of sub-optimal piecemeal growth and aligning with transport and wider objectives. The Employment Land Review (2024) explains: *"Lack of floorspace at the airport has resulted in aviation businesses spilling out into surrounding areas, especially along the A120 towards Braintree."*

9.7.4 The other key consideration here is a need to deliver homes in support of employment growth, which means: **A)** setting the housing requirement at a level that reflects LHN, any economic / infrastructure opportunity and any unmet needs; **B)** ensuring that the identified supply is sufficient to give confidence that the housing requirement will be provided for in practice over the plan period; **C)** delivering a good mix of homes, including homes suited to those working in key growth sectors; and **D)** focusing homes in close proximity to key employment hubs / growth locations, including in locations well-linked to Greater Cambridge. In these regards the plan broadly performs well. In respect of point (D) there is a need to note a focus of growth along the A120 corridor, which is distant from Greater Cambridge. However, it is difficult to envisage reasonable higher growth options at Great Chesterford, Saffron Walden, Newport, Thaxted, Stansted Mountfitchet or Elsenham, as discussed in Section 5.4.

Development management policy

9.7.5 The plan includes a range of policies aimed at protecting existing employment land and guiding applications for new employment land. Other key policies include:

- Policy on **noise** – seeks to avoid development in areas where noise could be an issue. This is an important consideration from a perspective of avoiding future issues with the Stansted's operation.
- Policy on **rural diversification** – strikes a balance between competing objectives. The policy supports "economic activities that bring about rural diversification" providing that criteria are met including: "*the development… contributes to the viability of the holding… [and] it is not detrimental to the character and appearance of existing buildings and their setting within the landscape."*
- Policy on **retail and main town centre uses hierarchy** – sets new town centre boundaries, which will be used to guide planning applications for main town centre uses, and also defines Primary Shopping Areas, where requirements will apply including:

"*Where planning permission is required, proposals resulting in the loss of Main Town Centre Uses at ground floor level within a Primary Shopping Area must demonstrate that the unit has been proactively and appropriately marketed for at least 12 months and it has been demonstrated that there is no longer a realistic prospect of the unit being used for E Class Uses in the foreseeable future.*"

9.7.6 There is also a need to consider any development management policies that could potentially conflict with 'economy and employment' objectives. One point to note is the requirement within the policy on **net zero operational carbon development** to achieve 'on site net zero' to include an energy use intensity of 35 kWh/m2/yr. There can be an argument for allowing for a higher energy use intensity and, in turn, increased reliance on rooftop solar PV in order to achieve onsite net zero (over the course of a year).

Conclusion

9.7.7 Whilst the Draft Local Plan predicted a moderate or uncertain positive effect, it is now possible to predict a **significant positive effect**. The ISA Report (2023) flagged some concerns, but these are now allayed in light of consultation responses and ongoing engagement with key partners. There is particular support for: A) supporting new R+D space at Great Chesterford Research Park; and B) supporting new industrial and logistics space along the A120 corridor. However, respect of (A) there is a need for an ongoing focus on supporting nearby housing growth; and in respect of (B) there is a need to ensure a long term strategy in-line with environmental and transport objectives.

9.8 Historic environment

Growth strategy

9.8.1 The appraisal in Section 6 flags a concern with the proposed growth strategy, and focuses discussion on **Great Dunmow**, which is a variable growth location across the alternative scenarios. The historic environment constraint at Great Dunmow is clearly somewhat significant, but it will be for Historic England to comment further on the extent to which the latest proposals – in terms of masterplanning, site-specific policy and district-wide development management policy – serve to appropriately mitigate concerns.

9.8.2 Also, the appraisal in Section 6 focuses on **Thaxted** where, in short, there is support for the proposed strategy of supporting nil growth over the plan period other than from windfall developments.

9.8.3 With regards to the settlements where the approach to growth is held constant in Section 6:

- **Saffron Walden** – there are inter-related landscape and historic environment concerns associated with expansion to the east and south east. The first point to note is that the town has already expanded to the east well-beyond the limits of its conservation area, and recent / committed expansion takes the settlement edge as far as two historic farms (although not with any listed buildings) and a historic lane (now a bridleway); however, historic environment concerns are overall fairly limited in this area. There are potentially greater concerns with expansion to the southeast, where there is a risk of growth (including transport infrastructure) encroaching on a historic farm ('Herberts') where there is a Grade II listed barn, and it is noted that the farm is associated with a notably raised position in the landscape and there is an adjacent footpath. It is also important to recognise that expansion to the south east could lead to pressure for further expansion to the south in the future, where land is significantly more sensitive in both landscape and historic environment terms, including given relative proximity to the Audley End Estate, which is a Grade I listed Registered Park and Garden. The current proposal is to safeguard land for a link road south of Saffron Walden through the Local Plan, in recognition of the benefits that this would achieve including for the constrained historic town centre.

  Two final considerations at Saffron Walden are: A) traffic through the town centre conservation area, including as a result of growth elsewhere in the District (to the south / south east); and B) the need to avoid the risk of coalescence with Sewards End, where there are several listed buildings (including thatched cottages) and a water tower, although there is overall limited historic character.

- **Stansted Mountfitchet** – there are fairly limited historic environment concerns associated with the proposed growth strategy. There is support for utilising Pennington Lane to define the northwestern edge of the settlement (recalling that the option of expanding beyond the lane has been explored). Potentially the greatest concern is in respect of traffic through the Stansted Mountfitchet Conservation Area, which includes Mountfitchet Castle, which is a visitor attraction and a Scheduled Monument.

Also, there is a need to consider traffic through Ugley Green, where there is a significant concentration of listed buildings, although this was more of a consideration in 2023, at which time consideration was given to the option of a garden village (with this option now ruled out, as discussed in Section 5.4).

- **Takeley** – there are a range of historic environment constraints to growth at Takeley, which have been set out in Section 5.4, above, and these also relate to landscape constraints, with Takeley associated with a raised position with historic valleys / stream corridors to both the west and east. Whilst recognising these constraints, a conclusion in the ISA Report (2023) was that *"there is a clear case for supporting comprehensive, masterplanned strategic urban expansion, rather than risk further piecemeal expansion."* Subsequently detailed work has been undertaken to adjust the masterplan and the new proposed approach performs much in historic environment terms, although it is important to recall that there will still be a need for new road and cycle infrastructure through the sensitive Smiths Green / Warish area (see the proposed concept masterplan in Section 5.4).
- **Newport** – has a strong medieval core, strongly associated with a confluence of valleys and associated transport routes, and the village has expanded beyond the conservation area only to the west. As discussed in Section 5.4, the new proposed approach is to support lower growth and to delegate the task of making allocations the Neighbourhood Plan, which is supported from a historic environment perspective. Previous appraisal work in 2023 raised a notable concern with one of the proposed allocations "somewhat framing a distant view of the Parish Church on the approach to the village…"
- **Hatfield Heath** – is proposed to see growth only from windfall, largely on account of Green Belt. The village has overall relatively low historic environment sensitivity, with no designated conservation area and few listed buildings, but there is a clear historic character linked to the central heath.
- **Elsenham** – has notably low historic environment constraint, and fairly limited constraint in wider respects. The new proposal is to support 110 homes as a logical extension to an existing permitted site, making use of an existing field boundary for containment. There are few historic environment concerns, but it is noted that the aforementioned field boundary is associated with a footpath shown on historic mapping as linking to a windmill to the east, and the historic village of Henham beyond.
- **Great Chesterford** – again there is significant historic environment constraint, as discussed in Section 5.4. The proposed strategy of supporting only growth from windfall is unchanged from the Draft Plan.
- **Large villages** – the proposed approach is broadly unchanged from the Draft Local Plan stage. Specifically, the proposed approach is to support housing growth of between 320 homes and 78 homes (in total over the plan period, i.e. from completions, commitments and allocations) at larger villages where possible (specifically where Green Belt is not a barrier to village expansion).

  Clearly numerous of these villages are constrained in historic environment terms, and some have expanded little from their historic cores / conservation areas, such that expansion could well lead to concerns in respect of impacts to the setting of the conservation and/or specific listed buildings. The methodology employed to arrive at housing requirements for larger villages does not factor-in environmental constraints (historic environment or otherwise), but there should be good potential to avoid and mitigate issues through site selection and good design etc.

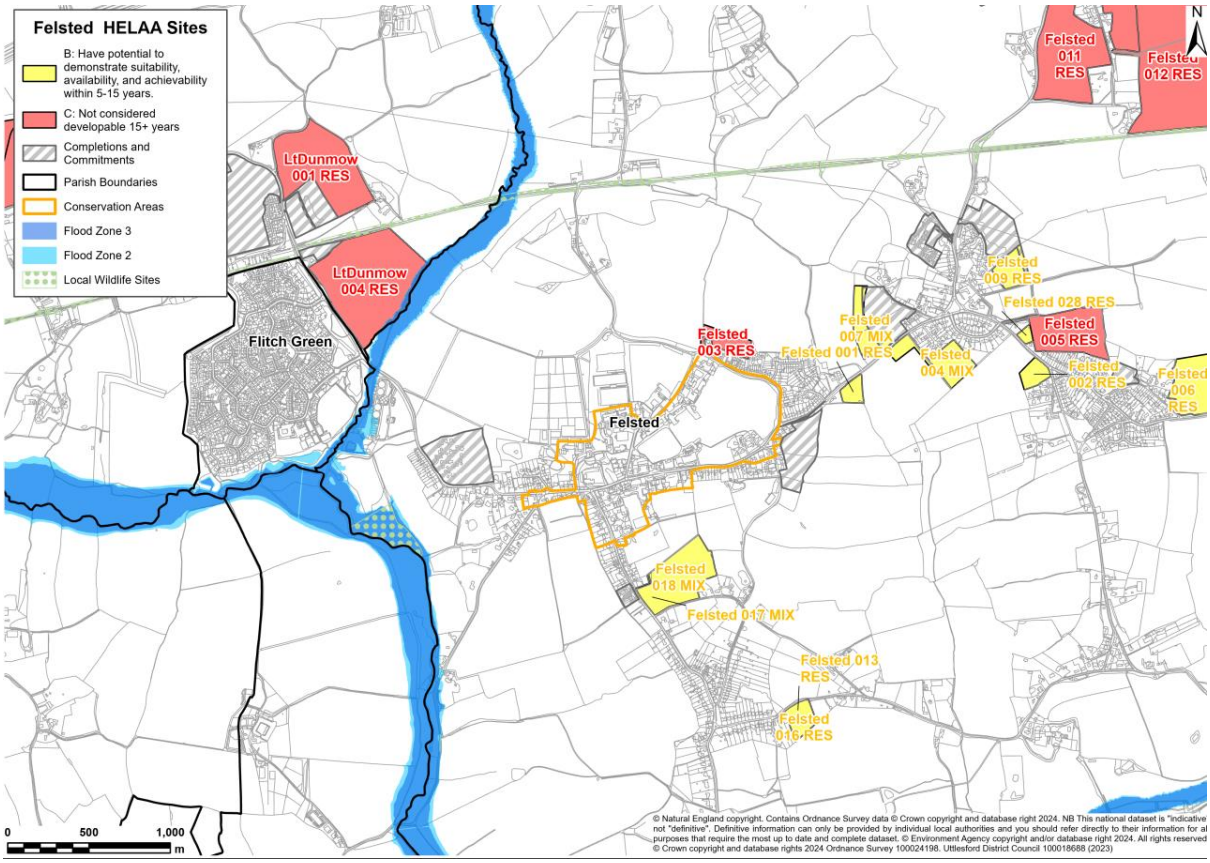
  Focusing on Felsted, which is village set to see highest growth (320 homes in total, with 104 from Neighbourhood Plan allocations) completions/commitments and HELAA sites for further consideration through the Neighbourhood Plan are shown on the figure below. Historic environment constraint is primarily focused in the western-most settlement area, but there is little reason to assume the likelihood of the Neighbourhood Plan allocating land for further housing in this area. The village primary school is located in the central settlement, and historic environment constraint here is low (with historic mapping showing that the primary school here was built prior to WWI and then homes built subsequently).

9.8.4 Finally, with regards to employment sites:

- Both of the proposed allocations along the A120 corridor are subject to a degree of historic environment constraint, as has been discussed, and at both sites there is now support for additional employment land relative to the Draft Plan stage. However, it is only the site to the west (Takeley Street) where support for additional development within the site potentially creates a tension with historic environment objectives. Specifically, this reflects a cluster of four Grade II listed buildings near adjacent to the south. However, the proposed concept masterplan aims to respond to this constraint with a landscape buffer. The other consideration here is the possibility of development resulting in future pressure for development of land adjacent to the east, which could potentially be more sensitive in historic environment terms, given a more significant cluster of near adjacent listed buildings and public footpaths.

- At Gaunt's End the proposal is to support office development, but there is a possibility of ongoing/future pressure to deliver industrial and logistics development, as discussed in Section 5.4. There are notable historic environment constrains in this area, both in the immediate vicinity (six or seven nearby Grade II listed buildings) and looking further afield and accounting for how traffic might look to route to the M11 and A120. The road network in this area is primarily one of rural lanes.
- At Chesterford Research Park there is an element of historic environment (and associated biodiversity) constraint, recognising that this land was historically the wooded and landscaped grounds of Chesterford Park. However, concerns are limited, including the knowledge that the landowner's vision for the area seeks to capitalise on historic and landscape assets.

***Figure 9.2**: Felsted as a notable larger village, showing sites in contention to deliver the housing requirement*



Development management policy

9.8.5 The suite of development management policies primarily reflects the standard wording included within local plans nationally (in the context of possible forthcoming national development management policies). There have been some adjustments made in response to comments received from Historic England; for example, HE suggested that policy should "*be expanded to refer to the historic environment's role in understanding the landscape. Many tracks, green lanes, field boundaries and settlement patterns are remnants of past use and provide evidence of how the landscape has evolved over time. The objective of protecting and enhancing the landscape and recognition of its links to cultural heritage can help improve how the historic environment is experienced an enjoyed."* The consideration of settlement and site options presented throughout this report does serve to highlight this as an important issue locally.

9.8.6 There is also a need to consider any development management policies that could potentially conflict with historic environment objectives. Numerous policies could potentially be discussed, but one policy of note is the policy on tourism and the visitor economy, which is supportive of "small-scale development to support the visitor economy, including farm diversification and equine development" provided that certain criteria are met. One of the requirements is that schemes *"are in keeping with the scale and character of the locality and will not adversely affect heritage assets or their setting."*

Conclusion

9.8.7 The appraisal in 2023 flagged a 'moderate or uncertain negative effect', recognising constraints to growth at key settlements and proposed allocations and given the context that: *"It is important to recognise that the proposed strategy is very different to that which underpinned the previously withdrawn local plan, namely a strategy centred on delivering three large new garden communities (which generated significant objection from a historic environment perspective)."* However, the appraisal in 2023 also recognised that: *"The historic environment has fed-in to the spatial strategy / site selection process as a key issue (e.g. influencing the proposed approach of nil proposed new supply at Great Chesterford)."*

9.8.8 The plan now performs notably better in many respects, both on account of adjustments made to strategy (notably at Thaxted and Newport) and masterplanning (notably at Takeley). However, there are still some tensions with historic environment objectives, most notably at Great Dunmow / Church End / Parsonage Down. On balance it remains appropriate to continue to flag a **moderate or uncertain negative effect**, although this is marginal, i.e. there is an argument for concluding an overall neutral effect, including given that alternative options are limited and the baseline situation involves continued growth without a plan.

9.9 Homes

Growth strategy

9.9.1 The appraisal in Section 6 finds the proposed growth strategy to perform well. However, there is unsurprisingly support for higher growth from a pure 'homes' perspective. Also, not providing for locally arising housing needs at **Thaxted** is potentially an issue (albeit these needs are unquantified) and there is an issue around providing for Gypsy and Traveller accommodation needs, particularly longer-term.

9.9.2 There is no need to repeat discussion from Section 6 here, either in respect of **A)** the proposed approach to growth quantum, i.e. setting the housing requirement relative to need, and then identifying a supply of sites/land sufficient to provide for the housing requirement on an annual basis, recognising that under-delivery can lead to punitive measures; or **B)** distribution, e.g. directing growth to locations with strong viability and deliverability credentials. However, it is appropriate to elaborate on the proposed approach to providing for **Gypsy and Traveller accommodation needs**.

9.9.3 Current understanding is that, whilst at some of the existing sites in the District that are generating a need there is the potential to accommodate additional pitches, which is a good solution (notwithstanding any constraints affecting the sites), it is not possible to provide for all of the need generated in this way. As such, the proposal is to provide for residual need via a 14 pitch extension to the one public owned / managed traveller site in the District, which is located at Felsted. There is merit to this approach in that there is a need to support public owned / managed traveller sites ('social provision', as discussed in a recent RTPI blog). Also, the site is considered to be quite well-located and subject to limited constraint. However, the site itself is not currently generating any need for new pitches itself, and the effect of allocation will be to triple the size of the site (although it has previously had permission for a 10 pitch extension). As such, this is not an ideal solution, but is considered the best performing option out of the alternative options open to the Council, given that there has been a lack of new site options promoted as available for Gypsy and Traveller, and given constraints to expanding certain of the sites that are generating a need (including, but not limited to, concerns around impacting openness of the Green Belt).

Development management policy

9.9.4 The first point to make here is the implications of wide ranging requirements in terms of infrastructure and wider policy asks for **development viability**. The ISA Report (2023) explained:

"It will be important to ensure that decisions taken through spatial strategy / site selection reflect key ambitions with cost implications, including around infrastructure delivery (notably new schools capacity and transport infrastructure) and wider policy asks including affordable housing and net zero. There is a need to avoid delivery risks that amount to storing up issues for the future, and one specific matter for further consideration is in respect of sites that will require collaboration between landowners, including instances of one landowner having to forego housing to provide land for strategic infrastructure…"

9.9.5 The Viability Study (2024) reaches an overall positive conclusion, but there is a recognition that

development viability is tighter at Takeley and Great Dunmow, which is where the plan is setting out to direct a relatively high proportion of growth (for wide-ranging reasons). Specifically, the Study concludes:

"This is based on an [affordable housing] headline at 35%. The latest findings show that in some test scenarios (and mainly those reflective of the direction of the emerging allocation proposals at NE Great Dunmow and N Takeley) the indications are around the cusp of viability with 35% AH with all other estimated costs allowed for. Overall, however, in our view this would not be an appropriate point at which to lower or selectively lower AH delivery expectations from such schemes. There is still a great deal of further preparatory work to do, and information to build and keep under review – typical circumstances involved in development at significant scale."

9.9.6 The following bullets consider policies with broadly positive implications for housing objectives:

- **Affordable dwellings** – new residential development (including conversions and changes of use) with the capacity to provide 10 or more self-contained units should provide 35% of the total dwellings as affordable dwellings. This would go a long way to meeting affordable housing needs, as set out within the Local Housing Needs Assessment (LHNA, 2024); however, it is not uncommon for some local authorities to prioritise affordable housing to the extent that the policy ask is 40% affordable housing.[18]

  The policy also sets out that: *"Affordable dwellings should incorporate a mix of tenures and sizes prioritising rented dwellings at social rent levels."* Specifically, the policy sets out a requirement that the affordable homes should split as follows: 70% affordable/ social rented; 30% other forms (including First Homes). The point on First Homes is important and a supported evolution from the Draft Plan stage.

- **Standards for new residential development** – the requirement is for all residential schemes to be wheelchair accessible, i.e. M4(2) compliant. Also, 10% of market homes and 20% of affordable homes should be M4(3) compliant. M4(2) dwellings are those that are 'accessible and adaptable' so a wheelchair user can visit whereas a Part M4(3) dwelling is one in which a wheelchair user could live.

  The LHNA provides data in support of this approach, for example identifying that over the 2023-2033 period there will be a 32% increase in the population aged 65+ and a 41% increase in the number of people aged 65+ with dementia and a 39% increase in those aged 65+ with mobility problems.

- **Specialist housing** - strategic housing sites will be expected to provide at least 5% extra care dwellings (C3 Use Class) as part of the overall mix. Should it be agreed with the Council that extra care housing would not be desirable in a particular location, an equivalent amount of alternative specialist housing15 (C3 Use Class) for older people will be required.

  Also, the policy sets out that the Council will support residential care homes (C2 Use Class) and developments which provide for a mix of Uses Classes C3 and C2 where the appropriate infrastructure is provided and they offer easy access to community facilities and frequent public transport. Sheltered and extra care housing are alternatives to care/nursing home bed spaces and can help to reduce costs associated with care by supporting people to remain as independent for as long as possible.

  The LHNA suggests that in the period 2023-2033 there is a need for: 355 sheltered/retirement market homes; 330 additional housing units with care (extra-care) (90% to be market sector); 300 additional nursing care bedspaces, and 370-640 dwellings for wheelchair users (meeting M4(3) standards).

- **Custom and self-build housing** – proposals for 100 or more dwellings will provide serviced plots to deliver at least 5% of the total number of dwellings on the site as self-build or custom build homes. Custom and self-build homes are another route to achieving home ownership.

- **The travelling community** – the policy sets out criteria to guide planning applications for new or expanded sites. This takes on considerable importance given: A) the specific issues associated with new and expanded/intensified Gypsy and Traveller sites, from a perspective of avoiding impacts / realising benefits to both Traveller and settler communities, and ensuring harmonious relationships between the communities; and B) needs are not being provided for through allocations to the extent that would ideally be the case, hence there is a need for robust policy to ensure that allocations are permitted without delay and there is a need for policy support for windfall development.

[18] The Local Housing Needs Assessment identified that 261 households p.a. in Uttlesford are currently in affordable housing need, which equates to 38 % of the annual LHN figure for the district of 684 dwellings. However, the link between affordable and overall needs is complex and many of those identified as having an affordable housing need are already in housing and thus do not generate a net additional need for a home. An adjusted need is 192 dwellings, or 28 % of our LHN.

Conclusion

9.9.7 The conclusion from the ISA Report (2023) still broadly holds true, namely that:

*"… a **moderate or uncertain positive effect** is predicted on the baseline, accounting for established objectives. The plan represents a considerable step-change, in terms of addressing housing and wider accommodation needs locally, in the context of a national housing crisis, but there is a need for further work, including around deliverability and providing for Gypsy and Traveller accommodation needs."*

9.9.8 In terms of growth quantum (i.e. setting the housing requirement relative to need, and then identifying a supply of sites/land sufficient to provide for the housing requirement on an annual basis, recognising that under-delivery can lead to punitive measures) the plan performs as well or better than in 2023, recognising that there has been a significant 'boost' to supply from sites unexpectedly gaining planning permission (that will deliver in the crucial early part of the plan period). In terms of growth distribution, the new proposed approach at Thaxted (no housing growth bar windfall) is not ideal, but the matter can be revisited through a Local Plan Review; and development viability along the A120 corridor that could feasibly lead to challenges in respect of delivering affordable housing in line with policy (in terms of the total number of affordable homes and their tenure mix). Finally, in respect of providing for Gypsy and Traveller accommodation needs, work has been completed but the available evidence base is incomplete, with the main outstanding issue uncertainty regarding needs beyond year five of the plan period.

9.10 Land, soils and other resources

Growth strategy

9.10.1 The appraisal in Section 6 finds the proposed growth strategy to perform well relative to the 'reasonable alternative' of supporting higher growth at Thaxted, but flags a concern with the proposed growth strategy in absolute terms. This is because Uttlesford is associated widespread grade 2 quality agricultural land, albeit this is also mostly the case for neighbouring local authorities over the sub-region.

9.10.2 Other than productive / best and most versatile agricultural land, it is difficult to identify other significant issues of relevance. One further consideration here is avoiding the undue sterilisation of minerals resources (and, equally, a situation whereby it transpires that there is an unexpected need to extract minerals ahead of development at allocated sites, leading to delays to / issues with site delivery); however, the County Council (the responsible authority) did not raise any concerns with the spatial strategy or site selection through the consultation in 2023 (but did request that Minerals Assessments are undertaken for a number of proposed allocations at the planning application stage). By way of context, the County Council is currently (July 2024) consulting on a new Minerals Local Plan, which identifies that the north of the District is associated with chalk minerals resources and the south sand and gravel. However, sand and gravel resources are very extensive within Essex and more widely, and it is not known to be the case that there is likely to be a need for extraction of chalk ahead of development at either Saffron Walden or Great Chesterford Research Park.

Development management policy

9.10.3 Natural England commented through the consultation in 2023: *"Best and Most Versatile Agricultural Land - Natural England expects to be consulted on larger allocations proposed within the Local Plan which would result in a potential loss of 20ha or more of Best and Most Versatile Agricultural Land. Development proposals would be expected to have undertaken an ALC survey as part of consultation."* However, it is important to recognise that protecting agricultural land is more of an issue for spatial strategy / site selection than it is for the development management process, because it is difficult or impossible to mitigate the loss/sterilisation of agricultural land within development sites.

9.10.4 Having said this, one proposed DM policy of note is that dealing with **change of use of agricultural land to domestic gardens**, which sets out that: *"Change of use of agricultural land to a domestic garden will be permitted if the proposal, particularly its scale and means of enclosure, does not result in a materially negative change in the character and appearance of the surrounding countryside and does not lead to the irreversible loss of the best and most versatile agricultural land."*

9.10.5 Also of note is the policy on **renewable energy infrastructure**, which sets out that account should be taken of best and most versatile agricultural land when making decisions, e.g. on solar farms. However, avoiding BMV agricultural land in Uttlesford is not easy, given the extent of BMV land and also limitations within the available data (see discussion in Section 6).

9.10.6 Also of note here is the policy on **managing waste**, which has a dual focus: 1) support proposals for sustainable waste management facilities as identified in the Essex Minerals Local Plan (2014) and Essex and Southend-on-Sea Waste Local Plan (2017), or their replacements (subject to criteria); and 2) ensure that new development includes adequate recycling facilities to allow occupiers to separate and store waste for recycling and recovery, preferably within the premises of the dwelling, or provide adequate, secure, external or communal storage facilities. Convenient and safe access to manage waste must be ensured, including for older persons or persons with disabilities.

9.10.7 In respect of waste there is also a need to note the policy on **embodied carbon**, as discussed above. Planning to minimise embodied carbon links in very closely with two other widely discussed concepts, namely planning for the 'whole lifecycle' of developments and planning for a 'circular economy'.

Conclusion

9.10.8 The conclusion from the ISA Report (2023) still holds true, namely that:

"… it is appropriate to flag a ***moderate or uncertain negative effect*** *given the extent of high quality agricultural land that would be lost. However, it is difficult to envisage an alternative strategy that would be preferable, and there is no clear guidance in respect of judging the significance of loss of agricultural land through local plans. The available guidance focuses on planning applications."*

9.11 Landscape

Growth strategy

9.11.1 The appraisal in Section 6 finds the proposed growth strategy to perform broadly on a par with the alternatives but concludes that there is a concern regarding impacts of the growth strategy. Whilst there are no nationally designated landscapes, landscape character and capacity/sensitivity is a key issue locally, and one that has been explored through recent character and sensitivity studies. In turn, there is an argument for favouring low growth. However, it is difficult to pinpoint which particular proposed allocations might be removed in order to allay landscape concerns. Attention may focus on the B1256 corridor, accounting for both proposed housing and employment allocations, but the discussion of alternatives in Sections 5 and 6 suggests that the key choice may be at **Great Dunmow**, and that landscape impacts are likely broadly similar whichever option is supported.

9.11.2 Also, it is recognised that an argument is to minimise concerns regarding landscape impacts by directing growth to new settlements rather than urban extensions. However, as discussed in Section 5, this is not considered to be a reasonable options for the current Local Plan (but can and will be revisited through the next Local Plan). Amongst other things, the concern is that were the plan delayed to further explore new settlement options then there could be a risk of Government intervention in plan-making and/or an ongoing inability to defend against 'speculative development' with resulting landscape impacts.

9.11.3 Taking each component of the proposed strategy in turn (with settlements in size order):

- **Saffron Walden** – a range of key issues have already been introduced above, under the 'Historic environment' heading. Beginning with option of expansion to the east (between the B-road corridors), it is important to recognise that the proposed allocations here would be less-well contained in topographical terms than the permitted sites to the west. However, the potential to draw upon topography to contain growth can be envisaged (potentially broadly drawing upon the 100m contour), and the latest proposals for new strategic greenspace (a potential country park) are strongly supported in this regard. Ultimately, landscape sensitivity work concludes 'low-moderate' sensitivity, which equates to relatively low sensitivity in the context of the growth options currently under consideration.

  The other site in question is located to the south of Thaxted Road is potentially more sensitive in landscape terms, with the land notably rising to the south, towards an adjacent high point. There is a clear need to plan comprehensively for growth as far as possible, avoiding development creep over time along with commensurate opportunities missed for infrastructure and environmental planning.

Also, there is a need to ensure early consideration is given to any possible road options that would link the two B-road corridors to the east with the M11corridor to the west, bypassing the historic town centre. The transport/traffic and wider arguments in support of exploring such options are recognised, but there are clear landscape constraints. The current proposal is to safeguard land for a potential future link.

- **Great Dunmow** – there is a degree of landscape capacity, however, this a is a relatively flat landscape and there are limited features within the landscape to contain growth. As such, there is a need for masterplanning with a view to a suitably comprehensive scheme / avoiding development sprawl. It is also important to recognise the merits of a new area of 'riverside parkland'.
- **Stansted Mountfitchet** – beginning with the small proposed allocation to the east of the B1351, this site relates well to the settlement edge and gives rise to limited landscape concerns. The site is split by a stream corridor, and the proposal is to use the stream corridor to bound the northern extent of the built form, presumably in perpetuity. Moving on to the larger proposed allocation to the north, this site gives rise to limited landscape concerns, and the proposal to deliver a new strategic area of greenspace at the site's northern extent is strongly supported, as it will serve to define the settlement edge. Also, there is support for drawing upon Pennington Lane to define the northwest edge of the settlement (Section 5.4), including noting rising land beyond the lane. However, the matter warrants ongoing consideration.
- **Thaxted** – the proposed low growth strategy is supported from a landscape perspective, but only 'on balance', as sensitivities are understood to relate to the historic environment more so than landscape.
- **Takeley** – constraints to growth north of Takeley have been discussed extensively under other headings. There is landscape sensitivity, including in light of the Landscape Sensitivity Study (2023), but equally there is a landscape argument for planning comprehensively for expansion of the village as far as the A120, with a view to avoiding further piecemeal expansion over time.

  A further consideration is long-term planning for growth along the A120 / B1256 corridor, with a view to avoiding risk of settlement coalescence / maintaining settlement gaps. As part of this, there is a need to recognise that Takeley is associated with raised land between stream corridors to the west (Harcamlow Way; Grade I listed church) and to the east (Little Canfield). In this regard, the new proposed approach to masterplanning and CPZ designation is supported, as has been discussed.

  It is also recognised that employment growth west and east of Takeley gives rise to an 'in-combination' risk. However, ultimately a long term situation whereby there is a balance struck between supporting growth an maintain settlement gaps / the landscape setting of settlements can be envisaged.
- **Newport** – is strongly associated with a confluence of valleys and associated transport routes (the upper reaches of the River Cam catchment), and the M11 is located to the west, which provides an opportunity to deliver growth that is well contained in landscape terms. This is an area, along with land to the east and south east of Saffron Walden, that is identified as having only 'low-moderate' landscape sensitivity. These factors fed-in to the proposal in 2023 to allocate sites to deliver strategic growth to the west of the village; however, significant concerns were raised by the local community through the consultation, including from a landscape perspective. The new proposed approach is to support lower growth an to delegate the task of allocating to the Neighbourhood Plan, and it will be important that work on strategy / site selection is undertaken with a long term perspective, with a focus on comprehensive growth..
- **Hatfield Heath** – nil strategic growth reflects the Green Belt constraint. The village has a dispersed built form, which can suggest some capacity for growth from a landscape perspective.
- **Elsenham** – has notably low landscape constraint, and fairly limited constraint in wider respects. However, the level of completions and commitments is very high, and all of the strategic growth options are now committed, hence 'no strategic allocation' is a constant across the scenarios.
- **Great Chesterford** – nil strategic growth is supported from a landscape perspective, because landscape sensitivity work concludes 'high' sensitivity (to the west of the B184, and whilst sensitivity is classed as lower to the east, there is equally a clear landscape case for containing the settlement to the west of the road). However, there are also strategic arguments for growth in this area, as has been discussed.
- **Employment sites** – both of the proposed allocations along the A120 corridor are subject to a degree of landscape constraint, as has been discussed. The other two stand-alone employment allocations are located in rural areas, but it is not clear that there are significant landscape concerns. Finally, at Saffron Walden there has been some discussion of the best way to deliver new employment land as part of the urban extension, with a clear need for it to relate closely to Knight Park, as far as possible, plus a consideration is surface water flood risk (recognising employment land has relatively low vulnerability).

Development management policy

9.11.4 The policy on **landscape character** is considered robust but reflects limited tailoring to the local context (recalling the Government's proposal to introduce National Development Management Policies, as discussed above). The policy sets out that proposals will not be permitted if they would:

"i. cause an unacceptable visual intrusion into the open countryside ii. be inconsistent with local character iii. cause coalescence between settlements iv. harm views to distant landmarks and landscapes particularly sensitive to change v. harm the setting of natural and built landmark features, or vi. reduce the historic significance of the landscapes."

9.11.5 Other key policies from a landscape perspective include those on:

- **Good design outcomes and process** – sets out a list of criteria that reflects a degree of local tailoring, but importantly sets out that: *"Development will be supported where proposals can clearly demonstrate compliance with appropriate national policy and guidance in respect of Design, especially the most up-to-date version of the Uttlesford Design Code(s), and the Essex Design Guide."*

  Also, the policy sets out that specific requirements for major developments and schemes involving 100 homes or more (*"make use of a Design Review as early in the process as possible"*).

- **Renewable energy infrastructure** – which has already been discussed above. The policy is clear that a key criterion is "visual impacts on local landscapes".

- **Specific areas** – noting both green / blue infrastructure and safeguarding land for transport infrastructure. As discussed, a key issue is a potential new strategic link road south of Saffron Walden.

Conclusion

9.11.6 The ISA Report (2023) concluded that:

"… after having accounted for the proposed suite of development management policies and also the site specific policies that have been developed (which will be further refined and supplemented prior to plan finalisation), it is appropriate to predict a broadly neutral effect on the baseline. However, the fact remains there are clear sensitivities. It will be important that plan-finalisation is informed by consultation responses received and further work, e.g. in respect of development densities, scheme layouts and integration of green infrastructure. There will be a need to consider the combination effects of developments and also ensure a suitably long-term perspective, including along the A120/B1256."

9.11.7 The plan has been improved significantly since the Draft Plan stage, perhaps most notably at Takeley (also accounting for the latest proposals in respect of CPZ designation). However, there remain sensitivities and challenges that will require ongoing consideration (as part of plan finalisation over the course of the Examination in Public, and then through decision making at the development management stage). As such, it remains appropriate to predict a **neutral effect**.

9.12 Transport

Growth strategy

9.12.1 The appraisal in Section 6 is notably supportive of the proposed growth strategy relative to the reasonable alternatives, although there remain some issues/challenges and uncertainties. The appraisal in Section 6 focuses particularly on Great Dunmow and Thaxted, and these are both key areas for consideration from a transport perspective, specifically: at **Great Dunmow** there is good potential to walk and cycle to designations within the town, but links to key destinations beyond the town is not as strong as for other settlements; whilst at **Thaxted** there is support for low growth from a transport perspective, given that Thaxted is a rural village with high car dependency / a need to travel long distances by car, albeit there are also transport argument for growth, from a perspective of supporting village services and facilities.

9.12.2 Looking more widely across the key settlements (other than Thaxted), the Table below is taken from the Sustainable Transport Study (2024) and presents a helpful summary of key issues and opportunities.

***Figure 9.3**: Summary of sustainable transport issues and opportunities (Sustainable Transport Study, 2024)*

Place	Public transport (bus and train)	Cycling and walking	Constraints	Opportunities
Saffron Walden	▪ Good coverage of bus stops, and accessibility to them ▪ Nearest train station is at Audley End, circa 3.5km SW of Saffron Walden	▪ Limited NCN access ▪ Consistent 30mph speed limits. ▪ Bike hire schemes and subsidised bike rental schemes. ▪ Most key services are within the town are within walking distance.	▪ No significant barriers such as rivers, motorways, or rail lines to impede internal movements. ▪ Historic centre with one-way streets which aren't wide enough for contraflow cycle lanes.	▪ High car dependency, and therefore significant potential for a mode shift.
Great Dunmow	▪ Bus routes are classed as Low Accessibility. ▪ Nearest train station is at Stansted Airport, circa 7.2km West of town centre	▪ Great access to NCN. ▪ Possible to cycle to Stansted Airport via a mostly segregated route. ▪ Access to The Flitch Way.	▪ River Chelmer and the A120 represent instances of severance.	▪ A compact town where walking and cycling to services may be more attractive than driving. ▪ Transport to Stansted Airport, as the largest employer in Uttlesford.
Stansted Mountfitchet	▪ Central rail station with regular journeys to key destinations. ▪ Adequate bus network.	▪ Stansted Mountfitchet links to NCN16 but lacks safe routes to the airport. ▪ A 92-mile route, NCN 11 runs north from Stansted Mountfitchet.	▪ Severance from M11 and A120. There are just 3 crossing points.	▪ B1383 Stansted Mountfitchet to Bishop Stortford active travel could be improved. ▪ Rail station ensures the town is well-connected.
Elsenham	▪ Sparse, and infrequent bus network. ▪ Has a rail station which provides frequent links to key destinations.	▪ New Road has a footway on just one side of the carriageway. ▪ No safe cycling connections between Elsenham and Stansted Mountfitchet and not served by NCN.	▪ Severance of M11 and rail line. ▪ New Road is unlikely to be wide enough for contraflow cycle lanes.	▪ Major scope to increase the mode share of active travel modes. ▪ Opportunity to upgrade bus stop facilities and improve walking and cycling provision at key junctions.
Great Chesterford	▪ Served by a sparse, and infrequent bus network. ▪ Great Chesterford has a rail station which provides frequent links to: Cambridge and London Liverpool Street.	▪ The proximity to Cambridgeshire, where many work, makes cycling more attractive with the right infrastructure. ▪ The access road to the station is poorly maintained. ▪ Lack of footways and dominance of parked cars on street.	▪ Severance of the River Cam and M11. ▪ Isolated location.	▪ Just 1.2% of the population cycle to work. Saffron Walden, the closest town, is 6 miles away, a feasible cycling distance with appropriate infrastructure. ▪ Opportunities for traffic calming measures on the B183.
Takeley	▪ Good coverage of bus stops, and accessibility to them. ▪ No train station – nearest is at Stansted Airport. Direct bus services are available.	▪ Great access to NCN through the town. ▪ Signed shared footpath/cycleway	▪ The current road network in Takeley town centre is inefficient, leading to frequent traffic. ▪ Minor A120 severance.	▪ Potential to provide access to the multi modal transport hub at Stansted Airport. ▪ Stansted Airport is the largest employment site in the district so there is an opportunity to access employment by sustainable means.

9.12.3 On the basis of the table it can be suggested that settlements with perhaps a lower case for growth, from a transport perspective, are:

- **Saffron Walden** – however, there is clear case for directing a good proportion of growth to the Distrrict's largest town, and there is an established strategy for boosting walking and cycling, which should be supported by strategic growth to the east / southeast to support the strategy.
- **Elsenham** – is assigned limited further growth (i.e. over-and-above completions and commitments) and the one new allocation is near adjacent to the train station and will help to deliver a primary school.
- **Great Chesterford** – is assigned nil growth. It is important to give weight to the village's very good train connectivity to Cambridge, as well as potential to reach key employment areas by cycling or bus.

9.12.4 The two settlements shown to perform strongly in the table below are then: A) **Stansted Mountfitchet**, where the possibility of higher growth is discussed in Section 5.4, but ruled out as unreasonable on balance; and B) **Takeley**, where there is considered to be a very strong transport-focused case for strategic growth, including because of good existing potential to reach key destinations by cycling or bus (most notably Stansted Airport, which is a key employment and transport hub) and potential to deliver benefits through a new secondary school and very well-targeted investment in 'sustainable transport'.

9.12.5 With regards to Takeley, it should also be noted that the transport merits of strategic growth were also highlighted through the appraisal work completed in 2023:

"With regards to Takeley, whilst the proposal… amounts to a relatively high growth strategy, and the village does not benefit from a train station, there is a clear transport argument for strategic growth given the inherent locational merits of Takeley combined with identified opportunities for delivering new and upgraded transport infrastructure in line with a clear long term strategy that includes:

- *A multi modal corridor for public transport and active travel between Takeley and Stansted Airport public transport interchange including improvements along Parsonage Road to improve connectivity for cyclists and offer priority for bus services, plus connections through the airport to the transport interchange.*
- *Creation of a Sustainable and Public Transport Mobility Hub adjacent to the proposed strategic employment allocation at Canfield End providing convenient access to the B1256/A120 junction.*
- *Flitch Way upgrade - safety, access, interpretation, multi-functional surface and eco- management.*
- *Explore B1256 Dunmow/Stortford Road as a secondary vehicular route and as a sustainable travelling route following on from the A120 sustainable transport study.*

However, there are also risks and uncertainties, particularly relating to the B1256, A120 and M11J8."

9.12.6 These appraisal statements broadly hold true at the current time. However, one point to note is the proposal to now weight growth further to the east, slightly more distant from Stansted.

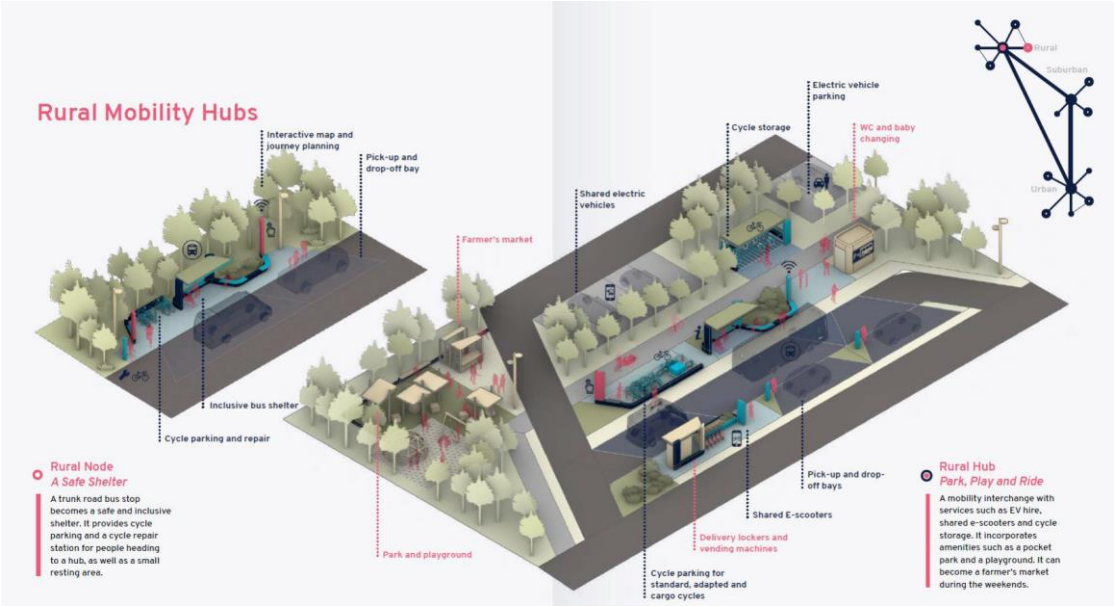
9.12.7 The other key point to note, from a sustainable transport perspective, is the proposed approach of supporting a series of new 'mobility hubs'. The ability to take this approach is strongly related to the proposed growth strategy, with lower order hubs proposed for each of the strategic allocations and a higher order hub proposed to be delivered between Takeley and Great Dunmow, enabled by a proposed 18ha employment allocation. Within the transport evidence base supporting the plan there is a focus on defining mobility hubs, and it is recommended that specifics of the vision are also made clear in the plan.

9.12.8 With regards to the proposed mobility hub between Takeley and Great Dunmow, it is described as follows within the evidence base supporting the plan:

"The site has good opportunity for a mobility hub with the Flitch Way cycle path being located along the southside of the site. There are also two bus stops within close proximity to the site which travel to Great Dunmow, Braintree, Stebbing, Stansted Airport and Bishops Stortford.

… Due to the location and size of the site, this mobility hub has the potential to become a Standard Hub. To be classified as a Standard Hub, this mobility hub would have to include Community Transport, 2 forms of shared mobility (car clubs, bike share), cycle parking and a sheltered waiting area. Components to consider also include EV charging for buses and private vehicles… and local services/amenities."

***Figure 9.4**: Potential design of a 'rural mobility hub'* (Sustainable Transport Study, 2024



9.12.9 The final matter for consideration is then traffic congestion along key road links and at junctions. This is an important consideration in and of itself, but also from a perspective of wishing to encourage walking and cycling as well as fast and reliable bus services. The Transport Topic Paper (2024) summarises the situation at each settlement in turn, an in each case concludes:

"The overall picture is one in which the additional impacts of the site allocations, over and above those set to be experienced because of committed growth, are relatively modest… The package of interventions which have been identified to mitigate the impacts, focuses on the need to improve travel choice and the provision of realistic and attractive alternatives to the car. The resultant reallocation of road space and reprioritisation of road users therefore results in marginal increases to the travel times and delays depicted in the Local Plan Case Modelling… The additional impacts are deemed to be justifiable in the context of the improved travel choice on offer and in seeking to facilitate sustainable growth."

9.12.10 This approach is broadly supported, from a transport perspective, and in line with recent shifts in national policy. Also, it can be anticipated that it will be in line with the new Essex Local Transport Plan (LTP), which is currently in development. It is also summarised elsewhere as follows:

"The approach to mitigating the impact of the Local Plan is not focused on the provision of increasing highway capacity. The wider transport strategy to support the Plan prioritises the provision of greater travel choice and realistic alternatives to the car. In this respect, the interventions can result in longer journey times and a reduction in the speed of traffic but presents a more sustainable 'vision led' approach than the historic predict and provide method of accommodating future demand on the network."

9.12.11 However, there is also a need to be clear on where the traffic pinch points could be, notwithstanding an assumed modal shift away from the private car. In this regard, it appears that concerns are focused at:

- Great Dunmow – "There will be some increases in traffic volume and delays around the town and particularly at the junctions of the B1256 with the B184 Woodside Way and at the Braintree Road/St Edmunds Lane intersection."
- Takeley – "There will be some increases in traffic volume and delays around the town and these are most evident around the known existing pinch point of the Four Ashes junction (B1256/Parsonage Rd / Station Road)."
- Stansted Mountfitchet – "There will be some increases in traffic volume and delays to the east and south and these are most evident on the B1051 with traffic looking to travel into the village from Elsenham and delays at the Gypsy Lane/B1383 junction."

9.12.12 With regards to Saffron Walden, it appears that concerns are relatively limited, but there is a degree of uncertainty regarding the extent to which a new link road through the site will deliver strategic benefits. The previous Transport Topic Paper (2024) had stated:

"The scheme itself could have many benefits in terms of the removal of traffic from many existing routes in the south of the town. However… many vehicles will still be required to travel through the town centre via High Street. In particular, if they are travelling north towards the M11 and Cambridge. In this respect, the link road would fall short in addressing all of the town's highway capacity issues...

… The link road could unlock wider benefits in terms of the reallocation of road space to more sustainable forms of travel within the town, and subsequent improvements to air quality..."

Development management policy

9.12.13 Numerous policies have broadly positive implications for transport objectives. For example, the policy on **active travel (walking and cycling)**, which sets out that developers will be expected to:

"enable and contribute towards improvements and delivery of local and strategic active travel routes and links as identified in the Area Strategies and associated [Infrastructure Delivery Plan, IDP] and [Local Cycling and Walking Implementation Plan, LCWIP]."

9.12.14 The policy on **providing for sustainable transport and connectivity** is also highly relevant. Amongst other things, the policy sets out that:

"The Council will support measures identified in the Essex Local Transport Plan and the area travel plans and work with Essex County Council to ensure that transport improvements…"

… Sustainable modes of transport should be prioritised in new developments to promote accessibility and integration with the wider community and existing networks. Priority should be given to cycle and pedestrian movements and providing access to public transport including the provision of new or enhanced existing bus services."

9.12.15 It is also possible to highlight policies for the **rural area** as potentially leading to a degree of tension with transport-related objectives. However, the key point to note is that the spatial strategy seeks to balance, on the one hand, a need to support a degree of new development in the rural area in support of rural communities and the rural economy; and, on the other hand, a need to limit the dispersal of growth to rural areas from a transport perspective (albeit recognising the national switchover to electric vehicles).

Conclusion

9.12.16 The proposed growth strategy performs very well in a number of respects, in light of a range of technical studies and consultation on a full draft version of the Local Plan in 2023 (a very important step in terms of providing partner organisations with early certainty and an opportunity to input effectively to plan-making). Fundamental aspects include: provision for housing need in full, which is important from a transport perspective; directing growth in line with the settlement hierarchy and restricting growth in rural areas (including Thaxted); directing growth to settlements with a train station (albeit the plan might ideally have a stronger focus in this regard, including noting the new lower growth strategy for Newport); and directing growth to the A120 corridor where, despite inherent constraints (given background traffic growth outside the control of the Local Plan), there is also a strategic opportunity (albeit more so at Takeley than at Great Dunmow). Also, it is important to recall that the current Local Plan is a major departure from the previous withdrawn local plan, which sought to rely on costly and uncertain major new transport infrastructure. Overall, and after taken account of concept masterplans and DM policies, it is now possible to predict **moderate or uncertain positive effects**, although there does remain a need for ongoing scrutiny of the viability, deliverability and efficacy of the sustainable transport proposals that are so central to the proposed approach to mitigating growth in road transport, perhaps most notably at Great Dunmow.

9.13 Water

Growth strategy

9.13.1 The appraisal in Section flags a potential concern with the proposed growth strategy, particularly in terms of capacity at wastewater treatment works (WwTWs), and in light of the evidence provided by the Stage 2 Water Cycle Study (2024). However, the proposed strategy is preferable to the alternatives appraised (on the basis that all of the alternatives involve higher growth). As discussed in Section 6, the potential issues are particularly associated with **Great Dunmow** and **Takeley**. However, in practice there is every chance that through further consultation with the water companies and the Environment Agency it will be possible to arrive at a conclusion that there are acceptable and viable solutions.

Development management policy

The policy on **water supply and protection of water resources** presents policy under several headings, but of particular note is the following requirement on water efficiency: *"All new residential development that achieves at least a water efficiency standard of 90 litres per person per day will be supported. Proposals for non-residential development should achieve at least 3 credits under the BREEAM "Wat01" measure. Where possible, proposals involving the refurbishment or change of use of existing building should undertake retrofitting to increase water efficiency."*

9.13.2 This is an evolution from the proposal at the Draft Plan stage (2023), when the requirement was that "*no more than 90l/p/d must be achieved in the sensitive chalk stream catchments"* and there is a need to strike a note of caution regarding potential implications for development viability at Takeley and Great Dunmow. By way of context, water use in the Uttlesford area is relatively high at around 161.27 litres per person per day (l/p/d) for existing customers, compared to a national average of 147 l/p/d and 121.92 and 126.19 in the East and Southeast Affinity Regions with higher levels of metering. The Building Regulations offer a standard beyond the mandatory 125l/p/day or 110l/p/d where there is local stress.

Conclusion

9.13.3 Whilst the proposed ambitious approach to water efficiency is supported, in the context of a water-stressed sub-region, there are some outstanding wastewater treatment challenges along the A120 corridor. There will likely be a solution, but it is appropriate to flag a **moderate or uncertain negative effect** at this stage.

9.14 Conclusions

9.14.1 The whole plan appraisal presented above builds upon the appraisal of Growth Scenario 1 in Section 6. After having accounted for the growth strategy alongside proposed concept masterplans and development management policy (including site-specific policy), and after having accounted for established sustainability objectives (see Section 3), the appraisal predicts effects on the baseline as follows:

- **Significant positive** in respect of **accessibility** (to community infrastructure) – primarily on account of the proposal to deliver or facilitate delivery of a secondary school and several primary schools, although there remains a degree of uncertainty at several settlements, notably Saffron Walden.
- **Significant positive** in respect of **employment land** – although there remains a degree of uncertainty at Saffron Walden and in respect of new office development at Gaunt's End (Elsenham).
- **Moderate or uncertain positive** in respect of **biodiversity** – given a focus on avoiding sensitivities and realising strategic opportunities, aligned with a DMP policy requirement for all development to achieve 20% BNG. However, SSSI woodlands along the A120 remain a constraint.
- **Moderate or uncertain positive** in respect of **communities, equality and health** – given adjustments that have been made to the plan following consultation in 2023, perhaps most notably at Takeley and Newport, but also at Thaxted (although there is a 'communities' argument for growth) and Great Dunmow (in particular, there is now a very strong proposed approach to green and blue infrastructure).

  The appraisal also includes a stand-alone discussion of **equality** and **health** considerations, including a focus on those with protected characteristics under the Equality Act. Ultimately, the plan is deemed to perform well and no significant tensions with equality or health objectives can be identified.
- **Moderate or uncertain positive** in respect of **homes** – the plan performs strongly in many regards, but is not able to provide for longer term Gypsy and Traveller accommodation needs. Also, development viability is tight along the A120 corridor, with possible implications for affordable housing.
- **Moderate or uncertain positive** in respect of **transport** – the plan takes a highly proactive approach to supporting modal shift away from the private car, including via a focus of growth at Takeley, but opportunities could feasibly be taken to ensure a higher focus of growth in proximity to train stations.
- **Neutral** in respect of **climate change adaptation** (flood risk focus) – because there are some outstanding constraints/challenges in respect of surface water flood risk. These can likely be addressed through masterplanning without undue issue, i.e. with limited need to compromise on wider objectives.
- **Neutral** in respect of **climate change mitigation** (built environment decarbonisation focus) – best practice DM policy approach is proposed, but there is also a need to ensure that all steps are taken through strategy / site selection, and there is a 'high bar' to concluding positive effects given targets.
- **Neutral** in respect of **landscape** – notable adjustments have been made, including at Takeley (CPZ). Whilst there are residual impacts, these are of localised more so than strategic significance, and it is important to recall that the baseline situation in one whereby growth would continue without a plan.
- **Moderate or uncertain negative** in respect of the **historic environment** – detailed work has been undertaken in line with the consultation response received from Historic England, but some inherent concerns/challenges remain, most notable at Great Dunmow.
- **Moderate or uncertain negative** in respect of the **land, soils and resources** – because significant loss of best and most versatile agricultural land (including grade 2 quality) is likely unavoidable.
- **Moderate or uncertain negative** in respect of the **water** – whilst the proposed ambitious approach to water efficiency is supported, in the context of a water-stressed sub-region, there are some outstanding wastewater treatment challenges along the A120 corridor.

9.14.2 There will be the potential to make improvements to the plan through the forthcoming examination in public. Improvements to the plan might seek to further bolster positive effects identified through this appraisal, and there will certainly be the potential to further explore tensions with sustainability objectives.

9.14.3 A small number of specific recommendations are discussed. However, it is inherently difficult to make specific recommendations because actioning them will inevitably have implications that are difficult to foresee and account for here. For example, it would be very easy to recommend further detailed policy in respect of affordable housing, but this would have cost/viability implications such that there could be a need to accept trade-offs in respect of one or more wider objectives (e.g. net zero). Equally, it would be very easy to recommend further site-specific policy, but there is always a risk of being overly prescriptive, such that there is reduced flexibility at the development management stage, potentially impacting delivery.

9.14.4 Finally, it should be noted that the current version of the Local Plan was prepared taking account of the appraisal presented within Section 9 of the Interim SA Report (2023). There is no requirement for SA to be iterative in this way, but it helps to demonstrate a robust and sound plan-making process.

Cumulative effects

9.14.5 The SEA Regulations, which underpin the SA process, indicate that stand-alone consideration should be given to 'cumulative effects', i.e. effects of the Local Plan in combination with other plans, programmes and projects that can be reasonably foreseen. In practice, this is an opportunity to discuss potential long term and 'larger than local' effects. The following bullet points cover some key considerations:

- **Housing needs** – progressing the Uttlesford Local Plan and providing for local housing needs (LHN) in full is strongly supported from a 'larger-than-local' perspective. It is not impossible that one or more neighbouring local authorities in the sub-region will struggle to provide for their own LHN in full. Another consideration is providing for Gypsy and Traveller accomodation needs in collaboroation with neighbouring authorities, recognising that it is not uncommon for Local Plans to fail to provide for needs in full (see https://www.rtpi.org.uk/blog/2024/june/simon-ruston-kicking-the-can-down-the-road/). However, on the other hand, accomodation needs can be very local, and even site-specific.
- **The economy** – the proposed strategy of providing for employment land needs in full is also strongly supported from a 'larger-than-local' perspective. The need to deliver employment land along the M11 corridor and in the vicinity of Stansted in particular is clearly of at least regional importance. Also, there is a need to support national objectives around economic growth at Cambridge, which leads to a focus on Great Chesterford (the plan does not propose any new supply) and Chesterford Research Park (the plan proposes to allocate land to enable the park to expand to the full extent of its masterplan vision).
- **Transport corridors** – there is need for ongoing consideration of capacity issues at M11 J8, and there is also a need to work with neighbouring local authorities – including East Herts (Bishops Strortford), Braintree and Chelmsford – in respect of capacity along the A120. Another key consideration is capacity on the train line to Cambridge, e.g. taking into account committed strategic growth to the north of Harlow.
- **Stansted Airport** – is a key national asset. The local plan is supportive of employment growth in the vicinity of the airport and has a strong focus on avoiding conflicts with the airport's operation.
- **Internationally and nationally important biodiversity sites** – the key consideration is recreational pressure on Hatfield Forest, which is nationally designated as a SSSI and National Nature Reserve. Recreational pressure also comes from East Hertfordshire District. The new proposed approach involves a focus on Suitable Alternative Natural Greenspace (SANG) which is strongly supported.
- **Landscape scale nature recovery** – primary larger-than-local considerations relate to river corridors, including the River Cam in the north of the District and the Chelmer in the south. However, other strategic considerations are set out in the Green and Blue Infrastructure Strategy (2023), and further spatial guidance will be set out in the forthcoming Essex Local Nature Recovery Strategy (LNRS).
- **Agricultural land** – self-sufficiency of food production is increasingly a key national consideration. The Local Plan will result in a significant loss of high quality agricultural land; however, in the absence of a Local Plan there is no reason to assume that development pressure locally would be any less.
- **Water** – this is a key larger-than-local issue, including recognising that the Greater Cambridge Local Plan is paused whilst work is undertaken in respect of water resources and the water environment. Also, it is understood that there is a need for collaboration across two water companies in respect of ensuring waste water treatment capacity in support of growth along the A120 corridor.

Part 3: What are the next steps?

10 Plan finalisation

10.1.1 Once the period for representations on the Local Plan / SA Report has finished the intention is to submit the plan for examination in public alongside a summary of the main issues raised through the Regulation 19 publication period. The Council will also submit the SA Report.

10.1.2 At examination one or more Government-appointed Inspector(s) will consider representations before identifying modifications necessary for soundness. Modifications will then be prepared (alongside SA if necessary) and subjected to consultation (alongside an SA Report Addendum if necessary).

10.1.3 Once found to be 'sound' the Local Plan will be adopted. At the time of adoption a 'Statement' must be published that sets out (amongst other things) "the measures decided concerning monitoring".

11 Monitoring

11.1.1 Within the SA Report the requirement is to present "measures envisaged concerning monitoring".

11.1.2 A draft monitoring framework is presented within the current Draft Local Plan, covering a wider range of issues including many of the issues that are a focus of the appraisal presented in Section 9 of this report. Amongst other things, it is noted that a range of detailed performance measures are proposed in respect of net zero carbon development, which is strongly supported, given the District's 2030 net zero target.

11.1.3 The following are possible suggestions for bolstering the monitoring framework (although it is recognised that, in practice, there is a need to balance ambition with time and resource implications):

- Agricultural land – it is not clear that this warrants being a focus of monitoring locally, but nationally there is certainly a need for increased clarity around loss of agricultural land and implications for plan-making.
- Biodiversity – there will be a need to establish a regime for ensuring that decision making in respect of biodiversity net gain as part of planning applications is undertaken under a strategic spatial framework – informed by the forthcoming Local Nature Recovery Strategy – and then monitor effectiveness.
- Communities – there could be merit to targeted monitoring of growth/change at Takeley.
- Community infrastructure – Wokingham Borough is commended as an authority that sets out very clear information on progress in respect of delivering infrastructure at strategic growth locations (see here).
- Climate change mitigation – monitoring should a focus on clarity. This can be a confusing policy area, but it is very important that the interested public can engage and effectively scrutinise applications.
- Climate change adaptation – a focus on avoiding surface water flood zones could be considered but would likely prove challenging. Regardless, there is a need for clarity on the different forms of flood risk.
- Economy and employment – the nature of need/demand for office floorspace and industrial/logistics floorspace changes very quickly. Regular monitoring of delivery would assist with future assessments.
- Historic environment – it can be difficult to know what monitoring indicators are most appropriate to apply. What is quite typical is to monitor the number of assets on the Heritage at Risk register, but this will not give a good picture of the local plans impacts or contextual changes to the historic environment.
- Homes – this topic is already a focus of the monitoring, but additional indicators could be explored, for example with figures broken down further by settlement and by housing type and tenure. A focus on Gypsy and Traveller accommodation could also serve to inform future needs assessments.
- Transport – there is a clear need for targeted detailed monitoring. As well as road traffic and air quality, there is a need for improved data on bus patronage and use of cycle routes. Also, understanding of strategic transport infrastructure issues and opportunities changes significantly over time (e.g. Essex LTP4 is forthcoming), hence there is a need to consider local plan implications on an ongoing basis.
- Water – there is a need for monitoring of the situation regarding the potential to accommodate the proposed growth strategy along the A120 corridor, from a perspective of ensuring that capacity is not breached at the receiving treatment works nor the environmental capacity of receiving watercourses. Also, there is a clear case for monitoring water efficiency standards achieved by developments.

Appendix I: Regulatory requirements

As discussed in Section 1, Schedule 2 of the Environmental Assessment of Plans Regulations 2004 explains the information that must be contained in the SA Report. However, interpretation of Schedule 2 is not straightforward. Table A links the structure of this report to an interpretation of Schedule 2, whilst Table B explains this interpretation. Table C then presents a discussion of more precisely how the information in this report reflects the requirements.

***Table A**: Questions answered by this SA Report, in-line with an interpretation of regulatory requirements*

	Questions answered		As per regulations… the SA Report must include…
Introduction	What's the plan seeking to achieve?		• An outline of the contents, main objectives of the plan and relationship with other relevant plans and programmes
	What's the SA scope?	What's the sustainability 'context'?	• Relevant environmental protection objectives, established at international or national level • Any existing environmental problems which are relevant to the plan including those relating to any areas of a particular environmental importance
		What's the sustainability 'baseline'?	• Relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan • The environmental characteristics of areas likely to be significantly affected • Any existing environmental problems which are relevant to the plan including those relating to any areas of a particular environmental importance
		What are the key issues and objectives that should be a focus?	• Key environmental problems / issues and objectives that should be a focus of (i.e. provide a 'framework' for) assessment
Part 1	What has plan-making / SA involved up to this point?		• Outline reasons for selecting the alternatives dealt with (and thus an explanation of the 'reasonableness' of the approach) • The likely significant effects associated with alternatives • Outline reasons for selecting the preferred approach in-light of alternatives assessment / a description of how environmental objectives and considerations are reflected in the draft plan
Part 2	What are the SA findings at this current stage?		• The likely significant effects associated with the draft plan • The measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the draft plan
Part 3	What happens next?		• A description of the monitoring measures envisaged

***Table B**: Interpreting Schedule 2 and linking the interpretation to the report structure*

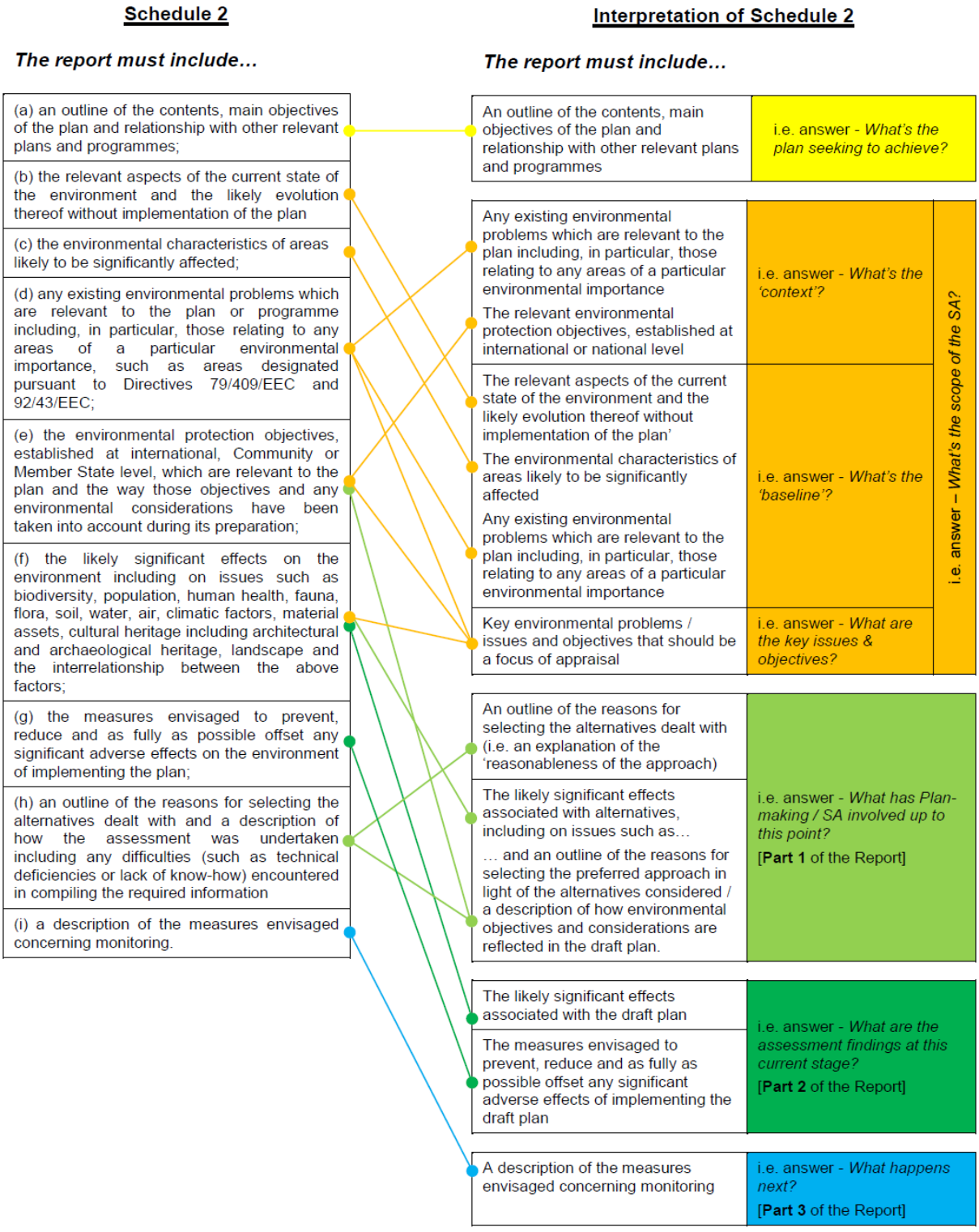


***Table C**: 'Checklist' of how and where (within this report) regulatory requirements are reflected.*

Regulatory requirement	Information presented in this report
Schedule 2 of the regulations lists the information to be provided within the SA Report	
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes;	Section 2 ('What's the plan seeking to achieve') presents this information.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	These matters were considered in detail at the scoping stage, which included consultation on a Scoping Report. The outcome of scoping was an 'SA framework', which is presented within Section 3 in an adjusted form.
c) The environmental characteristics of areas likely to be significantly affected;	
d) … environmental problems which are relevant… …areas of a particular environmental importance…;	
e) The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation;	The Scoping Report presented a detailed context review and explained how key messages from this (and baseline review) were then refined in order to establish an 'SA framework', which is presented within Section 3. With regards to explaining *"how… considerations have been taken into account"*, Section 7 explains reasons for supporting the preferred option, i.e. how/why the preferred option is justified in-light of alternatives appraisal.
f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.	Section 6 presents alternatives appraisal findings in respect of reasonable growth scenarios, whilst Section 9 presents an appraisal of the Local Plan as a whole. All appraisal work naturally involved giving consideration to the SA scope and the potential for various effect characteristics/dimensions.
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Section 9 presents recommendations.
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Sections 4 and 5 deal with 'reasons for selecting the alternatives dealt with', with an explanation of reasons for focusing on growth scenarios / certain growth scenarios. Sections 7 explains 'reasons for supporting the preferred approach', i.e. explains how/why the preferred approach is justified in-light of the alternatives (growth scenarios) appraisal. Methodology is discussed at various places, ahead of presenting appraisal findings.
i) … measures envisaged concerning monitoring;	Section 11 presents this information.
j) a non-technical summary… under the above headings	The NTS is a separate document.
The SA Report must be published alongside the draft plan, in-line with the following regulations	
Authorities… and the public, shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Art. 6.1, 6.2)	This SA Report is published alongside the Proposed Submission Local Plan in order to inform representations and plan finalisation.
The SA Report must be taken into account, alongside consultation responses, when finalising the plan.	
The environmental report prepared pursuant to Article 5, the opinions expressed pursuant to Article 6 and the results of any transboundary consultations entered into pursuant to Article 7 shall be taken into account during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.	This SA Report will be taken into account when finalising the plan for publication (see Section 10). Also, it should be noted that an Interim SA Report was published alongside the Draft Local Plan in 2023. It presented the information required of the SA Report.

REPORT

Uttlesford Local Plan

Sustainable Transport Evidence Base and Strategy

Client: Uttlesford District Council

Reference: PC5857-RHD-RP-2

Status: A4/C01

Date: 2 July 2024

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V4-0	02/07/2024	Fourth issue	DC	ED	ED
V3-0	02/07/2024	Third issue	DC	ED	ED
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V1-0	18/06/2024	First issue	RP / JS / DC	IS	ED
V0-2	06/06/2024	Updated draft	RP / JS / DC	IS	ED
V0-1	22/05/2024	Working draft	RP / JS	ED	IS

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A3 Local Policies and Guidance
A4 Draft Uttlesford Local Plan district wide core transport policies
A5 Draft North and South Uttlesford and Stansted and Elsenham area transport policies
A6 Uttlesford Local Plan – Sustainable Transport Policy comments and suggestions

Executive Summary

Integrated Transport Planning Ltd (ITP) was appointed by Uttlesford District Council (UDC) in April 2024 to provide support with preparing sustainable transport and accessibility evidence to inform the emerging Development Plan Documents (DPD) for the Uttlesford Local Plan (Regulation 19 stage). The current Local Plan was adopted in 2005. Since 2020 the council has been preparing a new Local Plan with public consultation being held on 'Issues and Options' in spring 2021 and the Consultation Draft (Regulation 18) consulted at the end of 2023. The current stage of work is for the Regulation 19 Plan.

This report is intended to provide a sustainable transport evidence base and strategy which will feed into the wider Transport Evidence Topic Paper UDC is preparing as part of the Regulation 19 submission. This in turn will be supplemented by a number of other transport studies and evidence.

What does existing national, regional and local policy mean for sustainable transport in Uttlesford?

For a rural district like Uttlesford, policy guidance and examples of best practice suggest the following common themes when improving sustainable transport:

- Opportunities to maximise sustainable transport differ between urban and rural areas, it is important these differences are taken into account.
- Developments, where possible, should limit impacts of car use by prioritising and encouraging walking, cycling and public transport.
- 'Decide and provide' and 'vision and validate' should be used rather than 'predict and provide' using robust evidence bases.
- Local Walking and Cycling Plans (LCWIPs) should be undertaken and optimised to support the wider cycle and walking network with new developments supporting these plans.

Uttlesford Local Plan

The emerging Uttlesford Local Plan has draft transport related planning policies across the whole district and for the North Uttlesford and South Uttlesford areas.

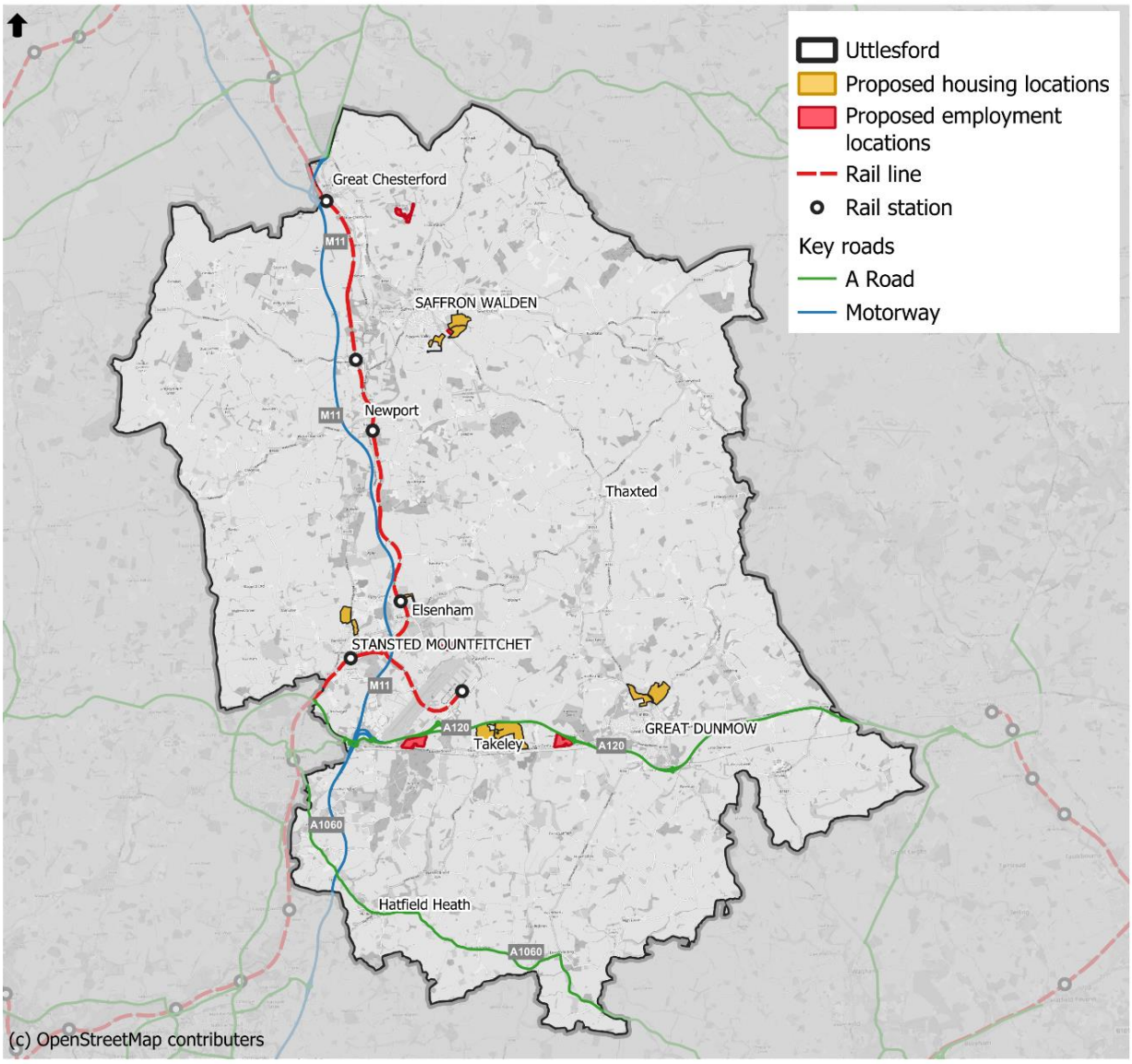
The core policies set-out the requirement that all developments must promote sustainable transport. Developments should be designed to cater for walking and cycling as the highest mode priorities, but also cater for public transport. Developments may need to improve sustainable transport infrastructure, which includes improving bus services. Developments should improve mobility and access for those with disabilities and mobility needs.

There are two transport related planning policies for North Uttlesford and two for South Uttlesford. They list specific schemes and measures that shall be provided for the delivery of growth in North and South Uttlesford respectively. Those schemes are predominately for sustainable transport and include the safeguarding of land for the delivery of schemes. Development proposals that affect the delivery and operation of the schemes will be refused.

The draft Uttlesford Local Plan transport policies are considered to align well with national, regional and local policies and strategies. The draft policies will enable the improvement of connectivity and sustainable transport modes and choices, whilst reducing the environmental impact of travel.

Development sites

A total of 3,849 new dwellings and 64.3 hectares of new employment land are proposed in the new Local Plan which will cover the period up until 2033. The figure on the following page shows these sites in relation to existing communities and the core transport network.



Existing sustainable transport in Uttlesford

The table on the following page summarises the existing sustainable transport provision in the main settlements in Uttlesford. Public transport provision and active travel provision have been colour coded with the below colour scheme based on their quality (commensurate to a rural district such as Uttlesford).

Quality of provision
Poor
Average
Good

Place	Public transport (bus and train)	Cycling and walking	Constraints	Opportunities
Saffron Walden	▪ Good coverage of bus stops, and accessibility to them ▪ Nearest train station is at Audley End, circa 3.5km SW of Saffron Walden	▪ Limited NCN access ▪ Consistent 30mph speed limits. ▪ Bike hire schemes and subsidised bike rental schemes. ▪ Most key services are within the town are within walking distance.	▪ No significant barriers such as rivers, motorways, or rail lines to impede internal movements. ▪ Historic centre with one-way streets which aren't wide enough for contraflow cycle lanes.	▪ High car dependency, and therefore significant potential for a mode shift.
Great Dunmow	▪ Bus routes are classed as Low Accessibility. ▪ Nearest train station is at Stansted Airport, circa 7.2km West of town centre	▪ Great access to NCN. ▪ Possible to cycle to Stansted Airport via a mostly segregated route. ▪ Access to The Flitch Way.	▪ River Chelmer and the A120 represent instances of severance.	▪ A compact town where walking and cycling to services may be more attractive than driving. ▪ Transport to Stansted Airport, as the largest employer in Uttlesford.
Stansted Mountfitchet	▪ Central rail station with regular journeys to key destinations. ▪ Adequate bus network.	▪ Stansted Mountfitchet links to NCN16 but lacks safe routes to the airport. ▪ A 92-mile route, NCN 11 runs north from Stansted Mountfitchet.	▪ Severance from M11 and A120. There are just 3 crossing points.	▪ B1383 Stansted Mountfitchet to Bishop Stortford active travel could be improved. ▪ Rail station ensures the town is well-connected.
Elsenham	▪ Sparse, and infrequent bus network. ▪ Has a rail station which provides frequent links to key destinations.	▪ New Road has a footway on just one side of the carriageway. ▪ No safe cycling connections between Elsenham and Stansted Mountfitchet and not served by NCN.	▪ Severance of M11 and rail line. ▪ New Road is unlikely to be wide enough for contraflow cycle lanes.	▪ Major scope to increase the mode share of active travel modes. ▪ Opportunity to upgrade bus stop facilities and improve walking and cycling provision at key junctions.
Great Chesterford	▪ Served by a sparse, and infrequent bus network. ▪ Great Chesterford has a rail station which provides frequent links to: Cambridge and London Liverpool Street.	▪ The proximity to Cambridgeshire, where many work, makes cycling more attractive with the right infrastructure. ▪ The access road to the station is poorly maintained. ▪ Lack of footways and dominance of parked cars on street.	▪ Severance of the River Cam and M11. ▪ Isolated location.	▪ Just 1.2% of the population cycle to work. Saffron Walden, the closest town, is 6 miles away, a feasible cycling distance with appropriate infrastructure. ▪ Opportunities for traffic calming measures on the B183.
Takeley	▪ Good coverage of bus stops, and accessibility to them. ▪ No train station – nearest is at Stansted Airport. Direct bus services are available.	▪ Great access to NCN through the town. ▪ Signed shared footpath/cycleway	▪ The current road network in Takeley town centre is inefficient, leading to frequent traffic. ▪ Minor A120 severance.	▪ Potential to provide access to the multi modal transport hub at Stansted Airport. ▪ Stansted Airport is the largest employment site in the district so there is an opportunity to access employment by sustainable means.

The strategic allocation sites are well connected with good accessibility to facilities, the bus and rail network, together with opportunities to walk and cycle. The proposed Local Plan policies provide an opportunity and the direction to improve sustainable travel opportunities and connectivity.

Sustainable Transport Strategies

The majority of development sites show accessibility to a range of key services, with the exception being the proposed employment allocation site near Great Chesterford. However, all sites require a sustainable transport strategy to maximise the sites potential for sustainable travel. The Local Plan provides an opportunity to improve the nature of sustainable transport, its quality and provision. Improvements to sustainable transport will reduce the environmental impact of existing and proposed development, thereby aiding the goal of reducing the impact of travel on the climate.

There are a range of measures that can be implemented to improve sustainable transport within existing communities and facilitate new development. The table below shows the measures which are proposed, broken down by six broad themes around which good practice for sustainable mobility and mode shift in new and existing development can be framed.

Theme	Proposed improvements through the Local Plan
Placemaking and land use planning	▪ Providing wayfinding within new development allocations to key local trip attractors, including railway stations and town centres, to aid the movement of people on foot and by cycle. ▪ Provision of mobility hubs.
Walking and cycling infrastructure	▪ Provide new sustainable transport routes and upgrade existing ones. ▪ Connect sites with LCWIP routes. ▪ Connect to Public Rights of Way network and improvements to Public Rights of Way. ▪ Review routes and identify measures to link new developments to bus stops and facilities in the most direct way, and to identify barriers to people with disabilities and a mobility impairments. ▪ Bike share, ebike charging stations, cargo bikes should be provided. Investigate provision of bike maintenance hubs ▪ Pedestrian routes to bus stops should be as direct as possible to aid amenity. ▪ Walking and cycling routes should be provided to the proposed primary and secondary schools. ▪ Upgrades to local walking and cycling routes. ▪ Investigate the increase cycle parking at railway stations.
Public transport	▪ Review existing bus services and addition of new services to serve the allocations. ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment. ▪ Enhance interchange facilities at railway stations. ▪ Improved connections to Stansted Airport.
Parking and traffic management	▪ EV car clubs. ▪ EV charge points provided for all houses. ▪ The highway mitigation and junction improvements that are required in Takeley and Great Dunmow as identified in the transport evidence including appropriate and proportionate mitigation measures at Junction 8 ▪ Smiths Green Lane will be close to through vehicular traffic at Warish Hall Farm and them route will be prioritised for walking and cycling whilst retaining local access.
Behavioural change	▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of residential and employment travel plans. ▪ Bus awareness and information campaigns.

Governance, policy and funding	▪ Provision of discounted bus vouchers for new residents at sites. ▪ Financial contributions towards the improvement of bus services, allowing for an increased frequency of services. ▪ Introduce Saffron Walden Transport Strategy measures for public transport, parking and traffic management and placemaking

There are opportunities to improve connectivity and accessibility of the strategic allocation sites at Saffron Walden, Great Dunmow, Stansted Mountfitchet, Elsenham, Great Chesterford and Takeley and the surrounding areas. The report demonstrates that there are a range of measures that can improve sustainable transport use, providing alternatives to the private car and reducing the environmental impact of transport. The measures align with the draft transport policies contained within the draft Local Plan.

1 Introduction

1.1.1 Integrated Transport Planning Ltd (ITP) was appointed by Uttlesford District Council (UDC) in April 2024 to provide support with preparing sustainable transport and accessibility evidence to inform the emerging Development Plan Documents (DPD) for the Uttlesford Local Plan (Regulation 19 stage).

1.2 Context of the new Local Plan

1.2.1 The current Local Plan was adopted in 2005. Since 2020 the council has been preparing a new Local Plan with public consultation being held on 'Issues and Options' in spring 2021 and the Consultation Draft (Regulation 18) consulted at the end of 2023. The current stage of work is for the Regulation 19 Plan.

1.3 Purpose and structure of this report

1.3.1 This report is intended to provide a **sustainable transport evidence base and strategy** which will feed into the wider Transport Evidence Topic Paper UDC is preparing as part of the Regulation 19 submission. This in turn will be supplemented by a number of other transport studies and evidence.

1.3.2 The remainder of this report is structured as follows:

Section 2 provides the baseline context of sustainable transport, nationally and in the district
Section 3 looks at the existing transport networks
Section 4 shows the strategic allocations in the Local Plan
Section 5 assesses the current accessibility of the site locations
Section 6 details the sustainable transport strategies for each area
Section 7 concludes the report.

2 Baseline and policy context

2.1.1 This chapter provides the context of Uttlesford, transport policy relevant to the district.

2.2 Background and context of Uttlesford

2.2.1 Uttlesford District is located in the north west of the county of Essex. It is a largely rural, non-metropolitan district with a population of 91,341[1], with a population density of 143 persons per square kilometre[2].

2.2.2 The administrative town of the district is Saffron Walden (with a population of 16,600). The district also includes the town of Great Dunmow and larger villages such as Stansted Mountfitchet, Elsenham, Great Chesterford, Hatfield Heath, Newport, Takeley and Thaxted. Other than Thaxted, these communities are situated close to either the M11, which runs roughly north to south through Uttlesford from Cambridge to the M25, and the A120, which travels west to east between the M25 near London Stansted Airport and Colchester.

2.2.3 Neighbouring districts are Braintree, Chelmsford and Epping Forest in Essex, as well as East Hertfordshire, North Hertfordshire and South Cambridgeshire. London Stansted Airport, the UK's fourth-busiest airport[3], is located within Uttlesford and is the largest employer in the district.

2.3 Policy, guidance and research

2.3.1 This section discusses policies and guidance which are relevant to sustainable transport for a Local Plan context.

National Policy and Guidance

2.3.2 A review of Policy and Guidance has been undertaken that relates to sustainable transport. The details of the review of national policy and guidance are contained within Appendix A1. The Table 2.1 summarises the relevant national policy and guidance.

Table 2.1: Summary of National guidance

Policy	Summary and key points
National Planning Policy Framework (NPPF) (UK Government, 2021)	Sets out the government's planning policies and how these should be applied. Key points - consideration of transport issues from the earliest stage, significant development should be focused where it can be made sustainable, significant impacts on the transport network should be mitigated, and planning should provide attractive and well-designed active travel facilities.
Planning Practice Guidance – Transport evidence bases in plan making and decision taking (UK Government, 2015)	Sets out guidance for transport evidence bases for Local Plans including their importance, what should be considered in their development and how evidence bases should be used when assessing Local Plan proposals.
Planning Practice Guidance – Travel Plans, Transport Assessments and Statements (UK Government, 2014)	Provides planning policy guidance on travel plans, transport assessments and transport statements.

[1] *2021 Census Profile for areas in England and Wales - Nomis (nomisweb.co.uk)*
[2] *Population density - Census Maps, ONS*
[3] *UK airport data 2024 | Civil Aviation Authority (caa.co.uk)*

	Guidance is provided on their importance, the key principles to consider during development, when each type of document is required and the information which should be included.
DfT Circular 01/22 – Strategic road network and the delivery of sustainable development (DfT, 2022)	Explains how National Highways engages with the planning system and fulfils its role in delivering sustainable economic growth whilst maintaining the strategic road network. Sets out principles for sustainable development including that developments should facilitate a reduction in need to travel and limit the impact on the strategic road network.
Planning for the future – A guide to working with National Highways on planning matters (National Highways, 2023)	This document provides further details the commitment of National Highways to planning, highlighting the need to engage early and collaboratively whilst supporting the key principles of DfT Circular 01/22 for locating sites where there is sustainable potential whilst reducing the impact on the strategic road network.
Local Transport Note 1/20 (DfT, 2020)	Provides guidance and good practice examples for the design of cycle infrastructure in England and Northern Ireland. Specific guidance on integration of cycling with new developments and highways improvements includes provision of appropriate high quality cycling facilities and integration with wider cycle network through LCWIP process.
National Design Guide (UK Government, 2021)	Provides guidance and examples on delivering well-designed places. In terms of transport, this includes 'a well-designed movement network' which is safe , accessible, promotes social activity, and limits the impact of car use by prioritising active travel and public transport.
Cycling and Walking Investment Strategy and Local Cycling and Walking Infrastructure Plans (LCWIPs) (DfT, 2022)	CWIS1 and CWIS2 set out ambitions to make walking and cycling the natural choice for shorter journeys or as part of a longer journey with clear objectives for each. Development of an LCWIP and guidance for this forms part of CWIS1. These are a network plan for walking and cycling, identifying key infrastructure improvements for future investment. LCWIPs should be included in local land use and transport planning.
Gear Change: A bold vision for cycling and walking (DfT, 2020)	Sets out government guidance for transforming the role cycling and walking play in the transport system. It sets out some key design principles for cycling including – treating cyclists as vehicles, ensuring separation with pedestrians at junctions, avoidance of purely cosmetic alterations, routes must join and be easy to use.
Active Travel England	ATE has strategic aims to increase levels of walking and cycling to 50% of journeys in towns and cities by 2030. They are a statutory consultee on all developments of 150 housing units or more. A number of tools have been developed to support the design and quality of active travel interventions and schemes including the crossing selector tool, route cross section tool, and planning application assessment tool.
Walkable Neighbourhoods (Sustrans, 2022)	Provides recommendations to ensure development reduces car dependency. This includes agreeing a spatial vision and setting clear accessibility standards to key services and bus stops to ensure development is in locations with the best accessibility.
Delivering Sustainably Walkable Neighbourhoods (Arup, 2024)	Provides guidance and evidence for delivering sustainable walkable neighbourhoods, detailing the concept of a 15-minute walkable neighbourhood. It presents the WalkFar tool to assess the walkability of new settlements, defining what different scales of development should include in terms of homes and jobs. Highlights the benefits of introducing walkable neighbourhoods on the highway network including the need to travel
Guide to the 20-minute neighbourhood (TCPA, 2021)	Guidance from the Town and Country Planning Association on the application of the '20 minute neighbourhood' in the context of England, it sets out a number of principles for success and provides case studies of best practice. Principles for success include a compelling vision, empowered communities, investment, and introducing both soft and hard measures. It further details what success in a rural area looks like.

Better planning, better transport, better places (CIHT, 2019)	Guidance on creating better places by better integrating planning and transport. It highlights the benefits of high quality evidence bases when assessing the needs and issues of communities, suggesting the use of a 'vision and validate' approach rather than the traditional 'decide and provide' methodology.
Future Mobility Hubs: Supporting the transition towards sustainable journeys (Arup / Go-Ahead, 2021)	Guidance sets out Go-Ahead and Arup's vision for how Future Mobility Hubs can be developed for different context within the UK including key design principles and examples of best practice.
Bus Back Better: National bus strategy for England (UK Government, 2021)	Published in 2021, sets out the national strategy for buses in England outside of London with a central aim to increase bus patronage back to pre-COVID-19 levels and then exceed this. As part of this guidance, all LTAs were required to publish a local Bus Service Improvement Plan (BSIP) to be updated annually, these set out how to improve services.

Regional Policy and Guidance

2.3.3 A review of regional policy and guidance that relates to sustainable transport has been undertaken. Table 2.2 summarises the regional guidance from Transport East and the Rural Strategy Hub which is detailed in Appendix A2.

Table 2.2 Summary of Regional guidance

Policy document	Summary and key points
Transport East Transport Strategy (TfE, 2022)	Sets out a vision for the transport system across the East alongside key objectives to meet this vision. The strategy highlights the unique challenges of rural transport provision across the region, whilst providing examples of best practice in sustainable transport provision.
Rural Connections: Transport challenges and opportunities for communities in the East (TfE, 2024)	Aims to highlight the evidence and findings from the Rural Strategy Hub call for evidence regarding the challenges facing transport in the East. It highlights key challenges in the provision of rural transport and provides a number of recommendations to address them.

Local Policy and Guidance

2.3.4 A review of the local policy and guidance that relates to sustainable transport is contained within Appendix A3. summarises the local policy guidance which includes policy from Essex County Council and Uttlesford District Council contained within Appendix A3.

Table 2.3: Summary of local guidance

Policy document	Summary and key points
Essex Local Transport Plan (ECC, 2011)	Essex County Council's LTP4 is currently in draft phase with LTP3, published in 2011, currently the statutory transport plan for Essex. This provides a vision for transport in Essex along with a number of objectives to meet this. Included within this plan are key policies on transport and land use planning along with carbon reduction.
Essex Cycling Strategy (ECC, 2024)	Currently in draft form, the Essex Cycling Strategy sets out a vision, outcomes and actions for cycling across Essex. It has 6 key outcomes covering design of infrastructure, perceptions, and health and equality. Further it sets out key planning guidance for cycling infrastructure.
Essex Design Guide (EPOA, 2018)	The Essex Design guide, first published in 1973 aims to promote high quality sustainable design that enhances the built environment and creates better

	places. It emphasises the role of neighbourhood design in travel choice and encouraging sustainable travel behaviour with guidance to support this.
Essex Country Council Developers' Guide to Infrastructure Contributions (ECC, 2023)	Details the scope and range of contributions for infrastructure which can been sought from developers including the methods in which funding can be secured.
Uttlesford Design Guide (UDC, 2024)	Currently in the draft phase, the Uttlesford Design guide will apply the National Design Guide and Essex Design Guide characteristics to Uttlesford.
Uttlesford Local Cycling Walking Infrastructure Plan (UDC, 2024)	Currently in the draft phase, the Uttlesford LCWIP details the network in Uttlesford. It provides proposals for strategic cycle routes and Velo village routes.
Transport Strategy for Saffron Walden (UDC, 2024)	Currently in the draft phase, the Transport Strategy for Saffron Walden considers a range of transport and a package of measures for each mode.
A120 Corridor Study (UDC / ECC, 2024)	Commissioned by UDC and ECC a multi-modal study of the A120 corridor was undertaken to assist in the delivery of sustainable transport. This includes a number of public transport service enhancement suggestions and walking and cycling proposals.
Uttlesford Local Plan (2024)	The emerging Uttlesford Local Plan has draft transport related planning policies across the whole district and for the North Uttlesford and South Uttlesford areas, it sets out core policies for all developments alongside Transport Assessment and Transport Statement requirements.

2.3.5 The draft Uttlesford Local Plan transport policies are considered within Appendix A3 and listed within Appendix A4, A5 and A6.

Policy Fit

2.3.6 The alignment of the draft Local Plan transport policies with national, regional and local policies and strategies has been considered. The policy and strategy alignment is indicated within Table 2.4.

Table 2.4: Draft Local Plan Policy alignment with National, Regional and Local Policies and Strategies

Draft Local Plan Policy	National Policy Alignment	Regional Policy Alignment	Local Policy Alignment
Core Policy 26: Providing for Sustainable Transport and Connectivity	NPPF ▪ Promotes sustainable transport with priority to active travel.	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation. ▪ Will aid connecting growing towns.	Essex Local Transport Plan ▪ Promote sustainable transport. ▪ Promotes connectivity to services and communities within Uttlesford by sustainable transport. ▪ Promotion of sustainable transport will reduction carbon create by transport.
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes walking, cycling and public transport. Provides sustainable transport alternatives to the motor car.		Essex Cycling Strategy ▪ Promotes cycling to reduce the environmental impact of travel. ▪ Promotion of cycling will aid connectivity and provide health benefits.

	▪ Promotes make locations more sustainable.		▪ Will improve the cycle network within Uttlesford and hence Esses. ▪ Promotes well designed cycling infrastructure.
	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling and states that they should have priority. ▪ Reduce the conflict with motor vehicles.		Transport Strategy for Saffron Walden ▪ Will aid promotion and the delivery of sustainable transport measures within the strategy.
	Bus Back Better ▪ Policy promotes bus use by incorporation of bus infrastructure and enhancing existing services.		
Core Policy 27: Assessing the impact of Development on Transport Infrastructure	NPPF ▪ The impacts of developments will be assessed and that they will mitigated. ▪ Sustainable transport will be promoted.		Essex Local Transport Plan ▪ Promote sustainable transport. ▪ Provides alternative modes to the private car and the opportunity to reduce car journeys. ▪ Promotes travel planning to for greater use of sustainable transport and reduce the transport impact on the environment.
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes walking, cycling and public transport. Provides sustainable transport alternatives to the motor car and has the potential to reduce the impact on the strategic road network. ▪ Promotes make locations more sustainable.		
Core Policy 28: Active Travel - Walking and Cycling	NPPF ▪ Active travel will be promoted with greater priority. ▪ Providing an improved environment for cyclists and pedestrians. ▪ Promotes attractive and well-designed walking and	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation. ▪ Will aid connecting growing towns.	Essex Local Transport Plan ▪ Promote active travel and will aid reducing the number and length of trips made by private cars.

	cycling routes with supporting facilities.		
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes walking and cycling which provides opportunities for more trips by those modes rather than the private car. ▪ Promotes make locations more sustainable.		Essex Cycling Strategy ▪ Promotes cycling to reduce the environmental impact of travel. ▪ Promotion of cycling will aid connectivity and provide health benefits. ▪ Will improve the cycle network within Uttlesford and hence Esses. ▪ Promotes well designed cycling infrastructure.
	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling and states that they should have priority. ▪ Reduce the conflict with motor vehicles.		
Core Policy 29: Electric and Low Emission Vehicles	NPPF ▪ Providing EV infrastructure will enable a wider choices of modes with an alternative to fossil fuels and reduced emissions.	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation.	Essex Local Transport Plan ▪ Will provide opportunities to reduce the carbon impact of transport by promoting EV and low emission vehicles.
Core Policy 30: Public Rights of Way	NPPF ▪ Provides for alternative modes of transport. ▪ Promotes walking and cycling. ▪ Improve quality of walking and cycling network.	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation. ▪ Will aid connecting growing towns.	Essex Local Transport Plan ▪ Promote active travel and will aid reducing the number and length of trips made by private cars.
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes walking and cycling which provides opportunities for more trips by those modes rather than the private car. ▪ Promotes make locations more sustainable.		
	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling and states that they should have priority. ▪ Reduce the conflict with motor vehicles.		

Core Policy 31: Parking Standards	NPPF ▪ Providing cycle parking to aid cycling and create a well designed network with supporting facilities. ▪ Provides cycle parking and EV charging to provide alternative modes of transport with zero and reduced emissions.	Transport East Transport Strategy ▪ Will help promote active travel which will aid decarbonisation.	Essex Local Transport Plan ▪ Promote active travel and will aid reducing the environmental impact of transport.
	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling by providing cycle parking.		
Core Policy 32: The movement and management of Freight	NPPF ▪ Promotes local delivery hubs and provision of freight management strategies to reduce transport impact. ▪ Promotes low or zero emission modes of transport.	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation.	Essex Local Transport Plan ▪ Promotes low or zero emission modes of transport which will reduce the impact of transport on the environment.
Core Policy 7: Delivery of Transport Schemes within the North Uttlesford Area	NPPF ▪ Promotes walking and cycling through the provision of new infrastructure and connectivity. ▪ Promotes alternative modes of transport through provision of EV car clubs, bike share and e-cargo bikes. ▪ Promotes a well-designed walking and cycling network with supporting facilities.	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation. ▪ Will aid connecting growing towns.	Essex Local Transport Plan ▪ Promote sustainable transport. ▪ Promotes connectivity to services and communities within Uttlesford by sustainable transport. ▪ Promotion of sustainable transport will reduction carbon create by transport.
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes sustainable transport and the potential to reduce journeys by private car. ▪ Promotes make locations more sustainable.		Essex Cycling Strategy ▪ Promotes cycling to reduce the environmental impact of travel. ▪ Promotion of cycling will aid connectivity and provide health benefits. ▪ Will improve the cycle network within Uttlesford and hence Esses. ▪ Promotes well designed cycling infrastructure.

	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling and states that they should have priority. ▪ Reduce the conflict with motor vehicles.		Transport Strategy for Saffron Walden ▪ Will aid promotion and the delivery of sustainable transport measures within the strategy.
Core Policy 13: Delivery of Transport Schemes within the South Uttlesford Area	NPPF ▪ Provides new and enhanced bus services which will promote bus us and alternative modes of transport to the private car. ▪ Promotes walking and cycling through the provision of new infrastructure and connectivity. ▪ Promotes alternative modes of transport through provision of EV car clubs, bike share and e-cargo bikes. ▪ Promotes a well-designed walking and cycling network with supporting facilities	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation. ▪ Will aid connecting growing towns.	Essex Local Transport Plan ▪ Promote sustainable transport. ▪ Promotes connectivity to services and communities within Uttlesford by sustainable transport. ▪ Promotion of sustainable transport will reduction carbon create by transport.
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes sustainable transport and the potential to reduce journeys by private car. ▪ Promotes make locations more sustainable		Essex Cycling Strategy ▪ Promotes cycling to reduce the environmental impact of travel. ▪ Promotion of cycling will aid connectivity and provide health benefits. ▪ Will improve the cycle network within Uttlesford and hence Esses. ▪ Promotes well designed cycling infrastructure.
	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling and states that they should have priority. ▪ Reduce the conflict with motor vehicles.		
	Bus Back Better ▪ Policy promotes bus use by incorporation of bus infrastructure and enhancing existing services.		

Core Policy 17: Delivery of Transport Infrastructure within the Stansted and Elsenham Area	NPPF ▪ Provides new and enhanced bus services which will promote bus us and alternative modes of transport to the private car. Improvements to bus stops and rail stations will improve the public transport and hence the sustainable transport offer. ▪ Promotes walking and cycling through the provision of new infrastructure and connectivity. ▪ Promotes alternative modes of transport through provision of EV car clubs, bike share and e-cargo bikes. ▪ Promotes a well-designed walking and cycling network with supporting facilities	Transport East Transport Strategy ▪ Promoting active travel will aid decarbonisation. ▪ Will aid connecting growing towns.	Essex Local Transport Plan ▪ Promote sustainable transport. ▪ Promotes connectivity to services and communities within Uttlesford by sustainable transport. ▪ Promotion of sustainable transport will reduction carbon create by transport.
	DfT Circular 01/22 – Strategic road network and the delivery of sustainable development ▪ Promotes sustainable transport and the potential to reduce journeys by private car. ▪ Promotes make locations more sustainable		Essex Cycling Strategy ▪ Promotes cycling to reduce the environmental impact of travel. ▪ Promotion of cycling will aid connectivity and provide health benefits. ▪ Will improve the cycle network within Uttlesford and hence Esses. ▪ Promotes well designed cycling infrastructure.
	Gear Change: A bold vision for cycling and walking ▪ Promotes walking and cycling and states that they should have priority. ▪ Reduce the conflict with motor vehicles.		
	Bus Back Better ▪ Policy promotes bus use by incorporation of bus infrastructure and enhancing existing services.		

2.3.7 The draft Uttlesford Local Plan transport policies are considered to align well with national, regional and local policies and strategies. The draft policies will enable the improvement of connectivity and sustainable transport modes and choices for proposed development allocations and sites.

2.4 What might good accessibility look like in Uttlesford?

2.4.1 Based upon previous research, ITP has identified that there are six broad themes around which good practice for sustainable mobility and mode shift in new and existing development can be framed:

- Placemaking and land use planning
- Walking and cycling infrastructure
- Public transport
- Parking and traffic management
- Behavioural change
- Governance, policy and funding

2.4.2 The remainder of this report focuses on the areas where development is proposed and the specific sites, it draws together the areas existing features and makes proposals on how sustainable transport can be maximised based on the policy guidance in this section and the specific themes (in the bullet points) above.

What does this mean for sustainable transport in Uttlesford?

For a rural district like Uttlesford, policy guidance and examples of best practice suggest the following common themes when improving sustainable transport:

- Opportunities to maximise sustainable transport differ between urban and rural areas, it is important these differences are taken into account.
- Local Walking and Cycling Plans (LCWIPs) should be undertaken and optimised to support the wider cycle and walking network with new developments supporting these plans.
- Developments where possible should limit impacts of car use by prioritising and encouraging walking, cycling and public transport.
- ‘Decide and provide’ and ‘vision and validate’ should be used rather than ‘predict and provide’ using robust evidence bases.

3 Transport networks

3.1.1 UDC's Transport Topic Paper considers the transport networks in more detail, however this section provides a summary of the key routes and infrastructure for all modes in the district as context for this sustainable transport paper.

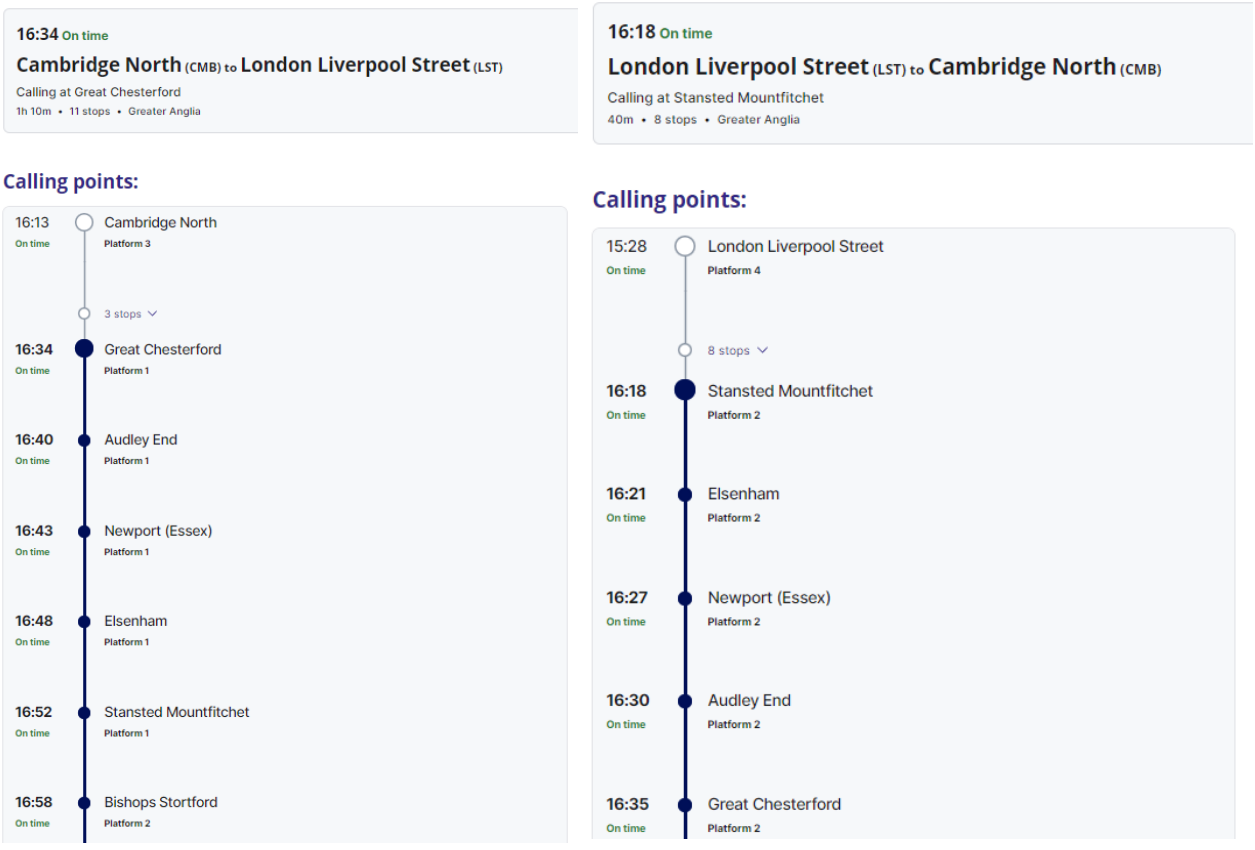
Highways

3.1.2 The M11 runs roughly north to south through Uttlesford between Great Chesterford (junction 9) and Hatfield Heath. This provides access from Uttlesford to Cambridge in the north and the M25 and London to the south. Junction 8 provides access to London Stansted Airport. The other National Highways operated strategic road is the A120 which runs west to east from Bishop's Stortford, Standon and the A10 in Hertfordshire to the A12 west of Colchester. London Stansted Airport, Takeley and Great Dunmow are all located close to the corridor.

Train

3.1.3 Uttlesford is served by the Great Anglia train route between London Liverpool Street, Cambridge and Cambridge North. There are stations in the district at Stansted Mountfitchet, Elsenham, Newport, Audley End (for Saffron Walden) and Great Chesterford. There are typically hourly southbound services to London and northbound services to Cambridge North from the stations in Uttlesford as shown in Figure 3-1. Stansted airport station can also be accessed through a change at Stansted Mountfitchet.

Figure 3-1 Typical weekday southbound and northbound routeing and journey times from stations in Uttlesford (source: National Rail, accessed 11/06/24)



3.1.4 Greater Anglia provide details on their website of the busiest services during the week to enable passengers to plan their journey, were possible to travel on trains with greater capacity. The data indicates whether the train is quiet, moderately busy, busy or crowded. Greater Anglia state that typically Monday and Fridays are quieter than Tuesday to Thursdays. The information is presented as trains before noon, between noon and 1800 hours and after 1800 hours.

3.1.5 The period is typically considered to be the busiest period due to passengers travelling to work. The train capacity data has been extracted for a range of journeys with Tuesday selected as a typical day. The train capacity data is contained within the table Figure 3-2. When a route has some capacity issues, those issues are presented as number out of the total for that period. Cells coloured green indicate the service is quiet, orange if the service is moderately busy and red if the service is busy.

Figure 3-2 Train service capacity data

Route	Before Noon			Noon to 1800 hours
Audley End – Stansted Airport	Quiet all services			Quiet all services
Audley End – Stansted Mountfitchet	Quiet all services			Quiet all services
Audley End – Liverpool Street, London	12 of 19	7 of 19	2 of 19	Quiet all services
Audley End – Elsenham	Quiet all services			Quiet all services
Stansted Airport – Audley End	No data			No data
Stansted Mountfitchet – Audley End	No data			No data
Liverpool Street, London – Audley End	No data			No data
Elsenham – Audey End	No data			No data
Stansted Airport – Liverpool Street, London	23 of 25	2 of 25	1 of 25	Quiet all services
Liverpool Street, London – Stansted Airport	No data			No Data
Great Chesterford – Stansted Mountfitchet	Quiet all services			Quiet all services
Stansted Mountfitchet – Great Chesterford	Quiet all services			Quiet all services

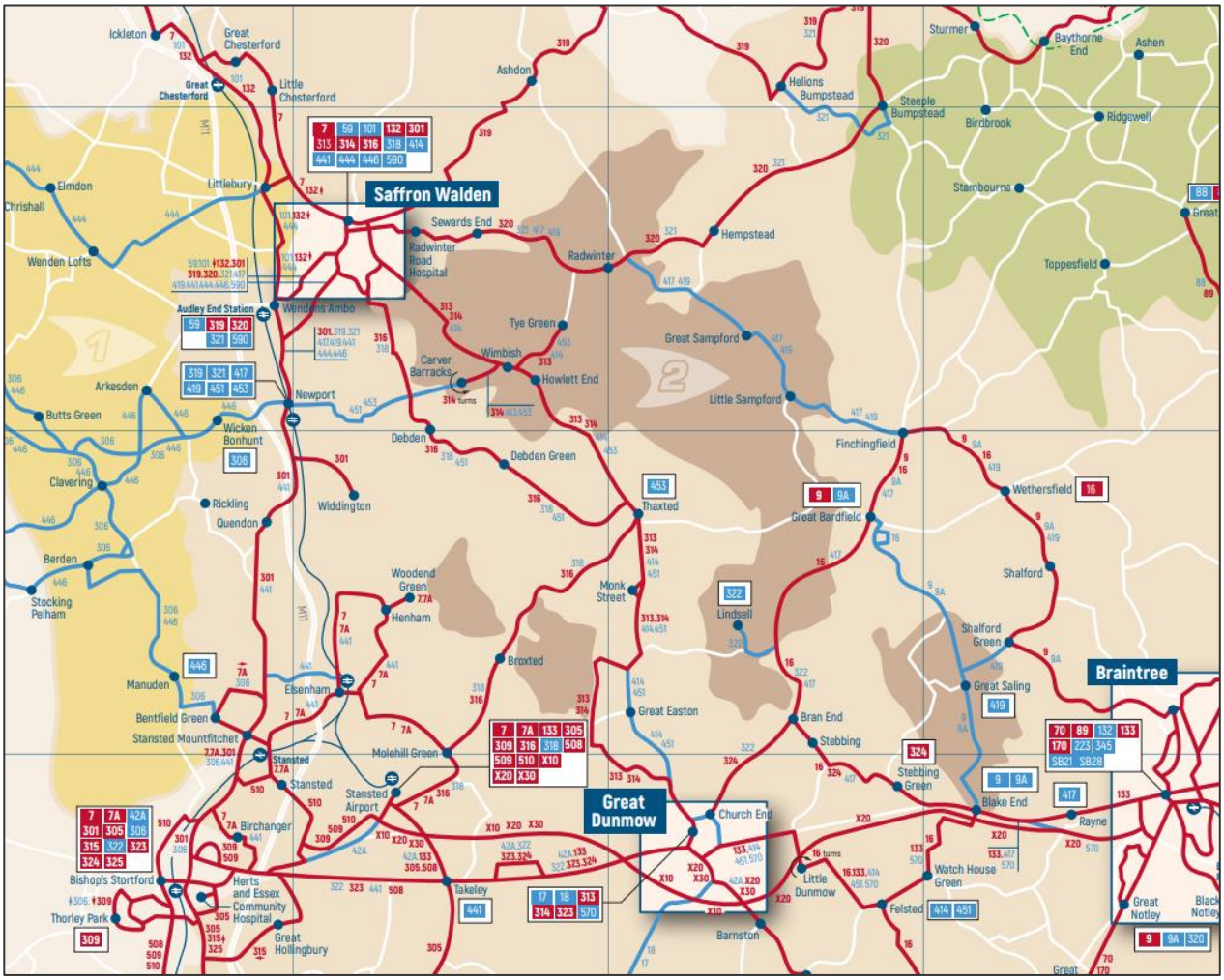
3.1.6 The table indicates that for services that have capacity data any capacity issues arise from Stansted Mountfitchet or at stations after Stansted Mountfitchet towards London.

Bus services

3.1.7 Bus routes in the district are shown in Figure 3-3. Specific routes and frequencies are described in the area profiles later in this chapter.

3.1.8 In addition, the DaRT 299 Demand Responsive Transport (DRT) operates in North and West Uttlesford. DRT is serviced by a number of minibus vehicles, typically accommodating between 8 and 16 passengers who need to pre-book their seat at least two hours in advance of their travel, which are flexible and can divert on and off route to collect and drop off passengers within their operating area. The DaRT service works by grouping bookings together to make it viable so it is not a taxi replacement. Unlike a larger bus, DaRT only needs three or four passengers to make a group booking. DaRT operates from 06.00-20.00 Mondays to Saturdays inclusive.

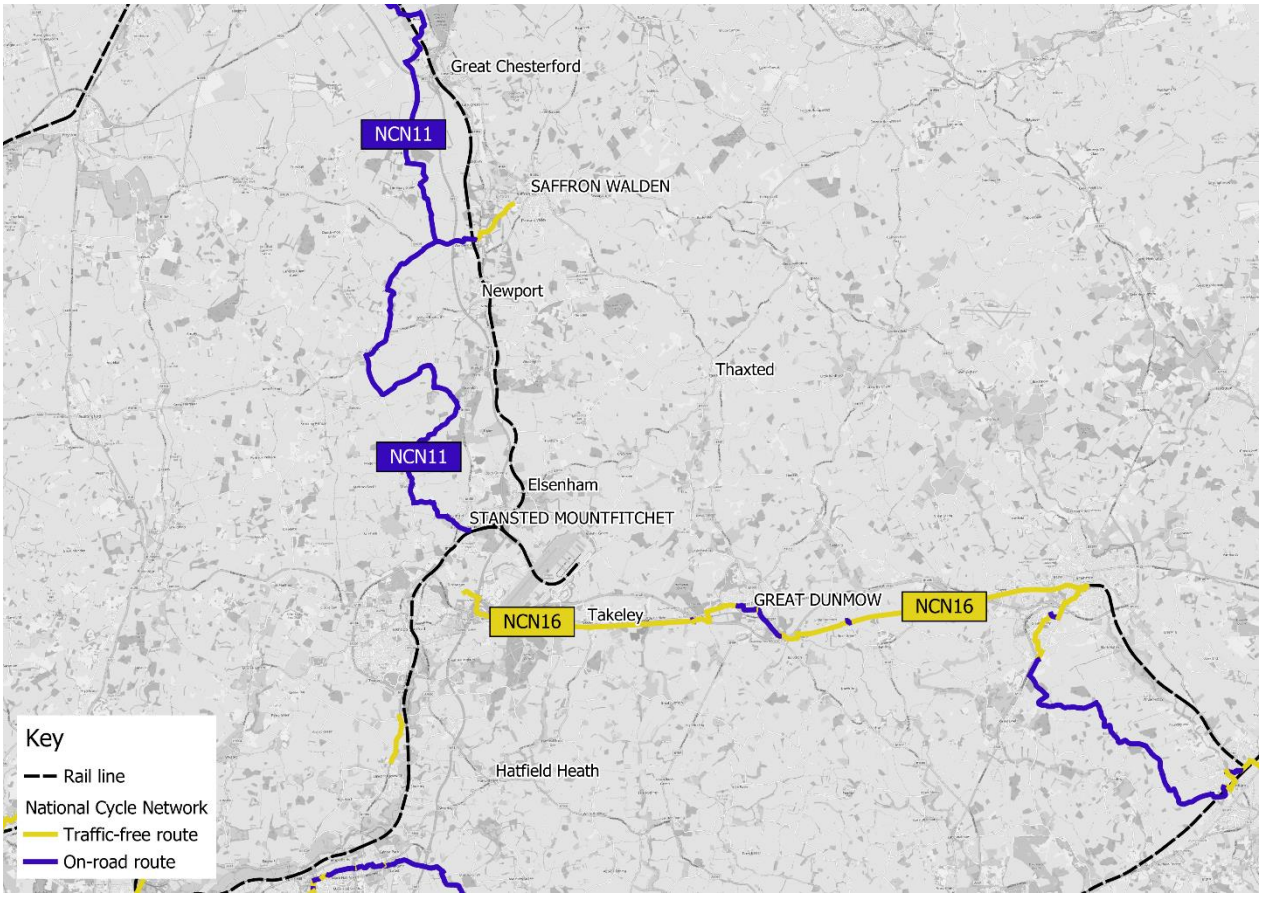
Figure 3-3 Bus routes serving Uttlesford (source: Public travel interactive map | Essex County Council (essexhighways.org), accessed 03/05/24)



National Cycle Network

3.1.9 National Cycle Network route 11 (Harlow in Essex with Wigginhall St Germans (south of King's Lynn) in Norfolk via Cambridge and Ely) and route 16 (connects Route 13 near Stansted via Great Dunmow, Braintree and Witham and continues to the intersection of Route 1 near Great Totham) run through Uttlesford as shown in Figure 3-4.

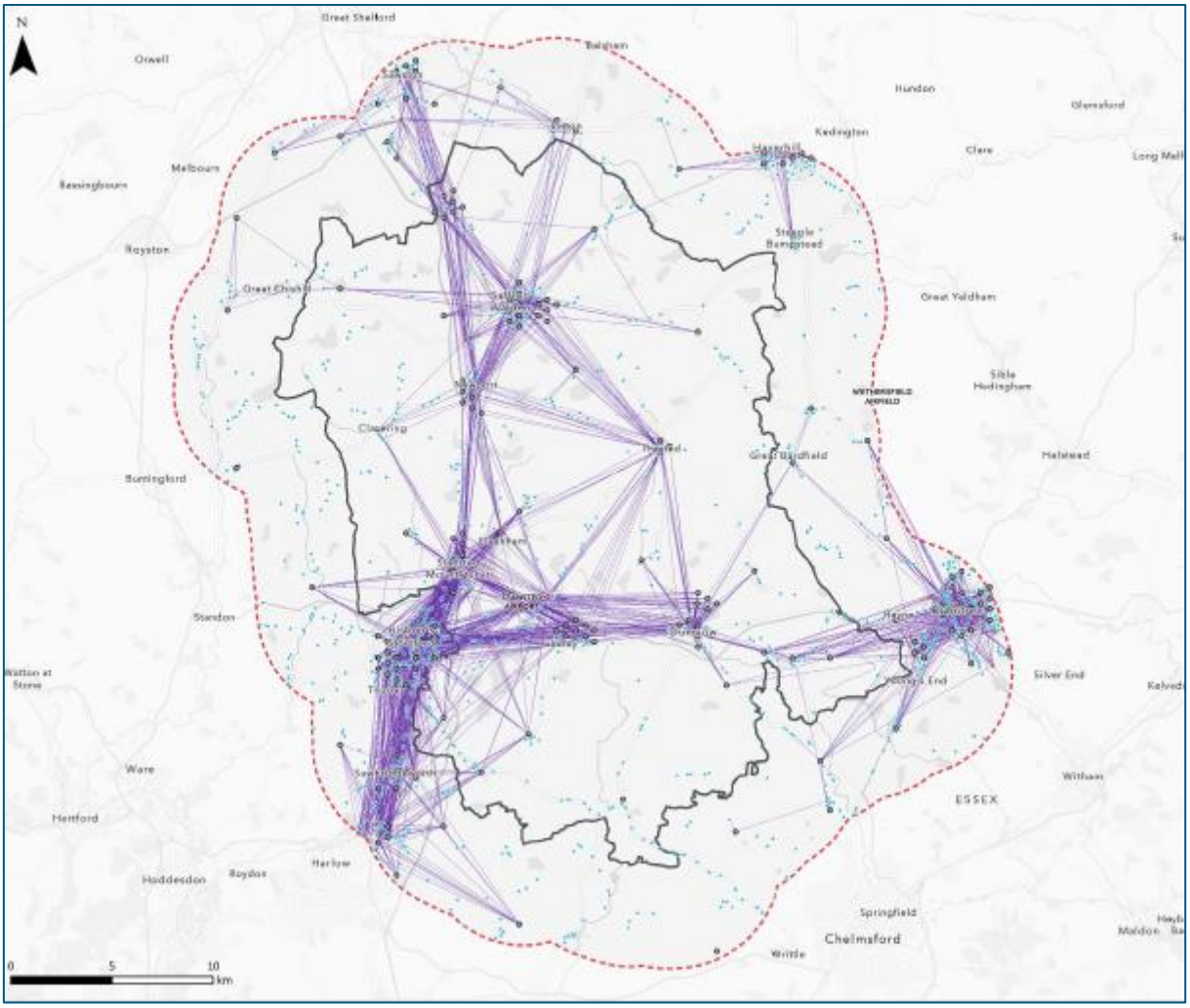
Figure 3-4 National Cycle Network in Uttlesford (source: Detailed maps & routes to explore across the UK | OS Maps accessed 03/05/24)



3.1.10 The Flitch Way, which forms part of NCN16, provides a connection between Bishop's Stortford and Braintree. Most of the route is traffic-free, excluding a small section where the route passes through Great Dunmow and cyclists are required to cycle on the carriageway which has high traffic flows. Interventions would therefore be required to ensure a continuous, safe shared route. A full review of the route was undertaken by Transport Initiatives in April 2023. This provides a detailed audit of the route and recommends improvements. Whilst much of the route is an unbound gravel surface, some sections are muddy, and there are also some pinch points which can present accessibility challenges. Some of the sections of this route fall within the Stansted Airport boundary are therefore under airport land ownership and would require the airport to deliver any proposed improvements.

3.1.11 For these reasons, and due to its strategic routing parallel to the A120 corridor, The Flitch Way serves as a potential key route to facilitate sustainable travel targets for employment and residential sites along this corridor.

Figure 3-5 Everyday cycle desire lines (Uttlesford LCWIP 2024)



3.1.12 There is a clear dense cluster of desire lines along the A120 corridor, connecting Great Dunmow, Takeley, Stansted Airport and Bishops Stortford/Stansted Mountfitchet, indicating that this corridor is likely to be an area of high demand for everyday cycling trips.

Public Rights of Way

3.1.13 The Public Rights of Way network provide opportunities for people to walk, cycle and ride horses on specific dedicated routes. The network provides opportunities for people to undertake trips to work, access facilities and services as well as undertake leisure trips. In more rural areas and on the edge of settlements the public rights of way network can form an important part of the recreational and active travel network. Where development is taking place on the edge of settlement it is important that public rights of way are protected and enhanced, including opportunities to enhance links to key services or between places. Developments can connect to Public Rights of Way to improve access options for people walking and cycling, as well as provide an opportunity to extend and enhance the network. ECC maintain the Definitive Map and the associated map modification orders for the Public Rights of Way Network across Essex. The map contains public footpaths, bridleways, byways and restricted byways within Uttlesford

3.2 Accessibility and travel patterns of Uttlesford's places

3.2.1 This section considers the accessibility and travel of each of the main settlements in the district. This provides:

- Settlement characteristics using the ONS custom area profiles4
- Walking and cycling accessibility to key services
- Access to bus and train
- Pipeline transport improvements
- Summary of sustainable transport constraints and opportunities

3.2.2 As part of the Local Plan review, classification of settlements within Uttlesford has been reviewed. This has produced a 'settlement hierarchy', ranking settlements based on their available and range of services and facilities. These types of facilities are:

- Education – Primary School, Secondary School, Sixth Form etc.
- Health – Doctors Surgery, Hospital, Dentist
- Community facilities – Library, Police Station, Community/Village Hall etc.
- Commercial – Restaurant, Hairdressers, Post Office, Supermarket, Petrol Station etc.
- Open space – Leisure centre, allotments etc.
- Transport and connectivity – Public car parks, railway station, taxi rank, bus service etc.
- Employment – key employment site

3.2.3 Based on the scores from this, five tiers of settlements were identified – Key Settlement, Local Rural Centre, Large Village, and Small Village, Open Countryside.

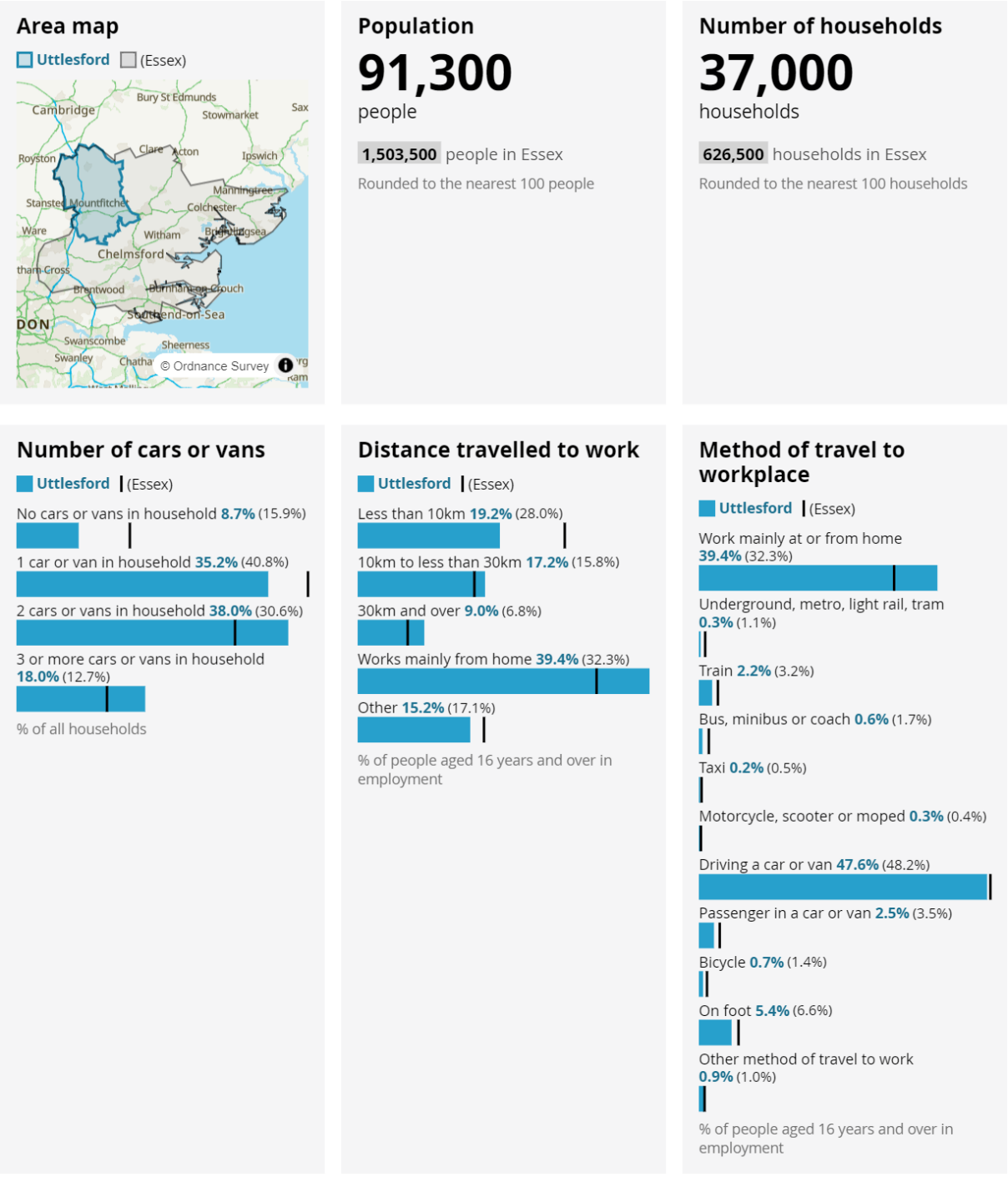
3.2.4 A higher score indicates a higher level of sustainable transport outcomes, with those containing a range of services and facilities. Settlements with a concentration of a range of services and facilities provides a stronger basis for sustainability as residents have access to a wider selection of services and facilities in one place, reducing their need to travel. As such, those falling into the 'Open Countryside' category are not considered suitable for any level of allocated development given the limited availability of services.

3.2.5 There are three settlements identified as 'Key Settlements' - Saffron Walden, Great Dunmow and Stansted Mountfitchet. These have a hierarchy score of over 200, signifying the highest range and quality or level of services and facilities. With each having at least one primary school, a secondary school, a bus services of at least an hourly frequency and a supermarket.

3.2.6 In terms of settlement characteristics, each of the key settlements have been compared using key census statistics from the 2021 Census. Figure 3-6 summarises the key information for the entire Uttlesford district when comparing to the wider Essex County. Car ownership is notably higher in Uttlesford than the Essex average, with no car ownership significantly lower in Essex. Distance travelled to work is slightly higher than the Essex average, but working from home is also higher. In terms of mode share, travel is broadly similar to the Essex average. However, use of public transport methods and active modes are slightly lower.

[4] *Build a custom area profile - Census 2021, ONS, accessed 24/05/24*

Figure 3-6 Uttlesford area profile (source: ONS, Census 2021, Census area boundary shown)



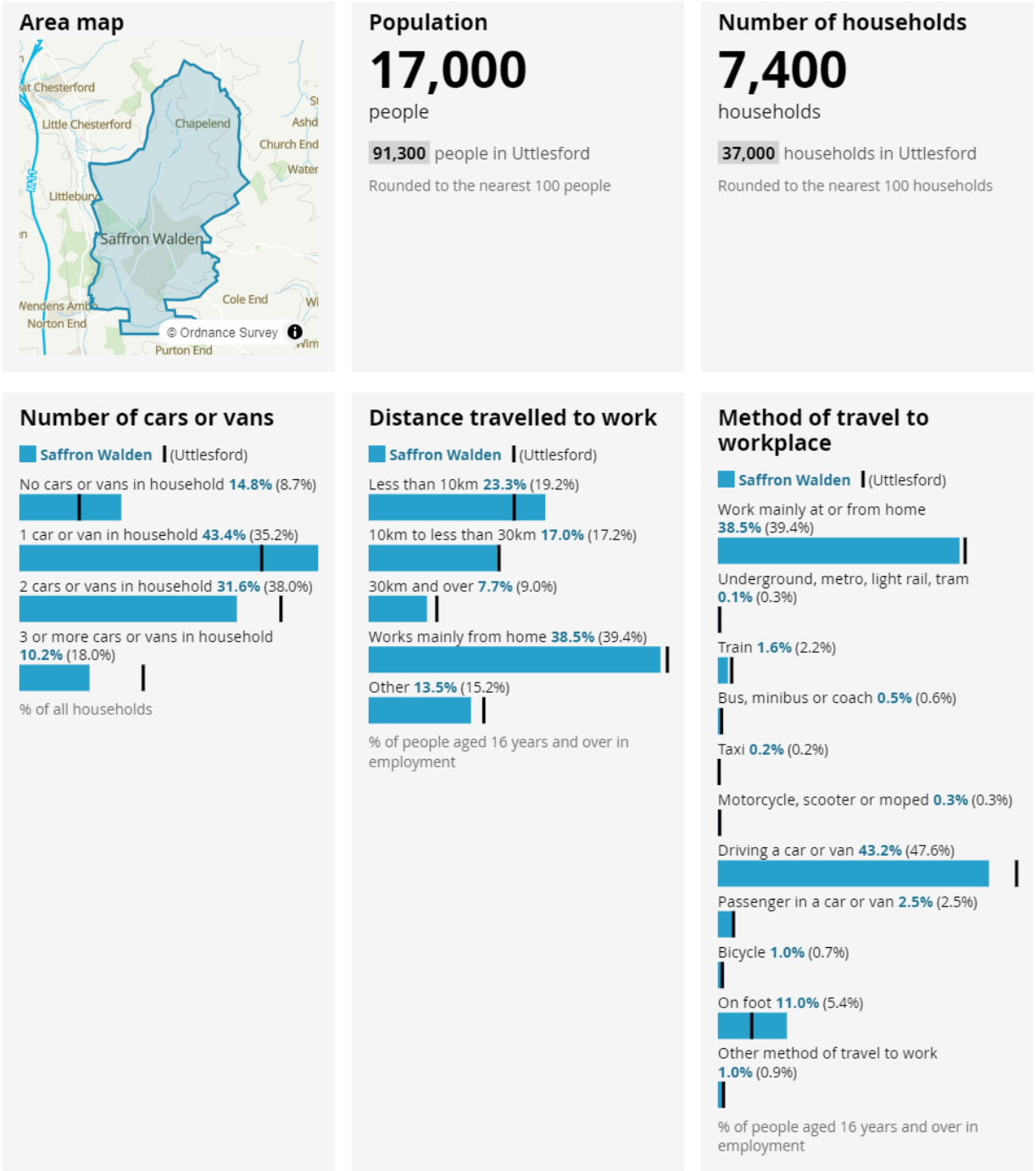
Saffron Walden

3.2.7 As the largest town in the district, Saffron Walden has the highest level of service and facilities. This includes a secondary school, primary schools, supermarkets alongside bus connections.

3.2.8 Figure 3-7 summarises key information about Saffron Walden including the population and number of households, key census statistics, and the current transport networks. Access to one car or van is higher than the Uttlesford average but lower for ownership of multiple vehicles.

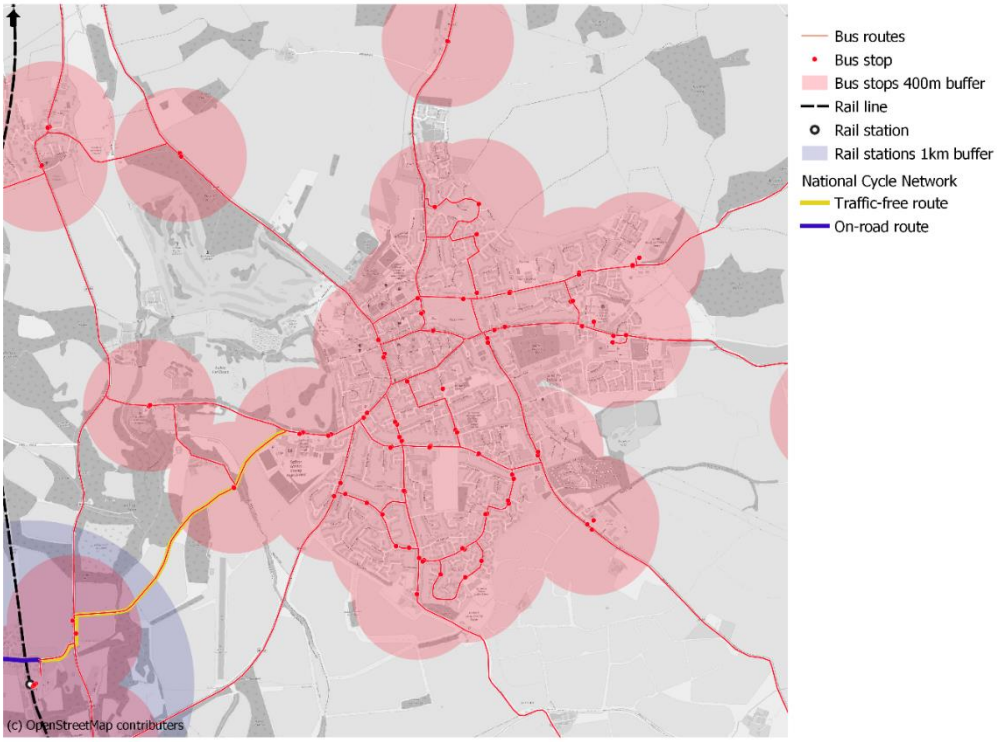
People travelled shorter distances than the Uttlesford average, although more people worked at home according to the last Census[5]. Driving to work by car is lower and walking is higher than the average. Both bus use and bicycle use are in line with the Uttlesford average but are overall much lower than the Essex average.

Figure 3-7 Saffron Walden area profile (source: ONS, Census 2021, Census area boundary show)



[5] *Caution required with the travel to work distance and location given this was during a Covid19 period where more people may have worked at home than in 'normal' conditions*

Saffron Walden sustainable transport situation



Cycling and walking

- Limited access to National Cycle Network (NCN) – and segregated route does not go as far west as Audley End station.
- Most roads, including tertiary and other residential roads have 30mph speed limits.
- Bike hire scheme with e-bikes and regular bikes for £1.50-£2.00 per 30 minutes.
- Residents of Saffron Walden can rent regular or electric bikes for up to 6 months at a subsidised rate, with free delivery included.
- Most places within the town are within walking distance of the town centre and key services.

Access to public transport – bus and train

- Good coverage of bus stops, and accessibility to them
- Bus services: 7, 34, 59, 132, 301, 313, 314, 316, 319, 320, 321, 590, F29. Providing direct services to: Cambridge, Haverhill, Great Chesterford, Newport, Thaxted, Stansted Mountfitchet, Bishop's Stortford, Great Dunmow.
- No train station – nearest is at Audley End, circa 3.5km SW of town centre, direct bus services available.

Pipeline transport improvements:

- The Saffron Walden neighbourhood plan (2021-2036) states a need for new shared routes and cycle storage and improved public transport connections.
- All new streets within the development limits of the parish must be designed to keep vehicle speeds at or below 20mph.
- The Saffron Walden Transport Strategy outlines an integrated approach to interventions which include: A shared mobility scheme with an EV car club, shared bike scheme, shared e-cargo bike; a mobility / transport hub and highway / junction improvements.

Constraints and opportunities:

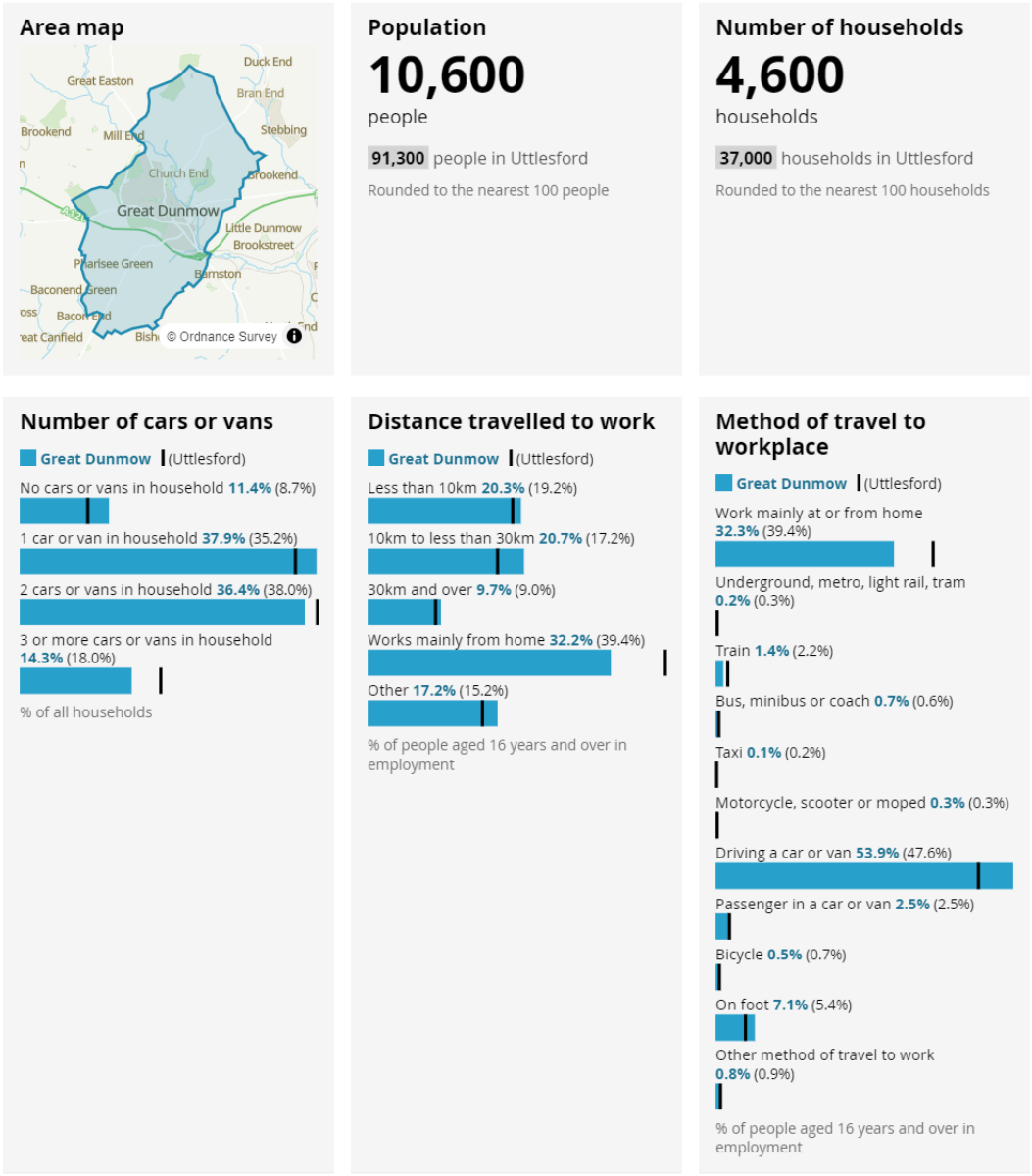
- No significant barriers such as rivers, motorways, or rail lines to impede internal movements.
- Historic centre with one-way streets which aren't wide enough for contraflow cycle lanes.
- Currently, the town exhibits high car dependency, which therefore translates to significant potential for a drastic mode shift.
- However, Saffron Walden is the 'best' area in Uttlesford with the highest levels of walking and cycling.

Great Dunmow

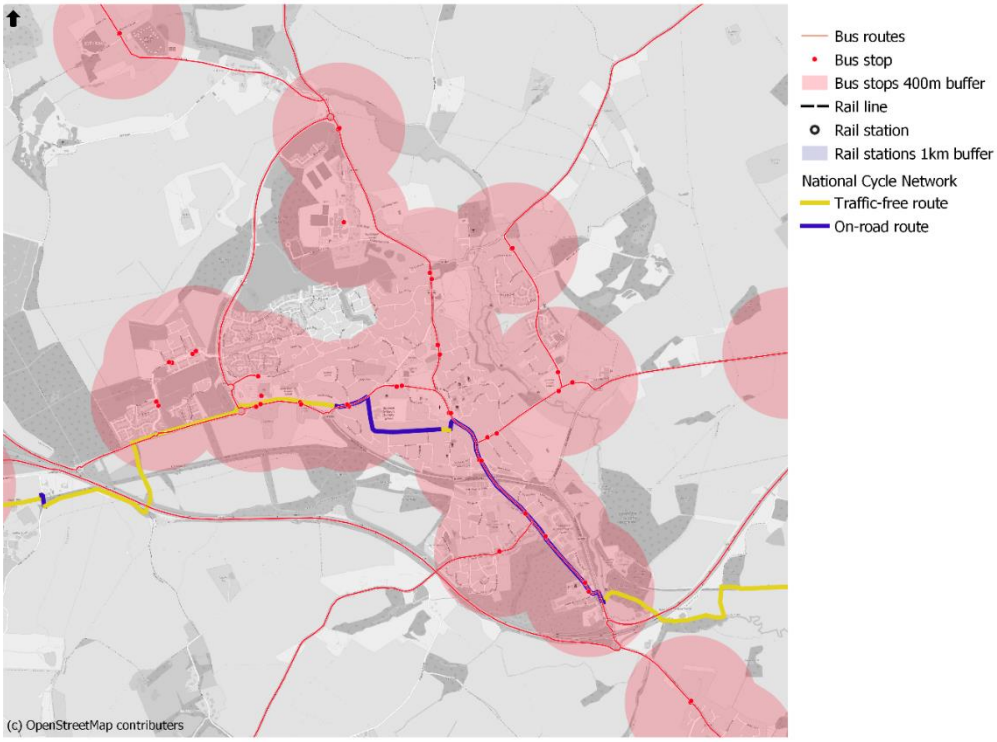
3.2.9 Great Dunmow is the second largest settlement in Uttlesford and is classified as a 'Key Settlement' according to the settlement hierarchy. It acts as the service centre focus for the south-eastern area of the district with a range of retail and service facilities including strategic bus services given its location close to the A120.

3.2.10 Figure 3-8 summarises the population and number of households in Great Dunmow, alongside the current transport network. Access to a car or van is lower than the Uttlesford average with more residents with no car or 1 car. Fewer people worked from home than the Uttlesford average with those travelling to work commuting shorter distances. Driving to work by car is higher than the Uttlesford average, with all other modes broadly in line with the Uttlesford average.

Figure 3-8 Great Dunmow area profile (source: ONS, Census 2021, Census area boundary show)



Great Dunmow sustainable transport situation



Cycling and walking

- NCN 16 runs east to west through Great Dunmow and connects Stansted and Braintree. There is a dominant movement between Great Dunmow and Stansted Airport
- When looking at Census data, ~2% people originating in Great Dunmow cycle to work.
- With good access to the NCN, and The Flitch Way, it is possible to cycle to Stansted Airport via a mostly segregated route. The Flitch Way is a 15-mile, flat, traffic-free walking and cycling route on a former railway from Braintree to Bishop's Stortford.
- Travel to Stansted Airport is significant as the largest employer in Uttlesford.

Access to public transport – bus and train

- Bus routes through Great Dunmow, and along the B1256 and A120 are classed as Low Accessibility.
- Bus services: 17, 18, 42A, 133, 313, 314, 322, 323, 324, 414, 451, 570, X20, X30. Providing direct services to: Braintree, Chelmsford, Stansted Airport, Southend, Saffron Walden, Newport, Bishop's Stortford, and Dunmow.
- No train station – nearest is at Stansted Airport, circa 7.2km West of town centre, direct bus services available

Pipeline transport improvements:

- A range of public transport service enhancement options have been devised, targeted at providing convenient public transport links for new development on the A120 corridor.
- New services will connect with existing services which will also improve the viability of these services. Mobility Hubs are planned to further benefit both new and existing services.

Constraints and opportunities:

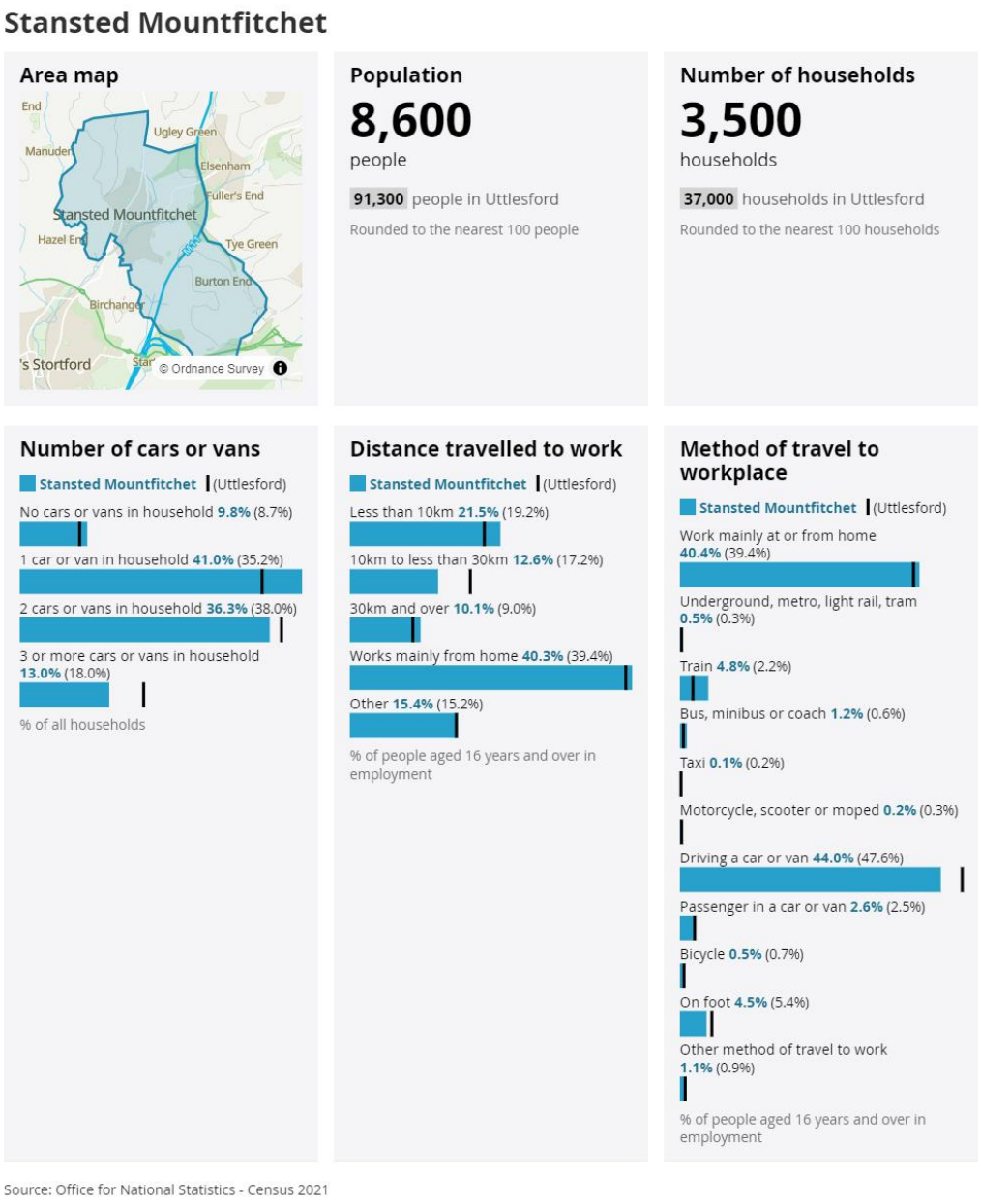
- A low cycling mode share alongside a low bus (0.2%) and train (1%) mode share represents an opportunity to improve cycling and public transport infrastructure.
- The River Chelmer to the East and the A120 to the South represent instances of severance for Great Dunmow.
- Great Dunmow is a compact town, walking and cycling to services may be quicker/more attractive than driving and parking

Stansted Mountfitchet

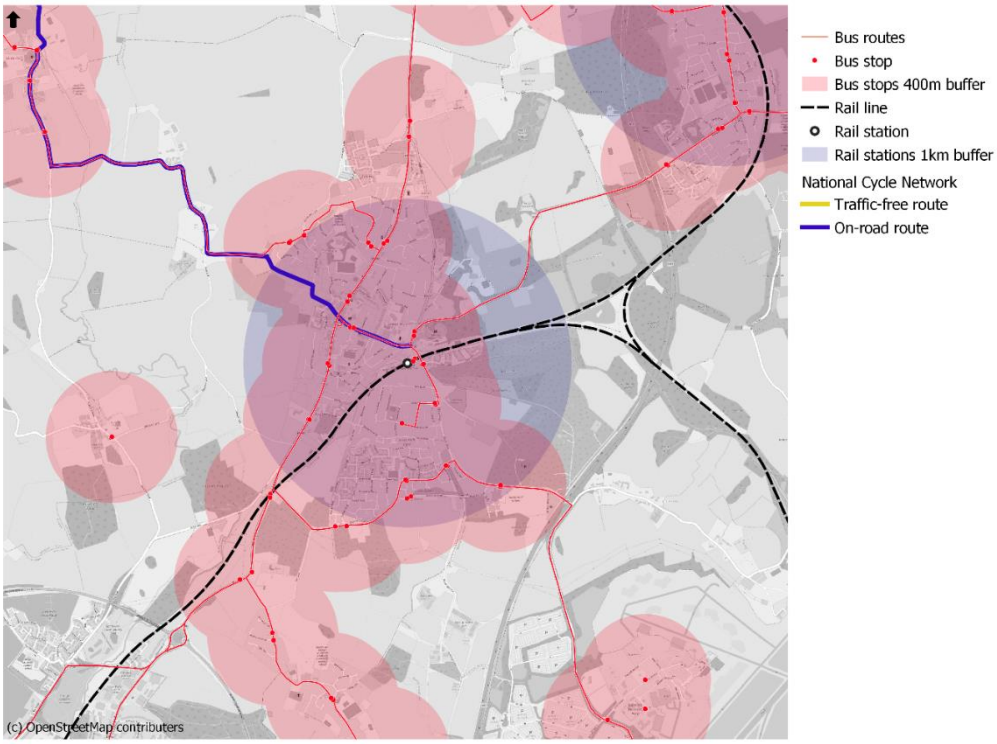
3.2.11 Stansted Mountfitchet is the third largest settlement in Uttlesford and is classified as a 'Key Settlement' according to the settlement hierarchy. It has a range of services and retail facilities including strong rail and bus connections.

3.2.12 Figure 3-9 shows the population and number of households in Stansted Mountfitchet, which is located in the west of the district near to the M11 junction 8. Access to a car or van is in-line with the Uttlesford average with slightly more people owning one car. Distances travelled to work is similar to the Uttlesford average, with slightly more shorter journeys less than 10km taking place. Driving to work by car is lower than the Uttlesford average, whilst travel by train is notably higher. Other public transport and active mode use are slightly lower than average.

Figure 3-9 Stansted Mountfitchet area profile (source: ONS, Census 2021, Census area boundary show)



Stansted Mountfitchet sustainable transport situation



Cycling and walking

- The majority of roads, including most tertiary and other residential roads have at least 30mph speed limits.
- A 92-mile route, NCN 11 runs north from Stansted Mountfitchet and continues through Cambridge, Ely before finishing in King's Lynn.
- Stansted Mountfitchet links to NCN16 but lacks safe routes to the airport.
- There is an existing shared use footway/cycleway to the north of Stansted Mountfitchet. This shared path is on the B1383 Cambridge Road and is ~200m long.

Access to public transport – bus and train

- Bus services: 7, 7A, 301, 306, 441, and 510. Providing direct services to: Harlow, Stansted Airport, Saffron Walden, Bishop's Stortford and Takeley.
- Stansted Mountfitchet has a central rail station with regular journeys to: London Liverpool Street, Cambridge, and Stansted Airport.

Pipeline transport improvements:

- Improvements to active travel infrastructure from Stansted Mountfitchet to Stansted Airport.
- Additional infrastructure to minimise vehicle impact in Stansted Mountfitchet could require a new link to B1383.

Constraints and opportunities:

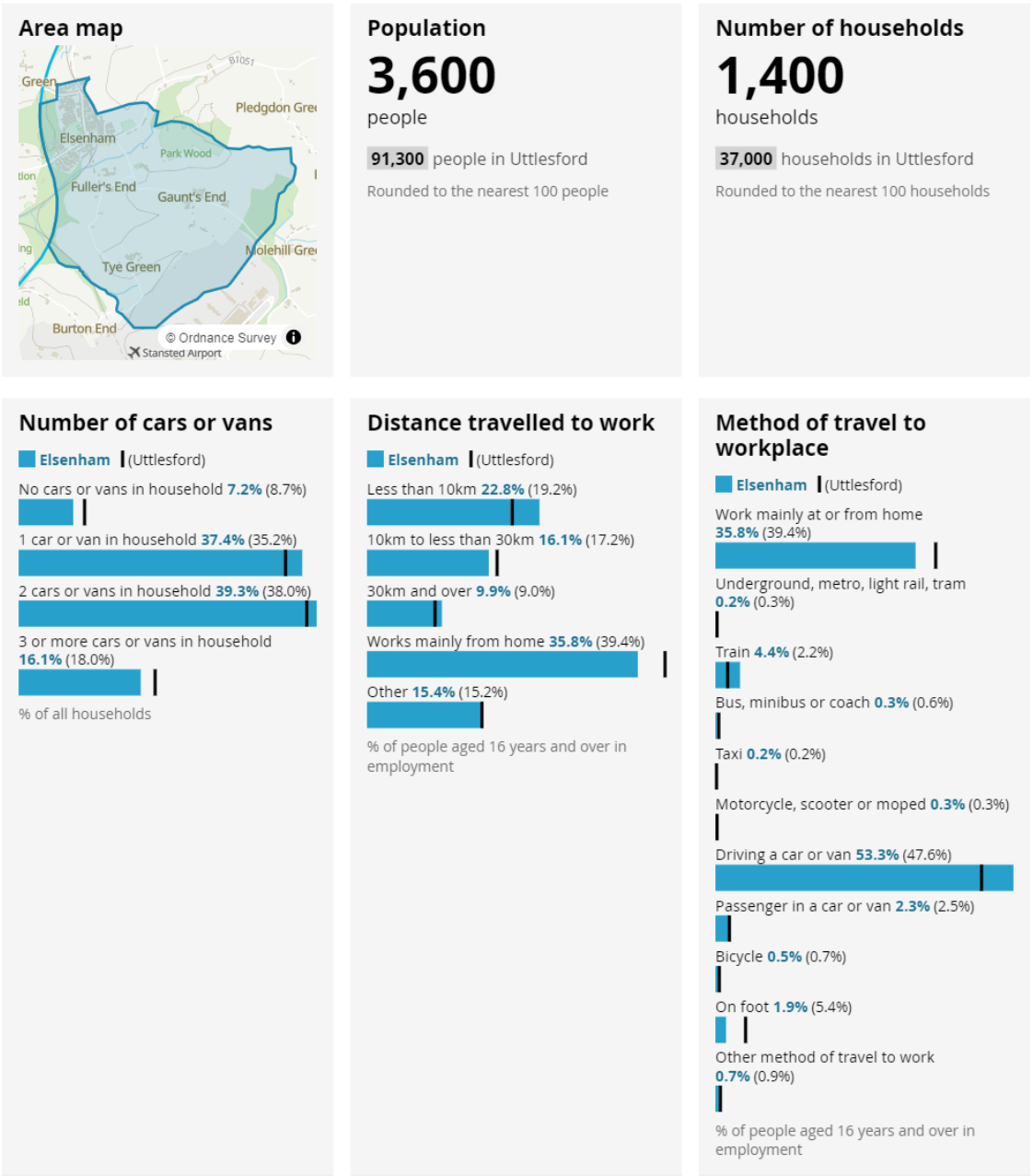
- Severance of M11 and A120 Bishop's Stortford bypass and severance of the railway line which separates the north and south of the town. There are just 3 crossing points.
- The low cycling mode share for commuting in Stansted Mountfitchet, with most areas north of the rail station having less than 1% of people cycling to work, represents an opportunity to improve active travel infrastructure.
- Rail station ensures the town is well-connected.

Elsenham

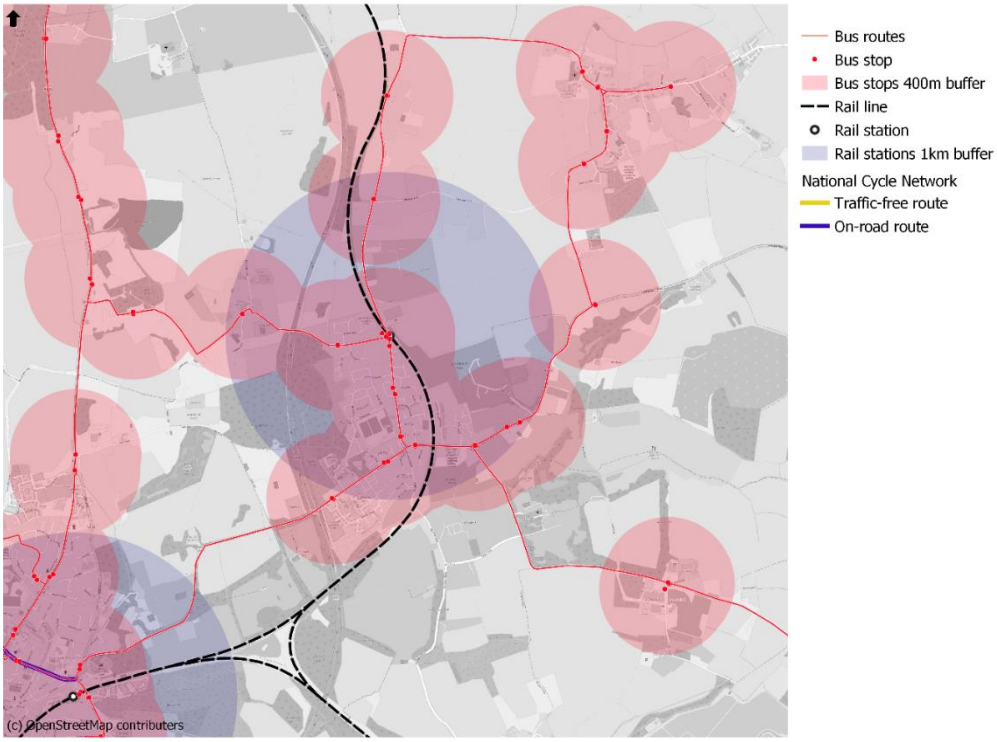
3.2.13 Elsenham is one of the six settlements classified as 'Local Rural Centres' by the settlement hierarchy. Located in the western part of Uttlesford, Elsenham has a doctor's surgery, primary schools and a railway station.

3.2.14 Figure 3-10 shows the population and number of households in Elsenham alongside the current transport network. Access to a car or van is in-line with the Uttlesford average, with slightly fewer households with 3 or more cars. Working from home in Elsenham is lower than the average In terms of travel to work, driving to work by car is higher than the average. Walking, cycling and bus travel to work is notably lower but train is higher than the average.

Figure 3-10 Elsenham area profile (source: ONS, Census 2021, Census area boundary show)



Elsenham sustainable transport situation



Cycling and walking

- There are currently no safe cycling connections between Elsenham and Stansted Mountfitchet.
- New Road, the road towards Elsenham rail station has a footway on just one side of the carriageway.
- Elsenham is not served by any nearby National Cycle Network routes.

Access to public transport – bus and train

- Elsenham is served by a sparse, and infrequent bus network
- Bus services: 7, 7A, and 441. Providing direct services to: Stansted Airport, Saffron Walden, Bishop's Stortford and Takeley.
- However, Elsenham has a rail station which provides frequent links to: Cambridge and London Liverpool Street. However, platform access is via a level crossing on Old Mead Road which is not ideal.

Pipeline transport improvements:

- HCC and ECC plan to upgrade bus stop facilities, improve walking and cycling provision at key junctions, improve access between sustainable travel modes at key interchange locations, enable the improved provision of electric vehicle charging points at key locations.

Constraints and opportunities:

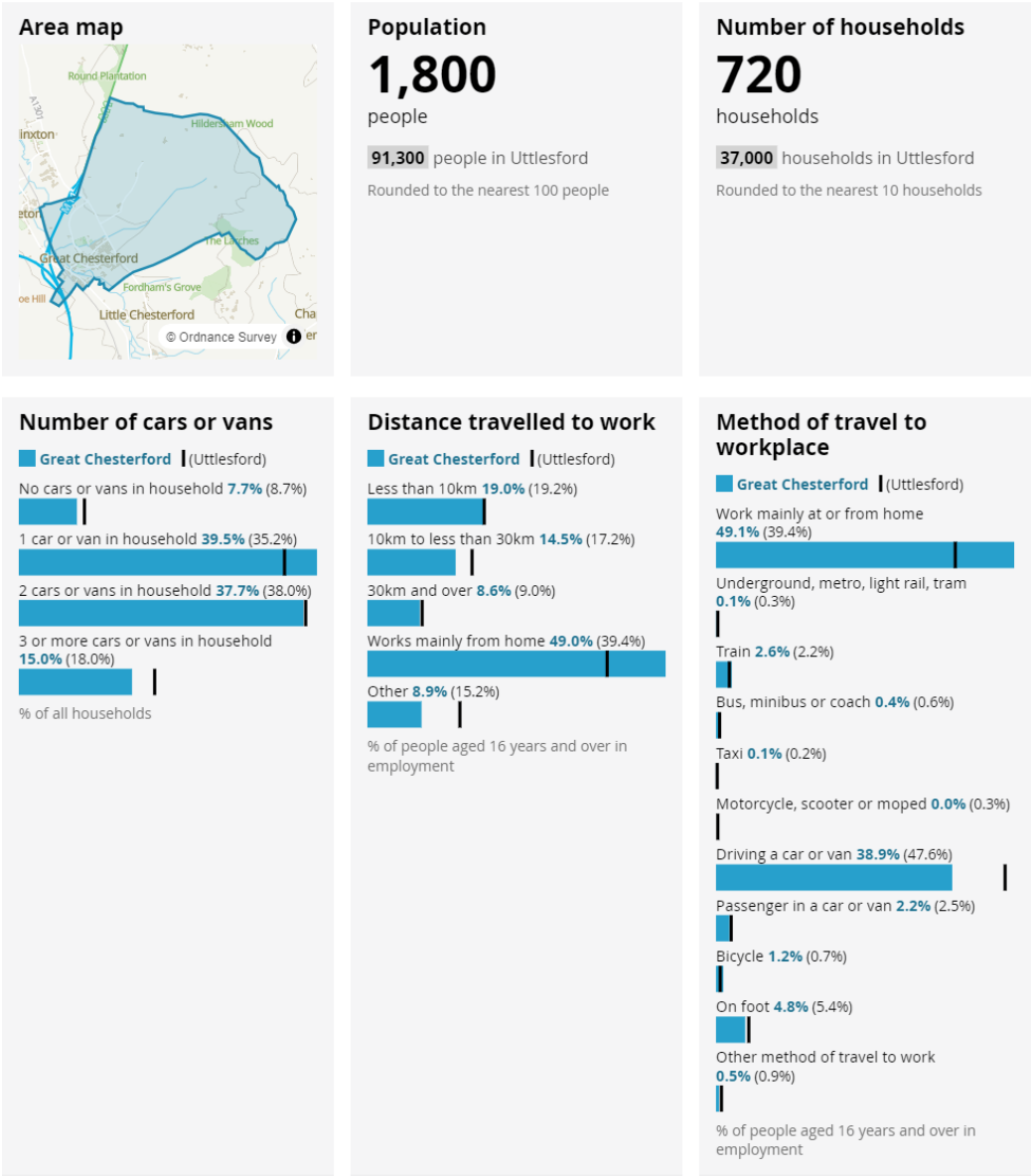
- Severance of M11 to the west and severance of railway line to the east.
- New Road is unlikely to be wide enough for contraflow cycle lanes.
- There is major scope to increase the mode share of active travel modes.
- Under 10% of people commute via train, foot, or bike. There is clearly opportunity to improve active travel infrastructure to the rail station.

Great Chesterford

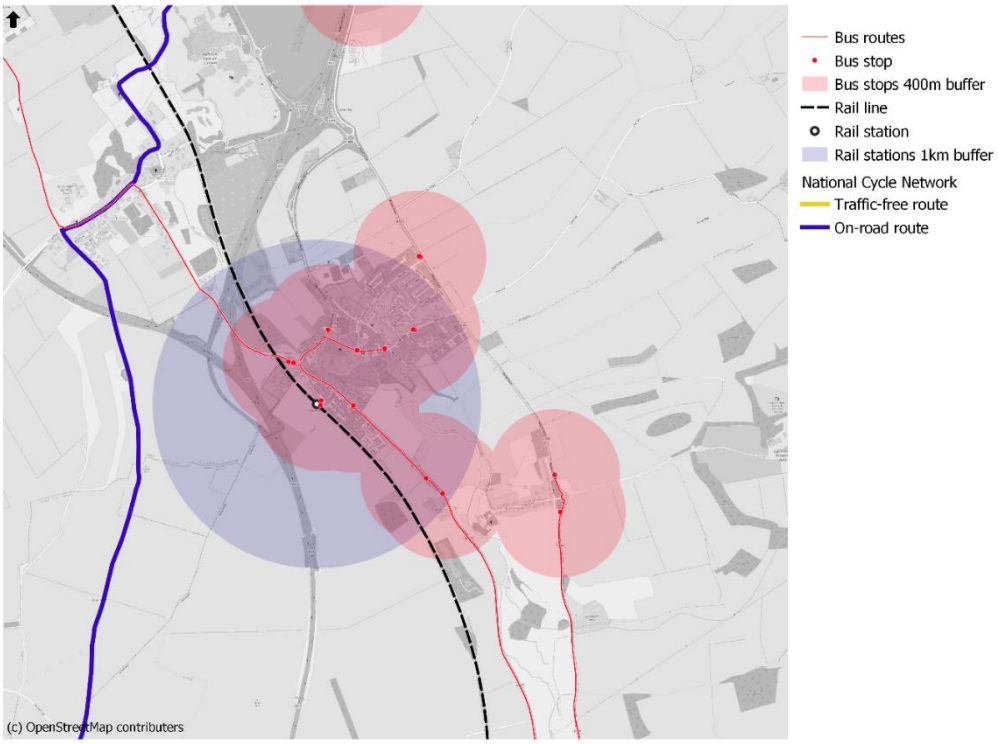
3.2.15 Great Chesterford is one of the six settlements classified as 'Local Rural Centres' by the settlement hierarchy. Located in the north of the district near to the M11 junction 9, Great Chesterford has an hourly bus service, a railway station and a number of services including a primary school. It should be noted that there are no residential allocations proposed for this area in the Local Plan.

3.2.16 Figure 3-11 shows the population and number of households in Great Chesterford alongside the current transport network. Access to a car or van is similar to the Uttlesford average, however with a higher number of 1 car or van households. Working at home is much higher than the Uttlesford average. Driving to work by train, car, walking, cycling and bus travel to work are all lower than the average due to the high proportion of people who work from home.

Figure 3-11 Great Chesterford area profile (source: ONS, Census 2021, Census area boundary show)



Great Chesterford sustainable transport situation



Cycling and walking

- The proximity to Cambridgeshire, where many work, makes cycling more attractive than other areas of Uttlesford with appropriate infrastructure.
- Lack of footways and dominance of parked cars on street as there is no official station car park, near the station hinder pedestrian access.
- The access road to the station is poorly maintained.

Access to public transport – bus and train

- Great Chesterford is served by a sparse, and infrequent bus network.
- Bus services: 7, 101, and 132. Providing direct services to: Saffron Walden, Cambridge, Whittlesford.
- However, Great Chesterford has a rail station which provides frequent links to: Cambridge and London Liverpool Street.

Pipeline transport improvements:

- Two separate routes between Great Chesterford and Saffron Walden have been explored.
- Reallocation of road space, and due to high traffic volumes, footway widening and conversion to shared used. Scheme design is currently being undertaken by Essex Highways.
- Improved access to The Great Chesterford Science Park is being explored.

Constraints and opportunities:

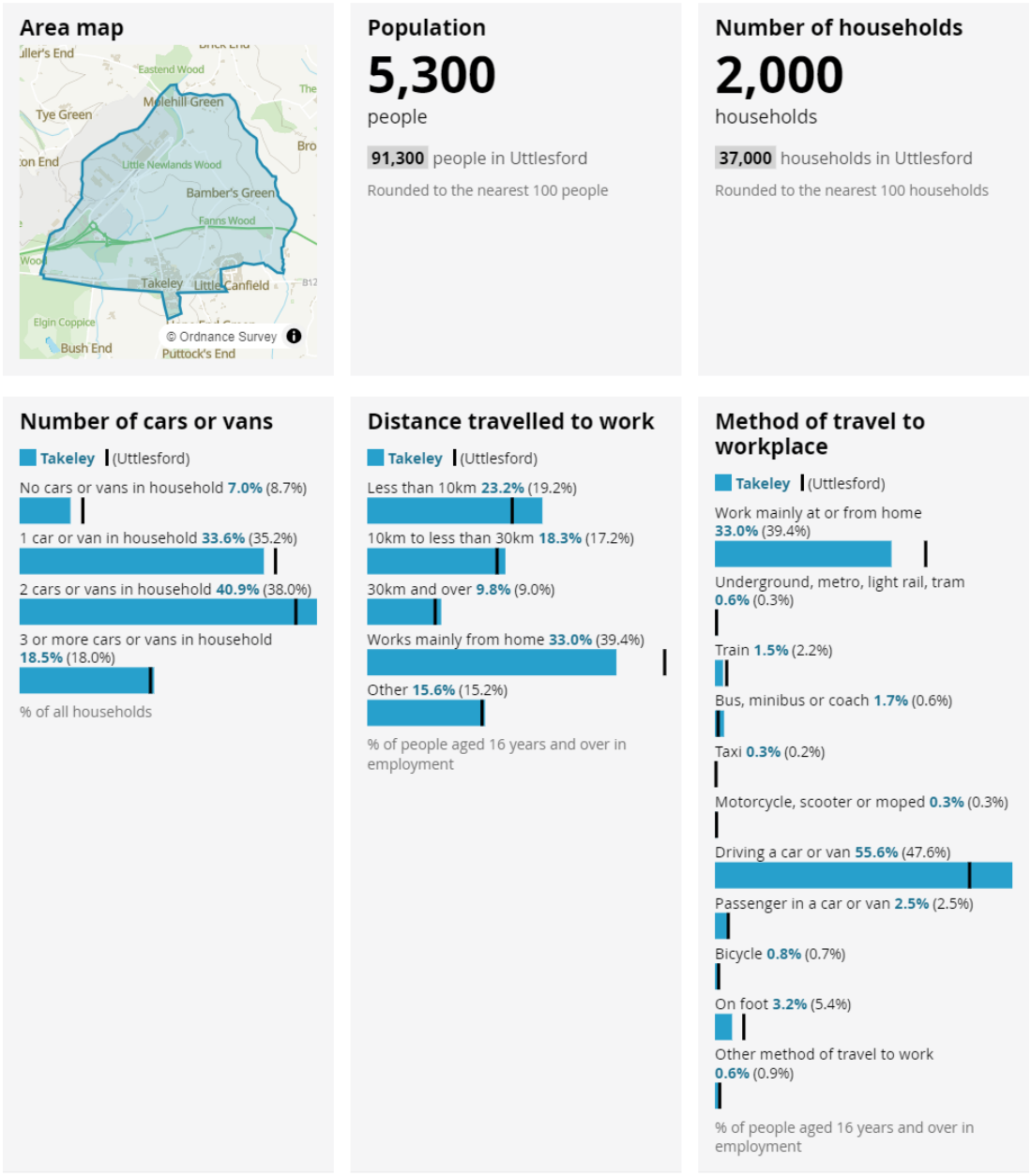
- Severance of the River Cam separates the town and the station which sits west of the river.
- Severance of the M11 to the west of the River Cam, and also north of the town.
- The B183 is a busy road, and the only route from east of the river to the rail station. There are opportunities for traffic calming measures.
- Just 1.2% of the population cycle to work. Saffron Walden, the closest town, is 6 miles away, a feasible cycling distance with appropriate infrastructure.

Takeley

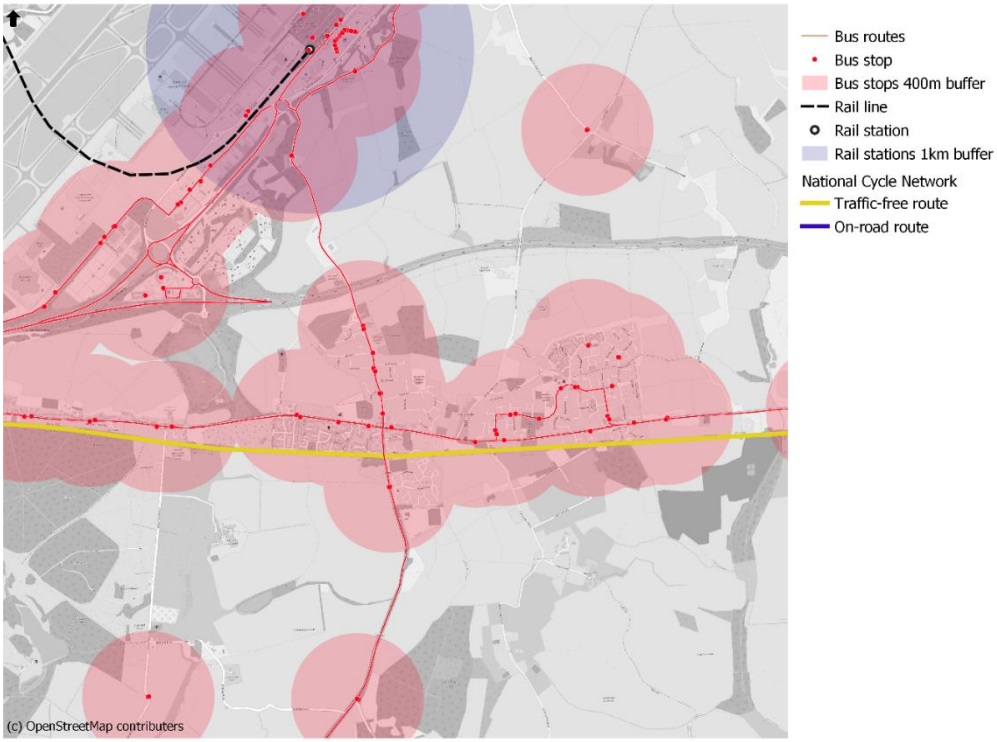
3.2.17 Takeley is one of the six settlements classified as 'Local Rural Centres' by the settlement hierarchy. Located south of Stansted Airport, Takeley is currently served by several daily bus services with a primary school and a number of retail facilities.

3.2.18 Figure 3-12 shows the population and number of households in Takeley. Access to multiple cars or vans is slightly higher than the Uttlesford average, with single car and no car households are lower. More people travelled under 10km to work compared to the Uttlesford average while working from home was lower. Driving to work is higher than the average, however, walking, cycling and train travel to work are all lower than the Uttlesford average, whilst bus travel is notably higher.

Figure 3-12 Takeley area profile (source: ONS, Census 2021, Census area boundary show)



Takeley sustainable transport situation



Cycling and walking

- The Flitch Way runs east to west, south of Takeley. It is a 15-mile, flat, traffic-free walking and cycling route on a former railway from Braintree to Bishop's Stortford. This route forms part of the 43-mile NCN Route 16.
- Takeley also benefits from NCN Route 50 which runs south to north through the centre of the town.
- There is a signed shared footpath/cycleway along Roding Drive, Fleming Road, Bennet Canfield, Honey Road, Stokes Road, and Burgattes Road.
- There is a shared use footway conversion along Dunmow Road from Roding Drive to just short of the junction with Parsonage Road.

Access to public transport – bus and train

- Good coverage of bus stops, and accessibility to them
- Bus services: 7, 7A, 42A, 133, 305, 316, 218, 322, 323, 324, 441, and 508. Providing direct services to: Braintree, Bishop's Stortford, Stanstead Airport, Chelmsford, Saffron Walden, Harlow.
- No train station – nearest is at Stansted Airport, circa 2.5km West of town centre. Direct bus services are available.

Pipeline transport improvements:

- Mobility hubs are being considered along the A120 to support sustainable movement along the corridor.
- Potential to implement a segregated cycle link along Parsonage Road, due to 85th percentile traffic speeds 44.8mph.

Constraints and opportunities:

- Potential to provide access to the multi modal transport hub at Stansted Airport.
- The current road network in Takeley town centre is inefficient, leading to frequent traffic.
- Stansted Airport is the largest employment site in the district so there is an opportunity to access employment by sustainable means.
- No major severance. Minor A120 severance.

3.3 Conclusions on existing sustainable transport in Uttlesford

3.3.1 Whilst some caution is required with Census 2021 data, people travel further than the England average from places across the district. Usual places of work of residents show a large proportion of self-containment residents' work within the district (42%), with 33% working in neighbouring authorities and over 16% in London. There is more working from home than the England average.

3.3.2 There are high levels of multiple car ownership households and fewer households have no access to car. Use of the train to work is higher than the national average, particularly in the south of district, although it is lower than elsewhere in Essex.

3.3.3 Bus, motorcycle, and bicycle use within Uttlesford is low. Walking within the district is approximately equivalent to both the county and England average, with this being higher in the market towns and lower within rural areas.

3.3.4 Table 3.1 summarises the existing sustainable transport provision in the main settlements in Uttlesford. Public Transport provision and active travel provision have been colour coded with the below colour scheme based on their quality (relative to Uttlesford).

Quality of provision
Poor
Average
Good

Table 3.1 Summary of existing sustainable transport provision in Uttlesford's places

Place	Public transport (bus and train)	Cycling and walking	Constraints	Opportunities
Saffron Walden	▪ Good coverage of bus stops, and accessibility to them ▪ Nearest train station is at Audley End, circa 3.5km SW of Saffron Walden	▪ Limited NCN access ▪ Consistent 30mph speed limits. ▪ Bike hire schemes and subsidised bike rental schemes. ▪ Most key services are within the town are within walking distance.	▪ No significant barriers such as rivers, motorways, or rail lines to impede internal movements. ▪ Historic centre with one-way streets which aren't wide enough for contraflow cycle lanes.	▪ High car dependency, and therefore significant potential for a mode shift.
Great Dunmow	▪ Bus routes are classed as Low Accessibility. ▪ Nearest train station is at Stansted Airport, circa 7.2km West of town centre	▪ Great access to NCN. ▪ Possible to cycle to Stansted Airport via a mostly segregated route. ▪ Access to The Flitch Way.	▪ River Chelmer and the A120 represent instances of severance.	▪ A compact town where walking and cycling to services may be more attractive than driving. ▪ Transport to Stansted Airport, as the largest employer in Uttlesford.
Stansted Mountfitchet	▪ Central rail station with regular journeys to key destinations. ▪ Adequate bus network.	▪ Stansted Mountfitchet links to NCN16 but lacks safe routes to the airport. ▪ A 92-mile route, NCN 11 runs north from Stansted Mountfitchet.	▪ Severance from M11 and A120. There are just 3 crossing points.	▪ B1383 Stansted Mountfitchet to Bishop Stortford active travel could be improved. ▪ Rail station ensures the town is well-connected.
Elsenham	▪ Sparse, and infrequent bus network. ▪ Has a rail station which provides frequent links to key destinations.	▪ New Road has a footway on just one side of the carriageway. ▪ No safe cycling connections between Elsenham and Stansted Mountfitchet and not served by NCN.	▪ Severance of M11 and rail line. ▪ New Road is unlikely to be wide enough for contraflow cycle lanes.	▪ Major scope to increase the mode share of active travel modes. ▪ Opportunity to upgrade bus stop facilities and improve walking and cycling provision at key junctions.
Great Chesterford	▪ Served by a sparse, and infrequent bus network. ▪ Great Chesterford has a rail station which provides frequent links to: Cambridge and London Liverpool Street.	▪ The proximity to Cambridgeshire, where many work, makes cycling more attractive with the right infrastructure. ▪ The access road to the station is poorly maintained. ▪ Lack of footways and dominance of parked cars on street.	▪ Severance of the River Cam and M11. ▪ Isolated location.	▪ Just 1.2% of the population cycle to work. Saffron Walden, the closest town, is 6 miles away, a feasible cycling distance with appropriate infrastructure. ▪ Opportunities for traffic calming measures on the B183.
Takeley	▪ Good coverage of bus stops, and accessibility to them. ▪ No train station – nearest is at Stansted Airport. Direct bus services are available.	▪ Great access to NCN through the town. ▪ Signed shared footpath/cycleway	▪ The current road network in Takeley town centre is inefficient, leading to frequent traffic. ▪ Minor A120 severance.	▪ Potential to provide access to the multi modal transport hub at Stansted Airport. ▪ Stansted Airport is the largest employment site in the district so there is an opportunity to access employment by sustainable means.

3.3.5 The review of sustainable transport indicates that Great Dunmow and Takeley are rated good for walking and cycling and Stansted Mountfitchet good for public transport. Great Dunmow and was rated poor for public transport due to the distance to the nearest rail station and Elsenham were rated poor for cycling and walking. All other places reviewed were rated average. The review highlighted opportunities to improve sustainable transport, which will benefit the strategic development sites and existing communities.

4 Strategic allocations proposed in the Local Plan

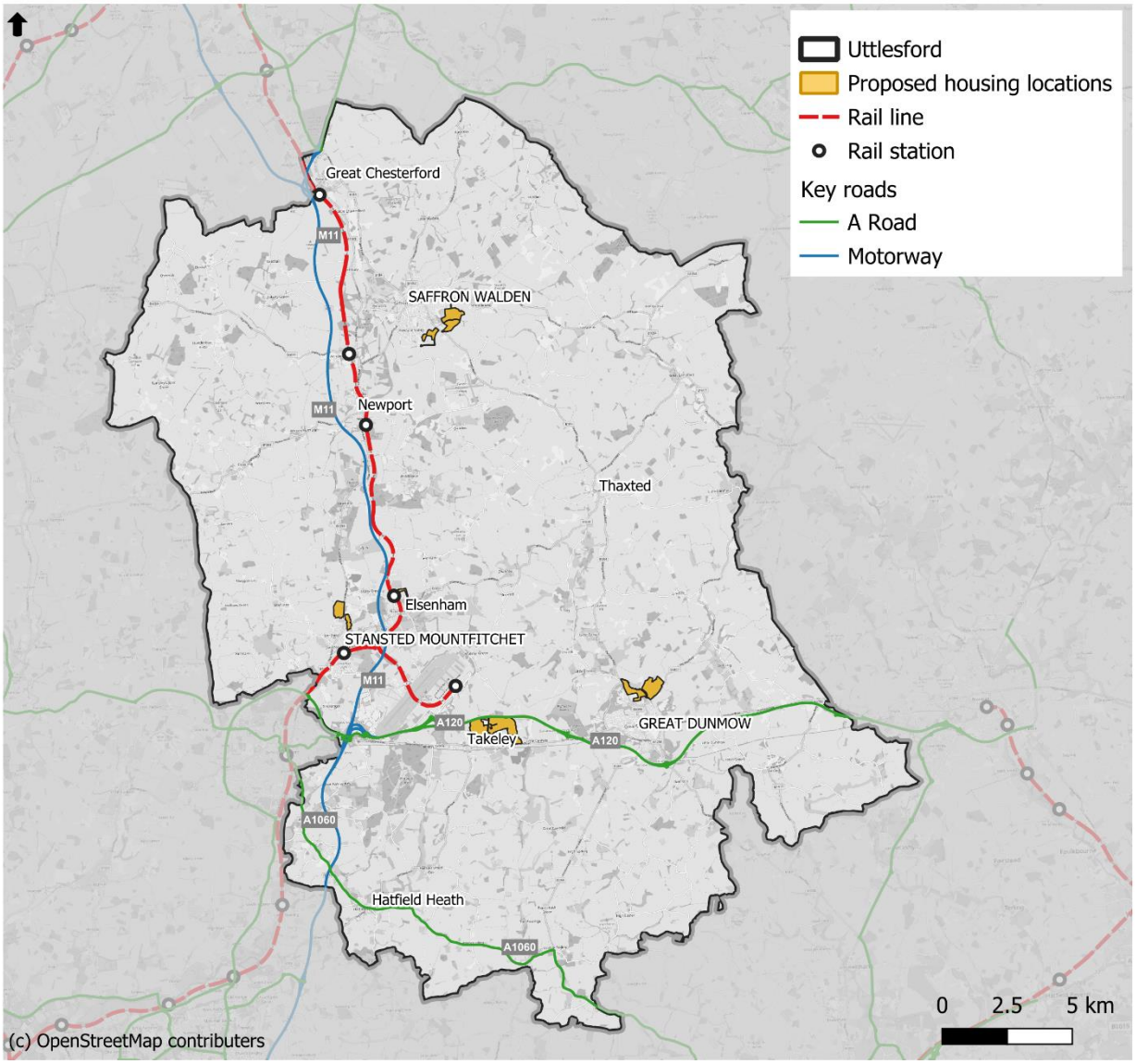
4.1.1 3,849 new dwellings are proposed in the new Local Plan which will run until 2033. As Table 4.1 and Figure 4-1 show these are situated in and around five existing settlements.

Table 4.1 Strategic residential sites

Proposed strategic allocation	Existing population / households[6]	Proposed dwellings	Notes / changes from Reg. 18
Saffron Walden	16,600 / 7,200	879	Reduced quantum of development from Regulation 18
Great Dunmow	10,400 / 4,500	884	1 extra site from Regulation 18
Stansted Mountfitchet	8,600 / 3,500	390	No changes
Elsenham	3,400 / 1,400	150	New site
Takeley	5,600 / 2,100	1,546	Include 8fe secondary & 3fe primary.
Great Chesterford	1,800 / 720	0	No change
Hatfield Heath	1,800 / 690	0	No change
Newport	2,900 / 1,200	0	Removed from Plan - still model Reg.18 number in LP model.
Thaxted	3,100 / 1,300	0	Removed from Plan - still modelling Regulation18 number in Local Plan modelling outputs
Totals	**91,300 / 37,000**	**3,849**	**N/A**

[6] *Source ONS, Census 2021 – figures rounded to the nearest 100 people. Note total population / households is for the district, not the total of the places in this table*

Figure 4-1 Proposed housing locations and transport network

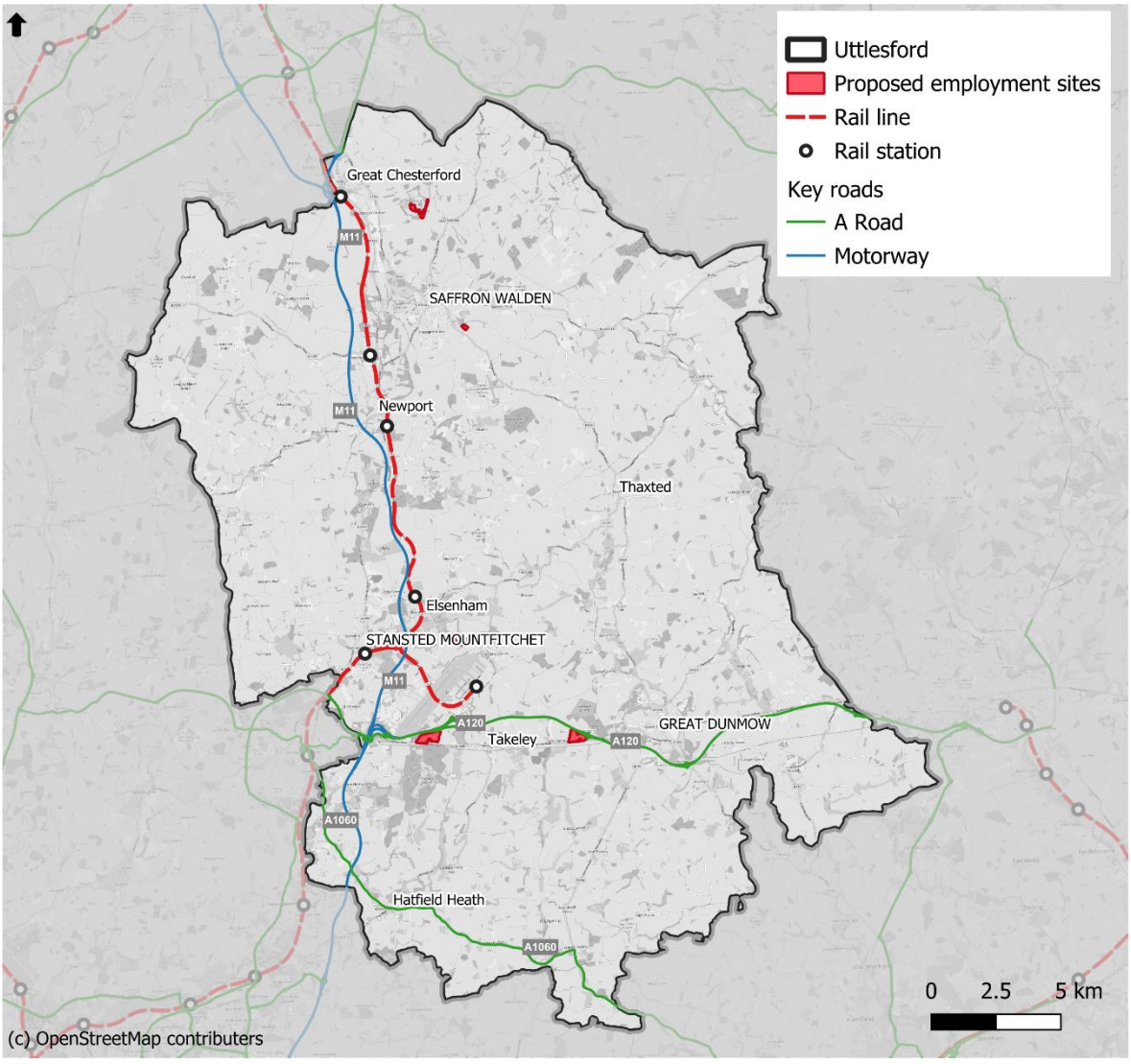


4.1.2 64.3 hectares of new employment land is proposed in the new Local Plan. As Table 4.2 and Figure 4-2 show these are proposed to be sited in and around four existing areas in the district.

Table 4.2 Strategic employment sites

Proposed strategic allocation	Use class and area	Notes
Saffron Walden	E(g)iii / B2 Industrial, 3ha	Land north of Thaxted Road (rear of Knights Park)
Elsenham	E(g)i office, 3ha	Land at Gaunts End
Great Chesterford	E(g)ii R&D, 18.30ha	Chesterford Research Park
Takeley / Little Canfield	(g)i office / E(g)ii R&D / E(g)iii / B2 Industrial, 20ha	Land between A120 & Stortford Road
Takeley	E(g)iii / B2 Industrial, 20ha	Land north of Takeley Street

Figure 4-2 Proposed employment locations



5 Transport accessibility by area and allocation

5.1.1 The following section details transport accessibility for each of the proposed residential and employment site allocations. This presents a transport profile for each site including connectivity to different services.

5.1.2 Accessibility mapping has been undertaken for each collection of sites, separating employment and residential allocations which are located within close proximity. TRACC mapping software has been used to create journey time calculations for public transport journeys, using the current transport network. Accessibility has been mapped for the AM peak (Monday 7-9am), these journey time results have been split into two isochrones, showing 0–15-minute and 15–30-minute travel times.

5.1.3 Connectivity to the following key services have been mapped, providing an indication of the types of services accessible by sustainable means from each of the allocation sites:

- Employment centre
- Grocery store (all sizes of supermarket and corner shops)
- GP/ Healthcare
- Hospital
- Local facility cluster (inc. schools, doctors, dentists, food shops, post office, rail station, bus score)
- Education (inc. primary, secondary and college / sixth form)

Saffron Walden

5.1.4 There is a single mixed residential and employment allocation in Saffron Walden. The mixed allocation comprises two residential parcels of land and one employment parcel of land. These are situated on the south east edge of Saffron Walden, with a proposed allocation of 879 residential properties. The locations of these sites and the transport connectivity to each site are depicted in Figure 5-1 and Figure 5-2. A summary of local services within a 30-minute proximity are shown in Table 5.1 and Table 5.2.

Figure 5-1 Saffron Walden residential sites public transport accessibility

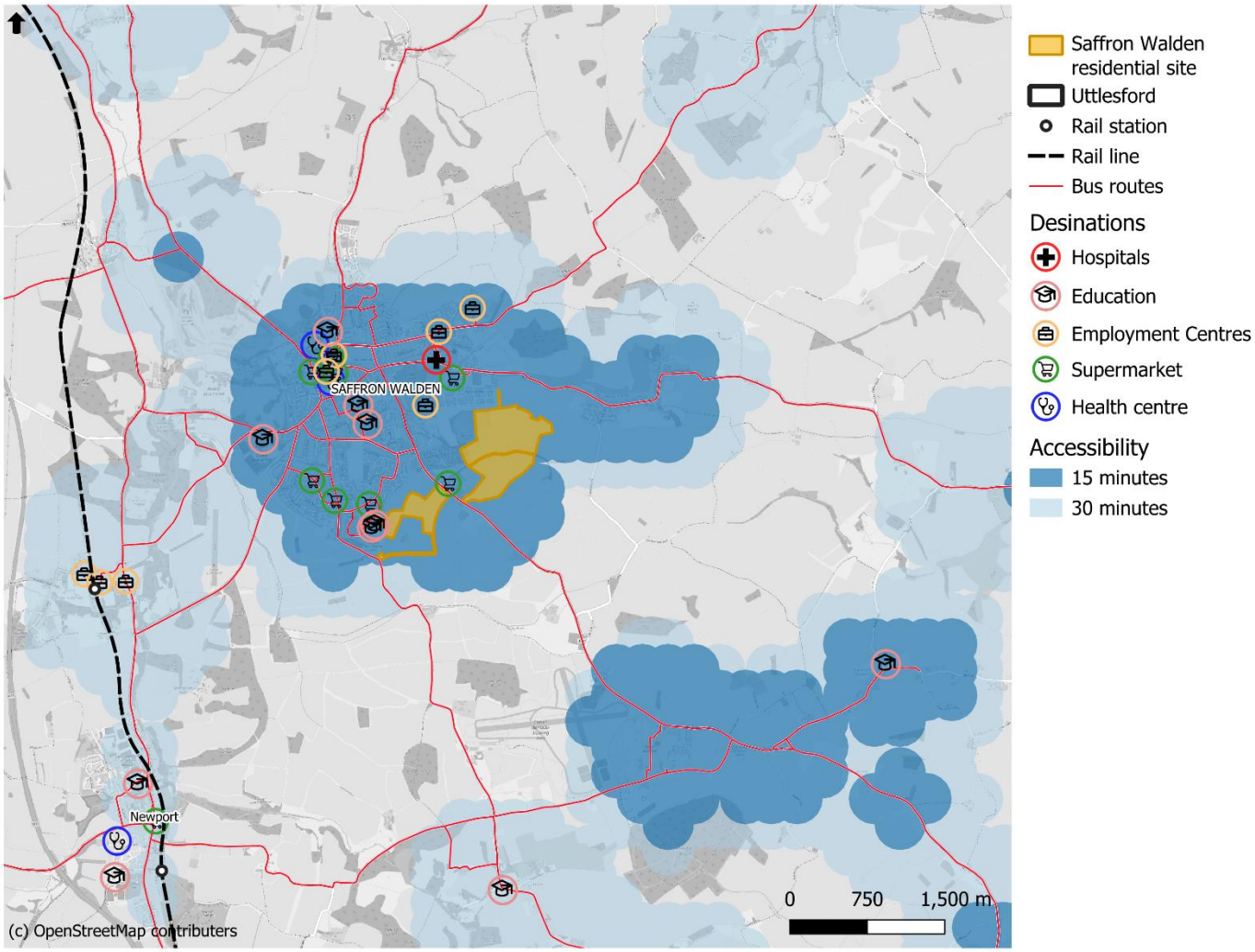


Table 5.1 Saffron Walden residential sites summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	5	6	11
Grocery store	8	5	13
GP / Health centre	2	4	6
Hospital	1	0	1
Local facility cluster	3	6	9
Education (inc. primary, secondary, college)	10	9	19

5.1.5 The accessibility analysis indicates that the residential site is accessible to a significant number and range of destinations within a 15-minute journey time. The location of employment site has moved a short distance within the overall allocation to a more northerly point. The destinations include two GP surgeries, one hospital and 10 education centres, as well as employment centres and shops. A further 15-minute journey increases the number of GP surgeries by four and

education centres by 9, as well as employment locations and shops.

Figure 5-2 Saffron Walden employment sites public transport accessibility

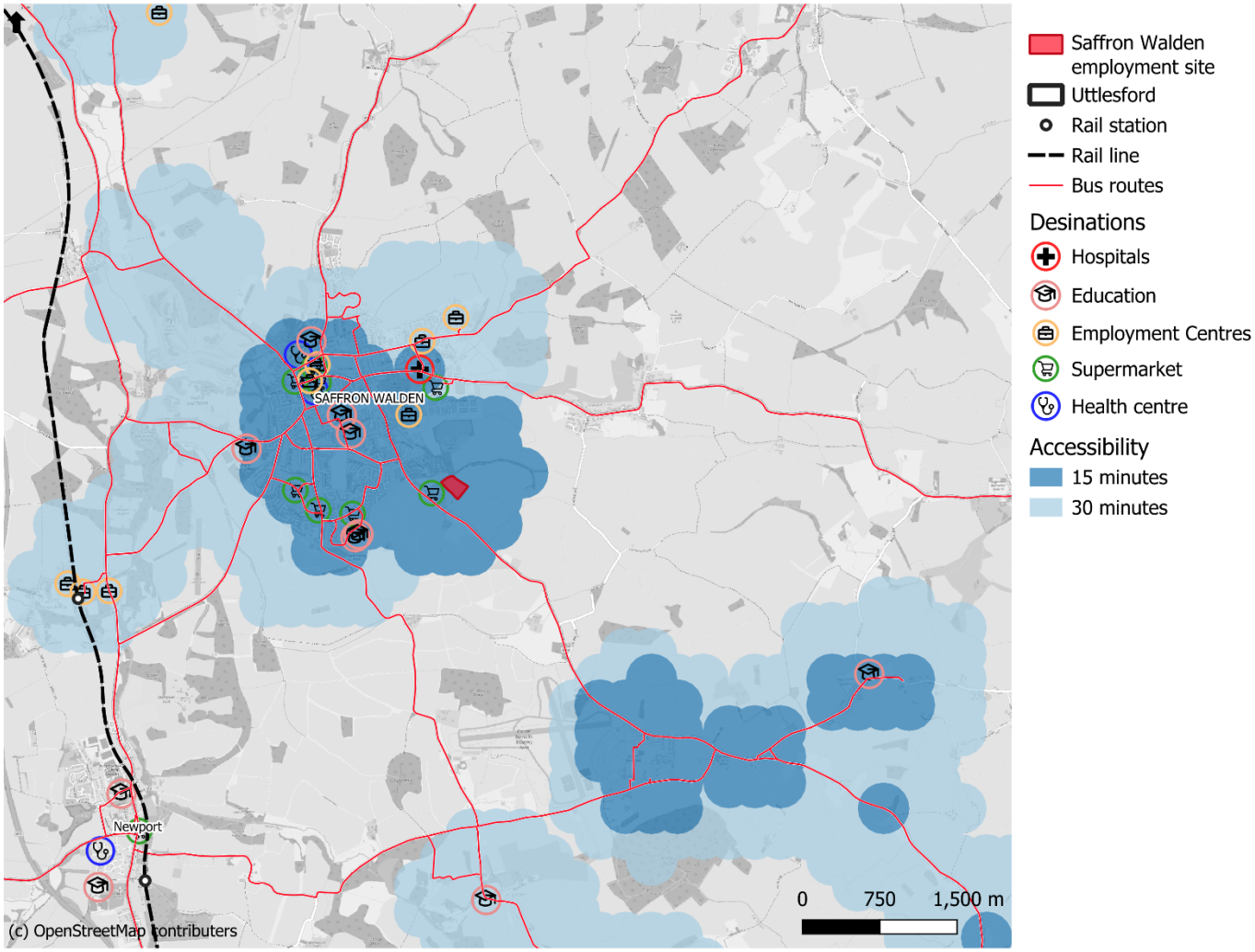


Table 5.2 Saffron Walden employment site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	3	8	11
Grocery store	8	4	12
GP / Health centre	2	3	5
Hospital	1	0	1
Local facility cluster	3	5	8
Education (inc. primary, secondary, college)	9	3	12

5.1.6 Saffron Walden Is well connected by a network of bus routes that provide accessibility to a range and significant number of education, health, employment and commercial facilities. Providing opportunities to access facilities by a combined journey by travelling on foot and by bus. A 15-minute journey is considered to provide good amenity. A 30-minute journey provides a larger catchment and a wider range of facilities. The bus network also provides connectivity to the railway station and other settlements within Uttlesford. The Audley End railway station provide access to Stansted Airport, Cambridge, Norwich and London by train expanding the catchment area of Saffron Walden by sustainable travel.

Great Dunmow

There are two proposed residential allocations in Great Dunmow. These are situated on the northern edge of Great Dunmow, with a proposed allocation of 884 residential properties. The locations of these sites and the transport connectivity to each site are depicted in Figure 5-3. A summary of local services within a 30 minute proximity are shown in

5.1.7 Table 5.3.

Figure 5-3 Great Dunmow residential site public transport accessibility

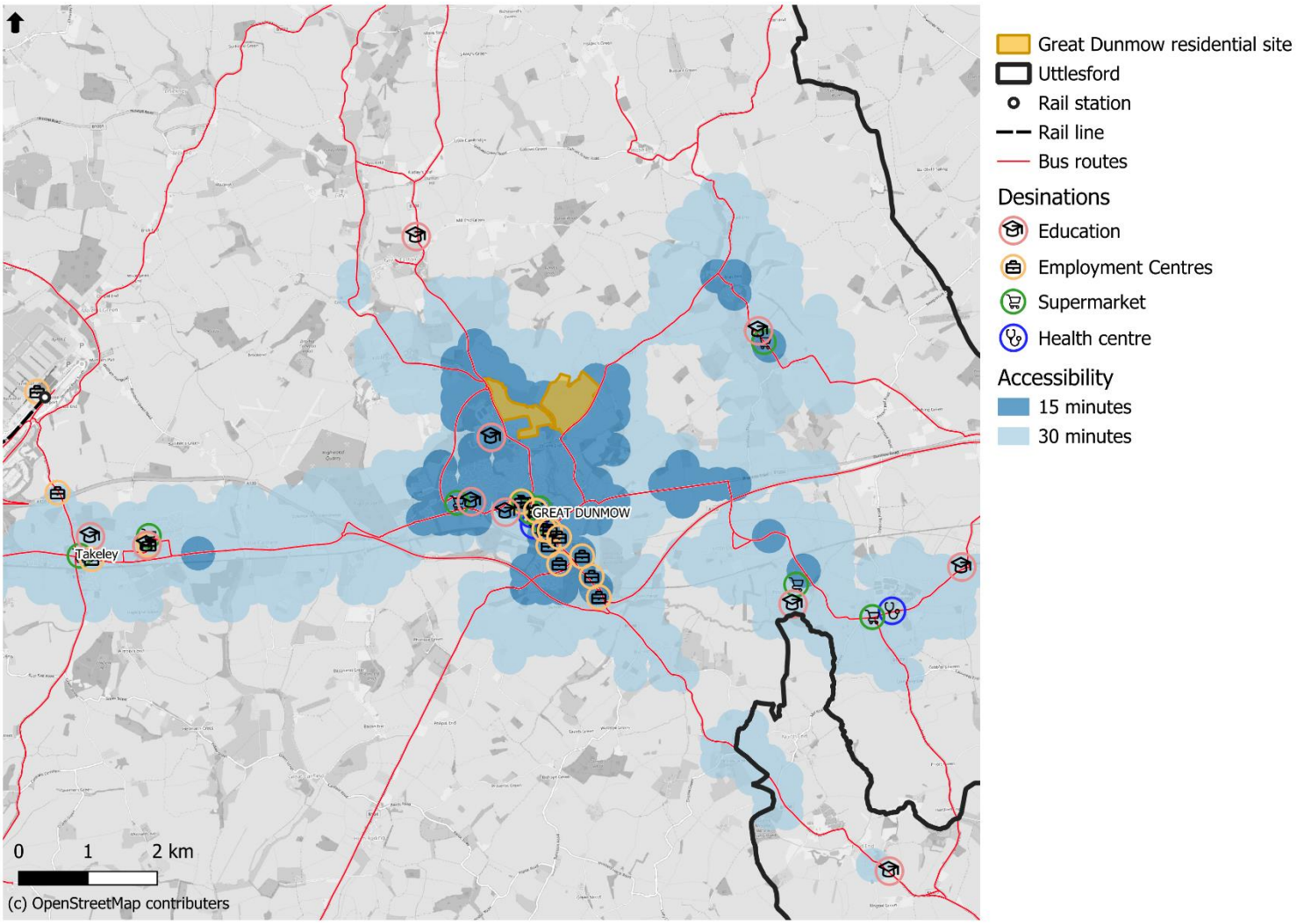


Table 5.3 Great Dunmow residential site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	10	6	16
Grocery store	7	5	12
GP / Health centre	2	1	3
Hospital	0	0	0
Local facility cluster	2	3	5
Education (inc. primary, secondary, college)	4	5	9

5.1.8 The accessibility analysis indicates that the residential site is accessible to a significant number and range of destinations within a 15-minute journey time. The destinations include two GP surgeries, four education centres, as well as employment centres and shops. A further 15-minute journey increases the number of GP surgeries by one and education centres by five, as well as employment locations and shops.

5.1.9 Great Dunmow is well connected by a network of bus routes that provide accessibility to a range and significant number of education, health, employment and commercial facilities. Providing opportunities to access facilities by a combined journey by travelling on foot and by bus. A 15-minute journey is considered to provide good amenity. A 30-minute journey provides a larger catchment and a wider range of facilities. The bus network also provides connectivity to the railway and bus stations at Stansted airport and other settlements within Uttlesford. The railway station at Stansted Airport provides access to Cambridge, Norwich, Birmingham and London by train expanding the catchment area of Great Dunmow by sustainable travel.

Stansted Mountfitchet

5.1.10 There are two proposed residential allocations in Stansted Mountfitchet and one employment allocation. The residential allocations are situated on the northern edge of Stansted Mountfitchet, with a proposed allocation of 390 properties. The employment site is located in Guants End, north of Stansted Airport. The locations of these sites and the transport connectivity to each site is depicted in

5.1.11

5.1.12

5.1.13 Figure 5-4 and Figure 5-6.

5.1.14 The accessibility analysis indicates that the residential site is accessible to a significant number and range of destinations within a 15-minute journey time. The destinations include two GP surgeries, seven education centres, as well as employment centres and shops. A further 15-minute journey increases the number of GP surgeries by five and education centres by 20, as well as employment locations and shops. A summary of local services within a 30 minute proximity are shown in

5.1.15 Table 5.4 and Table 5.6

Figure 5-4 Stansted Mountfitchet residential site public transport accessibility

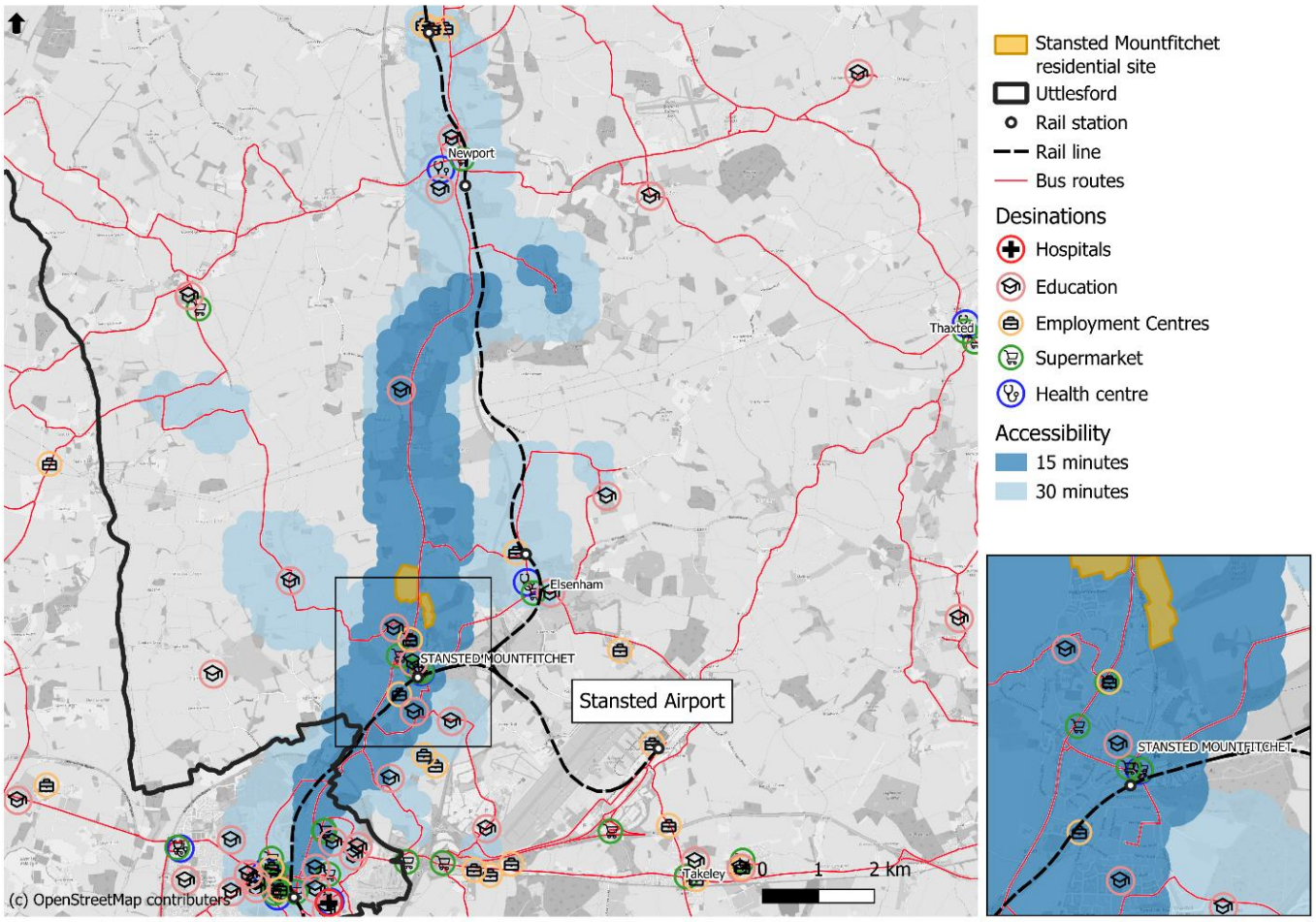


Table 5.4 Stansted Mountfitchet residential site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	3	6	9
Grocery store	11	8	19
GP / Health centre	2	5	7
Hospital	0	1	1
Local facility cluster	4	6	10
Education (inc. primary, secondary, college)	7	20	37

5.1.16 The accessibility analysis indicates that the residential site is accessible to a significant number and range of destinations within a 15-minute journey time. The destinations include two GP surgeries, seven education centres, as well as employment centres and shops. A further 15-minute journey increases the number of GP surgeries by five and education centres by 20, as well as employment locations and shops.

5.1.17 Stansted Mountfitchet is well connected by a network of bus routes that provide accessibility to a range and significant number of education, health, employment and commercial facilities. Providing opportunities to access facilities by a combined journey by travelling on foot and by bus. A 15-minute journey is considered to provide good amenity. A 30-minute journey provides a larger catchment and a wider range of facilities. The bus network also provides connectivity to the railway station at Bishops Stortford and other settlements within Uttlesford. The railway station at Bishops Stortford provides access to Cambridge, Stratford and London by train expanding the catchment area of Stansted Mountfitchet by sustainable travel.

Elsenham

5.1.18 There is one proposed residential allocation in Elsenham. This is situated on the north eastern edge of Elsenham, with a proposed allocation of 150 residential properties. The location of this site and the transport connectivity is depicted in Figure 5-5. A summary of local services within a 30 minute proximity are shown in Table 5.5.

Figure 5-5 Elsenham residential site public transport accessibility

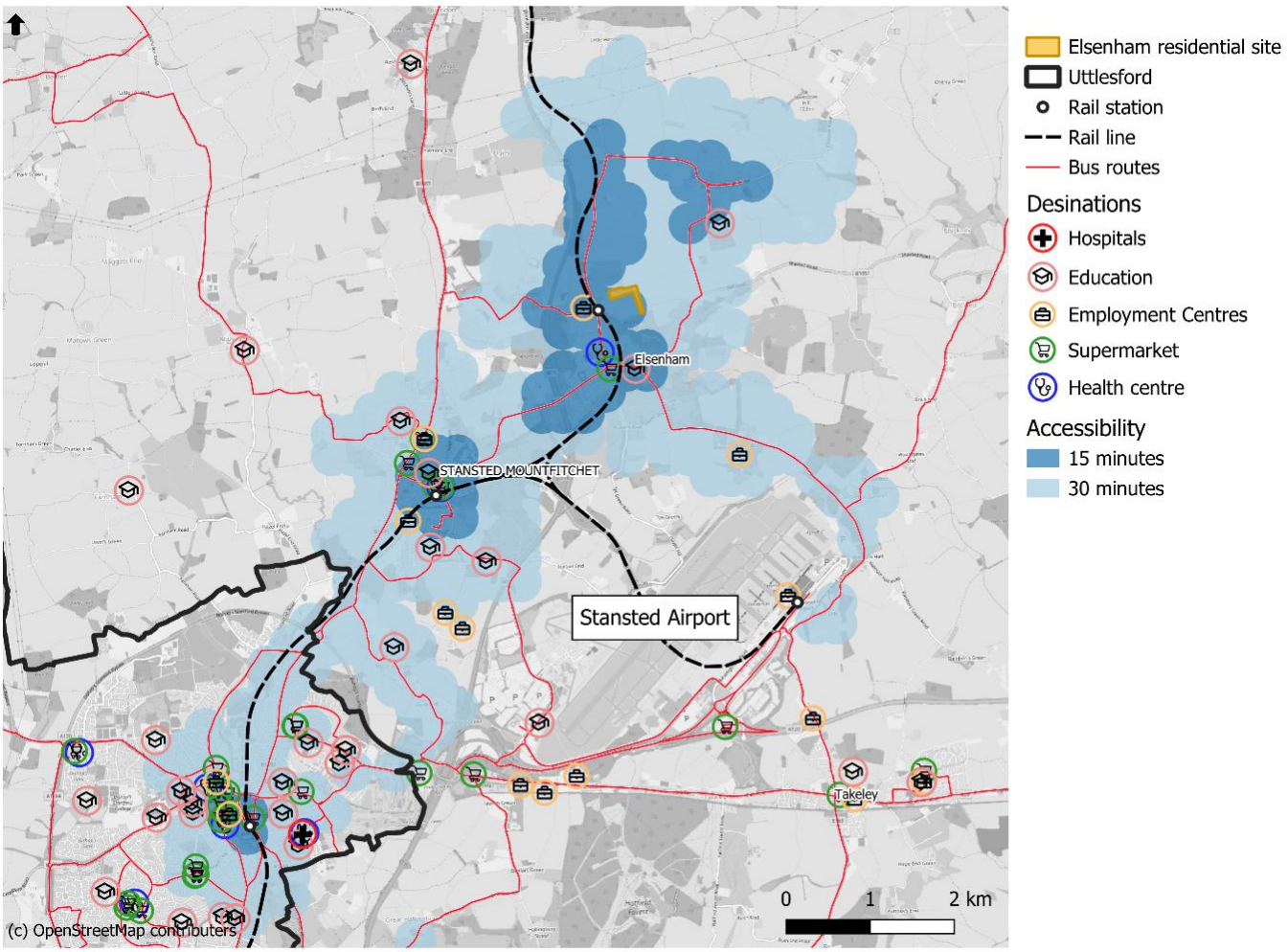


Table 5.5 Elsenham residential site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	5	7	12
Grocery store	9	19	28
GP / Health centre	3	6	9
Hospital	0	1	1
Local facility cluster	5	6	11
Education (inc. primary, secondary, college)	3	24	27

Figure 5-6 Guants End employment site public transport accessibility

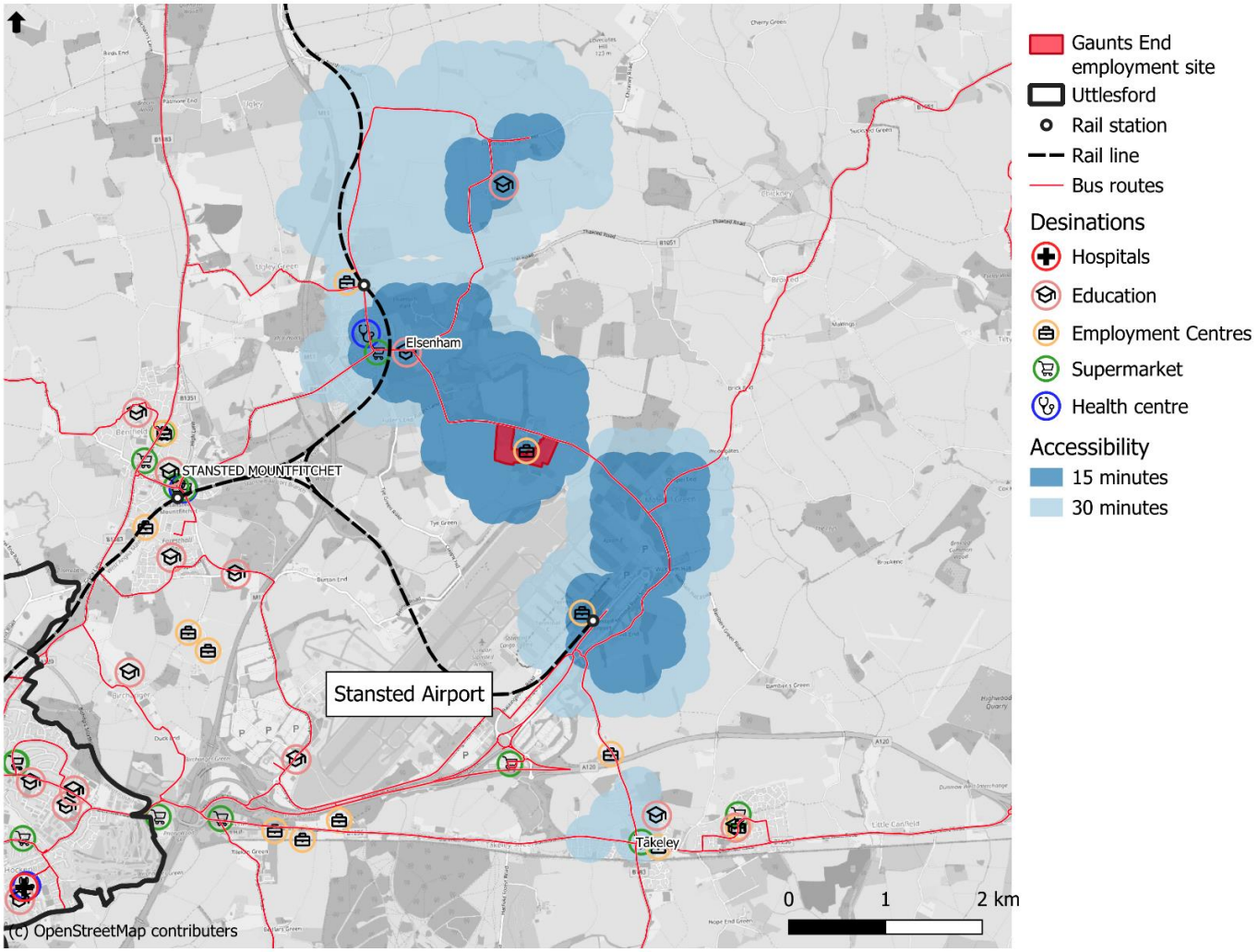


Table 5.6 Guants End employment site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	2	2	4
Grocery store	1	1	2
GP / Health centre	1	0	1
Hospital	0	0	0
Local facility cluster	2	1	3
Education (inc. primary, secondary, college)	2	1	3

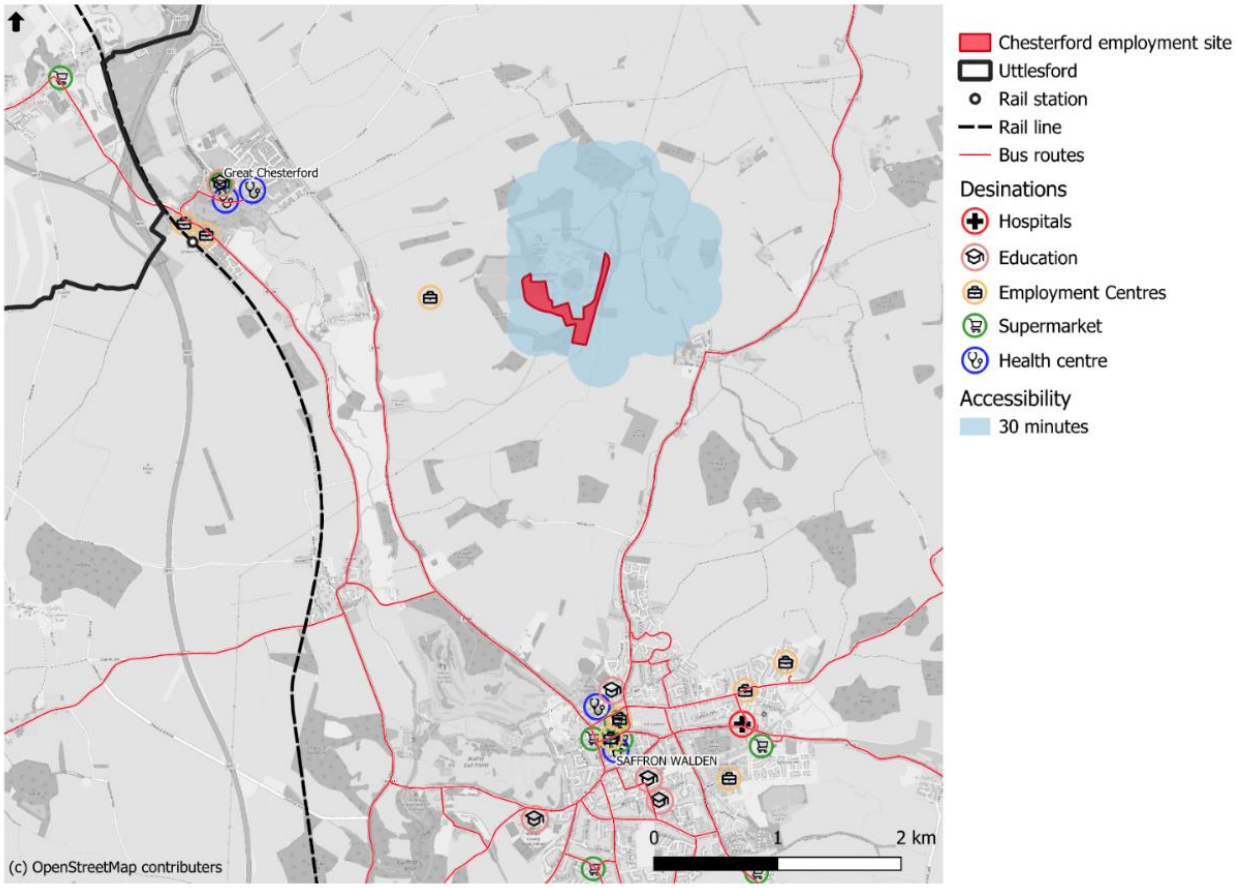
5.1.19 The accessibility analysis indicates that the residential site is accessible to a significant number and range of destinations within a 15-minute journey time. The destinations include six GP surgeries, 24 education centres, as well as employment centres and shops. A further 15-minute journey increases the number of GP surgeries by three and education centres also by three, as well as employment locations and shops.

5.1.20 Elsenham is well connected by a network of bus routes that provide accessibility to a range and significant number of education, health, employment and commercial facilities. Providing opportunities to access facilities by a combined journey by travelling on foot and by bus. A 15-minute journey is considered to provide good amenity. A 30-minute journey provides a larger catchment and a wider range of facilities. The bus network provides connectivity to settlements within Uttlesford and Stansted Airport. The railway station is accessible by foot and by foot and bus. The railway station at Elsenham provides access to Cambridge, Ely and London by train expanding the catchment area of Elsenham by sustainable travel.

Great Chesterford

5.1.21 There is one proposed employment allocation site in Great Chesterford. This is situated on the Chesterford Research Park, south east of Great Chesterford. Public transport accessibility to the employment site in Great Chesterford is currently limited, with no direct bus service to the site. Therefore, there are no services within the 30-minute catchment shown for the other locations. The location of this site and the transport connectivity (walking time only as no bus services) to is depicted in Figure 5-7.

Figure 5-7 Great Chesterford employment site accessibility



5.1.22 Great Chesterford Research Park has access to the B184 Walden Road, which is a bus route. The bus services on the B184 Walden Road provide connectivity to the railway station at Great Chesterford and Saffron Walden. The railway station at Great Chesterford provides access to Cambridge and London.

Takeley

5.1.23 There are three proposed allocations in Takeley – one residential and two employment. The residential allocations are situated on the north edge of Takeley, south east of Stansted Airport. These have a proposed allocation of 1,546 residential properties. The locations of the residential sites and the transport connectivity is depicted in

Figure 5-8 with a summary of local services within a 30-minute proximity shown in

5.1.24 Table 5.7.

5.1.25 Both employment sites are located along the B1256 with one located near Little Canfield, with the other site located west of Takeley. The locations of the employment sites in Takeley are shown in Figure 6-8 and a summary of the connectivity to local services from these sites is summarised in Table 5.8 and Table 5.9.

Figure 5-8 Takeley residential site public transport accessibility

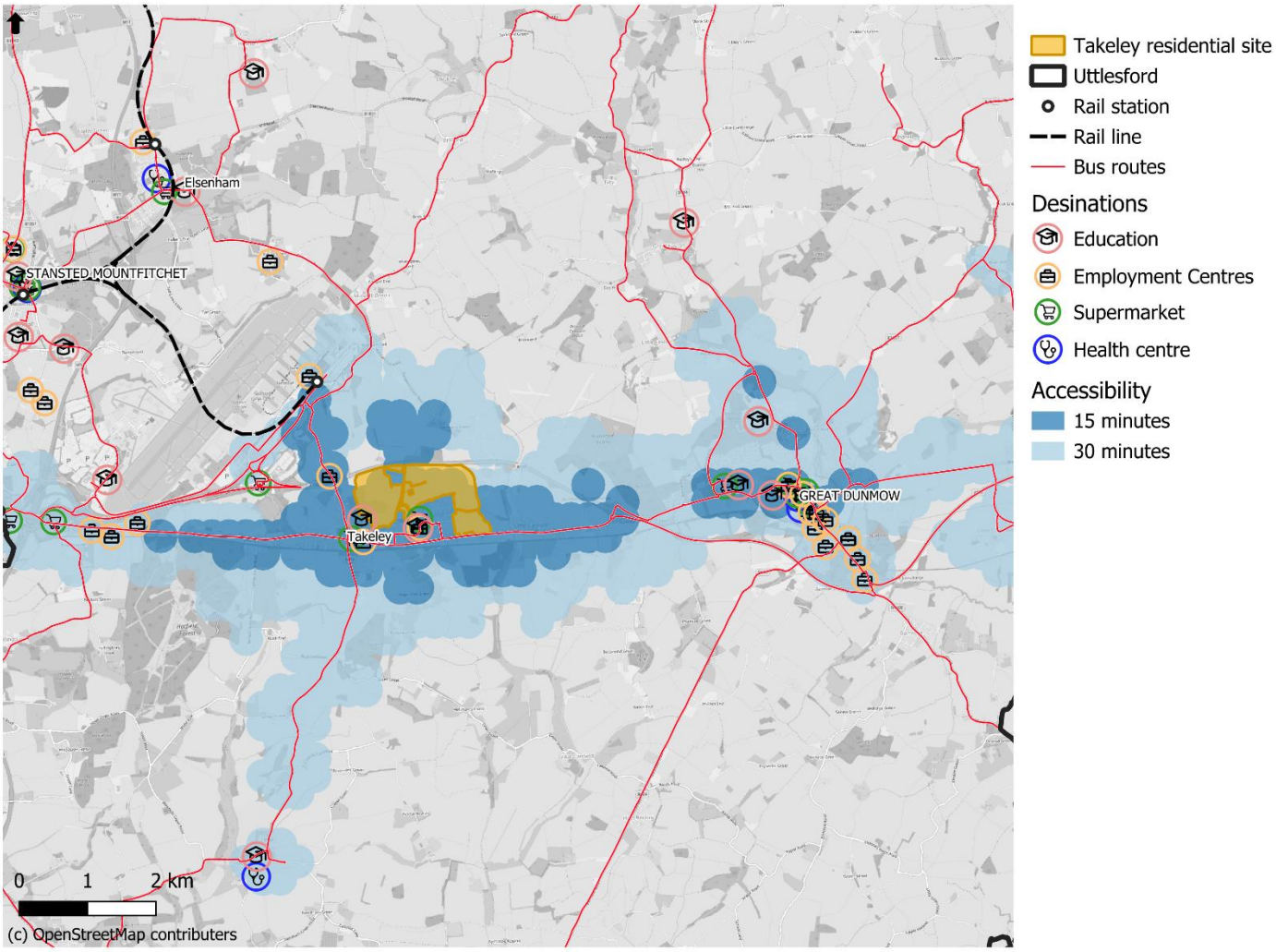


Table 5.7 Takeley residential sites summary of service connectivity

Type of service	0-15 min	15-30 min	Combined

Employment centre	7	12	19
Grocery store	7	17	24
GP / Health centre	2	6	8
Hospital	0	1	1
Local facility cluster	2	6	8
Education (inc. primary, secondary, college)	4	14	18

5.1.26 The accessibility analysis indicates that the residential site is accessible to a significant number and range of destinations within a 15-minute journey time. The destinations include two GP surgeries, as well as employment centres and shops. There are no education centres within a 15-minute journey by bus. A further 15-minute journey increases the number of GP surgeries by five, as well as employment locations and shops. There are no education centres within a 30-minute journey by bus.

Figure 5-9 Takeley / Little Canfield employment site public transport accessibility

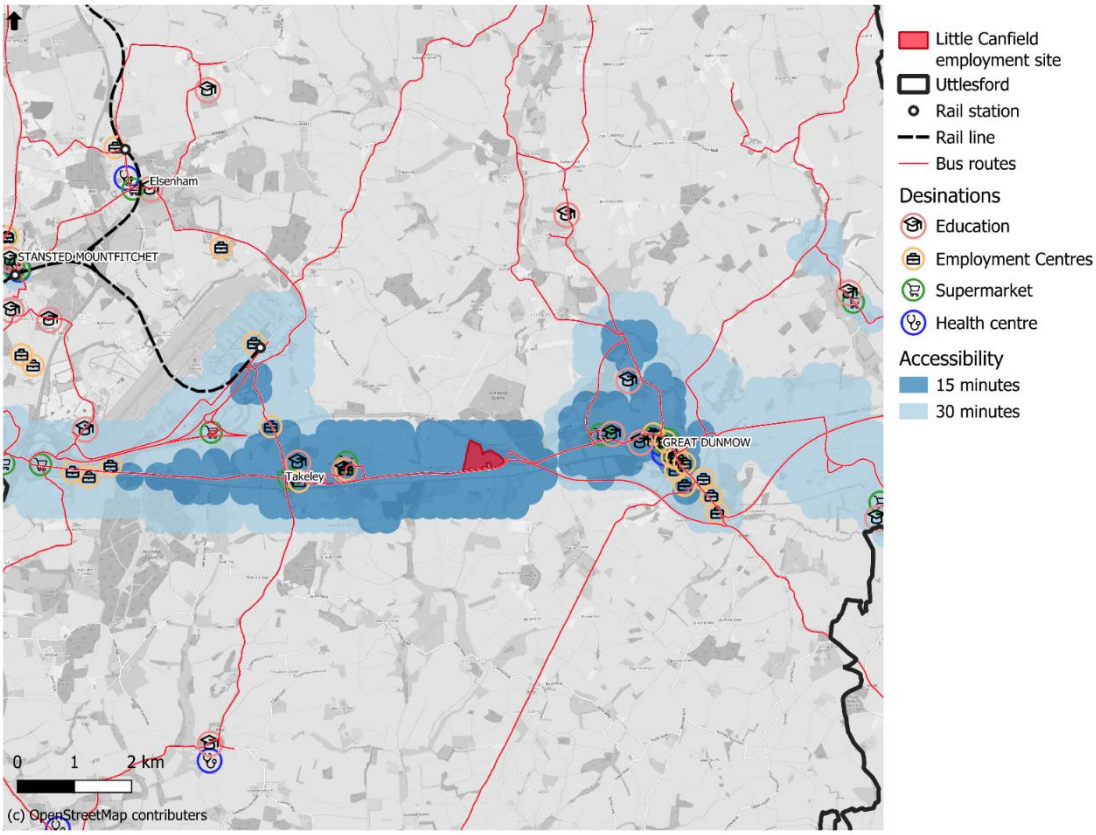


Table 5.8 Takeley / Little Canfield employment site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	10	9	19
Grocery store	7	20	27
GP / Health centre	2	6	8
Hospital	0	1	1
Local facility cluster	2	6	8
Education (inc. primary, secondary, college)	4	14	18

Figure 5-10 Takeley employment site public transport accessibility

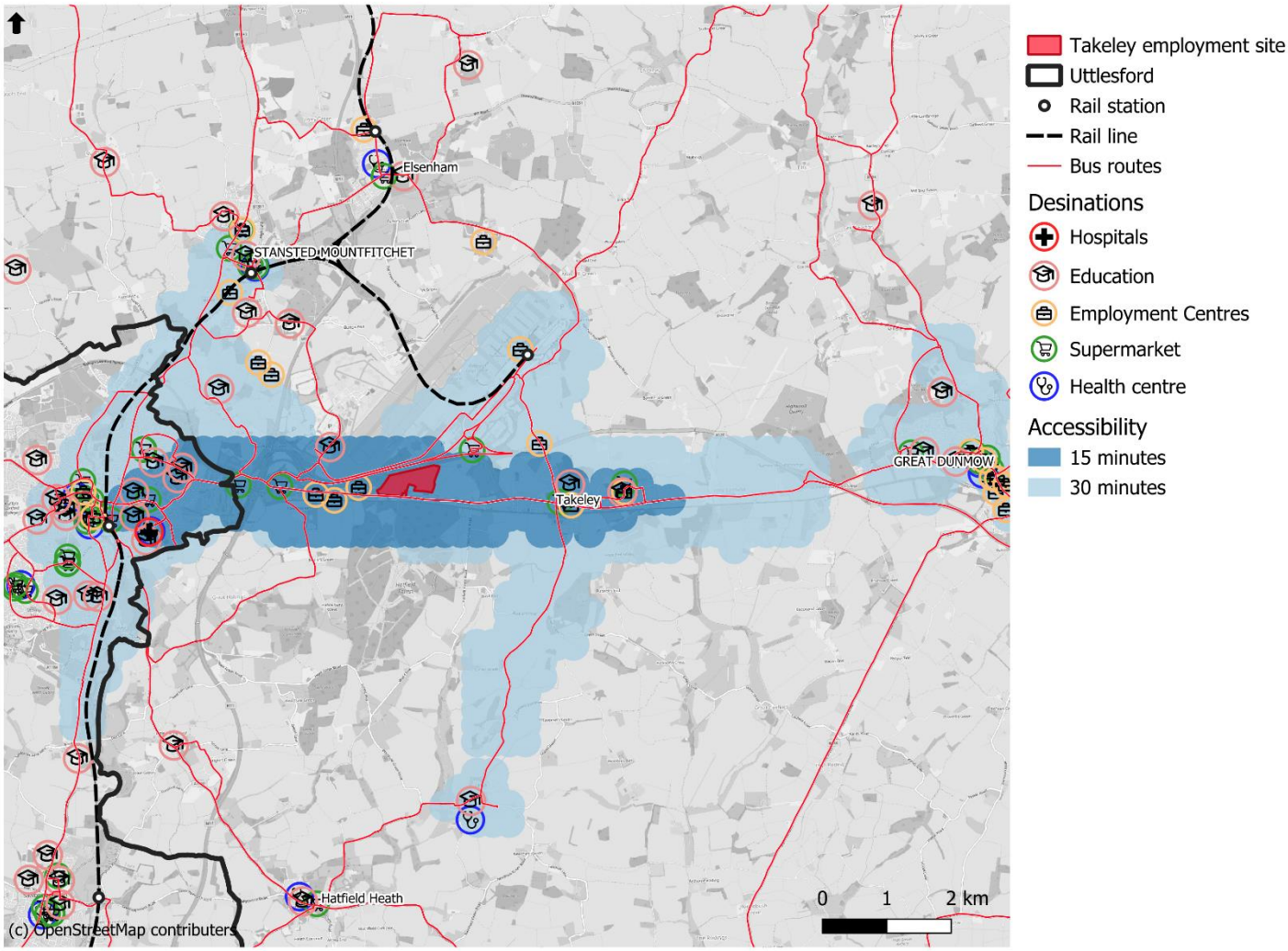


Table 5.9 Takeley employment site summary of service connectivity

Type of service	0-15 min	15-30 min	Combined
Employment centre	5	16	21
Grocery store	6	24	30
GP / Health centre	2	6	8
Hospital	1	0	1
Local facility cluster	1	7	8
Education (inc. primary, secondary, college)	11	14	25

5.1.27 Takeley is well connected by a network of bus routes that provide accessibility to a range and significant number of education, health, employment and commercial facilities. Providing opportunities to access facilities by a combined journey by travelling on foot and by bus. A 15-minute journey is considered to provide good amenity. A 30-minute journey provides a larger catchment and a wider range of facilities. The bus network also provides connectivity to the bus and railway stations at Stansted Airport and other settlements within Uttlesford. The railway station at Stansted Airport provides access to Cambridge, Norwich, Birmingham and London by train expanding the catchment area of Takeley by sustainable travel.

Summary

5.1.28 This section indicates that the strategic allocation sites are well connected with good accessibility to facilities, the bus and rail network. The proposed Local Plan policies provide an opportunity and the direction to improve sustainable travel opportunities and connectivity.

5.1.29 Using the existing connectivity highlighted in this section, the sustainable transport area strategies in the following section make suggestions on how to improve connectivity. These aim to introduce interventions to improve connectivity to the site using sustainable modes, such as proposing the re-routing of nearby bus routes to enter the development site or connecting the development with a nearby active travel route.

6 Sustainable transport area strategies

6.1.1 The residential and employment allocations within Uttlesford require a sustainable transport strategy to maximise the sites potential for sustainable travel. The Local Plan provides an opportunity to improve the nature of sustainable transport, its quality and provision. Improvements to sustainable transport will reduce the environmental impact of existing and proposed development, thereby aiding the goal of reducing the impact of travel on the climate.

6.1.2 Improving sustainable transport will provide alternatives to the private car to access jobs, facilities and services. Sustainable transport provides access to jobs and services for those without access to a car, those with a disability and mobility impairment. The environmental impact of transport will be reduced, thereby improving health and providing opportunities to exercise by walking and cycling. These elements should be considered as part of sustainable transport strategy.

6.1.3 National and local planning policies promote the increased use of sustainable transport: public transport, walking and cycling. There is a need to improve sustainable mobility and the six broad themes for good practice identified within section 2.4 will aid the development of a strategy. Those themes are:

- Placemaking and land use planning
- Walking and cycling infrastructure
- Public transport
- Parking and traffic management
- Behavioural change
- Governance, policy and funding

6.1.4 The following area based strategies build on the transport studies and proposals that are under various stages of development for UDC and ECC (outlined in section 2). They support the ‘Decide and Provide’ approach to transport in the Local Plan.

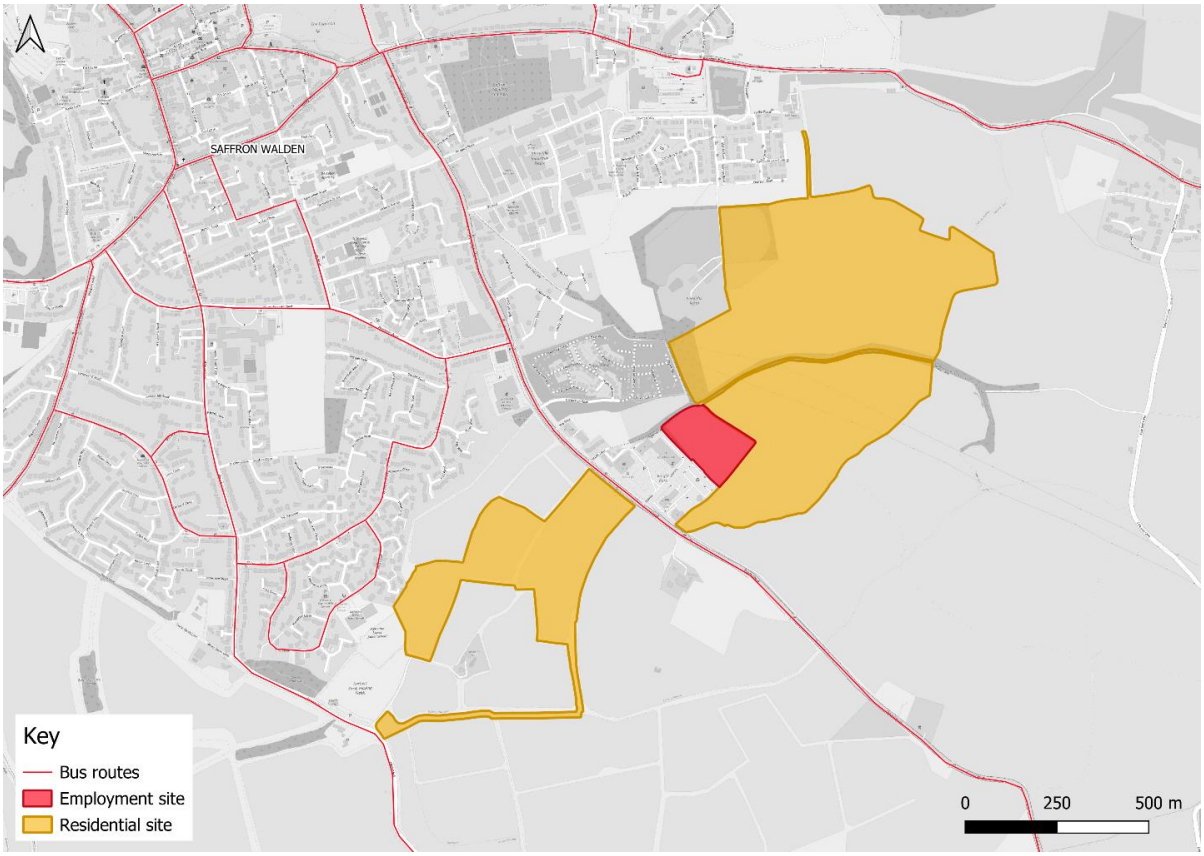
6.2 Saffron Walden

Sustainable Transport Opportunities

6.2.1 The proposed strategic sites in Saffron Walden are located to southeast of the town centre. There is one allocation site, comprising two residential and one employment parcel of land. The larger of the two residential parcels of land, consisting of 747 dwellings is located between Radwinter Road and Thaxted Road. The smaller residential parcel of land consists of 132 dwellings and is located on the south side of Thaxted Road. The employment parcel of land consists of 3ha of B2 industrial is located to the north of Thaxted Road. All three parcels of land are located either adjacent or close to Thaxted Road. Figure 6-1 indicates the strategic employment and housing allocations within Saffron Walden. The location of employment site has subsequently moved a short distance within the overall allocation to a more northerly point within the mixed use allocation.

6.2.2 Radwinter Road, Thaxted Road and Debden Road are the primary connections to the public highway network providing access for private cars and deliveries, cyclists and pedestrians. Both roads also provide connectivity to the bus network. The site allocation policy requires a site wide vision and master plan and lists highway and sustainable transport network requirements, which will create permeable residential sites. The proposals contained within the Uttlesford LCWIP for Saffron Walden provide connectivity to the two residential sites and the employment site. The transport strategy that is under development as part of the Saffron Walden Quality project will aid the access by sustainable modes as well as amenity, with the measures in vicinity of the development sites and further afield with Saffron Walden.

Figure 6-1 Saffron Walden Strategic Housing and Employment Sites



Potential Sustainable Transport Measures

6.2.3 The opportunities for sustainable transport have been split into three themes. There are crossovers between the themes depending on the measures.

6.2.4 Potential measures to improve Public Transport are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- Thaxted Road and Radwinter Road via Griffin Place are bus routes. The existing bus services are not common to both roads in the vicinity of the development site. Providing bus penetration to residential sites is likely to result in greater bus patronage, especially to the centre of Saffron Walden. Bus use could be enhanced by considering:
  - Re-routing of the 320 bus service from Radwinter Road via Griffin Place into the northern development site. Re-routing could be the via the adjacent Redrow development site and loop within the northern housing site and onto Radwinter Road. The 320 only provides five services Monday to Saturday and times and frequencies would need to be reviewed and improved to aid a significant improve patronage.
  - Re-routing of 313 and/or 314 bus service into the northern parcel of land from Thaxted Road and looping round the site back onto Thaxted Road could be considered. The 313 and 314 only operates seven services Monday to Saturday. Depending on destinations it is likely to be more attractive and viable to re-route the 320, rather than the 313 and/or 314.
  - Re-routing the 313 or 314 bus service into the southern residential site could be considered. The quantum of potential passengers may not be attractive. The increase in journey time would not be anticipated to be significant.
  - The 313 and 314 bus services do not serve Audley End railway station and therefore there is no regular direct bus service from Thaxted Road. The 320 bus route provides only five buses a day. A new bus service with a greater frequency may have greater patronage and be more viable than re-routing existing services and increased frequencies. The service would connect Thaxted Road with Radwinter Road via a road through the northern residential site. A new service could be considered to serve the strategic site, the town centre and the railway station, as well as the areas in-between, is likely to make bus travel within more attractive within Saffron Walden. The feasibility of that service would need to be investigated.
- Sustainable transport route should be provided to link Radwinter Road with Thaxted Road, as contained within the site development framework.
- Pedestrian routes to bus stops should be as direct as possible to aid amenity. Pedestrian routes to bus stops that are circuitous are less attractive and may discourage some people from using the bus.
- Provision of bus shelters at bus stops should be considered and provided where feasible.
- Review of accessibility at existing bus stops and implementation of best practice at new locations should be considered to ensure that buses are accessible to people with a disability or a mobility impairment.
- Enhancements will also be required for interchange facilities at Audley End railway station.
- Provision of Real Time Information to provide users with better information to plan and undertake journeys by bus. This is Saffron Walden Transport Strategy reference PT.01.
- Provision of a mobility hub within the housing allocation.
- Bus awareness and information campaigns.

- Provide details of bus services as part of residential and employment travel plans.
- Provision of discounted bus vouchers for new residents at strategic development site.

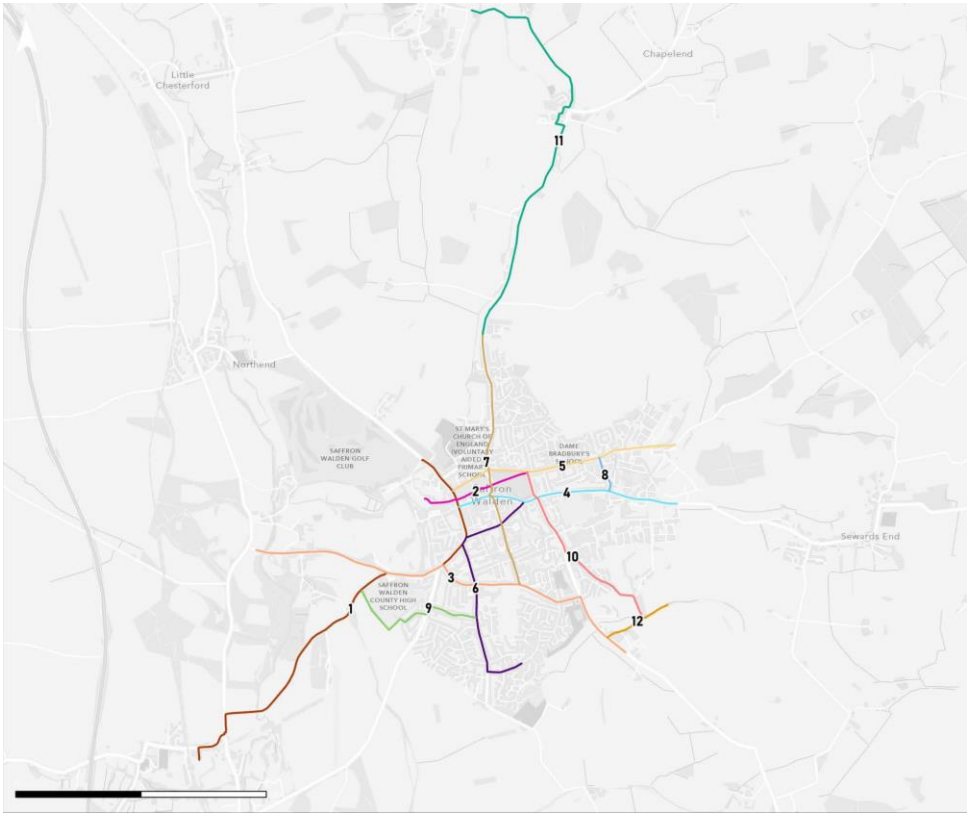
6.2.5 Potential measures to improve Cycling and Walking are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The LCWIP identified 12 routes within Saffron Walden, of which four connect to the two strategic housing and one employment site. The network provides connectivity to the town centre and Audley End railway station. Further investigation will be required to ascertain the feasibility of the proposed LCWIP routes.
  - LCWIP 3 traverses from the Knight Park retail park to Audley End House and utilises the shared use footway on Thaxted Road. The housing and employment site on the north side of Thaxted Road could be connected to this route by LCWIP 12, which is Saffron Walden byway 18. The residential site on the southern side of Thaxted road would need to be connected to the facility on Thaxted Road. The LCWIP has a series of design recommendations, and the nature of the connection would need to be investigated.
  - LCWIP 4 would traverse from the Redrow development to Hill Street. The proposed route terminates to the west of the proposed residential allocation. The potential to extend the route to the residential allocation should be investigated. A connection would provide a continuous route and would be attractive for users. The LCWIP has design recommendations to improve the route.
  - LCWIP 10 traverses from Shire Hill Lane to Chaters Hill. Shire Hill Lane is Saffron Walden Bridleway 19 and connects to Saffron Walden byway 18, providing access to both the northern housing site and the industrial allocation. A pedestrian and cycle route within the housing allocation which connects to Shire Hill Lane would improve sustainable transport access. The LCWIP provides design recommendations to improve LCWIP 10.
  - LCWIP 12 is Saffron Walden byway 18 and could connect to Thaxted Road with the northern housing allocation and the employment allocation. North Uttlesford Core Policy 7 proposes to make the byway a restricted byway. LCWIP 12 should connect to a walking and cycling route within the residential allocation. The LCWIP provides design recommendations to improve LCWIP 12.
- A sustainable transport route (which is contained within the Development Framework) should be provided to link Radwinter Road with Thaxted Road, as well LCWIP routes 4, 10 and 12. The road should have segregated pedestrian and cycle routes as well as connections to Public Right of Ways with multiple priority crossing points.
- Provide walking and cycling connections with the northern site connecting to the LCWIP routes and the cross site sustainable travel route. Walking and cycling routes should be preferably segregated.
- Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers.
- Bike share facility should be provided within the allocation. The bike share scheme would provide an appropriate number of ebikes and pedal powered bikes. North Uttlesford Core Policy 7 proposes provision of a bike share scheme.
- Provide ebike charging stations and investigate the provision of bike maintenance hubs.
- Ascertain whether Audley End Railway station cycle parking could have capacity to cater for the existing scheme and the demand arising from the residential and employment

allocations.

- A cargo bike should be provided within residential development. The number of cargo bikes should be reviewed in line with the scheme already operating within Saffron Walden. Uttlesford Core Policy 7 proposes provision of cargo bike to be located within the development.
- Enhance Saffron Walden public footpath 36. Uttlesford Core Policy 7 proposes that the footpath becomes an active travel route. The section within the two allocations may need to diverted and would need the status changed if its to be used by cyclists. Any change to the alignment of the route should enable its use to be enhanced and be attractive to users.
- Providing wayfinding within the development allocations and within Saffron Walden, to the town centre and Audley End railway station to aid the movement of people on foot and by cycle.
- Walking and cycling information and awareness campaigns.

Figure 6-2 Saffron Walden LCWIP Routes[7]



6.2.6 Other:

- Introduction of the Transport Strategy for Saffron Walden to provide the infrastructure to promote sustainable transport and create a more positive environment for residents, business and employees to undertake more trips by public transport, on foot or by cycle.
- The provision of car parking in accordance with the Local Plan Core Policy.
- EV car clubs with 2 spaces as proposed by Uttlesford Core Policy 7.
- EV charge points provided for all houses to enable residents to own and charge their vehicle

[7] *Proposed Saffron Walden LCWIP Network, Figure 5.2, Page 57, Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

at their residence.

6.2.7 How these improvements relate to the identified sustainable mobility themes is shown in Table 6.1.

Table 6.1 Saffron Walden – Summary of the proposed improvements related to sustainable mobility themes

Theme	Proposed improvements through the Local Plan
Placemaking and land use planning	▪ Providing wayfinding within the development allocations and within Saffron Walden, to the town centre and Audley End railway station to aid the movement of people on foot and by cycle. ▪ Provision of a mobility hub within the northern housing allocation.
Walking and cycling infrastructure	▪ A sustainable transport route should be provided to link Radwinter Road with Thaxted Road. ▪ Connect residential sites with LCWIP routes 3, 4, 10 and 12. ▪ Public Footpath Saffron Walden 36 to be upgraded to become an active travel route. ▪ Pedestrian routes to bus stops should be as direct as possible to aid amenity. ▪ Review routes and identify measures to link new developments to bus stops and facilities in the most direct way, and to identify barriers to people with disabilities and a mobility impairments. ▪ Bike share, ebike charging stations and cargo bikes should be provided. Investigate the provision of bike maintenance hubs. ▪ Investigate the need to increase Audley End Railway station cycle parking.
Public transport	▪ Review existing bus services and addition of new services to serve the allocations, linking them to the town centre and railway station. ▪ Sustainable transport route should be provided to link Radwinter Road with Thaxted Road. ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment. ▪ Enhance interchange facilities at Audley End railway station.
Parking and traffic management	▪ EV car clubs with 2 spaces. ▪ EV charge points provided for all houses.
Behavioural change	▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of residential and employment travel plans. ▪ Bus awareness and information campaigns.
Governance, policy and funding	▪ Provision of discounted bus vouchers for new residents at strategic development site. ▪ Introduce Saffron Walden Transport Strategy measures for public transport, parking and traffic management and placemaking.

6.2.8 The proposed allocation site is accessible by all sustainable transport modes. The accessibility of the site could be improved though the introduction of a range of sustainable transport measures. The measures would increase transport choices available to residents and businesses, improving the alternative modes to the private car and reducing the environmental impact of transport. The measures accord with the Local Plan transport policies.

6.3 Great Dunmow

Sustainable Transport Opportunities

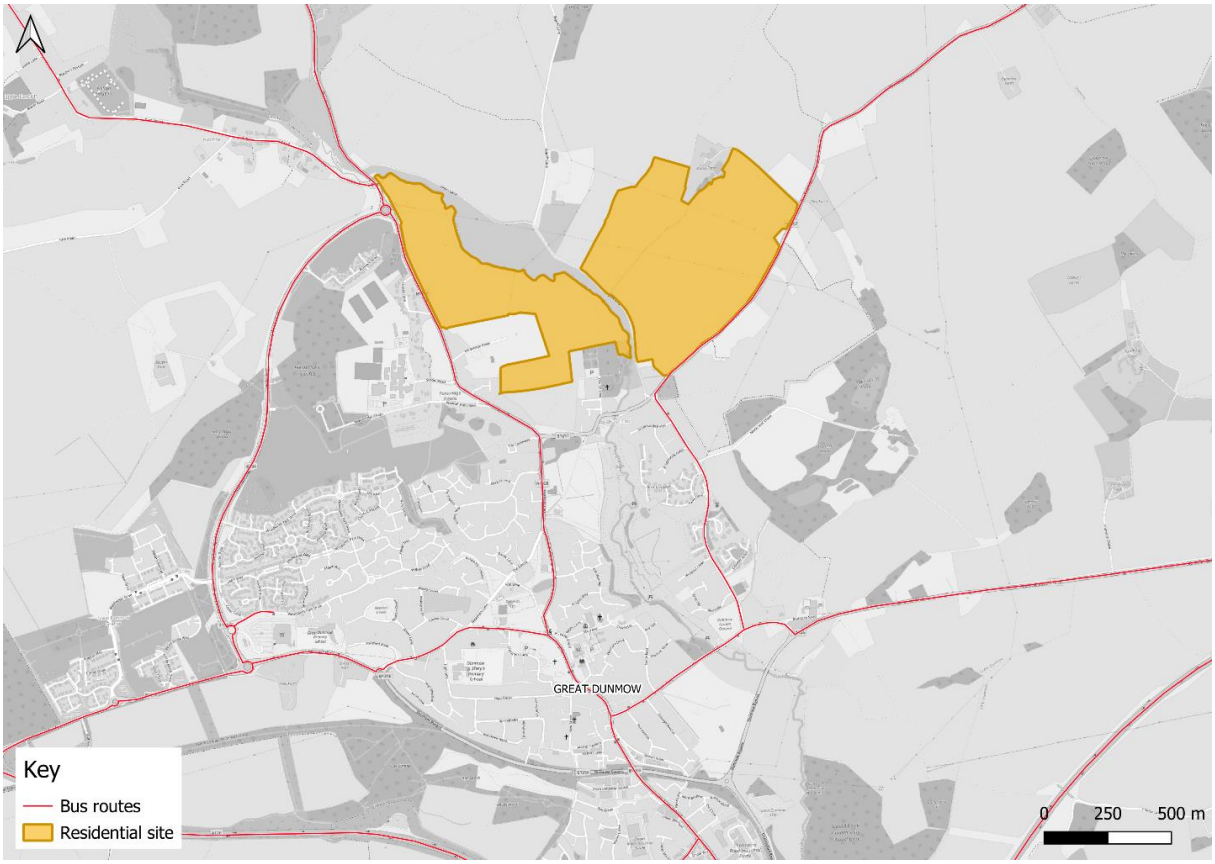
6.3.1 There are two strategic housing sites located at Great Dunmow. Both sites are located to the north of the town centre. The Parsonage Downs site is located to the east of B1008 and has an allocation of 170 residential units. The Church End East allocation is located to the north west of the B1057 The Broadway. The two housing allocation sites are separated by the River Chelmer.

6.3.2 The B1008 and B1057 The Broadway are both bus routes, which connect to the centre of the

town. Both roads are served by regular bus services. Both housing allocations have public rights of way which traverse through them.

6.3.3 Both housing allocation sites have sustainable transport connectivity to the town centre. However, that connectivity could be improved by improving bus services and active travel links. The draft LCWIP has routes which should improve connectivity and amenity by foot and cycle.

Figure 6-3 Great Dunmow Strategic Housing sites



Potential Sustainable Transport Measures

6.3.4 The opportunities for sustainable transport have been split into three themes. There are crossovers between the themes depending on the measures.

6.3.5 Potential measures to improve Public Transport are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The feasibility to divert bus services on the B1008 into the Parsonage Downs residential allocation site and loop back onto the B1008 could be considered. The potential to increase the frequency of bus services could be explored.
- The feasibility to divert the bus services on the B1057 The Broadway into the Church End East housing allocation site could be considered. The service could loop back onto the B1057 The Broadway. The potential to increase the frequency of the bus service could be explored. The A120 corridor study identified re-routing the 324 service in the housing site.
- The feasibility of a new local bus service that links to the housing allocation with the town centre and the Tesco superstore could be explored.

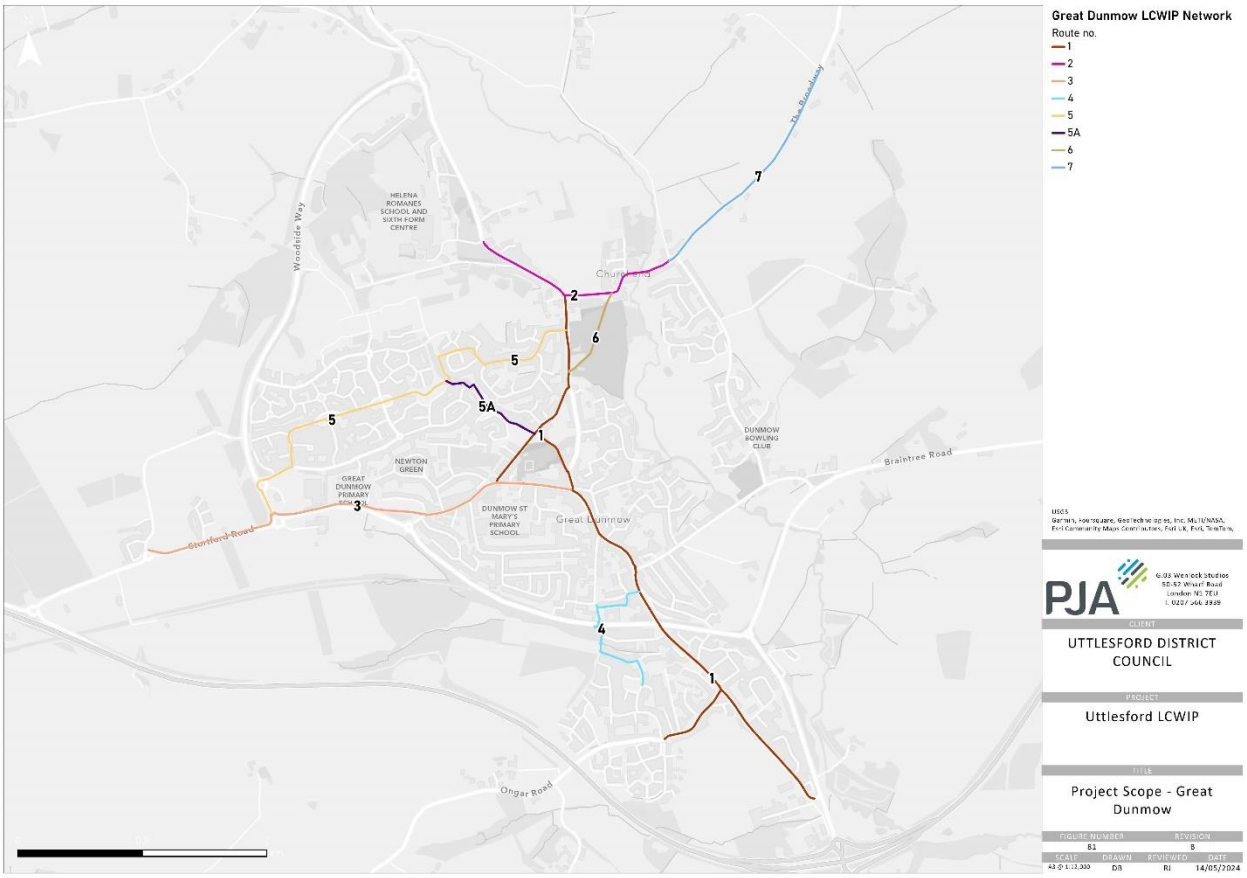
- The A120 corridor study identified two potential new bus services:
  - A new bus service, 2a from Great Dunmow via St Edmunds Lane to the Broadway development site. The service would use the development site to perform a loop. An alternative to St Edmunds Lane would be via Church End Bridge.
  - A new alternative 2b bus service would link the Broadway development site with the proposed Country Parkland via St Edmunds Lane and Stortford Road. The service would use the development site to perform a loop at the Broadway site and the Country Parkland locations. The 2b service would also have the alternative to St Edmunds Lane of Church End Bridge.
- Investigate bus service connections to Stansted airport, which would also provide rail connectivity.
- Pedestrian routes to bus stops should be as direct as possible to aid amenity. Pedestrian routes to bus stops that are circuitous are less attractive and may discourage some people from using the bus.
- Provision of bus shelters at bus stops should be considered and provided where feasible.
- Review of accessibility at existing bus stops and implementation of best practice at new locations should be considered to ensure that buses are accessible to people with a disability or a mobility impairment.
- Provision of Real Time Information to provide users with better information to plan and undertake journeys by bus.
- Provision of a mobility hub within both residential allocation sites.
- Bus awareness and information campaigns.
- Provide details of bus services as part of residential and employment site travel plans.
- Provision of discounted bus vouchers for new residents at strategic development site.

6.3.6 Potential measures to improve Cycling and Walking are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The LCWIP identified 8 routes within Great Dunmow, of which one connects to the Church End East housing allocation site. Another LCWIP route is close to the Parsonage Downs residential allocation site. The network provides connectivity to the town centre, the Tesco superstore and other facilities within the town. Further investigation will be required to ascertain the feasibility of the proposed LCWIP routes.
  - LCWIP 2 traverses from Church End to St Helena Romanes school via the B1008 in a general east to west direction. The potential to extend the route along the B1008 to the housing site should be explored. The LCWIP has design recommendations to improve the route.
  - LCWIP 7 is from Church End to Marks Farm. This route traverses along the Church End East. The LCWIP has design recommendations to improve the route. Connecting the route directly into the site to provide direct connectivity for pedestrians and cyclists should be explored.
- The potential to upgrade Public Footpath Great Dunmow 21 and 22 to bridleways should be explored. The minimum would be to improve the surface and provide lighting to provide a connection to LCWIP 2.
- Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers.
- Pedestrian routes should be as direct as practicable to connect to external facilities thereby providing good amenity, which should encourage journeys by foot.

- Consider the provision of a Bike share facility within the residential sites. The bike share scheme would provide an appropriate number of ebikes and pedal powered bikes.
- Consider providing ebike charging stations.
- Consider providing a cargo bike within residential development sites.
- Providing wayfinding within the development allocations and within Great Dunmow, to the town centre and other facilities to aid the movement of people on foot and by cycle.
- Walking and cycling information and awareness campaigns.

Figure 6-4 Great Dunmow LCWIP routes[8]



6.3.7 Other:

- EV car clubs with 2 spaces as proposed by Uttlesford Core Policy 7.
- EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence.

[8] *Proposed Great Dunmow LCWIP Network, Figure 6.2, Page 71, Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

6.3.8 How these improvements relate to the identified sustainable mobility themes is shown in Table 6.2.

Table 6.2 Great Dunmow – Summary of the proposed improvements related to sustainable mobility themes

Theme	Proposed improvements through the Local plan
Placemaking and land use planning	▪ Providing wayfinding within the development allocations and within Great Dunmow. ▪ Provision of a mobility hub within both residential sites.
Walking and cycling infrastructure	▪ Potential to extend LCWIP 2 to the housing site, with LCWIP 7 connecting directly into the housing site. ▪ Potential to upgrade Public Footpath Great Dunmow 21 and 22 to bridleways. ▪ Review routes and identify measures to link new developments to bus stops and facilities in the most direct way, and to identify barriers to people with disabilities and a mobility impairments. ▪ Bike share, ebike charging stations and cargo bikes should be considered.
Public transport	▪ Review of existing bus services on the B1008 and B1057 to potentially service the new sites, including review of frequencies. ▪ Consider new local bus services, including those proposed in the A120 corridor study, as well as new services to Stansted Airport which would also provide rail connectivity. ▪ Provision of bus shelters at bus stops should be considered and provided where feasible ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment.
Parking and traffic management	▪ EV car clubs with 2 spaces ▪ EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence.
Behavioural change	▪ Bus awareness and information campaigns. ▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of residential and employment site travel plans.
Governance, policy and funding	▪ Provision of discounted bus vouchers for new residents at strategic development site.

6.3.9 The proposed allocation site is accessible by all sustainable transport modes. The accessibility of the site could be improved though the introduction of a range of sustainable transport measures. The measures would increase transport choices available to residents, improving the alternative modes to the private car and reducing the environmental impact of transport. The measures accord with the Local Plan transport policies.

6.4 Stansted Mountfitchet

Sustainable Transport Opportunities

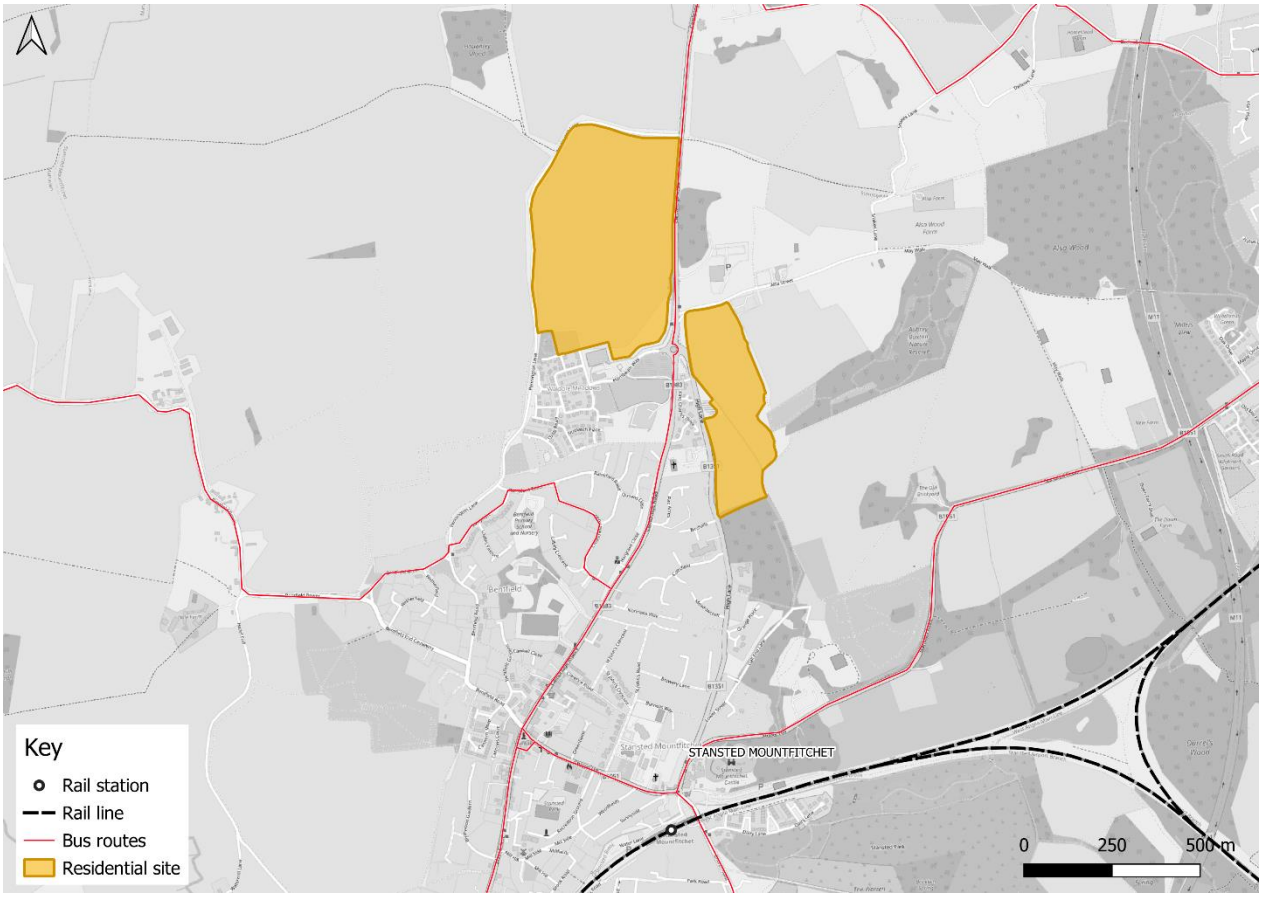
6.4.1 There are two strategic housing allocation sites within Stansted Mountfitchet. Both sites are to the north of the village. The larger site is located adjacent to the B1383 Cambridge Road. The south of the site is bounded by residential estate roads. The smaller site is located to the east of the B1383 Cambridge Road and High Lane.

6.4.2 The B1383 is a bus route which connects to the village centre and Bishops Stortford to the south

and Newport to the north. High Lane is not a bus route. There is a railway station at Stansted Mountfitchet. The bus service along the B1383 Cambridge Road currently connects directly to the railway station at Bishops Stortford. The railways station at Stansted Mountfitchet can also be accessed by bus by interchanging.

6.4.3 High Lane has different sections of footway along one side of the road, resulting in a road without a continuous footway on one side of the road. The opportunity to provide a continuous pedestrian link to the railway station and Co-Op should be investigated.

Figure 6-5 Stansted Mountfitchet Strategic Housing sites



Potential Sustainable Transport Measures

6.4.4 The opportunities for sustainable transport have been split into three themes. There are crossovers between the themes depending on the measures.

6.4.5 Potential measures to improve Public Transport are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The feasibility of diverting bus services on the B1383 into the western residential site and loop back onto the B1383 could be explored. The potential to increase the frequency of bus services could be explored.
- The northern portion of the eastern residential site has nearby access to the bus stops on the B1383 Cambridge Road near the junction with High Lane. Those stops are the closest to the remainder of the site. The potential for a new bus service to serve the eastern and

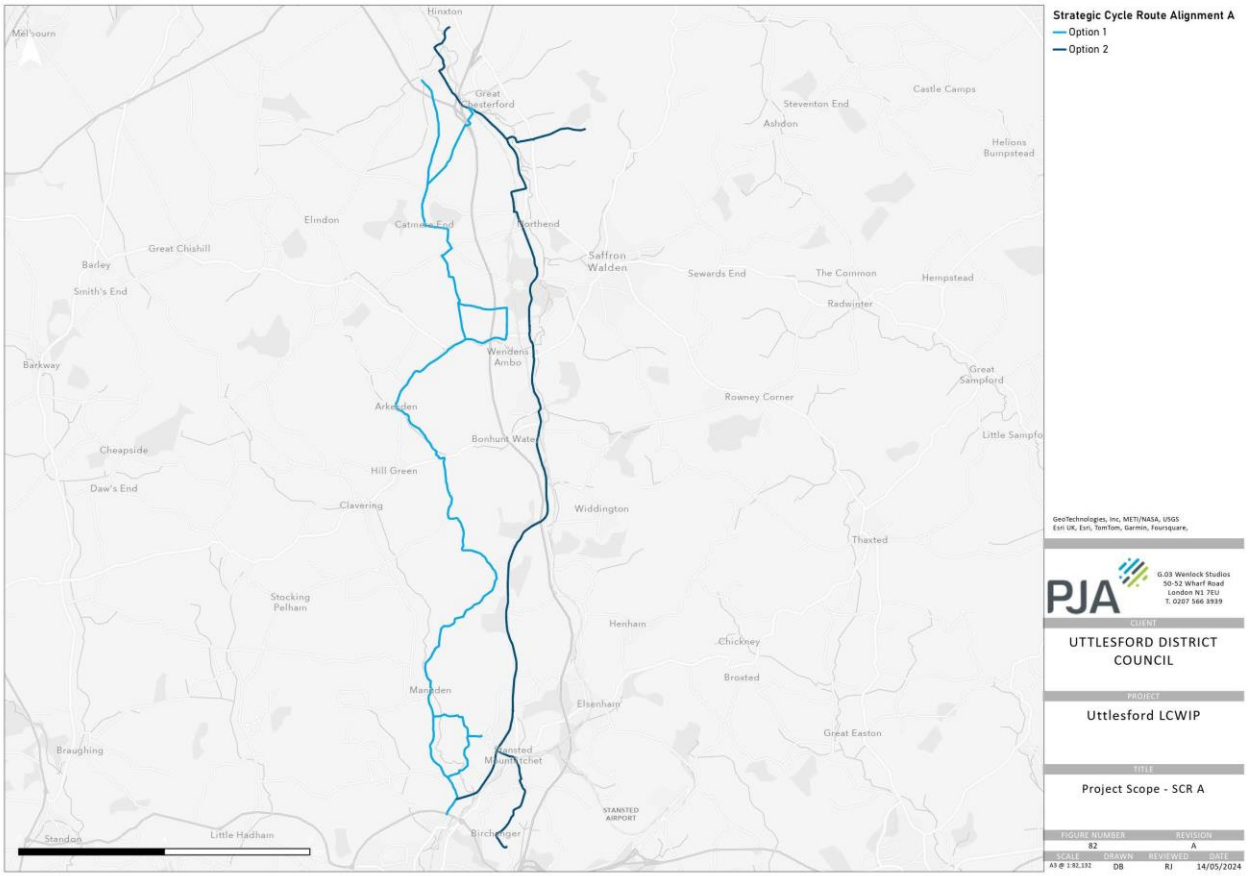
western housing allocation sites, the village centre and Bishop Stortford could be explored. The service could also connect to the railway station at Stansted Mountfitchet. The service would benefit existing housing and facilities in Stansted Mountfitchet.

- Investigate bus service connections to Stansted airport, which would also provide rail connectivity.
- Pedestrian routes to bus stops should be as direct as possible to aid amenity. Pedestrian routes to bus stops that are circuitous are less attractive and may discourage some people from using the bus.
- Provision of bus shelters at bus stops should be considered and provided where feasible.
- Review of accessibility at existing bus stops and at new locations and the implementation of best practice to ensure that buses are accessible to people with a disability or a mobility impairment.
- Provision of Real Time Information to provide users with better information to plan and undertake journeys by bus.
- Explore the provision of a mobility hub within both residential allocation sites.
- Bus awareness and information campaigns.
- Provide details of bus services as part of residential travel plans.
- Provision of discounted bus vouchers for new residents at strategic development site.

6.4.6 Potential measures to improve Cycling and Walking are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The LCWIP identified 2 strategic routes which connect of Bishops Stortford with Great Chesterford. The first alignment is to the west without a connection to the two housing sites. The first alignment option is predominately rural. The second alignment provides connectivity to the two residential allocation sites. The adoption of the second alignment sould the aid accessibility of the western residential allocation by foot and cycle. The LCWIP has design recommendations to improve the route. Further investigation will be required to ascertain the feasibility of the proposed LCWIP routes.
- Public Footpath Stansted Mountfitchet 17 traverses north to south through the eastern residential site. Improving the surface of the route should be explored. The Stansted Mountfitchet 17 footpath connects to Stansted Mountfitchet footpath 19. The improvement of Stansted Mountfitchet footpath 19 should be investigated which includes surfacing, thereby providing a link to the footway on High Street.
- Pedestrian routes should be as direct as practicable to connect to external facilities thereby providing good amenity, which should encourage journeys by foot.

Figure 6-6 LCWIP Proposal in the vicinity of Stansted Mountfitchet[9]



- Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers.
- Bike share facility should be provided within the residential allocations. The bike share scheme would provide an appropriate number of ebikes and pedal powered bikes.
- Consider providing ebike charging stations.
- A cargo bike should be provided within residential development sites.
- Providing wayfinding within the development allocations and within Stansted Mountfitchet, to the town centre and other facilities to aid the movement of people on foot and by cycle.
- Walking and cycling information and awareness campaigns.

6.4.7 Other:

- EV car clubs with 2 spaces as proposed by Uttlesford Core Policy 7.
- EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence.

6.4.8 How these improvements relate to the identified sustainable mobility themes is shown in Table 6.3.

[9] *Figure 7.1, Page 85, Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

Table 6.3 Stansted Mountfitchet – Summary of the proposed improvements related to sustainable mobility themes

Theme	Proposed improvements through the Local plan
Placemaking and land use planning	▪ Providing wayfinding within the development allocations and within Stansted Mountfitchet. ▪ Potential provision of a mobility hub within both residential sites.
Walking and cycling infrastructure	▪ Adoption of the second LCWIP strategic alignment would the aid accessibility of the western residential allocation by foot and cycle ▪ Improvement of Stansted Mountfitchet footpath 19 should be investigated which includes surfacing, thereby providing a link to the footway on High Street. ▪ Review routes and identify measures to link new developments to bus stops and facilities in the most direct way, and to identify barriers to people with disabilities and a mobility impairments. ▪ Bike share and cargo bikes should be provided. Consider providing ebike charging stations and ▪ Providing wayfinding within the development allocations and within Stansted Mountfitchet.
Public transport	▪ Review existing bus services and addition of new services to serve the allocations, linking them to the village centre and Bishop Stortford should be explored. The service should also connect to the railway station at Stansted Mountfitchet, benefiting new and existing residents. ▪ Investigate bus service connections to Stansted airport, which would also provide rail connectivity. ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment.
Parking and traffic management	▪ EV car clubs with 2 spaces ▪ EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence.
Behavioural change	▪ Bus awareness and information campaigns. ▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of residential travel plans.
Governance, policy and funding	▪ Provision of discounted bus vouchers for new residents at strategic development site.

6.4.9 The proposed allocation site is accessible by all sustainable transport modes. The accessibility of the site could be improved though the introduction of a range of sustainable transport measures. The measures would increase transport choices available to residents, improving the alternative modes to the private car and reducing the environmental impact of transport. The measures accord with the Local Plan transport policies.

6.5 Elsenham

Sustainable Transport Opportunities

6.5.1 There is a single, small, strategic housing and employment site in Elsenham. The housing site is located to the north of the centre of the village and to the east of Old Mead Road. The housing site is an extension to the site that has consent. The strategic employment site is located to the southeast of Elsenham village centre. Hall Road forms the northern boundary to the employment site.

Figure 6-7 Elsenham Strategic Housing and Employment sites

6.5.2 Old Mead Road and Hall Road are bus routes and served by the same service.

6.5.3 Elsenham railway station is approximately 200m to the west of the housing allocation site on Old Mead Road/Station Road. A level crossing separates the two station platforms. The proposed housing allocation will have a direct link to the railway station via the adjacent consented residential development and Old Mead Road. Pedestrian connectivity to the railway station via the adjacent housing site needs to be provided to maximise the opportunity provided by housing site location.

6.5.4 The strategic employment site is located to the southeast of the railway station and is outside the built-up area of the village. The connectivity opportunity provided by the railway station to the employment site needs to be explored for sustainable transport.

6.5.5 There are no LCWIP proposals for Elsenham. The opportunities for pedestrian and cycle access to the village facilities and the railway station will need to be investigated further in the next iteration of the LCWIP.

Potential Sustainable Transport Measures

6.5.6 The opportunities for sustainable transport have been split into three themes. There are crossovers between the themes depending on the measures.

6.5.7 Potential measures to improve Public Transport are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The proposed housing allocation will have a direct link to the railway station via the adjacent consented residential development and Old Mead Road. Pedestrian connectivity to the railway station via the adjacent housing needs to be explored to maximise the opportunity provided by housing site location.
- Explorer diverting the bus service into the employment site to improve connectivity.
- Financial contributions towards the improvement of bus services, allowing for an increased frequency of services.
- Pedestrian routes to bus stops should be as direct as possible to aid amenity. Pedestrian routes to bus stops that are circuitous are less attractive and may discourage some people from using the bus.
- Provision of bus shelters at bus stops should be considered and provided where feasible.
- Review of accessibility at existing bus stops and at new locations and the implementation of best practice to ensure that buses are accessible to people with a disability or a mobility impairment.
- Provision of Real Time Information to provide users with better information to plan and undertake journeys by bus.
- Explore the potential provision of a mobility hub within both residential allocation site.
- Bus awareness and information campaigns.
- Provide details of bus services as part of residential and employment site travel plans.
- Provision of discounted bus vouchers for new residents at strategic development site.

6.5.8 Potential measures to improve Cycling and Walking are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- There is no footway on Old Mead Road on the north of the level crossing at the railway station. A pedestrian route should be provided from the housing site to the station via the consent housing site.
- Create a pedestrian point of access along the northern edge of the site which connects to the existing PROW network.
- Delivery of attractive, convenient and all-weather active travel routes within allocated development sites, including connections to and enhancements of the existing Public Rights of Way network.
- New and improved off site active travel routes providing connections to key service centres or facilities.
- There is no continuous pedestrian route from the village centre to the proposed employment site.
- There is no cycle route from Elsenham or Stansted airport to the employment site. Hall Road is subject to the national speed limit after leaving Elsenham.

- Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers.
- Explore the potential for a Bike share facility within the residential allocations. The bike share scheme would provide an appropriate number of ebikes and pedal powered bikes.
- Explore the potential to provide ebike charging stations.
- Explore the potential to provide a cargo bike within residential development sites.
- Providing wayfinding within the development allocations and within Elseham, to the town centre and other facilities to aid the movement of people on foot and by cycle.
- Walking and cycling information and awareness campaigns.

6.5.9 Other

- Explore the potential to provide EV car clubs with 2 spaces.
- EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence.
- EV charge points to be provided at the employment allocation to facilitate the use of electric vehicles at employment sites.

6.5.10 The relationship with the identified sustainable mobility themes is shown in in Table 6.4.

Table 6.4 Elsenham – Summary of the proposed improvements related to sustainable mobility themes

Theme	Proposed improvements through the Local plan
Placemaking and land use planning	▪ Providing wayfinding within the development allocations and within Elsenham. ▪ Explore the potential provision of a mobility hub within both residential site.
Walking and cycling infrastructure	▪ A pedestrian route should be provided from the housing site to the station via the consent housing site. ▪ Delivery of attractive, convenient and all-weather active travel routes within allocated development sites, including connections to and enhancements of the existing Public Rights of Way network. ▪ New and improved off site active travel routes providing connections to key service centres or facilities. ▪ Pedestrian routes to bus stops should be as direct as possible to aid amenity. ▪ Explore the potential for Bike share, ebike charging stations and cargo bikes. ▪ Providing wayfinding within the development allocations and within Elsenham
Public transport	▪ Pedestrian connectivity to the railway station via the adjacent housing needs to be explored to maximise the opportunity provided by housing site location. ▪ Financial contributions towards the improvement of bus services, allowing for an increased frequency of services. ▪ Explorer the potential for diverting the bus service into the employment site to improve connectivity. ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment.
Parking and traffic management	▪ Explore the potential for EV car clubs with 2 spaces. ▪ EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence. ▪ EV charge points to be provided at the employment allocation to facilitate the use of electric vehicles at employment sites.
Behavioural change	▪ Bus awareness and information campaigns. ▪ Walking and cycling information and awareness campaigns.

	▪ Provide details of bus services as part of residential and employment site travel plans.
Governance, policy and funding	▪ Financial contributions towards the improvement of bus services, allowing for an increased frequency of services. ▪ Provision of discounted bus vouchers for new residents at strategic development site.

6.5.11 The proposed allocation site is accessible by all sustainable transport modes. The accessibility of the site could be improved though the introduction of a range of sustainable transport measures. The measures would increase transport choices available to residents and workers, improving the alternative modes to the private car and reducing the environmental impact of transport. The measures accord with the Local Plan transport policies.

6.6 Great Chesterford

Sustainable Transport Opportunities

6.6.1 The employment site at Great Chesterford is located at Chesterford Research Park which is an existing centre for research. The site is located to the southeast of the village of Great Chesterford in a rural setting. The site has an area of 18.3 ha.

Figure 6-8 Employment allocation at Great Chesterford

6.6.2 The employment site connects with the Walden Road via an access road at a roundabout. The existing centre of the research park is approximately 1.5km from Walden Road using the access road. The access road has access control approximately 875m from the roundabout. The access road has a footway on one side. There are bus stops with shelters to the north and south of the roundabout. Within Great Chesterford there is a railway station. Improving public transport access to the site should be explored.

6.6.3 The draft LCWIP has two alignments that link Bishop Stortford with Greater Chesterford. The second alignment proposes a spur to Great Chesterford Research Park. There are opportunities to directly improve connectivity for pedestrians and cyclists to the proposed employment allocation using the LCWIP. There is also a link proposed from Saffron Walden to the Research Park via Little Walden. Public footpath Little Chesterford 11 is parallel to research park access road for part of its length and provides a sustainable transport facility.

Potential Sustainable Transport Measures

6.6.4 The opportunities for sustainable transport have been split into three themes. There are crossovers between the themes depending on the measures.

6.6.5 Potential measures to improve Public Transport are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- Walden Road is a bus route but the distance from the bus stops to the research park is beyond the recommended walking distance. Improved bus access to the research park and employment allocation by re-routing the service and reconfiguring the access road could be explored. The reconfiguration of the access road would require a bus turning loop, with stops and relocated access controls. The potential to increase the frequency of bus services could be explored.
- Improved bus service frequency connecting Saffron Walden, Great Chesterford, Great Chesterford Research Park and Cambridge.
- Enhancements will also be required for interchange facilities at Great Chesterford railway station.
- Provision of bus shelters at bus stops should be considered and provided where feasible.
- Review of accessibility at existing bus stops and at new locations and the implementation of best practice to ensure that buses are accessible to people with a disability or a mobility impairment.
- Explore the provision of Real Time Information to provide users with better information to plan and undertake journeys by bus and rail.
- Bus awareness and information campaigns.
- Provide details of bus services as part of employment travel plans.

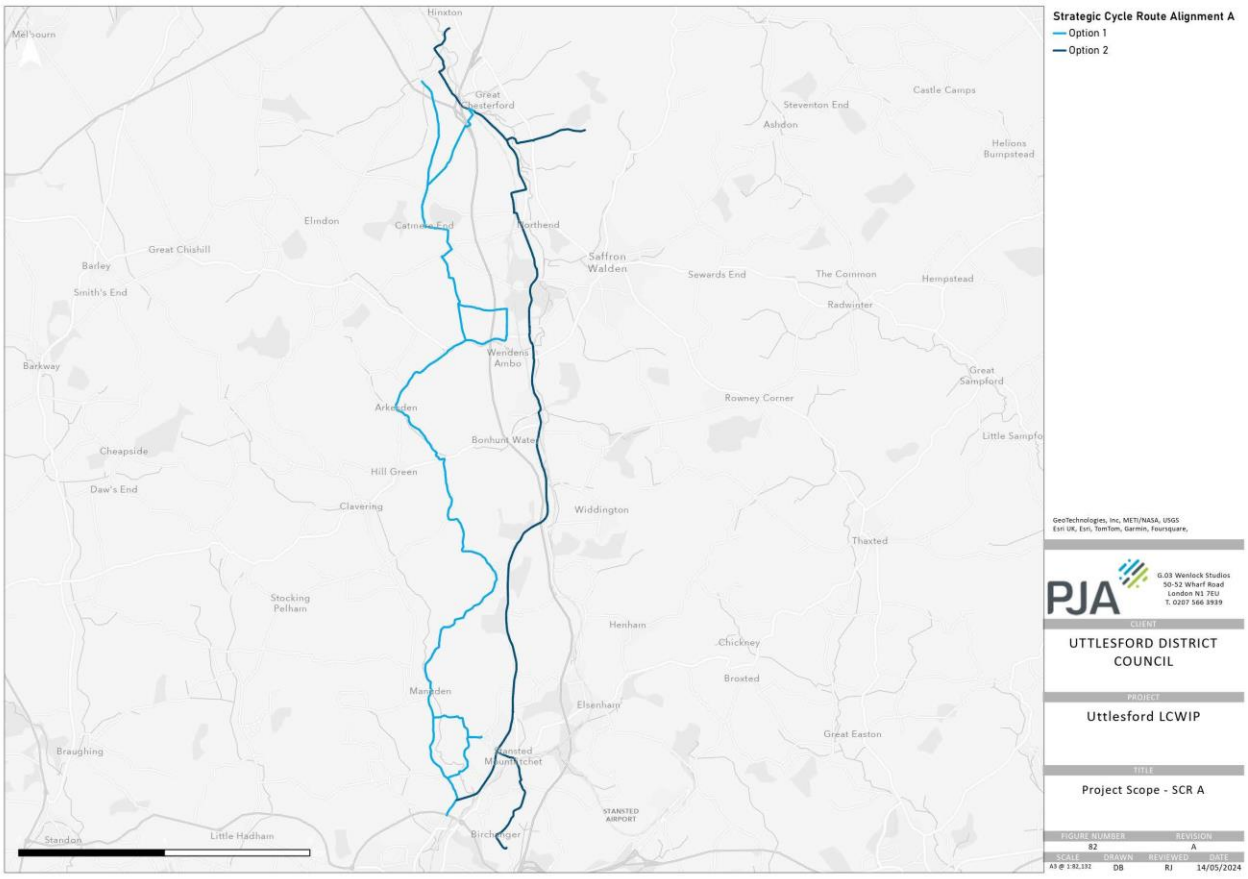
6.6.6 Potential measures to improve Cycling and Walking are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The LCWIP second alignment provides direct connectivity to the existing research facility and proposed employment. The LCWIP proposes to provide a segregated route alongside the research park access road. The potential of a shared use route is raised in the LCWIP depending upon pedestrian flows that use the route. The LCWIP has design recommendations to improve the route. Further investigation will be required to ascertain the feasibility of the proposed LCWIP routes.
- LCWIP route 11 from Saffron Walden via Little Walden connects to Chesterford Research Park from the east. The LCWIP has design recommendations to improve the route. Further investigation will be required to ascertain the feasibility of the proposed LCWIP route.
- The potential to improve the route of Public Footpath Little Chesterford 11 could be explored. The footpath provides connectivity to the southbound bus stop. The footpath would be surfaced and may be extended or connected to the footway on the southside of the access road. The footpath has steps near the bus stop which would need to be replaced by a ramp to improve accessibility for people with disabilities and a mobility impairment.
- Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers.
- Explore providing ebike charging stations.
- Providing wayfinding within the employment allocation and within Great Chesterford, to the town centre, the railway station and other facilities to aid the movement of people on foot

and by cycle.

- Provide active travel improvements at Great Chesterford railway station. Explore providing additional secure cycle parking and ebike charging points.
- Walking and cycling information and awareness campaigns.

Figure 6-9 LCWIP Proposal in the vicinity of Great Chesterford and the Research Park[10]



[10] *Figure 7.1, Page 85, Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

Figure 6-10: LCWIP route from Saffron Walden to Great Chesterford Research Park[11]

6.6.7 Other

- EV charge points to be provided at the employment allocation to facilitate the use of electric vehicles at employment sites.

6.6.8 How these improvements relate to the identified sustainable mobility themes is shown in in Table 6.5 .

[11] *Extract from Figure 5.12, Page 64, Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

Table 6.5 Great Chesterford – Summary of the proposed improvements related to sustainable mobility themes

Theme	Proposed improvements through the Local Plan
Placemaking and land use planning	▪ Providing wayfinding within the employment allocation and within Great Chesterford, to the town centre, the railway station and other facilities
Walking and cycling infrastructure	▪ Direct connection into the LCWIP route. ▪ Potential connection to Saffron Walden from an LCWIP route. ▪ The potential to improve the route of Public Footpath Little Chesterford 11 should be explored. The footpath provides connectivity to the southbound bus stop. ▪ Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers. ▪ Provide active travel improvements at Great Chesterford railway station. Explore providing additional secure cycle parking and ebike charging points. ▪ Explore providing ebike charging stations.
Public transport	▪ Improved bus access to the research park and employment allocation by exploring re-routing the service and reconfiguring the access road. ▪ Improved bus service frequency connecting Saffron Walden, Great Chesterford, Great Chesterford Research Park and Cambridge. ▪ Enhancements will also be required for interchange facilities at Great Chesterford railway station ▪ Provision of bus shelters at bus stops should be considered and provided where feasible, explore the provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment.
Parking and traffic management	▪ EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence.
Behavioural change	▪ Bus awareness and information campaigns. ▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of employment travel plans.
Governance, policy and funding	▪ Financial contributions towards the improvement of bus services, allowing for an increased frequency of services.

6.6.9 The proposed allocation site is accessible by all sustainable transport modes. The accessibility of the site could be improved though the introduction of a range of sustainable transport measures. The measures would increase transport choices available to workers, improving the alternative modes to the private car and reducing the environmental impact of transport. The measures accord with the Local Plan transport policies.

6.7 Takeley

Sustainable Transport Opportunities

There is one strategic housing allocation and two strategic employment allocations at Takeley or in the vicinity. The housing allocation comprises two parcels of land separated by Smiths Green Lane. The western portion of the site is bound by the existing housing to the south in Takeley and the A120 to the north. The eastern portion is bound by housing and the B1256 Stortford Road to the south and the A120 to the north. The housing site is indicated on Figure 6-9 and

6.7.1 Figure 6-11. The B1256 Stortford Road and some of the estate roads below the eastern residential site are bus routes. The B1256 Stortford Road forms a junction with Parsonage Road, which is also a bus route and connects to Stansted airport bus and rail interchange. The eastern employment allocation is indicated on Figure 6-9.

The eastern employment allocation site is bound by the B1256 Stortford Road to the south, the A120 to the north and agricultural land to the west. A grade separated junction is also at the eastern end. The western employment allocation site is bounded by the B1256 Dunmow Road to the south and the A120 to the north. The B1256 Dunmow Road is a bus route. The western employment allocation site is indicated on

6.7.2 Figure 6-11.

6.7.3 All four sites are connected to the rail network from the railway station at Stansted Airport using the bus network. The draft LCWIP proposals provide the opportunity to connect the housing and employment sites with Bishop's Stortford, Stansted Airport and Great Dunmow.

6.7.4 The Strategic residential and employment sites have the opportunity to connect to bus and rail services and the walking and cycling network. There are opportunities to enhance sustainable transport connectivity.

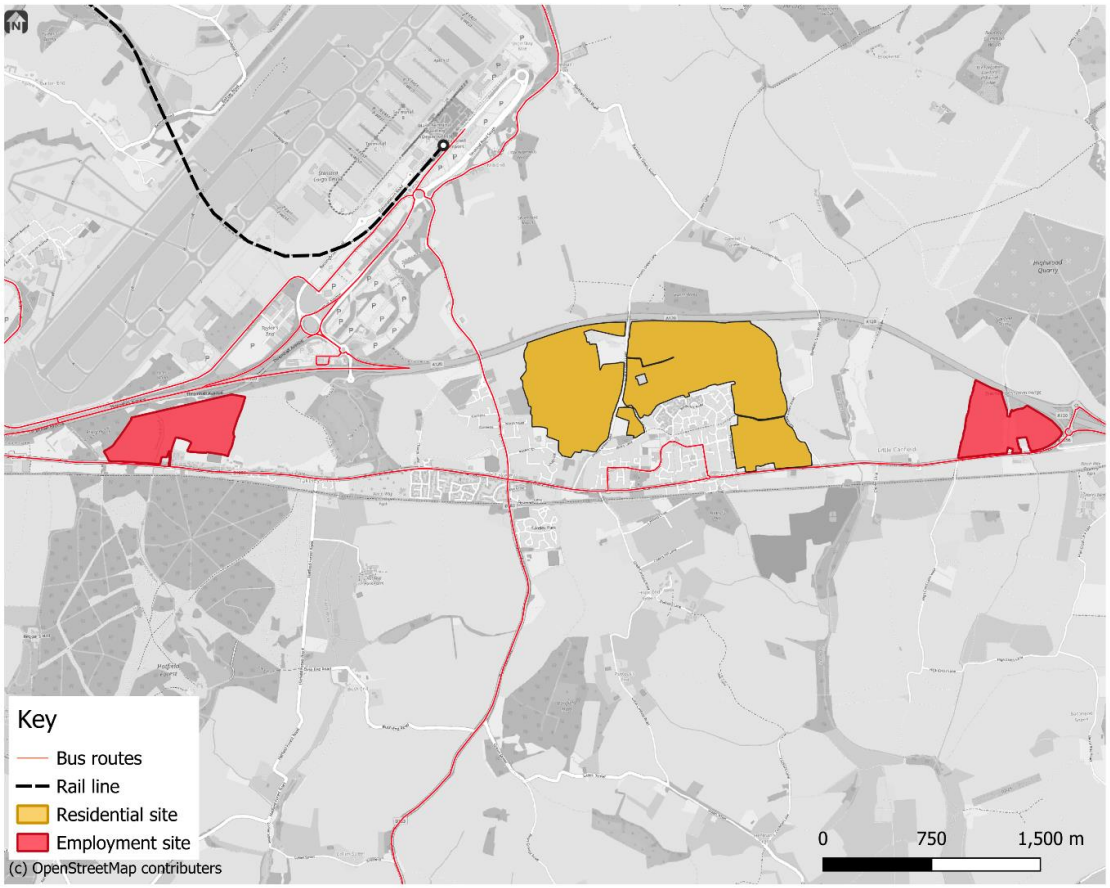
6.7.5 A new secondary school is proposed at Takeley which will serve the settlement and wider catchment. A new primary school is planned (including early years provision) and facility to accommodate Special Educational Needs at Takeley. Opportunities for sustainable travel should be provided for both schools, so that pupils will have alternatives to travel as passengers in private cars, thereby reducing congestion, reducing the environmental impact of school travel

and providing them with the health benefits of sustainable travel.

6.7.6 Measures that enable school pupils to walk and appropriately cycle to school and create a safe environment should be promoted. Those measures will be a combination of infrastructure and 'soft' measures. School Travel Plans provide the opportunity to connect physical infrastructure with a range of other behaviour change measures to provide a comprehensive plan to facilitate sustainable travel in a safer and more environmentally friendly environment.

6.7.7 The adoption of 'Safer Routes to School' and school safety zones provide an opportunity for schools to work the local highway and local planning authority to co-ordinate and deliver a wider range of measures. School Transport in accordance with ECCs policy should be provided. Measures that may facilitate sustainable travel to school are included within paragraphs 6.2.4 and 6.2.5.

Figure 6-11 Strategic Housing and Strategic Employment sites at Takeley



Potential Sustainable Transport Measures

6.7.8 The opportunities for sustainable transport have been split into three themes. There are crossovers between the themes depending on the measures.

6.7.9 Potential measures to improve Public Transport are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The potential to re-route the existing bus service on the B1256 Stortford Road to the housing allocation site should be explored. Increasing the service frequency should also be considered. The A120 corridor study proposes re-routing of the 323 and 324 bus services and alternatively the 133 bus service through the development in Takeley.
- Re-routing the bus services on the B1256 Stortford and B1256 Dunmow Road should be considered. The master plan layouts for the two employment allocation sites will enable the benefits of re-routing to be determined. Increasing the frequency of the bus services should also be considered.
- The potential for bus new services to serve the residential and employment allocations should be explored. There is the potential to loop into the sites, in particular the housing sites. The services should connect to the bus and rail interchange at Stansted Airport. The services should be routed to local facilities and services, that will encourage travel by bus by new and existing residents. The A120 corridor study proposes a new bus service, 1a from Stansted Airport Rail station through the development site with an alternative route via Takeley crossroads.

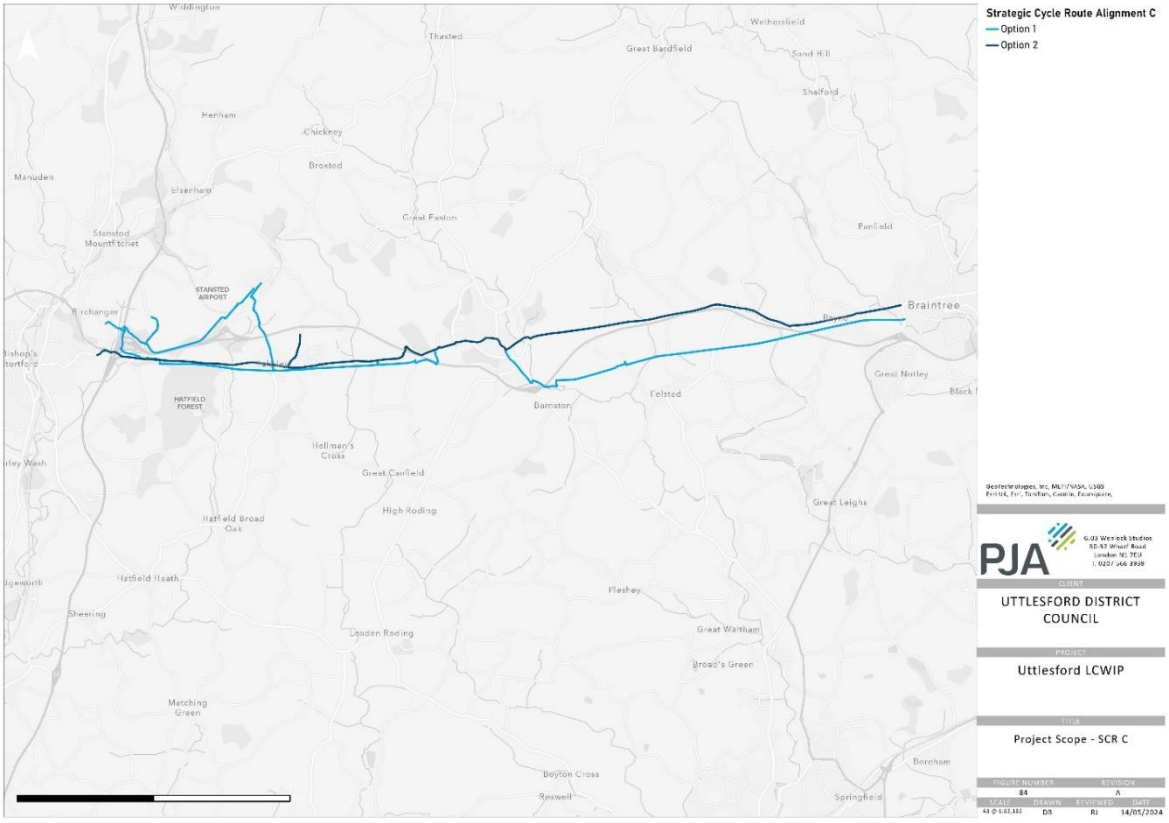
- The proposed schools should be accessible to school bus services.
- Pedestrian routes to bus stops should be as direct as possible to aid amenity. Pedestrian routes to bus stops that are circuitous are less attractive and may discourage some people from using the bus.
- Provision of bus shelters at bus stops should be considered and provided where feasible.
- Review of accessibility at existing bus stops and at new locations and the implementation of best practice to ensure that buses are accessible to people with a disability or a mobility impairment.
- Provision of Real Time Information to provide users with better information to plan and undertake journeys by bus.
- Provision of a community mobility hub within residential allocation sites.
- Bus awareness and information campaigns.
- Provide details of bus services as part of residential and employment site travel plans.
- Provision of discounted bus vouchers for new residents at strategic development site.

6.7.10 Potential measures to improve Cycling and Walking are considered below. Detailed discussions will be required with transport authorities to determine the feasibility, develop schemes, funding and deliver the potential measures.

- The draft LCWIP has identified two alignments from Bishops Stortford to Braintree via Takeley and Great Dunmow. Option 1 connects Bishops Stortford with Stansted Airport, Takeley, Great Dunmow and Braintree. Option 2 connects Bishops Stortford with Takeley, Great Dunmow and Braintree. Option 2 also includes Smiths Green as an active travel route. Both routes could serve the two housing and two employment allocation sites. The works to Parsonage Road which will provide a link to the airport and Smiths Green Lane are listed below. The LCWIP has design recommendations to improve the route. Further investigation will be required to ascertain the feasibility of the proposed LCWIP routes.
- a sustainable transport route will be delivered through the Takeley strategic site which will be designed to accommodate all appropriate road users and deliver walking and cycling schemes to the highest standard. The route will only be available for buses and active travel west of Smiths Green Lane
- public transport and active travel connections will be improved between Takeley and Stansted Airport public transport interchange, including improvements along Parsonage Road to improve connectivity for cyclists. This will include new active travel connections through the airport to the transport interchange and will require signalised crossings of road infrastructure at the airport.
- Appropriate upgrades to the Flitch Way including enhancements that improve safety, access, interpretation, multi-functional surfacing for all users and measures to improve biodiversity.
- Smiths Green Lane will be close to through vehicular traffic at Warish Hall Farm and the route will be prioritised for walking and cycling whilst retaining local access.
- enhancements will be made to Public Footpath 41 and High Cross Lane to provide active travel connections to the Flitch Way.
- on-site and off-site enhancements to all public rights of way
- Little Canfield employment allocation should be accessed from the cycle link through the site which links to the consented residential scheme at Highwood Quarry.
- Walking and cycling routes should be provided to the proposed primary and secondary schools.
- Review of routes from new development to bus stops and facilities to identify barriers to people with disabilities and a mobility impairment to identify measures that should be provided to remove those barriers.

- provision of two electric car club vehicles for Takeley strategic allocation.
- provision of a bike share scheme that will deliver e-bikes and conventional bikes for Takeley strategic allocation.
- provision of an e-cargo bike to be located on the development site for Takeley strategic allocation,
- Consider providing ebike charging stations and bike maintenance hubs.
- Providing wayfinding for the housing and employment allocations to services and facilities and the railway and bus stations at Stansted Airport and other facilities to aid the movement of people on foot and by cycle.
- Walking and cycling information and awareness campaigns.

Figure 6-12 LCWIP Routes from Bishop's Stortford to Braintree via Takeley and Stansted Airport[12]



6.7.11 Other:

- EV car clubs with 2 spaces as proposed by Uttlesford Core Policy 13.
- EV charge points to be provided at the residential and employment allocation sites to facilitate the use of electric vehicles at employment sites.
- The highway mitigation and junction improvements that are required in Takeley and Great Dunmow as identified in the transport evidence including appropriate and proportionate mitigation measures at Junction 8.

6.7.12 How these improvements relate to the identified sustainable mobility themes is shown in in

6.7.13 Table 6.6.

[12] *Figure 7.3, Page 89, Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

Table 6.6 Takeley – Summary of the proposed improvements related to sustainable mobility themes

Theme	Proposed improvements through the Local Plan
Placemaking and land use planning	▪ Providing wayfinding for the housing and employment allocations to services and facilities and the railway and bus stations at Stansted Airport ▪ Provision of a mobility hub within both residential sites.
Walking and cycling infrastructure	▪ Connect sites with LCWIP routes ▪ A sustainable transport route will be delivered through the Takeley strategic site which will be designed to accommodate all appropriate road users and deliver walking and cycling schemes to the highest standard. ▪ Public transport and active travel connections will be improved between Takeley and Stansted Airport public transport interchange. ▪ Upgrades to local walking and cycling routes, including multi-functional surfacing for all users and measures to improve biodiversity. ▪ Walking and cycling routes should be provided to the proposed primary) and secondary schools. ▪ Review routes and identify measures to link new developments to bus stops and facilities in the most direct way, and to identify barriers to people with disabilities and a mobility impairments. ▪ Bike share, ebike charging stations and cargo bikes should be provided. Investigate the provision of bike maintenance hubs. ▪ Providing wayfinding for the housing and employment allocations to services and facilities and the railway and bus stations at Stansted Airport
Public transport	▪ Review existing bus services and addition of new services to serve the allocations. ▪ The services should connect to the bus and rail interchange at Stansted Airport. The services should be routed to local facilities and services, that will encourage travel by bus by new and existing residents. ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment.
Parking and traffic management	▪ EV car clubs with 2 spaces ▪ EV charge points provided for all houses to enable residents to own and charge their vehicle at their residence. ▪ The highway mitigation and junction improvements that are required in Takeley and Great Dunmow as identified in the transport evidence including appropriate and proportionate mitigation measures at Junction 8. ▪ Smiths Green Lane will be close to through vehicular traffic at Warish Hall Farm and them route will be prioritised for walking and cycling whilst retaining local access.
Behavioural change	▪ Bus awareness and information campaigns. ▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of residential and employment site travel plans.
Governance, policy and funding	▪ Provision of discounted bus vouchers for new residents at strategic development site.

6.7.14 The proposed allocation site is accessible by all sustainable transport modes. The accessibility of the site could be improved though the introduction of a range of sustainable transport measures. The measures would increase transport choices available to residents and workers, improving the alternative modes to the private car and reducing the environmental impact of transport. The measures accord with the Local Plan transport policies.

6.8 Summary

6.8.1 There are opportunities to improve connectivity and accessibility for sustainable transport, thereby reducing the environmental impact of transport for proposed development allocations as well as existing settlements within Uttlesford. Sustainable Transport to the strategic allocation sites at Saffron Walden, Great Dunmow, Stansted Mountfitchet, Elsenham, Great Chesterford and Takeley can be improved so that they algin with the draft Local Plan transport policies.

6.8.2 A range of measures have been identified within section 6, which could be introduced which align with the themes to improve sustainable mobility. Those themes are:

- Placemaking and land use planning.
- Walking and cycling infrastructure.
- Public transport.
- Parking and traffic management.
- Behavioural change.
- Governance, policy and funding

6.8.3 The measures present a significant opportunity to improve sustainable transport within Uttlesford. The measures will require detailed discussion with transport authorities to determine the feasibility, develop schemes and funding to deliver them.

7 Conclusions

7.1.1 For a rural district like Uttlesford, policy guidance and examples of best practice suggest the following common themes when improving sustainable transport:

- Opportunities to maximise sustainable transport differ between urban and rural areas, it is important these differences are taken into account.
- Developments, where possible, should limit impacts of car use by prioritising and encouraging walking, cycling and public transport.
- 'Decide and provide' and 'vision and validate' should be used rather than 'predict and provide' using robust evidence bases.
- Local Walking and Cycling Plans (LCWIPs) should be undertaken and optimised to support the wider cycle and walking network with new developments supporting these plans.

7.1.2 Draft transport policies related policies for the Uttlesford Local Plan have been developed. Those local plan policies are considered to align well with national, regional and local policies and strategies. The draft policies will enable the improvement of connectivity and sustainable transport modes and choices.

7.1.3 A total of 3,849 new dwellings and 64.3 hectares of new employment land are proposed across 6 areas of the District in the new Local Plan. The majority of the proposed development sites benefit from accessibility to most key services, with the exception being the proposed employment allocation site near Great Chesterford.

7.1.4 The strategic allocation sites are well connected with good accessibility to facilities, the bus and rail network. The proposed Local Plan policies provide an opportunity and the direction to improve sustainable travel opportunities and connectivity.

7.1.5 However, all sites require a sustainable transport strategy to maximise the sites potential for sustainable travel. The Local Plan provides an opportunity to improve the nature of sustainable transport, its quality and provision. Improvements to sustainable transport will reduce the environmental impact of existing and proposed development, thereby aiding the goal of reducing the impact of travel on the climate.

7.1.6 There are a range of measures that can be implemented to improve sustainable transport within existing communities and facilitate new development. The table below shows the measures which are proposed, broken down by six broad themes around which good practice for sustainable mobility and mode shift in new and existing development can be framed.

Table 7.1: Proposed Sustainable Travel Improvements

Theme	Proposed improvements through the Local Plan
Placemaking and land use planning	▪ Providing wayfinding within new development allocations to key local trip attractors, including railway stations and town centres, to aid the movement of people on foot and by cycle. ▪ Provision of mobility hubs.
Walking and cycling infrastructure	▪ Provide new sustainable transport routes and upgrade existing ones. ▪ Connect sites with LCWIP routes. ▪ Connect to Public Rights of Way network and improvements to Public Rights of Way. ▪ Review routes and identify measures to link new developments to bus stops and facilities in the most direct way, and to identify barriers to people with disabilities and a mobility impairments. ▪ Bike share, ebike charging stations, cargo bikes should be provided. Investigate provision of bike

	maintenance hubs ▪ Pedestrian routes to bus stops should be as direct as possible to aid amenity. ▪ Walking and cycling routes should be provided to the proposed primary and secondary schools. ▪ Upgrades to local walking and cycling routes. ▪ Investigate the increase cycle parking at railway stations.
Public transport	▪ Review existing bus services and addition of new services to serve the allocations. ▪ Provision of bus shelters at bus stops, provision of real time information, as well as reviewing existing stops to ensure they are accessible to people with a disability or a mobility impairment. ▪ Enhance interchange facilities at railway stations. ▪ Improved connections to Stansted Airport.
Parking and traffic management	▪ EV car clubs. ▪ EV charge points provided for all houses. ▪ The highway mitigation and junction improvements that are required in Takeley and Great Dunmow as identified in the transport evidence including appropriate and proportionate mitigation measures at Junction 8 ▪ Smiths Green Lane will be close to through vehicular traffic at Warish Hall Farm and them route will be prioritised for walking and cycling whilst retaining local access.
Behavioural change	▪ Walking and cycling information and awareness campaigns. ▪ Provide details of bus services as part of residential and employment travel plans. ▪ Bus awareness and information campaigns.
Governance, policy and funding	▪ Provision of discounted bus vouchers for new residents at sites. ▪ Financial contributions towards the improvement of bus services, allowing for an increased frequency of services. ▪ Introduce Saffron Walden Transport Strategy measures for public transport, parking and traffic management and placemaking

7.1.7 There are opportunities to improve connectivity and accessibility of the strategic allocation sites at Saffron Walden, Great Dunmow, Stansted Mountfitchet, Elsenham, Great Chesterford and Takeley and the surrounding areas. The report demonstrates that there are a range of measures that can improve sustainable transport use, providing alternatives to the private car and reducing the environmental impact of transport. The measures align with the draft transport policies contained within the draft Local Plan.

Appendix

A1 National Policies and Guidance

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National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF)[13] was first published in March 2012, with the latest update issued in December 2023. It sets out the government's planning policies for England and how these should be applied.

Section 9 (paragraphs 108 to 113) considers the promotion of sustainable development and notes that 'transport issues should be considered from the earliest stages of plan-making and development proposals'.

This continues by highlighting that the 'planning system should actively manage patterns of growth' and that 'significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.'

Paragraph 110 considers that planning policies should 'support an appropriate mix of uses across an area…and to minimise the number and length of journeys needed….'. It continues stating that planning policies should also 'provide for attractive and well-designed walking and cycling networks with supporting facilities…'

Paragraphs 114-117 of chapter 9 provide guidance on the assessment of development proposals stating that these should ensure 'appropriate opportunities to promote sustainable transport modes have been taken up', 'safe and suitable access can be achieved for all', the design of all transport elements reflect relevant and current government guidance, and that any 'any significant impacts on the transport network…can be cost effectivity mitigated to an acceptable degree'

Planning Practice Guidance - Transport evidence bases in plan making and decision taking

Transport evidence bases in plan making and decision taking is planning policy guidance published in 2015. It first defines in paragraph 002 why a planning authority should establish a transport evidence base for a Local Plan:

"It is important for local planning authorities to undertake an assessment of the transport implications in developing or reviewing their Local Plan so that a robust transport evidence base may be developed to support the preparation and/or review of that Plan. A robust transport evidence base can facilitate approval of the Local Plan and reduce costs and delays to the delivery of new development, thus reducing the burden on the public purse and private sector."

Paragraph 003 explains what should be considered in developing the transport evidence base to support the Local Plan. Paragraph 005 explains the baseline information which should be used. Paragraph 006 lists detailed information to be used and paragraph 008 states how the impact of land allocations should be considered in assessing the Local Plan proposals.

[13] National Planning Policy Framework - GOV.UK (www.gov.uk)

Planning Practice Guidance – Travel Plans, Transport Assessments and Statements

Travel Plans, Transport Assessments and Statements is planning policy guidance published in March 2014. This policy document details what travel plans, transport assessments and statements are and how they relate to each other. They are:

'ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements'

Paragraph 006 details why travel plans, transport assessments and statements are important:

- encouraging sustainable travel;
- lessening traffic generation and its detrimental impacts;
- reducing carbon emissions and climate impacts;
- creating accessible, connected, inclusive communities;
- improving health outcomes and quality of life;
- improving road safety; and
- reducing the need for new development to increase existing road capacity or provide new roads.

Paragraph 007 details the key principles when preparing a Travel Plan, Transport Assessment or Statement. These first 8 paragraphs refer to all three types with paragraphs 009-12 relating to Travel Plans and paragraph 013-015 providing specific detail on when the documents are required, scope for these and what information should be included.

DfT Circular 01/22 – Strategic road network and the delivery of sustainable development

DfT Circular 01/202214 is a policy paper which explains how National Highways engages with the planning system and fulfils its remit of a delivery partner for sustainable economic growth whilst maintaining the strategic road network.

Paragraphs 11-17 set out the principles of sustainable development. Stating that 'New development should be facilitating a reduction in the need to travel by private car and focused on locations that are or can be made sustainable'. It highlights the impact of where developments are located has on people's mode of travel for short journeys.

As part of the NPPF expectations of a clear evidence base to support local plans and spatial development strategies, National Highways expect this process to explore options to reduce SRN reliance for local journeys, maximising opportunities for walking, wheeling, cycling and PT use. With development plans to only promote locations that are or can be made sustainable.

This policy guidance sets out that in the preparation of local plans and spatial development strategies that National Highways will be engaged with from the outside. Policies and allocations arising from these must not 'compromise the SRN's prime function to enable long-distance movement of people and good'

[14] *Strategic road network and the delivery of sustainable development - GOV.UK (www.gov.uk)*

Planning for the future – A guide to working with National Highways on planning matters

This planning guide15 describes the approach National Highways will take when engaging with the planning system and the issues explored when considering draft planning documents and planning applications.

When engaging with the planning system, National Highways are committed to the following values:

1. **Maintain safety** – plan roads to the highest levels of safety
2. **Engage early** – encourage parties developing plans or planning applications which may have an impact on the SRN to engage as early as possible
3. **Work openly** – commitment of National Highways as a proactive partner who will work openly and collaboratively
4. **Share evidence** – National Highways collect and analyse significant amounts of data about the SRN which can be provided where available
5. **Share knowledge and experience** – National Highways will willingly share knowledge on the development, design and delivery of traffic schemes
6. **Work collaboratively** – respond to consultations in a timely manner and work with local authorities prior to and in between formal consultation

In terms of sustainable development, this policy document supports DfT Circular 01/2022, highlighting key principles:

- 'New development should be facilitating a reduction in the need to travel by car and focused on locations that are or can be made sustainable'
- 'Developments in the right places and served by the right sustainable infrastructure delivered alongside or ahead of occupancy must be a key consideration when planning for growth in all local authority areas.'
- 'Where developments are located, how they are designed and how well delivery and public transport services are integrated has a huge impact on people's mode of travel for short journeys'

Local Transport Note 1/20

Local Transport Note 1/2016 published in 2020 provides guidance and good practice for the design of cycle infrastructure for England and Northern Ireland, supporting the statutory Cycling and Walking investment Strategy.

This guidance provides a number of recommendations for the setting of design standards by local authority. It highlights five overarching design principles – coherent, direct, safe, comfortable, and attractive.

Chapter 14 of this guidance refers to the integration of cycling with highway improvements and new developments. It highlights the importance of embedding cycling infrastructure requirements

[15] *Planning for the future - A guide to working with National Highways on planning matters - GOV.UK (www.gov.uk)*
[16] *LTN 1/20 Cycle infrastructure design - GOV.UK (www.gov.uk)*

in local authority planning, design and highway adoption policies and processes. This chapter provides guidance on the planning process, planning the network, designing of the network, and on main streets, quiet streets, and for motor traffic routes:

- Appropriate cycle facilities should be provided within all new and improved highways, with these typically being delivered alongside other highway work in new developments.
- Local Walking and Cycling Plans (LCWIPs) should be undertaken to plan the wider cycle network with these supporting network plans for new developments.
- Expectation that high quality cycle facilities should be provided in all new developments following relevant design guidance

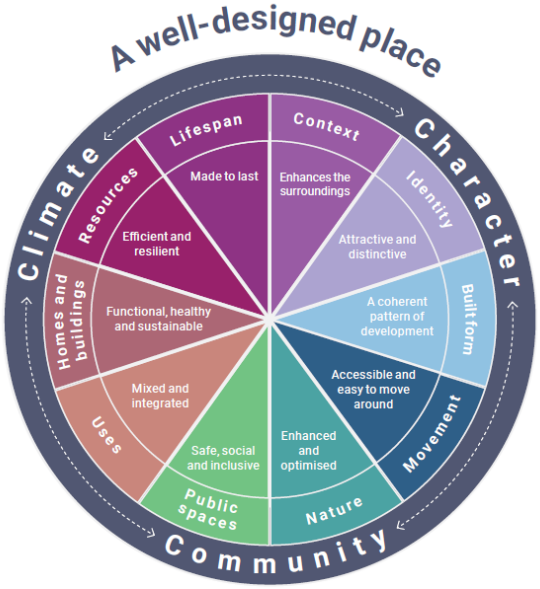
National Design Guide

The National Design Guide17 first published in 2019 and then updated in 2021, illustrates 'how well-designed places that are beautiful, healthy, greener, enduring and successful can be achieved in practice'. It forms part of the Government's collection of planning practice guidance. There are ten key characteristics with examples of best practice provided for each.

Paragraph 77 of the National Design Guide states that 'a well-designed movement network defines a clear pattern of streets that':

- is safe and accessible for all
- functions efficiently to get everyone around, takes account of the diverse needs of all its potential users and provides a genuine choice of sustainable transport modes
- limits the impacts of car use by prioritising and encouraging walking, cycling and public transport, mitigating impacts and identifying opportunities to improve air quality
- promotes activity and social interaction, contributing to health, well-being, accessibility and inclusion; and
- incorporates green infrastructure, including street trees to soften the impact of car parking, help improve air quality and contribute to biodiversity'

Figure: Ten characteristics of well-designed places, National Design Guide



[17] National design guide - GOV.UK (www.gov.uk)

Cycling and Walking Investment Strategy and Local Cycling and Walking Infrastructure Plans (LCWIPs)

In 2017, the Government published the first Cycling and Walking Investment Strategy (CWIS1)18 which sets out ambitions to make walking and cycling the natural choice for shorter journeys or as part of a longer journey. This has since been updated in the second Cycling and Walking Investment Strategy (CWIS2)19, retaining the vision but outlining total investment into active travel until 2025 and a revised set of objectives to:

- Increase the percentage of short journeys in towns and cities that are walked or cycled
- Increase walking
- Double cycling
- Increase the percentage of children aged 5 to 10 who usually walk to school

As set out in CWS1, LCWIPs are an approach to identify cycling and walking improvements at the local level to enable a long-term approach to developing local cycling and walking networks.

Key outputs of LCWIPs are:

- a network plan for walking and cycling which identifies preferred routes and core zones for further development
- a prioritised programme of infrastructure improvements for future investment
- a report which sets out the underlying analysis carried out and provides a narrative which supports the identified improvements and network

These documents provide technical guidance for developing LCWIPs20 including integration with land use planning and transport planning

- Local planning authorities should consider incorporating LCWIPs into Supplementary Planning Documents and refer to them in Area Action Plans and Neighbourhood Plans
- Incorporating LCWIPs into local planning policy ensures ‘that appropriate consideration is given to cycling and walking in all local planning and transport decisions’
- ‘To be successful it is vital that LCWIPs are part of an integrated response to creating better places, safer streets and more reliable journeys’

Essex County Council has published an LCWIP for Basildon, Braintree, Chelmsford and Colchester, aiming to develop LCWIPs for all major areas. However, all boroughs / districts in Essex have a Cycling Action Plan21 including Uttlesford District who have also developed a LCWIP currently in draft form.

Gear Change: A bold vision for cycling and walking

Gear change22, published in 2020, sets out government guidance for transforming the role cycling and walking play in the transport system. This is set out in a vision for England:

[18] *Cycling and walking investment strategy (2017) - GOV.UK (ww.gov.uk)*
[19] *Cycling and walking investment strategy (2022) - GOV.UK (www.gov.uk)*
[20] *Local cycling and walking infrastructure plans technical guidance - GOV.UK (www.gov.uk)*
[21] *Uttlesford District Cycling Action Plan - Essex County Council (essexhighway.org)*
[22] *Gear change - a bold vision for cycling and walking - GOV.UK (www.gov.uk)*

'Places will be truly walkable. A travel revolution in our streets, towns and communities will have made cycling a mass form of transit. Cycling and walking will be the natural first choice for many journeys with half of all journeys in towns and cities being cycled or walked by 2030.'

This vision for walking and cycling in England is supported by four key themes:

1. Better streets for cycling and people
2. Putting cycling and walking at the heart of transport, place-making and health policy
3. Empowering and encouraging local authorities
4. We will enable people to cycle and protect them when they cycle

This guidance sets out some key design principles for cycling including:

- Cyclists must be treated as vehicles, not pedestrians
- Cyclists must be separated from pedestrians and volume of traffic at both junctions and stretches of road between
- Routes should be designed only by those who have experienced the road on a cycle
- Routes must join together and feed direct, logical and initiatively understandable by all road users
- Purely cosmetic alterations should be avoided

Active Travel England

Active Travel England's (ATE) strategic aims are to increase levels of walking and cycling to 50% of journeys in towns and cities by 2030 by:

- creating better streets and networks for cycling and walking that are built to the 'key design principles' as set out in Gear Change and Local Transport Note 1/20
- putting walking and cycling at the heart of transport, place-making, and health policy so travelling without a car is easy and accessible utilising a long-term walking and cycling programme and budget
- empowering and encouraging local authorities who manage their roads to incorporate active travel improvements into all aspects of their functions. This includes access to new powers to manage the highway effectively for active travel and training on all aspects of active travel best practice
- enabling people to cycle and protecting them when they do by reducing road danger through the creation of safe infrastructure based on the key design principles and working with the department and relevant bodies to ensure that the rules of the road work to protect people travelling actively.

Since June 2023 ATE is "a statutory consultee on all planning applications for developments equal to or exceeding 150 housing units, 7,500 m2 of floorspace or an area of 5 hectares"23 but does "not have any statutory powers to direct the outcome of planning applications".

ATE's **planning application assessment toolkit**[24] was updated in July 2023 and allows assessors to consider development proposals against current guidance for cycling and walking.

[23] *Active Travel England to be consulted on all large planning applications - GOV.UK (www.gov.uk)*
[24] *Active Travel England: planning application assessment toolkit - GOV.UK (www.gov.uk)*

It *"is not in itself the determinant of a planning application. Its purpose is to allow the user to assemble the evidence and assess the development proposal against current expectations. Users are expected to use their professional judgement in providing an evidence-based recommendation*". The checklist considers:

- The Transport Assessment must provide quantitative and qualitative analyses of the active travel environment surrounding the site, including the quality of current walking, wheeling and cycling infrastructure as well as the future trip generation forecast based on well thought out and realistic yet ambitious assumptions for the take-up of active travel and the future provision of active travel infrastructure, schemes and initiatives.
- Off-site infrastructure/facilities should conform to the latest available guidance, be of high-quality design and support a significant shift towards active travel.
- On-site infrastructure/facilities should ensure that placemaking and active travel are at the centre of the planning proposal and the permeability of the site is maximised.
- The Travel Plan should have an ambitious series of targets, monitoring, review and remedial measures/funding to be actioned in the event that the targets are not achieved.

ATE has also developed a range of tools25 to support the development of designs and the assessment of design quality for active travel interventions and schemes (February 2024). This includes:

- Crossing selector tool – providing a range of suitable design options when connecting walking, wheeling and cycling routes over a main road
- Route cross-section tool – assists in confirming the suitability of a corridor for different types of active travel infrastructure.

Walkable Neighbourhoods

Sustrans[26] made the following recommendations as part of 2022 research to build in the right places to reduce car dependency:

- Agree a spatial vision, using mapping to clearly show the locations with best accessibility.
- Develop Supplementary Planning Documents that set accessibility standards based on 800m walking and wheeling distances to key services, and 400m to bus stops.
- Develop accessibility background papers to reinforce the importance of walkable distances.
- Measure proximity to services for sites in the site allocations process, whether or not they are within a settlement boundary.
- Include proximity to services as a criterion to discount unsuitable sites.

Delivering Sustainably Walkable Neighbourhoods

2024 research[27] provides guidance and evidence for delivering sustainable walkable neighbourhoods. It defines a vision that 'New settlements and urban extensions need to be better designed, be more sustainable and delivery more liveable outcomes – truly 'Walkable Neighbourhoods' focused on local living and sustainable travel.'

[25] *Design assistance tools - Active Travel England (www.gov.uk)*
[26] *Walkable neighbourhoods: how to reduce car dependency in new developments (sustrans.org.uk)*
[27] *Delivering sustainably walkable neighbourhoods - Arup*

This report details the concept of a ’15-minute walkable neighbourhood’, commonly described as a 15-minute route trip (7.5-minute journey in each direction) and uses a WalkFar tool to assess walkability of new settlements, modelling the relationship between the scale of development and the radius of the development.

It defines what different scales of development could and should include, on average around 1,500 homes and jobs would support a Local Centres, 2,500-3,500 for a district centre and 6,500 for a town centre.

It highlights the benefits of introducing walkable neighbourhoods on the highway network including reducing the need to travel. For a 3,500-home scheme supporting a large district centre or small town centre, this will generate 15-25% fewer car trips per dwelling in the AM peak hour compared to the national average.

Key guidance on delivering sustainably walkable neighbourhoods include:

1. A strong ‘centre’ providing a range of destinations within a walkable distance is critical
2. A ‘critical; mass’ of homes and jobs is essential for a settlement to sustain a strong walkable centre
3. How much development is delivered is far more important than the settlement radius
4. Public transport and cycling remain key to achieving 50% sustainable mode share in most settlements

Guide to the 20-minute neighbourhood

The Town and Country Planning Association with Sport England working with partners including Sustrans, Design Council, Fields in Trust, CLES to explore how the idea of a ’20-minute neighbourhood’ could be introduced in the context of the English planning system. This guidance document28 outlines a set of principles for success including case studies from across England.

The key 10 principles for success are defined as:

- a compelling vision, well communicated;
- strong, inspiring leadership;
- empowered communities;
- research, data, and analysis;
- partnership and advocacy;
- addressing inequalities;
- adopting policy;
- investment;
- ‘hard’ and ‘soft’ measures; and
- evaluation and adaptation.

The work applies the 20-minute neighbourhood idea to villages and rural areas, highlighting the unique set of challenges from those in urban areas. These include poorer broadband and mobile

[28] *Guide to the 20-minute neighbourhood - TCPA (tcpa.org.uk)*

coverage, inferior public transport provision and road infrastructure, and poor variety of employment opportunities. TCPA propose two different approaches:

1. Areas with market towns – ensure that the market town itself becomes a complete and compact 20-minute neighbourhood. Ensuring services once in the town are walkable
2. Areas with small villages and no towns – create a network of villages that collectively meet requirements for daily life, joined by active travel arrangements.

Better planning, better transport, better places

The Chartered Institution of Highways and Transportation (CIHT) produced guidance on creating better places by better integrating planning and transport29, designed to complement Government policy and guidance on planning.

It suggests that 'plan makers must prepare a high-quality proportionate evidence base that is fit for purpose when assessing the needs and issues for communities and places'. These must provide 'credible and robust evidence', challenging traditional 'predict and provide' methodology.

This guidance suggests the use of 'vision and validate' or 'decide and provide', starting with 'a vision of what the development seeks to achieve, including mode share, and then establish the required design parameters and sustainable transport interventions, stress-tested under different future drivers-of-demand scenarios'

Future Mobility Hubs: Supporting the transition towards sustainable journeys

This guidance30 sets out Go-Ahead and Arup's vision for how Future Mobility Hubs can be developed for different context within the UK.

A mobility hub is defined as a 'place where people can switch from one mode of transport to another with convenient facilities designed for a low-carbon society'

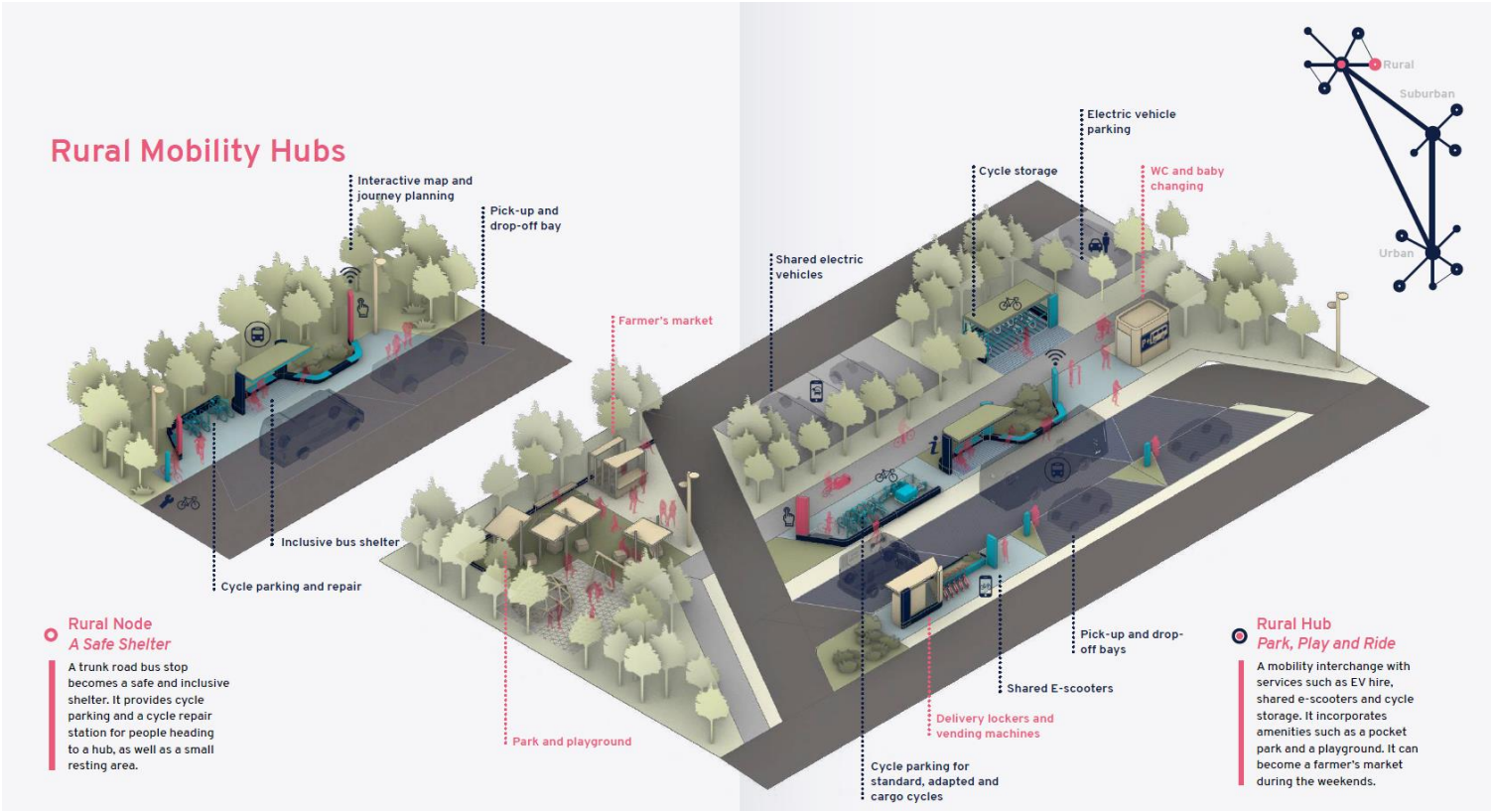
Key design principles:

1. Adaptability and function – create a comfortable, safe and inclusive space
2. Identity and integration – through common design, the Future Mobility Hub brings together multiple modes and services
3. Sustainable growth – the kit-of-parts system ensures a flexible and sustainable growth over time, starting with the core mobility services

[29] *Better planning, better transport, better place - CIHT (ciht.org)*
[30] *Future Mobility Hubs - Supporting the transition towards sustainable journeys - Arup / Go-Ahead (arup.com)*

Services at mobility hubs should be tailored to each location and include enhancing existing infrastructure like bus stops and railway stations but also additions such as cycle storage, e-bikes, EV charging and improvements to public realm. An example of a rural mobility hub is illustrated in Figure.

Figure: Rural mobility hub example (Arup / Go-Ahead, 2021)



Bus Back Better

Bus Back Better[31], published in 2021, is a national strategy for buses in England outside of London. Its central aim is to increase bus patronage back to pre-COVID-19 levels and then exceed this.

This policy document highlights some examples to delivering better bus services – limited cooperation between bus networks, lack of evening services, complex ticketing, and poor integration

These challenges are clear in rural areas where more dispersed, lower density populations lead to issues in delivering a timetabled bus service with more indirect routes, increasing journey times

The strategy sets out methods to achieve the vision of increasing bus patronage, these include making services:

- **More frequent** – turn up and go services on major urban routes, DRT where needed,

[31] *Bus Back Better: national bus strategy for England - GOV.UK (www.gov.uk)*

feeder services

- **Faster and more reliable** – greater priority on urban roads, promote reliability, complement walking and cycling schemes
- **Cheaper** – low, flat fares, daily price capping
- **More comprehensive** - more services in evenings, weekends, and at night
- **Easier to understand** – easy to access information, accurate bus stop information, coordinated timetable changes, local areas to have a common numbering system
- **Easier to use** – common ticketing, contactless payments, simple ticket structure
- **Better to ride in** – comfortable, high-spec, modern buses
- **Better integrated with other modes** – integrate with walking and cycling routes and serve railway stations
- **Greener** – support the introduction of more zero emission buses
- **Accessible and inclusive by design** – buses, stops, stations more accessible
- **Innovative** – strive for innovation in the market
- **Seen as a safe mode of transport** – supporting passenger safety through CCTV onboard

As part of this strategy, each LTA was required to publish a local Bus Service Improvement Plan (BSIP) to be updated annually. These were to be developed in collaboration with local bus operators, community transport bodies, local businesses and local people, setting out a local plan to improve bus services.

LTAs were also required to have an Enhanced Partnership in place or to be in the process of implementing a franchising scheme.

Appendix

A2 Regional Policies and Guidance

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Transport East Transport Strategy

Transport East was set up in 2018 and is the sub-national transport body for Norfolk, Suffolk, Essex, Southend and Thurrock. The Transport East Transport Strategy32 was formally endorsed by Essex County Council in 2022. This provides a vision for what transport should look like in the Transport East region and objectives to meet this:

'A thriving Eastern region with safe, efficient and net zero transport networks advancing a future of inclusive and sustainable growth for decades to come'.

The vision for transport is supported by four strategic objectives:

1. Decarbonisation to net-zero
2. Connecting growing towns and cities
3. Energising coastal and rural communities
4. Unlocking international gateways

Transport East recognise the acute challenge of rural transport access with poor connections hindering access to jobs education and essential services. 33% of residents in the Transport East area of these two thirds live in a 'transport desert' with no alternative to the private car.

This strategy highlights the example of Norwich in growing towns sustainably. Norwich has a 30-mile labour market catchment with car travel being the dominant mode. It has introduced a bike hire scheme, new bridges, routes for walking and cycling and bus priority schemes to tackle these challenges.

Further to the four strategic objectives, Transport East sets out 4 goals in achieving net zero emissions. 'Goal 4 – Zero carbon growth' includes detail on building homes in places that help to travel sustainably and on designing places to encourage walking, cycling or use of public transport:

- Transport East through a transport decarbonisation framework will work with local authorities and national government to strengthen the evidence, guidance, funding structures and assessments of new developments. These will support local authorities in development of strategic plans including Local Plans
- Integrating sustainable transport hubs should be a core element of design for the design of new developments
- The design of public realm should maximise opportunities for people to walk or cycle to sustainable transport hubs and destinations

[32] *Transport East Transport Strategy (transporteast.gov.uk)*

Rural Connections: Transport challenges and opportunities for communities in the East

A core priority of Transport East's Transport Strategy is 'Energising rural and coastal communities'.' This report33 supports this priority, highlighting evidence and findings from the Rural Strategy Hub's call for evidence regarding challenging facing transport in the East.

The Rural Strategy Hub is an independent body supported by Transport East, providing recommendations to influence local government and national transport policy. The first inquiry topic was rural mobility.

600,000 people in the Transport East region live in a 'transport' desert, improving rural connections are a priority for the region. Limited transport options in rural areas impact access to employment, essential services and connections.

Multiple challenges are raised with the provision of rural transport in the East:

- Current network challenges – challenges with cost, booking methods and ticketing structures
- Journey planning and travel information – need for reliable, easy to use apps to access journey information
- Quality of transport infrastructure – concerns with reliability of transport and unsafe sustainable transport infrastructure
- Perceptions of the network – need to improve frequency, reliability and services on bus network to improve rural mobility
- Operators and local authorities – funding and financial challenges when supporting rural mobility

This report emphasises the need for a comprehensive approach to address rural challenges, this includes recommendations to:

- Provide and recognise community transport provision and Demand Responsive Transport (DRT)
- Better coordination between transport and land use planning for rural areas to maximise opportunities for sustainable journeys
- Prioritise maintenance and improvement of rural public transport and active travel infrastructure
- Undertake transport impact assessments to include social, environmental and long-term impacts when transport provision is changed

[33] *Rural Connections: Transport challenges and opportunities for communities in the East - Rural Strategy Hub (transporteast.gov.uk)*

Appendix

A3 Local Policies and Guidance

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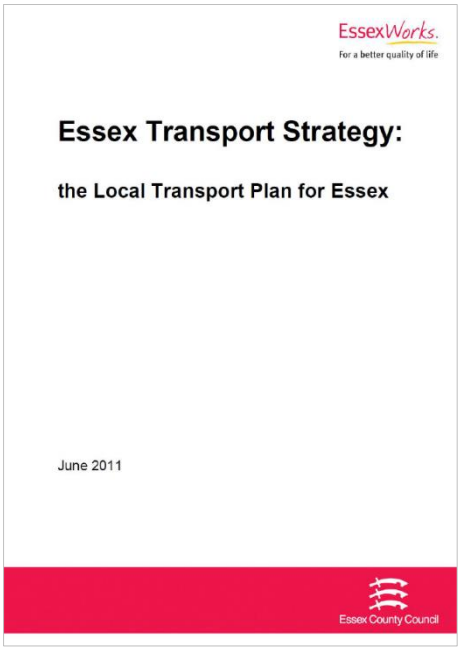
Essex Local Transport Plan

Essex County Council is preparing a new Local Transport Plan (LTP) in 2024. At present LTP3, published in 2011 remains the statutory transport plan for Essex. The County Council will develop LTP4 during 2024[34], with consultation expected later in the year before the document is adopted as policy. Essex County Council note the significant local and national policy changes for transport since the publication of LTP3.



Essex's LTP3 provides a vision for transport and five key objectives to meet this:

'Our Vision is for a transport system that supports sustainable economic growth and helps deliver the best quality of life for the residents of Essex.'

1 Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration
2 Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology
3 Improve safety on the transport network and enhance and promote a safe travelling environment
4 Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use
5 Provide sustainable access and travel choice for Essex residents to help create sustainable communities.

Policy 2 relates to transport and land use planning. This includes:

- Locating new developments in areas which are accessible to key services
- Ensuring new developments provide for sustainable transport and effective travel planning Requiring new developments to provide appropriate transport infrastructure

Policy 7 refers to carbon reduction, highlighting the need to ensure developments minimise the number and length of trips made by private vehicles

Essex Cycling Strategy

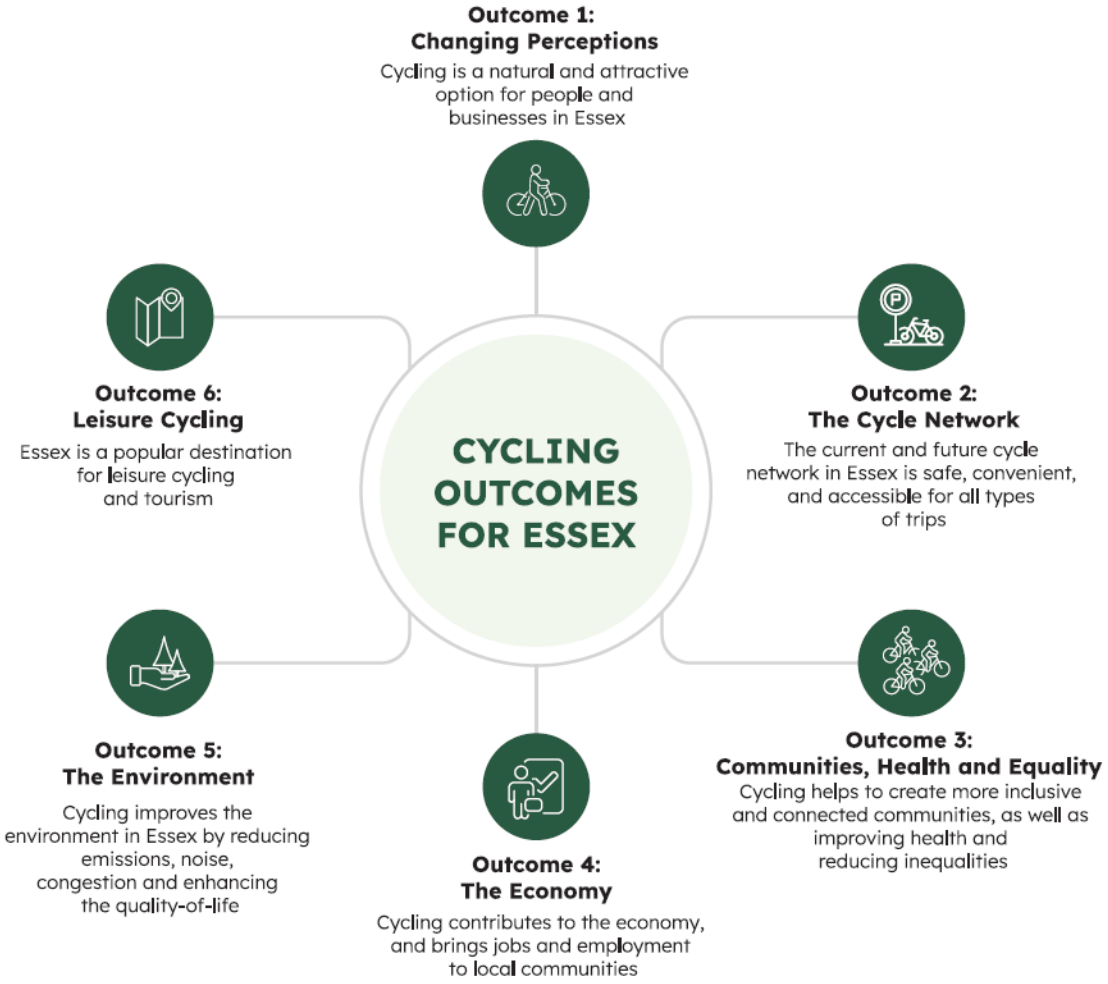
The Essex Cycling Strategy[35], currently in draft form, sets out a vision, outcomes and actions for cycling across Essex. Consultation on this draft strategy is currently taking place and will run until July 2024.

[34] *Local Transport Plan | Essex County Council (essexhighways.org)*
[35] *Essex Cycling Strategy - Essex County Council (letstalkessexsustainabletravel.co.uk)*

The vision for the Essex Cycling Strategy is:

'To see more people, of all abilities, ages and backgrounds, cycling in Essex more safely and more frequently.'

This main vision is supported by 6 key cycling outcomes:



In terms of planning guidance for cycling, the Essex Cycle Strategy includes some key outcomes:

- Design of cycle schemes to ensure safety for cycles, particularly at junctions and key intersections (1.1)
- Ensure that up to date cycle information is provided as part of travel planning for new developments (1.5)
- Develop and communicate our position on cycle standards and design via the Essex Active Travel Design Portal, Essex Design Guide and Essex Developer Guide (2.2)
- Utilise developer funding to support the delivery of appropriate cycle schemes, where possible (2.3)
- Ensure cycling is 'designed-in' to new developments from the start, including (2.7):
    1. Delivery of well-placed, high-quality, secure, and easily accessible cycle storage in all new developments

2. Delivery of routes that connect into existing cycle networks and infrastructure

- Ensure appropriate mode shift targets are incorporated into all Travel Plans, and that these continue to be reviewed and monitored - including for New Development Travel Plans (5.2)

Essex Design Guide

The Essex Design Guide (EDG)[36] is a comprehensive document that provides planning and design guidance for various elements within developments in Essex. First developed in 1973, it has since been updated in 1997, 2005 and 2018. The guide aims to promote high-quality and sustainable design that enhances the built environment and creates better places for residents, businesses, and visitors.

With regards to transport, it emphasises the role of neighbourhood design on travel choices and encouraging sustainable travel. Key guidance includes:

- Strategic planning should seek to futureproof for anticipated changes in transport
- Development is laid out in a way as to maximise proximity to facilities and public transport and to encourage walking and cycling instead of the use of cars
- Implementing walking and cycling routes that make best use of current and future green infrastructure.
- Minimising carbon emissions and pollutants associated with transport by supporting installation of electric charging points, cycle parking and bike-share schemes
- Supporting the function and effective operation of local and strategic transport networks – roads, public transport and rail.
- For higher density developments, the mobility hubs approach should be considered

The Essex County Council Developers' Guide to Infrastructure Contributions

ECC produced a guide to infrastructure contributions because of development[37]. The latest version of the guide was issued in 2023. The guide provides details of the scope and range of contributions for infrastructure which ECC may seek from developers and landowners to mitigate the impact and make the development acceptable in planning terms. The guide covers the methods by which funding can be secured. The guide can be applied to a range of measures, which includes sustainable transport:

- Education – walking and cycling routes, traffic management and traffic calming, school street zones, school transport.
- Highways – contributions to schemes, highway maintenance and Traffic Regulation Orders
- Sustainable Travel Planning – workplace, residential and school travel plans.
- Active Travel – walking and cycling infrastructure and contributions to schemes.
- Passenger Transport – public transport infrastructure, Real Time Passenger Information, fund diversions to existing service, fund or contribute to new services.
- Public Rights of Way – works or financial contributions to rights of way.
- Monitoring costs

[36] *Essex Design Guide - Essex Planning Officers Association (essexdesignguide.co.uk)*
[37] *The Essex County Council Developers' Guide to Infrastructure Contributions, Essex County Council, Revised 2023*

Uttlesford Design Guide

The Uttlesford Design Code[38] is currently in a draft phase. These will tailor the National Design Guide characteristics to Uttlesford, defining what good design and development looks like in Uttlesford. There are currently three parts to the code – Uttlesford Places, District-wide coding, and Development-scale coding.

Draft Uttlesford LCWIP

A draft Uttlesford LCWIP[39] was produced for consultation in May 2024. The draft LCWIP contains proposals for Saffron Walden, Great Dunmow, strategic cycle routes and Velo village routes. Velo villages are intended to improve connectivity between villages and the nearest large settlements or public transport hubs.

Saffron Walden and Great Dunmow contain several routes that provide a local network. There are four strategic cycle routes (Bishops Stortford & Stansted Airport to Cambridgeshire, Bishops Stortford to Chelmsford, Bishops Stortford to Braintree and Saffron Walden to the Linton Greenway). The strategic cycle routes have alternative routes. Whilst the Velo village proposal from Clavering to Newport provides an alternative route and the Flested, Fletch Green and Bannister Green has a single option.

The routes have been assessed in terms of directness, gradient, safety, connectivity and comfort. Depending upon the assessment score a series of design recommendations have been provided to improve sections of those routes. The report identifies the need for further work to develop the design recommendations, and therefore they are not final.

The routes within the LCWIP provide opportunities to improve sustainable transport opportunities within the district and will be discussed in more detail within the relevant section in this chapter. However, the development of the design recommendations may not provide the anticipated benefits if further investigation investigations indicate issues with suitability, deliverability and benefits.

Saffron Walden Air Quality Project

Three Air Quality Management Areas (AQMAs) were declared in Saffron Walden in 2007 due to the level of Nitrogen dioxide (NO2). The three AQMAs were revoked and replaced with a new AQMA in 2012 due to NO2 pollutants, which is centred on Elm Grove with a radius of 1200m. Transport is a major contributor to air pollution by NO2, and sustainable transport provides an opportunity to reduce harmful emissions, thereby improving air quality and improving the health of residents.

The Department for Environment, Food and Rural Affairs (DEFRA) provided UDC with funding in 2023 for a clean air project in Saffron Walden. The project seeks to pilot sustainable modes of transport and encourage active travel within the town. The aim of the project is to increase the number of journeys undertaken by sustainable modes within the town and thereby reduce car use. This will help to reduce congestion and improve air quality.

The project comprises three workstreams. Those workstreams are:

[38] *Uttlesford Design Guide - Uttlesford District Council (uttlesforddesigncode.co.uk)*
[39] *Uttlesford LCWIP Draft for Comment: Project report, PJA, 22 May 2024*

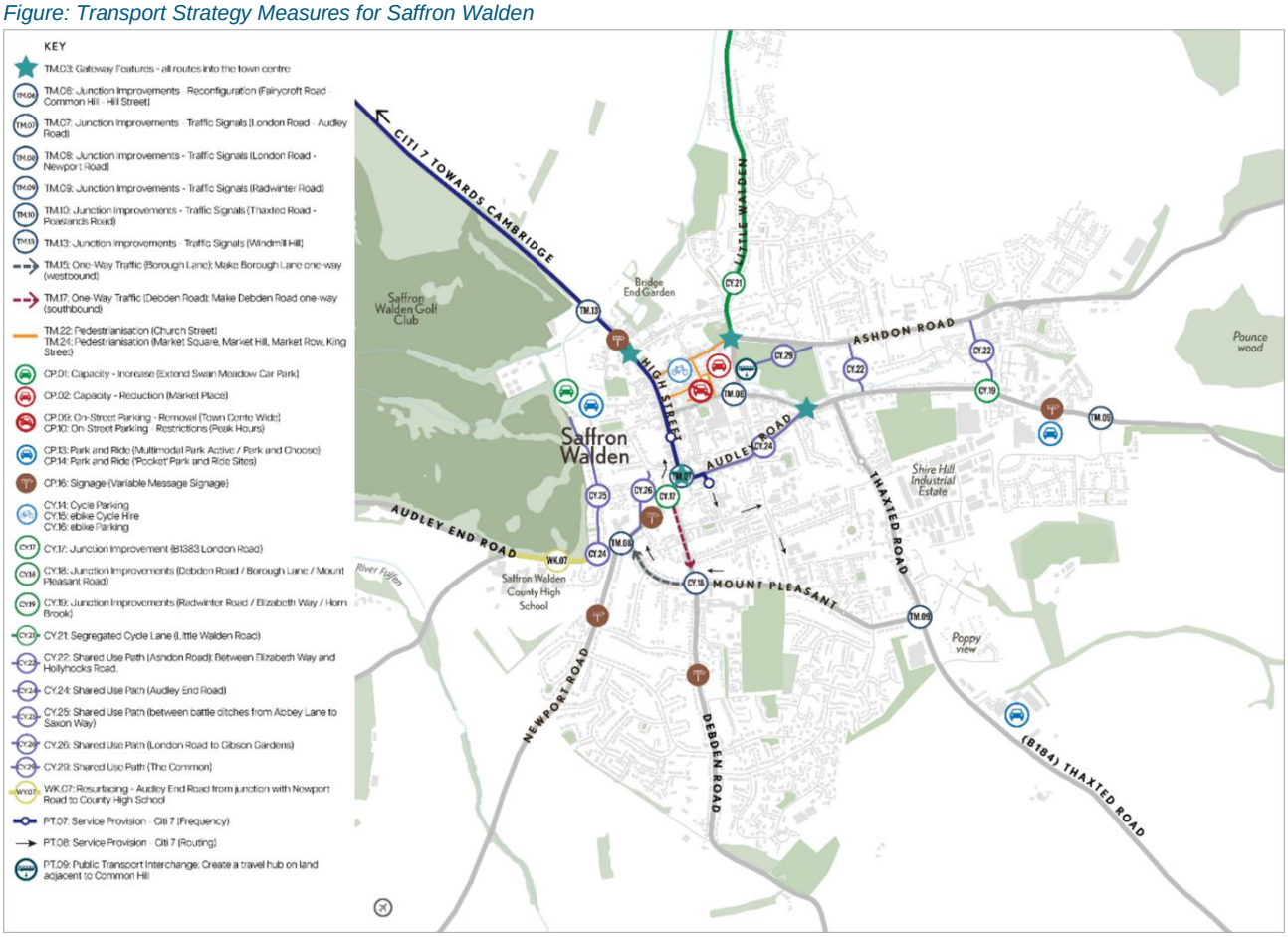
- Pollution awareness, education, and behaviour change projects.
- Active travel and zero emission shared transport pilot projects.
- Traffic management, freight, loading and parking studies.

A programme of pollution awareness and education campaigns has commenced. Cargo bike and bike hire pilot projects have also been implemented. The bike hire scheme consists of 20 ebikes and 15 pedal cycles located at hubs across Saffron Walden. Pilot projects are supported by cycle events.

Tetra Tech have been commissioned by UDC to produce a Transport Strategy for Saffron Walden which considers traffic management, freight, parking, cycling, walking and public transport. In March 2024, Tetra Tech produced a draft Transport Strategy (Issues & Options report)[40]. The report provides a package of measures across six themes:

1. Traffic management
2. Freight
3. Car Parking
4. Cycling
5. Walking
6. Public Transport

Figure: Transport Strategy Measures for Saffron Walden



[40] *Transport Strategy (Issues & Options report), Saffron Walden Air Quality Project, Tetra Tech, 1 March 2024*

A120 Corridor Study

UDC and ECC commissioned a multi modal viability study for the A120 corridor from the west of the M11 to the east of Great Dunmow, towards Braintree. The Study is part-funded by Homes England.

The overarching objective of the study is to assist in the delivery of sustainable transport across the region, as well as aiding the response to the climate emergency, reducing emissions, supporting the economy and people's health and wellbeing. A key aim for the corridor study is that 'Development will be located in ways to optimise opportunities for delivery of new infrastructure and use of public and active transport.' The latest version of the study considers the development scenario dated March 2024, with the aim of identifying the most viable public transport service enhancements for the planned development.

The proposed bus measures are:

- Re-routing of the 323 and 324 bus services and alternatively the 133 bus service through the development in Takeley.
- A new bus service, 1a from Stansted Airport Rail station through the development site with an alternative route via Takeley crossroads.
- Re-routing the 324 bus service within the Broadway development site at Great Dunmow.
- A new bus service, 2a from Great Dunmow via St Edmunds Lane to the Broadway development site. The service would use the development site to perform a loop. An alternative to St Edmunds Lane would be via Church End Bridge.
- A new alternative 2b bus service would link the Broadway development site with the proposed Country Parkland via St Edmunds Lane and Stortford Road. The service would use the development site to perform a loop at the Broadway site and the Country Parkland locations. The 2b service would also have the alternative to St Edmunds Lane of Church End Bridge.

The viability study identifies active travel proposals in the form of walking and cycling routes and mobility hubs. The walking and cycling proposals consist of:

- Footway alongside the Parsonage Road linking Takeley with Stansted Airport. Measures consist of:
  - Potentially widening the footway to provide for pedestrians and cyclists.
  - Improved street lighting and potentially reducing the speed limit.
  - Crossing facilities and new cycle paths between Parsonage Road and Stansted Airport Rail Station and the terminal building.

- Provision of mobility hubs which aim to improve access to public transport and walking and cycling between existing and proposed public transport services. Four locations have been identified for mobility hubs. Those locations are:
  - South Area Strategy location with a standard hub.
  - Great Dunmow allocation with a community hub.
  - Takeley allocation with a community hub.
  - Takeley allocation with community hub, which has an alternative location near Parsonage Road.

The two hub types consist of:

- Standard hub classification:
  - Community transport.
  - Two forms of shared mobility (car clubs and bike share).
  - Cycle parking
  - Sheltered waiting area.
  - Additional measures to consider would include:
    - EV charging for buses and private vehicles.
    - Local information board.
    - Local services/amenities.
- Community hub classification:
  - Community transport.
  - One form of shared mobility (car clubs, bike share)
  - Local information board
  - Additional measures to consider would include:
    - EV charging for private vehicles.
    - CCTV.

Uttlesford Local Plan

The emerging Uttlesford Local Plan has draft transport related planning policies across the whole district and for the North Uttlesford and South Uttlesford areas. There are seven district wide core transport policies. The draft district wide policies are summarised in Appendix A1.

The core policies set-out the requirement that all developments must promote sustainable transport. The development should be designed to cater for walking and cycling as the highest mode priorities, but also cater for public transport. Developments may need to improve sustainable transport infrastructure, which includes improving bus services. Developments should improve mobility and access for those with disabilities and mobility needs.

Developments should promote and protect the Public Right of Way network. Developments should provide opportunities for occupiers or resident to use electric vehicles, bikes and low emission vehicles. The Council will support the development and enhancement of local delivery hubs. Developments should ensure deliveries and servicing is managed and mitigated.

Developers will be required to submit a Transport Assessment and/ or a Transport Statement to assess the potential transport impacts of the developments. Transport Assessments, Travel Transport Statements and Travel Plans will be required to propose mitigation measures.

There are two transport related planning policies for North Uttlesford, two for South Uttlesford and two for Stansted and Elsenham. Those policies are shown in Appendix A5. They list specific schemes and measures that shall be provided for the delivery of growth in North, South Uttlesford and Stansted and Elsenham respectively. Those schemes are predominately for sustainable transport and include the safeguarding of land for the delivery of schemes. Development proposals that affect the delivery and operation of the schemes will be refused.

There is also a Core Policy which includes measures for Stansted Airport. A new surface access strategy for the airport is currently under development. The outcome of study and the

discussions with ECC, National Highways, UCC and other stakeholders may result in changes to Core Policies in South Uttlesford.

Comments and suggestions have been made on where improvements to the proposed policies could be made to further support sustainable travel, these are shown in Appendix A6.

Appendix

A4 Draft Uttlesford Local Plan district wide core transport policies

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Policy Number	Title	Summary of policy coverage
Core Policy 26	Providing for Sustainable Transport and Connectivity	Council will support measures identified in the Essex Local Transport Plan and the area travel plans and work with Essex County Council to ensure that transport improvements contribute positively to the attractiveness and safety of our places, quality of life, and respond sensitively to our natural and historic environment. Area transport strategies and infrastructure delivery plan identify specific schemes to address sustainable transport and connectivity. All strategic developments as set out in Chapter 4 and the Area Strategies will be expected to provide direct bus access, rapid electric charging points and a shared mobility scheme. Sustainable modes of transport should be prioritised in new developments to promote accessibility and integration with the wider community and existing networks. Priority should be given to cycle and pedestrian movements and providing access to public transport including the provision of new or enhanced existing bus services. Strategic allocations will provide mobility hubs in accessible locations. Mobility hubs will provide access to bus services and shared mobility (cycle hire, cargo bikes and a development wide car club). Development proposals should provide the following sustainable measures: I. maximise the incorporation of bus service provision and supporting infrastructure into development proposals including the enhancement of existing services. II. promote walking and cycling by ensuring movement proposals give first priority to pedestrians and cyclists in the use of road space and provide for filtered permeability. III. deliver an improved environment for pedestrians and cyclists including measures to the reduction of conflict with motor vehicles. Provision should be inclusive and address disabled users and those with mobility needs. IV. ensure that existing pedestrian and cycling routes and public rights of way are retained as continuous linear features and improved where appropriate. V. identify key pedestrian and cycling routes and their destinations and assess existing and predicted active travel movements to, through and from the site. They should provide safe, direct, and attractive routes that accommodate these movements and will be encouraged to support additional active travel movements. VI. reduce road danger from other transport modes. VII. ensure the provision of cycle parking and active travel in line with Essex County Council latest guidance, and VIII. cycling and walking routes should be planned, where possible, as part of the network of multi-functional green infrastructure.
Core Policy 27	Assessing the impact of Development on Transport Infrastructure	Development should be located in an areas which are within walking and cycling distance to key services and facilities and where there is an appropriate level of public transport accessibility and, in turn, where public transport capacity can accommodate the proposed increase in the number of trips, or where capacity can be increased to an appropriate level through contributions, or other infrastructure funding. Developers will be required to submit a Transport Assessment and/ or a Transport Statement to assess the potential transport impacts of the developments.

		Transport Assessments, Travel Transport Statements and Travel Plans will be required to propose mitigation measures to demonstrate they have maximised how opportunities for active sustainable travel have been maximised and will make adequate detail the provision of measures to mitigate the likely transport impacts. Travel Plans will be provided when mitigation can be addressed by management measures. Where a Transport Assessment or Travel Plan is required, a Transport Related Carbon Emissions Quantification Statement will be necessary and should be integrated into the document. I. prioritise active travel over the use of the car including providing walking and cycling connections to key services in the town and permeability to existing settlements II. contribute towards the improvement of all sustainable modes of transport including public transport and the improvement and delivery of walking and cycling routes that serve the site. III. limit motor vehicle trips and identify and deliver highway safety measures at and around the development site, including temporary measures during the construction phase. IV. implement shared mobility schemes including the provision of electric car club vehicles, hire bicycles and e-cargo bikes. V. comply with the latest guidance on design, parking provision, servicing facilities and electric charging infrastructure. VI. Proposals to improve or provide new public transport infrastructure and facilities will be supported subject to: VII. being acceptable in terms of impact on the environment including landscape, townscape, public realm and amenity of adjoining areas VIII. being designed to be safe, convenient, attractive and accessible for use especially for vulnerable users including lone females, young adults, people with disabilities and specific mobility needs, and IX. providing adequate secure cycle parking and ease of access on foot, including consideration of pedestrian desire lines. Travel Plans All developments will be required to produce a Travel Plan in relation to the thresholds in Essex County Council published guidance. The Travel Plan will need to identify and deliver the sustainable transport interventions, behaviour changes and travel planning mechanisms required to ensure the development reduces carbon emissions to become net zero and achieve modal split targets. The policy sets out what a Travel Plan should include, how it should be actioned and monitored.
Core Policy 28	Active Travel - Walking and Cycling	Development should be planned around a network of safe and accessible walking and cycling routes where dedicated traffic free links make walking and cycling the preferred choice for day-to-day trips, encourage sustainable travel, and support healthy and active lifestyles. The Council will support the delivery of public realm improvements and infrastructure designed to create attractive places that make walking and cycling safer, healthier, and more attractive, facilitating mode shift to active travel as the natural first choice for journeys. All new development and infrastructure proposals should: I. promote walking and cycling by ensuring proposals give greater priority to pedestrians and cyclists in the use of road space and provide for filtered permeability. II. deliver an improved environment for pedestrians and cyclists appropriate to the scale and nature of the proposal. Provision

		should be inclusive and address disabilities and particular mobility needs. III. ensure that existing pedestrian and cycling routes and public rights of way are retained and enhanced as continuous linear features IV. identify key pedestrian and cycling routes and their destinations and assess existing and predicted active travel movements to, through and from the site. They should provide safe, direct, and attractive routes that accommodate these movements and will be encouraged to support additional active travel movements. V. facilitate high quality routes for active travel to schools including supporting the introduction of school streets and enhancing walking access and permeability to schools. VI. reduce road danger from other transport modes. VII. be expected to enable and contribute towards improvements and delivery of local and strategic active travel routes and links as identified in the Area Strategies and associated IDP and LPWIP, and VIII. ensure provision of secure cycle parking and active travel in line with the latest guidance.
Core Policy 29	Electric and Low Emission Vehicles	All development should maximise the opportunity for occupiers/residents and visitors to use electric and low emission vehicles, ebikes and eCargo bikes. Safe charging infrastructure for ebikes should be located within storage which is both prominent and easily accessible. Infrastructure and storage should be installed for electric mobility scooters where appropriate, and particularly in in specialist and older persons housing. Proposals should maximise the provision of residential and public electric vehicle charging/ plug-in points and/or the space and infrastructure required to provide them in the future. Design of the charging and plug in points should follow best practice and not be detrimental to the quality of the public realm.
Core Policy 30	Public Rights of Way	Development proposals for sites that include a Public Right of Way within the site or are for major development proposals adjacent to an existing Right of Way there is a requirement to submit a Rights of Way Scheme that demonstrates how the development will protect, enhance and promote the public Rights of Way network. Development proposals where necessary, should include improvements to help restore and re- connect Rights of Way. Where development would increase the pressure on the Rights of Way network, contributions will be sought through planning obligations for measures to protect and enhance the Rights of Way network, including the delivery of additional routes and improvements to existing public paths both on-site and off-site. The rights of way will be delivered in green corridors that provide enhanced widths offering natural surveillance and maximising opportunities for active travel. Surfacing enhancements are required and will need to cater to all users including wheelchairs and those with mobility challenges.
Core Policy 31	Parking Standards	New transport infrastructure or development proposals to existing transport infrastructure including bus interchanges and rail stations should include proposals for secure cycle parking and also facilitate parking/docking for cycle hire schemes. All major developments, including employment, and the strategic allocations should deliver an electric car club scheme to an appropriate scale to the development.

		Development proposals should consider those will mobility challenges and ensure secure and accessible parking is provided for mobility scooters and vehicles including charging infrastructure. Proposals for provision below the local and national standards should be supported by evidence detailing the local circumstances that justify a deviation from the standards, such as significantly higher levels of sustainable transport provision.
Core Policy 32	The movement and management of Freight	The Council will support the development and enhancement of local delivery hubs that help consolidate deliveries, reduce vehicle traffic and enable sustainable last-mile movements in the district, subject to their acceptability on the local and strategic road networks and local communities. Any HGV or freight generating uses should consider the impact on the pedestrian environment and active travel network. Development proposals should consider the freight strategies and policies set out in the Essex Local Transport Plan that relate to the efficient and reliable transportation of freight. Proposals must submit a Freight Management Strategy setting out how freight, home deliveries and servicing will be managed and mitigated within the development for approval. Freight management strategies should ensure the prioritisation of the use of the Strategic Road Network and minimise the use of the rural network and that encourage the movement of freight by sustainable modes whilst minimising negative impact of freight trips on local communities. Development proposals that generate a significant number or intensity of transport movements, will be required to demonstrate that: I. they are conveniently located to enable direct routing to the strategic road network. II. there is no unacceptable impact on residential areas, local air quality, local amenity, or the highway network. III. there would be no unacceptable impact on landscape, heritage, local character and biodiversity. IV. they adopt best practice approaches to managing and minimising freight, servicing and delivery trips. V. they facilitate low or zero emission technologies, and VI. provide adequate off-street provision to accommodate delivery and servicing activities, with on-street loading only considered in exceptional circumstances.

Appendix

A5 Draft North and South Uttlesford and Stansted and Elsenham area transport policies

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Policy Number	Title	Summary of policy coverage
North Uttlesford		
Core Policy 7	Delivery of Transport Schemes within the North Uttlesford Area	Policy lists the transport infrastructure required for the delivery of growth in North Uttlesford. I. delivery of direct walking and cycling routes which link to key services, town and villages centres and connect with other transport infrastructure. II. In Saffron Walden provide walking and cycling routes on direct routes, through green corridors, which maximise connections to the residential developments to the west and retail park to the south. III. delivery of a shared transport scheme on the Saffron Walden mixed-use allocation which will include: a. provision of two electric car club vehicles b. provision of a bike share scheme that will deliver e-bikes and conventional bikes. c. provision of an e-cargo bike to be located on the development site. d. A centralised mobility hub which consolidates the shared transport measures with proximity to bus stops and the primary school and other local services IV. deliver strategic cycling and walking infrastructure improvements as identified in the Uttlesford and Essex LCWIP including connections between Saffron Walden and Chesterford Research Park. V. Enhance public footpath No 36 to enable the route to act as an active travel route through the development. VI. Byway No 18 will be enhanced to provide an active travel route for the development whilst enhancing facilities for equestrian users. Restrictions should be put in place to restrict motor vehicles using the byway through legal orders. VII. a multi-modal link road in Saffron Walden linking Radwinter Road and Thaxted Road for all vehicles, cyclists and pedestrians. VIII. financial contributions towards improved bus services between Saffron Walden and Audley End rail station between Saffron Walden and Cambridge and between Chesterford Research Park and Great Chesterford and Cambridge, allowing for an increased frequency of services. Enhancements will also be required for interchange facilities at rail stations. IX. enhancements to the active travel connections to Audley End and Great Chesterford rail station X. delivery or contributions to the schemes detailed in the Saffron Walden Transport Strategy 2024 which are not detailed in this policy. States that details of transport schemes and interventions are detailed in the transport evidence topic paper.
Core Policy 8	Safeguarding of Land for Strategic Transport Schemes in the North Uttlesford Area	Safeguarding of land for future connections and junction improvements for a multimodal link road linking Radwinter Road with Thaxted Road. A further two sections of the link road between Thaxted Road Debden Road and Debden Road and Newport will be safeguarded for future delivery. Any development proposals to impact on the delivery of the safeguarded scheme will be refused.

Policy Number	Title	Summary of policy coverage
South Uttlesford Area		
Core Policy 13	Delivery of Transport Schemes within the South Uttlesford Area	Provides details of the transport infrastructure required for delivery of growth in South Uttlesford. I. delivery of direct walking and cycling routes which link to key services, town and villages centres and connect with other transport infrastructure from all strategic sites including the strategic employment sites. II. The delivery of a new and enhanced bus services and infrastructure at the Takeley and Great Dunmow strategic sites, including the employment sites, which provide enhanced connections to key services and locations including Stansted Airport. Development proposals will consider the recommendations in the A120 Corridor Study. III. a sustainable transport route will be delivered through the Takeley strategic site which will be designed to accommodate all appropriate road users and deliver walking and cycling schemes to the highest standard. The route will only be available for buses and active travel west of Smiths Green Lane IV. public transport and active travel connections will be improved between Takeley and Stansted Airport public transport interchange, including improvements along Parsonage Road to improve connectivity for cyclists. This will include new active travel connections through the airport to the transport interchange and will require signalised crossings of road infrastructure at the airport. V. delivery of a shared transport scheme on the Takeley strategic allocation which will include: a. provision of two electric car club vehicles b. provision of a bike share scheme that will deliver e-bikes and conventional bikes c. provision of an e-cargo bike to be located on the development site d. A centralised mobility hub which consolidates the shared transport measures with close proximity to bus stops and the schools and other local services VI. the strategic employment sites will deliver a comprehensive package of sustainable transport measures which will deliver a significant mode shift away from the private car and demonstrate that any transport generating uses minimise the impact on the local highway network including implementing routing strategies. VII. deliver strategic cycling and walking infrastructure improvements as identified in the Uttlesford and Essex LCWIP including connections along the B1256 between Great Dunmow, Takeley, Stansted Mountfitchet and Bishops Stortford VIII. on site and off site enhancements to all public rights of way IX. Appropriate upgrades to the Flitch Way including enhancements that improve safety, access, interpretation, multi-functional surfacing for all users and measures to improve biodiversity. X. Smiths Green Lane will be close to through vehicular traffic at Warish Hall Farm and the route will be prioritised for walking and cycling whilst retaining local access.

Policy Number	Title	Summary of policy coverage
		XI. improved access to Great Dunmow centre from the proposed development site, including review of roles of Bigods Lane (and possible extension using bridleway to B184 at Bowyer's Bridge as a later phase) XII. the highway mitigation and junction improvements that are required in Takeley and Great Dunmow as identified in the transport evidence including appropriate and proportionate mitigation measures at Junction 8 and Start Hill roundabout area. Little Canfield employment allocation the site will deliver a mobility hub in a prominent location which promotes and consolidates sustainable transport measures at the site including the following: I. located on or close to the B1256 frontage with provision on new bus stop infrastructure on the B1256 including real time information, II. provision of a signalised crossing on the B1256 to enable access to the bus stop on the westbound side of the B1256, III. accessed from the cycle link through the site which links to the consented residential scheme at Highwood Quarry, IV. space provide for an electric car club vehicles, V. cycle parking/docking for a bike share scheme, VI. parking and provision of an e-cargo bike, and VII. enhancements will be made to Public Footpath 41 and High Cross Lane to provide active travel connections to the Flitch Way. States that details of transport schemes and interventions are detailed in the transport evidence topic paper.
Core Policy 14	Safeguarding of Land for Strategic Transport Schemes in the South Uttlesford Area	Land will be safeguarded for the delivery of: I. land for the delivery of a multi modal corridor for public transport and active travel Pedestrian/ Cycle link between Takeley and Stansted Airport transport interchange II. ensure any development proposals along the B1256 between Great Dunmow and J8 of the M11 deliver cycle and walking improvements to ensure sustainable connections are delivered between all development sites to local services and employment locations. III. creation of a Sustainable and Public Transport Mobility Hub adjacent to the proposed strategic employment allocation at Canfield End providing appropriate and convenient access to the B1256/A120 Junction, and IV. Flitch Way upgrade, including to safety, access, interpretation, multi- functional surface and eco- management. Any development proposals to impact on the delivery of the safeguarded scheme will be refused.
Stansted and Elsenham Area Strategy		
Core Policy X	Delivery of Transport Infrastructure within the Stansted and Elsenham Area	To deliver the growth in the Stansted and Elsenham Area, transport and other infrastructure has been identified to mitigate the impact of planned growth, which is important to help secure a viable and sustainable future for the area. Transport infrastructure in Stansted and Elsenham will be required as follows:

Policy Number	Title	Summary of policy coverage
		I. delivery of walking and cycling routes to link to local services and other transport infrastructure such as bus stops and rail stations. II. in Stansted Mountfitchet an active travel route will be delivered along High Lane and Lower Street and opportunities should be investigated to reduce traffic flows by closing High Lane to through traffic. III. delivery of a shared transport scheme on the Stansted Mountfitchet allocation which will include: a. provision of an electric car club vehicle b. provision of a bike share scheme that will deliver e-bikes and conventional bikes c. provision of an e-cargo bike to be located on the development site IV. delivery of strategic cycling and walking infrastructure improvements between settlements and schemes identified in the Uttlesford and Essex LCWIP including routes to Stansted Airport and Bishops Stortford. V. financial contributions towards improved bus services between Stansted Mountfitchet and Bishops Stortford and Saffron Walden and services between Elsenham and Bishops Stortford and Stansted Airport, allowing for an increased frequency of services. VI. Enhancements will also be required at bus stops, including real time information and the interchange at rail stations, and VII. provision of discounted bus vouchers for all new residents on the strategic development sites. The package may be further refined through development of the Local Transport and Connectivity Plan being developed by Essex County Council.
Core Policy X	Safeguarding of Land for Strategic Infrastructure in the Stansted Mountfitchet and Elsenham Area	Land is safeguarded to support the delivery of the following strategic infrastructure schemes: • 4 ha expansion of the existing Forest Hall Secondary School at Stansted Mountfitchet. • Active travel route along High Lane and Lower Street in Stansted Mountfitchet. Any proposals for development that may reasonably be considered to have the potential to impact the delivery of the identified strategic infrastructure scheme (as shown on the Policies Map and Appendix ADD)* should demonstrate the proposals would not harm their delivery. Planning permission for development that would prejudice the construction or effective operation of the proposed infrastructure schemes listed will be strongly resisted. * the area shown on the Policies Map and Appendix ADD illustrates where the policy will apply. It does not seek to show a precise alignment for the school expansion which will need to be informed by detailed design work, carried out in consultation with Essex County Council and other relevant parties.

Appendix

A6 Uttlesford Local Plan – Sustainable Transport Policy comments and suggestions

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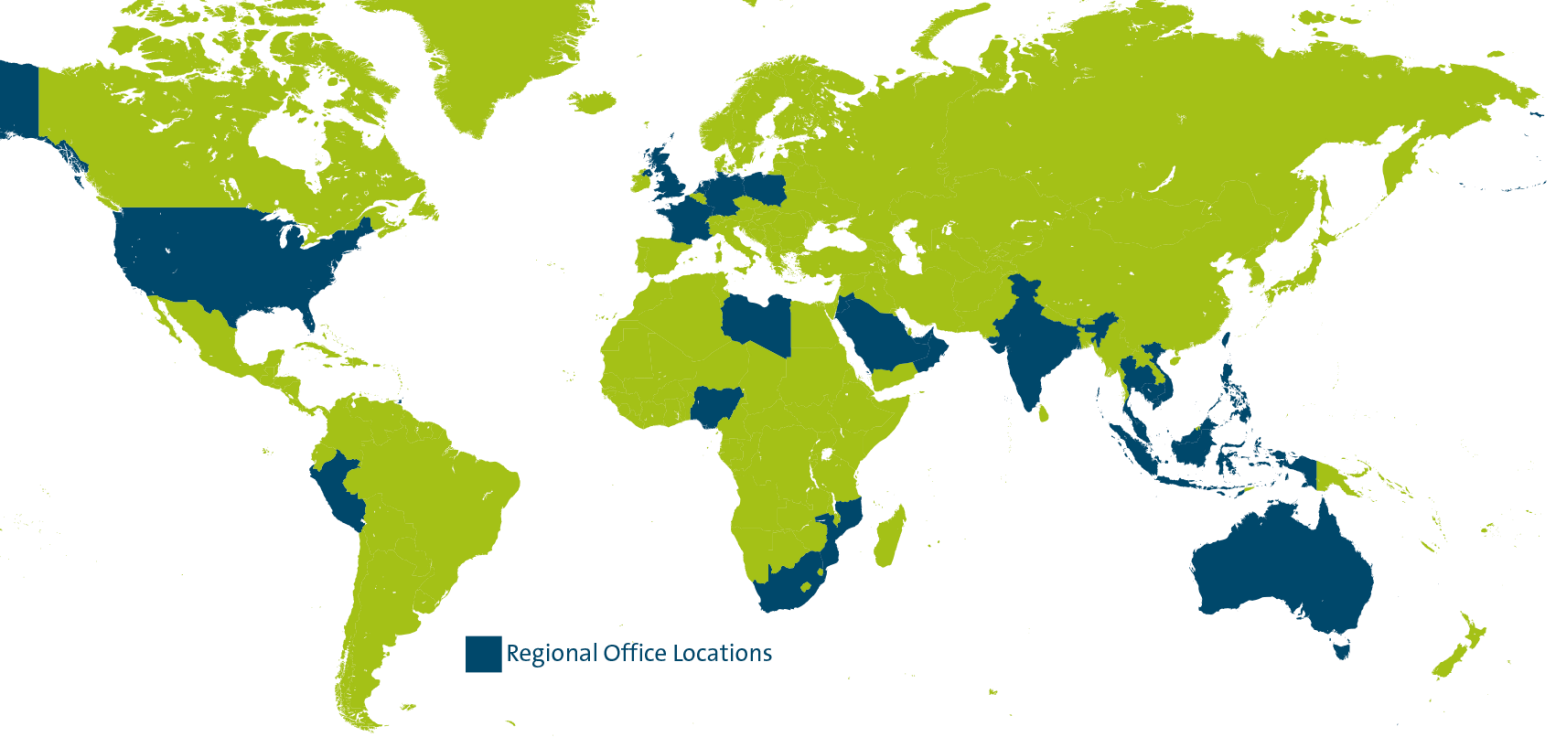
The table below provides the chapter and policy number, the current wording and suggested amendment. The table also includes a reason for the proposed change.

Chapter and Policy Number	Current Wording	Suggested Change	Reason for Change
Chapter 5, Core Policy 7	To deliver the growth in the North Uttlesford Area, transport and other infrastructure has been identified to mitigate the impact of planned growth, which is important to help secure a viable and sustainable future for the area. The package may be further refined through development of the Local Transport and Connectivity Plan being developed by Essex County Council.	Add The development should deliver the measures contained within the policy and those contained within the site development framework.	The policy does not list all the measures and in the detail contained within the Site Development Framework. To ensure that site masterplans/layouts include as part of the planning application all necessary transport measures.
Chapter 5, Core Policy 7	X. contributions to the traffic management and active travel schemes listed in the IDP which are essential to maximise the traffic distribution benefits of the development link road.	Add XI. develop a strategy to integrate future cycle connectivity from the Saffron Walden residential allocation site to Katherine Semar Junior School to the south of Thaxrted Road. XII. Deliver secure parking for cycles and other wheeled vehicle storage for students, staff and visitors at new primary schools. XIII. Provision of a school travel plan and introduction of measures to promote sustainable travel to school. XIV. No drop off or pick up facilities will be provided at schools other than for those to aid pupils with a disability or mobility impairment.	The site development framework states a strategy to integrate future cycle connectivity from Saffron Walden residential allocation site to Katherine Semar Junior school to the south of Thaxted road is required. Provide specific reference within the policy to ensure sustainable travel measures which include cycles and other wheeled vehicles parking, school travel plans and other measures to promote sustainable travel to school are provided. In order to promote sustainable travel to school indicate within the policy the drop off and pick up areas will not be provided, other than to aid pupils with a disability or mobility impairment.
Chapter 6, Core Policy 13	To deliver the growth in the South Uttlesford Area, transport infrastructure has been identified to mitigate the impact of planned growth, which is important to help secure a viable and sustainable future for the area.	Add The development should deliver the measures contained within the policy and those contained within the site development framework.	The policy does not list all the measures and in the detail contained within the Site Development Framework. To ensure that site masterplans/layouts include as part of the planning application all necessary transport measures.

Chapter and Policy Number	Current Wording	Suggested Change	Reason for Change
Chapter 6, Core Policy 13	After IX. On the Little Canfield employment allocation the site will deliver a mobility hub in a prominent location which promotes and consolidates sustainable transport measures at the site in accordance with the details set out in the Development Framework for the site (Appendix 4).	Add X. Deliver secure parking for cycles and other wheeled vehicle storage for students, staff and visitors at new primary schools. XI. Provision of a school travel plan and introduction of measures to promote sustainable travel to school. XII. No drop off or pick up facilities will be provided at schools other than for those to aid pupils with a disability or mobility impairment.	Provide specific reference within the policy to ensure sustainable travel measures which include cycles and other wheeled vehicles parking, school travel plans and other measures to promote sustainable travel to school are provided. In order to promote sustainable travel to school indicate within the policy the drop off and pick up areas will not be provided, other than to aid pupils with a disability or mobility impairment.
Chapter 7, Core Policy X	After To deliver the growth in the Stansted and Elsenham Area, transport and other infrastructure has been identified to mitigate the impact of planned growth, which is important to help secure a viable and sustainable future for the area. Transport infrastructure in Stansted and Elsenham will be required as follows:	Add The development should deliver the measures contained within the policy and those contained within the site development framework.	The policy does not list all the measures and in the detail contained within the Site Development Framework. To ensure that site masterplans/layouts include as part of the planning application all necessary transport measures.
Chapter 9, Core Policy 26	At i. maximise the incorporation of bus service provision and supporting infrastructure, including the enhancement of existing services.	Amend to i. maximise the incorporation of bus service provision and supporting infrastructure, including the enhancement of existing and the provision of new services.	Indicate that developments should also provide or contribute to new bus services. The policy would align with the site development framework.



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Change is happening. And it's happening fast – from climate and digital transformation to customer demands and hybrid working. The speed and extent of these changes create complex challenges which cannot be addressed in isolation. New perspectives are needed to accommodate the broader societal and technological picture and meet the needs of our ever-changing world.

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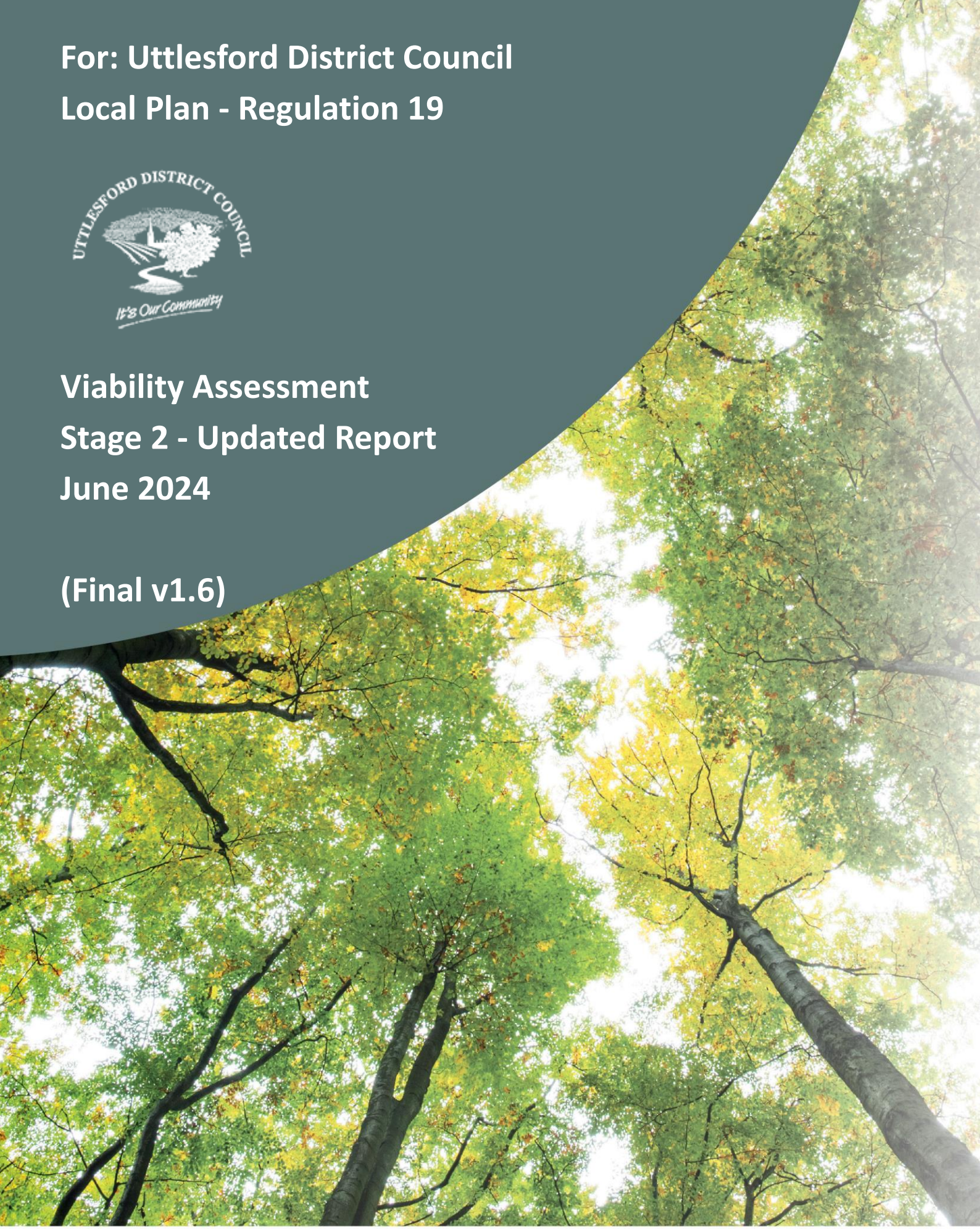
For: Uttlesford District Council
Local Plan - Regulation 19

Viability Assessment
Stage 2 - Updated Report
June 2024

(Final v1.6)



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Appendices

Note: These are all new at Stage 2 (2024); The residential typologies results (as per Appendix II generated at Stage 1 in 2023) have not been repeated and similarly the earlier version Appendices I and IV remain relevant as context for those, all as part of the building up of this assessment and feeding into this reporting update for emerging LP Regulation 19 stage.

Appendix S2-I **Development appraisal assumptions build up and overview - Updated** (Tables S2 1a – 1i)

Appendix S2-II **Tested site allocations - Housing results tables - Updated** (Tables S2 2a – 2f)
(Part 2 - Appraisal summaries and further sensitivity testing data)

Appendix S2-III **Employment development appraisal review results tables** (Tables S2 3a – 3d)
(Part 2 - Sample appraisal summaries)

Appendix S2-IV **Market and values research report – Updated**
(CoStar data extracts provided to rear as Sub-Appendix S2-IVa)

High level summary

Introduction/context

1. The following updated reporting (together with its Appendices S2-I to S2-IV) builds upon the Stage 1 assessment work reported September 2023 under DSP reference 23825. Together, this now provides a Stage 2 (hence 'S2') completed Viability Assessment (VA), prepared in an iterative way to inform and now support the emerging Local Plan (LP) through Regulation 18 Stage and now moving on to Regulation 19 and beyond. Following and building upon the Stage 1 approach and context for consistency, the current Appendices provide a guide to the assumptions made, as now revisited and expanded in scope (Appendix S2-I), set out in tables the further results (Appendices S2-II and S2-III) and include an overview of the updated research carried out to inform this (Appendix S2-IV).

2. As an overarching statement, this Stage 2 report retains the Stage 1 structure and context, as well as much of its context. However, it revisits and adds or amends where new information and findings are now available to supplement the Stage 1 assessment work.

3. In general, therefore, much of this Stage 2 report (both context and content) remains unchanged. We note where this has changed or been added to, therefore, and otherwise the earlier reporting remains part of this now final information for UDC's forthcoming regulation 19 consultation.

4. This assessment looks at the potential for development identified through the emerging new Local Plan for Uttlesford District (over the period to 2041) to be viable once the policies in the new plan are applied - alongside typical costs of development and national requirements.

5. National requirements include the Building Regulations. Those have tightened in areas including climate change response (carbon reduction/energy efficiency), accessibility, water usage efficiency and electric vehicle charging. They will tighten further. Other newly applicable national requirements now formally include Biodiversity Net gain (BNG). The typical costs of development include the building works, fees and finance, and costs of sale as well as land value, development profit and other elements.

6. As is usual for this type of assessment, and is the case here, the key local policy variables are:

    - Affordable Housing (both quantum i.e. % and its tenure type)
    - Local policy response to climate change (for example through the use of measurable energy efficiency standards as in the case of the UDC policy proposals) and
    - Level of infrastructure/development mitigation required.

    These are the policy areas and requirements which are the costliest to support from the development finances. They therefore have most influence on viability and are key elements which need to be considered in the mix with other matters (including the need for their provision) and need to be positioned by the Council as plan maker.

7. Accordingly, viability in this context means the financial health of development. Typically, it varies with the site type and nature of development involved. The viability of development also varies according to the level of values that will likely be achieved on sale of the completed scheme and how these values may vary with location and dwelling types. While various costs of development will be broadly consistent, the variable viability supported by different circumstances often means, in our experience, that there may need to be some consideration of differential policy positions to reflect and respond to this.

Assessment approach

8. The assessment provision is consistent with the national Planning Practice Guidance (PPG) on ‘Viability’. That sets out how viability should be considered in plan making (as addressed here) as well as at the decision taking stage (for development control i.e. planning applications).

9. The PPG section on ‘Viability’ brings to life the principles in the National Planning Policy Framework (NPPF) that developer contributions and other policy requirements need to be clearly set out and need to be assessed. This aims to ensure that cumulatively (i.e. when applied together and alongside all other costs) the requirements will not undermine the deliverability of the plan.

10. Using the principles of 'residual valuation' within a well-established and tested assessment methodology, highly experienced consultancy Dixon Searle Partnership (DSP) was appointed to prepare this assessment – now considered and reported further - to reflect the comprehensive review work undertaken to complete the work to this subsequent Stage 2, informing and supporting UDC's Regulation 18 to 19 stages new Local Plan consultations.

11. Having also allowed for necessary development profit (using a base assumption here for market housing sales at 17.5% GDV – gross development value) the term 'residual' reflects the calculation which deducts all assumed development costs (including tested policy costs) from the estimated sales value.

12. The process (running of a great many development type appraisals) then produces a range of 'residual land values' (RLVs). These are run based on a range of development typologies which are test scenarios broadly representing the general nature of expected developments. More specific assumptions are then also used to initially assess the potential viability prospects for a sample of larger scale developments, reflecting potential strategic or similar site allocation proposals. For Stage 2, the focus of the further development of the assessment has involved:

    - Looking again at the viability prospects for the larger/strategic housing site allocation proposals as are now being firmed up towards Regulation 19 consultation stage (results as per new Appendix S2-II), revisited reflecting the updated Uttlesford LP allocation proposals and using latest available information on infrastructure and other matters, and

    - Considering through typologies aligned to the broad type and scale of development expected to come forward on key employment development allocation proposal sites, the potential viability of those – high-level review (as per new Appendix S2-III).

13. The resulting numerous RLVs are then compared with judgments on a range 'benchmark land values' (BLVs) which are assessed to represent existing use value (EUV) of sites plus any necessary premium (uplift) needed by a landowner - to take a site out of existing use and release it for development. The comparison, across a wide range of scenarios and sensitivity tests at different sales value levels

(VLs) and affordable housing (AH) proportions (%s) then informs the degree to which various development circumstances are considered able to support the emerging policy positions; alongside all other relevant requirements and costs.

14. At these plan preparation stages of review, the sales values of market housing have been considered across an overall range £4,000 to £6,000/m^2, then focussing on the narrower mid-range most relevant to housing delivery overall here – as noted at Stage 1. For the Stage 2 Regulation 19 updating – the further, more specific review of selected larger/strategic site allocation proposals - the overall VLs range tested is £4,250 to £5,500/m^2. The range of VLs sensitivity tested per location/site is set out in Appendices S2-I and II.

15. The influence of BLVs across the range £250,000/ha to £3m/ha, overall, has been considered at this stage. The lower end of this represents larger greenfield sites while, within this overall range, c. £1.25m/ha is considered a provisional key level of BLV suitable for use in viability in planning for a range of PDL - sites in various/former industrial/commercial or other non-residential existing uses. For Stage 2, reviewing large or very large scale greenfield land release proposals, the BLV focus is at £250,000/ha (applied to gross site areas).

Stage 1 Draft VA findings

16. Here, before moving on to a summary of latest Stage 2 (see below), we will extract from section 3.2 of the full report – findings of the first full phase of assessment, Stage 1 testing (review work completed to September 2023). The typologies review content is unchanged from Stage 1 and we carry forward those findings to Stage 2, as briefly outlined below.

Typologies review

17. On the basis of the assumptions used, 35 – 40% AH is considered potentially viable as a headline on greenfield hosted developments. The testing suggests this to be supportable. With proposed policy (emerging Core 56 – Affordable Housing) settling at 35% upon finalising the review and assessment to Stage 2, without pushing viability to the limits across a range of sites this is considered a suitable policy position. Latest information available to DSP suggests that as a headline percentage this exceeds overall AH need, but our understanding is that its placing

is intended to balance out the effect of smaller sites (non-major development i.e. beneath the 10 dwellings threshold) not contributing, potentially along with others that may have proven viability issues.

18. The findings continue to suggest that, broadly, the cumulative policy set envisaged should mean that sites retain the ability to come forward viably in general.

19. However, with £20,000/dwelling (all dwellings) section 106 contributions/works costs also applied, we have seen that these indications can get tight and particularly if considered in the context of housing sale values falling beneath the currently most relevant levels. We have also noted that the costs of providing homes to enhanced Building Regulations Part L M4(3) – homes accessible to wheelchair users – are significant. Likewise, and although extra over costs can be expected to reduce over time, the costs involved in the energy efficiency requirement proposals (as a key part of the local climate change response) are not insignificant. The specifics and further considerations may be dependent to some extent on the particular approach to be taken, including on embodied carbon, within this set of principles.

20. Finalising the LP policy approach to such aspects might also play into the settling of a suitable, supportable mix of requirements and balance overall – i.e. alongside the affordable housing and infrastructure proposals.

21. Reiterated at this stage for UDC's information, and a regular finding by DSP in such assessments, it appeared likely that an AH policy differential for developments on PDL (lower percentage requirement) should be considered if this is sufficiently relevant to the planned land supply overall. This principle or its level may depend on the overall role and types of sites within the intended supply, however.

Initial review of potential larger/strategic sites

22. At Stage 1, the potential sites selected for initial appraisal and representing large scale/strategic development types were those at SE Saffron Walden (based on c. 900 dwellings), NE Great Dunmow (c. 1,100 dwellings) and N Takeley (assumed potential c. 1,600 dwellings).

23. On the basis initially appraised to this stage, these also appeared to have the potential to come forward viably in the context of the emerging policy proposals, although ultimately, likely with variable packages of affordable housing and infrastructure/other mitigation or matters supported to some degree from site to site. We noted that it would be possible to explore these matters further should this be appropriate and, if so, with more information available to support a more detailed, updated/refined set of appraisals and sensitivity tests.

24. At Stage 1 DSP also noted that, overall, it is possible that once appraised in due course with the knowledge of the estimates of required infrastructure and other further details available, the indications could change considerably.

25. This further appraisal has now been possible, using the more settled and more detailed information to the extent available at Stage 2. More is provided on this below, after next summarising briefly the Stage 1 overview.

Stage 1 - Overall

26. The emerging draft policy proposals were tested cumulatively. All in all, we considered that the approach proposed by the Council should be capable of supporting viable developments. This was on the basis of UDC consideration also being given to a differential between affordable housing requirements for GF and PDL sites – principles as noted above.

27. On the whole, taking the wider plan context rather than only the short term relatively challenging market conditions and costs, on progressing further review work to further inform the LP we considered this would likely to be able to continue supporting the viability prospects related to the policy directions and nature of development. We noted that whilst some adjustments may be recommended for consideration from a viability point of view, these appeared unlikely to be of a critical nature overall.

28. It was acknowledged that this was likely to warrant further review as UDC's information (particularly on infrastructure) develops and proposed positions progress further, however.

29. Accordingly, at Stage 1 the findings informed the Council's work and overall DSP confirmed support of the direction of travel given the emerging viability picture. At Stage 1 it was not possible to determine the firm combinations of policies (mainly in reference to final AH % headlines in different circumstances) and infrastructure requirements that will be viable alongside the final approach to climate change response – amongst the key areas of influence on viability. However, we noted this was to be expected. Some further consideration could be given to this, including potential variation (policy differentials) in reaching the final approach.

30. DSP also noted a potential need to adapt where flexibility is needed in operation of policies. It seems likely, and not just in Uttlesford, that a range of matters considered here might take a while to bed in – developing responses to climate change, tightening building regulations, evolving/uncertain national policy, further market developments, and so on. This, however, is a typical finding and does not undermine the above indications as far as are possible and appropriate to provide form this level of review.

Stage 2 (Updated assessment work completed June 2024)

General residential development – reviewing the typologies work

31. Taking a proportionate approach to the assessment, as is appropriate, it has not been considered necessary to run further typology appraisals at Stage 2.

32. The earlier findings are considered to remain representative and continue to provide a suitable overview of the viability of general developments.

33. At the point of the Stage 2 write-up, we understand that windfall sites are likely to make up approximately 10% of the overall supply, however it is possible that these will not all be from PDL.

34. However, on the typically lower viability scope supported by PDL relative to the indications for developments on greenfield land, UDC will need to view the findings in the plan context and will be able to consider the extent to which final consideration of policy differential(s) may be relevant. This is essentially a question of judgement, with PDL sites likely to vary greatly and a lower AH requirement not

guaranteed to be met in any event. Considering needs is also key, in tension with the viability findings.

Larger/strategic sites

35. Building on and checking the direction of the Stage 1 work, to both further inform and support the development of the Uttlesford Local Plan content from a viability perspective, at Stage 2 DSP revisited or reviewed the following allocation proposals:

    - SE Saffron Walden (based on an assumed circa. 879 dwellings)
    - NE Great Dunmow (884)
    - Stansted Mountfitchet (390)
    - Elsenham (150)
    - N Takeley (1,546)
    - Thaxted (489)

36. So, this involved a refreshed look at 3 of these larger site proposals, with 3 further site reviews added and the assessment scope agreed with UDC. The further assessment and results are discussed within the current (Stage 2) main report body and shown within new Appendices S2-I and S2-II.

37. At Stage 2 the assessment has found these sites to have suitable, reasonable prospects of coming forward viably. This is based on the Council's emerging LP policy approach and the other development value and costs assumptions made and allowed for cumulatively (together). Although this is again acknowledged as still relatively early stage work reflecting the point in the overall process towards progressed development, it has been appropriately approached for the purpose and again forms a basis which could be revisited at future points.

38. This is based on an AH headline at 35%. The latest findings show that in some test scenarios (and mainly those reflective of the direction of the emerging allocation proposals at NE Great Dunmow and N Takeley) the indications are around the cusp of viability with 35% AH with all other estimated costs allowed for. Overall, however, in our view this would not be an appropriate point at which to lower or selectively lower AH delivery expectations from such schemes. There is still a

great deal of further preparatory work to do, and information to build and keep under review – typical circumstances involved in development at significant scale.

High level review of employment use development sites/typologies

39. Although the emerging UDC LP policy "reach" as directly affects the viability of non-residential schemes is essentially limited to a requirement for sustainable development and construction reflecting the climate change response (carbon reduction and increased energy efficiency measures) and Biodiversity Net Gain (BNG), for completeness of information DSP has also reviewed the viability of employment development uses.

40. Acknowledging the nature and limitations of this, it has been conducted at a high level using a typologies approach. Assumptions have been broadly aligned to the nature of the emerging larger site allocation proposals, albeit based on general viability in planning principles and using the information available at the point of review.

41. The findings from this element of the exercise are mixed and at this point in time this also reflects the wider strategic viability assessment work that DSP has carried out elsewhere for some time now. Generally, the viability outcomes can be regarded as marginal at best overall, although the Research and Development premises typology indicates stronger prospects at this time.

42. However, the progression of such schemes is very often underpinned by particular business or longer-term investment plans and drivers – i.e. for operational or other ownership/occupational reasons rather than necessarily the property development activity as such. This also means that the figures behind proposals progressing may well be different to the assumptions typically used in viability in planning exercises. The appraisal results included here do not necessarily indicate or determine that developments of these types will not come forward, therefore. We understand that UDC has had positive engagement with site promoters and this is consistent with the wider context noted here.

43. We suggest that UDC will need to be mindful of any significant infrastructure requirements which (without other funding) could be expected to be very challenging for the viability of such schemes, as is typically the case. However, the

sustainable construction (carbon reduction/energy efficiency) and BNG related policy requirement proposals are considered unlikely to tip an otherwise proceedable scheme into non-viability. To date, the commercial property sector has if anything been running ahead of residential in the latter respect, where more energy efficient cheaper to run buildings are generally easier to market and let/sell and this will increasingly show in their investment characteristics and value compared with older, less efficient premises.

44. The full report, as follows, provides the detail of the viability assessment work undertaken and as now built further to this updating point, Stage 2. This is intended to be part of the wide range of evidence that will inform and support the further Uttlesford Local Plan consultation at Regulation 19 stage.

High level summary ends - June 2024

1.0 Introduction

1.1 Introduction, Background & Report Purpose

1.1.1 This further viability assessment report – update - covers the assessment work added to June 2024, building on the 'Viability Assessment (Stage 1 Draft Report) September 2023' provided by Dixon Searle Partnership (DSP) under reference DSP23825 as part of UDC's developing evidence base.

1.1.2 The context noted here, along with much of the content, is a recap of that set out in our Stage 1 report. This therefore acts as a body of work. The report content presented here on finalising the viability assessment uses the Stage 1 report and updates/adds to that as far as now reflects the latest assessment work (Stage 2 - principally comprising the extended and updated review of selected larger / strategic allocation proposals). Accordingly, the latest, Stage 2, assessment and findings are now also reported in combination with the continued use and relevance of the Stage 1 typologies-based work. The Stage 1 typologies work did not need to be revisited. Therefore, the results provided within Stage 1 Appendix II remain relevant as part of the assessment and therefore are not re-provided at this final reporting stage.

1.1.3 Uttlesford District Council (UDC) is in the process of preparing a new Local Plan to replace the current Local Plan 2005 (adopted in January 2005). The Council has been preparing this following the withdrawal, in January 2020, of its 2019 Submission. UDC consulted on Issues and Options and a 'Call for Sites' in spring 2021, followed by a process of reviewing responses in parallel with collating/analysing various evidence documents. The Council also set up a Community Stakeholder Forum to seek local residents' and interested parties' views and ideas on the Local Plan themes. The comments were used to develop the Spatial Vision and Strategic Objectives within the development of the new Regulation 18 draft Local Plan version.

1.1.4 The Regulation 18 stage consultation took place in the Autumn of 2023 and the Council has continued gathering evidence ready for Regulation 19 stage consultation in the coming months – mid to later 2024.

1.1.5 The Local Plan 2041 will be a comprehensive Development Plan Document (DPD) with a viable and deliverable spatial strategy. It will allocate sites for infrastructure, residential and other development, and apply strategic and non-strategic policies working towards net zero carbon development over the 20 years of its life.

1.1.6 The Local Plan must be prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the accompanying Planning Practice Guidance (PPG) – as updated 2018 and in some respects further amended through to this assessment period. Viability testing is an important part of the plan-making process. The NPPF includes a clear requirement to assess viability of the delivery of Local Plans and the impact on development of policies contained within them. The key guidance on how to address this is within the PPG, while other publications also provide reference sources.

1.1.7 As part of preparing the evidence base for the new Local Plan and in light of the above, the Council commissioned this assessment to help inform the development of policy (focusing on those policies likely to have direct cost implications for new development). The aim was to provide an understanding of the viability of the development proposed within the Plan. Using a well-established methodology consistent with PPG principles and informed by our long experience of the process through to examination stages, this was to be conducted through testing a mixture of site typologies and more specific assessment work on selected key strategic sites/allocations proposals and including, at the time of being commissioned, Garden Communities development intended to be allocated through the Local Plan. Ultimately, the development identified in the emerging plan should not be subject to such a scale of obligations and policy burdens that the ability of sites to be developed viably is unduly threatened.

1.1.8 As will be outlined below, this assessment project evolved alongside the Council's changing approach to its development strategy, with the plan making process paused and revisited - leading to the current, emerging approach as adjusted through to the Autumn of 2023 (see Uttlesford District Profile below). It was commissioned early to enable the viability perspective to be considered alongside the Council's LP development work and Regulation 18 stage

consultations. During the course of this assessment, it has been possible to feed into UDC's wider processes with initial (emerging) viability findings and the Draft Stage 1 report. The Council has continued to consider further its emerging policy proposals as our Stage 2 work has built on Stage 1. This process has continued to inform the LP development work. Although proposed policy versions have not been available for DSP to view (in fully settled final wording form) again the process has enabled this further review of the potential viability implications of the policies being worked up.

1.1.9 At the early stages of developing the new Preferred Options version Local Plan, our project scope involved conducting iterative phases of viability testing to help inform the emerging policies. Conducted in this way, the project both informs and supports the choice of emerging policies. The assessment requires a significant number of assumptions to be made. We noted at Stage 1 that given the scope of the evidence base produced to date, there were a number of aspects building in terms of settled sources for firm assumptions for use within the viability work. We therefore noted a likely need to revisit the assessment, looking beyond that Regulation 18 consultation phase.

1.1.10 Therefore, the progression of the viability work to now add this Stage 2 is as had been expected. This remains an appropriate and robust approach now compiled to further inform and support the Regulation 19 stage.

1.1.11 After carrying out local property values research and a first stage review of available information at the time, the first of those phases (completed in November 2021) was an initial limited development typologies-based appraisal exercise. That was run to begin reviewing the likely strength of relationship between development values and costs in the district; and how that might be affected by various potential/exploratory policy positions on key matters such as affordable housing (AH).

1.1.12 Subsequently, we were asked to take a preliminary high-level look at how the Council's consideration of various potential development strategy options might influence the viability scope that could be available to support the balance between addressing affordable housing need and potential levels of other policies/planning obligations. Provisional feedback on this further very high-level exercise (on viability only) was provided to UDC in February 2022

(again based on the assumptions developed for the November 2021 interim reporting). This was then further revisited and updated in response to the Council's review of potential development options at that time; leading to further interim viability reporting (August/September 2022).

1.1.13 Between Autumn 2022 and Spring 2023 there were a number of changes at the Council, which resulted in a change in approach to the emerging overall development strategy to be brought in and leading to a pause in this viability project while the adjusted direction was settled. In late spring, work on the assessment resumed. This led to the Stage 1 Draft Report providing information on the likely viability of the developing policies and an initial look at selected key sites in the emerging Uttlesford Regulation 18 Preferred Options Plan.

1.1.14 Overall, this assessment has been initiated, built on and progressed through regular close dialogue with the Council's officers (and contact with others involved in contributing to the Local Plan evidence base) since project inception. This has been a two-way process, with our work informing the Local Plan policy development as it has progressed to reflect evolving UDC information and respond as far as possible to early stage feedback and questions from the Council. Having undertaken this right through from the various phases of preliminary high level assessment work, and provided the Stage 1 picture, DSP has remained in contact with UDC and liaised generally on viability related matters as they influence the Council's LP policies and strategy development.

1.1.15 Details of the earlier work and interim assessment work are summarised in Chapter 3 later in this report. Although a combination of information on approach to and findings of the preliminary work, section 3.1 below is used to draw this together. The approach taken is consistent with DSP's long running and wide experience of similar assessments applying the same principles and methodology, undertaken reflecting the local characteristics.

1.1.16 Moving beyond the preliminary review work to the latest (the latest work being the focus of the findings this report) the assessment provided here involves two main elements. The first is the review of financial viability using a site typologies approach to test the likely viability of the emerging policies in the

context of the general development coming forward. The typologies are test scenarios agreed with the Council as broadly representing a range of site types/development schemes likely to come forward through the emerging Local Plan.

1.1.17 The second element consists of a more specific review of strategic scale development based on considering selected specific sites as far as possible (informed by available information) at the study stage, where that is important in delivering the aims and objectives of the Local Plan overall. Owing to various stages of progression having been reached towards or through the decision taking (planning application i.e. development management) stage, three potential allocation sites were considered in more detail at Stage 1 in order to further test the proposed policy LP positions and initially assess the viability prospects of these. Those were SE Saffron Walden (based on c. 900 dwellings), NE Great Dunmow (c. 1,100 dwellings) and N Takeley (comprising of a proposed c. 1,600 dwellings). Those were considered initially as representative of schemes of the nature covered by emerging policies on areas proposed for large scale development.

1.1.18 The Stage 2 work now also included in this updated reporting takes the review of those larger site scenarios further. Although also supplementing the earlier work with a review of typologies representing employment development, the main focus of Stage 2 has been an updated review of large housing allocation proposals. As per the information also set out in new Appendices S2-I and S2-II, these are as follows:

- SE Saffron Walden (based on an assumed circa. 879 dwellings)
- NE Great Dunmow (884)
- Stansted Mountfitchet (390)
- Elsenham (150)
- N Takeley (1,546)
- Thaxted (489)

1.1.19 At this stage, our understanding remains that the Council intends to consider implementing a Community Infrastructure Levy (CIL) at a subsequent stage, with the viability of that and potential charging rates considered under a separate commission. While we are looking to lay some groundwork for that

through this LP viability assessment, the more detailed work could progress on it once the overall Local Plan strategy is firmer - reducing the circularity that would be involved in viability testing that aspect ahead of the final stages of Local Plan process.

1.1.20 Consistent with much of our strategic viability assessment work, and particularly in recent years, the approach to/phasing of our brief and in particular the overall project timing has changed during the course of the work. As we have found to happen frequently, there have been pauses during the assessment resulting in an extended project period overall. Nevertheless, this has been an effective process with the dialogue continuing (and most recently allowing for) the assessment of latest emerging policy iterations including refinements as far as have been known up to preparation of this final 'Stage 2' report (write up completed June 2024).

1.1.21 This viability assessment has been produced in the context of and with regard to the NPPF, PPG (including crucially on 'Viability' but also consistent with other PPG sections such as on First Homes) as well as other Guidance[1] applicable to studies of this nature. After setting out the assessment context, purpose and general approach within this 'Introduction' section, the following report structure, on the study detail, is presented over two main sections as included below (brief outline here):

- Methodology – approach to the study, residual valuation methodology, assumptions basis and discussion.

- Findings Review – overall results review based on the findings from the typologies and site specific assessment work. Focussing on the available strength of viability in the Local Plan area in relation to supporting affordable housing (AH) proportions (%s) as far as possible bearing in mind affordable housing need; and when considered cumulatively alongside local and national emerging policies, including in areas such as climate change response (sustainable development / carbon reduction)

[1] Including RICS re-issued April 2023 Professional Standard 'Assessing viability in planning under the National Planning Policy Framework 2019 for England' (formerly introduced March 2021 as guidance effective 1st July 2021); 'RICS Professional statement on Financial viability in planning – conduct and reporting' (1 September 2019) and 'Local Housing Delivery Group – Viability Testing Local Plans' (Harman, June 2012)

and all other areas considered likely to have a direct influence (through a cost impact) on the viability of developments in the Local Plan area.

1.1.22 The testing of Local Plans for viability does not require a detailed appraisal of every site anticipated to be developed over the plan period, but rather a proportionate test of a range of appropriate site typologies that reflect the potential nature mix of sites likely to come forward. The process should however include more specific consideration of any key proposals upon which the Plan relies overall for the delivery of its growth objectives – e.g. particular strategic sites and especially where there has not been more specific work underway already as schemes progress to or reach DM stage.

1.1.23 Equally, the local plan viability assessment does not require an appraisal of every likely policy but rather the emerging policies that may to have a direct quantifiable bearing on the overall development costs. In our experience this type of assessment involves a focus primarily on the viability prospects and potential policies associated with housing development. This is because the scope of the Council's influence over the viability of other forms of development (i.e. non-residential/employment/commercial) through local planning policy positions is typically much more confined. There is no equivalent to affordable housing policy having such a significant effect, or to the increased range of standards relevant to residential development. In this case, the extent of emerging policy influence on the viability of wider development uses is limited, essentially, to the sustainable construction, biodiversity and development objectives of the emerging Plan. As noted, this Stage 2 adds high level consideration of employment development use typologies.

1.1.24 The overall assessment approach has applied sensitivity testing to explore the likely impacts of the potential policy costs - including on a range of affordable housing requirements combined with allowances for meeting the requirements of other policies emerging through the local plan process (as well as those applicable at a national level). This covers areas such as carbon reduction measures, Biodiversity Net Gain (BNG), water usage efficiency and space standards alongside infrastructure requirements. At this stage, high level assumptions have needed to be made with regard to wider planning obligations/infrastructure costs as the Council is still in the process of

gathering evidence in relation to infrastructure planning. It is usual that such work continues to evolve.

1.1.25 In practice, within any given scheme there are many variations and details that can influence the specific viability outcome. Acknowledging that, this work provides a high level, area-wide overview that cannot fully reflect a wide range of highly variable site specifics.

1.1.26 The point in time and prevailing economic and housing/property market conditions as schemes come forward can also greatly affect the circumstances around particular developments. It is necessary to consider also that the Local Plan will be delivered over a relatively long timeframe and most likely through varying economic cycles, meaning that taking only an immediate/short term view of assumptions and judgements is not appropriate in this context (whereas it will be more so in most development management 'decision taking' – situations). All in all, there are many variables involved. Such an assessment seeks to take a course through the consideration of these and how they come together in looking at the potential for developments to be viable - at this strategic level.

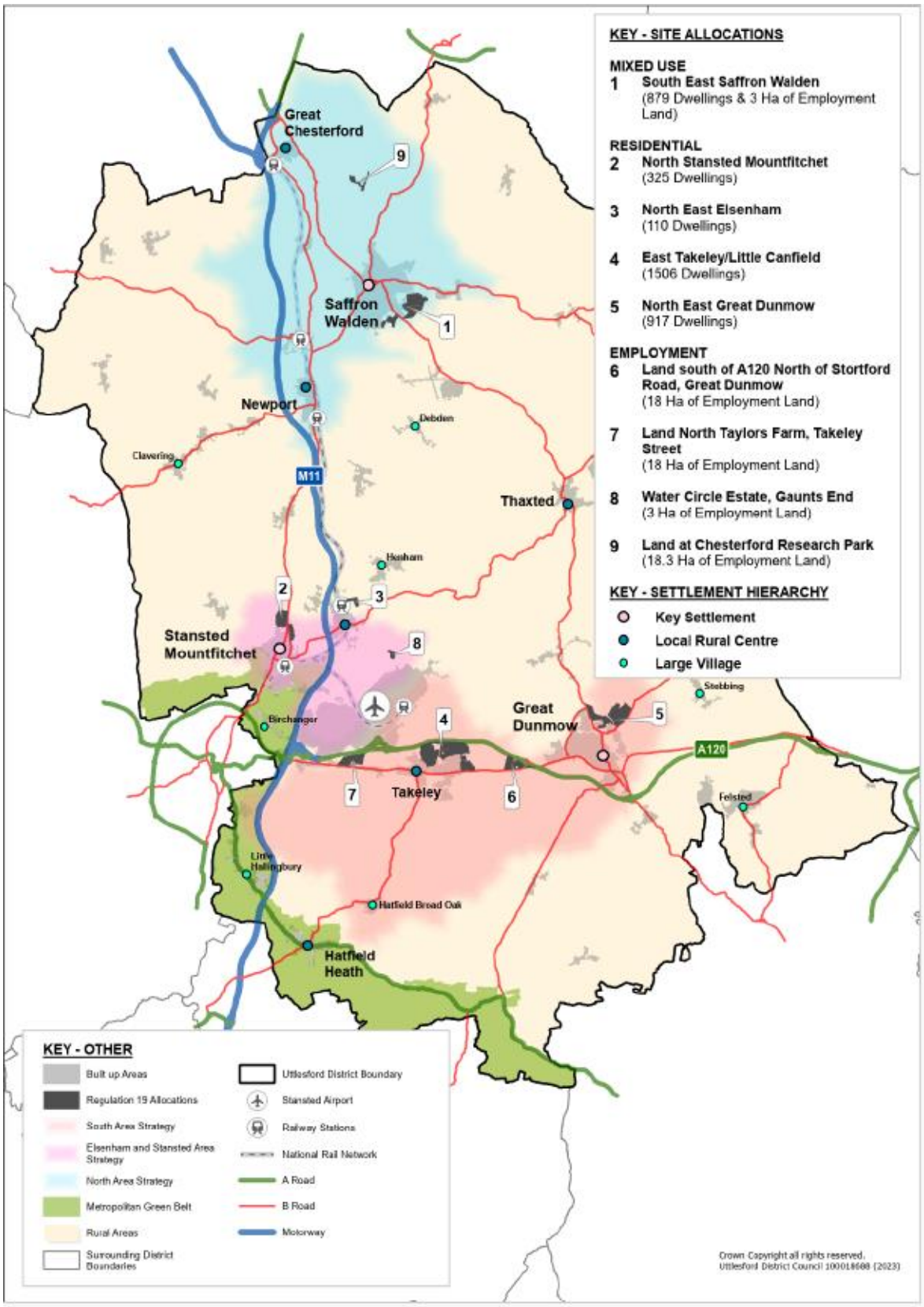
1.2 Uttlesford District - Profile

1.2.1 The emerging Local Plan will set out the spatial characteristics of the Plan area. This report section provides an outline only, feeding into the consideration of the local characteristics that are influencing the emerging Plan direction and therefore the review of policies and their viability in the relevant local context. The Council's wider evidence base provides an extensive range of information on the nature of the Local Plan area, and the related planning issues and opportunities.

1.2.2 Uttlesford is a prosperous largely rural district in north-west Essex with a population of just over 91,000. Housing values are high. The district includes the heritage market towns of Saffron Walden (in the north-west of the district and the largest settlement) and Great Dunmow (the second largest settlement and situated in the south-east of the district) together with over 60 villages set within the countryside, dominated by historic landholding estates, woodland, and agriculture.

1.2.3 Amid strong pressures for development, Uttlesford occupies a strategic location astride the M11, with London Stansted Airport in the south and the high growth area of Cambridge, including the Chesterford Research Park, part of the cluster of science parks, to the north. The district benefits from the London-Stansted Innovation Corridor and spin-off from the Oxford-Cambridge Arc, new transport proposals and skilled employment growth from Cambridge, with these factors key influences of strong demand for housing in the district.

Figure 1: Spatial Portrait of Uttlesford District



(Source: UDC 2024)

1.2.4 The emerging Plan seeks to make provision for 14,741 new homes between 2021 and 2041; a level in excess of the identified housing requirement of 13,500 - to ensure flexibility and contingency. It is proposed that approximately 3,738 dwellings will be provided through strategic allocations across the district and approximately 900 dwellings will be delivered via non-strategic allocations at Newport and the larger villages and additional dwellings (including windfall) will be delivered through Neighbourhood Development Plans or through the Development Management Process. Core Policy 2 of the emerging Plan sets out more detail.

1.2.5 In addition to provision for residential development, the emerging Plan is set to identify circa 58 hectares of land for employment development in the period to 2041.

1.2.6 At the point of this final write up, we note that since the Stage 2 work commenced, the dwelling numbers and other figures noted here have changed slightly as site options were refined and UDC's monitoring information was updated, along with a decision taken by the Council to remove the allocations at Thaxted.

1.3 National Policy & Guidance

1.3.1 The requirement to consider viability stems from the National Planning Policy Framework (NPPF)[2] which says on *'Preparing and reviewing plans'* at para 31: *'The preparation and review of all policies should be underpinned by relevant and up-to-date evidence. This should be adequate and proportionate, focused tightly on supporting and justifying the policies concerned, and take into account relevant market signals.'*

1.3.2 NPPF para 34 on *'Development contributions'* states*: 'Plans should set out the contributions expected from development. This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure). Such policies should not undermine the deliverability of the plan.'*

[2] At the time of writing up Stage 1 an updated NPPF (September 2023) had just been published. Latest update 20 December 2023.

1.3.3 The updated national Planning Practice Guidance (PPG) on 'Viability', published alongside the NPPF in July 2018 and most recently updated on 14 February 2024, provides more comprehensive information on considering viability in plan making, with CIL viability assessment following the same principles. The PPG on Viability states:

> *'Plans should set out the contributions expected from development. This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure).*
>
> *These policy requirements should be informed by evidence of infrastructure and affordable housing need, and a proportionate assessment of viability that takes into account all relevant policies, and local and national standards, including the cost implications of the Community Infrastructure Levy (CIL) and section 106. Policy requirements should be clear so that they can be accurately accounted for in the price paid for land. To provide this certainty, affordable housing requirements should be expressed as a single figure rather than a range. Different requirements may be set for different types of site or types of development…Viability assessment should not compromise sustainable development but should be used to ensure that policies are realistic, and that the total cumulative cost of all relevant policies will not undermine deliverability of the plan'.*

1.3.4 The PPG states that site promoters should engage in plan making and should give appropriate weight to emerging policies. The latest revision to the PPG (paragraph 006) increases the emphasis on viability at the plan-making stage; therefore, if a planning application is submitted which proposes contributions at below the level suggested by policy, the NPPF expectation is that the applicant will need to demonstrate what has changed since the Local Plan was adopted.

1.3.5 However, the PPG (paragraph 010) is clear in stating that: '*In plan making and decision making viability helps to strike a balance between the aspirations of developers and landowners, in terms of returns against risk, and the aims of*

the planning system to secure maximum benefits in the public interest through the granting of planning permission'.

1.3.6 The Council has to date not progressed the putting in place of a Community Infrastructure Levy (CIL) Charging Schedule (CS), preferring to continue with securing development mitigation and infrastructure requirements under s106 of the Town and Country Planning Act 1990 (further details on the level of planning obligations assumed at this stage are set out later in this report and appendices). Further work to inform the introduction of a CIL for the district is understood as likely to be the subject of a separate commission in due course.

1.3.7 Within this assessment, allowances have been made for the cost to developers of providing affordable housing and complying with other planning policies fully (based on assumptions relevant to testing options for the Local Plan and going on to consider emerging policy proposals). This is whilst factoring-in the usual costs of development (build costs, fees, contingencies, finance, costs of sale, profit and land value) so that an overview of the cumulative effect of the estimated costs of development can be made.

1.3.8 The consideration of the collective planning obligations (including affordable housing and other infrastructure requirements) is key and cannot be separated from other matters influencing viability. The level of each will play a role in determining the potential for development to bear this collective cost. Each of these cost factors influences the available scope for supporting the others, which links back to 'striking a balance' between the various planning objectives whilst reflecting the market drivers of development.

1.3.9 Further relevant information is contained in the publication 'Viability Testing Local Plans – Advice for planning practitioners' published in June 2012 by the Local Housing Delivery Group chaired by Sir John Harman (known as the 'Harman' report[3]). That sets out a stepped approach as to how best to build viability and deliverability into the plan preparation process and offers guidance on how to assess the cumulative impact of policies within the Local Plan, requirements of SPDs and national policy. It provides some still useful practical advice on viability in plan-making and its contents should be taken into account in the Plan making process.

[3] 'Local Housing Delivery Group – Viability Testing Local Plans' (Harman, June 2012)

1.3.10 Planning and in particular national policy are constantly evolving processes, with the current environment for these being especially uncertain and fluid – potentially subject to significant further change. A viability assessment such as this, however, is necessarily carried out at a point in time based on knowledge of the system and policies in place at that time or – to the extent that may be practical - taking into account likely changes to policy moving forward (for example through further sensitivity testing or commentary). It needs to be acknowledged however that no study can cover every future eventuality and as far as possible there is a need to avoid re-starting projects at great cost. It therefore needs to be accepted that there may be cases where an update to an assessment such as this may be appropriate to consider or required as the Plan moves forward to Examination.

1.3.11 During the course of carrying out this assessment (viability review work undertaken and related latest dialogue with the Council between 2021 - 2024) the Government has both consulted on and more generally considered potential short term and longer-term reforms to the planning system in England and Wales.

1.3.12 Previously, the White Paper: Planning for the Future consultation (August 2020) sought views on wholesale reforms to the planning system which in some respects would make it almost unrecognisable from the system under which this assessment and the Local Plan are being produced. A second consultation – 'Changes to the current planning system' looked at shorter term objectives including the introduction of a First Homes policy[4] and temporary increase in the national affordable housing threshold[5]. The Government's response to its consultation[6] concluded that: '*On balance, we do not consider this measure to be necessary at this stage, particularly in light of the broader way in which the sector has responded to the challenges of the pandemic and the other measures we have available to support SMEs. We therefore do not think any change to existing policy is currently needed*'. The later topic appears to have been revisited recently by government to an uncertain extent,

[4] Policy that requires a minimum of 25% of affordable housing to be First Homes for sale at a minimum discount of 30% of market value.
[5] The government consulted on whether to increase the current affordable housing threshold (where affordable housing may be sought from developments of 10 dwellings or more) to 40 or 50 dwellings for a temporary period.
[6] https://www.gov.uk/government/consultations/changes-to-the-current-planning-system/outcome/government-response-to-the-first-homes-proposals-in-changes-to-the-current-planning-system (April 2021)

but so far there has been no move to raise the affordable housing policy general threshold from the 10 or more dwellings (reflecting 'major' development) level (subject to potential changes via the proposed 'Infrastructure Levy').

1.3.13 The longer-term major reforms proposed in the White Paper look likely to have a significant impact on the setting of planning policy and the way in which policy and wider plan development is considered, running also into the operation of policies. The Government's proposals include a wholesale reform of CIL. An Infrastructure Levy (IL) may be introduced across the country, over time, for all Local Authorities (including those without a CIL currently) in an overhaul of current arrangements in regard to both CIL and section 106 (s.106) planning obligations agreements, such as continue to be relied upon in Uttlesford and many other areas.

1.3.14 During 2022 the Department for Levelling Up, Housing and Communities (DLUHC) introduced planning reforms, ushered in via the Queen's Speech and set out in the Levelling Up and Regeneration Bill (May 2022) – 'LURB'. More planning reform proposals were put forward through the Chancellor's September 2022 "mini-budget" that lead to speculation of further revisions to this new Bill; or scrapping it altogether. Later developments led to the Government consulting on 'Levelling-up and Regeneration Bill: reforms to national planning policy' between December 2022 and March 2023. Subsequently, further amendments to the LURB proposals were considered.

1.3.15 This became law on 26th October 2023 as the 'LURA' (Levelling-up and Regeneration Act) and as things stand, via secondary legislation (Regulations) in due course, will form the basis for a new Infrastructure Levy, for example. The details of the new levy are yet to be fully set out, however, and reports have been suggesting that its introduction is possibly some years away. If progressed, it will, in essence, shift the focus for rate setting toward the capture of land value, be set as a percentage of gross development value (rather than floorspace), and charged once a property is sold rather than at the start of the development process. Given the uncertainty over future Infrastructure Levy proposals, however, we have not considered the IL as part of this assessment. This could be considered at the time of looking at CIL

viability in due course, potentially, dependent on the level of clarity available at that time.

1.3.16 There is therefore significant uncertainty about when we will know more and what any new arrangements might be. Given these wide-ranging, proposed planning reforms are not yet confirmed, we are unable to comment at this stage on what the impact may be on the viability assessment or indeed on the Local Plan or future Infrastructure levy. The proposed wider reforms may not ultimately take the form envisaged and there could be a considerable amount of time taken before any changes enter the planning system.

1.3.17 However, in respect of First Homes, by Written Ministerial Statement 24th May 2021 the Government confirmed the introduction of a requirement for these to be delivered via section 106 of the Town and Country Planning Act 1990. Therefore, this assessment fully reflects the inclusion of First Homes in reaching all latest viability results and recommendations.

1.3.18 According to the Act and supporting guidance ('First Homes' within the PPG – added 24th May 2021) a minimum of 25% of all affordable housing units secured through developer contributions should be First Homes with a minimum discount of 30% of market value (MV). Increased levels of discount can be considered (at 40% or 50% of MV) subject to demonstrating appropriate need – although we understand the discount selection to be an area wide matter aside from the potential for Neighbourhood Plan areas to look at this more specifically. After discount, the First Homes must be available on the basis of not exceeding a price cap of £250,000 (cap figure outside London).

1.3.19 In addition to the above, during 2019 the Government consulted on and sought views on plans for a Future Homes Standard (FHS) for new homes from 2025, and proposed options for an interim increase to the energy efficiency requirements for new homes ahead of that. The consultation proposed that from 2025, new homes built to the Future Homes Standard will have carbon dioxide (CO_2) emissions at least 75% lower than those built to pre-FHS interim standards (standards applicable prior to the Building Regulations update in 2022).

1.3.20 Introducing the Future Homes Standard will ensure that the homes needed will be fit for the future, better for the environment and affordable for consumers to heat, with very high building fabric standards and low carbon heating.

1.3.21 The government's current approach is such that all homes will be 'zero carbon ready', becoming zero carbon homes over time as the electricity grid decarbonises, without the need for further costly retrofitting work.

1.3.22 The interim standard is such that carbon reduction of 31% over prior levels is required and this is now reflected through changes to the Building Regulations (Part L) that have become effective from 15th June 2022. In turn this reflects the direction of travel towards zero carbon, at this stage leading next to the wider implementation of the FHS from 2025 whereby it is expected that a reduction in CO_2 of 75% from pre-June 2022 standards will be achieved, as above.

1.3.23 A number of local planning authorities have looked to or are looking to have within their Local Plans policies which go beyond the Government's Future Homes Standard approach.

1.3.24 However, in terms of material factors, a 13th Dec 2023 Written Ministerial Statement (WMS) indicates that Government does not expect Local Planning Authorities to set their own targets on energy efficiency in buildings and seeks the use of a specific metric if such targets are sought in the local plan. The background to this is purported to be concern over an increasing lack of consistency in how energy efficiency policies are applied to development, in as much as this might conceivably slow down the supply of new housing. The WMS position is that: 'the proliferation of multiple, local standards by local authority area can add further costs to building new homes by adding complexity and undermining economies of scale'. It therefore promotes the use of a specific metric from the national Building Regulations, based on a view that this would offer clarity and consistency for those investing and preparing to build net-zero ready homes. The WMS sets out that: 'Any planning policies that propose local energy efficiency standards for buildings that go beyond current or planned building regulations should be rejected at examination if they do not have a well-reasoned and robustly costed rationale that ensures:

- That development remains viable, and impact on housing supply and affordability is considered in accordance with the National Planning Policy Framework.

- The additional requirement is expressed as a percentage uplift of a dwelling's Target Emission Rate (TER) calculated using a specified version of the Standard Assessment Procedure'.

1.3.25 As part of a 'Long Term plan for Housing Update' including a presumption in favour of brownfield development, permitted development, public sector land rights and other themes aimed at easing housing supply constraints, a further WMS dated 19th February 2024 seeks to clamp down on CIL Charging authorities setting higher rates of CIL on sites that are not required to provide affordable housing. The WMS notes this 'is not within the spirit of the Government's policy on small sites. The Government will be updating CIL guidance to make clear that CIL-charging authorities should consider the impact of CIL rates on SME developers and should not set higher residential CIL rates on minor development. This will apply to new and revised charging schedules.' This is another area that DSP has been discussing while running some strategic assessments in recent months.

1.3.26 At the time of this Stage 2 write up, a General Election has been announced for 4th July 2024 and housing/planning and climate change response etc. are amongst the matters and pledges being discussed and put forward. The assessment has been prepared in the context of current and known pending legislation as of the report date – i.e. preceding any knowledge of the General Election outcome and any relevant implications of that.

1.3.27 All in all, along with the reported issues around determining housing needs and site supply, with further movement in those seeming likely to come as well, there are wide ranging uncertainties within the planning system at this time. The progression of such work – on Local Plans and associated evidence - relies on information gathering and review, making assumptions and judgements as far as are possible at the relevant points – in this case, the points at which inputs need to be fixed ready for running appraisals. However, this does not detract from the nature of the exercise in that it is not workable

but not necessary in any event to seek to cover all variables and permutations – be they policy combinations and other eventualities, sites or scheme types.

1.3.28 Information on the assumptions used in this assessment is provided in Chapter 2 below and within the appendices to this report – Appendix I at Stage 1 and Appendix S2-I reflecting Stage 2.

2.0 Methodology & assumptions

2.1 General Approach

2.1.1 In this section, again we continue to use the Stage 1 report commentary basis, with updated content added at Stage 2 where noted.

2.1.2 The assessment as described in this report has involved an ongoing approach to informing the development of policies of the Local Plan (LP) and all conducted based on dialogue with the Council – with information feeding into and out of the study. To recap, a number of stages to this process have taken place since July 2021 with pauses in the process reflecting the Council's further consideration of issues such as overall housing numbers and need; and how these and the wide range of other context matters and objectives are to be reflected in the formulation of the new LP.

2.1.3 The earlier work considered the general viability of options for key policy areas through the testing of 'site typologies' that allowed DSP to provide emerging / initial findings and feedback on policy development through the assessment process by carrying out sensitivity testing; leading to interim feedback (emerging findings) for UDC in November 2021 and then again in August/September 2022. These provided some high-level findings and recommendations for the Council to consider based on potential policy options/scope discussed at the time; particularly in relation to the potential scope to support affordable housing alongside other costs and requirements, and potentially suitable overall policy approach. As has been noted, section 3.1 below outlines the nature of and preliminary indications from that earlier review work.

2.1.4 Then, through a process of ongoing dialogue reflecting wider emerging evidence (feeding into and out of the assessment) and further assumptions development, this progressed to our full Draft Stage 1 (September 2023) reporting, subsequently developed to current Stage 2. This document provides an update as a full final report reflecting both stages, taking the assessment on from the Regulation 18 consultation phase on the viability of the likely direction of the emerging Local Plan policies and key sites as far as were

known then. Whilst still in the mode of informing the settled content of the Draft Local Plan, DSP has not had sight of the Council's fully assembled drafted Regulation 19 Plan version. However, as referred to above, this has enabled sharing of emerging draft policy content and ensured a working knowledge of the policy directions. Previously we noted in particular that the detailed picture on specific infrastructure requirements had not been developed at the point of undertaking Stage 1. Stage 2 now uses UDC's latest available most up to date possible information on this, which is a key aspect of looking at strategic scale development to more closely test its viability prospects (as per the updated methodological points and assumptions (see below and new Appendix S2-I together with the results tables provided in June 2024 Appendix S2-II).

2.1.5 For each appraisals stage, necessarily rounded up at a point in time prior to fixing assumptions, we have undertaken an extensive information review, updated as needed during the course of this commission. This has included property market research, with stakeholder consultation also undertaken as part of our assessment work. We have continued considering those potential policy proposals/areas that may be likely to have a regular and quantifiable cost impact on future development, and additional cost implications over and above the typical costs involved in the development process. Those typical costs being, for example, build costs utilising the costs information from established sources such as the Building Cost Information Service (BCIS), associated fees and contingencies, finance, sale costs, development profit and land costs.

2.1.6 At Stage 1 Appendix I (Table 1d) we included our 'Policy Analysis' overview, which considered the likely level of influence of the emerging proposed policy positions and therefore their relevance directly (or otherwise) to the viability assessment assumptions. The assessment focus is on the likely policies that may be expected, usually, to directly contribute to impacting the viability of developments as part of the cumulative costs involved in completing schemes under the scope of the Local Plan. As discussed above, the work undertaken for this study has been iterative. It has need to remain proportionate for the purpose, and economic to run. Accordingly, an approach based on the inclusion of typical policy effects and assumptions within Local Plan viability combined with the local context and with sensitivity testing carried out has

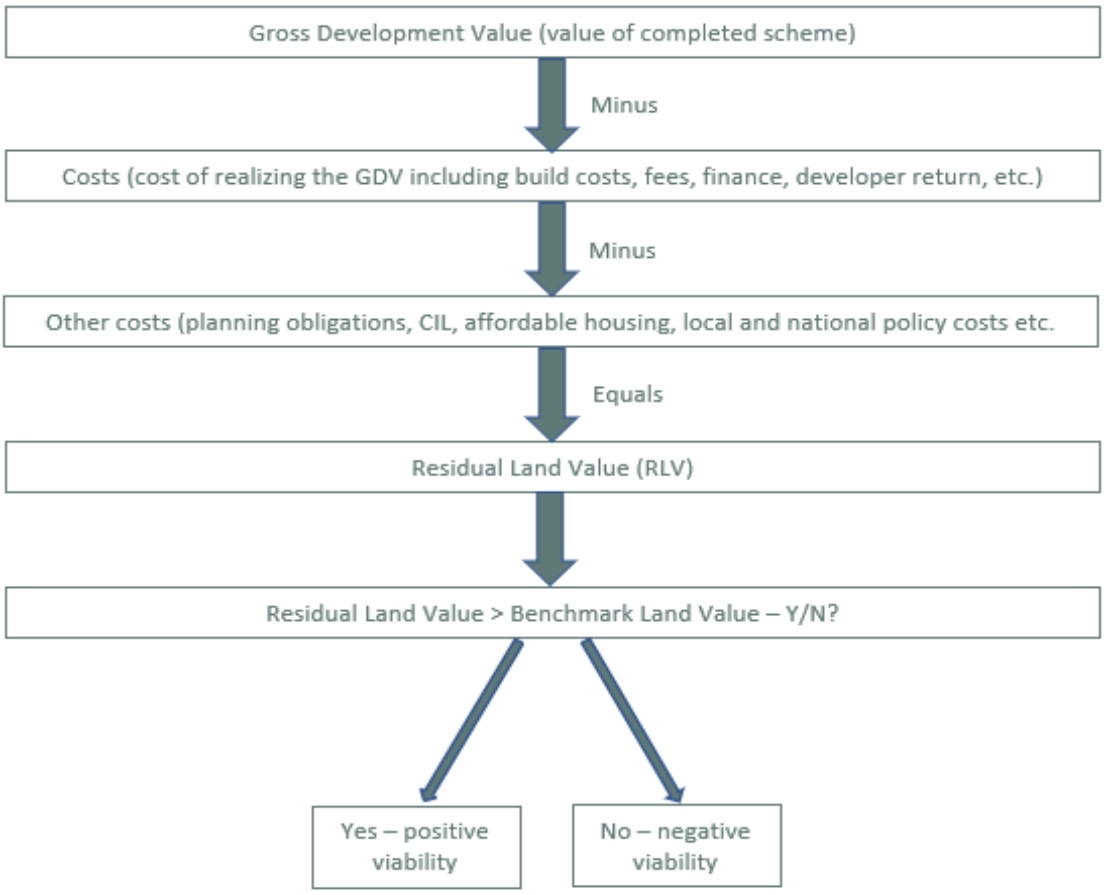
been appropriately continued to aid the Council in considering the potential viability implications of various policy positions and key sites selections. Those policies reflecting more specific positions intended to be progressed locally have been reflected within the current appraisals, where the positions were known at the time of needing to fix assumptions.

2.1.7 Collectively, this study therefore investigates the viability and, therefore, deliverability of the Local Plan and potential policy positions and requirements - including affordable housing and development standards and now taking further the earlier review of the viability prospects for larger/strategic scale development that is key to the delivery of the new housing overall.

2.2 Residual Valuation Principles

2.2.1. The most established and accepted route for studying development viability at a strategic level, including for whole plan viability (but also used for site-specific viability assessments) is residual valuation. This is also consistent with the relevant guidance described above. Figure 2 below sets out (in simplified form only) the principles of the residual valuation calculation, which is the methodological basis of the appraisals sitting behind our results and findings at all stages.

Figure 2: Simplified Residual Land Valuation Principles



(DSP 2023-2024)

2.2.2. Having allowed for the costs of acquisition, development, finance, profit and sale, the appraisal results show the sum that is potentially available to pay for the land – i.e. the residual land value (RLV).

2.2.3. This assessment is consistent with the NPPF and accompanying PPG on Viability, with the NPPF no longer containing any reference to competitive returns to a 'willing landowner' and 'willing developer'. The emphasis has moved away from a market value based approach to land as may have been used or carried greater influence in the past. The PPG on Viability has for some time now made it clear this benchmark land value (BLV) should be based on Existing Use Value (EUV) and states:

'To define land value for any viability assessment, a benchmark land value should be established on the basis of the existing use value (EUV) of the land, plus a premium for the landowner. The premium for the landowner should

reflect the minimum return at which it is considered a reasonable landowner would be willing to sell their land. The premium should provide a reasonable incentive, in comparison with other options available, for the landowner to sell land for development while allowing a sufficient contribution to fully comply with policy requirements. Landowners and site purchasers should consider policy requirements when agreeing land transactions. This approach is often called 'existing use value plus' ['EUV+'].

2.2.4. The NPPF and associated PPG on Viability indicate a greater link than previous between the role of strategic level viability work such as this assessment and the decision making (development management of planning applications/delivery) stage. The national approach has moved more towards a general acknowledgement that the main role of viability should be at the plan making stage.

2.2.5. However, and consistent with our experience in practice to date, it appears likely that there will still be a role, albeit at a reduced level, for planning application stage / site-specific viability reviews but that it is '*up to the applicant to demonstrate whether particular circumstances justify the need for a viability assessment at the application stage*'[7]. An indication of the types of circumstances where viability could be assessed in decision making is also included in the PPG. These include: '*for example where development is proposed on unallocated sites of a wholly different type to those used in viability assessment that informed the plan; where further information on infrastructure or site costs is required; where particular types of development are proposed which may significantly vary from standard models of development for sale (for example build to rent or housing for older people); or where a recession or similar significant economic changes have occurred since the plan was brought into force*'[8]. There may be the potential for the development of some site typologies or sites identified by the Council to need to overcome abnormal issues and support added costs. The national approach recognises that within this picture and / or at certain stages in the

[7] https://www.gov.uk/guidance/viability#standardised-inputs-to-viability-assessment (Paragraph: 006 Reference ID: 10-006-20190509 Revision date: 09 05 2019

[8] https://www.gov.uk/guidance/viability#standardised-inputs-to-viability-assessment (Paragraph: 007 Reference ID: 10-006-20190509 Revision date: 09 05 2019

economic cycles there could be sound reasons for site-specific viability evidence to be brought forward at the delivery stage in such circumstances; as a part of ultimately settling the development details and exact degree of support that can be maintained for planning obligations to secure infrastructure. This is, of course, prior to any changes that may be eventually brought forward through any national Infrastructure Levy.

2.2.6. The range of assumptions that go into the RLV appraisals process is set out in more detail in this chapter. Further information is also available at Stage 1 Appendices I (Assumptions overview) and IV (research – market/values information review); and as now updated for Stage 2 with further Appendices S2-I and S2-II.

2.3 Stakeholder Consultation

2.3.1 National policy and guidance reflects the need for and value of stakeholder engagement. Consistent with our established practice for strategic viability assessments, DSP sought soundings as far as were available from a range of development industry stakeholders as assumptions were considered in the earlier stages of this overall assessment to date. This offered an engagement opportunity to a wide range of locally active organisations and interests, with a view to gathering feedback on our emerging study approach and inputs - to help inform the assessment.

2.3.2 This engagement process was conducted by way of survey type exercises seeking information and views with which to help test our emerging assumptions at the early project stages, followed up with key participants as appropriate. The approach set out our initial draft assumptions and testing ideas, with the opportunity provided for the stakeholders to then comment on those emerging positions or suggest alternative assumptions with reasoning. Generally, the approach involved inviting pointers or examples from local experience. These were issued as follows: -

- Development Industry – range of active or potentially active stakeholders in the Plan area with organisations and contact points as informed by the Council, including local property agents, developers, housebuilders, planning agents and others.

- AH Providers – range of locally active affordable housing providers again as informed by the Council and its housing enabling work. Whilst also invited to comment more generally, these organisations were issued with a narrower survey requesting information more specifically related to the consideration of the AH revenue levels that might be expected by developers on constructing and transferring affordable homes to the RPs, and related assumptions.

2.3.3 In addition to the above, in this case the Council also issued our stakeholder engagement questionnaires to other interested parties including neighbourhood groups/parish councils and similar.

2.3.4 As part of this process, a full record of all stakeholder interaction is kept, including a log indicating the parties contacted, reminders issued, the feedback responses and level of response overall. Given potential commercial sensitivities/confidentiality in some instances, the details of the responses received are not included within our published report. However, this has all contributed to the overall information review, further informing both the consideration of the assumptions range, and the review of and judgments made around the results in the earlier and subsequent assessment stages. All in all, the work is informed by a combination of sources, including the Council and its supplied information, our own extensive research process and experience and supplemented through the relevant stakeholder sourced feedback as far as available at the time.

2.3.5 Leading up to the Stage 1 reporting of our review work, there was a level of refreshing of this exercise undertaken. DSP produced a letter which was issued by UDC. There has been a limited response to this, in the main leading to some contact with Parish Council representatives. The Council has been actively engaging with the promoting parties involved in the larger/strategic site allocations

2.4 Scheme Development Scenarios - Residential Typologies and Tested Large/Strategic Sites Proposals

2.4.1 The scenarios (typologies) considered and appraised as part of this assessment (Stage 1 and findings carried over to Stage 2) reflect the variety of different types of development that are likely to be brought forward through the planning process across the plan area. They include a mix of residential test scenarios. This has enabled viability to be tested in a way that reflects the likely range of future housing supply characteristics, informed also by the local experience of development to date. This appropriately informs the development of local plan policy alongside an assumption on the level of planning obligations (infrastructure requirements) that is in place for the time being. All with the key aim of operating an appropriate balance between policy requirements (including provision of affordable housing and infrastructure funding) and the objective of developments being able to continue to come forward viably on the basis of both the community needs and the commercial drivers being met as far as possible in the available circumstances.

2.4.2 While this cannot be and does not need to be an exhaustive exercise as the guidance recognises, in order to adopt a relevant range of residential development typologies, we have considered with UDC the broad nature of the housing supply expected to come forward over the emerging plan period – up to 2041.

2.4.3 A full range of housing development typologies have been tested over a range of value levels (VLs) representing varying residential sales values considered appropriate at the time of review across the Local Plan area by scheme location/type. As well as looking at the influence of location within the Local Plan area, this sensitivity testing approach allowed us to consider the potential impact on development viability of changing market conditions over time (i.e. as could be seen through falling or rising values dependent on market conditions) as well as how this key assumption may vary by location, development type and scale.

2.4.4 A summary of the residential scheme typologies is shown at Figure 3 below, with the full detail having been set out in Appendix I to the Stage 1 Report (September 2023).

Figure 3: Residential Site Typologies

Scheme Size Appraised	Type	Site type
1	House	PDL
5	Houses	PDL/Greenfield
10	Houses	PDL/Greenfield
15	Flats	PDL
15	Houses	Greenfield
15	Houses	PDL
30	Flats (Sheltered)	PDL
50	Mixed	Greenfield
50	Mixed	PDL
50	Flats	PDL
60	Flats (Extra Care)	PDL
100	Mixed	Greenfield
250	Mixed	Greenfield

(DSP 2023)

2.4.5 In addition to the use of the site typologies approach, this assessment considers the viability of a set of specific larger site allocations/strategic scale sites. These have been discussed further with UDC informing more specific appraisal, albeit whilst acknowledging that at the Stage 2 updating this remains very early in the context of the overall progression of proposals and envisaged timelines, should the allocations be confirmed. Whilst still a relatively high-level exercise of course, reflecting this early stage in terms of the concepts/nature of proposals, this revisiting has used the latest available costs and values information. The UDC provided infrastructure costs and timings estimates available to end May 2024 (sourced from the Council's current Infrastructure Planning iteration) have fed into DSP's latest assessment work. This therefore is again based on information as far as available at the point of running in this case the further, more refined appraisals – as part of a full revisit of the initial sites review at Stage 1 and moving this assessment on to completed Stage 2).

2.4.6 A summary of the larger site allocations/strategic sites proposal scenarios now tested is shown in Figure 4 below. This has been updated from the Figure 4 version within the Stage 1 Report. Appendix S2-I provides more detail, where Tables S2-1a to 1f provide an assumptions sheet per site, including known infrastructure requirements. Tables S2-1g and 1h there provide the more general development costs and proposed Uttlesford LP policy costs based

assumptions applied, as well as the assumed housing types, mixed and tested values ranges.

Figure 4: Proposed Large/Strategic Site Allocations tested – Summary

Potential Local Plan Allocation Proposal	Tested Indicative Dwellings Capacity	Approx. Site Area (Gross – Ha)	Stage 2 Appendix S2-I Specific Assumptions Table ref.	Stage 2 Appendix S2-II Results Table ref.
SE Saffron Walden	879	63.2	1a	2a
NE Great Dunmow	884	97.3	1b	2b
Stansted Mountfitchet	390	26	1c	2c
Elsenham	150	8.4	1d	2d
N Takeley	1,546	120	1e	2e
Thaxted	489	49.8	1f	2f

(DSP 2024)

2.4.7 The selected strategic sites representative testing has been based on information as far as available at the point of appraisal – as provided to DSP by the Council and supplemented via the stakeholder consultation exercise where possible at the assumptions fixing stage. The assumed total (gross) site areas and indicatively expected dwelling numbers are as shown above, with the assumptions including current stage broad estimates of infrastructure requirements as noted in Table 1b of Appendix S2-I – to reiterate, using information where provided and discussed with UDC at the assessment stage.

2.4.8 As part of considering both the site typologies and specific (larger / strategic sites), and seeking to make these as representative as possible of the emerging policy approach, an assumption is made in relation to dwelling mix, for which we have adopted the principles set out in Figure 5 below and Appendix I. These dwelling mix principles are based on information provided to DSP by UDC using emerging evidence supporting the Local Plan. The assumed mixes for the typology tests used the below as far as practical, and we note that these were adjusted slightly as informed by the Council's latest available information (Local Housing Needs Assessment (LHNA) 2024) with that becoming available for use at Stage 2. See Appendix S2-I Table S2-1g for further information on this.

Figure 5: Dwelling Mix Assumptions[9]

Property Type	Dwelling Mix (%)		
	Market Units	Affordable Housing - Rented	Affordable Housing - Home Ownership
1-bed flat	5%	35%	20%
2-bed flat	15%	20%	20%
2-bed house	20%	15%	25%
3-bed house	40%	25%	25%
4-bed house	20%	5%	10%

(DSP 2023)

2.4.9 In all cases it should be noted that assumptions have to be made based on a "best fit" of both the market dwellings mix and affordable housing numbers/mix in combination with the target AH tenure assumptions. This is due to the effects of numbers rounding and also the limited scope that can be available to reflect all aspects of this within any given scheme; particularly in scheme typologies with small dwelling numbers or lower tested AH % levels.

2.4.10 The assumed scheme mixes are by their nature hypothetical and are not exhaustive. Many other types and variations may be seen, including larger or smaller dwelling types in different combinations and according to particular site characteristics, localised demand and requirements etc. The affordable housing (AH) content assumed within each test scenario is set out in more detail below. As well as summarising the dwelling mix criteria that we have aimed to follow as far as possible, Appendix I also provides more information on the revenue levels associated with (assumed values of) varying AH tenure types and likewise this has been updated at Stage 2 – again the latest detail is found in Appendix S2-I - Table S2-1g.

2.4.11 The dwelling sizes (on a GIA i.e. gross internal area basis) assumed for the purposes of this study are as set out in Figure 6 below and based on the Nationally Described Space Standard (NDSS). We understand that this standard is proposed for inclusion by UDC through the new Local Plan. As with the many other variables considered through assumptions, there will be a

[9] Based on: JG Consulting: UDC Local Housing Needs Assessment (June 2023) at Stage 1; with some updating at Stage 2 as noted

large range and mix of dwelling sizes coming forward in practice, with these varying by scheme and location. Due to the high-level nature of this study process, a sample of scenarios and assumptions can be tested - rather than every potential iteration. This approach is sufficient to generate a suitable overview for the purpose, in accordance with the guidance.

Figure 6: Residential Dwelling Sizes

Unit Sizes (sq. m.)*	Affordable	Market
1-bed flat	50	50
2-bed flat	61	61
2-bed house	79	79
3-bed house	93	93
4-bed house	106	130

Notes: Older persons' housing – Retirement/sheltered dwellings assumed 1-beds @ 55m^2; 2-beds @ 75m^2

(DSP 2023 - 2024)

2.4.12 Since there is a relationship between dwelling size, value and build costs, it is the relative levels of the values and costs that are most important given the nature and purpose of this study (i.e. with values and costs expressed and reviewed in £/sq. m. terms); rather than necessarily the specific dwelling sizes to which those levels of costs and values are applied in each case. With this approach, the indicative 'Value Levels' (VLs) used in the study can then be applied to varying (alternative) dwelling sizes, as can other assumptions. Although methods vary, an approach to focussing on values and costs per sq. m. also fits with a key mode that developers and others tend to use to assess, compare/analyse and price schemes. It provides a more relevant context for considering the potential viability scope across the typologies approach, as part of considering relative policy costs and impacts, and is also consistent with how a CIL is set up and charged (as prescribed under the regulations).

2.4.13 The above dwelling sizes are expressed in terms of gross internal floor areas (GIAs) for houses (with no floor area adjustment – i.e. 100% saleable floorspace). For flats, the additional cost of constructing communal/shared non-saleable areas also needs to be taken into account. For example, the general flatted typology development tests assume a net:gross ratio of 85%

(i.e. 15% communal space). The sheltered housing scenario assumes a lower proportion of saleable floorspace compared with typical general needs flats, at 75% (i.e. 25% communal) which is then further reduced through the selected assumptions to 65% saleable (35% communal) for the extra care development typology.

2.4.14 We consider these to be reasonably representative of the types of homes and other space coming forward within the scheme types likely to be seen most frequently providing on-site integrated AH, although again we acknowledge that all such factors will likely vary to some extent from scheme to scheme. It is always necessary to consider the size of new build accommodation in looking at its price per sq. m. rather than its price alone.

2.4.15 At this level of strategic overview, we do not differentiate between the overall value assumed per sq. m. for flats and houses although in reality we often observe an inverse relationship between the size of a property and its value when expressed in terms of a £ sales value rate per unit area (£/sq. m or £/sq. ft. or shown as £/m^2 or £/ft^2).

2.5 Commercial/Non-residential Development

2.5.1 We commented previously that, as is typical, the Council's policy approach to requirements on non-residential development is likely to have a very limited reach (influence on viability) compared with the policy influence in the residential sector. As far as we aware this has not changed, so that we can expect a low level of direct impact on scheme viability and by the same token a limited ability of UDC to influence the viability of non-residential schemes through typical policy. However, policies on carbon reduction/energy efficiency and biodiversity net gain (BNG) may impact the viability of non-residential/commercial development and are likely to need to be considered.

2.5.2 National policy will now require BNG (albeit at a minimum of 10% compared with UDC's intended 20%) and new commercial building will also need to meet increased standards through the Regulations. In a parallel with the government's Future Homes trajectory, the 'Future Buildings Standard' is in place. Accordingly, the basis of the current and short term extra over costs lies in national requirements on development, emphasising the above commentary

on the relatively limited local policy reach as far as directly impacts the viability of schemes.

2.5.3 Extra-over cost estimates reflecting these factors have been made in the relevant appraisals, as below.

2.5.4 Consistent with the likely building up of this assessment as was anticipated at Stage 1, the Stage 2 work has included a high-level review of employment development use types.

2.5.5 For this, we used four typology-based scenarios that are very broadly representative of the location, type and scale of development that could come forward on proposed allocation sites for employment/commercial property uses. These comprise an out of town/business park style office complex, research and development/offices, light industrial/warehousing and distribution space.

2.5.6 The final table of Appendix S2-I shows the assumptions on both revenue and costs used in this part of the exercise, within appraisals run again using the residual valuation approach. The results tables are provided by assumed development use type in new Appendix S2-III.

2.5.7 As a more general point, UDC will also need to consider the type and cost of any direct infrastructure provision or contributions needed to support appropriate developments. At the point of running our work these were not known in detail and the findings will need to be viewed in this context. The allocation of sites that do not rely heavily on meeting significant additional cost burdens associated with access/transport and movement, will be positive for viability and deliverability; avoiding or closely limiting further pressure on what are often found to be marginal or limited viability prospects – see section 3.4 below.

2.6 Scheme Revenue (Gross Development Value/GDV) – Residential

2.6.1 A key part of the appraisal assumptions are the market housing sale values. For a proportionate but appropriately robust evidence basis, it is preferable to

consider information from a range of sources including those listed below. Our practice is to consider all available sources to inform our independent overview - not just historic data or particular scheme comparables, including:

- Previous viability studies as appropriate;
- Land Registry;
- Valuation Office Agency (VOA);
- Property search, sale / market reporting and other web resources;
- Development marketing websites;
- Any available information from stakeholder consultations

2.6.2 A framework needs to be established for gathering and reviewing property values data. An extensive residential market review has been carried out in order to consider and appropriately reflect, at a level suitable for strategic assessment, the variation in residential property values seen across the Local Plan area. This data was collected by both parish / ward and settlement areas reflecting the Council's settlement hierarchy and analysed using both sold and asking prices for new-build and re-sale property. We considered this to provide the most appropriate and reflective framework for this data collection exercise, and the subsequent analysis to inform assumptions.

2.6.3 This research will ultimately enable us to view how the value patterns and levels observed will overlay with the areas in which the most significant new housing provision is expected to come forward over the plan period. It must be acknowledged that the scope of the data available for review varies through time and by location. In some instances, data samples are small (e.g., relating to a particular period or geography) and this is not unusual. Consistent with the above principles and the need to overview the information for the study purpose, it is important that the available indications are reviewed collectively in setting the values assumptions.

2.6.4 Overall, this research indicates a variable values picture across Uttlesford District. This is a common finding whereby different values are often seen to vary within individual developments dependent on design, orientation etc., at opposing sides of roads, within settlements or localities and based on other variables – as well as variations between settlements and areas of course. Values patterns are often indistinct and especially at a very local level.

However, in this study context we need to consider whether there are any particular variations that are considered relevant to influencing varying viability between wards/settlements or other geographical areas in a broader overview sense, including relating to the types and locations of development that are considered most relevant over the emerging plan period.

2.6.5 Overall, however, and on the basis of our research and using our tested assessment approach, we have applied assumed property 'Value Levels' (VLs) to each typology from VL1 (lowest) to VL9 (highest). These VLs reflect an overall range between £4,000/m^2 to £6,000/m^2, representative of varying new-build sale prices likely to be seen by varying location in the Local Plan area. Necessarily but also appropriately for the assessment purpose, we consider the key new build property values – i.e., the most relevant range to housing delivery overall here – to be within the range £4,500/m^2 (VL3) up to £5,250/m^2 - (VL6) with flatted development also likely to see values above typical base levels (as the inverse relationship between property size and value when expressed on a £/m^2 basis is seen). This is not to say that values do not and will not fall outside these levels – i.e. the VLs considered broadly represent the key part of the overall range that may be seen. Stage 1 Appendix I provided an indicative guide to the relevance of the range of VLs to locations in the plan area based on settlement and Ward areas and the assessment will consider how the general picture on the VLs that are thought to be available to support scheme viability in the various areas that are likely to be key to the planned development with the emerging Local Plan; all based on developing information as far as available at the time of undertaking the various assessment stages. This is now carried into assessment Stage 2.

2.6.6 It should also be noted that house price data is highly dependent on specific timing in terms of the number and type of properties within the dataset for a given location at the point of gathering the information. Again, in some cases, small numbers of properties in particular data samples (limited house price information) can produce inconsistent results. This is not specific to Uttlesford. However, these factors do not affect the scope to get a clear overview of how values vary typically, or otherwise, between ward areas in this case, given the varying characteristics of the area.

2.6.7 However, with this a key variable and its relevance perhaps likely to increase with the market currently changing, to provide a wide range of sensitivity tests that reflect both recent/current values as well as provide as an ability to consider the potential effect of higher and lower values, we carried out our modelling across the full range of values sensitivity tests; again, as shown in the appendices.

2.6.8 The values research commenced in July 2021 continued to be updated alongside progression of the study with latest data feeding into Stage 1 considered in the Summer of 2023 as the report drafting for that was built up.

2.6.9 While the earlier part of the assessment period extended through 2021-2023, previously we noted that the reportable position on the market, generally, and values trends, remained positive overall to early summer 2023. We found that although build costs rose (sharply and then more moderately), broadly the previously unexpected buoyancy of the market (following the pandemic) and the growing prices it supported were sufficient to balance out or even outweigh cost rises.

2.6.10 Upon finalising Stage 1 of this assessment, however, we noted experiencing different and rather more unstable property market conditions, with drops in house prices reported at that point. A watching brief on the heightened economic uncertainty appeared to be becoming the new norm, with a widely reported cost of living crisis reflecting the recent high energy costs and inflation rates, rising interest rates, changes in the leadership of government and resulting financial as well as wider policy changes. This led to an environment resulting in much greater uncertainty as to what the coming period might hold.

2.6.11 At the point of finalising the information review for our Stage 1 draft reporting (August - September 2023) even with the continuing economic uncertainty, the latest available reporting indicated however that overall house prices continued to be ahead of where they were 12 months previously. House Price Index (HPI) data suggested house prices in June 2023 (latest available data at the point of that earlier reporting) in Uttlesford were around 4% ahead of where they had been a year earlier. See Figure 7 below. We noted that did not to that time fully reflect a national picture where house prices were reported by

some outlets to have fallen nationally at their fastest rate since 2009[10] although this hid the fact that this is relative to record high property prices seen in the summer of 2022.

2.6.12 Figure 7 below includes the average house price movements noted as included in the Stage 1 reporting. Below this, at Stage 2 we now also include the equivalent information for the subsequent period – latest available HPI overview (all property types in Uttlesford).

Figure 7: HPI Data for Uttlesford District

As included at Stage 1:

Average price by type of property in Uttlesford

All property types | Detached houses | Semi-detached houses | Terraced houses | Flats and maisonettes

See data graph | See data table | Download this data | Compare with location ...

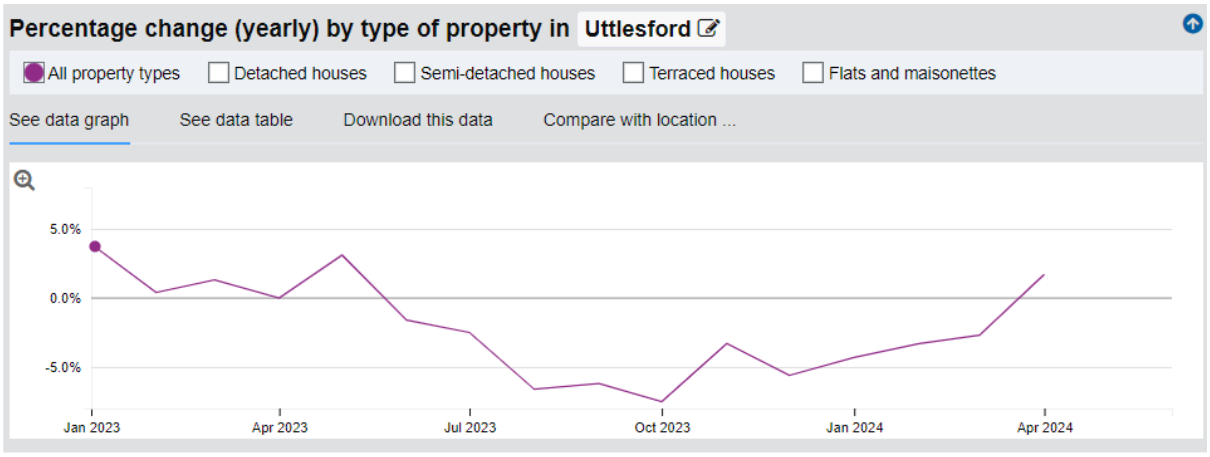
Date	All property types
Jun 2022	£465,495
Jul 2022	£475,535
Aug 2022	£489,829
Sep 2022	£489,271
Oct 2022	£492,169
Nov 2022	£478,140
Dec 2022	£481,345
Jan 2023	£469,863
Feb 2023	£459,196
Mar 2023	£473,875
Apr 2023	£478,169
May 2023	£495,571
Jun 2023	£484,847

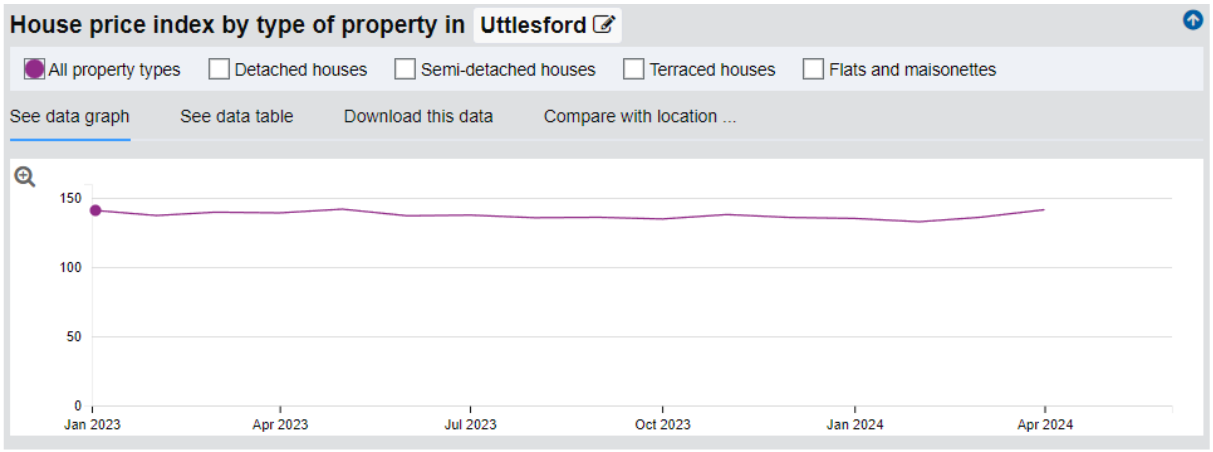
print this table

Source: https://landregistry.data.gov.uk/app/ukhpi/browse?from=2022-06-01&location=http%3A%2F%2Flandregistry.data.gov.uk%2Fid%2Fregion%2Futtlesford&to=2023-08-01&lang=en

[10] https://moneyweek.com/investments/house-prices/uk-house-prices-drop-at-their-fastest-rate-since-2009

Updated Land registry HPI information at Stage 2:





Source:https://landregistry.data.gov.uk/app/ukhpi/browse?from=2023-01-01&location=http%3A%2F%2Flandregistry.data.gov.uk%2Fid%2Fregion%2Futtlesford&to=2024-06-01&lang=en

2.6.13 Overall, although a level of economic uncertainty remains and as we complete the Stage 2 write-up a General Election has been called, the housing market appears to have re-stabilised somewhat. Essentially, looking at averages and overall trends as is appropriate at this level of overview, house process have moved little in Uttlesford between the assessment main reporting points.

2.6.14 In carrying out the larger/strategic site allocation proposal appraisals at Stage 2, we have assessed the viability prospects across a range of market housing sale value levels (VLs) as previous, to continue and expand on the sensitivity testing approach. We have adopted a slightly different range of VLs for the testing of each site, reflecting a further look at the values and local relativities

although again we have not observed very large differences between these generally.

2.6.15 Used along with the general assumptions as per Table S2-1g and 1h within Appendix S2-I, Tables S2-1a to 1e within the same Appendix show the more directed assumptions applied per specific allocation proposal site test.

2.6.16 On market conditions, movements and values, the key point to reiterate is the Local Plan timeline which is projected to run to 2041. This drives the long-term strategic overview that is needed, across which it is appropriate to make more typical assumptions reflecting potentially a middle line through various economic cycles. Again, it is not appropriate to assume only the downside risks and inputs related to deteriorating or poor economic conditions and a tougher housing market for development (such as has been experienced generally, to a varying degree, while progressing this assessment).

2.6.17 Although not undertaken in Uttlesford at this time, in DSP's wider viability in planning work as conducted at planning application stage, we were seeing stagnating or slightly reducing values beginning not to support the steep rises in build costs. However, upon moving on to the later assessment phases, in the more recent period build costs have also settled a great deal and are now rising at a much steadier rates more typical of experience over the longer term.

2.6.18 Again, as per Stage 1, we have not made any particular values uplift allowance for scheme marketing and values benefitting from the latest and forthcoming new dwellings meeting higher standards. Information on this remains limited and mostly anecdotal still, but again we could reasonably expect the influence of this on viability to be not just negative over time. Longer term, it should not be necessary to consider accommodating still relatively high extra over costs without considering other effects.

2.6.19 As noted in the report Appendices, higher sales values have been tested in the case of the sheltered/retirement living and extra care typologies. There was no direct comparable information available to inform those test assumptions at the time of needing to set them. Judgments were made by DSP based on experience of the premium values that are more likely to be

supported by these more specialist scheme types (and indeed from experience, with substantially higher than typical values very often needed but achievable in support the viability of such developments). There has not been notable new information readily available, to our knowledge, to inform particular updating on this element. As part of the comprehensive Stage 1 typologies work, this has not been revisited at this stage.

2.7.1 As noted at 2.1.1 above, we will continue to use the approach of updating (as far as appropriate) the Stage 1 commentary in running through other assumptions areas below. Again, Appendix S2-I provides the detail as updated at this Stage 2 in the further review of the larger/strategic site allocation proposals coming through in the draft Uttlesford Local Plan to 2041.

2.7 Scheme revenue (gross development value) – Affordable housing (AH) revenue

2.7.2 In addition to the market housing, the development appraisals also include affordable housing tested at various levels within the modelling.

2.7.3 A key part of the purpose of this assessment has been to ensure a robust and deliverable policy set and provide information to the Council on an appropriate and viable level of affordable housing to seek from development through the emerging Local Plan. On this basis, we tested a range of affordable proportions against the residential development typologies, also reflecting the latest national policy position as set out in the NPPF and PPG; now including First Homes as 25% of the AH. It is also important to note that not every percentage iteration has been tested on every typology. From our results analysis, it is possible to see where the likely viability lies and also to consider positions between results sets. In summary the testing for this study covered the following range:

- General sites of 10 or more dwellings: tested with 20%, 30%, 35% and 40% AH on-site reflecting PDL (previously developed land i.e. brownfield) and greenfield (GF) sites. To explore how much affordable housing may reasonably and realistically be sought under emerging Local Plan policy, alongside cumulative costs of all other development and mitigation/infrastructure.

- At Stage 2, the emerging policy proposal larger/strategic sites allocations selected with UDC for the more specific testing have been appraised at 30%, 35% and 40% AH – i.e. at the proposed policy headline position (35%) and either side of this. These sensitivity tests (and perhaps especially at 30% AH) viewed alongside the other variables may be informative where the cumulative development costs are seen to push up against the viability scope with the less favourable combinations of assumptions – i.e. as assumed VL reduces and/or build costs rise.

2.7.4 The AH revenue that is assumed to be received by a developer is based only on the capitalised value of the net rental stream (for AR or SR) or capitalised net rental stream and capital value of retained equity (shared ownership - SO). The starting assumption pending any review of viability and funding support which becomes available at a later stage for specific scenarios/programmes is that the AH is developer funded rather than part grant funded. We have therefore made no allowance for grant or other public subsidy or equivalent.

2.7.5 The value of the AH (level of revenue received by the developer) is variable by its very nature and is commonly described as the 'transfer payment' or 'payment to developer'. These revenue assumptions are based on our extensive experience in dealing with AH policy development and site-specific viability issues and consultation with local AH providers. The AH revenue assumptions were also underpinned by RP type financial appraisals – looking at the capitalised value of the estimated net rental flows (value of the rental income after deduction for management and maintenance costs, voids allowances etc.).

2.7.6 The assumed transfer values for the rented affordable units assumed for study Stage 2 are shown in Appendix S2-I (at Table S2-1g)

2.7.7 In practice, as above, the AH revenues generated would be dependent on property size and other factors including the AH provider's own development strategies and therefore could vary significantly from case to case when looking at site specifics. The AH provider may have access to other sources of funding, such as related to its own business plan, external funding resources, cross-subsidy from sales/other tenure forms, or recycled capital grant from stair-casing receipts, for example, but such additional funding cannot be

regarded as the norm for the purposes of setting viability study assumptions – it is highly scheme-dependent and variable and so has not been factored in here. It follows that the transfer values assumed could therefore be a conservative estimate in some cases and in reality on some schemes an affordable housing provider (e.g. Registered Provider – housing association or similar) could include their own reserves and if so thus improve viability and/or affordability.

2.7.8 First Homes have been included as 25% of the overall affordable housing provision within each of the appraisals. The main principles for First Homes provision are as follows:

- Sales to be discounted by a minimum of 30%;
- After the discount is applied the initial sale price of First Homes must not exceed £250,000 (or £420,000 in Greater London);
- Initial sales of First Homes must contain a legal mechanism to ensure each future sale maintains the discount (as a percentage of current market value). However, a mortgagee enforcing their security against the property will be exempt from this requirement;
- The First Homes requirement is that a minimum of 25% of section 106 units should be delivered as First Homes. With regards to the allocation of the remaining 75% of units after the First Homes requirement has been met, national policy will be that:
    - The provision for Social Rent as already described in the development plan should be protected.
    - Where other affordable housing units can be secured, these tenure-types should be secured in the relative proportions set out in the development plan.
    - In situations where the local plan allocates more than 75% of contributions to Social Rent, the 25% First Homes requirement will remain.

2.7.9 There are exemptions to the requirement to provide affordable home ownership following the principles set out at paragraph 65 of the NPPF and these include:

- Developments which provide solely for Build to Rent homes;

- Developments which provide specialist accommodation for a group of people with specific needs (such as purpose-built accommodation for the elderly or students);
- Developments by people who wish to build or commission their own homes;
- Developments exclusively for affordable housing, entry-level exception sites or a rural exception site.

2.7.10 Transitional arrangements were put in place based on the following criteria:

- Local or neighbourhood plans submitted for Examination before the implementation of the policy or that have reached publication stage before implementation and are subsequently submitted for Examination within 6 months of implementation will not be required to reflect the First Homes requirements;

- The requirement for 25% First Homes will not apply to sites with full or outline planning permissions already in place or determined (or where a right to appeal against non-determination has arisen) within 6 months of implementation of the policy (or 9 months if there has been significant pre-application engagement), although local authorities should allow developers to introduce First Homes to the tenure mix if the developer wishes to do so;

- The above arrangements will also apply to entry-level exception sites.

2.8 Scheme revenue (Gross Development Value (GDV)) – Commercial/Non-residential

2.8.1 Further to the initial, current stage commentary at 2.5 above, assessment Stage 2 includes a high-level review of employment development scenarios.

2.8.2 Retaining the Stage 1 commentary, the value (GDV) generated by a commercial or other non-residential scheme often varies enormously by specific type of development and location. A range of assumptions are needed. Typically, these are made with regard to the rental values and yields

that would drive the value of completed schemes within each appraisal. The strength of the relationship between the GDV and the development costs has been considered using the same principles as the housing schemes viability review - residual valuation methodology as explained above.

2.8.3 As with other elements of the viability assessment work both previous and as now added/updated, the adopted assumptions sets cannot be expected to exactly match those applicable to all scheme specifics and we need to keep this in mind when considering how this might all play out in practice.

2.8.4 We continue to use the terms 'commercial'/non-residential generally – i.e. reflecting development use types that are not residential. Of most relevance locally, upon the continued information review to date, it is 'employment' related development (such as industrial, offices, research & development, warehousing / distribution) that appear most likely to be relevant to the proposed LP delivery overall. At this further review point, Stage 2, the allocation of land for such scheme types has been confirmed by UDC as the focus for proportionate viability review.

2.8.5 The assumptions applied within the still early-stage high-level appraisals for this element of Stage 2 are shown within Table S2-1i of Appendix S2-I.

2.8.6 As noted, the current stage review viability indications (ranges of RLV results) are included as Tables 3a to 3d within Appendix S2-III.

2.8.7 Should UDC progress to consider a CIL (or other Infrastructure Levy) in due course, then it would be necessary to review the viability of some other locally relevant non-residential development types to inform that, and possibly to take a finer grained look at the work undertaken for the LP level information on this.

2.9 Development Costs - Generally

2.9.1 Total development costs can vary significantly from one site or scheme to another. For these strategic overview purposes, however, these cost assumptions have to be fixed per typology set or (now – added at Stage 2) more specifically reviewed potential larger/strategic site allocation test set. This is to enable the comparison of results and outcomes. It enables a focus

on the main variables under review (such as affordable housing content or infrastructure) in a way which is not unduly affected by how variable site-specific cases can be. Although the full set of cost assumptions adopted within the appraisals as now further developed or added at Stage 2 are set out in detail in Appendix S2-I to this report, a summary of the key aspects is, again, also set out below. Again, this follows the same format and largely the same context as at Stage 1.

2.9.2 Each cost assumption is informed by data and supporting evidence from such sources as follows in accordance with relevant sections of the PPG:

- Building Cost Information Service (BCIS);
- Locally available information as far as available following the stakeholder consultation process;
- Other desktop-based research;
- Professional experience.

2.9.3 For the site typology testing, we have not allowed for abnormal costs that may be associated with particular sites - these are highly specific and can distort comparisons at this level of review or unduly pull down the view of the available scope to support important policies on sustainable development. Where issues are known as likely to impact development viability and early costs estimates are available or can be devised, these are applied to the specific site allocation tests, however. Contingency allowances have however been made for all appraisals. Although efficiencies may be found and some extra over cost allowances currently made can reasonably be expected to reduce, overall costs could rise from current/assumed levels. The interaction between values and costs is central to this type of assessment and whilst any costs rise may be supported or outweighed by values increased from the assessment stage assumed levels, this may not be the case.

2.10 Development costs - build costs

2.10.1 The assumed base build cost level shown below is taken from BCIS; an approach endorsed by the PPG guidance on Viability and considered to be

'*appropriate data*'[11] and rebased using a Uttlesford location factor. The costs assumed for each development type (e.g. houses, flats, mixed as well as non-residential etc.) are as provided in Appendix I – and summarised below – Figure 8. These are the selected BCIS median average cost rates. We note also that, reflecting economies of scale, the lower quartile 'mixed developments' build cost rate has been applied in the case of the current stage strategic / larger proposed allocation site tests (only).

Figure 8: Base Build Cost (Housebuilding) – Stage 2 selected larger/strategic sites testing

Development type	Rate/m^2
Build cost - Mixed Developments (generally - houses/flats) – Lower Quartile	£1,393/m^2
Build cost - Supported Housing (generally) - Median	£1,970/m^2

(DSP 2024 sourced from BCIS)

2.10.2 BCIS build costs do not include external works/site costs, contingencies or professional fees (assumed allowances all added separately). Across the assessment an allowance for external works has been allowed for on a variable basis depending on scheme type (between 7.5% and 15% of base build cost at this Stage 2). These are based on a range of information sources and cost models and generally not pitched at minimum levels so as to ensure sufficient allowance for the potentially variable nature of these works.

2.10.3 Specifically, wider site works and infrastructure costs reflecting an uplift using the BCIS All-In Tender Price Index to the Stage 1 assumptions (larger/strategic housing allocation site proposals – see Appendix II-I Tables 1a to 1f) and equivalent to £600,000/ha (for the employment use typology tests) have been assumed for Stage 2.

2.10.4 For this broad test of viability, it is not possible to test all potential variations to any additional costs. There will always been a range of data and opinions on and methods of describing, build costs. In our view, we have made reasonable

[11] https://www.gov.uk/guidance/viability (Paragraph 012 Reference ID: 10-012-20180724 Revision date: 24 07 2018

assumptions in accordance with relevant guidance and experience, which lie within the range of figures we generally see for typical new build schemes (rather than high specification/complex or more individual, bespoke schemes that may require particular construction techniques or materials). As with many aspects of viability assessment, there is no single appropriate figure in reality, so judgements on these assumptions (as with others) are necessary. It is important to note that as with any appraisal input, in practice this will be highly site specific.

2.10.5 In the same way that we have mentioned the potential to see increased costs in some cases, it is just as likely that we could also see cases where base build costs, external works costs or other elements will be lower than those assumed. Once again, in accordance with considering balance and the prospect of scheme specifics varying in practice, we aim to pitch assumptions which are appropriate and realistic through not looking as favourably as possible (for viability) at all assumptions areas. The proposed larger/strategic housing site allocation tests have, however, reflected more specific information as far as has been available to this Stage – further assumptions again as per Appendix S2-I.

2.10.6 An allowance typically of between 3%-5% build costs is also added to cover contingencies (i.e. unforeseen variations in build works scope/costs compared with appraisal or initial stage estimates). At Stage 2 we have applied 3% to the base housebuilding costs and 5% to the other works costs elements; 5% in the employment development use typology based tests.

2.10.7 It is important to note that the interaction of costs and values levels will need to be considered again at future reviews of the Local Plan as base build cost levels typically vary over time. However, further sensitivity tests have been run and included where considered most relevant in relation to the larger/strategic sites more directed current stage testing. This additional information is included to allow the sensitivity of the various scenario test outcomes to build costs variation to be viewed; all as set out in the assumptions and results appendices (S2-I and S2-II respectively).

2.11 Development costs – Fees, Finance & Profit

2.11.1 Alongside those noted above, the following costs have been assumed for the purposes of this study and vary slightly depending on the scale and type of development. Other key development cost allowances are as follows (see Figure 9 below). Appendix S2-I provides the detail, as used at Stage 2 (with Appendix I to the Draft Stage 1 report setting out the earlier residential typologies testing assumptions).

2.11.2 At Stage 2, the land acquisition costs allowances (percentages) and a number of other assumptions have been continued. Professional fees have been allowed for at 8% on the base housebuilding costs and 10% on all other works; and a flat 10% in the employment test scenarios.

Figure 9: Residential Development Costs – Fees, Finance & Profit

Residential Development Costs – Fees, Finance & Profit	Cost Allowance
Professional & Other Fees	8 - 10% of build cost
Site Acquisition Fees	1.5% Agent's fees
	0.75% Legal Fees
	Standard rate (HMRC scale) for Stamp Duty Land Tax (SDLT)
Finance	6.5% p.a. interest rate (assumes scheme is debt funded and represents costs including ancillary fees) – Local Plan overview assumption rate, through various market cycles.
Marketing Costs	3% of GDV sales agent & marketing fees.
	£750/unit legal fees.
Developer Profit	Open Market Housing – based on range described in PPG of 15% - 20% of GDV @ base 17.5% assumed for Local Plan overview.
	Affordable Housing – 6% GDV (AH revenue on SR, AR & SO); 12% GDV on First Homes.

(DSP 2023 - 2024)

2.12 Build and development period

2.12.1 The build period assumed for each test scenario has been based on BCIS data utilising the Construction Duration calculator by entering the scheme

typology details modelled in this study. This has then been sense-checked using our experience and informed by site-specific examples where available. The build periods and sales rates noted in Appendices I (at Stage 1) and S2-1 – III exclude lead-in times. Sales periods are off-set accordingly (i.e. running after the commencement of and beyond the assumed construction period).

2.12.2 In the case of the larger/strategic housing site appraisals, the timing assumptions used by DSP directly reflect the draft trajectory information provided to us by UDC per site. These were sense checked and considered to be broadly in line with our recent experience of prudent, appropriate assumptions on the largest proposal site considered (circa 1,500 dwellings – in this case Takeley) with multiple sales outlets assumed, completing on average an assumed circa 150 dwellings per year over the programme, overall. For the other sites appraised, this rate ranged at an assumed 50 to 90 dwellings per year, with specific UDC sourced assumptions applied in each case (and if anything, in our view potentially representing a fairly cautious completions rate, however depending on market circumstances moving ahead of course). The above involve assumptions of an indicated 2 to potentially 4 outlets per site. Again, the specifically applied assumptions are noted in Appendix S2-II (Tables S2-1a to 1f).

2.12.3 Within the appraisal timings, the site-wide works and infrastructure costs are assumed to start prior to the main construction (housebuilding) in a site preparation phase, as a mix of font loaded and then overlapping cost. Where on-site education provision is involved, this has been assumed as needed relatively early, with construction commencing 18 months after construction start and then spread over an 18-month period assuming an s-curve profile. Where a site is expected to require expansion of existing school premises, our modelling assumes cost expended over a shorter period of 12 months commencing slightly later into construction, again assuming an s-curve profile. Education provision via financial contributions only, together with other assumed s106 contributions/provision are assumes as funded on an s-curve profile over the whole construction period at this stage – spread provision as the site gets underway and new homes come onstream.

2.12.4 We consider the assumed timings as outlined above to be appropriate given the context of the assessment at a time when much of the site-specific detail is

still in the early stages of being considered and will be going through significant further working up.

2.13 Key policy areas tested – Summary

2.13.1 A number of policies that the Council is considering implementing through the emerging Local Plan may have impacts on development viability, both directly and indirectly. Some do not add or add significantly to the typical costs of development or costs that, at the time of completing the assessment key stages from summer 2023 to summer 2024, are now resulting from or expected to relate to national level policy or requirements.

2.13.2 As discussed previously, a key purpose of this process was to test whether and to what degree those policies could be absorbed by development whilst enabling it to come forward viably (and therefore supporting the viability of the proposed new Local Plan overall).

2.13.3 As before, at the time of building up this reporting, policy wording and numbers had not been fully finalised and as such the sub-headings below continue to relate to a mix of more specific references, where known, and broad policy areas (as above, those that are likely to have a cost impact on development and that are outside normal, established development costs). The direct impacts are from policies which ultimately result in a specific fixed cost assumption within the appraisal modelling. Those key elements not already discussed above - e.g. dwelling mix, affordable housing, etc. are considered further below, as have now been included within the review of costs assessed cumulatively within the larger/strategic sites tests run to this point – Stage 2 viability assessment. The points below simply note the updates applied relative to the Stage 1 typologies review and, as with other aspects, details of the latest assumptions are set out in Appendices S2-I and II (and as far as relevant in Appendix S2-III in regard to the employment development use test scenarios).

- **Nationally Described Space Standard (NDSS)**
  Dwelling size assumptions reflect the application of this, as at Stage 1.

- **Green infrastructure/open space requirements**

As set out in the S2 Appendices, UDC's provided overall ('gross') site area assumptions i.e. including both anticipated development and non-developed areas have been reflected in terms of land cost (via the extent of land allowed for at the relevant benchmark land value (BLV) as set out below (see section 2.15 and the results commentary – chapter 3). Additionally, known UDC provided estimates at this stage for site works and/or s.106 costs allowances/contributions relating to green infrastructure and open space – including play, sports provision, amenity and allotments – have been allowed for. Appendix S2-I Tables S2-1a to 1f provide details of the assumptions used at this stage, sourced from the UDC Infrastructure Planning evidence work as that was being developed and firmed up (although acknowledging that typically such information tends to keep evolving to some extent in our experience – and it is likely to continue doing so).

- **Water efficiency**
  A base assumption of 90 - 110 lpppd (water usage not exceeding 110 litres per person, per day) depending on location relative to catchment has been continued into Stage 2 – commentary as previous.

- **Carbon/Energy reduction**
  At Stage 2 the assessment assumptions include a +5% extra over cost – added to build costs in both the larger/strategic housing and employment development uses tests. The background to the consideration of this remains as previous. In our view, upon review of wider industry work carried out on this aspect, it should no longer be necessary to reflect a cost uplift representing meeting Building Regulations Part L 2021 (implemented June 2022) compared with an earlier baseline of Part L 2013.

- **Electric vehicle charging points**
  As per Appendix S2-I (Table S2-1h) an additional cost allowance of between £865 and £1,961 per dwelling (representing houses and flats respectively) has continued to be assumed at this Stage 2 of the assessment.

- **Biodiversity Net Gain (BNG)**
  Latest discussion with UDC suggests that the Council is continuing to aim for a policy requirement for new developments to meet a minimum net gain of 20%, in place of the minimum 10% now in place in national policy.

Accordingly, all Stage 2 appraisals reflect this. The additional cost assumption continues to be allowed for - as noted, again, in current Appendix S2-I.

- **Accessible Homes** (Building Regulations Part M4 (2) and (3))
  Again, the Council's emerging approach has not changed during the course or this work as far as we are aware. Accordingly, carrying forward the Stage 1 assumptions approach, the additional cost allowances made to represent these at this level of review are again noted in Appendix S2-I (see Tables S2-1h).

- **Self and Custom-build**
  This Stage 2 assessment work reflects the continued assumption of 5% self-build plots, which have been assigned within the larger/strategic sites appraisals that have been re-run and added to, now that further information is available. The plot sales (receipts to the site developer) have been assumed at £125,000 each.

  From DSP's experience of this type of development, we consider the provision of plots (serviced and ready for development) for self or custom-build has the potential to be sufficiently profitable so as not to provide a significant drag on the viability of a scheme in general. Broadly, we would expect this activity to be at least neutral in viability terms, with the exact outcomes dependent on site-specific details, as with other aspects of the development process. In our view however, there may be some practical challenges to be overcome in integrating plots within general market housing schemes, and perhaps especially if such a policy is applied in a rigid way. We offer the comment again that, in practice, many self-builders will look to satisfy their own specific aims through the market – finding either an individual plot, re-build opportunity, conversion or similar. With an assumption pitched at £125,000/plot, however, this envisages a potentially more widely affordable route into this model of home ownership.

- **Hatfield Forest SSSI (SAMM) / Essex Coast Recreational Disturbance Avoidance & Mitigation Strategy (RAMS)**
  Cost allowances have been made at Stage 2 according to the relevance of these by location. Except for at Saffron Walden, the provided figure of

£1,395/dwelling has been allowed for in the further appraisals – for the Hatfield Forest SSSI SAMM.

At this stage, being a very small factor on viability in terms of added cost, and not universally applicable across development in the district (the Zone of Influence is confined), we have not allowed specifically for the Essex Coast RAMS related mitigation cost. At the noted £156/dwelling the influence of this on viability would not be readily detectable. At the point of writing up Stage 2, UDC has advised that the cost of the RAMS mitigation contribution could be subject to review. However, significant cumulative development cost assumptions have been allowed for.

- **Meeting Gypsy, Travellers & Travelling Showpeoples' Needs**
  As previously, no particular policy detail or basis for allowances have been reflected at this stage.

2.14 Infrastructure costs provision – Section 106 (s106)

2.14.1 As discussed earlier in this report, UDC currently has no CIL in place and therefore has continued to request contributions to, or provision of, site-specific infrastructure mitigation measures through s106 on a site by site basis (for example potentially relating to a range of matters alongside affordable housing - such as education, open space, highways adjustments/improvements and any other particular requirements needed to make a development acceptable in planning terms). The s106 approach continues. We understand the Council is likely, however, be considering the introduction of a CIL for the district in due course.

2.14.2 The Stage 1 Report set out the approach taken to this area of the assumptions in the earlier appraisals. Reflecting the previous commentary and now able to build a more specific picture with the Council's Infrastructure Planning work having developed considerably, DSP has been provided with cost estimates associated with key infrastructure categories, as follows (and as applicable in each case per site tested):

- Education (early years, primary, secondary, SEND and Post-16 – combination of provision and contributions)

- Flooding and drainage
- Green infrastructure (various types – as noted above)
- Health and wellbeing (primary care contributions)
- Transport and movement (walking, cycling, public transport and roads)
- Community provision/library service

2.14.3 The cost assumptions applied are listed individually in the relevant table per site within Appendix S2-I (Tables S1-1a to 1f) with that detail not repeated here.

2.14.4 Accordingly, the results reported in Appendix S2-II (Tables 2a to 2f) reflect these estimated costs along with all other cost assumptions made – i.e. taking a cumulative view of all the development costs as far as are able to be estimated at this stage for the purpose of the Local Plan proposals level.

2.14.5 This is not to say that these cost estimates will not alter or other sources of additional cost will not be relevant in due course, but the appraisal approach now possible begins to provide the Council with a more comprehensive view, as would be expected at this stage in our experience.

2.14.6 At the point of the Stage 2 reporting, having run the appraisals, UDC has advised that an example of the evolving nature of infrastructure requirements and cost estimates is the potential need to also support facilities provision for or contributions towards Integrated Care Board (ICB) requirements. We understand there could be further costs of circa £1.95million for provision at Takeley and approx. £800,000 at Great Dunmow based on the ICB's calculator for build costs. There may some overlap with the assumptions within the appraisals, however – for example in relation to the cost of land. Nevertheless, the Council will be able to consider the viability indications provided within Appendix S2-II, particularly the £/dwelling surpluses found, and consider what additional costs pressures could mean in various circumstances.

2.14.7 As previously, a guide to the Stage 2 results tables (Appendix S2-II) and an overview of the findings is provided in chapter 3 below.

2.15 Indicative land value comparisons and related discussion

2.15.1 There has been no change to the approach taken when considering the larger/strategic housing site appraisals (now carried forward to Stage 2). Therefore, aside from restating that and now also noting the approach taken in considering the employment development use types (see 2.15.25 – 2.15.26) this section remains almost entirely as per Stage 1.

2.15.2 In order to consider the likely viability of any development scheme, the results of the appraisal modelling (the RLVs viewed in £/ha terms) need to be measured against an appropriate level of land value. This enables the review of the strength of the results as those change across the range of value levels, affordable housing policy targets (%s) and other planning obligations.

2.15.3 The process of comparison with land values is, as with much of strategic level viability assessment, not an exact science. It involves judgements and well-established acknowledgements that, as with other appraisal aspects, the values associated with the land will, in practice, vary from scheme to scheme.

2.15.4 The levels of land values selected for this context are known as 'benchmark land values' (BLVs). They are not fixed in terms of creating definite cut-offs or steps in viability but, in our experience, they serve well by adding a filter to the results as part of the review. BLVs help to highlight the changing strength of relationship between the values (scheme revenue (GDV)) and development costs as the appraisal inputs (assumptions) change.

2.15.5 As noted above, the PPG on viability is very clear that BLVs should be based on the principle of existing use value plus a premium to incentivise the release of the site for development. Land value in any given situation should reflect the specifics of existing use, planning status (including any necessary works, costs and obligations), site conditions and constraints. It follows that the planning policies and obligations, including any site specific s106 requirements, will also have a bearing on land value where an implementable planning consent forms a suitable basis for an alternative use value (AUV) based approach that could be in place of the primary approach to considering site value (benchmark land value – BLV), which is now always "EUV plus" (existing use value plus) consistent with the PPG on Viability.

2.15.6 As part of our results analysis, we have compared the wide scope of resulting residual land values with a range of potential BLVs used as 'Viability Tests', based on the principles of 'existing use value plus' (EUV+). This allows us to consider a wide array of potential scenarios, outcomes and the resulting viability trends seen in this case. The coloured shading within the results tables appended to this report provide a graded effect intended only to show the general tone of results through the range clearly viable (most positive – boldest green coloured) to likely non-viability scenarios (least positive, where the RLVs show no surplus or a deficit against the BLVs).

2.15.7 The land value comparison levels (BLVs) are not fixed or even guides for use on scheme specifics; they are purely for this assessment purpose. Schemes will obviously come forward based on very site-specific circumstances, including in some cases on sites with appropriately judged land values beneath the levels assumed for this purpose.

2.15.8 As part of the process of developing appropriately robust BLVs, we have reviewed other available evidence, including previous viability studies at a strategic level as well as site-specific assessments where available. In addition, we have also had regard to the consultation responses and published Government sources on land values for policy appraisal[12] providing industrial, office, residential and agricultural land value estimates for locations across the country.

2.15.9 It should be noted that the *residential* land value estimates of the (former) MHCLG require adjustment for the purposes of strategic viability testing due to the fact that a different assumptions basis is used in our study compared to the truncated valuation model used by the MHCLG. This study assumes all development costs are accounted for as inputs to the RLV appraisal, rather than those being reflected within a much higher "serviced" i.e. "ready to develop" level of land value.

2.15.10 The MHCLG model provides a much higher level of land value for 'residential land' as it assumes the following:

[12] MHCLG: Land value estimates for policy appraisal – most recent version 2019 published August 2020

- All land and planning related costs are discharged;
- Nil affordable housing requirement – whereas in practice the requirement for AH can impact land value by up to around 50% on a 0.5ha site with 35% AH.
- Nil CIL;
- No allowance for other planning obligations;
- Full planning consent is in place – the risk associated with obtaining consent can equate to as much as a 75% deduction when adjusting a consented site value to an unconsented land value starting point;
- Lower quartile build costs;
- 17% developer's profit.

2.15.11 The above are additional assumptions that lead to a view of land value well above that used for comparison (benchmarking purposes) in viability assessments. Overall, the assessment approach (as relates to all land values) assumes all deductions from the GDV are covered by the development costs assumptions applied within the appraisals. In our view this would lead to a significantly reduced residential land value benchmark when taking into account all of the above factors.

2.15.12 As set out in the results appendices, we have made indicative comparisons with BLVs in a range between £250,000/ha and £3,000,000/ha plus overall, enabling us to view where the RLVs fall in relation to those levels and to the overall range between them. Below, we will consider further the relevance of this range first to GF sites and then to PDL.

2.15.13 Typically, for viability in planning purposes we would expect to apply an EUV+ based land value benchmark at not more than approximately £250,000/ha (applied to gross site area) for bulk greenfield (GF) land release, based on a circa ten times uplift factor (the "plus" element) from the EUV for agricultural land at not exceeding c. £25,000/ha.

2.15.14 In our view, moving outside the scope of the general site typologies considered in this assessment (i.e. development at a scale of more than approximately 200 – 300 dwellings) an appropriate BLV should not need to exceed this level (£250,000/ha). The largest typology-based sets of testing have been run assuming 250 dwellings, representing a scale of development

beneath the large strategic level appraised more specifically but at the upper end of the range that in our view should be reflected by median level build costs and a higher GF related BLV of £500,000/ha.

2.15.15 However, this indicated point (assumed for results review, for now, at 250 dwellings in this case) beneath which a higher BLV could apply is a current stage testing assumption only and not a fixed boundary between BLV assumptions levels. In some cases, we have experienced development at 50 – 100 dwellings on GF representing larger than typical schemes in an area, so the that the higher GF BLV at c. £500,000/ha might only apply to a narrower band of smaller, more general sites – developments of fewer than 250 dwellings. In our view and experience, certainly the c. 250 dwelling typology outcomes could also be considered relative to the £250,000/ha GF BLV as well as the higher (smaller sites) GF BLV at £500,000/ha. This means that viewing the RLVs of the 250 dwellings tests in the context of a £500,000/ha represents a fairly cautious approach in our view; lower BLVs could be appropriate at that scale of (greenfield) development.

2.15.16 This reflects the viability in planning policy principles within the PPG as opposed to a more market orientated approach that may be influenced by comparison with older (pre-PPG) deals and include more emphasis on 'hope value' or similar, rather than being purely EUV plus based. We need to bear in mind that especially for bulk GF land, the stated BLV figures should not be regarded as a minimum or absolute cut-off. Indeed, gross land area figures may include areas of land where for example lower values may be appropriate in support of ancillary provision, undeveloped mitigation land such as SANG or similar.

2.15.17 Above the base level of BLV £250,000/ha, and generally reflecting smaller, non-strategic scale development, we would expect an EUV+ of up to £500,000/ha could be applicable for greenfield / amenity land use releases. The commentary above reflects this. We will consider it further as part of the context for the review of the Appendix II typologies results (see Findings Review – section 3 – below).

2.15.18 Moving on to typically higher BLVs representing the same principles on PDL sites with usually higher EUVs, we consider that a key area of the range for

judging the viability prospects is around £1.25m/ha. This is around the minimum value we might expect to see for land in a range of commercial uses. Beneath this level of land value, sites are likely to be in lower values existing uses, such as former community uses or other redundant uses such as low grade commercial / yards etc.

2.15.19 RLVs meeting or exceeding BLVs the range £1.25m to £3m/ha are indicative of scenarios that come with more certainty and, as the RLV increases, more confidence of a viable outcome across a wider range of circumstances (site types) – and, again, all in the viability in planning context. In some PDL scenarios, we also need to be mindful that EUV+ based BLVs will be higher; hence the overall range used for viewing the results context - as set out below and seen in use within the Appendix II typologies results tables.

2.15.20 DSP understands that the emerging Plan site supply (mix of new dwellings) is to come predominantly from greenfield sites although with PDL hosted development also playing a role as a range of redevelopments / underused and other sites also some forward.

2.15.21 Figure 10 below shows, with some explanatory notes, the range of selected BLVs which have been used as 'viability tests' (filters) for the viewing and provision of the results interpretation / judgments – as per the results in the Appendices II tables where these BLV levels are also shown as part of the 'key' or notes. There are two versions of this – the first applying to GF scenarios and the second being relevant to PDL.

Figure 10: Range of BLVs (Indicative 'viability tests')

Relevant to greenfield (GF):

Key:

Indicative non-viability	RLV beneath Viability Test 1 (RLV <£250,000/ha)
Potential/marginal viability	Viability Test 2 (RLV £250,000 to £500,000/ha)
Indicative positive viability scenario	Viability Test 3 (RLV >£500,000/ha)

BLV Notes:

EUV+ £/ha	Notes
£250,000	Greenfield Enhancement - reflecting larger scale development
£500,000	Greenfield Enhancement (Upper) - reflecting smaller scale development

Relevant to PDL:

Key:

Indicative non-viability	RLV beneath Viability Test 1 (RLV <£500,000/ha)
Potential viability on lower value PDL	Viability Test 2 (RLV £500,000 to £1,250,000/ha)
Viable indications - Medium value PDL	Viability Test 3 (RLV £1,250,000 to £3,000,000/ha)
Viability indications - higher value PDL	Viability Test 4 (RLV >£3,000,000/ha)

BLV Notes:

EUV+ £/ha	Notes
£500,000	Low-grade PDL (e.g. former community uses etc.)
£1,250,000	Medium PDL - industrial/commercial
£3,000,000	Upper PDL Benchmark/residential land values

(DSP 2023)

2.15.22 It is important to note that all RLV results indicate the potential receipt level available to a landowner after allowing, within the appraisal modelling, for all development costs (as discussed earlier). This is to ensure no potential overlapping / double-counting of development costs that might flow from assuming land values at levels associated with serviced/ready for development land, with planning permission etc. The RLVs and the indicative comparison levels (BLVs) represent a "raw material" view of land value, with all development costs falling to the prospective developer (usually the site purchaser).

2.15.23 Matters such as realistic site selection for the particular proposals, allied to realistic landowner's expectations on site value will continue to be vitally important. Site value needs to be proportionate to the realistic development

scope and site constraints, ensuring that the available headroom for supporting necessary planning obligations (securing AH and other provision) is not overly squeezed beneath the levels that should be achieved.

2.15.24 The PPG[13] states the following:

'To define land value for any viability assessment, a benchmark land value should be established on the basis of the existing use value (EUV) of the land, plus a premium for the landowner. The premium for the landowner should reflect the minimum return at which it is considered a reasonable landowner would be willing to sell their land. The premium should provide a reasonable incentive, in comparison with other options available, for the landowner to sell land for development while allowing a sufficient contribution to comply with policy requirements. This approach is often called 'existing use value plus' (EUV+)…

Benchmark land value should:

- *be based upon existing use value*
- *allow for a premium to landowners (including equity resulting from those building their own homes)*
- *reflect the implications of abnormal costs; site-specific infrastructure costs; and professional site fees*

Viability assessments should be undertaken using benchmark land values derived in accordance with this guidance. Existing use value should be informed by market evidence of current uses, costs and values. Market evidence can also be used as a cross-check of benchmark land value but should not be used in place of benchmark land value. There may be a divergence between benchmark land values and market evidence; and plan makers should be aware that this could be due to different assumptions and methodologies used by individual developers, site promoters and landowners.

This evidence should be based on developments which are fully compliant with emerging or up to date plan policies, including affordable housing requirements at the relevant levels set out in the plan. Where this evidence is

[13] https://www.gov.uk/guidance/viability#standardised-inputs-to-viability-assessment Paragraph: 014 Reference ID: 10-014-20190509 Revision date: 09 05 2019

not available plan makers and applicants should identify and evidence any adjustments to reflect the cost of policy compliance. This is so that historic benchmark land values of non-policy compliant developments are not used to inflate values over time.

In plan making, the landowner premium should be tested and balanced against emerging policies. In decision making, the cost implications of all relevant policy requirements, including planning obligations and, where relevant, any Community Infrastructure Levy (CIL) charge should be taken into account.

Where viability assessment is used to inform decision making under no circumstances will the price paid for land be a relevant justification for failing to accord with relevant policies in the plan. Local authorities can request data on the price paid for land (or the price expected to be paid through an option or promotion agreement).

2.15.25 Rounding up on the BLV relevant to the Stage 2 assessment, this has been placed at £250,000/ha across the larger/strategic scale housing sites now appraised in a more refined way (Appendix S2-II results tables). We apply this to the whole (gross) site area which in our view represents a prudent assumption – one that should not need to be exceeded.

2.15.26 The same has been applied to the employment development scenarios (S2-III results table) – predominantly also reflecting larger scale greenfield land releases. In the case of the smaller of the employment development tests (sites assumed at 3 to 5.5 ha), it is acknowledged that it may be appropriate to also consider a higher greenfield release BLV at up to £500,000/ha, however.

2.15.27 An alternative route to considering BLV on larger sites such as these (bulk land releases) could be to adopt a higher rate for the expected development area and a significantly lower level of value to the non-development areas that provide much of the green infrastructure including any mitigation land. That approach could be expected to produce a similar overall assumption on BLV.

3.0 Findings review

Stage 2 Update - Note: On reaching the Stage 2 reporting, the Initial review stage (i.e. preliminary assessment work 2021 to 2022) has again not been revisited. The reporting of that remains unchanged, therefore, retaining the purpose of outlining the development of the viability assessment from inception. This applies to the next section, 3.1, through to paragraph 3.1.25 below. Before progressing to the Stage 2 findings (at 3.3), the reporting of full assessment Stage 1 is retained below as well. Whilst the Stage 1 reporting is also a recap and again the findings carried forward, the wording now included in section 3.2. below reflects that as previous work too, hence it is no longer described as current/latest.

3.1 Initial review – Preliminary assessment work

3.1.1 Reflecting the phased assessment approach to date, first in this section we will outline the key points from the preliminary assessment work (emerging findings) based on the information available and appraisals run at the time – as follows. Although much has moved on since this earlier work in terms of the refreshed emerging LP approach, there are also many continued or largely unchanged aspects of the context in which the ongoing viability assessment is provided; both local and wider.

(1) Assumptions development and initial review work – completed November 2021

3.1.2 This first preliminary phase of viability assessment work included information review, values research, an initial phase of stakeholder consultations and limited early running of appraisals.

3.1.3 This was undertaken in order to generate some initial indications for review and to help inform next steps as part of an iterative approach overall. For this exercise we applied initial assumptions to 2 no. general development typologies; 100 Mixed dwellings (houses/flats) – greenfield site, and 100 Mixed dwellings – assuming re-use of PDL. We have also provided some

preliminary feedback to UDC in the form of commentary relating to a high-level strategic scale scenario test.

3.1.4 Below together we outline what we noted at this very early stage, i.e. providing an initial feel only for the type of emerging findings that we might need to begin to put forward, dependent on being able to review further information to support firmer assumptions as the LP development and viability assessment moved on. This was also informed by our experience of what new housing development of a likely relevant local value level is generally found able to viably support, in terms of cumulative development and policy costs.

3.1.5 The early information provision aimed to help inform a view on the relative costs of different requirements, and how these might need to trade-off against each other in some cases as part of making choices within an overall balance. DSP noted that typical experience showed there is usually a need for some level of compromise against the full list of desired objectives.

3.1.6 Overall, amongst the initial and necessarily broad indications based on the information available to this point were indications that the value of typical new housing was found at around the “cusp” level of viability needed to support more extensive policy requirements and planning obligations. It was noted at very this early stage that there were likely to be compromises needed when reviewing policy priorities together.

3.1.7 The table below (Figure 11) sets out the ‘base’ costs included within that early version appraisal model as well as the emerging policy costs (viewed as variables) that were excluded from the initial testing.

Figure 11: First stage preliminary assessment – overview approach to considering development and policy costs

Base Appraisal Costs (included within appraisal model)	Potential Emerging Policy currently excluded from high-level testing (direct cost implications only)
Build cost - Mixed Developments (generally - houses/flats)	**Additional sustainable design/climate change/carbon reduction standards** (% of build cost over base test assuming Building Regulations Part L 2021) - emerging policy positions considered at 1.5% and 5.5% over 'base appraisal costs', representative of full FHS and zero carbon.
External Works	**Parking Standards** - Electric Vehicle Charging Points (£/unit)
Site Works (on gross land area)	**Water efficiency standards**
	Affordable Housing (AH) (% proportion)
Contingency (% of build cost)	**Open Space (on-site)**
Professional Fees (% of build cost)	**Open Space - maintenance contributions**
S106 / Proxy CIL	**Sports Facilities and Playing Pitch Provision**
Sustainable design/climate change/carbon reduction (% of build cost) - assumed at 31% carbon reduction representative of the FHS interim uplift to current Building Regulations (Part L 2016).	**Education Contributions**
Biodiversity Net Gain (BNG) (% of build cost)	**M4(2)** Accessible and adaptable dwellings compliance
Marketing & Sales Costs (% of GDV)	**M4(3)** Wheelchair user dwellings compliance
Legal Fees on sale (£ per unit)	**Flooding / Flood Risk**
Developer's Return for Risk & Profit	
Open Market Housing Profit (% of GDV)	
Affordable Housing Profit (% of GDV)	
Finance & Acquisition Costs	
Agents Fees (% of site value)	
Legal Fees (% of site value)	
Stamp Duty Land Tax (% of site value)	
Finance Rate - Build (%)	
Finance Rate - Land (%)	

(DSP 2021)

3.1.8 Although this recap of the approach repeats some of the above, it is worth setting out the nature of the assumptions used at this very early stage. So, for context, other considerations/assumptions at this first preliminary stage were as follows. We noted (September 2023) that the thrust of these policy initiatives has essentially continued, although refinements/reinforcements to proposed policies have been developed and the national policy/Regulations

base has also moved on since – as per the current scope and assumptions set (see report Section 2 above and Appendix I):

- **Sustainability/climate change response**
  The Council's vision for the district was understood to be the achievement of net-zero carbon status by 2030 and this was expected to be central to all aspects of the Plan. The Future Homes Standard (FHS) due to be implemented in full in 2025 intends to achieve 75% lower carbon emissions from new homes compared to the then current Building Regulations Part L (2013). The first phase of Government consultation states that from 2025 new homes will be "zero carbon ready" i.e. no further retrofitting for energy efficiency will be required to achieve 'zero carbon' status, as the electricity grid continues to decarbonise.[14] The first phase of implementing the full FHS (to achieve 31% carbon reduction in new homes) has now to come into effect (in June 2022) and the cost to achieve this standard was assumed as a base cost (above BCIS build costs) within our initial high-level typology tests and at that stage also proposed for carrying forward as a key base assumption. Assuming a base position representing the FHS interim uplift, the emerging policy scope tests a range of further additional costs looking ahead, from 1.5% to 5.5% (% uplift over Building Regulations Part L 2021) representing the full FHS and paving the way zero carbon homes.

- **Parking Standards – Electric vehicle charging points**
  Alongside the above carbon emissions reduction scenario, we anticipated requirements for electric vehicle charging points as a part of updated parking standards in the district - assumed in the very early tests at a cost of £500/dwelling (reflecting individual and / or communal type provision).

- **Biodiversity Net Gain (BNG)**
  At this stage, subject to further clarification from the Council, we assumed an explicit additional cost allowance for BNG reflecting the 10% minimum national baseline requirement. Following our research,

[14] MHCLG: The Future Homes Standard 2019 Consultation document and summary

consideration elsewhere (including liaison with other consultants) the cost assumptions were noted vary by type of site (PDL/greenfield), based on the data contained in the DEFRA/Natural England BNG impact assessment approach (specifically Tables 19 and 20), assuming a 90% pass-through cost to the land.[15] On this basis, we applied an additional percentage uplift to the base build costs to reflect the cost of achieving the 10% minimum BNG requirements – at 0.7% (Greenfield) and 0.1% (PDL). We noted that in due course, sensitivity tests could be used to consider any reasonable alternative levels / assumptions – noting that it is not possible or necessary to appraise all potential scenarios or iterations.

- **Water usage efficiency**
  Consumption restricted to not more than 110 litres per person was the assumption, on the basis the Council could appropriately demonstrate that the district is an area of water stress (as with all optional enhanced standards, the case for the need has to be established as well as the viability impact reviewed). The overall cost impact for this requirement (at this level compared with the current Building Reg.s baseline of 125 lpppd) is nominal and was noted to be reflected within the overall development cost allowances (no additional explicit cost assumption required to meet 110 lpppd).

- **Accessibility and use of buildings**
  The emerging policy requirements for accessibility standards in the district were not available at this early stage and therefore we based our initial exercise allowances on the following as a baseline test. We noted that this would need to be confirmed by the Council once further information is available (and, again, linked to an assessment of need).

    - All dwellings to meet at least enhanced M4(2) accessible and adaptable dwellings standard. With up to 10% M4(3) wheelchair user dwellings targeted (although we also noted that this may be found quite onerous in due course – often we have seen this

15 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839610/net-gain-ia.pdf

provision linked to the affordable homes in some way. However, this meant the initial assumption reflected 90% M4(2) and 10% to M4(3) as these standards are independent. It was noted that it may well be appropriate to carry forward a less onerous requirement if ultimately some balancing of viability or other with other matters is needed, with the cost of M4(3) indicatively up to around ten times that related to M4(2).

- **Education provision (contributions)**
  Although (as per Figure 11 above) education infrastructure costs were outside the appraisals, it was noted that the consideration of these alongside other infrastructure costs would be a key matter to get a clearer picture of as the LP and viability assessment progressed in due course. The potential costs mooted at the time looked very high in our experience, being part only of the likely overall developer contributions.

- **Nationally Described Space Standard (NDSS)**
  As a base assumption, we assumed a requirement for all housing to meet the minimum standards set out by (former) MHCLG - consistent with the NDSS. It was noted that these may need to be checked in response to / for consistency with any other relevant UDC evidence (and that it would be useful to review the size of dwellings that have been built recently in this district if this information is available).

- **Other emerging policies**
  It was noted that there will be other emerging policy areas which would need further clarification and explanation from the Council regarding the appropriate on-site or off-site contributions to be sought from development and therefore to be reflected as closely as possible within the fuller viability testing in due course. For example in respect of the various likely required forms of open space provision. As the Council develops the draft working policy set, we noted a need to understand whether there are any other emerging policies (in addition to those areas outlined above) which will be likely to have a cost impact on development.

3.1.9 At each stage of viability testing, we have to use the information available to that point. This influenced the way in which we conducted this first very high level look at the potential varying strength of development value:costs relationships and as noted through the latest assessment work this remains a relevant theme.

3.1.10 Alongside the above, we considered the variable influence of market housing sales values. This was done using assumed sales values from levels between £3,500/sq. m. and £6,000/sq. m. (approx. £325 to £557/sq. ft.) and within range formed the view that the key typical new build values were most closely represented within the range approximately £4,000 to £4,500/sq. m. at the time (approx. £372 to £418/sq. ft). Accordingly, we found £4,250/sq. m. (approx. £395/sq. ft.) to be a reasonable representation of the key part of values range at this point, representing a suitable indicator for the purposes of initially reviewing the early preliminary results. We noted that flatted development could be expected to typically achieve sales values at the upper end of the main range considered but also found, as is normal in any area, there to be both higher and lower values seen within an area and even within a site or between nearby sites; so that an overview has to be taken at Plan Making stage.

3.1.11 Overall, we noted a relatively narrow range of new-build housing values likely to be relevant to the forthcoming supply in the district, but with typically the highest values seen around Saffron Walden together with key commuter areas around the M11 and A120 main transport routes. Lower values were seen around Stansted Airport and the central eastern areas e.g. Great Dunmow and some of the rural fringes e.g. Stort Valley. How this picture would go on to influence viability was noted to depend on how the value patterns and relativities “overlay” with a more settled view of the emerging development strategy and sites locations within that in due course. This would be a theme to keep considering.

3.1.12 As part of the wider early stakeholder consultation exercise, the responses received from housebuilders and others broadly aligned with the above range of typical values for new build property in the district, albeit noting this is likely to vary depending on the type and scale of development.

3.1.13 Respondents to the stakeholders survey consistently summarised their experience of Uttlesford, noting the strong housing market compared to national and regional markets – typically supporting higher values historically than some adjoining local authorities and with this relativity expected to remain strong moving forwards. Typical new build sales values were noted to range between approximately £3,000 to £4,800/sq. m. and expected trends over the 6 months from the survey indicated a range of £4,000 to 4,750/sq. m. for flats and £3,900/sq. m. to £4,500/sq. m. houses; overall a similar picture to that observed by DSP.

3.1.14 Commentary was also provided in relation to the approach to BLVs and particularly the level of uplift over existing use value for brownfield and greenfield sites. Greenfield sites were noted to be of particular relevance in the district and overall respondents indicated approximate land values for this purpose of £50,000 to £150,000 per gross acre. In respect of the scope of policy costs, overall respondents noted a balance needing to be struck between specific obligations and additional costs on viability and deliverability of development, with the importance of the Council considering competing pressures linked to making policy choices.

Affordable Housing (AH)

3.1.15 An updated Housing Needs Assessment was under preparation and therefore at this stage we based initial review ideas on the previous SHMA Update (2017). With this context in mind, we considered a range of affordable housing proportions – at 20%, 30% and 40%. We assumed AH tenure based on the above – i.e. with 70% Affordable Rent and 30% Intermediate reflected within the assumed overall dwelling mix after “top-slicing” the affordable housing content so that it also included 25% as First Homes (FH) in line with the Government’s then recent introduction of this new model. It is important to note that the improved revenue from FH might be offset by the additional market related risk associated with this model, as reflected by our assumed profit level for this element @ 10% GDV, as a provisional assumption reflecting our emerging experience of and views on this at the time. Our emerging review of First Homes and their potential influence on viability generally had been indicating that even at the minimum prescribed level of discount (30% from MV) there may be no improvement in viability compared

with shared ownership provision and it was possible that depending on circumstances may see a further burden on viability overall from this.

3.1.16 The housing mix was noted as also potentially having an influence here as the overall price cap on First Homes may limit the income from this tenure or limit the size of properties which can be brought forward as FH. We conducted some initial high-level analysis of the potential impact of the FH cap which demonstrates initially the likely relationships between the fixed FH discount levels and property type/size based on our values research, as set out in Figure 12 below. Within this the red shaded price levels indicated those which would fall outside (not be workable based upon) the various FH discount levels (the discount can be placed at 30%, 40% or 50% MV, subject local evidence).

Figure 12: Initial look at First Homes in context of local values range

Uttlesford DC - Initial review - Indicative First Homes property price cap and MV discount effects

100% Market Value

Unit Type	Size of unit (m²)	VL1 £3,500	VL2 £4,000	VL3 £4,250	VL4 £4,500	VL5 £4,750	VL6 £5,000	VL7 £5,250	VL8 £5,500	VL9 £6,000
1BF	50	£175,000	£200,000	£212,500	£225,000	£237,500	£250,000	£262,500	£275,000	£300,000
2BF	67	£234,500	£268,000	£284,750	£301,500	£318,250	£335,000	£351,750	£368,500	£402,000
2BH	75	£262,500	£300,000	£318,750	£337,500	£356,250	£375,000	£393,750	£412,500	£450,000
3BH	93	£325,500	£372,000	£395,250	£418,500	£441,750	£465,000	£488,250	£511,500	£558,000
4Bh	124	£434,000	£496,000	£527,000	£558,000	£589,000	£620,000	£651,000	£682,000	£744,000

30% Discount

Unit Type	Size of unit (m²)	VL1 £3,500	VL2 £4,000	VL3 £4,250	VL4 £4,500	VL5 £4,750	VL6 £5,000	VL7 £5,250	VL8 £5,500	VL9 £6,000
1BF	50	£122,500	£140,000	£148,750	£157,500	£166,250	£175,000	£183,750	£192,500	£210,000
2BF	67	£164,150	£187,600	£199,325	£211,050	£222,775	£234,500	£246,225	£257,950	£281,400
2BH	75	£183,750	£210,000	£223,125	£236,250	£249,375	£262,500	£275,625	£288,750	£315,000
3BH	93	£227,850	£260,400	£276,675	£292,950	£309,225	£325,500	£341,775	£358,050	£390,600
4BH	124	£303,800	£347,200	£368,900	£390,600	£412,300	£434,000	£455,700	£477,400	£520,800

40% Discount

Unit Type	Size of unit (m²)	VL1 £3,500	VL2 £4,000	VL3 £4,250	VL4 £4,500	VL5 £4,750	VL6 £5,000	VL7 £5,250	VL8 £5,500	VL9 £6,000
1BF	50	£105,000	£120,000	£127,500	£135,000	£142,500	£150,000	£157,500	£165,000	£180,000
2BF	67	£140,700	£160,800	£170,850	£180,900	£190,950	£201,000	£211,050	£221,100	£241,200
2BH	75	£157,500	£180,000	£191,250	£202,500	£213,750	£225,000	£236,250	£247,500	£270,000
3BH	93	£195,300	£223,200	£237,150	£251,100	£265,050	£279,000	£292,950	£306,900	£334,800
4BH	124	£260,400	£297,600	£316,200	£334,800	£353,400	£372,000	£390,600	£409,200	£446,400

50% Discount

Unit Type	Size of unit (m²)	VL1 £3,500	VL2 £4,000	VL3 £4,250	VL4 £4,500	VL5 £4,750	VL6 £5,000	VL7 £5,250	VL8 £5,500	VL9 £6,000
1BF	50	£87,500	£100,000	£106,250	£112,500	£118,750	£125,000	£131,250	£137,500	£150,000
2BF	67	£117,250	£134,000	£142,375	£150,750	£159,125	£167,500	£175,875	£184,250	£201,000
2BH	75	£131,250	£150,000	£159,375	£168,750	£178,125	£187,500	£196,875	£206,250	£225,000
3BH	93	£162,750	£186,000	£197,625	£209,250	£220,875	£232,500	£244,125	£255,750	£279,000
4BH	124	£217,000	£248,000	£263,500	£279,000	£294,500	£310,000	£325,500	£341,000	£372,000

Red denotes property value above the £250,000 FH cap.

Discount required to achieve £250,000 cap

Unit Type	Size of unit (m²)	VL1 £3,500	VL2 £4,000	VL3 £4,250	VL4 £4,500	VL5 £4,750	VL6 £5,000	VL7 £5,250	VL8 £5,500	VL9 £6,000
1BF	50	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
2BF	67	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	32.2%	37.8%
2BH	75	30.0%	30.0%	30.0%	30.0%	30.0%	33.3%	36.5%	39.4%	44.4%
3BH	93	30.0%	32.8%	36.7%	40.3%	43.4%	46.2%	48.8%	51.1%	55.2%
4BH	124	42.4%	49.6%	52.6%	55.2%	57.6%	59.7%	61.6%	63.3%	66.4%

(DSP 2021)

(1) First stage preliminary findings – emerging indications November 2021

3.1.17 These pre-assessment findings were intended to enable officers to get an initial feel for the potential level of surplus (or deficit) available to support policy requirements after all 'base' fixed development costs/assumption were considered.

3.1.18 Looking at the 100 Mixed dwellings on PDL typology with market housing values at c. £4,250/sq. m) as an example, we saw that when all emerging policy costs (at the above noted levels assumed for this illustrative exercise) were deducted from the indicated surplus, the results included a range of deficits. While it could be seen that there may be scope to support some but not all of the policy costs (again bearing in mind the potentially very high level at which Education contributions were discussed there are of course other aspects of infrastructure to be funded, that have not yet been identified and we could expect to balance against a reduction in the education related costs to some extent.

3.1.19 This indicated in our view a strong likelihood for example that a universally applicable 40% AH policy would be likely to be found challenging, and possibly too challenging as part of a significant cumulative costs set. This may be the case even on some greenfield development when combined with the level of policy scope that may be envisaged, but certainly a need for some potential policy differentiation looked likely to be a consideration on the viability prospects of PDL sites.

3.1.20 Although we did not specifically test a strategic scale typology, based on the typical characteristics of such schemes and our experience of a range of large scale sites (both for site allocations review and DM stage purposes), with increasing cumulative costs (often including significant infrastructure and abnormals) we could reasonably expect the level of achievable AH to be perhaps in the range 30-40% rather than higher. This was not put forward as a limiter by any means, and above all it would need to be explored more fully. These were all highly provisional points only. Once the Council reached the stage of being able to confirm the strategic/larger strategic sites to be specifically viability tested (with the infrastructure requirements and other

costs estimates available together with a more refined set of policy iterations to test) full appraisal modelling could be presented for further consideration.

3.1.21 As additional context for review, we understand the Council's current target for affordable housing[16] is 40%. It was noted that the success rate of delivering this via s106 could usefully be reviewed; and bearing in mind the less onerous adopted policy set compared with the envisaged.

(2) Further preliminary review work – completed August 2022

3.1.22 Conducted as above, the preliminary assessment work and emerging findings aimed to explore whether the policies as set out to date were likely to leave development able to come forward viably, cumulatively, and if not, to inform begin to inform any potential compromises and policy priorities the Council may need to consider from a viability perspective. This principle is noted bearing in mind there is a limit in all Plan areas as to how far development can go in meeting infrastructure and policy costs/requirements cumulatively. Any potential compromises or "trade-offs" that need to be considered are reviewed in the context of striking a balance between policy objectives (including on affordable housing need, infrastructure fundings etc.) whilst ensuring the scope for continued delivery and growth across the district.

3.1.23 As continues to apply, and as a general point applicable in any area (not just Uttlesford), typically there are some sites that are likely to have inherent viability issues, regardless of the level of affordable housing (AH) or other policy requirements. However, it is typically the affordable housing proportion (%) that is key in considering viability prospects. To re-cap, this is because affordable housing as a policy 'ask' is significantly more costly to support than other policy requirements. A Council's approach also has to reflect the need for affordable homes as far as possible, so that viability is not the only factor in weighing up policy positions.

3.1.24 Through this further phase of liaison with UDC through 2022, DSP consolidated the first set of preliminary assessment and findings as above and began initial exploration with UDC as to how the review work to date might

[16] Based on the Council's adopted Local Plan 2005, Policy H9.

inform the consideration of viability/infrastructure scope comparisons across various potential LP growth options (potential variations of an emerging spatial strategy).

3.1.25 This assessment aspect was not progressed beyond initial exploratory thinking and discussion, however, as the Council then changed its approach to how the distribution of housing delivery might be addressed - through the subsequently refreshed emerging Regulation 18 version LP (as has now developed through further consultation).

3.1.26 Accordingly, the above noted preliminary findings remained in place as an initial guide only for UDC. This was pending the subsequent comprehensive further information review, updating of assumptions and appraisals exercise running to late summer/early Autumn 2023 as Stage 1 and then to June 2024 as Stage 2. All as per the above reporting (chapters 1 and 2 of this now updated report), the assumptions basis as per Stage 1 Appendix I, updated again at Stage 2; and producing the viability indications within the Stage 1 Appendices II and III results tables and subsequently the Stage 2 Appendices – S2-II and S2-III.

3.1.27 The overview of the findings reported to September 2023 is re-provided in following section 3.2.

3.2 Further assessment findings – Stage 1

Stage 1 Draft Viability Assessment – Regulation 18 stage

Stage 2 Update - Note: On reaching the Stage 2 reporting, the Initial review stage (preliminary assessment work 2021 to 2022) has again not been revisited. Continuing the cumulative reporting approach, this also remains unchanged apart from its now past tense wording, therefore. Again, this retains the purpose of outlining the development of the viability assessment from preliminary review stages, 2021 to 2022, to first full stage 1 in 2023. This applies to this section 3.2, through to paragraph 3.2.27 below.

Updated review context to that point – Market housing values

3.2.1 As per the commentary at 2.6.5 above and informed by the research within Appendix IV, the updated values context for this full Stage 1 exercise was as follows.

3.2.2 The sensitivity tested value levels (VLs) reflected an overall range between £4,000/m^2 and £6,000/m^2, representative of varying new-build sale prices likely to be seen by varying location in the Local Plan area. Necessarily but also appropriately for the assessment purpose, we considered the key new build property values – i.e., the most relevant range to housing delivery overall here – to be within the range £4,500/m^2 (VL3) up to £5,250/m^2 (VL6) with flatted development also likely to see values above typical base levels (as the inverse relationship between property size and value when expressed on a £/m^2 basis is seen).

3.2.3 As the Stage 1 Appendix II tables show, the typologies appraisals were run across the full range of VLs – 1 to 9. The retirement living/sheltered housing and extra care scheme typology appraisals were run reflecting a premium (higher) range of test VLs – extended upwards to VLs 10 and 11, reaching a tested £6,500/m^2 (see more on those below).

3.2.4 In a similar but more targeted use of the VLs approach (although with wider sensitivity testing on both changes to values and costs also provided) because

specific locations are assumed, the larger sites results tables in Appendix III set out the 3 no. VLs that were tested as base assumptions in each of those cases.

Benchmark land values (BLVs)

3.2.5 Reflecting the context and overview, but also noting the nuances, within section 2.15 above, the following review of updated assumptions and appraisals based findings is to be based on the use of key points within the BLVs range (EUV+ based and applied to gross site area) – as appropriate judgments for this viability in planning purpose in our experience:

- £250,000/ha reflecting bulk release of agricultural land – here (indicatively only for the assessment purpose) reflecting sites producing more than c. 250 dwellings (i.e. larger than the general typologies range appraised). Including larger scale / strategic sites, as appraised more specifically (as per Stage 1 Appendix I Table 1b and Appendix III results – Tables 3a – 3c).

- £500,000/ha reflecting smaller scale GF release sites – indicatively those within the size range represented by general typologies, although not a formal threshold or similar because some sites supporting lower dwellings numbers may have very large gross (overall) site areas.

- £1,250,000 (£1.25m)/ha reflecting a level of land value which generally a range of PDL schemes could be expected to need to reach, frequently as a minimum. As acknowledged earlier, while some PDL site values (and therefore suitable BLVs) could be lower, significantly higher existing use values could also be seen. Hence the wider overall range against which the scheme appraisal RLVS have been compared ('filtered' using coloured shading in the results tables).

Affordable housing

3.2.6 The UDC emerging LP policy proposal at this stage was for a 35% headline in AH policy (Proposed Core Policy 56 – Affordable Dwellings). For

completeness and wider reviewing of the sensitivity of outcomes to this key influence, AH was tested across a range 20% to 40% as the Stage 1 Appendix II tables show. It is noted that owing to part dwellings / numbers rounding on some smaller schemes, 35% and 40% AH amount to the same. This approach enabled the proposed draft policy level outcomes to be viewed in the context of others.

Infrastructure / development mitigation
- Tested (trial) levels of / approach to s.106 costs

3.2.7 With the detail on infrastructure requirements not known at this testing stage, and based on all the other assumptions set out, the tested levels of s.106 (at £10,000 and £20,000/dwelling) within the typologies appraisals (as per Stage 1 Appendix II) were aimed to enable UDC to consider the level of this that may be supportable in combination with variable AH, as above, in different potential circumstances. We commented that this may need to be considered in the context of emerging site supply and that above all in our view it may need to be reviewed further once the typical infrastructure requirements are known for comparison with these test levels.

3.2.8 As also discussed in Section 2 above, the Stage 1 Appendix III results indications (Tables 3 a – 3c) for the selected 3 no. larger/specific site allocations proposals tested were provided entirely on the basis of reported surplus (or in a few scenarios, deficit) outcomes i.e. prior to knowing more specifics on the scope of s.106 infrastructure/development mitigation. This was considered appropriate as a means of comparing the potential scenarios on a like for like basis at that stage, prior to there being sufficient information available to carry out appraisals that included cost estimates timed within the cashflows. The latter approach should generally be considered in our experience, so this was noted as likely to remain a follow-up point at this Regulation 18 stage – all as noted above. This has now been addressed further at Stage 2, as per the context and methodology review above, and the further findings noted in 3.3 below.

3.2.9 In both of these cases (Stage 1 Appendix II and III results indications) the aim was UDC being able to begin comparing the provided viability and surplus

indications with estimated infrastructure costings in different circumstances as that information became available.

3.2.10 Again, indicatively only, DSP noted that a £10,000/dwelling s106 (or other cost) assumption would be approximately equivalent to a CIL charge of c. £110/sq. m on an average dwelling size (of c. 90 sq. m). The £20,000/dwelling test on the same basis would be broadly equivalent to a CIL charging rate of c. £220/sq. m. However, in considering this context, CIL is not paid on affordable homes, so that a higher residential CIL charging rate than noted here would be needed to secure a similar level of income overall.

Full assessment Stage 1 findings – viability indications – greenfield (GF) site typologies (Stage 1 Appendix II)

3.2.11 Reviewing in the above context, the updated findings were such that (on the basis of the assumptions made) 35 – 40% AH appeared potentially viable as a headline. This was viewed as 'certainly not ruled out and could well be supportable'.

3.2.12 The findings also suggested that, broadly, the cumulative policy set envisaged should mean that sites retain the ability to come forward viably in general.

3.2.13 As the (Stage 1) Appendix II results tables showed, however, with £20,000/dwelling (all dwellings) s106 applied, these indications could get tight and particularly if considered with housing sale values falling beneath the range considered most relevant as noted at 3.2.2 above. We also noted that, based on an earlier assumption and not reflecting the subsequent policy drafting, the appraisals (in all cases) were run on the basis of a 10% M4(3) dwellings content overall and not reflecting a higher 20% of the affordable homes.

3.2.14 The Stage1 key finding was that the finally considered viable combination of new LP policies (including the AH) and infrastructure requirements that are supportable in various circumstances will need to be considered again once UDC is able to compare the typical infrastructure levels that will be required with the provided viability indications.

Stage 1 findings – viability indications – PDL site typologies (Stage 1 Appendix II)

3.2.15 As could be seen within the relevant Stage 1 Appendix II tables (Tables 2c, 2e, 2f, 2h, 2i, 2j and 2l) the viability indications representing PDL scenarios were found to be generally notably poorer, with the higher EUV based BLVs to be met or exceeded.

3.2.16 This again was noted as particularly the case at the higher s106 cost test level (i.e. with £20,000/dwelling assumed, although noting there is no CIL here) and also, more generally, as the AH proportion tested goes beyond 30%. Similarly, this relativity (with GF) was seen further with reducing sales values assumed.

3.2.17 Overall, with the information available at this still early stage, the feedback to UDC brought out the theme that the ultimately supportable combinations of policies and costs would need to be considered further once the (albeit likely still estimated) infrastructure costs become more closely; and priorities further reviewed, therefore, as far as necessary.

3.2.18 In the meantime, at this stage there were other emerging themes apparent and that in our view also looked likely to need further consideration as part of settling these variables within a suitable overall mix and balance of objectives, as follows:

a) It appeared likely that an AH policy differential for PDL sites should be considered. This principle or its level may depend on the overall role and types of sites within the intended supply. Provisionally, this may be in the range 20% - 30% AH – but for further review subject to circumstances, i.e. differentiated for if this is sufficiently relevant as a component of the planned sites supply (including windfalls element allowed for).

b) DSP's experience at the time of examiners tending to encourage or expecting to see an acknowledgement of the role of viability within policy framing, i.e. considering potential flexibility in requirements

where appropriately justified in assessing some sites at DM stage. This was offered as a point for UDC to consider in firming up policies.

c) The Stage 1 Appendix II results Tables 2f and even more so 2j indicated that even with a PDL policy differential as noted for consideration here, retirement living (sheltered) and extra case appeared likely to more frequently need the type of approach noted at b) above. We offered our view that a combination of these policy tools should avoid the need for a further policy differential for such schemes. This was noted as potentially appropriate because schemes within these brackets are very varied in nature. With increasing demand, as the UDC housing needs information recognises, it might also be the case that we see different/more mixed provision models appearing. It could also be the case that such development comes forward on GF sites or as part of larger GF developments (with lower BLVs applicable).

d) However, in noting all the above on PDL findings relative to the indications for developments on GF land, it was considered that UDC would need to "overlay" these findings on to the emerging site supply and would then be able to consider the extent to which policy differential(s) would likely be relevant in the overall plan context.

Stage 1 findings – viability indications for emerging larger/strategic/specific site allocation proposals
(Stage 1 Appendix III)

Stage 2 Update - Note: While the Stage 1 appraisals provided appropriate early-stage pointers, this appraisal work has now been updated by Stage 2 – more on this below at 3.3 – Stage 2 Update reporting.

3.2.19 While using the same principles, and reflecting the different appraisal approach as noted above, the Stage 1 Appendix III tables showed from top to bottom the tested AH % in combination with (across the top) the tested value level (VL) again as assumed for the market sale housing.

3.2.20 Surplus outcomes were shown in the green shaded results areas, while (using current assumptions) a few test scenarios (in respect of NE Great Dunmow only) arrived at deficits - the pink/red shaded results.

3.2.21 In each case the current base build cost assumption supports the '0% BASE TEST' row of results shown in bold type, meaning results with 0% change applied to the base build cost. Either side of that, the effect of further sensitivity tests with adjusted (higher and lower assumed) build costs were seen.

3.2.22 The results displayed expected patterns. The indicated surpluses (sums potentially available to support s106 and any other currently unknown costs that are not included within the appraisals) fall with increasing AH% tested, VL test level reducing, or sensitivity tested build cost increasing. The indicated surpluses rise with the opposite effects.

3.2.23 The potential effect of varying movements in and combinations of assumptions could be viewed. As with the typologies results, it was also possible to identify different assumptions combinations that might produce broadly similar viability outcomes overall. The Stage 2 results (see below) can be used in a similar way – comparative outcomes from different assumptions combinations can be picked out.

3.2.24 The surplus (or deficit) indications result from deducting the constant of the assumed BLV per site (gross site area multiplied by £250,000/ha) from the appraisal RLV in each instance. Each outcome is shown as a total indicated surplus (or deficit) sum (£ total) as well as expressed in £/dwelling terms (right hand side of the tables) to give a better feel for how the indications look. The same results display principles apply at current Stage 2, as can be seen in current results Appendix S2-II.

3.2.25 At Stage 1, the viability indications on this basis for SE Saffron Walden as tested were seen to be notably stronger than for the other two sites tested at that stage, with NE Great Dunmow indicating the likely tightest viability on this basis. However, the varying strength of the housing values assumed within the appraisals (as represented by the different use of the VLs in each case, as shown within the tables) was noted as a key influence.

3.2.26 At Stage 1, overall, it was noted as very possible that once appraised in due course with the knowledge of the estimates of required infrastructure and other further details available, these early-stage indications (and possibly the results relativities) could move considerably.

3.2.27 On this basis, however, the sites appeared to have the potential to come forward viably, although ultimately, likely with variable packages of affordable housing and infrastructure/other mitigation or matters supported from site to site once dealing with the actual site specifics in due course. It will be possible to explore these matters further should this be appropriate and, if so, with more information available to support a more detailed, updated/refined set of appraisals and sensitivity tests. This has now become possible at Stage 2, and the updated findings of the expanded review are as follows.

Overall – at Stage 1

3.2.28 The current stage emerging draft policy proposals have been tested cumulatively. All in all, as reviewed so far, we consider the nature of development and the approach proposed by the Council should be capable of supporting viable developments.

3.2.29 Therefore, on the whole, and taking the wider plan context rather than only the short term, on progressing further review work to further inform the LP we are likely to be able to support the viability prospects related to the policy directions and nature of development coming forward in the district.

3.2.30 Some adjustments may be recommended for consideration from a viability point of view. However, these appeared unlikely to be of a critical nature overall – no “showstoppers” were identified to this stage.

3.2.31 Bearing in mind the commentary and findings above, it also appears that this is likely to warrant further consideration and refinement as UDC’s information (particularly on infrastructure) develops further and the emerging policy scope continues to be reviewed.

3.2.32 Accordingly, at Stage 1 it was not possible to determine the firm combinations of policies (mainly in reference to final AH % headlines in different circumstances) and infrastructure requirements that will be viable alongside the final approach to climate change response – amongst the key areas of influence on development viability. Our view was put forward that there may need to be consideration of some variation in this. A particular theme identified, following on from and consistent with the 2021 – 2022 preliminary emerging findings, continued to be the added pressure often seen on the viability of PDL hosted developments in many cases, compared with greenfield. We noted the relevance of considering how the dwellings supply would relate to this – i.e. what is likely to be the extent of the contribution to overall supply from PDL sites?

3.2.33 In addition to suggesting further considering infrastructure and the role of PDL sites regarding their typically reduced scope to support extensive cumulative policy costs (primarily noting affordable housing), we noted a potential need to adapt where flexibility is needed in the operation of policies. It seems likely, and not only in Uttlesford, that a range of matters considered here might take a while to bed in. This has continued to be a typical observation and does not undermine our Uttlesford emerging LP overview that on the whole the policy aims should be supportable, and reasonably placed over the longer run that is relevant (the emerging LP period runs to 2041).

3.3 Stage 2 Update

Proposed larger/strategic site allocations – further test findings

(Appendix S2-II)

3.3.1 The results tables (Tables 2a to 2f in S2-II) use the same principles and formatting approach as carried through the assessment. The surplus (green shaded results) or deficit outcomes (pink/red) are displayed as £ total sums on the left and in £/dwelling terms to the right. These outcomes are in the case of each figure the result of deducting the BLV (applied at £250,000/ha and resulting in an assumed BLV per site as stated in each table) from the appraisal RLV (residual land value).

3.3.2 They again show the effect on viability of the assumed market housing sales value level (VL) increasing or falling and/or build costs rising (or indeed falling). Across the top of each table section the most relevant range of VLs to that location are shown highlighted with the yellow shaded band. The range of 3 or 4 VLs highlighted in each case is taken from the overview included at Table S2 1g of Appendix S2-I.

3.3.3 The lower VL sensitivity tests show deficit positions, and these are emphasised when rising build cost is also considered, as can be seen. These are expected effects and trends. However, in the context of the large figures and potential variance involved, it is appropriate to think of tolerances and in our view an outcome that falls not more than around £5,000/dwelling (or equivalent) either side of a nil £0 surplus results (so in the range approximately -£5,000 to £5,0000/dwelling) could be considered potentially marginal/within tolerances of an outcome that broadly supports the tested values and policies/costs combination. This is noted only to give a feel for the results – there are no strict cut-offs.

3.3.4 On the whole, current Appendix S2-II Tables 2a to 2f show the potential for viable development at the proposed locations based on the updated and expanded review scope using latest available UDC information to the end of

May 2024 and with the development costs and policy requirement areas cumulatively tested.

3.3.5 With the same AH% levels tested, the main variables interacting and resulting in any differences seen between the results per site are the VLs range that is considered most applicable in each case, and the estimated infrastructure cost level included within each appraisal at this stage – as per the figures in Tables S1-1a to 1f.

3.3.6 The tables at Figures 13 to 18 below pull out the key areas of the full results from the tables within Appendix S2-II – provided here for ease of access to an overview of these findings.

3.3.7 The influence of the VL tested (as shown across the top of each table), the AH% tested and the build cost sensitivity test can be seen on the reported surplus £ per dwelling level. Reading left to right, we see how increasing the VL assumption has the expected effect of increasing the reported surplus (or reducing reported deficits where found).

3.3.8 The bold emphasised results running through the centre of each table left to right are those reflecting the build cost assumption at base level (unadjusted). Then beneath and above that, for each AH% test, we show the effect of the build cost assumption being reduced or increased by 5% and then 10% - i.e. both down and up at 5% steps.

3.3.9 Extracting from results tables S2-2a to 2f in this way - as below - illustrates that for Saffron Walden as tested we see the strongest of the viability prospects indicated – Figure 13 below.

Figure 13 – Stage 2 results extract (Surplus per dwelling - Table 2a – Saffron Walden - within Appendix S2-II)

AH % tested and build cost sensitivity	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500
- 10%	£34,868	£43,678	£52,505	£61,328
- 5%	£29,384	£38,200	£47,032	£55,859
30% AH	**£23,899**	**£32,716**	**£41,553**	**£50,385**
+ 5%	£18,412	£27,231	£36,069	£44,906
+ 10%	£30,883	£21,744	£30,584	£39,422
- 10%	£28,545	£36,872	£45,214	£53,552
- 5%	£23,112	£31,443	£39,791	£48,133
35% AH	**£17,679**	**£26,010**	**£34,361**	**£42,709**
+ 5%	£12,241	£20,577	£28,928	£37,279
+ 10%	£6,776	£15,139	£23,495	£31,846
- 10%	£22,663	£30,522	£38,394	£46,261
- 5%	£17,281	£25,141	£33,019	£40,892
40% AH	**£11,899**	**£19,759**	**£27,638**	**£35,516**
+ 5%	£6,508	£14,377	£22,256	£30,134
+ 10%	£1,065	£8,985	£16,874	£24,752

(DSP 2024)

3.3.10 Similarly strong results indications (positive viability prospects) are seen in respect of Elsenham as assumed – Figure 14 below.

Figure 14 – Stage 2 results extract (Surplus per dwelling - Table 2d – Elsenham - within Appendix S2-II)

AH % tested and build cost sensitivity	VL3 £4,500	VL4 £4,750	VL5 £5,000
- 10%	£36,864	£47,363	£57,835
- 5%	£30,160	£40,662	£51,135
30% AH	**£23,456**	**£33,958**	**£44,434**
+ 5%	£16,752	£27,255	£37,732
+ 10%	£10,044	£34,551	£31,028
- 10%	£28,429	£38,216	£47,978
- 5%	£21,788	£31,575	£41,339
35% AH	**£15,143**	**£24,934**	**£34,698**
+ 5%	£8,496	£18,291	£28,057
+ 10%	£1,847	£11,647	£21,416
- 10%	£22,529	£31,786	£41,017
- 5%	£15,951	£25,211	£34,444
40% AH	**£9,369**	**£18,634**	**£27,870**
+ 5%	£2,787	£12,054	£21,294
+ 10%	-£3,801	£5,471	£14,716

(DSP 2024)

3.3.11 Slightly less positive viability indications (more of a mix of outcomes overall, some around the cusp of viability) are indicated for Stansted Mountfitchet (extract from Table 3c included as Figure 15 below) and Thaxted (Table 2f included as Figure 16 below).

Figure 15 - Stage 2 results extract (Surplus per dwelling - Table 2c – Stansted Mountfitchet - within Appendix S2-II)

AH % tested and build cost sensitivity	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000
- 10%	£20,387	£30,132	£39,866	£49,570
- 5%	£14,239	£23,996	£33,738	£43,447
30% AH	**£8,092**	**£17,849**	**£27,603**	**£37,321**
+ 5%	£1,910	£11,702	£21,458	£31,188
+ 10%	-£4,642	£5,552	£31,978	£25,044
- 10%	£14,522	£23,699	£32,863	£41,995
- 5%	£8,430	£17,610	£26,786	£35,926
35% AH	**£2,330**	**£11,518**	**£20,697**	**£29,849**
+ 5%	-£4,047	£5,426	£14,606	£23,763
+ 10%	-£10,798	-£808	£8,514	£17,671
- 10%	£8,725	£17,354	£25,978	£34,568
- 5%	£2,690	£11,322	£19,950	£28,553
40% AH	**-£3,522**	**£5,290**	**£13,918**	**£22,526**
+ 5%	-£10,179	-£838	£7,886	£16,494
+ 10%	-£17,009	-£7,423	£1,801	£10,462

(DSP 2024)

Figure 16 - Stage 2 results extract (Surplus per dwelling - Table 2f – Thaxted - within Appendix S2-II)

AH % tested and build cost sensitivity	VL2 £4,250	VL3 £4,500	VL4 £4,750
- 10%	£22,117	£31,542	£40,967
- 5%	£16,245	£25,672	£35,097
30% AH	**£10,371**	**£19,799**	**£29,227**
+ 5%	£4,493	£13,924	£23,354
+ 10%	-£1,389	£8,047	£42,959
- 10%	£15,973	£24,800	£33,626
- 5%	£10,157	£18,985	£27,812
35% AH	**£4,338**	**£13,168**	**£21,997**
+ 5%	-£1,485	£7,348	£16,179
+ 10%	-£7,313	£1,525	£10,359
- 10%	£10,536	£18,861	£27,186
- 5%	£4,775	£13,102	£21,428
40% AH	**-£988**	**£7,341**	**£15,668**
+ 5%	-£6,755	£1,577	£9,907
+ 10%	-£12,528	-£4,191	£4,142

(DSP 2024)

3.3.12 At this stage and level of review, the 2 sites indicating prospects more around the cusp of viability – i.e. showing outcomes either side of a nil surplus depending on the strength of sale value levels (VLs) available to support the estimated costs – are NE Great Dunmow (Table 2b – extract at Figure 17 below) and N Takeley (Table 2 e – extract at Figure 18 below).

Figure 17 - Stage 2 results extract (Surplus per dwelling - Table 2b – NE Great Dunmow - within Appendix S2-II)

AH % tested and build cost sensitivity	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000
- 10%	£1,449	£10,082	£18,707	£27,310
- 5%	-£3,855	£4,815	£13,447	£22,051
30% AH	**-£9,224**	**-£481**	**£8,181**	**£16,791**
+ 5%	-£15,057	-£5,819	£2,891	£11,526
+ 10%	-£21,423	-£11,465	£25,079	£6,240
- 10%	-£4,100	£4,002	£12,093	£20,165
- 5%	-£9,392	-£1,234	£6,867	£14,939
35% AH	**-£15,006**	**-£6,521**	**£1,631**	**£9,714**
+ 5%	-£21,237	-£12,006	-£3,651	£4,478
+ 10%	-£27,998	-£18,074	-£9,046	-£800
- 10%	-£9,146	-£1,495	£6,132	£13,742
- 5%	-£14,494	-£6,694	£955	£8,564
40% AH	**-£20,497**	**-£11,994**	**-£4,243**	**£3,387**
+ 5%	-£27,096	-£17,845	-£9,513	-£1,810
+ 10%	-£34,672	-£24,329	-£15,261	-£7,066

(DSP 2024)

Figure 18 - Stage 2 results extract (Surplus per dwelling - Table 2e – N Takeley - within Appendix S2-II)

AH % tested and build cost sensitivity	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000
- 10%	£10,317	£19,129	£27,925	£36,687
- 5%	£4,883	£13,710	£22,521	£31,296
30 % AH	**-£654**	**£8,285**	**£17,103**	**£25,893**
+ 5%	-£6,550	£2,784	£11,682	£20,476
+ 10%	-£13,080	-£2,963	£25,601	£15,056
- 10%	£4,760	£13,029	£21,294	£29,520
- 5%	-£670	£7,661	£15,930	£24,174
35% AH	**-£6,363**	**£2,244**	**£10,562**	**£18,811**
+ 5%	-£12,721	-£3,357	£5,158	£13,443
+ 10%	-£19,466	-£9,496	-£376	£8,051
- 10%	-£358	£7,440	£15,229	£22,984
- 5%	-£5,851	£2,121	£9,912	£17,683
40% AH	**-£11,945**	**-£3,330**	**£4,595**	**£12,366**
+ 5%	-£18,591	-£9,252	-£825	£7,049
+ 10%	-£26,121	-£15,826	-£6,627	£1,648

(DSP 2024)

3.3.13 In our experience it is not unusual to see such a range of outcomes overall when sensitivity testing in this way, and it shows how the viability can move around.

3.3.14 As can be seen from Figures 17 and 18 above (and the full display in Appendix S2-II), the results representing the proposed large scale development NE Great Dunmow and to a lesser extent at N Takeley are indicated to be the tightest of the further tests run. This reflects a combined

effect of estimated s106 levels at these sites to date being higher (see Appendix S2-II) than at the others tested using currently available information and assumptions, and values (most relevant VLs) estimated to be closer to the lower to typical levels tested rather towards the mid to higher levels as are more likely to be supported in other, locations such as Saffron Walden and by and large the other locations tested.

3.3.15 This suggests that at the locations indicating the likely more limited viability scope for supporting other cost while providing 35% AH, any increased cost (such as those noted in regard to potential ICB requirements at 2.14.6 above) the achievable packages of affordable housing and infrastructure there may come under more pressure than elsewhere.

3.3.16 Overall, however, alongside all the other assumptions and allowances made at this more refined appraisal updating stage, in our view it would be an early point at which to rule out 35% AH and aim for a lower level in policy.

3.3.17 At this stage, it is worth noting though that the tighter sets of results suggest there to be little scope in the foreseeable future, potentially, for higher than the assumed cumulative policy costs and provisional infrastructure scope to be supportable and readily delivered, and perhaps especially in those instances.

3.3.18 Many assumptions need to be made. Our assessment of these sites is considered appropriate for the stage and purpose – acknowledged as necessarily relatively high level high-level although significantly more detailed than a typical typologies approach.

3.3.19 The results tables show the potential influence of variable sales values, affordable housing content and build costs, acting together to influence the view of the viability prospects. The sensitivity testing information included within the appended tables acts to enable an overview of these influences either individually or in combination, and how viability may change both positively and negatively in different circumstances.

3.4 Review of employment development use typologies

3.4.1 These results (see Appendix S2-III Tables 3a to 3d) added to the assessment at latest Stage 2 show that Research and Development floorspace (Table 3a) appears likely to have notably greater viability prospects locally than other forms tested, again based on all the assumptions used. However, even for this use test the base assumptions combination points more to potentially marginal rather than consistently clear viability prospects, viewed using available information at this time.

3.4.2 The findings are similar to those we see typically when assessing viability at a strategic level to inform CIL charging schedules. Based on the assumptions used and findings generated at this stage, it is difficult to draw out a great deal. However, as noted above, the final UDC LP policy reach as directly affects the viability of any such schemes that are progressed in the coming few years is expected to be limited.

3.4.3 Climate change response policy measures on sustainable construction to achieve zero carbon developments in due course, and in respect of BNG, are not considered likely to regularly tip an otherwise proceedable development info non-viability.

3.4.4 The generally marginal at best outcomes reflect the assumptions made within the viability in planning approach. The limitations of this are acknowledged. The findings from this element of the exercise are mixed and at this point in time this also reflect the wider strategic viability assessment work that DSP has carried out elsewhere for some time now. Generally, the viability outcomes can be regarded as marginal at best overall, although the Research and Development premises typology indicates stronger prospects at this time.

3.4.5 However, the progression of such schemes is very often underpinned by particular business or longer-term investment plans and drivers – i.e. for operational or other ownership/occupational reasons rather than necessarily the property development activity as such. This also means that the figures behind proposals progressing may well be different to the assumptions typically used in viability in planning exercises. The appraisal results included here do not necessarily indicate or determine that developments of these

types will not come forward, therefore. We understand that UDC has positive engagement ongoing with site promoters and this is consistent with the wider context noted here.

3.4.6 We suggest that UDC will need to be mindful of any significant infrastructure requirements which (without other funding) could be expected to be very challenging for the viability of such schemes, as is typically the case. However, the sustainable construction (carbon reduction/energy efficiency) and BNG related policy requirement proposals are considered unlikely to tip an otherwise proceedable scheme into non-viability. To date, the commercial property sector has if anything been running ahead of residential in the latter respect, where more energy efficient cheaper to run buildings are generally easier to market and let/sell and this will increasingly show in their investment characteristics and value compared with older, less efficient premises.

3.4.7 At 2.5.7 above we noted the potential influence of infrastructure requirements. Consistent with the general commentary offered on this point, we assume that the site proposals and intended development use selections will not rely unduly on significant and costly infrastructure that may not be deliverable by developments – at least without other financial support the relatively beyond modest developer contributions that appear likely to be supportable at this stage.

3.5 Main Findings Summary

3.5.1 As a final overview, having considered the viability of the Local Plan through its development and with this assessment supported by ongoing liaison with the UDC team, we consider the approach and policy directions viable on the whole.

3.5.2 This is when reviewed to include the affordable housing and infrastructure scope discussed above and detailed in the appended information, bearing in mind the LP overall timeline (extending to 2041). A range of economic and market conditions and other circumstances can be expected to be experienced.

3.5.3 The Council's policy positions are not considered to result in excessive costs. Extra-over cost allowances currently made, reflecting more stringent development requirements that have been introduced over a condensed period of significant change in those recently, can be expected to reduce.

3.5.4 While acknowledging the inevitable variation, which is typical in DSP's broad experience of viability in planning, it is considered that sites will be able to come forward viably with the policies in place.

3.5.5 These headline conclusions are based on and include the following summary of the scope that we have found on affordable housing. That is summarised here as a key element of the main findings (but with the information above and appended to be referred to as well) as follows – Figure 19 below:

Figure 19 – Main findings summary – affordable housing scope

	Affordable Housing (AH) % considered viable					Suggested LP headline position
	20%	**25%**	**30%**	**35%**	**40%**	
Greenfield (GF) generally	Yes	Yes	Yes	Yes	Potentially viable but beyond needs level.	35%
Larger/strategic scale	Yes	Yes	Yes	Yes, on the whole	Potentially viable (only in highest value instances) but as above.	35%
PDL	<< Potentially >>			<< Unlikely >>		UDC to consider given limited role overall

(DSP 2024)

3.6 General points remaining relevant at Stage 2

3.6.1 This wider commentary is also carried over from DSP's Draft Stage 1 report.

3.6.2 The purpose of viability in planning is to inform rather than constrain sustainable development; and in doing so to enable the optimising of planning obligations supporting this.

3.6.3 UDC must consider the overall sustainability of development together with the affordable housing and other community needs – all in balance with viability. The Council is able to consider how much weight to give to viability at decision taking stage, as per the PPG.

3.6.4 Looking across and between tested scenario results, the likely effect of intermediate levels of AH or other assumptions (such as s106 level) can also be considered through interpolation – i.e. viewing between two results points, if relevant. Overall, the sensitivity testing information could also be used to broadly assess different combinations of appraisal inputs (assumptions) that may be expected to support similar viability outcomes or which might be viewed on a "trade-off" type basis if needs be in particular instances.

3.6.5 The significant viability impact of the affordable housing relates to its development cost being broadly the same as market housing while it generates revenue (sale value) at a very much lower level – often around half (50%) of market value when a blend of AH tenure is taken into account overall. This is also behind the affordable housing generally needing to be considered (and potentially not being provided at the fullest levels of policy aspirations) when it comes to considering support of a mix of policy objectives within an overall balance. Aside from the nationally required First Homes now allowed for as a base assumption, the AH policy as impacts viability is entirely locally set. In balancing up, the cost of providing the AH is such that some adjustment in its provision can often "pay for" other less costly policy objectives in their entirety, and/or collectively.

3.6.6 The assessment allows for extra-over costs for example as are assumed to be associated with increased development and housing standards relative to previous requirements. However, no allowance has been made at this stage

for the likelihood of these costs reducing as the currently new or emerging sustainability and other requirements become the norm, reflecting improvements in knowledge, techniques and technologies, and economies of scale.

3.6.7 We continue to note that it should be possible soon also to assess whether more energy-efficient homes and business premises attract higher values. There have been suggestions of this for some time, but mostly anecdotally that we have seen so far. More data on this is awaited. We have noted that this effect is being seen already in some commercial sectors, but we expect it to flow through more into the residential market. Developers' marketing campaigns are now often including or focusing on energy efficiency. This along with the above noted likely cost efficiencies anticipated over time may well help further to balance out any initial viability pressures. Nevertheless, it seems very likely that there will be some form of transition to make, with time taken over that.

3.6.8 Similarly, although build costs have risen steeply, recently this pressure has been easing considerably and this trend can be expected to strengthen in the event of a decline in demand.

3.6.9 We expect also that "multi-purpose" solutions to supporting measures for achieving biodiversity and other elements of the landscaping, open space, environmental and ecological requirements will be developed too, whereas currently in this process we are taking more of an individual costs assumptions approach to some of these elements. This, in our view, means a potential for overlapping allowances and assumptions potentially having a greater cost and viability effect than actual practical solutions might arrive at; especially as knowledge and the availability of alternatives improves.

3.6.10 This has been a relatively challenging time over which to consider development viability, as it has been for development activity in many respects. We have noted that generally conditions appear to be stabilising but, having said this, economic uncertainty remains and a General Election has been called for 4th July 2024, leading to ongoing or even heightened uncertainty as to what might be next in policy areas such as planning, housing, taxation and so on. To be clear, at the time of this write up, the

election outcome and any relevant implications for matters considered in this assessment are not known.

3.6.11 However, while done at a point in time, considering recent and current circumstances, above all it is appropriate to look across the emerging LP period overall. Viability assessment at this strategic level also reflects this longer-term more strategic, relevance, therefore. This is consistent with the application of viability in planning at plan making stage, as per the NPPF and reflecting the PPG. This commentary is considered relevant to both residential and other development use types.

3.6.12 DSP notes that these have been common factors across such assessments undertaken in recent years and they continue to be. The dynamics described here are by no means unique to Uttlesford District. In our extensive experience of these matters, they are typical considerations (albeit at varying policy levels etc. according to local characteristics and at this point in time exacerbated by circumstances in terms of current / short term market effects).

3.6.13 All in all, within the nature of viability in planning it is appropriate to consider how development can and will come forward, rather than only how it might not be able to comply with reasonable requirements. The same context applies to other policy related matters proposed by UDC.

3.6.14 However, it is also appropriate in our view to consider that in the short term (potentially the next few years) the increased development costs related to local as well as national policy requirements will be impacting at a time when the economic circumstances seem likely to continue to be somewhat uncertain and potentially changeable, although with the very latest on inflation being that it is back on track at close to 2%. Nevertheless, it is likely that there will be a coming together of aspects that will be challenging for viability in some cases. This will be likely to influence matters across the board to some extent, but the assessment suggests this effect will probably continue to be at its most challenging on some PDL sites as well schemes that support heavy burdens from infrastructure requirements or significant abnormal costs.

3.6.15 Typically, PDL sites are where more frequently there will be inherently less or very limited viability headroom owing to higher site values (BLVs based on

existing use plus as per the PPG) in combination with often higher development costs. The same principles may also be relevant to bear in mind in regard to some more specialised forms of development – such as retirement living/sheltered housing and perhaps particularly extra care development – as noted above.

3.6.16 In our view, this theme on PDL development and considering any local relevance of a policy differential remains a matter for UDC to consider taking through into final policy positions. Its role within the overall sites supply (and potentially including as relates to windfall developments) may well be best looked at further unless this has been addressed already within the Council's exploration of policy approaches. Our understanding is that at 35% the emerging proposed AH policy headline exceeds the overall need level and reflects a balancing against those sites which will not contribute owing to their size or other circumstances.

3.6.17 If delivery of development on PDL is sufficiently important in the new LP context to warrant a viability based differential in affordable housing policy, then in our view this could be applied at 20-30% as suggested at Stage 1. It appears a lower AH level would not go far enough towards meeting needs, but this is only a general comment and UDC will need to consider the balance between all the competing requirements.

3.6.18 As a point applicable to all such assessments, different assumptions used as appraisal inputs could result in different viability indications. For example, a varied dwellings number or mix, assumed density or other alternative assumptions could be expected to have an influence. The assessment does not amount to an options appraisal for sites or similar, whereas prospective promoters, developers and housebuilders can be expected to work up the most viable scenarios that will be able to address the individual site characteristics and requirements as far as possible.

3.6.19 As previously, DSP will be happy to assist Uttlesford District Council with any ongoing points in relation to this or further viability assessment work to inform and in support of the development of its emerging new Local Plan to 2041.

Notes and Limitations

1. The purpose of the further assessment reported in this document (as now conducted between mid-2021 and June 2024 overall) has been to inform the emerging LP approach and policies as consulted on at Regulation 18 stage and now being developed towards draft Local Plan regulation 19 stage consultation – intended summer 2024.

2. Gathering up and reflecting on the testing of typologies and strategic scale development over the main elements of assessment over the above noted period (work to date), this report sets out the information considered and scope of review as part of the Council's development of its emerging LP proposals from a viability perspective - whilst also taking into account national policies and initiatives that may have an impact on development viability.

3. This has been a desk-top exercise based on information provided by UDC supplemented with information gathered by and assumptions made by DSP, once again as appropriate in the context of LP development ('plan making').

4. This review has been carried out using well recognised residual valuation techniques by consultants highly experienced in the preparation of strategic viability assessments for local authority policy development including whole plan viability, affordable housing and CIL economic viability as well as providing site-specific viability reviews and advice. In order to carry out this type of assessment many assumptions are required alongside the consideration of a range of a large quantity of information which rarely fits all eventualities.

5. It should be noted that every scheme is different, and no review of this nature can reflect all the variances seen in site specific cases. Accordingly, this assessment (as with similar studies of its type) is not intended to directly prescribe assumptions. Assumptions applied for our test scenarios are unlikely to be appropriate for all developments. A degree of professional judgment is required. We are confident, however, that our assumptions are reasonable in terms of making this viability overview and further informing and supporting the Council's approach towards a robust and viable LP.

6. Small changes in assumptions can have a significant individual or cumulative effect on the residual land value (RLV) or other surplus / deficit output generated – the indications generated by the development appraisals for this strategic purpose will not necessarily reflect site specific circumstances. Nevertheless, the assumptions used within this study inform and then reflect the policy requirements and strategy of the Council and therefore take into account the cumulative cost effects of policies.

7. The research, review work and reporting for this assessment has been assembled at a time when there have remained remain economic uncertainties associated with post-Brexit, the after-effects of the COVID-19 (Coronavirus) pandemic situation, more latterly the war in Ukraine, and relatively challenging economic circumstances in general. However, while the economic uncertainties no doubt remain and we are now also awaiting a General Election in July 2024, there appear to be more positive signs. Inflation has recently fallen back broadly to expected norm levels (at circa 2%). Although the Bank of England Base Rate has remained unchanged again (at 5.25% as per the last few months) there has in the most recent period been an increased sense of housing market stability being felt, as far as we have been able to gauge.

8. This uncertainty may run through into many potential areas affecting development viability or deliverability, particularly in the short term. However, there could be a range of influences and effects, not necessarily all negative in their impact on viability. It is of course only possible to work with available information at the point of carrying out the assessment.

9. Local Authorities and others will be able to consider how this picture may change – monitor it as best possible and consider any necessary updating of the evidence and local response in due course. This is consistent with the approach that typically is taken already when either a significant amount of time passes, or other circumstances change during the period of Plan preparation/review and potentially pending or during examination. In the meantime, this work contains information on the impact of varied assumptions applied within a wide range of sensitivity tests. Run in this way, and through regular dialogue with the Council while in progress, this has helped and continues to inform the Council's consideration of development viability in the wider plan delivery context.

10. This document has been prepared for the stated objective and should not be used for any other purpose without the prior written authority of Dixon Searle Partnership Ltd (DSP); we accept no responsibility or liability for the consequences of this document being used for a purpose other than for which it was commissioned.

11. To the extent that the document is based on information supplied by others, DSP accepts no liability for any loss or damage suffered by the client or others who choose to rely on it.

12. In no way does this study provide formal valuation advice; it provides an overview not intended for other purposes nor to over-ride particular site considerations as the Council's policies will be applied from case to case.

13. DSP conducts its work only for Local Authorities and selected other public organisations. We do not act on behalf of any development interests. We have not undertaken and are not undertaking other work in the Council's area at the time of this project, but DSP has undertaken strategic viability assessment work previously on behalf of the Council and we work for other authorities in the region.

14. In any event we can confirm that no conflict of interests exists, nor is likely to arise given our approach and client base. Our fees are all quoted in advance and agreed with clients on a fixed or capped basis, with no element whatsoever of incentive/performance related payment. Our project costs are simply built-up in advance, based on hourly/day rates and estimates of involved time.

15. In the preparation of this assessment DSP has acted with objectivity, impartiality, without interference and with reference to appropriate available sources of information.

Report ends.
DSP v1.6 (Final)
Appendices S2-I to S2-IV follow.

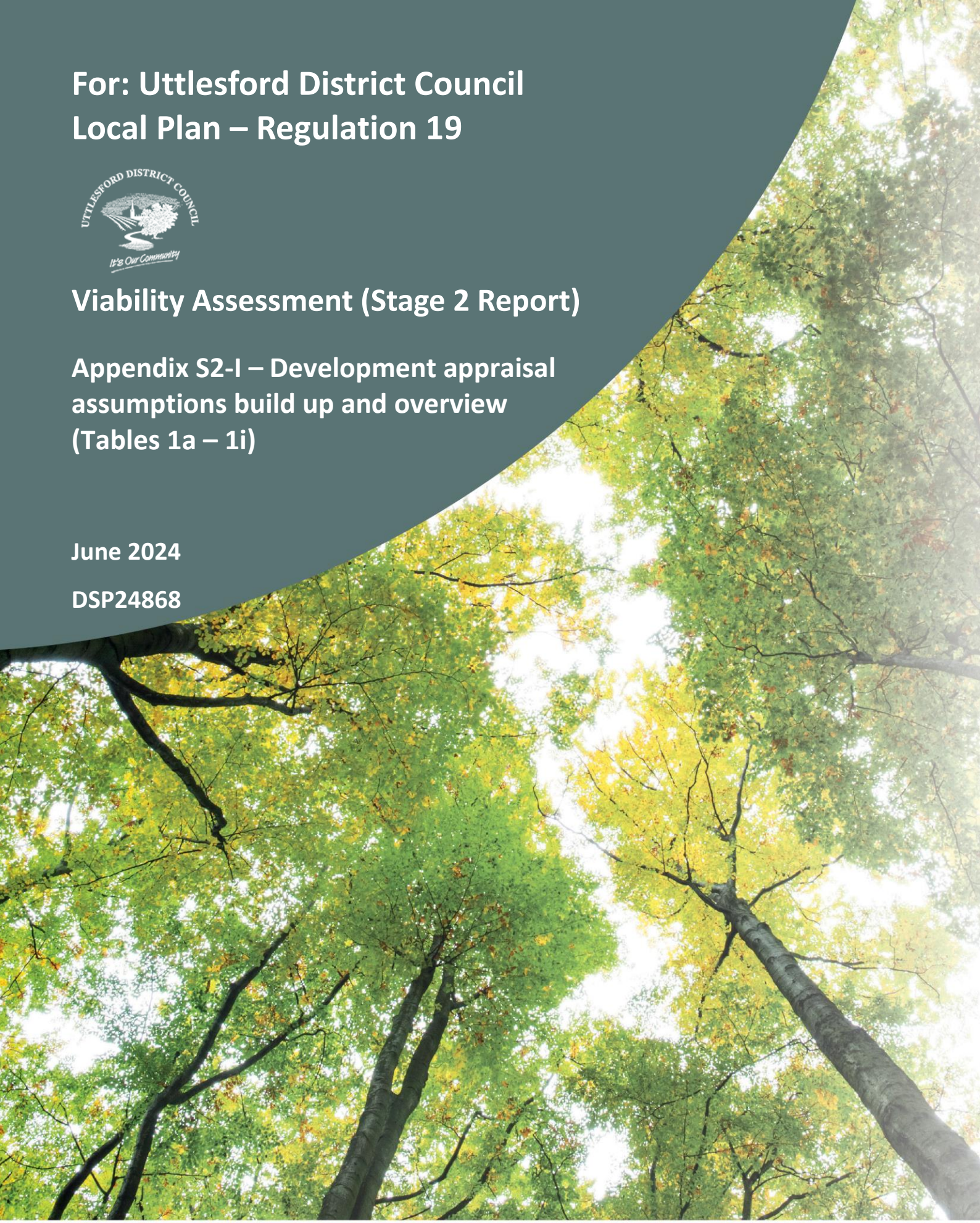
For: Uttlesford District Council
Local Plan – Regulation 19

Viability Assessment (Stage 2 Report)

Appendix S2-I – Development appraisal assumptions build up and overview (Tables 1a – 1i)

June 2024

DSP24868



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Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment
Residential Assumptions
Table S2-1a: Reviewed Site Allocation

Site Name:	**SE Saffron Walden** *SLAA Refs 001, 003, 006, 037*
Site Type:	**Greenfield**
Indicative capacity: **(approx. no. of dwellings)**	879 dwellings Assuming 5% self-build plots (44) and 5% retirement/sheltered units (44). *Note: See Tables S2-1g-1h for assumptions on sheltered housing element allowed for*
Affordable Housing %:	Tested at 30% / 35% / 40% (Tenure assuming 30% Affordable Home Ownership, 70% Social rent)
Non-residential element (where applicable):	N/A
Assumed Gross Site Area (ha):	63.2
Site works/infrastructure:	Assume £25,250/dwelling (includes BCIS All-in TPI uplift since Regulation 18 stage DSP assessment). Note: these costs relate to site works e.g. prep, servicing etc. Specific infrastructure requirements, where known, are listed below.
Indicative Residential Market Value (£/sq.m.):	VL4 £4,750 - VL7 £5,500
Housing Trajectory - timescales/phasing:	Assumes 90 dwellings per year as per UDC current information.

DSP Additional Assumptions / Comments / Site Specific Costs		
Infrastructure Category	**Detailed requirement / DSP Comments**	**Indicative Cost (£ Total)**
Education - Primary school, early years	2FE Primary School	£7,992,341
Education - Secondary school, Sixth Form	Expansion of the existing school to 12FE - provision of a new site and facilities	£4,579,427
Education - Early Years	Relocation of the early years from Saffron Walden	£1,984,696
Education - SEND & Post 16	Contribution towards SEND & Post 16 provision	£1,380,873
Flooding and drainage	Culvert repairs. Indicative cost indicates range of £600 - 800k, DSP assumes mid-point of £700k.	£700,000
Green infrastructure, open space and sports - play area	Provision of play area 0.23ha	£225,000
Green infrastructure, open space and sports - Allotments	Provision of allotments 0.42ha	£50,400
Green infrastructure, open space and sports - Amenity green space	Provision of amenity 3.38ha	£540,800
Green infrastructure, open space and sports	Improvements to existing sports hall space and swimming pool - quality and capacity. *Note: proportional amount assumed linked to total quantum on site allocations. 20% for Saffron Walden* .	£329,060
Green infrastructure, open space and sports - playing pitches	Land to accommodate circa 3 to 4 football pitches and accompanying ancillary provision (clubhouse/potential changing rooms). Plus , contributions sought for cricket, rugby union, 3G and hockey pitches.	£1,120,000
Health and Wellbeing - primary care	Additional/improved facilities / increased capacity at existing sites. See IDS for detail	£155,747
Transport and movement - walking, cycling, public transport and roads	Various minor requirements including mobility schemes, hubs, minor junction improvements - some proportionate contributions. See IDS for detail.	£1,878,000
Transport and movement - roads	Saffron Walden Estate road - Proposal of a new residential street to serve as the main access through the sites. IDS specifys a total cost of £6,400,000. Note: potential extra over cost allowance of £3,200,000 assumed within modelling on the basis some of the IDS total amount is allowed for within site works allowances.	£3,200,000
	TOTAL:	**£24,136,345**
	TOTAL per dwelling:	**£27,459**

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment
Residential Assumptions
Table S2-1b: Reviewed Site Allocation

Site Name:	**NE Great Dunmow** *SLAA Refs 009 and 017*
Site Type:	**Greenfield**
Indicative capacity: **(approx. no. of dwellings)**	884 dwellings Assuming 5% self-build plots (44) and 5% retirement/sheltered units (44). *Note: See Tables S2-1g-1h for assumptions on sheltered housing element allowed for*
Non-residential element (where applicable):	60-bed care home (assuming 0.32ha)
Affordable Housing %:	Tested at 30% / 35% / 40% (Tenure assuming 30% Affordable Home Ownership, 70% Social rent)
Assumed Gross Site Area (ha):	97.3
Site works/infrastructure:	Assume £25,250/dwelling (includes BCIS All-in TPI uplift since Regulation 18 stage DSP assessment). Note: these costs relate to site works e.g. prep, servicing etc. Specific infrastructure requirements, where known, are listed below.
Indicative Residential Market Value (£/sq.m.):	VL2 £4,250 - VL5 £5,000
Housing Trajectory - timescales/phasing:	Assumes 80 dwellings per year as per UDC current information.

DSP Additional Assumptions / Comments / Site Specific Costs		
Infrastructure Category	**Detailed requirement / DSP Comments**	**Indicative Cost (£ Total)**
Education - Primary school, early years	Provision of a new primary school with early years	£6,673,923
Education - Secondary school	Contributions to the provision of new secondary school provision at Takeley	£4,021,380
Education - Secondary school	Contributions for secondary pupil school travel from Great Dunmow to Takeley	£856,368
Education - SEND	Contributions to SEND provision	£562,993
Education - Post 16	Contributions to Post 16 education provision	£649,608
Green infrastructure, open space and sports - play area	Provision of play area 0.23ha	£225,000
Green infrastructure, open space and sports - Allotments	Provision of allotments 0.42ha	£50,400
Green infrastructure, public open space	Parkland and SANG provision	TBC - assume within overall land
Green infrastructure, open space and sports - Amenity green space	Provision of amenity 3.39ha	£542,400
Green infrastructure, open space and sports - public open space	Provision of SANGs in accordance with Natural England's SANG Guidelines	£1,820,329
Green infrastructure, open space and sports	Improvements to existing sports hall space and swimming pool - quality and capacity. *Note: proportional amount assumed linked to total quantum on site allocations. 20% for Great Dunmow*.	£329,060
Green infrastructure, open space and sports - playing pitches	Land to accommodate circa 3 to 4 football pitches and accompanying ancillary provision (clubhouse/potential changing rooms). Plus , contributions sought for cricket, rugby union, 3G and hockey pitches.	£930,000
Health and Wellbeing - primary care	Additional/improved facilities / increased capacity at existing sites. See IDS for detail	£260,317
Transport and movement - walking, cycling, public transport and roads	Various requirements including mobility schemes, hubs, minor junction improvements, crossings, cycle routes etc. See IDS for detail.	£15,242,667
	TOTAL:	**£32,164,445**
	TOTAL per dwelling:	**£36,385**

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Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment
Residential Assumptions
Table S2-1c: Reviewed Site Allocation

Site Name:	**Stansted Mountfitchet** *SLAA Refs 013, 015 and 023*
Site Type:	**Greenfield**
Indicative capacity: **(approx. no. of dwellings)**	390 dwellings Assuming 5% self-build plots (20) and 5% retirement/sheltered units (20). *Note: See Tables S2-1g-1h for assumptions on sheltered housing element allowed for*
Non-residential element (where applicable):	N/A
Affordable Housing %:	Tested at 30% / 35% / 40% (Tenure assuming 30% Affordable Home Ownership, 70% Social rent)
Assumed Gross Site Area (ha):	26
Site works/infrastructure:	Assume £25,250/dwelling (includes BCIS All-in TPI uplift since Regulation 18 stage DSP assessment). Note: these costs relate to site works e.g. prep, servicing etc. Specific infrastructure requirements, where known, are listed below.
Indicative Residential Market Value (£/sq.m.):	VL2 £4,250 - VL5 £5,000
Housing Trajectory - timescales/phasing:	Assumes 65 dwellings per year as per UDC current information.

DSP Additional Assumptions / Comments / Site Specific Costs		
Infrastructure Category	**Detailed requirement / DSP Comments**	**Indicative Cost (£ Total)**
Education - Primary school, early years	Contributions towards the provision of Primary School with early years	£3,182,388
Education - Secondary school	Expansion of the existing school to increase capacity.	£1,823,435
Education - SEND	Contributions to SEND provision	£268,457
Education - Post 16	Contributions to Post 16 education provision	£309,758
Green infrastructure, open space and sports - play area	Provision of play area 0.1ha	£150,000
Green infrastructure, open space and sports - Allotments	Provision of allotments 0.19ha	£22,800
Green infrastructure, open space and sports - Amenity green space	Provision of amenity 1.50ha	£240,000
Green infrastructure, open space and sports - public open space	Provision of SANGs in accordance with Natural England's SANG Guidelines	£968,500
Green infrastructure, open space and sports	Improvements to existing sports hall space and swimming pool - quality and capacity. *Note: proportional amount assumed linked to total quantum on site allocations. 9% for Stansted MF .*	£148,077
Green infrastructure, open space and sports - playing pitches	Improvements to local sites	£651,536
Health and Wellbeing - primary care	Additional/improved facilities / increased capacity at existing sites. See IDS for detail	£80,229
Transport and movement - walking, cycling, public transport and roads	Various requirements including mobility schemes, hubs, minor junction improvements, crossings, cycle links/routes etc. See IDS for detail.	£3,540,000
	TOTAL:	**£11,385,181**
	TOTAL per dwelling:	**£29,193**

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment
Residential Assumptions
Table St-1d: Reviewed Site Allocation

Site Name:	**Elsenham** *SLAA Refs 006*
Site Type:	**Greenfield**
Indicative capacity: **(approx. no. of dwellings)**	150 dwellings Assuming 5% self-build plots (8) and 5% retirement/sheltered units (8). *Note: See Tables S2-1g-1h for assumptions on sheltered housing element allowed for*
Non-residential element (where applicable):	N/A
Affordable Housing %:	Tested at 30% / 35% / 40% (Tenure assuming 30% Affordable Home Ownership, 70% Social rent)
Assumed Gross Site Area (ha):	8.4
Site works/infrastructure:	Assume £25,250/dwelling (includes BCIS All-in TPI uplift since Regulation 18 stage DSP assessment). Note: these costs relate to site works e.g. prep, servicing etc. Specific infrastructure requirements, where known, are listed below.
Indicative Residential Market Value (£/sq.m.):	VL3 £4,500 - VL5 £5,000
Housing Trajectory - timescales/phasing:	Assumes 50 dwellings per year as per UDC current information.

DSP Additional Assumptions / Comments / Site Specific Costs		
Infrastructure Category	**Detailed requirement / DSP Comments**	**Indicative Cost (£ Total)**
Education - Primary school, early years	Contributions towards the expansion of the existing school to increase capacity.	£1,107,953
Education - Secondary school	Contribution towards provision of a new secondary school at Takeley	£1,917,552
Education - Secondary school	Contribution for secondary pupil school travel from Elsenham to Takeley	£178,410
Education - SEND	Contributions to SEND provision	£115,053
Education - Post 16	Contributions to Post 16 education provision	£132,754
Green infrastructure, open space and sports - play area	Provision of play area 0.04ha	£150,000
Green infrastructure, open space and sports - Allotments	Provision of allotments 0.07ha	£8,400
Green infrastructure, open space and sports - Amenity green space	Provision of amenity 0.58ha	£92,800
Green infrastructure, open space and sports	Improvements to existing sports hall space and swimming pool - quality and capacity. *Note: proportional amount assumed linked to total quantum on site allocations. 3.5% for Elsenham* .	£57,586
Green infrastructure, open space and sports - playing pitches	Improvements to local sites	£250,542
Health and Wellbeing - primary care	Additional/improved facilities / increased capacity at existing sites. See IDS for detail	£13,289
Transport and movement - walking, cycling, public transport and roads	Provision of a new bus stops and shared mobility scheme contributions. See IDS for detail.	£200,000
	TOTAL:	**£4,224,339**
	TOTAL per dwelling:	**£28,162**

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Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment
Residential Assumptions
Table S2-1e: Reviewed Site Allocation

Site Name:	**Takeley** *SLAA Refs 007, 016 + Canfield 003*
Site Type:	**Greenfield**
Indicative capacity: **(approx. no. of dwellings)**	1546 dwellings Assuming 5% self-build plots (77) and 5% retirement/sheltered units (77). *Note: See Tables S2-1g-1h for assumptions on sheltered housing element allowed for*
Non-residential element (where applicable):	N/A
Affordable Housing %:	Tested at 30% / 35% / 40% (Tenure assuming 30% Affordable Home Ownership, 70% Social rent)
Assumed Gross Site Area (ha):	120
Site works/infrastructure:	Assume £25,250/dwelling (includes BCIS All-in TPI uplift since Regulation 18 stage DSP assessment). Note: these costs relate to site works e.g. prep, servicing etc. Specific infrastructure requirements, where known, are listed below.
Indicative Residential Market Value (£/sq.m.):	VL2 £4,250 - VL5 £5,000
Housing Trajectory - timescales/phasing:	Assumes 150 dwellings per year as per UDC current information.

DSP Additional Assumptions / Comments / Site Specific Costs		
Infrastructure Category	**Detailed requirement / DSP Comments**	**Indicative Cost (£ Total)**
Education - Primary school, early years	Expansion of Roseacres primary school, including early years provision providing additional capacity.	£660,450
Education - Primary school, early years	Provision of Primary School with early years provision.	£13,693,362
Education - Secondary school	8FE Secondary School with safeguarded land capable of expanding to 12FE if required.	£8,250,952
Education - SEND	Contributions to SEND provision	£1,155,133
Education - Post 16	Contributions to Post 16 education provision	£1,332,846
Green infrastructure, open space and sports - play area	Provision of play area 0.41ha	£500,000
Green infrastructure, open space and sports - Allotments	Provision of allotments 0.74ha	£88,800
Green infrastructure, open space and sports - Amenity green space	Provision of amenity 5.94ha	£950,400
Green infrastructure, open space and sports - Public Open Space	Provisions of SANG's	£1,967,695
Green infrastructure, open space and sports	Improvements to existing sports hall space and swimming pool - quality and capacity. *Note: proportional amount assumed linked to total quantum on site allocations. 35% for Takeley .*	£575,855
Green infrastructure, open space and sports - playing pitches	Land to accommodate circa 5 to 6 football pitches and accompanying ancillary provision (clubhouse/potential changing rooms).	£1,390,000
Transport and movement - walking and cycling, public transport, roads	Shared mobility scheme delivering sustainable transport interventions	£1,000,000
Transport and movement - walking and cycling	Delivery of cycle route 1.8km long requiring grade crossings of airport access roads	£5,500,000
Transport and movement - Bus	New bus service between the development site and Stansted Airport *Note: potential over allowance - contributions may also be provided by other sites.*	£2,000,000
Transport and movement - Bus	Offer free bus travel to all new residents for 12 months *Note: potential over allowance - contributions may also be provided by other sites.*	£4,300,000
Transport and movement - Railways	Offer discounted rail travel to all new residents for 12 months *Note: potential over allowance - contributions may also be provided by other sites.*	£9,900,000
Transport and movement - walking, cycling, public transport and roads	Various requirements including minor junction improvements, crossings, cycle links/routes etc. See IDS for detail.	£2,352,500
	TOTAL:	**£55,617,994**
	TOTAL per dwelling:	**£35,975**

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Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment
Residential Assumptions
Table S2-1f: Reviewed Site Allocation

Site Name:	**Thaxted**
Site Type:	**Greenfield**
Indicative capacity: **(approx. no. of dwellings)**	489 dwellings Assuming 5% self-build plots (24) and 5% retirement/sheltered units (24). *Note: See Tables S2-1g-1h assumptions on sheltered housing element allowed for*
Non-residential element (where applicable):	N/A
Affordable Housing %:	Tested at 30% / 35% / 40% (Tenure assuming 30% Affordable Home Ownership, 70% Social rent)
Assumed Gross Site Area (ha):	49.84
Site works/infrastructure:	Assume £25,250/dwelling (includes BCIS All-in TPI uplift since Regulation 18 stage DSP assessment). Note: these costs relate to site works e.g. prep, servicing etc. Specific infrastructure requirements, where known, are listed below.
Indicative Residential Market Value (£/sq.m.):	VL2 £4,250 - VL4 £4,750
Housing Trajectory - timescales/phasing:	Assumes 65 dwellings per year as per UDC current information.

DSP Additional Assumptions / Comments / Site Specific Costs		
Infrastructure Category	**Detailed requirement / DSP Comments**	**Indicative Cost (£ Total)**
Education - Primary school, early years	Provision of Primary School with early years provision.	£4,446,251
Community - Libraries	Provision of New library building and extension to existing library *Note: potential over allowance - contributions may also be provided by other sites.*	£119,766
Flooding and drainage	Thaxted trash screens. Indicative cost indicates range of £80 - 100k, DSP assumes mid-point of £90k. *Note: potential over allowance - contributions may also be provided by other sites.*	£90,000
Green infrastructure, open space and sports	Improvements to existing sports hall space and swimming pool - quality and capacity. *Note: proportional amount assumed linked to total quantum on site allocations. 11% for Thaxted .*	£180,983
Health and Wellbeing - primary care	Additional/improved facilities / increased capacity at existing sites. See IDS for detail *Note: potential over allowance - contributions may also be provided by other sites.*	£43,322
	TOTAL:	**£4,880,322**
	TOTAL per dwelling:	**£9,980**

Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment - Residential Assumptions
Table S2-1g: Reviewed Site Allocations - Housing: Dwelling mixes and revenue assumptions detail

Dwelling sizes and mix assumptions

Property Type	Assumed Unit Sizes*		Dwelling Mix (%)**		
	Market Units	Affordable Units	Market Units	Affordable Units - rented	Affordable Units - affordable home ownership
1-bed flat	50	50	5%	25%	20%
2-bed flat	61	61	10%	15%	20%
2-bed house	79	79	10%	15%	25%
3-bed house	93	93	45%	35%	25%
4-bed house	130	106	30%	10%	10%

**Based on Nationally Described Space Standard October 2015*
**Based on the LHNA (2024)*

Retirement / Sheltered Housing - bespoke dwelling size and mix assumptions

Property Type	Assumed Unit Sizes	Non-Saleable Floor Area Allowance *(net to gross ratio)*	Dwelling Mix (%)
1-bed flat (Sheltered)	55	75%	60%
2-bed flat (Sheltered)	75		40%

Note: *We see a range of different levels of communal facilities and the above assumptions represent the upper end of communal areas seen at application stage viability assessment.*

Affordable Housing Revenue Assumptions

Unit Type	Social Rent (£/dwelling)	First Homes	Shared Ownership
		% Market Value	% Market Value
1-Bed Flat	£90,000	70%	65%
2-Beds Flat	£109,800		
2-Bed House	£142,200		
3-Bed House	£167,400		
4-Bed House	£190,800		

Residential Sales Value Level (VL) Assumptions - Indicative relevance by area within District

Market Values (MV)	VL1	VL2	VL3	VL4	VL5	VL6	VL7	VL8	VL9
		Typical New Builds Values Range - district overall							
1-bed flat	£200,000	£212,500	£225,000	£237,500	£250,000	£262,500	£275,000	£287,500	£300,000
2-bed flat	£244,000	£259,250	£274,500	£289,750	£305,000	£320,250	£335,500	£350,750	£366,000
2-bed house	£316,000	£335,750	£355,500	£375,250	£395,000	£414,750	£434,500	£454,250	£474,000
3-bed house	£372,000	£395,250	£418,500	£441,750	£465,000	£488,250	£511,500	£534,750	£558,000
4-bed house	£520,000	£552,500	£585,000	£617,500	£650,000	£682,500	£715,000	£747,500	£780,000
MV (£ / sq. m.)	**£4,000**	**£4,250**	**£4,500**	**£4,750**	**£5,000**	**£5,250**	**£5,500**	**£5,750**	**£6,000**

Note: The older persons' (retirement/sheltered) housing element for each site assumes a fixed value level of £6,250/sq. m. Self-build plot sales assumed at £125,000 per plot.

Value Levels - Locations by ward area

Ward Area	Value Level Range
Ashdon	**VL4 - VL7**
Broad Oak & The Hallingburys	**VL2 - VL5**
Clavering	**VL3 - VL5**
Debden & Wimbush	**VL2 - VL3**
Elsenham & Henham	**VL3 - VL4**
Felstead & Stebbing	**VL3 - VL5**
Flitch Green & Little Dunmow	**VL1 - VL3**
Great Dunmow North	**VL1 - VL3**
Great Dunmow South & Barnston	**VL2 - VL5**
Hatfield Heath	**VL3 - VL6**
High Easter & The Rodings	**VL2 - VL5**
Littlebury, Chesterford & Wenden Lofts	**VL3 - VL5**
Newport	**VL2 - VL4**
Saffron Walden Audley	**VL4 - VL7**
Saffron Walden Castle	**VL3 - VL5**
Saffron Walden Shire	**VL5 - VL7**
Stansted North	**VL2 - VL4**
Stansted South & Birchanger	**VL3 - VL5**
Stort Valley	**VL2 - VL3**
Takeley	**VL2 - VL5**
Thaxted & The Eastons	**VL2 - VL3**
The Sampfords	**VL2 - VL5**

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Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment Stage 2
Residential Assumptions - Table S2-1h: Development Costs

Appraisal Costs / Key Sensitivity Testing Parameters Appraisal Costs

Base Appraisal Cost Description	Cost Assumption	Notes
Build cost - Mixed Developments (generally - houses/flats)	£1,555/sq. m. (LQ £1,393/sq. m.)	*Based on BCIS 'median' rebased to an Uttlesford location factor (5yr data sample), excludes external works. Lower Quartile (LQ) rates applied within larger/strategic site testing, representing economies of scale.*
Build cost - Supported housing (generally)	£1,970/sq. m.	
External Works	10% (Flats) 15% (Houses)	*Applied to base build costs* *7.5% assumed for Sheltered and Extra Care typologies.*
Site Prep Contingency (on gross land area)	See individual site detail	*Bespoke assumptions apply to specific site allocations - see Tables 1a - 1f*
Contingency (% of build cost)	3-5%	*Assumed at 3% (housebuilding) and 5% on all other works*
Professional Fees (% of build cost)	8-10%	*Assumed at 8% (housebuilding) and10% on all other works*
Infrastructure costs	See individual site detail	*See individual assumed per site assessed. Costs extracted from latest IDS version assumed to be fully developer funded.*
Sustainable design/climate change/carbon reduction (% of build cost)	5.00%	*Net zero (aligning with LETI) - total operational energy use (regulated and unregulated). Space heating demand of no more than 15-20kWh/m2/yr with a average total energy use intensity (EUI) demand of 35kWh/m2/yr assuming a 'fabric first' approach.* *Embodied carbon - no additional cost assumed beyond base cost assumed.*
Electric Vehicle Charging Points (£/unit)[1]	£865/unit (houses) £1,961 (flats)	*Houses only typologies - assumes 1x EVCP per dwelling* *Flats typologies - assumes 1x EVCP per dwelling* *Mixed (Houses/Flats) typologies - cost weighted by dwelling mix, assumes 1x EVCP per dwelling*
Water efficiency standards	90-110 litres per person per day	*Assumed nominal cost (forming part of overall cost allowance) based on DSP research and analysis.* *Areas within the identified 'White Chalk Subgroup will need to meet 90lppd requirement.*
Biodiversity Net Gain (BNG) (% of build cost)	2.86% (Greenfield) 0.59% (PDL)	Assuming 20%, variable by site type. Costs based on Impact Assessment (Scenario C)[2] plus uplift for latest information from the 10% minimum baseline.
Hatfield Forest SSSI - SAMM contributions	£1,395 per dwelling	Applied to all strategic site allocations excluding Saffron Walden only.
Essex Coast Recreational disturbance Avoidance and Mitigation Strategy (RAMS)	£156 per dwelling	Note: The Zone of Influence impacts a small proportion of the district. Where applicable, we assumed any contributions required are included in the range of s106 contributions. UDC advises could be subject to review.
M4(2) Accessible and adaptable dwellings compliance[3]	£15.5/sq. m.	
M4(3-a) Wheelchair user dwellings compliance	£115/sq. m.	All (100%) new dwellings assumed to meet at least M4(2) 10% provision of M4(3a) on market dwellings 20% provision of M4(3b) on affordable dwellings
M4(3-b) Wheelchair user dwellings compliance	£180/sq. m.	
Empty Property Costs - retirement/sheltered housing only (linked to site allocations)	£2,000/unit	
Marketing & Sales Costs (% of GDV)	3%	
Legal Fees on sale (£ per unit)	£750	
<u>Developer's Return for Risk & Profit</u>		
Open Market Housing Profit (% of GDV)	Range of 15-20%	*DSP assumed testing at mid-point of range at 17.5%. First Homes at 12%*
Affordable Housing Profit (% of GDV)	6%	
<u>Finance & Acquisition Costs</u>		
Agents Fees (% of site value)	1.50%	
Legal Fees (% of site value)	0.75%	
Stamp Duty Land Tax (% of site value)	0% to 5%	*HMRC Scale*
Finance Rate - Build (%)	6.50%	
Finance Rate - Land (%)	6.50%	

[1] *Costs adopted from the DfT Residential Charging Infrastructure Provision Impact Assessment (September 2021) and requirements as set out in the Surrey County Council's Vehicular and Cycle Parking Guidance (January 2018)*

[2] *Biodiversity Net Gain Impact Assessment - Natural England (Table 19-20)*

[3] *https://www.gov.uk/government/consultations/raising-accessibility-standards-for-new-homes/raising-accessibility-standards-for-new-homes-html-version#raising-accessibility-standards-of-new-homes*

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Uttlesford DC - Appendix S2-I: Regulation 19 Local Plan Viability Assessment Stage 2
Commercial Development Assumptions - Table S2-1i: Typologies, Value Levels/Revenue and Costs

Use Class / Type	Example Scheme Type	Gross Site Area (Ha)	Assumed Net Site Area*	Site Coverage	GIA (m²)	Build Period (Months)**	Values Range - Annual Rents £ per sq m			Build Cost (£ per sq m)***	External works cost addition (%)	Total Build Cost (£/sq m excl fees etc)	Notes:
							Low	Mid	High				
Business - Offices - Out of town centre or Business Park	Office complex	5.5	3.7	30%	11006	15	£161	£269	£377	£2,104	15%	£2,420	BCIS - Offices - 1-2 Storey; airconditioned
Business - Research & Development	R&D / Office Space	13.5	9.0	30%	27014	18	£215	£377	£538	£2,899	15%	£3,334	BCIS - Research facilities
Business - Industrial or Warehousing	Larger industrial / warehousing unit including offices - industrial estate	3	2.0	40%	8004	12	£70	£90	£110	£1,033	15%	£1,188	BCIS - Advance factories / offices - mixed facilities (E) - >2000
Distribution	Distribution Warehouse	18	12.0	50%	60030	14	£70	£90	£110	£922	15%	£1,060	BCIS - Advance warehouses/stores

Development Costs	
Sustainability Allowance / other enhancements addition contingency (% of cost)	5%
Professional & Miscellaneous Fees (% of cost)	10%
Contingencies (% of cost)	5%
Site preparation/servicing/S106	£600,000/ha
Biodiversity Net Gain (BNG) (£ per ha)	£47,885 per ha *(based on Scenario C, Table 15 of the Government's Impact Assessment - Net Gain Delivery Costs (non-residential)*
Finance Costs	
Finance rate p.a. (including over lead-in and letting / sales period)	6.5%
Sales, Lettings & Marketing Costs	
Purchaser's costs	5.75%
Marketing, letting & sales costs	3.00%
Developer Profit (% of GDV)	15%
Yields	Variable applicability - sensitivity tested across range at 3 to 8.5%
Site Acquisition Costs	
Agents Fees (% of site value)	1.50%
Legal Fees (% of site value)	0.75%
Stamp Duty (% of value - HMRC scale)	0 to 5%

* Assumed that net site area is 67% of gross - allowance for access, parking, services, landscaping etc.

**BCIS Construction Duration Calculator

***BCIS Median - Location Factor

DSP (2024)

For: Uttlesford District Council
Local Plan – Regulation 19

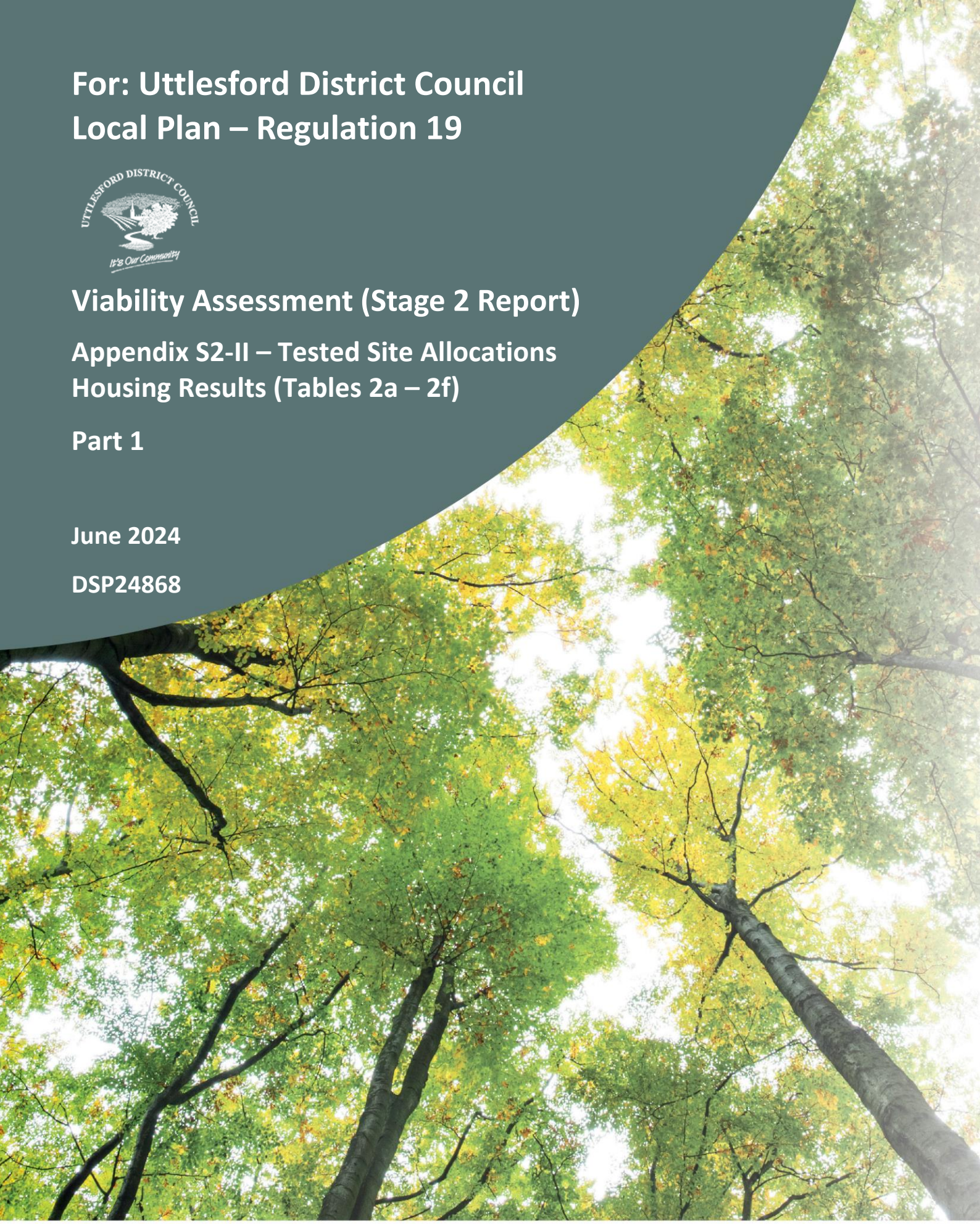
Viability Assessment (Stage 2 Report)

Appendix S2-II – Tested Site Allocations Housing Results (Tables 2a – 2f)

Part 1

June 2024

DSP24868



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Uttlesford DC - Appendix S2-II: Regulation 19 Local Plan Viability Assessment Stage 2 - Specific Site Allocation Results: Table 2a: SE Saffron Walden

Site Name/Ref	SE Saffron Walden
	879
	Mixed (houses/flats)
Typical Site Type	Greenfield
Gross Land Area (ha)	63.20
BLV at £250,000/ha i.e.	£15,800,000

Affordable Housing %	Construction: Rate/sq. m. Sensitivity Test	Surplus (£ Total) after deducting BLV at £250,000/ha									Surplus (£/dwelling)								
		VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000	VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000
30% AH	-10%	£7,360,141	£15,113,227	£22,881,626	£30,649,301	£38,393,298	£46,151,972	£53,907,731	£61,643,159	£69,395,343	£8,373	£17,194	£26,031	£34,868	£43,678	£52,505	£61,328	£70,129	£78,948
	-5%	£2,514,095	£10,288,945	£18,060,434	£25,828,851	£33,578,010	£41,340,885	£49,099,959	£56,837,664	£64,592,356	£2,860	£11,705	£20,547	£29,384	£38,200	£47,032	£55,859	£64,662	£73,484
	0% BASE TEST	**-£2,373,000**	**£5,446,763**	**£13,236,399**	**£21,007,641**	**£28,757,346**	**£36,525,338**	**£44,288,473**	**£52,029,341**	**£59,786,192**	**-£2,700**	**£6,197**	**£15,058**	**£23,899**	**£32,716**	**£41,553**	**£50,385**	**£59,192**	**£68,016**
	5%	-£7,369,672	£564,670	£8,396,991	£16,183,854	£23,936,218	£31,704,553	£39,472,667	£47,217,450	£54,977,328	-£8,384	£642	£9,553	£18,412	£27,231	£36,069	£44,906	£53,717	£62,545
	10%	-£12,852,919	-£4,375,769	£3,521,072	£27,146,446	£19,112,657	£26,883,425	£34,651,760	£42,401,376	£50,165,038	-£14,622	-£4,978	£4,006	£30,883	£21,744	£30,584	£39,422	£48,238	£57,071
35% AH	-10%	£3,082,838	£10,410,370	£17,750,781	£25,091,112	£32,410,902	£39,743,155	£47,072,357	£54,382,036	£61,706,969	£3,507	£11,843	£20,194	£28,545	£36,872	£45,214	£53,552	£61,868	£70,201
	-5%	-£1,737,261	£5,630,022	£12,975,157	£20,315,584	£27,638,306	£34,976,225	£42,309,114	£49,621,381	£56,948,719	-£1,976	£6,405	£14,761	£23,112	£31,443	£39,791	£48,133	£56,452	£64,788
	0% BASE TEST	**-£6,604,482**	**£815,692**	**£8,194,840**	**£15,539,944**	**£22,862,694**	**£30,203,103**	**£37,541,284**	**£44,857,363**	**£52,187,587**	**-£7,514**	**£928**	**£9,323**	**£17,679**	**£26,010**	**£34,361**	**£42,709**	**£51,032**	**£59,372**
	5%	-£11,822,475	-£4,034,278	£3,386,453	£10,759,658	£18,087,127	£25,427,481	£32,767,901	£40,088,750	£47,422,813	-£13,450	-£4,590	£3,853	£12,241	£20,577	£28,928	£37,279	£45,607	£53,951
	10%	-£17,901,244	-£9,102,289	-£1,457,122	£5,956,199	£13,306,842	£20,651,914	£27,992,268	£35,315,103	£42,653,809	-£20,365	-£10,355	-£1,658	£6,776	£15,139	£23,495	£31,846	£40,176	£48,525
40% AH	-10%	-£846,085	£6,069,852	£12,995,305	£19,920,670	£26,828,553	£33,748,085	£40,663,774	£47,560,185	£54,471,251	-£963	£6,905	£14,784	£22,663	£30,522	£38,394	£46,261	£54,107	£61,970
	-5%	-£5,639,541	£1,331,642	£8,264,501	£15,189,973	£22,098,724	£29,023,628	£35,943,667	£42,843,484	£49,757,108	-£6,416	£1,515	£9,402	£17,281	£25,141	£33,019	£40,892	£48,741	£56,606
	0% BASE TEST	**-£10,577,931**	**-£3,458,843**	**£3,525,951**	**£10,459,149**	**£17,367,942**	**£24,293,386**	**£31,218,704**	**£38,122,657**	**£45,039,682**	**-£12,034**	**-£3,935**	**£4,011**	**£11,899**	**£19,759**	**£27,638**	**£35,516**	**£43,370**	**£51,240**
	5%	-£16,260,541	-£8,345,470	-£1,261,371	£5,720,170	£12,637,190	£19,562,592	£26,488,050	£33,396,836	£40,318,239	-£18,499	-£9,494	-£1,435	£6,508	£14,377	£22,256	£30,134	£37,994	£45,868
	10%	-£23,071,367	-£13,794,680	-£6,115,518	£936,105	£7,897,802	£14,831,839	£21,757,241	£28,666,108	£35,591,495	-£26,247	-£15,694	-£6,957	£1,065	£8,985	£16,874	£24,752	£32,612	£40,491

Key:

Deficit outcomes - Indicative non-viable scenarios
Additional surplus outcomes - indicated viable scenarios
Indicative most relevant VLs range

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-II: Regulation 19 Local Plan Viability Assessment Stage 2 - Specific Site Allocation Results: Table 2b: NE Great Dunmow

Site Name/Ref	NE Great Dunmow
	884
	Mixed (houses/flats)
Typical Site Type	Greenfield
Gross Land Area (ha)	97.30
BLV at £250,000/ha i.e.	£24,325,000

Affordable Housing %	Construction: Rate/sq. m. Sensitivity Test	Surplus (£ Total) after deducting BLV at £250,000/ha									Surplus (£/dwelling)								
		VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000	VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000
30% AH	-10%	-£6,371,984	£1,281,322	£8,912,073	£16,536,840	£24,142,131	£31,760,187	£39,373,911	£46,966,758	£54,576,079	-£7,208	£1,449	£10,082	£18,707	£27,310	£35,928	£44,541	£53,130	£61,738
	-5%	-£11,179,203	-£3,407,985	£4,256,813	£11,886,915	£19,493,397	£27,117,108	£34,735,767	£42,331,728	£49,943,429	-£12,646	-£3,855	£4,815	£13,447	£22,051	£30,675	£39,294	£47,887	£56,497
	0% BASE TEST	**-£16,490,405**	**-£8,153,843**	**-£425,453**	**£7,232,098**	**£14,843,472**	**£22,468,240**	**£30,092,084**	**£37,692,724**	**£45,307,707**	**-£18,654**	**-£9,224**	**-£481**	**£8,181**	**£16,791**	**£25,417**	**£34,041**	**£42,639**	**£51,253**
	5%	-£22,337,029	-£13,310,592	-£5,143,698	£2,555,653	£10,189,066	£17,818,314	£25,443,082	£33,048,784	£40,667,949	-£25,268	-£15,057	-£5,819	£2,891	£11,526	£20,156	£28,782	£37,386	£46,004
	10%	-£28,857,936	-£18,937,992	-£10,134,939	£22,169,546	£5,516,234	£13,164,350	£20,793,156	£28,399,639	£36,023,761	-£32,645	-£21,423	-£11,465	£25,079	£6,240	£14,892	£23,522	£32,126	£40,751
35% AH	-10%	-£10,831,147	-£3,624,797	£3,537,409	£10,690,000	£17,825,433	£24,973,521	£32,117,079	£39,240,213	£46,378,261	-£12,252	-£4,100	£4,002	£12,093	£20,165	£28,251	£36,332	£44,389	£52,464
	-5%	-£15,933,394	-£8,302,540	-£1,091,181	£6,070,751	£13,206,191	£20,358,777	£27,507,614	£34,634,644	£41,775,581	-£18,024	-£9,392	-£1,234	£6,867	£14,939	£23,030	£31,117	£39,179	£47,257
	0% BASE TEST	**-£21,621,220**	**-£13,265,601**	**-£5,764,290**	**£1,442,221**	**£8,586,942**	**£15,739,534**	**£22,892,121**	**£30,024,569**	**£37,169,256**	**-£24,458**	**-£15,006**	**-£6,521**	**£1,631**	**£9,714**	**£17,805**	**£25,896**	**£33,964**	**£42,047**
	5%	-£27,974,573	-£18,773,872	-£10,613,396	-£3,227,167	£3,958,355	£11,120,285	£18,272,878	£25,408,313	£32,558,663	-£31,645	-£21,237	-£12,006	-£3,651	£4,478	£12,580	£20,671	£28,742	£36,831
	10%	-£35,103,739	-£24,749,827	-£15,977,837	-£7,996,284	-£707,361	£6,491,694	£13,653,622	£20,789,068	£27,941,657	-£39,710	-£27,998	-£18,074	-£9,046	-£800	£7,344	£15,445	£23,517	£31,608
40% AH	-10%	-£15,023,119	-£8,085,092	-£1,321,877	£5,420,905	£12,147,513	£18,887,702	£25,622,403	£32,337,335	£39,066,237	-£16,994	-£9,146	-£1,495	£6,132	£13,742	£21,366	£28,985	£36,581	£44,193
	-5%	-£20,483,379	-£12,813,040	-£5,917,910	£844,311	£7,570,925	£14,313,703	£21,054,878	£27,774,060	£34,506,041	-£23,171	-£14,494	-£6,694	£955	£8,564	£16,192	£23,818	£31,419	£39,034
	0% BASE TEST	**-£26,597,763**	**-£18,119,430**	**-£10,602,281**	**-£3,750,721**	**£2,994,329**	**£9,737,115**	**£16,479,893**	**£23,205,365**	**£29,941,866**	**-£30,088**	**-£20,497**	**-£11,994**	**-£4,243**	**£3,387**	**£11,015**	**£18,642**	**£26,250**	**£33,871**
	5%	-£33,562,532	-£23,952,745	-£15,775,225	-£8,409,486	-£1,599,838	£5,160,406	£11,903,303	£18,629,913	£25,372,012	-£37,967	-£27,096	-£17,845	-£9,513	-£1,810	£5,838	£13,465	£21,075	£28,701
	10%	-£40,873,864	-£30,650,419	-£21,507,238	-£13,490,360	-£6,245,936	£566,825	£7,326,266	£14,053,322	£20,796,103	-£46,237	-£34,672	-£24,329	-£15,261	-£7,066	£641	£8,288	£15,897	£23,525

Key:

Deficit outcomes - Indicative non-viable scenarios
Additional surplus outcomes - indicated viable scenarios
Indicative most relevant VLs range

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-II: Regulation 19 Local Plan Viability Assessment Stage 2 - Specific Site Allocation Results: Table 2c: Stansted Mountfitchet

Site Name/Ref	Stansted Mountfitchet
	390
	Mixed (houses/flats)
Typical Site Type	Greenfield
Gross Land Area (ha)	26.00
BLV at £250,000/ha i.e.	£6,500,000

Affordable Housing %	Construction: Rate/sq. m. Sensitivity Test	Surplus (£ Total) after deducting BLV at £250,000/ha									Surplus (£/dwelling)								
		VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000	VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000
30% AH	-10%	£4,154,788	£7,950,744	£11,751,665	£15,547,549	£19,332,163	£23,124,735	£26,915,758	£30,697,682	£34,487,541	£10,653	£20,387	£30,132	£39,866	£49,570	£59,294	£69,015	£78,712	£88,430
	-5%	£1,757,430	£5,553,323	£9,358,253	£13,157,936	£16,944,494	£20,738,110	£24,530,682	£28,312,647	£32,103,660	£4,506	£14,239	£23,996	£33,738	£43,447	£53,175	£62,899	£72,597	£82,317
	0% BASE TEST	-£680,996	£3,155,945	£6,960,992	£10,765,334	£14,555,102	£18,350,538	£22,144,056	£25,927,534	£29,718,627	-£1,746	£8,092	£17,849	£27,603	£37,321	£47,053	£56,780	£66,481	£76,202
	5%	-£3,306,507	£744,776	£4,563,643	£8,368,663	£12,163,300	£15,961,372	£19,756,582	£23,540,909	£27,333,480	-£8,478	£1,910	£11,702	£21,458	£31,188	£40,927	£50,658	£60,361	£70,086
	10%	-£5,987,353	-£1,810,446	£2,165,245	£12,471,310	£9,767,208	£13,569,919	£17,367,643	£21,153,527	£24,946,855	-£15,352	-£4,642	£5,552	£31,978	£25,044	£34,795	£44,532	£54,240	£63,966
35% AH	-10%	£2,092,276	£5,663,574	£9,242,775	£12,816,406	£16,378,167	£19,946,516	£23,513,879	£27,071,876	£30,637,942	£5,365	£14,522	£23,699	£32,863	£41,995	£51,145	£60,292	£69,415	£78,559
	-5%	-£299,084	£3,287,880	£6,867,744	£10,446,487	£14,010,988	£17,581,185	£21,149,515	£24,708,423	£28,274,973	-£767	£8,430	£17,610	£26,786	£35,926	£45,080	£54,230	£63,355	£72,500
	0% BASE TEST	-£2,851,513	£908,509	£4,492,050	£8,071,913	£11,641,300	£15,214,136	£18,784,202	£22,343,958	£25,911,521	-£7,312	£2,330	£11,518	£20,697	£29,849	£39,011	£48,165	£57,292	£66,440
	5%	-£5,495,540	-£1,578,457	£2,116,227	£5,696,178	£9,267,497	£12,844,683	£16,417,286	£19,978,658	£23,546,957	-£14,091	-£4,047	£5,426	£14,606	£23,763	£32,935	£42,096	£51,227	£60,377
	10%	-£8,408,203	-£4,211,134	-£314,943	£3,320,507	£6,891,761	£10,471,666	£14,048,067	£17,611,870	£21,181,677	-£21,559	-£10,798	-£808	£8,514	£17,671	£26,850	£36,021	£45,159	£54,312
40% AH	-10%	£39,984	£3,402,805	£6,768,014	£10,131,561	£13,481,713	£16,837,077	£20,191,075	£23,535,788	£26,888,383	£103	£8,725	£17,354	£25,978	£34,568	£43,172	£51,772	£60,348	£68,945
	-5%	-£2,430,400	£1,048,924	£4,415,447	£7,780,646	£11,135,618	£14,493,662	£17,849,082	£21,195,035	£24,547,949	-£6,232	£2,690	£11,322	£19,950	£28,553	£37,163	£45,767	£54,346	£62,943
	0% BASE TEST	-£5,038,186	-£1,373,429	£2,062,917	£5,428,087	£8,785,207	£12,147,732	£15,505,610	£18,853,045	£22,207,041	-£12,918	-£3,522	£5,290	£13,918	£22,526	£31,148	£39,758	£48,341	£56,941
	5%	-£7,846,543	-£3,969,953	-£326,860	£3,075,514	£6,432,646	£9,797,839	£13,159,847	£16,509,511	£19,865,051	-£20,119	-£10,179	-£838	£7,886	£16,494	£25,123	£33,743	£42,332	£50,936
	10%	-£10,989,707	-£6,633,512	-£2,894,843	£702,347	£4,080,098	£7,445,275	£10,810,470	£14,163,904	£17,521,461	-£28,179	-£17,009	-£7,423	£1,801	£10,462	£19,090	£27,719	£36,318	£44,927

Key:

Deficit outcomes - Indicative non-viable scenarios
Additional surplus outcomes - indicated viable scenarios
Indicative most relevant VLs range

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-II: Regulation 19 Local Plan Viability Assessment Stage 2 - Specific Site Allocation Results: Table 2d: Elsenham

Site Name/Ref	Elsenham
	150
	Mixed (houses/flats)
Typical Site Type	Greenfield
Gross Land Area (ha)	8.40
BLV at £250,000/ha i.e.	£2,100,000

Affordable Housing %	Construction: Rate/sq. m. Sensitivity Test	Surplus (£ Total) after deducting BLV at £250,000/ha									Surplus (£/dwelling)								
		VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000	VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000
30% AH	-10%	£2,382,499	£3,954,236	£5,529,544	£7,104,407	£8,675,260	£10,249,912	£11,824,563	£13,395,437	£14,969,968	£15,883	£26,362	£36,864	£47,363	£57,835	£68,333	£78,830	£89,303	£99,800
	-5%	£1,376,366	£2,948,687	£4,523,993	£6,099,291	£7,670,180	£9,244,810	£10,819,461	£12,390,335	£13,964,986	£9,176	£19,658	£30,160	£40,662	£51,135	£61,632	£72,130	£82,602	£93,100
	0% BASE TEST	£369,624	£1,942,685	£3,518,441	£5,093,749	£6,665,058	£8,239,707	£9,814,359	£11,385,233	£12,959,884	£2,464	£12,951	£23,456	£33,958	£44,434	£54,931	£65,429	£75,902	£86,399
	5%	-£637,239	£936,413	£2,512,785	£4,088,197	£5,659,727	£7,234,606	£8,809,257	£10,380,132	£11,954,782	-£4,248	£6,243	£16,752	£27,255	£37,732	£48,231	£58,728	£69,201	£79,699
	10%	-£1,649,231	-£70,450	£1,506,651	£5,182,648	£4,654,176	£6,229,483	£7,804,154	£9,375,030	£10,949,680	-£10,995	-£470	£10,044	£34,551	£31,028	£41,530	£52,028	£62,500	£72,998
35% AH	-10%	£1,330,011	£2,795,893	£4,264,304	£5,732,401	£7,196,692	£8,664,159	£10,131,625	£11,595,551	£13,063,017	£8,867	£18,639	£28,429	£38,216	£47,978	£57,761	£67,544	£77,304	£87,087
	-5%	£332,572	£1,799,176	£3,268,161	£4,736,262	£6,200,840	£7,668,465	£9,135,932	£10,599,857	£12,067,324	£2,217	£11,995	£21,788	£31,575	£41,339	£51,123	£60,906	£70,666	£80,449
	0% BASE TEST	-£665,097	£801,737	£2,271,445	£3,740,126	£5,204,701	£6,672,751	£8,140,238	£9,604,163	£11,071,630	-£4,434	£5,345	£15,143	£24,934	£34,698	£44,485	£54,268	£64,028	£73,811
	5%	-£1,669,675	-£195,702	£1,274,428	£2,743,713	£4,208,563	£5,676,660	£7,144,523	£8,608,492	£10,075,937	-£11,131	-£1,305	£8,496	£18,291	£28,057	£37,844	£47,630	£57,390	£67,173
	10%	-£2,767,487	-£1,196,258	£276,989	£1,746,997	£3,212,428	£4,680,523	£6,148,620	£7,612,776	£9,080,242	-£18,450	-£7,975	£1,847	£11,647	£21,416	£31,203	£40,991	£50,752	£60,535
40% AH	-10%	£603,397	£1,990,054	£3,379,403	£4,767,865	£6,152,613	£7,540,573	£8,928,053	£10,312,206	£11,699,685	£4,023	£13,267	£22,529	£31,786	£41,017	£50,270	£59,520	£68,748	£77,998
	-5%	-£384,053	£1,002,722	£2,392,712	£3,781,699	£5,166,568	£6,554,645	£7,942,449	£9,326,601	£10,714,081	-£2,560	£6,685	£15,951	£25,211	£34,444	£43,698	£52,950	£62,177	£71,427
	0% BASE TEST	-£1,377,919	£15,390	£1,405,380	£2,795,083	£4,180,525	£5,568,600	£6,956,677	£8,340,997	£9,728,477	-£9,186	£103	£9,369	£18,634	£27,870	£37,124	£46,378	£55,607	£64,857
	5%	-£2,420,220	-£975,169	£418,048	£1,808,038	£3,194,048	£4,582,555	£5,970,633	£7,355,391	£8,742,873	-£16,135	-£6,501	£2,787	£12,054	£21,294	£30,550	£39,804	£49,036	£58,286
	10%	-£3,611,795	-£1,976,560	-£570,137	£820,707	£2,207,363	£3,596,344	£4,984,588	£6,369,336	£7,757,269	-£24,079	-£13,177	-£3,801	£5,471	£14,716	£23,976	£33,231	£42,462	£51,715

Key:

Deficit outcomes - Indicative non-viable scenarios
Additional surplus outcomes - indicated viable scenarios
Indicative most relevant VLs range

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-II: Regulation 19 Local Plan Viability Assessment Stage 2 - Site Allocation Results: Table 2e: N Takeley

Site Name/Ref	N Takeley
	1546
	Mixed (houses/flats)
Typical Site Type	Greenfield
Gross Land Area (ha)	120.00
BLV at £250,000/ha i.e.	£30,000,000

Affordable Housing %	Construction: Rate/sq. m. Sensitivity Test	Surplus (£ Total) after deducting BLV									Surplus (£/dwelling)								
		VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000	VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000
30% AH	-10%	£2,308,823	£15,949,337	£29,572,666	£43,172,449	£56,717,972	£70,284,206	£83,842,797	£97,364,122	£110,914,345	£1,493	£10,317	£19,129	£27,925	£36,687	£45,462	£54,232	£62,978	£71,743
	-5%	-£6,339,340	£7,549,466	£21,195,625	£34,817,916	£48,383,587	£61,961,699	£75,528,821	£89,055,689	£102,610,545	-£4,100	£4,883	£13,710	£22,521	£31,296	£40,079	£48,854	£57,604	£66,372
	0% BASE TEST	**-£15,762,962**	**-£1,011,627**	**£12,807,911**	**£26,441,913**	**£40,030,596**	**£53,627,307**	**£67,205,425**	**£80,740,580**	**£94,300,972**	**-£10,196**	**-£654**	**£8,285**	**£17,103**	**£25,893**	**£34,688**	**£43,471**	**£52,225**	**£60,997**
	5%	-£26,157,156	-£10,126,986	£4,303,403	£18,059,954	£31,655,532	£45,275,853	£58,871,028	£72,416,603	£85,984,640	-£16,919	-£6,550	£2,784	£11,682	£20,476	£29,286	£38,080	£46,841	£55,617
	10%	-£37,568,655	-£20,221,001	-£4,580,186	£39,578,851	£23,276,650	£36,901,820	£50,520,430	£64,082,166	£77,660,329	-£24,301	-£13,080	-£2,963	£25,601	£15,056	£23,869	£32,678	£41,450	£50,233
35% AH	-10%	-£5,523,803	£7,359,243	£20,143,582	£32,919,827	£45,637,971	£58,371,373	£71,096,813	£83,786,068	£96,501,610	-£3,573	£4,760	£13,029	£21,294	£29,520	£37,756	£45,988	£54,195	£62,420
	-5%	-£14,541,180	-£1,035,145	£11,843,915	£24,628,266	£37,373,088	£50,122,187	£62,856,703	£75,552,660	£88,273,441	-£9,406	-£670	£7,661	£15,930	£24,174	£32,421	£40,658	£48,870	£57,098
	0% BASE TEST	**-£24,674,938**	**-£9,837,779**	**£3,469,409**	**£16,328,588**	**£29,082,137**	**£41,856,943**	**£54,606,403**	**£67,311,505**	**£80,038,834**	**-£15,961**	**-£6,363**	**£2,244**	**£10,562**	**£18,811**	**£27,074**	**£35,321**	**£43,539**	**£51,772**
	5%	-£35,723,189	-£19,666,173	-£5,189,377	£7,973,641	£20,782,602	£33,566,809	£46,340,797	£59,060,061	£71,796,834	-£23,107	-£12,721	-£3,357	£5,158	£13,443	£21,712	£29,975	£38,202	£46,440
	10%	-£48,181,216	-£30,095,202	-£14,680,755	-£580,696	£12,446,669	£25,267,275	£38,051,480	£50,794,058	£63,544,277	-£31,165	-£19,466	-£9,496	-£376	£8,051	£16,344	£24,613	£32,855	£41,102
40% AH	-10%	-£12,925,898	-£553,257	£11,501,501	£23,544,146	£35,532,726	£47,529,932	£59,517,534	£71,469,979	£83,447,637	-£8,361	-£358	£7,440	£15,229	£22,984	£30,744	£38,498	£46,229	£53,976
	-5%	-£22,659,779	-£9,045,389	£3,279,161	£15,324,231	£27,338,001	£39,356,707	£51,355,489	£63,315,578	£75,298,437	-£14,657	-£5,851	£2,121	£9,912	£17,683	£25,457	£33,218	£40,954	£48,705
	0% BASE TEST	**-£33,301,687**	**-£18,467,164**	**-£5,148,806**	**£7,103,670**	**£19,118,082**	**£31,160,710**	**£43,180,411**	**£55,152,292**	**£67,142,165**	**-£21,541**	**-£11,945**	**-£3,330**	**£4,595**	**£12,366**	**£20,156**	**£27,930**	**£35,674**	**£43,430**
	5%	-£45,468,955	-£28,742,044	-£14,303,465	-£1,275,761	£10,897,775	£22,940,812	£34,983,420	£46,975,039	£58,977,003	-£29,411	-£18,591	-£9,252	-£825	£7,049	£14,839	£22,628	£30,385	£38,148
	10%	-£58,237,525	-£40,383,046	-£24,467,741	-£10,245,225	£2,547,734	£14,720,517	£26,763,542	£38,777,093	£50,798,470	-£37,670	-£26,121	-£15,826	-£6,627	£1,648	£9,522	£17,311	£25,082	£32,858

Key:

Deficit outcomes - Indicative non-viable scenarios
Additional surplus outcomes - indicated viable scenarios
Indicative most relevant VLs range

Dixon Searle Partnership (2024)

Uttlesford DC - Appendix S2-II: Regulation 19 Local Plan Viability Assessment Stage 2 - Site Allocation Results: Table 2f: Thaxted

Site Name/Ref	Thaxted
	489
	Mixed (houses/flats)
Typical Site Type	Greenfield
Gross Land Area (ha)	49.84
BLV at £250,000/ha i.e.	£12,460,000

Affordable Housing %	Construction: Rate/sq. m. Sensitivity Test	Surplus (£ Total) after deducting BLV									Surplus (£/dwelling)								
		VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000	VL1 £4,000	VL2 £4,250	VL3 £4,500	VL4 £4,750	VL5 £5,000	VL6 £5,250	VL7 £5,500	VL8 £5,750	VL9 £6,000
30% AH	-10%	£6,216,691	£10,815,151	£15,423,958	£20,032,778	£24,629,632	£29,237,534	£33,845,435	£38,442,286	£43,050,082	£12,713	£22,117	£31,542	£40,967	£50,367	£59,790	£69,214	£78,614	£88,037
	-5%	£3,344,389	£7,943,760	£12,553,659	£17,162,465	£21,760,228	£26,368,647	£30,976,548	£35,573,399	£40,181,300	£6,839	£16,245	£25,672	£35,097	£44,499	£53,924	£63,347	£72,747	£82,170
	0% BASE TEST	£470,331	£5,071,204	£9,681,886	£14,291,883	£18,889,924	£23,498,730	£28,107,487	£32,704,512	£37,312,414	£962	£10,371	£19,799	£29,227	£38,630	£48,055	£57,480	£66,880	£76,304
	5%	-£2,406,045	£2,197,020	£6,809,078	£11,420,011	£16,018,951	£20,628,433	£25,237,239	£29,834,936	£34,443,527	-£4,920	£4,493	£13,924	£23,354	£32,759	£42,185	£51,610	£61,012	£70,437
	10%	-£5,286,021	-£679,357	£3,934,771	£21,006,953	£13,147,081	£17,757,075	£22,366,881	£26,964,696	£31,573,437	-£10,810	-£1,389	£8,047	£42,959	£26,886	£36,313	£45,740	£55,143	£64,567
35% AH	-10%	£3,504,596	£7,810,797	£12,127,206	£16,443,064	£20,748,226	£25,063,783	£29,379,341	£33,684,337	£37,999,316	£7,167	£15,973	£24,800	£33,626	£42,430	£51,255	£60,080	£68,884	£77,708
	-5%	£659,409	£4,966,680	£9,283,683	£13,600,086	£17,906,152	£22,221,664	£26,537,222	£30,842,431	£35,157,988	£1,348	£10,157	£18,985	£27,812	£36,618	£45,443	£54,268	£63,072	£71,898
	0% BASE TEST	-£2,187,747	£2,121,166	£6,439,120	£10,756,568	£15,062,621	£19,379,031	£23,695,103	£28,000,312	£32,315,870	-£4,474	£4,338	£13,168	£21,997	£30,803	£39,630	£48,456	£57,260	£66,086
	5%	-£5,037,442	-£726,208	£3,593,279	£7,911,562	£12,218,724	£16,535,509	£20,851,912	£25,157,975	£29,473,751	-£10,302	-£1,485	£7,348	£16,179	£24,987	£33,815	£42,642	£51,448	£60,274
	10%	-£7,892,080	-£3,576,012	£745,693	£5,065,393	£9,373,649	£13,691,163	£18,008,395	£22,314,447	£26,630,854	-£16,139	-£7,313	£1,525	£10,359	£19,169	£27,998	£36,827	£45,633	£54,460
40% AH	-10%	£1,090,056	£5,152,003	£9,222,906	£13,293,808	£17,354,960	£21,425,372	£25,495,696	£29,556,258	£33,626,581	£2,229	£10,536	£18,861	£27,186	£35,491	£43,815	£52,138	£60,442	£68,766
	-5%	-£1,727,562	£2,335,162	£6,406,886	£10,478,347	£14,539,487	£18,610,392	£22,681,245	£26,742,040	£30,812,363	-£3,533	£4,775	£13,102	£21,428	£29,733	£38,058	£46,383	£54,687	£63,011
	0% BASE TEST	-£4,547,047	-£482,925	£3,589,875	£7,661,759	£11,723,722	£15,794,931	£19,865,832	£23,926,917	£27,997,814	-£9,299	-£988	£7,341	£15,668	£23,975	£32,300	£40,625	£48,930	£57,255
	5%	-£7,369,799	-£3,302,991	£771,329	£4,844,279	£8,906,866	£12,978,590	£17,050,325	£21,111,453	£25,182,351	-£15,071	-£6,755	£1,577	£9,907	£18,214	£26,541	£34,868	£43,173	£51,498
	10%	-£10,216,880	-£6,126,046	-£2,049,211	£2,025,373	£6,088,919	£10,161,723	£14,233,464	£18,295,426	£22,366,887	-£20,893	-£12,528	-£4,191	£4,142	£12,452	£20,781	£29,107	£37,414	£45,740

Key:

Deficit outcomes - Indicative non-viable scenarios
Additional surplus outcomes - indicated viable scenarios
Indicative most relevant VLs range

Dixon Searle Partnership (2024)

For: Uttlesford District Council
Local Plan – Regulation 19

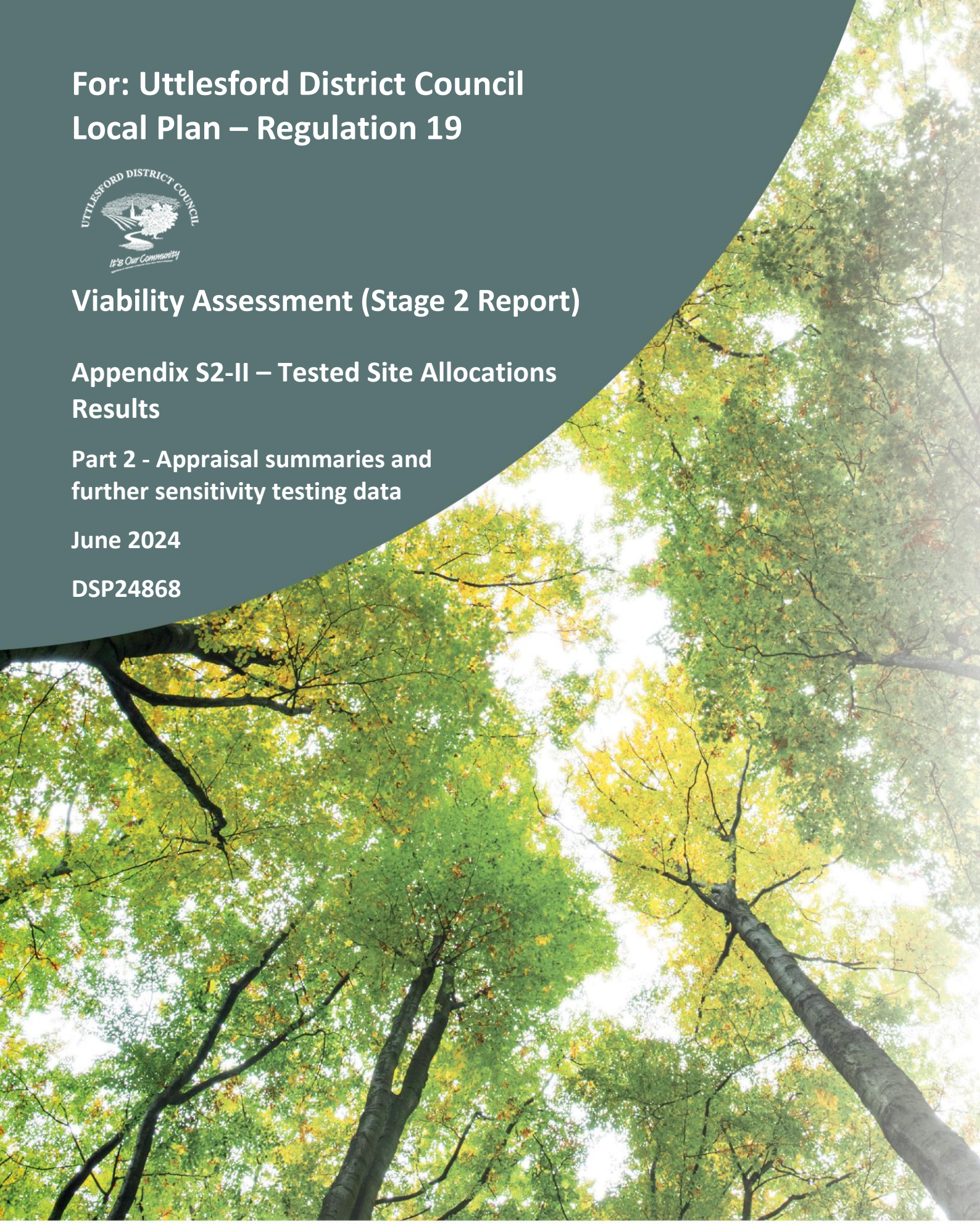
Viability Assessment (Stage 2 Report)

Appendix S2-II – Tested Site Allocations Results

Part 2 - Appraisal summaries and further sensitivity testing data

June 2024

DSP24868



Dixon Searle Partnership
Ash House, Tanshire Park,
Shackleford Road, Elstead, Surrey, GU8 6LB
www.dixonsearle.co.uk

SE Saffron Walden
Uttlesford District Council

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879 dwellings
30% Affordable Housing
Value Level - VL6 @ £5,250/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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SE Saffron Walden
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	554	53,959.60	5,250.00	511,350	283,287,900	0	283,287,900
AH - SR	166	12,732.20	1,700.00	130,390	21,644,740	0	21,644,740
AH - FH	59	4,661.00	3,675.00	290,325	17,129,175	0	17,129,175
AH - SO	12	909.60	3,412.50	258,668	3,104,010	0	3,104,010
Market Sheltered	31	1,953.00	6,250.00	393,750	12,206,250	0	12,206,250
AH Sheltered SR	8	536.00	1,700.00	113,900	911,200	0	911,200
AH Sheltered SO	5	335.00	3,900.00	261,300	1,306,500	0	1,306,500
5% Self-build plots	44	0.00	0.00	125,000	5,500,000	0	5,500,000
Totals	**879**	**75,086.40**			**345,089,775**	**0**	**345,089,775**

NET REALISATION		**345,089,775**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (63.20 Ha @ 827,932.57 /Hect)	52,325,338	
		52,325,338
Stamp Duty	2,607,267	
Effective Stamp Duty Rate	4.98%	
Agent Fee	1.50%	784,880
Legal Fee	0.75%	392,440
		3,784,587

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	54,624.40	1,393.00	76,091,789	
AH - SR	13,263.40	1,393.00	18,475,916	
AH - FH	4,661.00	1,393.00	6,492,773	
AH - SO	949.20	1,393.00	1,322,236	
Market Sheltered	2,442.80	1,970.00	4,812,316	
AH Sheltered SR	670.40	1,970.00	1,320,688	
AH Sheltered SO	419.00	1,970.00	825,430	
Totals	**77,030.20 m²**		**109,341,148**	
Contingency - housebuilding		3.00%	3,755,569	
Contingency - all other works		5.00%	1,667,611	
Site Works & Infrastructure 50%	879.00 un	12,625.00 /un	11,097,375	
Site Works & Infrastructure 50%	879.00 un	12,625.00 /un	11,097,375	
				136,959,079
Other Construction				
Externals		15.00%	15,357,407	
Externals SHELTERED		7.00%	487,090	
Climate change response %		5.00%	5,467,057	
Electric Vehicle Charging (Market)	585.00 un	1,029.00 /un	601,965	
Electric Vehicle Charging (AH)	250.00 un	1,303.00 /un	325,750	
M4(2) 100%	77,030.20 m²	15.50	1,193,968	
M4(3a) 10% Market dwellings	554.00 un	1,134.00 /un	628,236	
M4(3a) 10% Market SHELTERED	31.00 un	897.00 /un	27,807	
M4(3b) 20% AH	237.00 un	2,844.00 /un	674,028	
M4(3b) 20% AH SHELTERED	13.00 un	3,017.00 /un	39,221	
BNG		2.86%	3,127,157	
Empty Property Costs (Sheltered)	44.00 un	2,000.00 /un	88,000	
				28,017,687
Section 106 Costs				
2FE PS			7,992,341	
Secondary School Expansion			4,579,427	
Early Years			1,984,696	
SEND FC & Post-16			1,380,873	
Flooding / Drainage			700,000	
GI/POS play area			225,000	
GI/POS allotments			50,400	
GI/POS amenity			540,800	
GI/POS Sports/swimming contribution			329,060	
GI/POS football pitches/ancillary			1,120,000	
Health - additions / improvements			155,747	
T Mobility scheme / various			1,878,000	
Transport - SW estate road			3,200,000	
				24,136,344
PROFESSIONAL FEES				
Professional Fees		8.00%	12,683,030	
				12,683,030
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	10,352,693	
Sales Legal Fee	879.00 un	750.00 /un	659,250	
				11,011,943
MISCELLANEOUS FEES				
AH Profit		6.00%	1,617,987	
Market Profit		17.50%	51,711,476	
First Homes		12.00%	2,055,501	
				55,384,964
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			20,289,316	
Construction			497,483	
Total Finance Cost				20,786,799
TOTAL COSTS				**345,089,770**
PROFIT				
				5

SE Saffron Walden
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£23,160,141)	(£30,913,227)	(£38,681,626)	(£46,449,301)	(£54,193,298)	(£61,951,972)	(£69,707,731)	(£77,443,159)	(£85,195,343)
1,253.70 /m²	(£23,160,141)	(£30,913,227)	(£38,681,626)	(£46,449,301)	(£54,193,298)	(£61,951,972)	(£69,707,731)	(£77,443,159)	(£85,195,343)
-5.000%	(£18,314,095)	(£26,088,945)	(£33,860,434)	(£41,628,851)	(£49,378,010)	(£57,140,885)	(£64,899,959)	(£72,637,664)	(£80,392,356)
1,323.35 /m²	(£18,314,095)	(£26,088,945)	(£33,860,434)	(£41,628,851)	(£49,378,010)	(£57,140,885)	(£64,899,959)	(£72,637,664)	(£80,392,356)
0.000%	(£13,427,000)	(£21,246,763)	(£29,036,399)	(£36,807,641)	(£44,557,346)	(£52,325,338)	(£60,088,473)	(£67,829,341)	(£75,586,192)
1,393.00 /m²	(£13,427,000)	(£21,246,763)	(£29,036,399)	(£36,807,641)	(£44,557,346)	(£52,325,338)	(£60,088,473)	(£67,829,341)	(£75,586,192)
+5.000%	(£8,430,328)	(£16,364,670)	(£24,196,991)	(£31,983,854)	(£39,736,218)	(£47,504,553)	(£55,272,667)	(£63,017,450)	(£70,777,328)
1,462.65 /m²	(£8,430,328)	(£16,364,670)	(£24,196,991)	(£31,983,854)	(£39,736,218)	(£47,504,553)	(£55,272,667)	(£63,017,450)	(£70,777,328)
+10.000%	(£2,947,081)	(£11,424,231)	(£19,321,072)	(£27,146,446)	(£34,912,657)	(£42,683,425)	(£50,451,760)	(£58,201,376)	(£65,965,038)
1,532.30 /m²	(£2,947,081)	(£11,424,231)	(£19,321,072)	(£27,146,446)	(£34,912,657)	(£42,683,425)	(£50,451,760)	(£58,201,376)	(£65,965,038)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

SE Saffron Walden
Uttlesford District Council

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879 dwellings
35% Affordable Housing
Value Level - VL6 @ £5,250/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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SE Saffron Walden
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	514	50,063.60	5,250.00	511,350	262,833,900	0	262,833,900
AH - SR	194	14,879.80	1,700.00	130,390	25,295,660	0	25,295,660
AH - FH	69	5,451.00	3,675.00	290,325	20,032,425	0	20,032,425
AH - SO	14	1,061.20	3,412.50	258,668	3,621,345	0	3,621,345
Market Sheltered	28	1,764.00	6,250.00	393,750	11,025,000	0	11,025,000
AH Sheltered SR	11	737.00	1,700.00	113,900	1,252,900	0	1,252,900
AH Sheltered SO	5	335.00	3,900.00	261,300	1,306,500	0	1,306,500
5% Self-build plots	44	0.00	0.00	125,000	5,500,000	0	5,500,000
Totals	**879**	**74,291.60**			**330,867,730**	**0**	**330,867,730**

NET REALISATION		**330,867,730**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (63.20 Ha @ 727,897.20 /Hect)	46,003,103	
		46,003,103
Stamp Duty	2,291,155	
Effective Stamp Duty Rate	4.98%	
Agent Fee	1.50% 690,047	
Legal Fee	0.75% 345,023	
		3,326,225

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	50,680.40	1,393.00	70,597,797	
AH - SR	15,500.60	1,393.00	21,592,336	
AH - FH	5,451.00	1,393.00	7,593,243	
AH - SO	1,107.40	1,393.00	1,542,608	
Market Sheltered	2,206.40	1,970.00	4,346,608	
AH Sheltered SR	921.80	1,970.00	1,815,946	
AH Sheltered SO	419.00	1,970.00	825,430	
Totals	**76,286.60 m²**		**108,313,968**	
Contingency - housebuilding		3.00%	3,720,061	
Contingency - all other works		5.00%	1,666,736	
Site Works & Infrastructure 50%	879.00 un	12,625.00 /un	11,097,375	
Site Works & Infrastructure 50%	879.00 un	12,625.00 /un	11,097,375	
				135,895,515
Other Construction				
Externals		15.00%	15,198,898	
Externals SHELTERED		7.00%	489,159	
Climate change response %		5.00%	5,415,698	
Electric Vehicle Charging (Market)	542.00 un	1,029.00 /un	557,718	
Electric Vehicle Charging (AH)	293.00 un	1,303.00 /un	381,779	
M4(2) 100%	76,286.60 m²	15.50	1,182,442	
M4(3a) 10% Market dwellings	514.00 un	1,134.00 /un	582,876	
M4(3a) 10% Market SHELTERED	28.00 un	897.00 /un	25,116	
M4(3b) 20% AH	277.00 un	2,844.00 /un	787,788	
M4(3b) 20% AH SHELTERED	16.00 un	3,017.00 /un	48,272	
BNG		2.86%	3,097,779	
Empty Property Costs (Sheltered)	44.00 un	2,000.00 /un	88,000	
				27,855,526
Section 106 Costs				
2FE PS			7,992,341	
Secondary School Expansion			4,579,427	
Early Years			1,984,696	
SEND FC & Post-16			1,380,873	
Flooding / Drainage			700,000	
GI/POS play area			225,000	
GI/POS allotments			50,400	
GI/POS amenity			540,800	
GI/POS Sports/swimming contribution			329,060	
GI/POS football pitches/ancillary			1,120,000	
Health - additions / improvements			155,747	
T Mobility scheme / various			1,878,000	
Transport - SW estate road			3,200,000	
				24,136,344
PROFESSIONAL FEES				
Professional Fees		8.00%	12,586,940	
				12,586,940
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	9,926,032	
Sales Legal Fee	879.00 un	750.00 /un	659,250	
				10,585,282
MISCELLANEOUS FEES				
AH Profit		6.00%	1,888,584	
Market Profit		17.50%	47,925,307	
First Homes		12.00%	2,403,891	
				52,217,783
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			17,762,992	
Construction			498,127	
Total Finance Cost				18,261,120
TOTAL COSTS				**330,867,837**
PROFIT				
				(107)

SE Saffron Walden
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£18,882,838)	(£26,210,370)	(£33,550,781)	(£40,891,112)	(£48,210,902)	(£55,543,155)	(£62,872,357)	(£70,182,036)	(£77,506,969)
1,253.70 /m²	(£18,882,838)	(£26,210,370)	(£33,550,781)	(£40,891,112)	(£48,210,902)	(£55,543,155)	(£62,872,357)	(£70,182,036)	(£77,506,969)
-5.000%	(£14,062,739)	(£21,430,022)	(£28,775,157)	(£36,115,584)	(£43,438,306)	(£50,776,225)	(£58,109,114)	(£65,421,381)	(£72,748,719)
1,323.35 /m²	(£14,062,739)	(£21,430,022)	(£28,775,157)	(£36,115,584)	(£43,438,306)	(£50,776,225)	(£58,109,114)	(£65,421,381)	(£72,748,719)
0.000%	(£9,195,518)	(£16,615,692)	(£23,994,840)	(£31,339,944)	(£38,662,694)	(£46,003,103)	(£53,341,284)	(£60,657,363)	(£67,987,587)
1,393.00 /m²	(£9,195,518)	(£16,615,692)	(£23,994,840)	(£31,339,944)	(£38,662,694)	(£46,003,103)	(£53,341,284)	(£60,657,363)	(£67,987,587)
+5.000%	(£3,977,525)	(£11,765,722)	(£19,186,453)	(£26,559,658)	(£33,887,127)	(£41,227,481)	(£48,567,901)	(£55,888,750)	(£63,222,813)
1,462.65 /m²	(£3,977,525)	(£11,765,722)	(£19,186,453)	(£26,559,658)	(£33,887,127)	(£41,227,481)	(£48,567,901)	(£55,888,750)	(£63,222,813)
+10.000%	£2,101,244	(£6,697,711)	(£14,342,878)	(£21,756,199)	(£29,106,842)	(£36,451,914)	(£43,792,268)	(£51,115,103)	(£58,453,809)
1,532.30 /m²	£2,101,244	(£6,697,711)	(£14,342,878)	(£21,756,199)	(£29,106,842)	(£36,451,914)	(£43,792,268)	(£51,115,103)	(£58,453,809)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

SE Saffron Walden
Uttlesford District Council

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879 dwellings
40% Affordable Housing
Value Level - VL6 @ £5,250/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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SE Saffron Walden
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	475	46,265.00	5,250.00	511,350	242,891,250	0	242,891,250
AH - SR	221	16,950.70	1,700.00	130,390	28,816,190	0	28,816,190
AH - FH	79	6,241.00	3,675.00	290,325	22,935,675	0	22,935,675
AH - SO	16	1,212.80	3,412.50	258,668	4,138,680	0	4,138,680
Market Sheltered	26	1,638.00	6,250.00	393,750	10,237,500	0	10,237,500
AH Sheltered SR	12	804.00	1,700.00	113,900	1,366,800	0	1,366,800
AH Sheltered SO	6	402.00	3,900.00	261,300	1,567,800	0	1,567,800
5% Self-build plots	44	0.00	0.00	125,000	5,500,000	0	5,500,000
Totals	**879**	**73,513.50**			**317,453,895**	**0**	**317,453,895**

NET REALISATION		**317,453,895**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (63.20 Ha @ 634,389.02 /Hect)	40,093,386	
		40,093,386
Stamp Duty	1,995,669	
Effective Stamp Duty Rate	4.98%	
Agent Fee	1.50% 601,401	
Legal Fee	0.75% 300,700	
		2,897,770

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	46,835.00	1,393.00	65,241,155	
AH - SR	17,657.90	1,393.00	24,597,455	
AH - FH	6,241.00	1,393.00	8,693,713	
AH - SO	1,265.60	1,393.00	1,762,981	
Market Sheltered	2,048.80	1,970.00	4,036,136	
AH Sheltered SR	1,005.60	1,970.00	1,981,032	
AH Sheltered SO	502.80	1,970.00	990,516	
Totals	**75,556.70 m²**		**107,302,987**	
Contingency - housebuilding		3.00%	3,685,135	
Contingency - all other works		5.00%	1,665,744	
Site Works & Infrastructure 50%	879.00 un	12,625.00 /un	11,097,375	
Site Works & Infrastructure 50%	879.00 un	12,625.00 /un	11,097,375	
				134,848,616
Other Construction				
Externals		15.00%	15,044,296	
Externals SHELTERED		7.00%	490,538	
Climate change response %		5.00%	5,365,149	
Electric Vehicle Charging (Market)	501.00 un	1,029.00 /un	515,529	
Electric Vehicle Charging (AH)	334.00 un	1,303.00 /un	435,202	
M4(2) 100%	75,556.70 m²	15.50	1,171,129	
M4(3a) 10% Market dwellings	475.00 un	1,134.00 /un	538,650	
M4(3a) 10% Market SHELTERED	26.00 un	897.00 /un	23,322	
M4(3b) 20% AH	316.00 un	2,844.00 /un	898,704	
M4(3b) 20% AH SHELTERED	18.00 un	3,017.00 /un	54,306	
BNG		2.86%	3,068,865	
Empty Property Costs (Sheltered)	44.00 un	2,000.00 /un	88,000	
				27,693,690
Section 106 Costs				
2FE PS			7,992,341	
Secondary School Expansion			4,579,427	
Early Years			1,984,696	
SEND FC & Post-16			1,380,873	
Flooding / Drainage			700,000	
GI/POS play area			225,000	
GI/POS allotments			50,400	
GI/POS amenity			540,800	
GI/POS Sports/swimming contribution			329,060	
GI/POS football pitches/ancillary			1,120,000	
Health - additions / improvements			155,747	
T Mobility scheme / various			1,878,000	
Transport - SW estate road			3,200,000	
				24,136,344
PROFESSIONAL FEES				
Professional Fees		8.00%	12,492,216	
				12,492,216
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	9,523,617	
Sales Legal Fee	879.00 un	750.00 /un	659,250	
				10,182,867
MISCELLANEOUS FEES				
AH Profit		6.00%	2,153,368	
Market Profit		17.50%	44,297,531	
First Homes		12.00%	2,752,281	
				49,203,180
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			15,407,379	
Construction			498,533	
Total Finance Cost				15,905,911
TOTAL COSTS				**317,453,981**
PROFIT				
				(86)

SE Saffron Walden
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£14,953,915)	(£21,869,852)	(£28,795,305)	(£35,720,670)	(£42,628,553)	(£49,548,085)	(£56,463,774)	(£63,360,185)	(£70,271,251)
1,253.70 /m²	(£14,953,915)	(£21,869,852)	(£28,795,305)	(£35,720,670)	(£42,628,553)	(£49,548,085)	(£56,463,774)	(£63,360,185)	(£70,271,251)
-5.000%	(£10,160,459)	(£17,131,642)	(£24,064,501)	(£30,989,973)	(£37,898,724)	(£44,823,628)	(£51,743,667)	(£58,643,484)	(£65,557,108)
1,323.35 /m²	(£10,160,459)	(£17,131,642)	(£24,064,501)	(£30,989,973)	(£37,898,724)	(£44,823,628)	(£51,743,667)	(£58,643,484)	(£65,557,108)
0.000%	(£5,222,069)	(£12,341,157)	(£19,325,951)	(£26,259,149)	(£33,167,942)	(£40,093,386)	(£47,018,704)	(£53,922,657)	(£60,839,682)
1,393.00 /m²	(£5,222,069)	(£12,341,157)	(£19,325,951)	(£26,259,149)	(£33,167,942)	(£40,093,386)	(£47,018,704)	(£53,922,657)	(£60,839,682)
+5.000%	£460,541	(£7,454,530)	(£14,538,629)	(£21,520,170)	(£28,437,190)	(£35,362,592)	(£42,288,050)	(£49,196,836)	(£56,118,239)
1,462.65 /m²	£460,541	(£7,454,530)	(£14,538,629)	(£21,520,170)	(£28,437,190)	(£35,362,592)	(£42,288,050)	(£49,196,836)	(£56,118,239)
+10.000%	£7,271,367	(£2,005,320)	(£9,684,482)	(£16,736,105)	(£23,697,802)	(£30,631,839)	(£37,557,241)	(£44,466,108)	(£51,391,495)
1,532.30 /m²	£7,271,367	(£2,005,320)	(£9,684,482)	(£16,736,105)	(£23,697,802)	(£30,631,839)	(£37,557,241)	(£44,466,108)	(£51,391,495)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

NE Great Dunmow
Uttlesford District Council

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884 dwellings
30% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

LICENSED COPY

NE Great Dunmow
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	557	54,251.80	4,750.20	462,669	257,706,900	0	257,706,900
AH - SR	159	12,195.30	1,700.00	130,390	20,732,010	0	20,732,010
AH - FH	60	4,740.00	3,325.14	262,686	15,761,164	0	15,761,164
AH - SO	20	1,516.00	3,087.63	234,042	4,680,847	0	4,680,847
Market Sheltered	31	1,953.00	6,250.00	393,750	12,206,250	0	12,206,250
AH Sheltered SR	8	536.00	1,700.00	113,900	911,200	0	911,200
AH Sheltered SO	3	201.00	3,900.00	261,300	783,900	0	783,900
5% Self-build plots	44	0.00	0.00	125,000	5,500,000	0	5,500,000
Totals	**882**	**75,393.10**			**318,282,271**	**0**	**318,282,271**

NET REALISATION		**318,282,271**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (97.30 Ha @ 324,327.83 /Hect)	31,557,098	
		31,557,098
Stamp Duty	1,568,855	
Effective Stamp Duty Rate	4.97%	
Agent Fee	1.50% 473,356	
Legal Fee	0.75% 236,678	
		2,278,890

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	54,920.20	1,393.00	76,503,839	
AH - SR	12,704.10	1,393.00	17,696,811	
AH - FH	4,740.00	1,393.00	6,602,820	
AH - SO	1,582.00	1,393.00	2,203,726	
Market Sheltered	2,442.80	1,970.00	4,812,316	
AH Sheltered SR	670.40	1,970.00	1,320,688	
AH Sheltered SO	251.40	1,970.00	495,258	
Totals	**77,310.90 m²**		**109,635,458**	
Contingency - housebuilding		3.00%	3,766,515	
Contingency - all other works		5.00%	1,672,926	
Site Works & Infrastructure 50%	882.00 un	12,625.00 /un	11,135,250	
Site Works & Infrastructure 50%	882.00 un	12,625.00 /un	11,135,250	
				137,345,399
Other Construction				
Externals		15.00%	15,451,079	
Externals SHELTERED		7.00%	463,978	
Climate change response %		5.00%	5,481,773	
Electric Vehicle Charging (Market)	588.00 un	1,029.00 /un	605,052	
Electric Vehicle Charging (AH)	250.00 un	1,303.00 /un	325,750	
M4(2) 100%	77,310.90 m²	15.50	1,198,319	
M4(3a) 10% Market dwellings	557.00 un	1,134.00 /un	631,638	
M4(3a) 10% Market SHELTERED	31.00 un	897.00 /un	27,807	
M4(3b) 20% AH	239.00 un	2,844.00 /un	679,716	
M4(3b) 20% AH SHELTERED	11.00 un	3,017.00 /un	33,187	
BNG		2.86%	3,135,574	
Empty Property Costs (Sheltered)	42.00 un	2,000.00 /un	84,000	
Hatfield Forest SSSI SAMM	882.00 un	1,395.00 /un	1,230,390	
				29,348,264
Section 106 Costs				
PS with EY			6,673,923	
Secondary School contributions			4,021,380	
Secondary School travel			856,368	
SEND FC			562,368	
Post-18 FC			649,608	
GI/POS play area			225,000	
GI/POS allotments			50,400	
GI/POS amenity			542,400	
GI/POS SANG			1,820,329	
GI/POS Sports/swimming contribution			329,060	
GI/POS sports pitches			930,000	
Health improved facilities			260,317	
T Mobility scheme / various			15,242,667	
				32,163,820
PROFESSIONAL FEES				
Professional Fees		8.00%	12,720,722	
				12,720,722
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	9,548,468	
Sales Legal Fee	882.00 un	750.00 /un	661,500	
				10,209,968
MISCELLANEOUS FEES				
AH Profit		6.00%	1,626,477	
Market Profit		17.50%	47,234,801	
First Homes		12.00%	1,891,340	
				50,752,618
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			11,326,217	
Construction			579,249	
Total Finance Cost				11,905,467
TOTAL COSTS				**318,282,246**
PROFIT				
				25

NE Great Dunmow
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000% 1,253.70 /m²	-£17,953,016 -£17,953,016	-£25,606,322 -£25,606,322	-£33,237,073 -£33,237,073	-£40,861,840 -£40,861,840	-£48,467,131 -£48,467,131	-£56,085,187 -£56,085,187	-£63,698,911 -£63,698,911	-£71,291,758 -£71,291,758	-£78,901,079 -£78,901,079
-5.000% 1,323.35 /m²	-£13,145,797 -£13,145,797	-£20,917,015 -£20,917,015	-£28,581,813 -£28,581,813	-£36,211,915 -£36,211,915	-£43,818,397 -£43,818,397	-£51,442,108 -£51,442,108	-£59,060,767 -£59,060,767	-£66,656,728 -£66,656,728	-£74,268,429 -£74,268,429
0.000% 1,393.00 /m²	-£7,834,595 -£7,834,595	-£16,171,157 -£16,171,157	-£23,899,547 -£23,899,547	-£31,557,098 -£31,557,098	-£39,168,472 -£39,168,472	-£46,793,240 -£46,793,240	-£54,417,084 -£54,417,084	-£62,017,724 -£62,017,724	-£69,632,707 -£69,632,707
+5.000% 1,462.65 /m²	-£1,987,971 -£1,987,971	-£11,014,408 -£11,014,408	-£19,181,302 -£19,181,302	-£26,880,653 -£26,880,653	-£34,514,066 -£34,514,066	-£42,143,314 -£42,143,314	-£49,768,082 -£49,768,082	-£57,373,784 -£57,373,784	-£64,992,949 -£64,992,949
+10.000% 1,532.30 /m²	£4,532,936 £4,532,936	-£5,387,008 -£5,387,008	-£14,190,061 -£14,190,061	-£22,169,546 -£22,169,546	-£29,841,234 -£29,841,234	-£37,489,350 -£37,489,350	-£45,118,156 -£45,118,156	-£52,724,639 -£52,724,639	-£60,348,761 -£60,348,761

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

NE Great Dunmow
Uttlesford District Council

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884 dwellings
35% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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NE Great Dunmow
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	517	50,355.80	4,750.20	462,669	239,200,121	0	239,200,121
AH - SR	195	14,956.50	1,700.00	130,390	25,426,050	0	25,426,050
AH - FH	70	5,530.00	3,325.14	262,686	18,388,024	0	18,388,024
AH - SO	14	1,061.20	3,087.63	234,042	3,276,593	0	3,276,593
Market Sheltered	29	1,827.00	6,250.00	393,750	11,418,750	0	11,418,750
AH Sheltered SR	11	737.00	1,700.00	113,900	1,252,900	0	1,252,900
AH Sheltered SO	4	268.00	3,900.00	261,300	1,045,200	0	1,045,200
5% Self-build plots	44	0.00	0.00	125,000	5,500,000	0	5,500,000
Totals	**884**	**74,735.50**			**305,507,638**	**0**	**305,507,638**

NET REALISATION	**305,507,638**

OUTLAY

ACQUISITION COSTS				
Residualised Price (97.30 Ha @ 264,822.41 /Hect)			25,767,221	
				25,767,221
Stamp Duty			1,279,361	
Effective Stamp Duty Rate		4.97%		
Agent Fee		1.50%	386,508	
Legal Fee		0.75%	193,254	
				1,859,123

Construction	m²	Build Rate m²	Cost	
CONSTRUCTION COSTS				
Market Housing	50,976.20	1,393.00	71,009,847	
AH - SR	15,580.50	1,393.00	21,703,636	
AH - FH	5,530.00	1,393.00	7,703,290	
AH - SO	1,107.40	1,393.00	1,542,608	
Market Sheltered	2,285.20	1,970.00	4,501,844	
AH Sheltered SR	921.80	1,970.00	1,815,946	
AH Sheltered SO	335.20	1,970.00	660,344	
Totals	**76,736.30 m²**		**108,937,515**	
Contingency - housebuilding		3.00%	3,741,597	
Contingency - all other works		5.00%	1,676,196	
Site Works & Infrastructure 50%	884.00 un	12,625.00 /un	11,160,500	
Site Works & Infrastructure 50%	884.00 un	12,625.00 /un	11,160,500	
				136,676,308
Other Construction				
Externals		15.00%	15,293,907	
Externals SHELTERED		7.00%	488,469	
Climate change response %		5.00%	5,446,876	
Electric Vehicle Charging (Market)	546.00 un	1,029.00 /un	561,834	
Electric Vehicle Charging (AH)	294.00 un	1,303.00 /un	383,082	
M4(2) 100%	76,736.30 m²	15.50	1,189,413	
M4(3a) 10% Market dwellings	517.00 un	1,134.00 /un	586,278	
M4(3a) 10% Market SHELTERED	29.00 un	897.00 /un	26,013	
M4(3b) 20% AH	279.00 un	2,844.00 /un	793,476	
M4(3b) 20% AH SHELTERED	15.00 un	3,017.00 /un	45,255	
BNG		2.86%	3,115,613	
Empty Property Costs (Sheltered)	44.00 un	2,000.00 /un	88,000	
Hatfield Forest SSSI SAMM	884.00 un	1,395.00 /un	1,233,180	
				29,251,396
Section 106 Costs				
PS with EY			6,673,923	
Secondary School contributions			4,021,380	
Secondary School travel			856,368	
SEND FC			562,368	
Post-18 FC			649,608	
GI/POS play area			225,000	
GI/POS allotments			50,400	
GI/POS amenity			542,400	
GI/POS SANG			1,820,329	
GI/POS Sports/swimming contribution			329,060	
GI/POS sports pitches			930,000	
Health improved facilities			260,317	
T Mobility scheme / various			15,242,667	
				32,163,820
PROFESSIONAL FEES				
Professional Fees		8.00%	12,659,505	
				12,659,505
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	9,165,229	
Sales Legal Fee	884.00 un	750.00 /un	663,000	
				9,828,229
MISCELLANEOUS FEES				
AH Profit		6.00%	1,860,045	
Market Profit		17.50%	43,858,302	
First Homes		12.00%	2,206,563	
				47,924,910
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			8,787,963	
Construction			589,140	
Total Finance Cost				9,377,103

TOTAL COSTS	**305,507,615**
PROFIT	
	23

NE Great Dunmow
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000% 1,253.70 /m²	(£13,493,853) (£13,493,853)	(£20,700,203) (£20,700,203)	(£27,862,409) (£27,862,409)	(£35,015,000) (£35,015,000)	(£42,150,433) (£42,150,433)	(£49,298,521) (£49,298,521)	(£56,442,079) (£56,442,079)	(£63,565,213) (£63,565,213)	(£70,703,261) (£70,703,261)
-5.000% 1,323.35 /m²	(£8,391,606) (£8,391,606)	(£16,022,460) (£16,022,460)	(£23,233,819) (£23,233,819)	(£30,395,751) (£30,395,751)	(£37,531,191) (£37,531,191)	(£44,683,777) (£44,683,777)	(£51,832,614) (£51,832,614)	(£58,959,644) (£58,959,644)	(£66,100,581) (£66,100,581)
0.000% 1,393.00 /m²	(£2,703,780) (£2,703,780)	(£11,059,399) (£11,059,399)	(£18,560,710) (£18,560,710)	(£25,767,221) (£25,767,221)	(£32,911,942) (£32,911,942)	(£40,064,534) (£40,064,534)	(£47,217,121) (£47,217,121)	(£54,349,569) (£54,349,569)	(£61,494,256) (£61,494,256)
+5.000% 1,462.65 /m²	£3,649,573 £3,649,573	(£5,551,128) (£5,551,128)	(£13,711,604) (£13,711,604)	(£21,097,833) (£21,097,833)	(£28,283,355) (£28,283,355)	(£35,445,285) (£35,445,285)	(£42,597,878) (£42,597,878)	(£49,733,313) (£49,733,313)	(£56,883,663) (£56,883,663)
+10.000% 1,532.30 /m²	£10,778,739 £10,778,739	£424,827 £424,827	(£8,347,163) (£8,347,163)	(£16,328,716) (£16,328,716)	(£23,617,639) (£23,617,639)	(£30,816,694) (£30,816,694)	(£37,978,622) (£37,978,622)	(£45,114,068) (£45,114,068)	(£52,266,657) (£52,266,657)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

NE Great Dunmow
Uttlesford District Council

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884 dwellings
40% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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NE Great Dunmow
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	478	46,557.20	4,750.20	462,669	221,156,011	0	221,156,011
AH - SR	223	17,104.10	1,700.00	130,390	29,076,970	0	29,076,970
AH - FH	79	6,241.00	3,325.14	262,686	20,752,199	0	20,752,199
AH - SO	16	1,212.80	3,087.63	234,042	3,744,678	0	3,744,678
Market Sheltered	26	1,638.00	6,250.00	393,750	10,237,500	0	10,237,500
AH Sheltered SR	13	871.00	1,700.00	113,900	1,480,700	0	1,480,700
AH Sheltered SO	5	335.00	3,900.00	261,300	1,306,500	0	1,306,500
5% Self-build plots	44	0.00	0.00	125,000	5,500,000	0	5,500,000
Totals	**884**	**73,959.10**			**293,254,558**	**0**	**293,254,558**

NET REALISATION		**293,254,558**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (97.30 Ha @ 211,451.99 /Hect)	20,574,279	
		20,574,279
Stamp Duty	1,019,714	
Effective Stamp Duty Rate	4.96%	
Agent Fee	1.50% 308,614	
Legal Fee	0.75% 154,307	
		1,482,635

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	47,130.80	1,393.00	65,653,204	
AH - SR	17,817.70	1,393.00	24,820,056	
AH - FH	6,241.00	1,393.00	8,693,713	
AH - SO	1,265.60	1,393.00	1,762,981	
Market Sheltered	2,048.80	1,970.00	4,036,136	
AH Sheltered SR	1,089.40	1,970.00	2,146,118	
AH Sheltered SO	419.00	1,970.00	825,430	
Totals	**76,012.30 m²**		**107,937,638**	
Contingency - housebuilding		3.00%	3,707,030	
Contingency - all other works		5.00%	1,675,358	
Site Works & Infrastructure 50%	884.00 un	12,625.00 /un	11,160,500	
Site Works & Infrastructure 50%	884.00 un	12,625.00 /un	11,160,500	
				135,641,026
Other Construction				
Externals		15.00%	15,139,493	
Externals SHELTERED		7.00%	490,538	
Climate change response %		5.00%	5,396,882	
Electric Vehicle Charging (Market)	504.00 un	1,029.00 /un	518,616	
Electric Vehicle Charging (AH)	336.00 un	1,303.00 /un	437,808	
M4(2) 100%	76,012.30 m²	15.50	1,178,191	
M4(3a) 10% Market dwellings	478.00 un	1,134.00 /un	542,052	
M4(3a) 10% Market SHELTERED	26.00 un	897.00 /un	23,322	
M4(3b) 20% AH	318.00 un	2,844.00 /un	904,392	
M4(3b) 20% AH SHELTERED	18.00 un	3,017.00 /un	54,306	
BNG		2.86%	3,087,016	
Empty Property Costs (Sheltered)	44.00 un	2,000.00 /un	88,000	
Hatfield Forest SSSI SAMM	884.00 un	1,395.00 /un	1,233,180	
				29,093,796
Section 106 Costs				
PS with EY			6,673,923	
Secondary School contributions			4,021,380	
Secondary School travel			856,368	
SEND FC			562,368	
Post-18 FC			649,608	
GI/POS play area			225,000	
GI/POS allotments			50,400	
GI/POS amenity			542,400	
GI/POS SANG			1,820,329	
GI/POS Sports/swimming contribution			329,060	
GI/POS sports pitches			930,000	
Health improved facilities			260,317	
T Mobility scheme / various			15,242,667	
				32,163,820
PROFESSIONAL FEES				
Professional Fees		8.00%	12,565,986	
				12,565,986
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	8,797,637	
Sales Legal Fee	884.00 un	750.00 /un	663,000	
				9,460,637
MISCELLANEOUS FEES				
AH Profit		6.00%	2,136,531	
Market Profit		17.50%	40,493,865	
First Homes		12.00%	2,490,264	
				45,120,659
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			6,554,155	
Construction			597,649	
Total Finance Cost				7,151,804
TOTAL COSTS				**293,254,643**
PROFIT				
				(85)

NE Great Dunmow
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£9,301,881)	(£16,239,908)	(£23,003,123)	(£29,745,905)	(£36,472,513)	(£43,212,702)	(£49,947,403)	(£56,662,335)	(£63,391,237)
1,253.70 /m²	(£9,301,881)	(£16,239,908)	(£23,003,123)	(£29,745,905)	(£36,472,513)	(£43,212,702)	(£49,947,403)	(£56,662,335)	(£63,391,237)
-5.000%	(£3,841,621)	(£11,511,960)	(£18,407,090)	(£25,169,311)	(£31,895,925)	(£38,638,703)	(£45,379,878)	(£52,099,060)	(£58,831,041)
1,323.35 /m²	(£3,841,621)	(£11,511,960)	(£18,407,090)	(£25,169,311)	(£31,895,925)	(£38,638,703)	(£45,379,878)	(£52,099,060)	(£58,831,041)
0.000%	£2,272,763	(£6,205,570)	(£13,722,719)	(£20,574,279)	(£27,319,329)	(£34,062,115)	(£40,804,893)	(£47,530,365)	(£54,266,866)
1,393.00 /m²	£2,272,763	(£6,205,570)	(£13,722,719)	(£20,574,279)	(£27,319,329)	(£34,062,115)	(£40,804,893)	(£47,530,365)	(£54,266,866)
+5.000%	£9,237,532	(£372,255)	(£8,549,775)	(£15,915,514)	(£22,725,162)	(£29,485,406)	(£36,228,303)	(£42,954,913)	(£49,697,012)
1,462.65 /m²	£9,237,532	(£372,255)	(£8,549,775)	(£15,915,514)	(£22,725,162)	(£29,485,406)	(£36,228,303)	(£42,954,913)	(£49,697,012)
+10.000%	£16,548,864	£6,325,419	(£2,817,762)	(£10,834,640)	(£18,079,064)	(£24,891,825)	(£31,651,266)	(£38,378,322)	(£45,121,103)
1,532.30 /m²	£16,548,864	£6,325,419	(£2,817,762)	(£10,834,640)	(£18,079,064)	(£24,891,825)	(£31,651,266)	(£38,378,322)	(£45,121,103)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

Stansted Mountfitchet
Uttlesford District Council

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390 dwellings
30% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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Stansted Mountfitchet
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	245	23,863.00	4,750.20	462,669	113,354,023	0	113,354,023
AH - SR	70	5,369.00	1,700.00	130,390	9,127,300	0	9,127,300
AH - FH	26	2,054.00	3,325.14	262,686	6,829,838	0	6,829,838
AH - SO	9	682.20	3,087.63	234,042	2,106,381	0	2,106,381
Market Sheltered	14	882.00	6,250.00	393,750	5,512,500	0	5,512,500
AH Sheltered SR	4	268.00	1,700.00	113,900	455,600	0	455,600
AH Sheltered SO	2	134.00	3,900.00	261,300	522,600	0	522,600
5% Self-build plots	20	0.00	0.00	125,000	2,500,000	0	2,500,000
Totals	**390**	**33,252.20**			**140,408,241**	**0**	**140,408,241**

NET REALISATION		**140,408,241**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (26.00 Ha @ 664,051.32 /Hect)	17,265,334	
		17,265,334
Stamp Duty	854,267	
Effective Stamp Duty Rate	4.95%	
Agent Fee	1.50% 258,980	
Legal Fee	0.75% 129,490	
		1,242,737

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	24,157.00	1,393.00	33,650,701	
AH - SR	5,593.00	1,393.00	7,791,049	
AH - FH	2,054.00	1,393.00	2,861,222	
AH - SO	711.90	1,393.00	991,677	
Market Sheltered	1,103.20	1,970.00	2,173,304	
AH Sheltered SR	335.20	1,970.00	660,344	
AH Sheltered SO	167.60	1,970.00	330,172	
Totals	**34,121.90 m²**		**48,458,469**	
Contingency - housebuilding		3.00%	1,664,224	
Contingency - all other works		5.00%	739,617	
Site Works & Infrastructure 50%	390.00 un	12,625.00 /un	4,923,750	
Site Works & Infrastructure 50%	390.00 un	12,625.00 /un	4,923,750	
				60,709,809
Other Construction				
Externals		15.00%	6,794,197	
Externals SHELTERED		7.00%	221,467	
Climate change response %		5.00%	2,422,923	
Electric Vehicle Charging (Market)	259.00 un	1,029.00 /un	266,511	
Electric Vehicle Charging (AH)	111.00 un	1,303.00 /un	144,633	
M4(2) 100%	34,121.90 m²	15.50	528,889	
M4(3a) 10% Market dwellings	245.00 un	1,134.00 /un	277,830	
M4(3a) 10% Market SHELTERED	14.00 un	897.00 /un	12,558	
M4(3b) 20% AH	105.00 un	2,844.00 /un	298,620	
M4(3b) 20% AH SHELTERED	6.00 un	3,017.00 /un	18,102	
BNG		2.86%	1,385,912	
Empty Property Costs (Sheltered)	20.00 un	2,000.00 /un	40,000	
Hatfield Forest SSSI SAMM	390.00 un	1,395.00 /un	544,050	
				12,955,694
Section 106 Costs				
PS + EY contributions			3,182,388	
Secondary School expansion			1,823,435	
SEND FC			268,457	
Post-18 FC			309,758	
GI/POS play area			150,000	
GI/POS allotments			22,800	
GI/POS amenity			240,000	
GI/POS SANG			968,500	
GI/POS Sports/swimming contribution			148,077	
GI/POS improvements to Local sites			651,536	
Health improved facilities			80,229	
T Mobility scheme / various			3,540,000	
				11,385,180
PROFESSIONAL FEES				
Professional Fees		8.00%	5,621,317	
				5,621,317
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	4,212,247	
Sales Legal Fee	390.00 un	750.00 /un	292,500	
				4,504,747
MISCELLANEOUS FEES				
AH Profit		6.00%	732,713	
Market Profit		17.50%	20,801,641	
First Homes		12.00%	819,581	
				22,353,935
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			4,170,775	
Construction			198,713	
Total Finance Cost				4,369,488
TOTAL COSTS				**140,408,242**
PROFIT				
				(1)

Stansted Mountfitchet
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£10,654,788)	(£14,450,744)	(£18,251,665)	(£22,047,549)	(£25,832,163)	(£29,624,735)	(£33,415,758)	(£37,197,682)	(£40,987,541)
1,253.70 /m²	(£10,654,788)	(£14,450,744)	(£18,251,665)	(£22,047,549)	(£25,832,163)	(£29,624,735)	(£33,415,758)	(£37,197,682)	(£40,987,541)
-5.000%	(£8,257,430)	(£12,053,323)	(£15,858,253)	(£19,657,936)	(£23,444,494)	(£27,238,110)	(£31,030,682)	(£34,812,647)	(£38,603,660)
1,323.35 /m²	(£8,257,430)	(£12,053,323)	(£15,858,253)	(£19,657,936)	(£23,444,494)	(£27,238,110)	(£31,030,682)	(£34,812,647)	(£38,603,660)
0.000%	(£5,819,004)	(£9,655,945)	(£13,460,992)	(£17,265,334)	(£21,055,102)	(£24,850,538)	(£28,644,056)	(£32,427,534)	(£36,218,627)
1,393.00 /m²	(£5,819,004)	(£9,655,945)	(£13,460,992)	(£17,265,334)	(£21,055,102)	(£24,850,538)	(£28,644,056)	(£32,427,534)	(£36,218,627)
+5.000%	(£3,193,493)	(£7,244,776)	(£11,063,643)	(£14,868,663)	(£18,663,300)	(£22,461,372)	(£26,256,582)	(£30,040,909)	(£33,833,480)
1,462.65 /m²	(£3,193,493)	(£7,244,776)	(£11,063,643)	(£14,868,663)	(£18,663,300)	(£22,461,372)	(£26,256,582)	(£30,040,909)	(£33,833,480)
+10.000%	(£512,647)	(£4,689,554)	(£8,665,245)	(£12,471,310)	(£16,267,208)	(£20,069,919)	(£23,867,643)	(£27,653,527)	(£31,446,855)
1,532.30 /m²	(£512,647)	(£4,689,554)	(£8,665,245)	(£12,471,310)	(£16,267,208)	(£20,069,919)	(£23,867,643)	(£27,653,527)	(£31,446,855)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

Stansted Mountfitchet
Uttlesford District Council

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390 dwellings
35% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Stansted Mountfitchet
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	228	22,207.20	4,750.20	462,669	105,488,641	0	105,488,641
AH - SR	85	6,519.50	1,700.00	130,390	11,083,150	0	11,083,150
AH - FH	31	2,449.00	3,325.14	262,686	8,143,268	0	8,143,268
AH - SO	6	454.80	3,087.63	234,042	1,404,254	0	1,404,254
Market Sheltered	13	819.00	6,250.00	393,750	5,118,750	0	5,118,750
AH Sheltered SR	5	335.00	1,700.00	113,900	569,500	0	569,500
AH Sheltered SO	2	134.00	3,900.00	261,300	522,600	0	522,600
5% Self-build plots	20	0.00	0.00	125,000	2,500,000	0	2,500,000
Totals	**390**	**32,918.50**			**134,830,163**	**0**	**134,830,163**

NET REALISATION		**134,830,163**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (26.00 Ha @ 560,458.19 /Hect)	14,571,913	
		14,571,913
Stamp Duty	719,596	
Effective Stamp Duty Rate	4.94%	
Agent Fee	1.50%	218,579
Legal Fee	0.75%	109,289
		1,047,464

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	22,480.80	1,393.00	31,315,754	
AH - SR	6,791.50	1,393.00	9,460,559	
AH - FH	2,449.00	1,393.00	3,411,457	
AH - SO	474.60	1,393.00	661,118	
Market Sheltered	1,024.40	1,970.00	2,018,068	
AH Sheltered SR	419.00	1,970.00	825,430	
AH Sheltered SO	167.60	1,970.00	330,172	
Totals	**33,806.90 m²**		**48,022,559**	
Contingency - housebuilding		3.00%	1,649,161	
Contingency - all other works		5.00%	739,219	
Site Works & Infrastructure 50%	390.00 un	12,625.00 /un	4,923,750	
Site Works & Infrastructure 50%	390.00 un	12,625.00 /un	4,923,750	
				60,258,439
Other Construction				
Externals		15.00%	6,727,333	
Externals SHELTERED		7.00%	222,157	
Climate change response %		5.00%	2,401,128	
Electric Vehicle Charging (Market)	241.00 un	1,029.00 /un	247,989	
Electric Vehicle Charging (AH)	129.00 un	1,303.00 /un	168,087	
M4(2) 100%	33,806.90 m²	15.50	524,007	
M4(3a) 10% Market dwellings	228.00 un	1,134.00 /un	258,552	
M4(3a) 10% Market SHELTERED	13.00 un	897.00 /un	11,661	
M4(3b) 20% AH	122.00 un	2,844.00 /un	346,968	
M4(3b) 20% AH SHELTERED	7.00 un	3,017.00 /un	21,119	
BNG		2.86%	1,373,445	
Empty Property Costs (Sheltered)	20.00 un	2,000.00 /un	40,000	
Hatfield Forest SSSI SAMM	390.00 un	1,395.00 /un	544,050	
				12,886,496
Section 106 Costs				
PS + EY contributions			3,182,388	
Secondary School expansion			1,823,435	
SEND FC			268,457	
Post-18 FC			309,758	
GI/POS play area			150,000	
GI/POS allotments			22,800	
GI/POS amenity			240,000	
GI/POS SANG			968,500	
GI/POS Sports/swimming contribution			148,077	
GI/POS improvements to Local sites			651,536	
Health improved facilities			80,229	
T Mobility scheme / various			3,540,000	
				11,385,180
PROFESSIONAL FEES				
Professional Fees		8.00%	5,580,514	
				5,580,514
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	4,044,905	
Sales Legal Fee	390.00 un	750.00 /un	292,500	
				4,337,405
MISCELLANEOUS FEES				
AH Profit		6.00%	814,770	
Market Profit		17.50%	19,356,294	
First Homes		12.00%	977,192	
				21,148,256
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			3,416,486	
Construction			198,003	
Total Finance Cost				3,614,489
TOTAL COSTS				**134,830,156**
PROFIT				
				7

Stansted Mountfitchet
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£8,592,276)	(£12,163,574)	(£15,742,775)	(£19,316,406)	(£22,878,167)	(£26,446,516)	(£30,013,879)	(£33,571,876)	(£37,137,942)
1,253.70 /m²	(£8,592,276)	(£12,163,574)	(£15,742,775)	(£19,316,406)	(£22,878,167)	(£26,446,516)	(£30,013,879)	(£33,571,876)	(£37,137,942)
-5.000%	(£6,200,916)	(£9,787,880)	(£13,367,744)	(£16,946,487)	(£20,510,988)	(£24,081,185)	(£27,649,515)	(£31,208,423)	(£34,774,973)
1,323.35 /m²	(£6,200,916)	(£9,787,880)	(£13,367,744)	(£16,946,487)	(£20,510,988)	(£24,081,185)	(£27,649,515)	(£31,208,423)	(£34,774,973)
0.000%	(£3,648,487)	(£7,408,509)	(£10,992,050)	(£14,571,913)	(£18,141,300)	(£21,714,136)	(£25,284,202)	(£28,843,958)	(£32,411,521)
1,393.00 /m²	(£3,648,487)	(£7,408,509)	(£10,992,050)	(£14,571,913)	(£18,141,300)	(£21,714,136)	(£25,284,202)	(£28,843,958)	(£32,411,521)
+5.000%	(£1,004,460)	(£4,921,543)	(£8,616,227)	(£12,196,178)	(£15,767,497)	(£19,344,683)	(£22,917,286)	(£26,478,658)	(£30,046,957)
1,462.65 /m²	(£1,004,460)	(£4,921,543)	(£8,616,227)	(£12,196,178)	(£15,767,497)	(£19,344,683)	(£22,917,286)	(£26,478,658)	(£30,046,957)
+10.000%	£1,908,203	(£2,288,866)	(£6,185,057)	(£9,820,507)	(£13,391,761)	(£16,971,666)	(£20,548,067)	(£24,111,870)	(£27,681,677)
1,532.30 /m²	£1,908,203	(£2,288,866)	(£6,185,057)	(£9,820,507)	(£13,391,761)	(£16,971,666)	(£20,548,067)	(£24,111,870)	(£27,681,677)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

Stansted Mountfitchet
Uttlesford District Council

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390 dwellings
40% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Stansted Mountfitchet
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	210	20,454.00	4,750.20	462,669	97,160,591	0	97,160,591
AH - SR	98	7,516.60	1,700.00	130,390	12,778,220	0	12,778,220
AH - FH	35	2,765.00	3,325.14	262,686	9,194,012	0	9,194,012
AH - SO	7	530.60	3,087.63	234,042	1,638,296	0	1,638,296
Market Sheltered	12	756.00	6,250.00	393,750	4,725,000	0	4,725,000
AH Sheltered SR	6	402.00	1,700.00	113,900	683,400	0	683,400
AH Sheltered SO	2	134.00	3,900.00	261,300	522,600	0	522,600
5% Self-build plots	20	0.00	0.00	125,000	2,500,000	0	2,500,000
Totals	**390**	**32,558.20**			**129,202,119**	**0**	**129,202,119**

NET REALISATION	**129,202,119**

OUTLAY

ACQUISITION COSTS				
Residualised Price (26.00 Ha @ 458,772.56 /Hect)			11,928,087	
				11,928,087
Stamp Duty			587,404	
Effective Stamp Duty Rate		4.92%		
Agent Fee		1.50%	178,921	
Legal Fee		0.75%	89,461	
				855,786

Construction	m²	Build Rate m²	Cost	
CONSTRUCTION COSTS				
Market Housing	20,706.00	1,393.00	28,843,458	
AH - SR	7,830.20	1,393.00	10,907,469	
AH - FH	2,765.00	1,393.00	3,851,645	
AH - SO	553.70	1,393.00	771,304	
Market Sheltered	945.60	1,970.00	1,862,832	
AH Sheltered SR	502.80	1,970.00	990,516	
AH Sheltered SO	167.60	1,970.00	330,172	
Totals	**33,470.90 m²**		**47,557,396**	
Contingency - housebuilding		3.00%	1,633,090	
Contingency - all other works		5.00%	738,776	
Site Works & Infrastructure 50%	390.00 un	12,625.00 /un	4,923,750	
Site Works & Infrastructure 50%	390.00 un	12,625.00 /un	4,923,750	
				59,776,761
Other Construction				
Externals		15.00%	6,656,081	
Externals SHELTERED		7.00%	222,846	
Climate change response %		5.00%	2,377,870	
Electric Vehicle Charging (Market)	222.00 un	1,029.00 /un	228,438	
Electric Vehicle Charging (AH)	148.00 un	1,303.00 /un	192,844	
M4(2) 100%	33,470.90 m²	15.50	518,799	
M4(3a) 10% Market dwellings	210.00 un	1,134.00 /un	238,140	
M4(3a) 10% Market SHELTERED	12.00 un	897.00 /un	10,764	
M4(3b) 20% AH	140.00 un	2,844.00 /un	398,160	
M4(3b) 20% AH SHELTERED	8.00 un	3,017.00 /un	24,136	
BNG		2.86%	1,360,142	
Empty Property Costs (Sheltered)	20.00 un	2,000.00 /un	40,000	
Hatfield Forest SSSI SAMM	390.00 un	1,395.00 /un	544,050	
				12,812,270
Section 106 Costs				
PS + EY contributions			3,182,388	
Secondary School expansion			1,823,435	
SEND FC			268,457	
Post-18 FC			309,758	
GI/POS play area			150,000	
GI/POS allotments			22,800	
GI/POS amenity			240,000	
GI/POS SANG			968,500	
GI/POS Sports/swimming contribution			148,077	
GI/POS improvements to Local sites			651,536	
Health improved facilities			80,229	
T Mobility scheme / various			3,540,000	
				11,385,180
PROFESSIONAL FEES				
Professional Fees		8.00%	5,536,947	
				5,536,947
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	3,876,064	
Sales Legal Fee	390.00 un	750.00 /un	292,500	
				4,168,564
MISCELLANEOUS FEES				
AH Profit		6.00%	937,351	
Market Profit		17.50%	17,829,978	
First Homes		12.00%	1,103,281	
				19,870,611
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			2,672,580	
Construction			195,329	
Total Finance Cost				2,867,909

TOTAL COSTS	**129,202,114**
PROFIT	
	6

Stansted Mountfitchet
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000% 1,253.70 /m²	(£6,539,984) (£6,539,984)	(£9,902,805) (£9,902,805)	(£13,268,014) (£13,268,014)	(£16,631,561) (£16,631,561)	(£19,981,713) (£19,981,713)	(£23,337,077) (£23,337,077)	(£26,691,075) (£26,691,075)	(£30,035,788) (£30,035,788)	(£33,388,383) (£33,388,383)
-5.000% 1,323.35 /m²	(£4,069,600) (£4,069,600)	(£7,548,924) (£7,548,924)	(£10,915,447) (£10,915,447)	(£14,280,646) (£14,280,646)	(£17,635,618) (£17,635,618)	(£20,993,662) (£20,993,662)	(£24,349,082) (£24,349,082)	(£27,695,035) (£27,695,035)	(£31,047,949) (£31,047,949)
0.000% 1,393.00 /m²	(£1,461,814) (£1,461,814)	(£5,126,571) (£5,126,571)	(£8,562,917) (£8,562,917)	(£11,928,087) (£11,928,087)	(£15,285,207) (£15,285,207)	(£18,647,732) (£18,647,732)	(£22,005,610) (£22,005,610)	(£25,353,045) (£25,353,045)	(£28,707,041) (£28,707,041)
+5.000% 1,462.65 /m²	£1,346,543 £1,346,543	(£2,530,047) (£2,530,047)	(£6,173,140) (£6,173,140)	(£9,575,514) (£9,575,514)	(£12,932,646) (£12,932,646)	(£16,297,839) (£16,297,839)	(£19,659,847) (£19,659,847)	(£23,009,511) (£23,009,511)	(£26,365,051) (£26,365,051)
+10.000% 1,532.30 /m²	£4,489,707 £4,489,707	£133,512 £133,512	(£3,605,157) (£3,605,157)	(£7,202,347) (£7,202,347)	(£10,580,098) (£10,580,098)	(£13,945,275) (£13,945,275)	(£17,310,470) (£17,310,470)	(£20,663,904) (£20,663,904)	(£24,021,461) (£24,021,461)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

Elsenham
Uttlesford District Council

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150 dwellings
30% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Elsenham
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	94	9,155.60	4,750.20	462,669	43,490,931	0	43,490,931
AH - SR	26	1,994.20	1,700.00	130,390	3,390,140	0	3,390,140
AH - FH	10	790.00	3,325.14	262,686	2,626,861	0	2,626,861
AH - SO	4	303.20	3,087.63	234,042	936,169	0	936,169
Market Sheltered	6	378.00	6,250.00	393,750	2,362,500	0	2,362,500
AH Sheltered SR	1	67.00	1,700.00	113,900	113,900	0	113,900
AH Sheltered SO	1	67.00	3,900.00	261,300	261,300	0	261,300
5% Self-build plots	8	0.00	0.00	125,000	1,000,000	0	1,000,000
Totals	**150**	**12,755.00**			**54,181,801**	**0**	**54,181,801**

NET REALISATION		**54,181,801**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (8.40 Ha @ 856,398.64 /Hect)	7,193,749	
		7,193,749
Stamp Duty	350,687	
Effective Stamp Duty Rate	4.87%	
Agent Fee	1.50%	107,906
Legal Fee	0.75%	53,953
		512,547

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	9,268.40	1,393.00	12,910,881	
AH - SR	2,077.40	1,393.00	2,893,818	
AH - FH	790.00	1,393.00	1,100,470	
AH - SO	316.40	1,393.00	440,745	
Market Sheltered	472.80	1,970.00	931,416	
AH Sheltered SR	83.80	1,970.00	165,086	
AH Sheltered SO	83.80	1,970.00	165,086	
Totals	**13,092.60 m²**		**18,607,503**	
Contingency - housebuilding		3.00%	638,931	
Contingency - all other works		5.00%	284,238	
Site Works & Infrastructure 50%	150.00 un	12,625.00 /un	1,893,750	
Site Works & Infrastructure 50%	150.00 un	12,625.00 /un	1,893,750	
				23,318,171
Other Construction				
Externals		15.00%	2,601,887	
Externals SHELTERED		7.00%	88,311	
Climate change response %		5.00%	930,375	
Electric Vehicle Charging (Market)	100.00 un	1,029.00 /un	102,900	
Electric Vehicle Charging (AH)	42.00 un	1,303.00 /un	54,726	
M4(2) 100%	13,092.60 m²	15.50	202,935	
M4(3a) 10% Market dwellings	94.00 un	1,134.00 /un	106,596	
M4(3a) 10% Market SHELTERED	6.00 un	897.00 /un	5,382	
M4(3b) 20% AH	40.00 un	2,844.00 /un	113,760	
M4(3b) 20% AH SHELTERED	2.00 un	3,017.00 /un	6,034	
BNG		2.86%	532,175	
Empty Property Costs (Sheltered)	8.00 un	2,000.00 /un	16,000	
Hatfield Forest SSSI SAMM	150.00 un	1,395.00 /un	209,250	
				4,970,331
Section 106 Costs				
PS + EY contributions			1,107,953	
Secondary School contributions			1,917,552	
Secondary school - travel FC			178,410	
SEND FC			115,053	
Post-18 FC			132,754	
GI/POS play area			150,000	
GI/POS allotments			8,400	
GI/POS amenity			92,800	
GI/POS Sports/swimming contribution			57,586	
GI/POS improvements to Local sites			250,542	
Health improved facilities			13,289	
T Mobility scheme / various			200,000	
				4,224,339
PROFESSIONAL FEES				
Professional Fees		8.00%	2,158,597	
				2,158,597
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	1,625,454	
Sales Legal Fee	150.00 un	750.00 /un	112,500	
				1,737,954
MISCELLANEOUS FEES				
AH Profit		6.00%	282,091	
Market Profit		17.50%	8,024,350	
First Homes		12.00%	315,223	
				8,621,664
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			1,366,922	
Construction			77,518	
Total Finance Cost				1,444,440
TOTAL COSTS				**54,181,792**
PROFIT				
				9

Elsenham
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£4,482,499)	(£6,054,236)	(£7,629,544)	(£9,204,407)	(£10,775,260)	(£12,349,912)	(£13,924,563)	(£15,495,437)	(£17,069,968)
1,253.70 /m²	(£4,482,499)	(£6,054,236)	(£7,629,544)	(£9,204,407)	(£10,775,260)	(£12,349,912)	(£13,924,563)	(£15,495,437)	(£17,069,968)
-5.000%	(£3,476,366)	(£5,048,687)	(£6,623,993)	(£8,199,291)	(£9,770,180)	(£11,344,810)	(£12,919,461)	(£14,490,335)	(£16,064,986)
1,323.35 /m²	(£3,476,366)	(£5,048,687)	(£6,623,993)	(£8,199,291)	(£9,770,180)	(£11,344,810)	(£12,919,461)	(£14,490,335)	(£16,064,986)
0.000%	(£2,469,624)	(£4,042,685)	(£5,618,441)	(£7,193,749)	(£8,765,058)	(£10,339,707)	(£11,914,359)	(£13,485,233)	(£15,059,884)
1,393.00 /m²	(£2,469,624)	(£4,042,685)	(£5,618,441)	(£7,193,749)	(£8,765,058)	(£10,339,707)	(£11,914,359)	(£13,485,233)	(£15,059,884)
+5.000%	(£1,462,761)	(£3,036,413)	(£4,612,785)	(£6,188,197)	(£7,759,727)	(£9,334,606)	(£10,909,257)	(£12,480,132)	(£14,054,782)
1,462.65 /m²	(£1,462,761)	(£3,036,413)	(£4,612,785)	(£6,188,197)	(£7,759,727)	(£9,334,606)	(£10,909,257)	(£12,480,132)	(£14,054,782)
+10.000%	(£450,769)	(£2,029,550)	(£3,606,651)	(£5,182,648)	(£6,754,176)	(£8,329,483)	(£9,904,154)	(£11,475,030)	(£13,049,680)
1,532.30 /m²	(£450,769)	(£2,029,550)	(£3,606,651)	(£5,182,648)	(£6,754,176)	(£8,329,483)	(£9,904,154)	(£11,475,030)	(£13,049,680)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

Elsenham
Uttlesford District Council

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150 dwellings
35% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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Elsenham
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	87	8,473.80	4,750.20	462,669	40,252,245	0	40,252,245
AH - SR	33	2,531.10	1,700.00	130,390	4,302,870	0	4,302,870
AH - FH	12	948.00	3,325.14	262,686	3,152,233	0	3,152,233
AH - SO	2	151.60	3,087.63	234,042	468,085	0	468,085
Market Sheltered	5	315.00	6,250.00	393,750	1,968,750	0	1,968,750
AH Sheltered SR	2	134.00	1,700.00	113,900	227,800	0	227,800
AH Sheltered SO	1	67.00	3,900.00	261,300	261,300	0	261,300
5% Self-build plots	8	0.00	0.00	125,000	1,000,000	0	1,000,000
Totals	**150**	**12,620.50**			**51,633,282**	**0**	**51,633,282**

NET REALISATION		**51,633,282**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (8.40 Ha @ 695,253.09 /Hect)	5,840,126	
		5,840,126
Stamp Duty	283,006	
Effective Stamp Duty Rate	4.85%	
Agent Fee	1.50%	87,602
Legal Fee	0.75%	43,801
		414,409

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	8,578.20	1,393.00	11,949,433	
AH - SR	2,636.70	1,393.00	3,672,923	
AH - FH	948.00	1,393.00	1,320,564	
AH - SO	158.20	1,393.00	220,373	
Market Sheltered	394.00	1,970.00	776,180	
AH Sheltered SR	167.60	1,970.00	330,172	
AH Sheltered SO	83.80	1,970.00	165,086	
Totals	**12,966.50 m²**		**18,434,730**	
Contingency - housebuilding		3.00%	632,947	
Contingency - all other works		5.00%	284,166	
Site Works & Infrastructure 50%	150.00 un	12,625.00 /un	1,893,750	
Site Works & Infrastructure 50%	150.00 un	12,625.00 /un	1,893,750	
				23,139,343
Other Construction				
Externals		15.00%	2,574,494	
Externals SHELTERED		7.00%	89,001	
Climate change response %		5.00%	921,737	
Electric Vehicle Charging (Market)	92.00 un	1,029.00 /un	94,668	
Electric Vehicle Charging (AH)	50.00 un	1,303.00 /un	65,150	
M4(2) 100%	12,966.50 m²	15.50	200,981	
M4(3a) 10% Market dwellings	87.00 un	1,134.00 /un	98,658	
M4(3a) 10% Market SHELTERED	5.00 un	897.00 /un	4,485	
M4(3b) 20% AH	47.00 un	2,844.00 /un	133,668	
M4(3b) 20% AH SHELTERED	3.00 un	3,017.00 /un	9,051	
BNG		2.86%	527,233	
Empty Property Costs (Sheltered)	8.00 un	2,000.00 /un	16,000	
Hatfield Forest SSSI SAMM	150.00 un	1,395.00 /un	209,250	
				4,944,375
Section 106 Costs				
PS + EY contributions			1,107,953	
Secondary School contributions			1,917,552	
Secondary school - travel FC			178,410	
SEND FC			115,053	
Post-18 FC			132,754	
GI/POS play area			150,000	
GI/POS allotments			8,400	
GI/POS amenity			92,800	
GI/POS Sports/swimming contribution			57,586	
GI/POS improvements to Local sites			250,542	
Health improved facilities			13,289	
T Mobility scheme / various			200,000	
				4,224,339
PROFESSIONAL FEES				
Professional Fees		8.00%	2,142,523	
				2,142,523
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	1,548,998	
Sales Legal Fee	150.00 un	750.00 /un	112,500	
				1,661,498
MISCELLANEOUS FEES				
AH Profit		6.00%	315,603	
Market Profit		17.50%	7,388,674	
First Homes		12.00%	378,268	
				8,082,545
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			1,107,612	
Construction			76,499	
Total Finance Cost				1,184,111
TOTAL COSTS				**51,633,269**
PROFIT				
				13

Elsenham
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£3,430,011)	(£4,895,893)	(£6,364,304)	(£7,832,401)	(£9,296,692)	(£10,764,159)	(£12,231,625)	(£13,695,551)	(£15,163,017)
1,253.70 /m²	(£3,430,011)	(£4,895,893)	(£6,364,304)	(£7,832,401)	(£9,296,692)	(£10,764,159)	(£12,231,625)	(£13,695,551)	(£15,163,017)
-5.000%	(£2,432,572)	(£3,899,176)	(£5,368,161)	(£6,836,262)	(£8,300,840)	(£9,768,465)	(£11,235,932)	(£12,699,857)	(£14,167,324)
1,323.35 /m²	(£2,432,572)	(£3,899,176)	(£5,368,161)	(£6,836,262)	(£8,300,840)	(£9,768,465)	(£11,235,932)	(£12,699,857)	(£14,167,324)
0.000%	(£1,434,903)	(£2,901,737)	(£4,371,445)	(£5,840,126)	(£7,304,701)	(£8,772,751)	(£10,240,238)	(£11,704,163)	(£13,171,630)
1,393.00 /m²	(£1,434,903)	(£2,901,737)	(£4,371,445)	(£5,840,126)	(£7,304,701)	(£8,772,751)	(£10,240,238)	(£11,704,163)	(£13,171,630)
+5.000%	(£430,325)	(£1,904,298)	(£3,374,428)	(£4,843,713)	(£6,308,563)	(£7,776,660)	(£9,244,523)	(£10,708,492)	(£12,175,937)
1,462.65 /m²	(£430,325)	(£1,904,298)	(£3,374,428)	(£4,843,713)	(£6,308,563)	(£7,776,660)	(£9,244,523)	(£10,708,492)	(£12,175,937)
+10.000%	£667,487	(£903,742)	(£2,376,989)	(£3,846,997)	(£5,312,428)	(£6,780,523)	(£8,248,620)	(£9,712,776)	(£11,180,242)
1,532.30 /m²	£667,487	(£903,742)	(£2,376,989)	(£3,846,997)	(£5,312,428)	(£6,780,523)	(£8,248,620)	(£9,712,776)	(£11,180,242)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

Elsenham
Uttlesford District Council

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150 dwellings
40% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Elsenham
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	80	7,792.00	4,750.20	462,669	37,013,558	0	37,013,558
AH - SR	37	2,837.90	1,700.00	130,390	4,824,430	0	4,824,430
AH - FH	14	1,106.00	3,325.14	262,686	3,677,605	0	3,677,605
AH - SO	3	227.40	3,087.63	234,042	702,127	0	702,127
Market Sheltered	5	315.00	6,250.00	393,750	1,968,750	0	1,968,750
AH Sheltered SR	2	134.00	1,700.00	113,900	227,800	0	227,800
AH Sheltered SO	1	67.00	3,900.00	261,300	261,300	0	261,300
5% Self-build plots	8	0.00	0.00	125,000	1,000,000	0	1,000,000
Totals	**150**	**12,479.30**			**49,675,570**	**0**	**49,675,570**

NET REALISATION	**49,675,570**

OUTLAY

ACQUISITION COSTS				
Residualised Price (8.40 Ha @ 582,747.92 /Hect)			4,895,083	
				4,895,083
Stamp Duty			235,754	
Effective Stamp Duty Rate		4.82%		
Agent Fee		1.50%	73,426	
Legal Fee		0.75%	36,713	
				345,893

CONSTRUCTION COSTS				
Construction	**m²**	**Build Rate m²**	**Cost**	
Market Housing	7,888.00	1,393.00	10,987,984	
AH - SR	2,956.30	1,393.00	4,118,126	
AH - FH	1,106.00	1,393.00	1,540,658	
AH - SO	237.30	1,393.00	330,559	
Market Sheltered	394.00	1,970.00	776,180	
AH Sheltered SR	167.60	1,970.00	330,172	
AH Sheltered SO	83.80	1,970.00	165,086	
Totals	**12,833.00 m²**		**18,248,765**	
Contingency - housebuilding		3.00%	626,531	
Contingency - all other works		5.00%	283,930	
Site Works & Infrastructure 50%	150.00 un	12,625.00 /un	1,893,750	
Site Works & Infrastructure 50%	150.00 un	12,625.00 /un	1,893,750	
				22,946,726
Other Construction				
Externals		15.00%	2,546,599	
Externals SHELTERED		7.00%	89,001	
Climate change response %		5.00%	912,438	
Electric Vehicle Charging (Market)	85.00 un	1,029.00 /un	87,465	
Electric Vehicle Charging (AH)	57.00 un	1,303.00 /un	74,271	
M4(2) 100%	12,833.00 m²	15.50	198,911	
M4(3a) 10% Market dwellings	80.00 un	1,134.00 /un	90,720	
M4(3a) 10% Market SHELTERED	5.00 un	897.00 /un	4,485	
M4(3b) 20% AH	54.00 un	2,844.00 /un	153,576	
M4(3b) 20% AH SHELTERED	3.00 un	3,017.00 /un	9,051	
BNG		2.86%	521,915	
Empty Property Costs (Sheltered)	8.00 un	2,000.00 /un	16,000	
Hatfield Forest SSSI SAMM	150.00 un	1,395.00 /un	209,250	
				4,913,682
Section 106 Costs				
PS + EY contributions			1,107,953	
Secondary School contributions			1,917,552	
Secondary school - travel FC			178,410	
SEND FC			115,053	
Post-18 FC			132,754	
GI/POS play area			150,000	
GI/POS allotments			8,400	
GI/POS amenity			92,800	
GI/POS Sports/swimming contribution			57,586	
GI/POS improvements to Local sites			250,542	
Health improved facilities			13,289	
T Mobility scheme / various			200,000	
				4,224,339
PROFESSIONAL FEES				
Professional Fees		8.00%	2,125,037	
				2,125,037
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	1,490,267	
Sales Legal Fee	150.00 un	750.00 /un	112,500	
				1,602,767
MISCELLANEOUS FEES				
AH Profit		6.00%	360,939	
Market Profit		17.50%	6,821,904	
First Homes		12.00%	441,313	
				7,624,156
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			923,243	
Construction			74,636	
Total Finance Cost				997,879

TOTAL COSTS	**49,675,561**
PROFIT	
	9

Elsenham
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£2,703,397)	(£4,090,054)	(£5,479,403)	(£6,867,865)	(£8,252,613)	(£9,640,573)	(£11,028,053)	(£12,412,206)	(£13,799,685)
1,253.70 /m²	(£2,703,397)	(£4,090,054)	(£5,479,403)	(£6,867,865)	(£8,252,613)	(£9,640,573)	(£11,028,053)	(£12,412,206)	(£13,799,685)
-5.000%	(£1,715,947)	(£3,102,722)	(£4,492,712)	(£5,881,699)	(£7,266,568)	(£8,654,645)	(£10,042,449)	(£11,426,601)	(£12,814,081)
1,323.35 /m²	(£1,715,947)	(£3,102,722)	(£4,492,712)	(£5,881,699)	(£7,266,568)	(£8,654,645)	(£10,042,449)	(£11,426,601)	(£12,814,081)
0.000%	(£722,081)	(£2,115,390)	(£3,505,380)	(£4,895,083)	(£6,280,525)	(£7,668,600)	(£9,056,677)	(£10,440,997)	(£11,828,477)
1,393.00 /m²	(£722,081)	(£2,115,390)	(£3,505,380)	(£4,895,083)	(£6,280,525)	(£7,668,600)	(£9,056,677)	(£10,440,997)	(£11,828,477)
+5.000%	£320,220	(£1,124,831)	(£2,518,048)	(£3,908,038)	(£5,294,048)	(£6,682,555)	(£8,070,633)	(£9,455,391)	(£10,842,873)
1,462.65 /m²	£320,220	(£1,124,831)	(£2,518,048)	(£3,908,038)	(£5,294,048)	(£6,682,555)	(£8,070,633)	(£9,455,391)	(£10,842,873)
+10.000%	£1,511,795	(£123,440)	(£1,529,863)	(£2,920,707)	(£4,307,363)	(£5,696,344)	(£7,084,588)	(£8,469,336)	(£9,857,269)
1,532.30 /m²	£1,511,795	(£123,440)	(£1,529,863)	(£2,920,707)	(£4,307,363)	(£5,696,344)	(£7,084,588)	(£8,469,336)	(£9,857,269)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

N Takeley
Uttlesford District Council

1546 dwellings
30% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

APPRAISAL SUMMARY

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N Takeley
Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	974	94,867.60	4,750.20	462,669	450,640,074	0	450,640,074
AH - SR	278	21,322.60	1,700.00	130,390	36,248,420	0	36,248,420
AH - FH	105	8,295.00	3,325.14	262,686	27,582,036	0	27,582,036
AH - SO	35	2,653.00	3,087.63	234,042	8,191,482	0	8,191,482
Market Sheltered	54	3,402.00	6,250.00	393,750	21,262,500	0	21,262,500
AH Sheltered SR	15	1,005.00	1,700.00	113,900	1,708,500	0	1,708,500
AH Sheltered SO	8	536.00	3,900.00	261,300	2,090,400	0	2,090,400
5% Self-build plots	77	0.00	0.00	125,000	9,625,000	0	9,625,000
Totals	**1,546**	**132,081.20**			**557,348,412**	**0**	**557,348,412**

NET REALISATION		**557,348,412**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (120.00 Ha @ 470,349.28 /Hect)	56,441,913	
		56,441,913
Stamp Duty	2,813,096	
Effective Stamp Duty Rate	4.98%	
Agent Fee	1.50%	846,629
Legal Fee	0.75%	423,314
		4,083,039

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	96,036.40	1,393.00	133,778,705	
AH - SR	22,212.20	1,393.00	30,941,595	
AH - FH	8,295.00	1,393.00	11,554,935	
AH - SO	2,768.50	1,393.00	3,856,520	
Market Sheltered	4,255.20	1,970.00	8,382,744	
AH Sheltered SR	1,257.00	1,970.00	2,476,290	
AH Sheltered SO	670.40	1,970.00	1,320,688	
Totals	**135,494.70 m²**		**192,311,477**	
Contingency - housebuilding		3.00%	6,605,515	
Contingency - all other works		5.00%	2,933,174	
Site Works & Infrastructure 50%	1,546.00 un	12,625.00 /un	19,518,250	
Site Works & Infrastructure 50%	1,546.00 un	12,625.00 /un	19,518,250	
				240,886,666
Other Construction				
Externals		15.00%	27,019,763	
Externals SHELTERED		7.00%	852,581	
Climate change response %		5.00%	9,615,574	
Electric Vehicle Charging (Market)	1,028.00 un	1,029.00 /un	1,057,812	
Electric Vehicle Charging (AH)	441.00 un	1,303.00 /un	574,623	
M4(2) 100%	135,494.70 m²	15.50	2,100,168	
M4(3a) 10% Market dwellings	974.00 un	1,134.00 /un	1,104,516	
M4(3a) 10% Market SHELTERED	54.00 un	897.00 /un	48,438	
M4(3b) 20% AH	418.00 un	2,844.00 /un	1,188,792	
M4(3b) 20% AH SHELTERED	23.00 un	3,017.00 /un	69,391	
BNG		2.86%	5,500,108	
Empty Property Costs (Sheltered)	77.00 un	2,000.00 /un	154,000	
Hatfield Forest SSSI SAMM	1,546.00 un	1,395.00 /un	2,156,670	
				51,442,436
Section 106 Costs				
PS Expansion			660,450	
PS + Early Years			13,693,362	
Secondary School FC			8,250,952	
SEND FC			1,155,133	
Post-16 FC			1,332,846	
GI/POS play area			500,000	
GI/POS allotments			88,800	
GI/POS amenity			950,400	
GI/POS SANGs			1,967,695	
GI/POS Sports/swimming contribution			575,855	
GI/POS football pitches/ancillary			1,390,000	
T Mobility scheme			1,000,000	
T Cycle Route			5,500,000	
T bus service			2,000,000	
T free bus travel to residents			4,300,000	
T discounted rail			9,900,000	
Transport - various			2,352,500	
				55,617,993
PROFESSIONAL FEES				
Professional Fees		8.00%	22,307,785	
				22,307,785
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	16,720,452	
Sales Legal Fee	1,546.00 un	750.00 /un	1,159,500	
				17,879,952
MISCELLANEOUS FEES				
AH Profit		6.00%	2,894,328	
Market Profit		17.50%	82,582,950	
First Homes		12.00%	3,309,844	
				88,787,123
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			18,930,214	
Construction			971,271	
Total Finance Cost				19,901,485

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Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£32,308,823)	(£45,949,337)	(£59,572,666)	(£73,172,449)	(£86,717,972)	(£100,284,206)	(£113,842,797)	(£127,364,122)	(£140,914,345)
1,253.70 /m²	(£32,308,823)	(£45,949,337)	(£59,572,666)	(£73,172,449)	(£86,717,972)	(£100,284,206)	(£113,842,797)	(£127,364,122)	(£140,914,345)
-5.000%	(£23,660,660)	(£37,549,466)	(£51,195,625)	(£64,817,916)	(£78,383,587)	(£91,961,699)	(£105,528,821)	(£119,055,689)	(£132,610,545)
1,323.35 /m²	(£23,660,660)	(£37,549,466)	(£51,195,625)	(£64,817,916)	(£78,383,587)	(£91,961,699)	(£105,528,821)	(£119,055,689)	(£132,610,545)
0.000%	(£14,237,038)	(£28,988,373)	(£42,807,911)	(£56,441,913)	(£70,030,596)	(£83,627,307)	(£97,205,425)	(£110,740,580)	(£124,300,972)
1,393.00 /m²	(£14,237,038)	(£28,988,373)	(£42,807,911)	(£56,441,913)	(£70,030,596)	(£83,627,307)	(£97,205,425)	(£110,740,580)	(£124,300,972)
+5.000%	(£3,842,844)	(£19,873,014)	(£34,303,403)	(£48,059,954)	(£61,655,532)	(£75,275,853)	(£88,871,028)	(£102,416,603)	(£115,984,640)
1,462.65 /m²	(£3,842,844)	(£19,873,014)	(£34,303,403)	(£48,059,954)	(£61,655,532)	(£75,275,853)	(£88,871,028)	(£102,416,603)	(£115,984,640)
+10.000%	£7,568,655	(£9,778,999)	(£25,419,814)	(£39,578,851)	(£53,276,650)	(£66,901,820)	(£80,520,430)	(£94,082,166)	(£107,660,329)
1,532.30 /m²	£7,568,655	(£9,778,999)	(£25,419,814)	(£39,578,851)	(£53,276,650)	(£66,901,820)	(£80,520,430)	(£94,082,166)	(£107,660,329)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

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Uttlesford District Council

1546 dwellings
35% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

Development Appraisal
Licensed Copy
17 June 2024

APPRAISAL SUMMARY

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Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales	Adjustment	Net Sales
Market Housing	905	88,147.00	4,750.20	462,669	418,715,879	0	418,715,879
AH - SR	341	26,154.70	1,700.00	130,390	44,462,990	0	44,462,990
AH - FH	122	9,638.00	3,325.14	262,686	32,047,699	0	32,047,699
AH - SO	24	1,819.20	3,087.63	234,042	5,617,016	0	5,617,016
Market Sheltered	50	3,150.00	6,250.00	393,750	19,687,500	0	19,687,500
AH Sheltered SR	19	1,273.00	1,700.00	113,900	2,164,100	0	2,164,100
AH Sheltered SO	8	536.00	3,900.00	261,300	2,090,400	0	2,090,400
5% Self-build plots	77	0.00	0.00	125,000	9,625,000	0	9,625,000
Totals	**1,546**	**130,717.90**			**534,410,585**	**0**	**534,410,585**

NET REALISATION		**534,410,585**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (120.00 Ha @ 386,071.57 /Hect)	46,328,588	
		46,328,588
Stamp Duty	2,307,429	
Effective Stamp Duty Rate	4.98%	
Agent Fee	1.50%	694,929
Legal Fee	0.75%	347,464
		3,349,823

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	89,233.00	1,393.00	124,301,569	
AH - SR	27,245.90	1,393.00	37,953,539	
AH - FH	9,638.00	1,393.00	13,425,734	
AH - SO	1,898.40	1,393.00	2,644,471	
Market Sheltered	3,940.00	1,970.00	7,761,800	
AH Sheltered SR	1,592.20	1,970.00	3,136,634	
AH Sheltered SO	670.40	1,970.00	1,320,688	
Totals	**134,217.90 m²**		**190,544,435**	
Contingency - housebuilding		3.00%	6,544,457	
Contingency - all other works		5.00%	2,931,564	
Site Works & Infrastructure 50%	1,546.00 un	12,625.00 /un	19,518,250	
Site Works & Infrastructure 50%	1,546.00 un	12,625.00 /un	19,518,250	
				239,056,956
Other Construction				
Externals		15.00%	26,748,797	
Externals SHELTERED		7.00%	855,339	
Climate change response %		5.00%	9,527,222	
Electric Vehicle Charging (Market)	955.00 un	1,029.00 /un	982,695	
Electric Vehicle Charging (AH)	514.00 un	1,303.00 /un	669,742	
M4(2) 100%	134,217.90 m²	15.50	2,080,377	
M4(3a) 10% Market dwellings	905.00 un	1,134.00 /un	1,026,270	
M4(3a) 10% Market SHELTERED	50.00 un	897.00 /un	44,850	
M4(3b) 20% AH	487.00 un	2,844.00 /un	1,385,028	
M4(3b) 20% AH SHELTERED	27.00 un	3,017.00 /un	81,459	
BNG		2.86%	5,449,571	
Empty Property Costs (Sheltered)	77.00 un	2,000.00 /un	154,000	
Hatfield Forest SSSI SAMM	1,546.00 un	1,395.00 /un	2,156,670	
				51,162,020
Section 106 Costs				
PS Expansion			660,450	
PS + Early Years			13,693,362	
Secondary School FC			8,250,952	
SEND FC			1,155,133	
Post-16 FC			1,332,846	
GI/POS play area			500,000	
GI/POS allotments			88,800	
GI/POS amenity			950,400	
GI/POS SANGs			1,967,695	
GI/POS Sports/swimming contribution			575,855	
GI/POS football pitches/ancillary			1,390,000	
T Mobility scheme			1,000,000	
T Cycle Route			5,500,000	
T bus service			2,000,000	
T free bus travel to residents			4,300,000	
T discounted rail			9,900,000	
Transport - various			2,352,500	
				55,617,993

PROFESSIONAL FEES				
Professional Fees		8.00%	22,142,388	
				22,142,388
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	16,032,318	
Sales Legal Fee	1,546.00 un	750.00 /un	1,159,500	
				17,191,818
MISCELLANEOUS FEES				
AH Profit		6.00%	3,260,070	
Market Profit		17.50%	76,720,591	
First Homes		12.00%	3,845,724	
				83,826,386
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			14,749,819	
Construction			984,755	
Total Finance Cost				15,734,575

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Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£24,476,197)	(£37,359,243)	(£50,143,582)	(£62,919,827)	(£75,637,971)	(£88,371,373)	(£101,096,813)	(£113,786,068)	(£126,501,610)
1,253.70 /m²	(£24,476,197)	(£37,359,243)	(£50,143,582)	(£62,919,827)	(£75,637,971)	(£88,371,373)	(£101,096,813)	(£113,786,068)	(£126,501,610)
-5.000%	(£15,458,820)	(£28,964,855)	(£41,843,915)	(£54,628,266)	(£67,373,088)	(£80,122,187)	(£92,856,703)	(£105,552,660)	(£118,273,441)
1,323.35 /m²	(£15,458,820)	(£28,964,855)	(£41,843,915)	(£54,628,266)	(£67,373,088)	(£80,122,187)	(£92,856,703)	(£105,552,660)	(£118,273,441)
0.000%	(£5,325,062)	(£20,162,221)	(£33,469,409)	(£46,328,588)	(£59,082,137)	(£71,856,943)	(£84,606,403)	(£97,311,505)	(£110,038,834)
1,393.00 /m²	(£5,325,062)	(£20,162,221)	(£33,469,409)	(£46,328,588)	(£59,082,137)	(£71,856,943)	(£84,606,403)	(£97,311,505)	(£110,038,834)
+5.000%	£5,723,189	(£10,333,827)	(£24,810,623)	(£37,973,641)	(£50,782,602)	(£63,566,809)	(£76,340,797)	(£89,060,061)	(£101,796,834)
1,462.65 /m²	£5,723,189	(£10,333,827)	(£24,810,623)	(£37,973,641)	(£50,782,602)	(£63,566,809)	(£76,340,797)	(£89,060,061)	(£101,796,834)
+10.000%	£18,181,216	£95,202	(£15,319,245)	(£29,419,304)	(£42,446,669)	(£55,267,275)	(£68,051,480)	(£80,794,058)	(£93,544,277)
1,532.30 /m²	£18,181,216	£95,202	(£15,319,245)	(£29,419,304)	(£42,446,669)	(£55,267,275)	(£68,051,480)	(£80,794,058)	(£93,544,277)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

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Uttlesford District Council

1546 dwellings
40% Affordable Housing
Value Level – VL4 @ £4,750/sq.m.

APPRAISAL SUMMARY

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Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	**Units**	**m²**	**Sales Rate m²**	**Unit Price**	**Gross Sales**
Market Housing	835	81,329.00	4,750.20	462,669	386,329,016
AH - SR	390	29,913.00	1,700.00	130,390	50,852,100
AH - FH	139	10,981.00	3,325.14	262,686	36,513,362
AH - SO	28	2,122.40	3,087.63	234,042	6,553,186
Market Sheltered	46	2,898.00	6,250.00	393,750	18,112,500
AH Sheltered SR	22	1,474.00	1,700.00	113,900	2,505,800
AH Sheltered SO	9	603.00	3,900.00	261,300	2,351,700
5% Self-build plots	77	0.00	0.00	125,000	9,625,000
Totals	**1,546**	**129,320.40**			**512,842,664**

NET REALISATION		**512,842,664**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (120.00 Ha @ 309,197.25 /Hect)	37,103,670	
		37,103,670
Stamp Duty	1,846,183	
Effective Stamp Duty Rate	4.98%	
Agent Fee	1.50%	556,555
Legal Fee	0.75%	278,278
		2,681,016

CONSTRUCTION COSTS

Construction	**m²**	**Build Rate m²**	**Cost**	
Market Housing	82,331.00	1,393.00	114,687,083	
AH - SR	31,161.00	1,393.00	43,407,273	
AH - FH	10,981.00	1,393.00	15,296,533	
AH - SO	2,214.80	1,393.00	3,085,216	
Market Sheltered	3,624.80	1,970.00	7,140,856	
AH Sheltered SR	1,843.60	1,970.00	3,631,892	
AH Sheltered SO	754.20	1,970.00	1,485,774	
Totals	**132,910.40 m²**		**188,734,627**	
Contingency - housebuilding		3.00%	6,481,924	
Contingency - all other works		5.00%	2,929,847	
Site Works & Infrastructure 50%	1,546.00 un	12,625.00 /un	19,518,250	
Site Works & Infrastructure 50%	1,546.00 un	12,625.00 /un	19,518,250	
				237,182,899
Other Construction				
Externals		15.00%	26,471,416	
Externals SHELTERED		7.00%	858,097	
Climate change response %		5.00%	9,436,731	
Electric Vehicle Charging (Market)	881.00 un	1,029.00 /un	906,549	
Electric Vehicle Charging (AH)	588.00 un	1,303.00 /un	766,164	
M4(2) 100%	132,910.40 m²	15.50	2,060,111	
M4(3a) 10% Market dwellings	835.00 un	1,134.00 /un	946,890	
M4(3a) 10% Market SHELTERED	46.00 un	897.00 /un	41,262	
M4(3b) 20% AH	557.00 un	2,844.00 /un	1,584,108	
M4(3b) 20% AH SHELTERED	31.00 un	3,017.00 /un	93,527	
BNG		2.86%	5,397,810	
Empty Property Costs (Sheltered)	77.00 un	2,000.00 /un	154,000	
Hatfield Forest SSSI SAMM	1,546.00 un	1,395.00 /un	2,156,670	
				50,873,335
Section 106 Costs				
PS Expansion			660,450	
PS + Early Years			13,693,362	
Secondary School FC			8,250,952	
SEND FC			1,155,133	
Post-16 FC			1,332,846	
GI/POS play area			500,000	
GI/POS allotments			88,800	
GI/POS amenity			950,400	
GI/POS SANGs			1,967,695	
GI/POS Sports/swimming contribution			575,855	
GI/POS football pitches/ancillary			1,390,000	
T Mobility scheme			1,000,000	
T Cycle Route			5,500,000	
T bus service			2,000,000	
T free bus travel to residents			4,300,000	
T discounted rail			9,900,000	
Transport - various			2,352,500	
				55,617,993

PROFESSIONAL FEES				
Professional Fees		8.00%	21,972,886	
				21,972,886
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	15,385,280	
Sales Legal Fee	1,546.00 un	750.00 /un	1,159,500	
				16,544,780
MISCELLANEOUS FEES				
AH Profit		6.00%	3,735,767	
Market Profit		17.50%	70,777,265	
First Homes		12.00%	4,381,603	
				78,894,636
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			10,977,468	
Construction			993,889	
Total Finance Cost				11,971,358

N Takeley
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£17,074,102)	(£29,446,743)	(£41,501,501)	(£53,544,146)	(£65,532,726)	(£77,529,932)	(£89,517,534)	(£101,469,979)	(£113,447,637)
1,253.70 /m²	(£17,074,102)	(£29,446,743)	(£41,501,501)	(£53,544,146)	(£65,532,726)	(£77,529,932)	(£89,517,534)	(£101,469,979)	(£113,447,637)
-5.000%	(£7,340,221)	(£20,954,611)	(£33,279,161)	(£45,324,231)	(£57,338,001)	(£69,356,707)	(£81,355,489)	(£93,315,578)	(£105,298,437)
1,323.35 /m²	(£7,340,221)	(£20,954,611)	(£33,279,161)	(£45,324,231)	(£57,338,001)	(£69,356,707)	(£81,355,489)	(£93,315,578)	(£105,298,437)
0.000%	£3,301,687	(£11,532,836)	(£24,851,194)	(£37,103,670)	(£49,118,082)	(£61,160,710)	(£73,180,411)	(£85,152,292)	(£97,142,165)
1,393.00 /m²	£3,301,687	(£11,532,836)	(£24,851,194)	(£37,103,670)	(£49,118,082)	(£61,160,710)	(£73,180,411)	(£85,152,292)	(£97,142,165)
+5.000%	£15,468,955	(£1,257,956)	(£15,696,535)	(£28,724,239)	(£40,897,775)	(£52,940,812)	(£64,983,420)	(£76,975,039)	(£88,977,003)
1,462.65 /m²	£15,468,955	(£1,257,956)	(£15,696,535)	(£28,724,239)	(£40,897,775)	(£52,940,812)	(£64,983,420)	(£76,975,039)	(£88,977,003)
+10.000%	£28,237,525	£10,383,046	(£5,532,259)	(£19,754,775)	(£32,547,734)	(£44,720,517)	(£56,763,542)	(£68,777,093)	(£80,798,470)
1,532.30 /m²	£28,237,525	£10,383,046	(£5,532,259)	(£19,754,775)	(£32,547,734)	(£44,720,517)	(£56,763,542)	(£68,777,093)	(£80,798,470)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

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Uttlesford District Council

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489 dwellings
30% Affordable Housing
Value Level – VL3 @ £4,500/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	**Units**	**m²**	**Sales Rate m²**	**Unit Price**	**Gross Sales**
Market Housing	309	30,096.60	4,500.00	438,300	135,434,700
AH - SR	87	6,672.90	1,700.00	130,390	11,343,930
AH - FH	33	2,607.00	3,150.00	248,850	8,212,050
AH - SO	12	909.60	2,925.00	221,715	2,660,580
Market Sheltered	17	1,071.00	6,250.00	393,750	6,693,750
AH Sheltered SR	4	268.00	1,700.00	113,900	455,600
AH Sheltered SO	3	201.00	3,900.00	261,300	783,900
5% Self-build plots	24	0.00	0.00	125,000	3,000,000
Totals	**489**	**41,826.10**			**168,584,510**

NET REALISATION	**168,584,510**

OUTLAY

ACQUISITION COSTS			
Residualised Price (49.84 Ha @ 444,259.35 /Hect)		22,141,886	
			22,141,886
Stamp Duty		1,098,094	
Effective Stamp Duty Rate	4.96%		
Agent Fee	1.50%	332,128	
Legal Fee	0.75%	166,064	
			1,596,287

CONSTRUCTION COSTS				
Construction	**m²**	**Build Rate m²**	**Cost**	
Market Housing	30,467.40	1,393.00	42,441,088	
AH - SR	6,951.30	1,393.00	9,683,161	
AH - FH	2,607.00	1,393.00	3,631,551	
AH - SO	949.20	1,393.00	1,322,236	
Market Sheltered	1,339.60	1,970.00	2,639,012	
AH Sheltered SR	335.20	1,970.00	660,344	
AH Sheltered SO	251.40	1,970.00	495,258	
Totals	**42,901.10 m²**		**60,872,650**	
Contingency - housebuilding		3.00%	2,090,999	
Contingency - all other works		5.00%	927,949	
Site Works & Infrastructure 50%	489.00 un	12,625.00 /un	6,173,625	
Site Works & Infrastructure 50%	489.00 un	12,625.00 /un	6,173,625	
				76,238,849
Other Construction				
Externals		15.00%	8,561,705	
Externals SHELTERED		7.00%	265,623	
Climate change response %		5.00%	3,043,632	
Electric Vehicle Charging (Market)	326.00 un	1,029.00 /un	335,454	
Electric Vehicle Charging (AH)	139.00 un	1,303.00 /un	181,117	
M4(2) 100%	42,901.10 m²	15.50	664,967	
M4(3a) 10% Market dwellings	309.00 un	1,134.00 /un	350,406	
M4(3a) 10% Market SHELTERED	17.00 un	897.00 /un	15,249	
M4(3b) 20% AH	132.00 un	2,844.00 /un	375,408	
M4(3b) 20% AH SHELTERED	7.00 un	3,017.00 /un	21,119	
BNG		2.86%	1,740,958	
Empty Property Costs (Sheltered)	24.00 un	2,000.00 /un	48,000	
Hatfield Forset SSSI SAMM	489.00 un	1,395.00 /un	682,155	
				16,285,794
Section 106 Costs				
PS + EY			4,446,251	
Communities - LIbraries			119,766	
Flooding/drainage			90,000	
GI/POS Sports/swimming contribution			180,983	
Health improved facilities			43,322	
				4,880,322
PROFESSIONAL FEES				
Professional Fees		8.00%	7,060,717	
				7,060,717
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	5,057,535	
Sales Legal Fee	489.00 un	750.00 /un	366,750	
				5,424,285
MISCELLANEOUS FEES				
AH Profit		6.00%	914,641	
Market Profit		17.50%	24,872,479	
First Homes		12.00%	985,446	
				26,772,565
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			7,910,351	
Construction			273,489	
Total Finance Cost				8,183,839

TOTAL COSTS	**168,584,544**
PROFIT	
	(34)

Performance Measures

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Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£18,676,691)	(£23,275,151)	(£27,883,958)	(£32,492,778)	(£37,089,632)	(£41,697,534)	(£46,305,435)	(£50,902,286)	(£55,510,082)
1,253.70 /m²	(£18,676,691)	(£23,275,151)	(£27,883,958)	(£32,492,778)	(£37,089,632)	(£41,697,534)	(£46,305,435)	(£50,902,286)	(£55,510,082)
-5.000%	(£15,804,389)	(£20,403,760)	(£25,013,659)	(£29,622,465)	(£34,220,228)	(£38,828,647)	(£43,436,548)	(£48,033,399)	(£52,641,300)
1,323.35 /m²	(£15,804,389)	(£20,403,760)	(£25,013,659)	(£29,622,465)	(£34,220,228)	(£38,828,647)	(£43,436,548)	(£48,033,399)	(£52,641,300)
0.000%	(£12,930,331)	(£17,531,204)	(£22,141,886)	(£26,751,883)	(£31,349,924)	(£35,958,730)	(£40,567,487)	(£45,164,512)	(£49,772,414)
1,393.00 /m²	(£12,930,331)	(£17,531,204)	(£22,141,886)	(£26,751,883)	(£31,349,924)	(£35,958,730)	(£40,567,487)	(£45,164,512)	(£49,772,414)
+5.000%	(£10,053,955)	(£14,657,020)	(£19,269,078)	(£23,880,011)	(£28,478,951)	(£33,088,433)	(£37,697,239)	(£42,294,936)	(£46,903,527)
1,462.65 /m²	(£10,053,955)	(£14,657,020)	(£19,269,078)	(£23,880,011)	(£28,478,951)	(£33,088,433)	(£37,697,239)	(£42,294,936)	(£46,903,527)
+10.000%	(£7,173,979)	(£11,780,643)	(£16,394,771)	(£21,006,953)	(£25,607,081)	(£30,217,075)	(£34,826,881)	(£39,424,696)	(£44,033,437)
1,532.30 /m²	(£7,173,979)	(£11,780,643)	(£16,394,771)	(£21,006,953)	(£25,607,081)	(£30,217,075)	(£34,826,881)	(£39,424,696)	(£44,033,437)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

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Uttlesford District Council

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489 dwellings
35% Affordable Housing
Value Level – VL3 @ £4,500/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE

Sales Valuation	Units	m²	Sales Rate m²	Unit Price	Gross Sales
Market Housing	287	27,953.80	4,500.00	438,300	125,792,100
AH - SR	108	8,283.60	1,700.00	130,390	14,082,120
AH - FH	38	3,002.00	3,150.00	248,850	9,456,300
AH - SO	8	606.40	2,925.00	221,715	1,773,720
Market Sheltered	16	1,008.00	6,250.00	393,750	6,300,000
AH Sheltered SR	6	402.00	1,700.00	113,900	683,400
AH Sheltered SO	2	134.00	3,900.00	261,300	522,600
5% Self-build plots	24	0.00	0.00	125,000	3,000,000
Totals	**489**	**41,389.80**			**161,610,240**

NET REALISATION		**161,610,240**
OUTLAY		
ACQUISITION COSTS		
Residualised Price (49.84 Ha @ 379,195.83 /Hect)	18,899,120	
		18,899,120
Stamp Duty	935,956	
Effective Stamp Duty Rate	4.95%	
Agent Fee	1.50%	283,487
Legal Fee	0.75%	141,743
		1,361,186

CONSTRUCTION COSTS

Construction	m²	Build Rate m²	Cost	
Market Housing	28,298.20	1,393.00	39,419,393	
AH - SR	8,629.20	1,393.00	12,020,476	
AH - FH	3,002.00	1,393.00	4,181,786	
AH - SO	632.80	1,393.00	881,490	
Market Sheltered	1,260.80	1,970.00	2,483,776	
AH Sheltered SR	502.80	1,970.00	990,516	
AH Sheltered SO	167.60	1,970.00	330,172	
Totals	**42,493.40 m²**		**60,307,609**	
Contingency - housebuilding		3.00%	2,071,482	
Contingency - all other works		5.00%	927,400	
Site Works & Infrastructure 50%	489.00 un	12,625.00 /un	6,173,625	
Site Works & Infrastructure 50%	489.00 un	12,625.00 /un	6,173,625	
				75,653,740
Other Construction				
Externals		15.00%	8,475,472	
Externals SHELTERED		7.00%	266,312	
Climate change response %		5.00%	3,015,380	
Electric Vehicle Charging (Market)	303.00 un	1,029.00 /un	311,787	
Electric Vehicle Charging (AH)	162.00 un	1,303.00 /un	211,086	
M4(2) 100%	42,493.40 m²	15.50	658,648	
M4(3a) 10% Market dwellings	287.00 un	1,134.00 /un	325,458	
M4(3a) 10% Market SHELTERED	16.00 un	897.00 /un	14,352	
M4(3b) 20% AH	154.00 un	2,844.00 /un	437,976	
M4(3b) 20% AH SHELTERED	8.00 un	3,017.00 /un	24,136	
BNG		2.86%	1,724,798	
Empty Property Costs (Sheltered)	24.00 un	2,000.00 /un	48,000	
Hatfield Forset SSSI SAMM	489.00 un	1,395.00 /un	682,155	
				16,195,560
Section 106 Costs				
PS + EY			4,446,251	
Communities - LIbraries			119,766	
Flooding/drainage			90,000	
GI/POS Sports/swimming contribution			180,983	
Health improved facilities			43,322	
				4,880,322
PROFESSIONAL FEES				
Professional Fees		8.00%	7,007,791	
				7,007,791
DISPOSAL FEES				
Marketing & Sales Agent Fees		3.00%	4,848,307	
Sales Legal Fee	489.00 un	750.00 /un	366,750	
				5,215,057
MISCELLANEOUS FEES				
AH Profit		6.00%	1,023,710	
Market Profit		17.50%	23,116,118	
First Homes		12.00%	1,134,756	
				25,274,584
FINANCE				
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)				
Land			6,848,469	
Construction			274,432	
Total Finance Cost				7,122,900
TOTAL COSTS				**161,610,261**
PROFIT				
				(21)

Performance Measures

Thaxted
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000%	(£15,964,596)	(£20,270,797)	(£24,587,206)	(£28,903,064)	(£33,208,226)	(£37,523,783)	(£41,839,341)	(£46,144,337)	(£50,459,316)
1,253.70 /m²	(£15,964,596)	(£20,270,797)	(£24,587,206)	(£28,903,064)	(£33,208,226)	(£37,523,783)	(£41,839,341)	(£46,144,337)	(£50,459,316)
-5.000%	(£13,119,409)	(£17,426,680)	(£21,743,683)	(£26,060,086)	(£30,366,152)	(£34,681,664)	(£38,997,222)	(£43,302,431)	(£47,617,988)
1,323.35 /m²	(£13,119,409)	(£17,426,680)	(£21,743,683)	(£26,060,086)	(£30,366,152)	(£34,681,664)	(£38,997,222)	(£43,302,431)	(£47,617,988)
0.000%	(£10,272,253)	(£14,581,166)	(£18,899,120)	(£23,216,568)	(£27,522,621)	(£31,839,031)	(£36,155,103)	(£40,460,312)	(£44,775,870)
1,393.00 /m²	(£10,272,253)	(£14,581,166)	(£18,899,120)	(£23,216,568)	(£27,522,621)	(£31,839,031)	(£36,155,103)	(£40,460,312)	(£44,775,870)
+5.000%	(£7,422,558)	(£11,733,792)	(£16,053,279)	(£20,371,562)	(£24,678,724)	(£28,995,509)	(£33,311,912)	(£37,617,975)	(£41,933,751)
1,462.65 /m²	(£7,422,558)	(£11,733,792)	(£16,053,279)	(£20,371,562)	(£24,678,724)	(£28,995,509)	(£33,311,912)	(£37,617,975)	(£41,933,751)
+10.000%	(£4,567,920)	(£8,883,988)	(£13,205,693)	(£17,525,393)	(£21,833,649)	(£26,151,163)	(£30,468,395)	(£34,774,447)	(£39,090,854)
1,532.30 /m²	(£4,567,920)	(£8,883,988)	(£13,205,693)	(£17,525,393)	(£21,833,649)	(£26,151,163)	(£30,468,395)	(£34,774,447)	(£39,090,854)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

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Uttlesford District Council

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489 dwellings
40% Affordable Housing
Value Level – VL3 @ £4,500/sq.m.

Development Appraisal
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17 June 2024

APPRAISAL SUMMARY

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Uttlesford District Council

Appraisal Summary for Phase 1 All Phases

Currency in £

REVENUE					
Sales Valuation	**Units**	**m²**	**Sales Rate m²**	**Unit Price**	**Gross Sales**
Market Housing	265	25,811.00	4,500.00	438,300	116,149,500
AH - SR	123	9,434.10	1,700.00	130,390	16,037,970
AH - FH	44	3,476.00	3,150.00	248,850	10,949,400
AH - SO	9	682.20	2,925.00	221,715	1,995,435
Market Sheltered	14	882.00	6,250.00	393,750	5,512,500
AH Sheltered SR	7	469.00	1,700.00	113,900	797,300
AH Sheltered SO	3	201.00	3,900.00	261,300	783,900
5% Self-build plots	24	0.00	0.00	125,000	3,000,000
Totals	**489**	**40,955.30**			**155,226,005**

NET REALISATION				**155,226,005**	
OUTLAY					
ACQUISITION COSTS					
Residualised Price (49.84 Ha @ 322,027.99 /Hect)			16,049,875		
				16,049,875	
Stamp Duty			793,494		
Effective Stamp Duty Rate		4.94%			
Agent Fee		1.50%	240,748		
Legal Fee		0.75%	120,374		
				1,154,616	
CONSTRUCTION COSTS					
Construction		**m²**	**Build Rate m²**	**Cost**	
Market Housing		26,129.00	1,393.00	36,397,697	
AH - SR		9,827.70	1,393.00	13,689,986	
AH - FH		3,476.00	1,393.00	4,842,068	
AH - SO		711.90	1,393.00	991,677	
Market Sheltered		1,103.20	1,970.00	2,173,304	
AH Sheltered SR		586.60	1,970.00	1,155,602	
AH Sheltered SO		251.40	1,970.00	495,258	
Totals		**42,085.80 m²**		**59,745,592**	
Contingency - housebuilding			3.00%	2,052,045	
Contingency - all other works			5.00%	926,968	
Site Works & Infrastructure 50%		489.00 un	12,625.00 /un	6,173,625	
Site Works & Infrastructure 50%		489.00 un	12,625.00 /un	6,173,625	
					75,071,855
Other Construction					
Externals			15.00%	8,388,214	
Externals SHELTERED			7.00%	267,691	
Climate change response %			5.00%	2,987,280	
Electric Vehicle Charging (Market)		279.00 un	1,029.00 /un	287,091	
Electric Vehicle Charging (AH)		186.00 un	1,303.00 /un	242,358	
M4(2) 100%		42,085.80 m²	15.50	652,330	
M4(3a) 10% Market dwellings		265.00 un	1,134.00 /un	300,510	
M4(3a) 10% Market SHELTERED		14.00 un	897.00 /un	12,558	
M4(3b) 20% AH		176.00 un	2,844.00 /un	500,544	
M4(3b) 20% AH SHELTERED		10.00 un	3,017.00 /un	30,170	
BNG			2.86%	1,708,724	
Empty Property Costs (Sheltered)		24.00 un	2,000.00 /un	48,000	
Hatfield Forset SSSI SAMM		489.00 un	1,395.00 /un	682,155	
					16,107,625
Section 106 Costs					
PS + EY				4,446,251	
Communities - LIbraries				119,766	
Flooding/drainage				90,000	
GI/POS Sports/swimming contribution				180,983	
Health improved facilities				43,322	
					4,880,322
PROFESSIONAL FEES					
Professional Fees			8.00%	6,955,269	
					6,955,269
DISPOSAL FEES					
Marketing & Sales Agent Fees			3.00%	4,656,780	
Sales Legal Fee		489.00 un	750.00 /un	366,750	
					5,023,530
MISCELLANEOUS FEES					
AH Profit			6.00%	1,176,876	
Market Profit			17.50%	21,290,850	
First Homes			12.00%	1,313,928	
					23,781,654
FINANCE					
Debit Rate 6.500%, Credit Rate 0.000% (Nominal)					
Land				5,927,635	
Construction				273,636	
Total Finance Cost					6,201,271
TOTAL COSTS					**155,226,018**
PROFIT					
					(13)

Performance Measures

Thaxted
Uttlesford District Council

Table of Land Cost and Land Cost

	Sales: Rate /m²								
Construction: Rate /m²	-33.330%	-29.170%	-25.000%	-20.830%	-16.670%	-12.500%	-8.330%	-4.170%	0.000%
-10.000% 1,253.70 /m²	(£13,550,056) (£13,550,056)	(£17,612,003) (£17,612,003)	(£21,682,906) (£21,682,906)	(£25,753,808) (£25,753,808)	(£29,814,960) (£29,814,960)	(£33,885,372) (£33,885,372)	(£37,955,696) (£37,955,696)	(£42,016,258) (£42,016,258)	(£46,086,581) (£46,086,581)
-5.000% 1,323.35 /m²	(£10,732,438) (£10,732,438)	(£14,795,162) (£14,795,162)	(£18,866,886) (£18,866,886)	(£22,938,347) (£22,938,347)	(£26,999,487) (£26,999,487)	(£31,070,392) (£31,070,392)	(£35,141,245) (£35,141,245)	(£39,202,040) (£39,202,040)	(£43,272,363) (£43,272,363)
0.000% 1,393.00 /m²	(£7,912,953) (£7,912,953)	(£11,977,075) (£11,977,075)	(£16,049,875) (£16,049,875)	(£20,121,759) (£20,121,759)	(£24,183,722) (£24,183,722)	(£28,254,931) (£28,254,931)	(£32,325,832) (£32,325,832)	(£36,386,917) (£36,386,917)	(£40,457,814) (£40,457,814)
+5.000% 1,462.65 /m²	(£5,090,201) (£5,090,201)	(£9,157,009) (£9,157,009)	(£13,231,329) (£13,231,329)	(£17,304,279) (£17,304,279)	(£21,366,866) (£21,366,866)	(£25,438,590) (£25,438,590)	(£29,510,325) (£29,510,325)	(£33,571,453) (£33,571,453)	(£37,642,351) (£37,642,351)
+10.000% 1,532.30 /m²	(£2,243,120) (£2,243,120)	(£6,333,954) (£6,333,954)	(£10,410,789) (£10,410,789)	(£14,485,373) (£14,485,373)	(£18,548,919) (£18,548,919)	(£22,621,723) (£22,621,723)	(£26,693,464) (£26,693,464)	(£30,755,426) (£30,755,426)	(£34,826,887) (£34,826,887)

Sensitivity Analysis : Assumptions for Calculation

Sales: Rate /m²

Heading	Phase	Rate	No. of Steps
Market Housing	1	£6,000.00	9 Down only
AH - FH	1	£4,200.00	9 Down only
AH - SO	1	£3,900.00	9 Down only

Construction: Rate /m²
Original Values are varied by Steps of 5.000%.

Heading	Phase	Rate	No. of Steps
Market Housing	1	£1,393.00	2.00 Up & Down
AH - SR	1	£1,393.00	2.00 Up & Down
AH - FH	1	£1,393.00	2.00 Up & Down
AH - SO	1	£1,393.00	2.00 Up & Down
Market Sheltered	1	£1,970.00	2.00 Up & Down
AH Sheltered SR	1	£1,970.00	2.00 Up & Down
AH Sheltered SO	1	£1,970.00	2.00 Up & Down

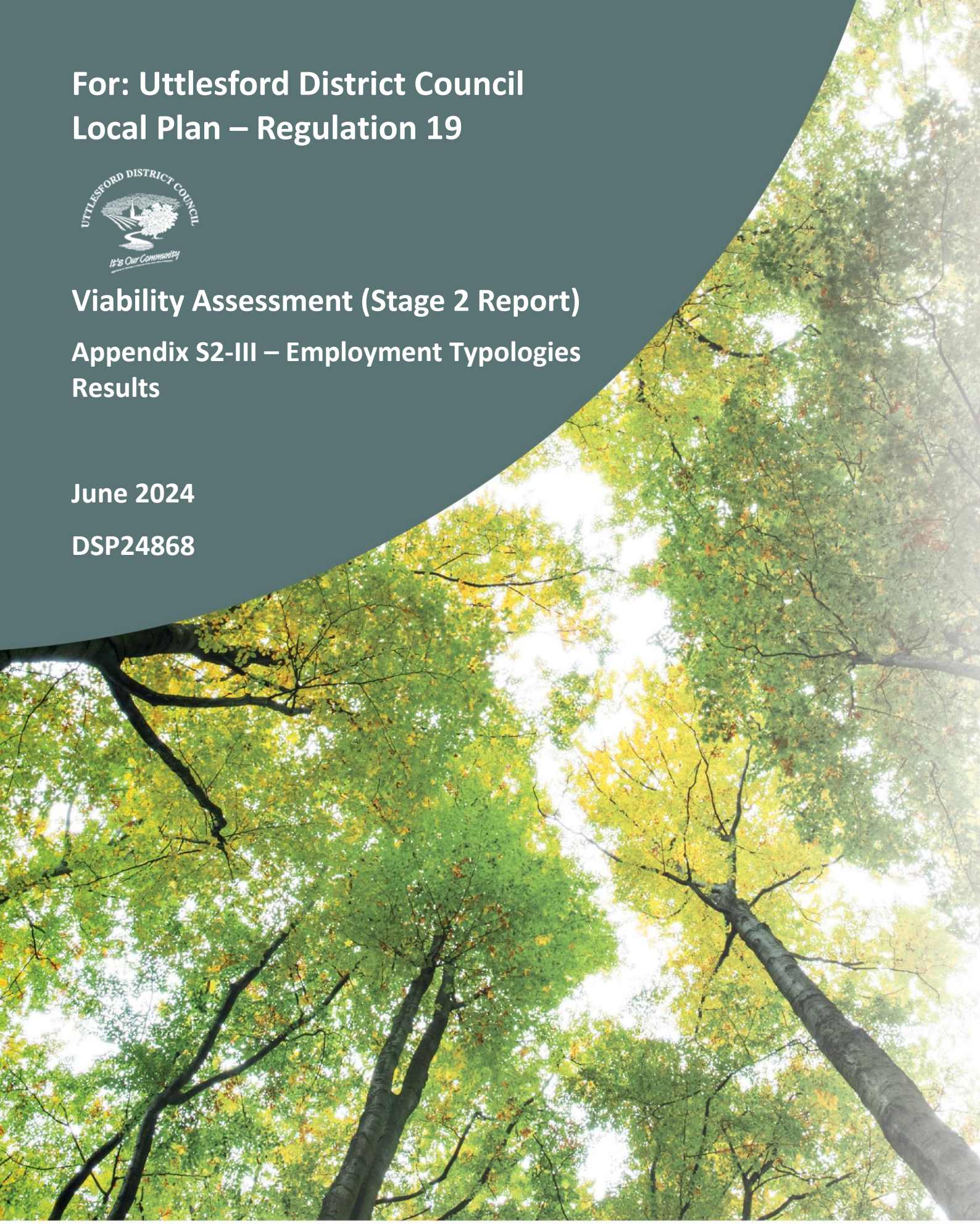
For: Uttlesford District Council
Local Plan – Regulation 19

Viability Assessment (Stage 2 Report)

Appendix S2-III – Employment Typologies Results

June 2024

DSP24868



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Uttlesford DC - Appendix S2 - III:
Regulation 19 Local Plan Viability Assessment
Stage 2: Employment Sites Typologies Results - Table 3a - R&D

Site Size (ha)	13.5
BLV/ha	£250,000

Residual Land Value (£)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	2.75%	3.25%	3.75%	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%
£216.00 /m²	£1,661,515								
£256.25 /m²	£24,470,158	£1,535,097							
£296.50 /m²	£47,278,801	£20,741,258	£1,286,144						
£336.75 /m²	£70,087,444	£39,947,418	£17,851,265	£959,886	Marginal to no Viability				
£377.00 /m²	£92,896,087	£59,153,579	£34,416,385	£15,506,067					
£417.25 /m²	£115,704,731	£78,359,740	£50,981,506	£30,052,248	£13,535,357	£170,076			
£457.50 /m²	£138,513,374	£97,565,900	£67,546,627	£44,598,429	£26,488,237	£11,833,675			
£497.75 /m²	£161,322,017	£116,772,061	£84,111,747	£59,144,610	£39,441,117	£23,497,274	£10,332,218		
£538.00 /m²	£184,130,660	£135,978,221	£100,676,868	£73,690,791	£52,393,996	£35,160,873	£20,931,239	£8,984,174	

Residual Land Value (£/Ha)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	2.75%	3.25%	3.75%	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%
£216.00 /m²									
£256.25 /m²									
£296.50 /m²									
£336.75 /m²									
£377.00 /m²					Marginal to no Viability				
£417.25 /m²	£8,570,721	£5,804,425							
£457.50 /m²	£10,260,250	£7,227,104							
£497.75 /m²	£11,949,779	£8,649,782	£6,230,500						
£538.00 /m²	£13,639,308	£10,072,461	£7,457,546	£5,458,577					

Surplus / Deficit Over Benchmark Land Value (BLV at £250,000/ha)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	2.75%	3.25%	3.75%	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%
£216.00 /m²									
£256.25 /m²									
£296.50 /m²									
£336.75 /m²									
£377.00 /m²					Marginal to no Viability				
£417.25 /m²	£8,320,721								
£457.50 /m²	£10,010,250	£6,977,104							
£497.75 /m²	£11,699,779	£8,399,782	£5,980,500						
£538.00 /m²	£13,389,308	£9,822,461	£7,207,546	£5,208,577					

Uttlesford DC - Appendix S2 - III:
Regulation 19 Local Plan Viability Assessment
Stage 2: Employment Sites Typologies Results - Table 3b - Offices

Site Size (ha)	5.5
BLV/ha	£250,000

Residual Land Value (£)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%
£161.00 /m²									
£188.00 /m²									
£215.00 /m²									
£242.00 /m²									
£269.00 /m²	£1,016,038				Marginal to no Viability				
£296.00 /m²	£4,822,854	£470,596							
£323.00 /m²	£8,629,671	£3,880,416							
£350.00 /m²	£12,436,487	£7,290,235	£3,081,488						
£377.00 /m²	£16,243,303	£10,700,055	£6,166,633	£2,390,556					

Residual Land Value (£/Ha)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%
£161.00 /m²									
£188.00 /m²									
£215.00 /m²									
£242.00 /m²									
£269.00 /m²					Marginal to no Viability				
£296.00 /m²	£876,883	£85,563							
£323.00 /m²	£1,569,031	£705,530							
£350.00 /m²	£2,261,179	£1,325,497	£560,271						
£377.00 /m²	£2,953,328	£1,945,465	£1,121,206	£434,646					

Surplus / Deficit Over Benchmark Land Value (BLV at £250,000/ha)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%	8.00%	8.50%
£161.00 /m²									
£188.00 /m²									
£215.00 /m²									
£242.00 /m²									
£269.00 /m²					Marginal to no Viability				
£296.00 /m²	£626,883								
£323.00 /m²	£1,319,031	£455,530							
£350.00 /m²	£2,011,179	£1,075,497	£310,271						
£377.00 /m²	£2,703,328	£1,695,465	£871,206	£184,646					

Uttlesford DC - Appendix S2 - III:
Regulation 19 Local Plan Viability Assessment
Stage 2: Employment Sites Typologies Results
Table 3c - Light Industrial / Warehousing

Site Size (ha)	3
BLV/ha	£250,000

Residual Land Value (£)									
Yield variation - sensitivity test									
Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	3.25%	3.75%	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
£70.00 /m²	Marginal to no Viability								
£75.00 /m²									
£80.00 /m²									
£85.00 /m²									
£90.00 /m²									
£95.00 /m²									
£100.00 /m²	£667,260								
£105.00 /m²	£1,397,456								
£110.00 /m²	£2,127,651								

Residual Land Value (£/Ha)									
Yield variation - sensitivity test									
Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	3.25%	3.75%	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
£70.00 /m²	Marginal to no Viability								
£75.00 /m²									
£80.00 /m²									
£85.00 /m²									
£90.00 /m²									
£95.00 /m²									
£100.00 /m²	£222,420								
£105.00 /m²	£465,819								
£110.00 /m²	£709,217								

Surplus / Deficit Over Benchmark Land Value (BLV at £250,000/ha)									
Yield variation - sensitivity test									
Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	3.25%	3.75%	4.25%	4.75%	5.25%	5.75%	6.25%	6.75%	7.25%
£70.00 /m²	Marginal to no Viability								
£75.00 /m²									
£80.00 /m²									
£85.00 /m²									
£90.00 /m²									
£95.00 /m²									
£100.00 /m²									
£105.00 /m²	£215,819								
£110.00 /m²	£459,217								

Uttlesford DC - Appendix S2 - III:
Regulation 19 Local Plan Viability Assessment
Stage 2: Employment Sites Typologies Results -Table 3d - Distribution

Site Size (ha)	18
BLV/ha	£250,000

Residual Land Value (£)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	3.00%	3.50%	4.00%	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%
£70.00 /m²									
£75.00 /m²									
£80.00 /m²	£2,672,011								
£85.00 /m²	£8,555,343								
£90.00 /m²	£14,438,676				Marginal to no Viability				
£95.00 /m²	£20,322,008	£3,890,092							
£100.00 /m²	£26,205,340	£8,908,587							
£105.00 /m²	£32,088,673	£13,927,082	£310,192						
£110.00 /m²	£37,972,005	£18,945,576	£4,680,264						

Residual Land Value (£/Ha)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	3.00%	3.50%	4.00%	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%
£70.00 /m²									
£75.00 /m²									
£80.00 /m²	£148,445								
£85.00 /m²	£475,297								
£90.00 /m²	£802,149				Marginal to no Viability				
£95.00 /m²	£1,129,000	£216,116							
£100.00 /m²	£1,455,852	£494,921							
£105.00 /m²	£1,782,704	£773,727	£17,233						
£110.00 /m²	£2,109,556	£1,052,532	£260,015						

Surplus / Deficit Over Benchmark Land Value (BLV at £250,000/ha)

Yield variation - sensitivity test

Rent: Rate £/m²	-2.00%	-1.50%	-1.00%	-0.50%	0.00%	0.50%	1.00%	1.50%	2.00%
	3.00%	3.50%	4.00%	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%
£70.00 /m²									
£75.00 /m²									
£80.00 /m²									
£85.00 /m²	£225,297								
£90.00 /m²	£552,149				Marginal to no Viability				
£95.00 /m²	£879,000								
£100.00 /m²	£1,205,852	£244,921							
£105.00 /m²	£1,532,704	£523,727							
£110.00 /m²	£1,859,556	£802,532	£10,015						

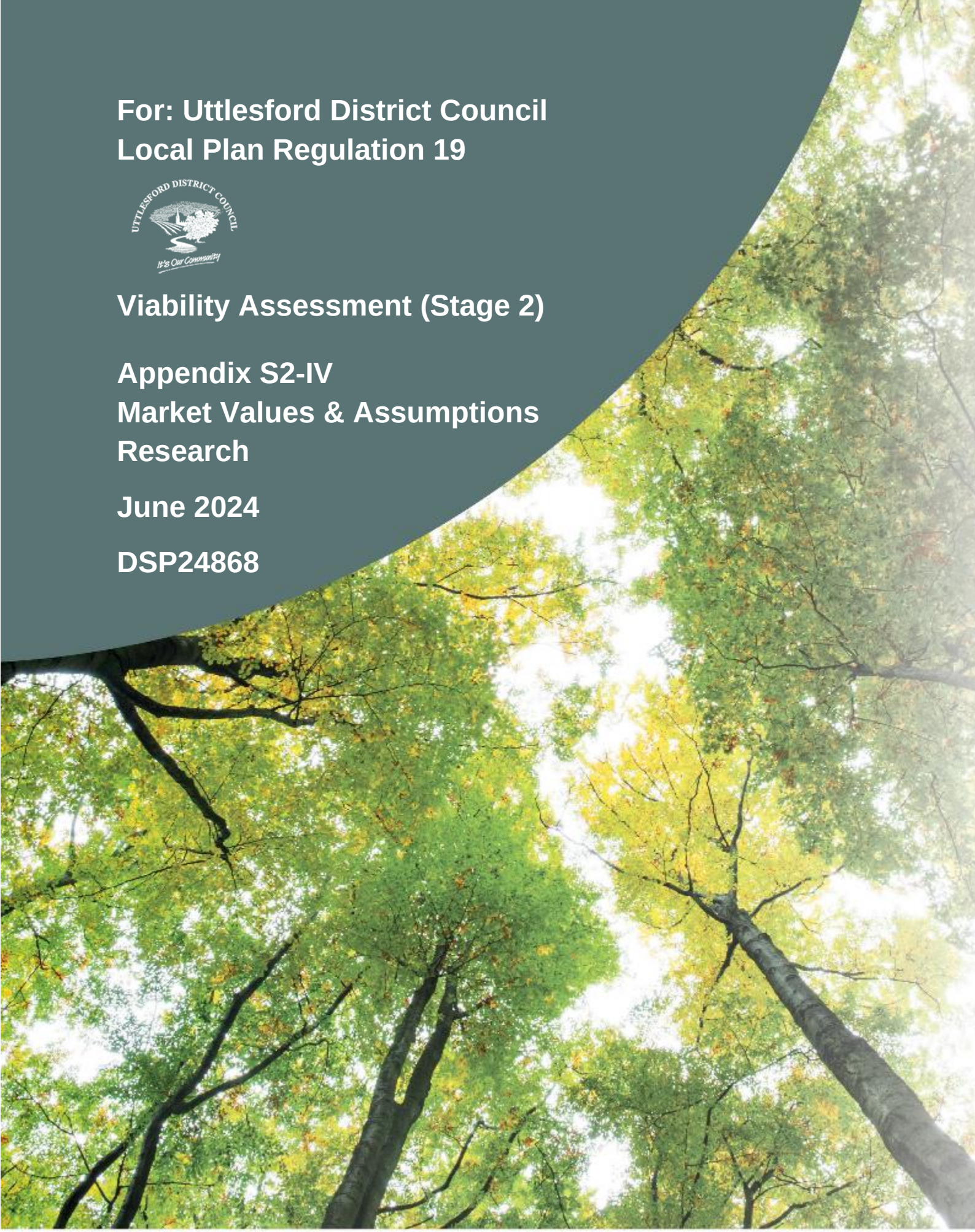
For: Uttlesford District Council
Local Plan Regulation 19

Viability Assessment (Stage 2)

Appendix S2-IV
Market Values & Assumptions Research

June 2024

DSP24868



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Note:

CoStar property resource extracts for research base follow the above – provided to the rear of this document as Sub-Appendix S2-IVa)

1.0 Introduction

1.1.1 During earlier stages of the Plan's development, Dixon Searle Partnership (DSP) was engaged to provide viability evidence in support and development of the Uttlesford District Council (UDC).

1.1.2 The Viability Assessment has taken place following earlier review stages between 2021 and 2023. Initial viability findings were issued to the Council throughout this period. Following these initial stages of assessment and further discussions with the Council alongside newly emerging evidence/national policy, the next phase of the study will provide a refresh/update, building on earlier work with a further focus on the consideration of key/strategic sites. Overall the viability assessment will consider the viability of the current emerging Local Plan, its sites and policies as well as wider national policy changes.

1.1.3 Referred to within DSP'S main report, this document – Appendix IV – provides an overview of the research undertaken into residential property values, together with the wider economic conditions at the time of writing. Collectively, this research aims to help inform the assumptions setting for the residential appraisal testing, providing important background evidence by building a picture of values and the variation of those within Uttlesford.

1.1.4 This report will also provide the Council with an indication of the type and sources of data that it could monitor, revisit and update, to further inform its ongoing work where necessary in the future. Doing so would provide valuable context for monitoring the delivery subsequent to settling policy positions and aspirations.

1.1.5 It should be acknowledged that this is high-level work, and a great deal of variance may be seen in practice from one development to another (with site-specific characteristics). This data gathering process adopted by DSP involves the review of a range of information sources, so as to inform an overview that is relevant to and appropriate for the project context. The aim here is to consider changes and trends and therefore enable us to assess with the Council an updated context picture so far as is suitable and practically possible.

1.1.6 This Appendix is informed by a range of industry reporting and quotes/extracts (shown in *italic text* to distinguish that externally sourced information from DSP's commentary and context/analysis), with sources acknowledged.

2.0 Economic/Housing Market Context

2.1.1. There are a number of sources available in reviewing the current economic and housing market context generally. We have made particular reference to the Land Registry, Royal Institution of Chartered Surveyors (RICS) market reporting, Office for National Statistics (ONS) and Savills market reporting and forecasts.

2.1.2. These industry reporting resources have all described a similar picture of the current economic context alongside the general patterns of the housing market, viewed at this time both more widely and in respect of the available information for Uttlesford District Council (UDC).

2.1.3. The war in Ukraine and general global economic uncertainty has caused some disruption and uncertainty in the market since 2022. However, the most recent (national) reporting suggests that the housing market generally is showing signs of improving somewhat following a brief period which saw month-on-month falls in house prices. Having taken a negative stance in 2023, Knight frank revised their assessment of the housing market in early 2024, stating “We now expect UK mainstream prices to rise by 3% in 2024, which compares to a decline of 4% predicted in October. With low-level single digit growth in subsequent years, we expect cumulative growth of 20.5% in the five years to 2028”. The ONS notes that the average UK house price increased by 1.1% in the 12 months to April 2024. Commentary from agents indicates a consensus that there has been a modest ‘Spring bounce’ in prices, as well as a significant increase in new properties being listed for sale.

2.1.4. Since 2022 there has also been a period of rapid increases in construction cost inflation which began to slow mid-2023 with most recent reporting indicating this is expected to stabilise from 2025.

2.1.5. This economic backdrop features heavily amongst the wider range of influences on development matters in the last 24 months (and continuing as significant influences at the current time) including the ongoing uncertainty in relation to planning reforms especially in light of the forthcoming general election. The increasing emphasis on climate change response is also a key theme and one which the Council is looking to fully support, via the Future Homes Standard, alongside other additional areas that now need to be reflected through assumptions within assessment such as this – biodiversity, nutrient neutrality, for example.

2.1.6. Despite the wide disruption and uncertainty within the market caused by the Coronavirus pandemic, and the continuing effects of Brexit, the downward effect on house prices did not initially materialise. Following the pandemic, values rose significantly – overall negative impacts were not experienced to nearly the extent

anticipated by many market commentators. However, the market appeared to reach its peak in early 2023 and in the latter part of 2023 and early part of 2024 we saw the decreases (year on year) in house prices. The annual rate of inflation has since returned to positive territory.

2.1.7. Ongoing economic uncertainty stems from the fallout from the pandemic and the 'cost of living crisis' reflecting the high energy costs, increasing inflation (albeit now having eased, with inflation having returned to the Government's 2.0% target), rising interest rates (at the time of writing, the BoE base rate has been held for the second time at 5.25% - and although forecast to fall it currently remains at the highest it has been in many First Time Buyer's lifetimes), changing government leadership and corresponding changes in financial policy - all resulting in much greater levels of uncertainty over the coming few years. Dixon Searle Partnership (DSP) has studied and analysed the latest economic/housing market commentary alongside our own wider experience across the country.

2.1.8. As noted above, the most recent analysis from Knight Frank is more upbeat than in previous reporting, referring to a 'turning point' with 'better-than-expected economic data and strengthening transaction numbers providing a platform for a longer-term recovery in residential development volumes'. However, in their Residential Market Update for Q2 2024, Knight Frank note that whilst prices have returned to annual growth, 'the current direction of travel is sideways'.

2.1.9. This aligns with our experience of the current market - we have seen build costs stabilise over the past year or so (after an extended period of rapid inflation). This is partly due to the lack of activity in housebuilding and therefore greater competition for building contracts, as well as by some of the supply chain issues easing. This is tempered however by continuing high mortgage rates.

2.1.10. The tone of the most recent Savills market reporting in June 2024 is cautious, but overall positive, noting that the residential market continues to stabilise, albeit with price growth likely to 'remain muted until there is additional mortgage rate cuts'. Regarding the forthcoming election, Savills note that 'at the time of writing [5 June 2024] there are no emerging policies from the major parties that are likely to disrupt the mainstream housing market'. Similarly to Knight Frank, Savills note the increase in listings and transactions which is positive for the market generally but is seen to have a limiting effect on house prices due to the increased number of properties now available for buyers to choose from.

2.1.11. The latest RICS residential market survey (May 2024) also takes a cautiously positive view, noting a 'general softening in momentum reported across the sales market' which is attributed to 'scaling back in expectations around the degree of monetary

policy loosening' from the Bank of England; however with most surveyors expecting the recovery to 'get back on track in the months ahead' and with contributors to the survey remaining 'firmly of the view that house prices will move higher over the next twelve months'.

2.1.12. The latest Office for National Statistics (ONS) UK House Price Index (HPI) for December 2023 focuses on sale prices and trends in data rather than forecasting the future of the housing market. The ONS examines the condition of the market over the last couple of years, and notes the following:

- Average UK house prices decreased by 1.4% in the 12 months to December 2023 (provisional estimate), up from a decrease of 2.3% (revised estimate) in the 12 months to November 2023.
- The average UK house price was £285,000 in December 2023, which was £4,000 lower than 12 months previous.
- Average house prices over the 12 months to December 2023 decreased in England to £302,000 (negative 2.1%), decreased in Wales to £214,000 (negative 2.5%), but increased in Scotland to £190,000 (3.3%).

2.1.13. At the current time, we are informed by housebuilders that they are increasingly pursuing non-standard forms of development or approaches to sales, for example agreeing bulk disposals of units to Registered Providers, Build to Rent schemes rather than outright sale, and retirement/age restricted housing. It should also be noted however that many Registered Providers also have a reduced appetite for expansion and acquisitions, due to a tougher lending environment and uncertainty regarding, for example, sales of shared ownership, as well as a decision amongst some providers to focus energy and funds on ensuring that existing stock is suitably maintained or refurbished.

2.1.14. The consensus within the industry is that significant house price growth will not be seen in the short term, but that in the medium to long term the market is supported by the 'fundamentals' – i.e. the continuing imbalance between supply and demand, as the population continues to increase with housebuilding falling well behind the rates needed to meet current and future demand. There are however concerns about the capacity of the development industry to cope with increased demand when the economy and housing market improve, as well as the availability of sufficient developable land should all those housebuilders who have 'retrenched' wish to increase their development programmes simultaneously.

3.0 Residential Market Review

3.1.1. Consistent with our assessment principles, DSP research data from a range of readily available sources, as also directed by the Planning Practice Guidance (PPG). As noted above, these are sources that could also be used by the Council for any future similar work, updating or monitoring. In the following sections we will provide an outline of the data reviewed.

3.1.2. The residential market review and data collection/analysis phase was conducted using data from the Land Registry grouped into Wards within the district between 2019 and 2023. Value level ranges were estimated for each area based on a variety of data presentation and analysis techniques including quartile analysis. This process comprised the desktop-based research and analysis of both sold and asking prices for new build and resale property across the district.

Review of Land Registry New Build Sold Prices Data – (January 2019 to December 2023)

3.1.3. The following tables below provide Uttlesford based summary of Land Registry published sold prices data – focusing solely on new build housing. The floor areas have been sourced separately – from the Domestic Energy Performance Certificate (EPC) Register operated by Landmark on behalf of the Government and available to view via www.epcregister.com under the DLUHC's remit. Property values have been updated in line with the UK House Price Index (HPI) at the point of data collection i.e., February 2024. Due to its size, the full data set has not been included - but can be requested if required.

Table 1a – Land Registry Sold Prices Review Analysis – New Build Property – Average Price and quartile analysis by Wards

New Build Value - Summary Quartile Analysis - Uttlesford (1.2019 - 12.2023)							
Ward	**Minimum £ per sq. metre**	**Q1 £ per sq. metre**	**Average Value £ per sq. metre**	**Median £ per sq. metre**	**Q3 £ per sq. metre**	**Maximum £ per sq. metre**	**Data Sample Number**
Broad Oak & Hallingburys	£4,034	£4,664	£4,991	£4,982	£5,208	£6,097	14
Elsenham & Henham	£3,839	£4,145	£4,520	£4,323	£4,875	£5,560	41
Felsted & Stebbing	£3,934	£4,266	£4,569	£4,515	£4,814	£5,890	27
Great Dunmow North	£3,259	£3,823	£4,298	£4,168	£4,813	£5,705	147
Great Dunmow South & Barnston	£3,708	£4,393	£4,846	£4,798	£5,114	£6,883	32
Hatfield Heath	£3,918	£4,280	£4,710	£4,805	£5,064	£5,379	11
Littlebury, Chesterford & Wenden	£3,823	£4,356	£4,860	£4,826	£5,208	£7,085	54
Newport	£3,803	£4,273	£4,533	£4,465	£4,759	£5,668	78
Saffron Walden Audley	£3,407	£4,167	£4,565	£4,483	£4,833	£7,085	142
Saffron Walden Shire	£3,643	£3,665	£3,972	£3,705	£3,705	£5,140	5
Stansted North	£3,784	£4,373	£4,934	£4,867	£5,497	£7,212	76
Stansted South & Birchanger	£4,118	£4,339	£4,600	£4,677	£4,900	£4,999	18
Takeley	£3,821	£3,994	£4,758	£4,846	£5,611	£5,889	19
Thaxted & the Eastons	£3,458	£4,154	£4,349	£4,396	£4,561	£5,264	38

** No New Sales in 2024*

*** Data sample of 702*

Table 1b – Land Registry Sold Prices Review Analysis – New Build Property – Average Price and quartile analysis by Dwellings

New Build Value - Summary Quartile Analysis – Uttlesford (1.2019 - 12.2023)							
Dwelling	**Minimum £ per sq. metre**	**Q1 £ per sq. metre**	**Average Value £ per sq. metre**	**Median £ per sq. metre**	**Q3 £ per sq. metre**	**Maximum £ per sq. metre**	**Data Sample Number**
Flat	£3,407	£4,477	£5,045	£4,945	£5,539	£7,085	75
Terraced	£3,259	£3,886	£4,344	£4,123	£4,687	£7,212	86
Semi-Detached	£3,458	£4,047	£4,560	£4,513	£4,894	£5,889	131
Detached	£3,389	£4,203	£4,549	£4,490	£4,873	£6,949	410

** Data sample of 702*

Table 1c – Land Registry Sold Prices Review Analysis – New Build Property – Average Price and quartile analysis - Uttlesford District

New Build Value - Summary Quartile Analysis - Uttlesford (1.2019 - 12.2023)							
District	**Minimum £ per sq. metre**	**Q1 £ per sq. metre**	**Average Value £ per sq. metre**	**Median £ per sq. metre**	**Q3 £ per sq. metre**	**Maximum £ per sq. metre**	**Data Sample Number**
Uttlesford	£3,259	£4,147	£4,579	£4,497	£4,922	£7,212	702

3.1.4. A key point of this analysis is to consider all available information in an appropriate way for the study purpose and strategic level, which in this case requires a high-level overview of general values 'patterns' rather than aiming necessarily to reflect finer grained variations and potential site-specifics.

3.1.5. The above new build data indicates a range of values with the overall key new build values between around £4,500 to £5,250/m2. However, this research analysis also indicated flatted sales values achieving the upper level of that range. As with any area, there are exceptions whereby higher and lower values can be seen also between nearby sites and even within a site – an overview is needed at plan making stage.

3.1.6. A similar process has been undertaken as above for re-sale property with the following Tables providing a district summary of Land Registry published sold prices data as part of the current project phase – focusing solely on resale housing. As above, the floor areas have been sourced separately – from the Domestic Energy Performance Certificate (EPC) Register operated by Landmark on behalf of the Government and available to view via www.epcregister.com under the DCLG's remit. Property values have been updated in line with the UK HPI (area-specific figures) at the point of data collection i.e., February 2024. Due to its size the full data set has not been included here, however it can be requested by the Council.

3.1.7. Given the context of the study, being a high-level overview of viability at a strategic level, we have considered general values 'patterns' rather than aiming necessarily to reflect finer grained variations and potential site specifics.

Table 2a – Land Registry Sold Prices Review Analysis – Average Price and quartile analysis by Wards

Resale Value - Summary Quartile Analysis - Uttlesford (5.2023 12.2023)							
Ward	**Minimum £ per sq. metre**	**Q1 £ per sq. metre**	**Average Value £ per sq. metre**	**Median £ per sq. metre**	**Q3 £ per sq. metre**	**Maximum £ per sq. metre**	**Data Sample Number**
Ashdon	£3,643	£4,363	£5,083	£5,083	£5,802	£6,522	2
Broad Oak & the Hallingburys	£3,542	£4,237	£4,797	£4,800	£5,354	£6,786	13
Clavering	£4,144	£4,418	£4,944	£4,613	£5,267	£6,178	9
Debden and Wimbish	£4,388	£4,742	£5,141	£5,237	£5,414	£6,052	7
Elsenham & Henham	£2,844	£4,244	£4,512	£4,754	£5,024	£5,229	18
Felsted & Stebbing	£1,954	£3,592	£4,029	£4,197	£4,556	£5,332	19
Flitch Green & Little Dunmow	£2,983	£3,194	£3,671	£3,576	£3,919	£5,751	15
Great Dunmow North	£2,301	£3,780	£4,202	£4,332	£4,604	£5,964	26
Great Dunmow South & Barnston	£2,396	£3,741	£4,356	£4,253	£5,032	£7,295	44
Hatfield Heath	£2,748	£3,321	£4,266	£4,483	£5,138	£5,714	7
High Easter & the Rodings	£3,964	£4,208	£4,758	£4,315	£4,440	£7,323	9
Littlebury, Chesterford & Wenden Lofts	£3,308	£4,183	£4,526	£4,415	£4,988	£5,789	17
Newport	£2,664	£4,244	£4,492	£4,484	£4,837	£5,472	24
Saffron Walden Audley	£2,488	£3,918	£4,609	£4,730	£5,238	£6,443	41
Saffron Walden Castle	£2,685	£4,275	£4,759	£4,587	£5,154	£7,564	33
Saffron Walden Shire	£1,423	£3,630	£4,169	£4,268	£4,739	£6,097	61
Stansted North	£2,571	£4,134	£4,771	£4,801	£5,284	£7,485	28
Stansted South & Birchanger	£3,009	£4,048	£4,516	£4,652	£4,844	£6,530	18
Stort Valley	£2,078	£2,704	£3,312	£3,312	£3,920	£4,548	4
Takeley	£2,838	£4,268	£4,616	£4,678	£4,848	£7,118	35
Thaxted & the Eastons	£3,280	£3,749	£4,188	£4,188	£4,556	£5,393	24
The Sampfords	£3,549	£3,696	£4,142	£4,001	£4,502	£4,932	9

** Data sample of 463*

Table 2b – Land Registry Sold Prices Review Analysis

– Average Price and quartile analysis by Dwellings

Resale Value - Summary Quartile Analysis - Uttlesford (5.2023 12.2023)							
Dwelling	**Minimum £ per sq. metre**	**Q1 £ per sq. metre**	**Average Value £ per sq. metre**	**Median £ per sq. metre**	**Q3 £ per sq. metre**	**Maximum £ per sq. metre**	**Data Sample Number**
Flat	£1,423	£3,095	£3,674	£3,630	£4,196	£6,096	59
Terraced	£2,838	£4,181	£4,629	£4,640	£5,065	£7,564	120
Semi-detached	£1,954	£3,871	£4,523	£4,526	£5,122	£7,343	114
Detached	£2,078	£4,003	£4,494	£4,389	£4,859	£7,485	170

** Data sample of 463*

Table 2c – Land Registry Sold Prices Review Analysis

– Average Price and quartile analysis - Uttlesford District

Resale Value - Summary Quartile Analysis - Uttlesford (5.2023 12.2023)							
District	**Minimum £ per sq. metre**	**Q1 £ per sq. metre**	**Average Value £ per sq. metre**	**Median £ per sq. metre**	**Q3 £ per sq. metre**	**Maximum £ per sq. metre**	**Data Sample Number**
Uttlesford	£1,423	£3,855	£4,432	£4,421	£4,997	£7,564	463

DSP Residential 'Value Levels' (VLs)

3.1.8. Overall, for the purposes of this assessment, we decided to focus our appraisals on the following values range – represented by what we refer to as Value Levels (VLs) 1-9 indicative by location, all in accordance with the extensive research values analysis outlined above. See Table 3a below (note: table also included for ease of reference in Appendix I). Above all, this shows the scale of values as well as the variation of those values seen in different parts of the district.

3.1.9. At the time of compiling Appendix I in Spring/ Summer 2024, we considered typical new build property values in Uttlesford to fall within the overall VLs range of £4,000/m2 to £6,000/m2 (i.e. approximately £430/sf to £645/sf). We consider the key new build values to be represented overall within the narrower range £4,250/m2 to £5,250/m2. Therefore, we have formed the view the above VL2-6 is a reasonable broad representation of a suitable indicator for results review/interpretation. As noted above,

we also consider flatted development to come forward at the upper end of the above overall VLs range.

Table 3a – DSP Value Levels (VLs)

Residential Sales Value Level (VL) Assumptions - Indicative relevance by area within District

Market Values (MV)	VL1	VL2	VL3	VL4	VL5	VL6	VL7	VL8	VL9
		Typical New Builds Values Range - districtwide							
1-bed flat	£200,000	£212,500	£225,000	£237,500	£250,000	£262,500	£275,000	£287,500	£300,000
2-bed flat	£244,000	£259,250	£274,500	£289,750	£305,000	£320,250	£335,500	£350,750	£366,000
2-bed house	£316,000	£335,750	£355,500	£375,250	£395,000	£414,750	£434,500	£454,250	£474,000
3-bed house	£372,000	£395,250	£418,500	£441,750	£465,000	£488,250	£511,500	£534,750	£558,000
4-bed house	£520,000	£552,500	£585,000	£617,500	£650,000	£682,500	£715,000	£747,500	£780,000
MV (£/sq. m.)	£4,000	£4,250	£4,500	£4,750	£5,000	£5,250	£5,500	£5,750	£6,000

Note: The retirement/sheltered housing element for each site assumes a fixed value level of £6,250/sq. m. Self-build plots assumed at £125,000 per plot.

3.1.10. As in all areas, values are always mixed to some extent – within particular wards and even within sites. The table above assumes the gross internal floor areas for dwellings as shown below in Table 3b (these are purely for the purpose of the above market dwelling price illustrations) for the 'standard' scenario set. Table 3b sets out the assumed dwelling mix principles applied as part of the testing.

Table 3b – Assumed Unit Sizes & Dwelling Mix

Property Type	Assumed Unit Sizes*		Dwelling Mix (%)**		
	Market Units	Affordable Units	Market Units	Affordable Units - rented	Affordable Units - affordable home ownership
1-bed flat	50	50	5%	25%	20%
2-bed flat	61	61	10%	15%	20%
2-bed house	79	79	10%	15%	25%
3-bed house	93	93	45%	35%	25%
4-bed house	130	106	30%	10%	10%

**Based on Nationally Described Space Standards October 2015*
**Based on the LHNA (2024)*

‘Value Levels’ (VLs) – by Ward Areas

3.1.11. Building on the above values research analysis, the table below indicatively aligns the range of Value Levels to ward areas in the district.

Table 4 – DSP Value Levels – Locations by Wards Areas

Value Levels - Locations by ward area

Ward Area	Value Level Range
Ashdon	VL4 - VL7
Broad Oak & The Hallingburys	VL2 - VL5
Clavering	VL3 - VL5
Debden & Wimbush	VL2 - VL3
Elsenham & Henham	VL3 - VL4
Felstead & Stebbing	VL3 - VL5
Flitch Green & Little Dunmow	VL1 - VL3
Great Dunmow North	VL1 - VL3
Great Dunmow South & Barnston	VL2 - VL5
Hatfield Heath	VL3 - VL6
High Easter & The Rodings	VL2 - VL5
Littlebury, Chesterford & Wenden Lofts	VL3 - VL5
Newport	VL2 - VL4
Saffron Walden Audley	VL4 - VL7
Saffron Walden Castle	VL3 - VL5
Saffron Walden Shire	VL5 - VL7
Stansted North	VL2 - VL4
Stansted South & Birchanger	VL3 - VL5
Stort Valley	VL2 - VL3
Takeley	VL2 - VL5
Thaxted & The Eastons	VL2 - VL3
The Sampfords	VL2 - VL5

Retirement/Sheltered and Extra Care Housing research

3.1.12. DSP conducted research on the value of new build retirement units in the borough.

3.1.13. DSP's significant experience of carrying out site-specific viability reviews on numerous schemes together with bespoke research analysis led us to test retirement/sheltered housing at the same overall upper range of values as used for traditional housing market appraisals (VL8 £5,750 to VL11 £6,500).

3.1.14. From wider experience, we would generally expect retirement/sheltered housing values to be representative of the upper end of this overall range; even this could be considered conservative in our view.

3.1.15. According to the Retirement Housing Group (RHG) in their paper amended February 2016 which discusses assumptions for strategic policy viability it is possible to value sheltered housing by assuming that a 1-bed new build sheltered flat is worth 75% the value of a second-hand 3-bed semi-detached property locally, with a 2 bed new build sheltered flat being worth 100% of the value. In addition, extra care housing values are typically considered to be 25% higher than sheltered housing.

3.1.16. DSP have conducted research into recent sales transactions for second-hand 3-bedroom semi-detached properties within Uttlesford to follow this methodology. The results provide a sense check on our other retirement research. Ultimately it corroborates the impression that new build retirement units represent higher value levels in the district.

Table 5 – RHG Analysis – April 2024

RHG Analysis - April 2024		
Average value of a resale 3-bed Semi-detached property in Uttlesford	**£455,531**	
Type	**Indicative New Build Value**	**Indicative New Build Vale £/m²**
1-bed new build sheltered flat (worth 75% of the value)	£341,648	£6,212
2-bed new build sheltered flat (worth 100% of the value)	£455,531	£6,074
1-bed extra care (typically 25% higher than sheltered housing)	£427,060	£7,765
2-bed new build extra care (typically 25% higher than sheltered housing)	£569,414	£7,592

* Source: Rightmove, April 2024 (Sample Size: 78)

4.0 Commercial Market Information, Rents and Yields

4.1.1 DSP have also analysed relevant articles relating to the commercial market, rents and yields, including the Royal Institution of Chartered Surveyors, Savills and Knight Frank Yields.

4.1.2 The commercial market, having rebounded from challenges posed by the pandemic and remote working, is now seeing commercial values heading downwards again, amongst economic uncertainty. The overall view of the commercial sector is considerably less positive, particularly regarding short term prospects for values.

4.1.3 The RICS Economy and Property Market Update May 2024 comments that forecasts point to a 'subdued' near term outlook for the UK economy, with commercial real estate investment volumes having fallen, continuing a *'persistently weak trend'*. Following previous negative reports on retail demand, surveyors remain generally downbeat, however a rising number feel that we are entering the early stages of an upturn.

4.1.4 Industrial values have not significantly changed of late, however the RICS report predicts modest annual percentage increases in capital values and rents.

4.1.5 DSP have also reviewed Savills' bulletin: UK Market in Minutes – UK Commercial – March 2024. Savills note '*another month of static yields'* with the market remaining in a period of stasis. However, Savills expect regional offices to be a driver of increased investment yields, with UK office occupancy rates continuing to climb as workers return to the office following the pandemic. It is also noted that *'industrials, retail warehouses and shopping centers have all seen negative total returns move back into positive territory'* with expectations that the office sector will follow.

Savills prime equivalent yields

	April 2023	March 2024	April 2024
West End offices	4.00%	4.00%	4.00%
City offices	4.75%	5.25%	5.25%
South East offices	6.50%	7.50%	7.50% ↑
Provincial offices	5.75%	7.00%	7.00%
High street retail	6.50%	7.00%	7.00%
Shopping centres	8.00% ↑	8.25%	8.25%
Retail warehouse (Open A1)	5.25%	5.75% ↓	5.50%
Retail warehouse (Restricted)	5.75%	6.25% ↓	6.00%
Foodstores (OMR)	5.00%	5.50%	5.50%
Industrial/Distribution (OMR)	4.75% ↓	5.25% ↓	5.00%
Industrial multi-lets	4.75% ↓	5.25% ↓	5.00%
Leisure parks	7.00%	7.75%	7.75%
London leased (core) hotels	4.25% ↑	4.75%	4.50%
Regional pubs (RPI)	5.75%	6.50%	6.50%

Source: Savills Research

4.1.6 To summarise the articles above, the commercial market is thought to be picking up from its lowest point (post-pandemic) with modest improvements seen in most sectors. Whilst at the time of review office yields were not beginning to fall (with falling yields indicating greater investment security) as seen in some other sectors, the pick-up trends around the office accommodation market are reported as

expected to follow the other more positive signs. This picture is as per Savills' table above, and also reflected in the Knight Frank sourced information included below – Table 6. Locally, UDC's employment needs evidence suggests demand for more office space.

4.1.7 By way of brief explanation on yield percentages (%s) and trends, upward moving investment yields i.e. higher or increasing %s (with trends denoted by upward arrows by Savills or 'negative' market sentiment noted by Knight Frank meaning yield %s increasing) indicate reducing security of investment income (e.g. rental flow) i.e. higher risk. This is reflected in a greater % return when viewed in this way. In valuation terms, this means rents are capitalised at a lower rate (using a lower multiplier). Conversely, stable or positive market sentiment reflects steady or falling yield %s, pointing towards more secure investment prospects – lower risk and stronger capitalisation of (higher multiplier applied to) the rent/other income.

4.1.8 Table 6 below sets out indications on prime yields provided by the Knight Frank Investment Yield Guide (May 2024)[1]

Table 6 – Knight Frank Investment Yield Guide May 2024

SECTOR	May-24	MARKET SENTIMENT
High Street Retail		
Bond Street	2.75% - 3.00%	**STABLE**
Oxford Street	4.50%	**STABLE**
Prime Towns (Oxford, Cambridge, Winchester)	7.00%	**STABLE**
Regional Cities (Manchester, Birmingham)	7.25%	**STABLE**
Good Secondary (Truro, Leamington Spa, Colchester etc)	10.00%	**STABLE**
Shopping Centres (sustainable income)		
Regional Scheme	8.25%	**STABLE**
Sub-Regional Scheme	9.50%	**STABLE**
Local Scheme (successful)	10.50%	**STABLE**
Neighbourhood Scheme (assumes <25% of income from supermarket)	10.00%	**STABLE**
Out of Town Retail		
Open A1 Parks	5.75%	**POSITIVE**
Good Secondary Open A1 Parks	7.75%	**POSITIVE**
Bulky Goods Parks	5.75%	**POSITIVE**
Good Secondary Bulky Goods Parks	7.75%	**POSITIVE**
Solus Open A1 (15 year income)	6.00%	**STABLE**
Solus Bulky (15 year income)	6.00%	**STABLE**

[1] Knight Frank "Investment Yield Guide" (May 2024)

Leisure		
Prime Leisure Parks	8.00%	**STABLE**
Good Secondary Leisure Parks	9.00%	**STABLE**
Major Foodstores		
Annual RPI Increases [NYI] (20 year income)	5.00%	**STABLE**
Open Market Reviews (20 year lease, 5 yearly reviews)	6.00%	**STABLE**
Discounters (20 year, 5 yearly indexation)	4.75%	**STABLE**
Specialist Sectors		
Car Showrooms (20 years with indexed uplifts & dealer covenant)	6.00%	**STABLE**
Budget Hotels London (20 years, 5 yearly indexed reviews)	4.75%	**POSITIVE**
Budget Hotels Regional (20 years, 5 yearly indexed reviews)	5.50%	**STABLE**
Student Accommodation Prime London (Direct Let)	4.25% +	**STABLE**
Student Accommodation Prime Regional (Direct Let)	4.50% +	**STABLE**
Student Accommodation Prime London (25 years, Annual indexation)	4.75%	**STABLE**
Student Accommodation Prime Regional (25 years, Annual indexation)	5.75%	**STABLE**
Healthcare (Elderly Care, 30 years, Annual indexed reviews)	5.00%	**STABLE**
Data Centres (Operational)	4.75%	**STABLE**
Data Centres (Leased, 15 years, Annual Indexation)	3.75%	**STABLE**
Income Strip (50 years, Annual RPI/CPIH+1% RRs, Annuity Grade)	3.75%	**STABLE**
Warehouse & Industrial Space		
Prime Distribution/Warehousing (20 years [NIY], higher OMV/index)	5.00%	**STABLE**
Prime Distribution/Warehousing (15 years, OMRRs)	5.50%	**STABLE**
Secondary Distribution (10 years, OMRRs)	6.00%	**STABLE**
South East Estate (excluding London & Heathrow)	5.25%	**STABLE**
Good Modern Rest of UK Estate	5.50%	**STABLE**
Good Secondary Estates	6.75% - 7.25%	**STABLE**
Office (Grade A)		
City Prime (10 years)	5.25% - 5.50%	**STABLE**
West End: Prime Core (Mayfair & St James's)	4.00%	**STABLE**
West End: Non-core (Soho & Fitzrovia)	4.75%	**STABLE**
Major Regional Cities (10 years)	6.50%	**STABLE**
Major Regional Cities (5 years)	7.50%	**STABLE**
Secondary Regional Cities	11.00% +	**NEGATIVE**
South East Towns (10 years)	7.25%	**STABLE**
South East Towns (5 years)	8.25%	**STABLE**
Secondary South East Towns	11.50% +	**NEGATIVE**
South East Business Parks (10 years)	8.00% +	**NEGATIVE**
South East Business Parks (5 years)	10.50% +	**NEGATIVE**
Secondary South East Business Parks	12.50% +	**NEGATIVE**

Commercial Property Values Research

4.1.9 The information as outlined in the following section is based on research data as far as available reflecting commercial properties within Uttlesford district. Our assessment particularly focuses on the main commercial uses – industrial, retail and office rents.

4.1.10 Our commercial rent assumptions are informed by a range of data sources detailed throughout this report.

Commercial Values Data – CoStar

4.1.11 DSP subscribes to the commercial property data resource 'CoStar' and here we include relevant extracts, again as far as available for Uttlesford, summary reporting analysis for the lease comparables is provided; combined with the full data extracts to be found in Sub-Appendix S2-IVa provided alongside this information. CoStar is a market leading commercial property intelligence resource used and informed by a wide range of Agents and other property firms, to provide commercial real estate information and analytics. CoStar conducts extensive, ongoing research to provide and maintain a comprehensive database of commercial and real estate information where subscribers can analyse, interpret and gain insight into commercial property values and availability, as well as general commercial market conditions.

4.1.12 The CoStar sourced research is based on available lease comparables within Uttlesford covering industrial/retail/office property over the last (36 months). Tables 8a-8c below provides the analysis summary, with the full data set provided at the rear of this Appendix.

4.1.13 The full CoStar dataset, as summarised in the above tables, has been further analysed over a 3-year period from 2021-2024 [see Table 7 below] to provide a more detailed view of the range of commercial rents in the Uttlesford submarket.

Table 7 – CoStar Summary Analysis in Uttlesford District - Commercial Leases 2021 - 2024

Uttlesford District					
Type of Commercial Leases - April 2021-April 2024 - [£ per sq. ft]	**Minimum Average Rental Indications [£ per sq. ft]**	**1st Quartile Rental Indications [£ per sq. ft]**	**Median Rental Indications [£ per sq. ft]**	**3rd Quartile Rental Indications [£ per sq. ft]**	**Maximum Average Rental Indications [£ per sq. ft]**
Retail	£12.50	£21.56	£31.59	£40.44	£51.47
Offices	£7.51	£10.99	£13.73	£15.00	£52.08
Industrial	£4.48	£8.10	£9.09	£10.05	£12.00

Uttlesford District					
Type of Commercial Leases - April 2021- April 2024 - [£ per sq. metre]	**Minimum Average Rental Indications [£ per sq. metre]**	**1st Quartile Rental Indications [£ per sq. metre]**	**Median Rental Indications [£ per sq. metre]**	**3rd Quartile Rental Indications [£ per sq. metre]**	**Maximum Average Rental Indications [£ per sq. metre]**
Retail	£134.55	£232.08	£340.01	£435.28	£554.03
Offices	£80.84	£118.30	£147.79	£161.46	£560.59
Industrial	£48.22	£87.16	£97.79	£108.18	£129.17

Table 8a – CoStar Lease Comparables – Retail – (Previous 36 months)

Lease Comps Summary

Lease Comps Report

Deals	Asking Rent Per SF	Achieved Rent Per SF	Avg. Months On Market
34	£26.12	£32.63	12

LEASE COMPARABLES

SUMMARY STATISTICS

Rent	Deals	Low	Average	Median	High
Asking Rent Per SF	30	£12.50	£26.12	£27.45	£51.47
Achieved Rent Per SF	12	£12.50	£32.63	£32.89	£42.50
Effective Rent Per SF	4	£16.14	£35.21	£38.81	£42.50
Asking Rent Discount	9	0.0%	11.2%	0.0%	30.0%
TI Allowance	-	-	-	-	-
Rent Free Months	6	0	4	0	12

Lease Attributes	Deals	Low	Average	Median	High
Months on Market	28	1	12	10	39
Deal Size	34	145	896	618	5,587
Deal in Months	17	36.0	87.0	60.0	259.0
Floor Number	34	BSMT	LBBY	GRND	GRND

Table 8b – CoStar Lease Comparables – Office – (Previous 36 months)

Lease Comps Summary

Lease Comps Report

Deals	Asking Rent Per SF	Achieved Rent Per SF	Avg. Months On Market
44	£12.96	£13.72	10

LEASE COMPARABLES

SUMMARY STATISTICS

Rent	Deals	Low	Average	Median	High
Asking Rent Per SF	29	£6.23	£12.96	£13.87	£52.08
Achieved Rent Per SF	8	£8.45	£13.72	£13.98	£52.08
Effective Rent Per SF	1	£13.01	£13.01	£13.01	£13.01
Asking Rent Discount	8	-0.2%	1.8%	0.0%	13.3%
TI Allowance	-	-	-	-	-
Rent Free Months	1	9	9	9	9

Lease Attributes	Deals	Low	Average	Median	High
Months on Market	43	1	10	6	36
Deal Size	44	50	1,261	835	11,518
Deal in Months	13	12.0	44.0	24.0	240.0
Floor Number	44	BSMT	GRND	GRND	2

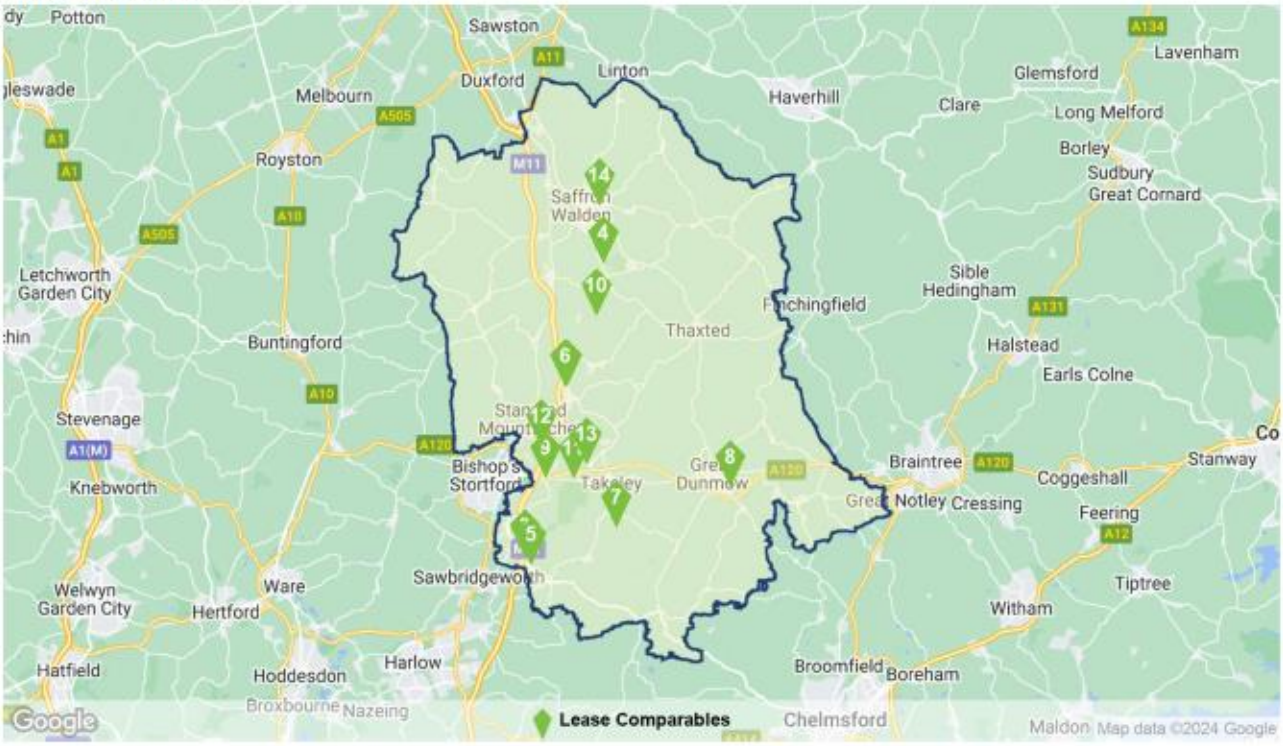
Table 8c – CoStar Lease Comparables – Industrial – (Previous 36 months)

Lease Comps Summary

Lease Comps Report

Deals	Asking Rent Per SF	Achieved Rent Per SF	Avg. Months On Market
18	£7.64	£7.16	10

LEASE COMPARABLES



SUMMARY STATISTICS

Rent	Deals	Low	Average	Median	High
Asking Rent Per SF	16	£4.48	£7.64	£9.09	£12.00
Achieved Rent Per SF	3	£6.01	£7.16	£8.90	£10.00
Effective Rent Per SF	-	-	-	-	-
Asking Rent Discount	3	0.0%	0.2%	0.0%	3.2%
TI Allowance	-	-	-	-	-
Rent Free Months	-	-	-	-	-

Lease Attributes	Deals	Low	Average	Median	High
Months on Market	16	1	10	7	38
Deal Size	18	580	3,384	2,681	9,597
Deal in Months	5	36.0	43.0	36.0	60.0
Floor Number	18	GRND	GRND	GRND	MEZZ

Further commercial property values data sources – VOA Rating List

4.1.14 Table 9 below sets out the VOA Data Summary for convenience stores, larger supermarkets and retail warehousing in Uttlesford, again to understand and build upon previous data analysis and viability testing conducted between 2020-2023. Note: full data sample not included due to large data sample.

Table 9 – VOA Data Summary Leases 2024

Uttlesford District Council					
Type of premises April 2024 - [£ per sq. ft]	**Minimum Average Rental Indications [£ per sq. ft]**	**1st Quartile Rental Indications [£ per sq. ft]**	**Median Rental Indications [£ per sq. ft]**	**3rd Quartile Rental Indications [£ per sq. ft]**	**Maximum Average Rental Indications [£ per sq. ft]**
Convenience Stores	£7.43	£12.89	£14.17	£17.19	£19.04
Large Supermarkets	£10.68	£15.79	£16.72	£19.04	£19.04
Retail Warehousing	£8.36	£13.36	£16.72	£19.51	£19.51
Offices	£7.90	£12.08	£13.94	£16.26	£30.19
Distribution Warehouses [500-1000m2]	£2.97	£3.67	£4.90	£6.50	£8.36
Distribution Warehouses [over 1000m2]	£1.72	£2.66	£3.72	£5.57	£8.36

Uttlesford District Council					
Type of premises April 2024 - [£ per sq. Metre]	Minimum Average Rental Indications [£ per sq. metre]	1st Quartile Rental Indications [£ per sq. metre]	Median Rental Indications [£ per sq. metre]	3rd Quartile Rental Indications [£ per sq. metre]	Maximum Average Rental Indications [£ per sq. metre]
Convenience Stores	£80.00	£138.75	£152.50	£185.00	£205.00
Large Supermarkets	£115.00	£170.00	£180.00	£205.00	£205.00
Retail Warehousing	£90.00	£143.81	£180.00	£210.00	£210.00
Offices	£85.00	£130.00	£150.00	£175.00	£325.00
Distribution Warehouses [500-1000m2]	£32.00	£39.52	£52.74	£70.00	£90.00
Distribution Warehouses [over 1000m2]	£18.50	£28.63	£40.00	£60.00	£90.00

5.0 Stakeholder Consultation

5.1.1 As part of the information gathering process between 2020-2023 and building on earlier consultation phases, DSP invited a number of local stakeholders to further contribute by providing any updated local residential/commercial market indications/experiences and values information. This was in order to both invite engagement and to help inform our study assumptions, alongside our own research, with further experience and judgements. It was conducted by way of a survey/pro-forma (containing some suggested assumptions) supplied by email by DSP via the Council for comment. The covering email contained a short introduction about the project, and also explained the type of information we required as well as assuring participants that any information they may provide would be kept in confidence respecting commercial sensitivities throughout the whole process.

5.1.2 The list of development industry stakeholders consulted as part of this assessment in connection with both consultation phases is included below. Contact information has not been included for confidentiality reasons:

- Avison Young
- Barton Willmore LLP
- CALA Homes (Chiltern) Limited
- Carter Jonas Cass Holdings Ltd
- Cass Holdings Ltd
- Planning Issues Ltd
- Crest Nicholson
- Crest Nicholson South
- Darcliffe Homes
- Environment Agency
- Feltham Properties Ltd
- Gladman Developments Ltd
- GVA
- J & M Properties (Berkshire) Ltd
- James Build Ltd
- Joy Schlaudraff
- JSA Architects Ltd
- Miller Homes Ltd
- Millgate Developments Ltd
- Oakridge Developments
- Orchard Investments
- Origin3
- Pegasus Group on behalf of Walker Logistics Ltd
- Persimmon Homes
- Persimmon Homes North London
- Praxis Real Estate Management Ltd
- Pro Vision
- Rackham Planning Ltd
- Rectory Homes
- Ressance Limited
- Robert Tutton Town Planning Consultants Ltd
- Rolfe Judd Planning
- Savills
- Sport England
- Strutt and Parker
- Sustrans (National Cycle Network)
- Sutton Griffin Architects
- Taylor Wimpey UK
- Thames Valley LEP
- Thames Water
- Turley
- UK Land Ltd
- Westbuild Homes
- White Young Green

5.1.3 Other stakeholders contacted as part of the information gathering process included locally active Affordable Housing Providers and local estate agents as well as key contacts at Uttlesford District.

5.1.4 DSP received a limited number of responses from development industry and affordable housing providers, some of which offered broad ranges for costs and values, or general opinions/commentary on the market, as well as some offering more detailed responses.

5.1.5 Any information/comments that were provided as a result of this consultation helped to inform and check/support our assumptions – these assumptions were developed through research within the district, discussions with local estate agents, and also DSP's extensive experience conducting independent viability reviews at planning application stage generally. However, due to concerns around commercial sensitivity, we have not included any specific references or comments in this Appendix.

6.0 Land Values Context

6.1.1 As with the residential and commercial values, DSP also considered information as far as available regarding land values. We focused on two main reports, the first being the Savills Market in Minutes: UK Residential Development Land – Q1 2024 which indicates that 'downward pressures' which materialized in 2023 persist. Whilst Savills report *'an improvement in activity'* they note that appetite for land remains highly varied and sales of sites are taking longer to progress.

6.1.2 Overall, Savills report that *'UK greenfield and urban land values remained relatively flat in Q1 2024, taking annual change to -4.8% and -6.5% respectively in the 12 months to Q1 2024.* Savills note that there is *'greater positivity in the wider housing market and economy, supporting an uptick in demand alongside limited supply in the land market.'* In summary, land values remain fairly static, having fallen slightly in 2023. Although there is renewed interest in land driven by a '*chronic scarcity of land'* which is sustaining the current land values, there are not currently signs of land values increasing. As has been the case for the past year or more, larger, optimum sites in primary locations remain popular however Savills note that the *'appetite for flat-led schemes in urban locations remains suppressed'*, noting also the viability challenges posed for schemes over six storeys due to the recently published guidance on additional staircases for buildings over 18 metres tall.

6.1.3 Savills also note a reduced appetite from RPs for the acquisition of S106 units, with *'previously assumed S106 values'* not being achieved in the current less competitive housing association market. This is a phenomenon which we have seen referred to in 2024, however the extent of this issue is unclear and where any issues have arisen with demand for S106 units these appear to be restricted to certain specific locations – it is not certain at this stage what is influencing RP

decision-making in this area and/or whether this is a temporary 'blip' or the start of a more general trend.

6.1.4 The Knight Frank report 'Residential Development Land Index Q1 – 2024' highlights the sentiment that a Labour government would *'enhance the land and development market the most'* but also notes that a lack of power capacity in the National Grid has delayed some housing schemes.

6.1.5 Knight Frank state that housebuilder sales rates for early 2024 have improved, and that sentiment is generally more positive – however based on their data land prices remain fairly static and the general expectation is that this will remain the case in the short to medium term. Interestingly, in contrast to Savills' view from earlier in the year, Knight Frank conclude that '*land is becoming more plentiful'* and *'while availability is still limited* [their survey] *points to a loosening'.* A quarter of those surveyed said that land supply is now adequate. This might therefore indicate further downward pressure on land prices.

6.1.6 Based on Knight Frank's data, the appetite for Build to Rent opportunities appears to have decreased. This aligns with indications we have received from the industry with many noting that whilst schemes which are in planning or consented are being pursued there is limited appetite for new opportunities in this sector, and in particular for BTR schemes which are not in prime locations.

6.1.7 To summarize, whilst there is some difference of opinion on the prospects for land values, both reports suggests that land values will remain at the present level having fallen over the past year or so.

Benchmark Land Values

6.1.8 Land value in any given situation should reflect specific viability influencing factors, such as:

- The existing use scenario
- Planning approval and status/risk (as an indication and depending on circumstances, planning risk factors may equate to a reduction from a "with planning" land value by as much as 75%)
- Development potential – scale, type, etc. (usually subject to planning)

- Development constraints – including site conditions and necessary works, costs and obligations (including known abnormal factors)
- Development plan policies

6.1.9 It follows that the planning policies and obligations will have a bearing on land value; as has been recognized by examiners and Planning Inspectors.

6.1.10 In order to consider the likely viability of local plan policies in relation to any development scheme relevant to the Local Plan, the outturn results of the development appraisals (the RLVs viewed in £/ha terms) need to be somehow measured against a comparative level of land value. This is a key part of the context for reviewing the strength of the results as those changes across the range of assumptions on sales values (GDVs) and crucially including the effect of local plan policies (including affordable housing) and other sensitivity tests.

6.1.11 This comparison process is, as with much of strategic level viability assessment, not an exact science. It involves judgements and well-established acknowledgements that, as with other appraisal aspects, land values will in practice vary from scheme to scheme as well as being dependent to some extent on timing in relation to market conditions and other wider influences such as Government policy. The levels of land values selected for this comparison context are often known as ‘benchmark’ land values, ‘viability tests’ (as referred to in our results tables – Appendices II-Iv) or similar. They are not fixed in terms of creating definite cut-offs or steps in viability, but in our experience, they serve well in terms of adding a layer of filtering to the results, to help enable the review of those; they help to highlight the tone of the RLV results and therefore the changing strength of relationship between the values (GDVs) and development costs as the appraisal inputs (assumptions) change.

6.1.12 As suitable (appropriate and robust) context for a high-level review of this nature, DSP’s practice is to compare the wide range of appraisal RLV results with a variety of potential land value comparisons in this way. This allows us to consider a wide range of potential scenarios and outcomes and the viability trends across those.

6.1.13 The land value comparison levels are not fixed or even guides for use on scheme specifics; they are purely for this assessment purpose. In our experience, sites will come forward at alternative figures – including in some cases beneath the levels

assumed for this purpose. We have considered land values in a way that supports an appropriately "buffered" type view.

National Planning Policy Framework – December 2023

6.1.14 The revised NPPF was published in July 2018, further revised in February 2019 and subsequently updated in 2021 and twice in 2023. This sits alongside the Planning Practice Guidance (PPG) (in relation to viability both at plan making and decision taking stages of the planning process). The PPG on 'Viability' (most recently updated February 2024) makes it clear that benchmark land values (BLVs) should be based on the Existing Use Value (EUV) plus approach and states: '*A benchmark land value should be established on the basis of the existing use value (EUV) of the land, plus a premium for the landowner [which] should reflect the minimum return at which it is considered a reasonable landowner would be willing to sell their land. The premium should provide a reasonable incentive, in comparison with other options available, for the landowner to sell land for development while allowing a sufficient contribution to comply with policy requirements. This approach is often called 'existing use value plus (EUV+).*

6.1.15 Further relevant extracts from the PPG are set out below.

Benchmark land values should:

- *Be based upon existing use value*
- *Allow for a premium to landowners (including equity resulting from those building their own homes)*
- *Reflect the implications of abnormal costs; site-specific infrastructure costs; and professional site fees'*

6.1.16 '*Viability* assessments *should be undertaken using benchmark land values derived in accordance with this guidance. Existing use value should be informed by market evidence of current uses, costs and values. Market evidence can also be used as a cross-check of benchmark land value but should not be used in place of benchmark land value. There may be a divergence between benchmark land values and market evidence; and plan makers should be aware that this could be due to different assumptions and methodologies used by individual developers, site promoters and landowners.'*

6.1.17 *'This evidence should be based on developments which are fully compliant with emerging or up to date plan policies, including affordable housing requirements at the relevant levels set out in the plan. Where this evidence is not available plan makers and applicants should identify and evidence any adjustments to reflect the cost of policy compliance. This is so that historic benchmark land values of non-policy compliant developments are not used to inflate values over time.'*

6.1.18 *'In plan making, the landowner premium should be tested and balanced against emerging policies. In decision making, the cost implications of all relevant policy requirements, including planning obligations and, where relevant, any Community Infrastructure Levy (CIL) charge should be taken into account.'*

6.1.19 On factors to be considered in establishing benchmark land values The PPG continues:

6.1.20 '*Existing use value (EUV) is the first component of calculating benchmark land value. EUV is the value of the land in its existing use. Existing use value is not the price paid and should disregard* hope *value. Existing use values will vary depending on the type of site and development types. EUV can be established in collaboration between plan makers, developers and landowners by assessing the value of the specific site or type of site using published sources of information by assessing the value of the specific site or type of site using published sources of information such as agricultural or industrial land values, or if appropriate capitalised rental levels at an appropriate yield (excluding any hope value for development).'*

6.1.21 *'Sources of data can include (but are not limited to): land registry records of transactions; real estate licensed software packages; real estate market reports; real estate research; estate agents' websites; property auction results; valuation office agency data; public sector estate/property teams' locally held evidence.'*

6.1.22 The PPG states the following on how the premium for viability assessment to the landowner should be defined:

6.1.23 *'The premium (or the 'plus' in EUV+) is the second component of benchmark land value. It is the* amount *above existing use value (EUV) that goes to the landowner. The premium should provide a reasonable incentive for a land owner to bring forward land for development while allowing a sufficient contribution to fully comply with policy requirements.'*

6.1.24 *'Plan makers should establish a reasonable premium to the landowner for the purpose of assessing the viability of their plan. This will be iterative process informed by professional judgement and must be based upon the best available evidence informed by cross sector collaboration. Market evidence can include benchmark land values from other viability assessments. Land transactions can be used but only as a cross check to other evidence. Any data used should reasonably identify any adjustments necessary to reflect the cost of policy compliance (including for affordable housing), or differences in the quality of land, site scale, market performance or different building use types and reasonable expectations of local landowners. Policy compliance means that the development complies fully with up to date plan policies including any policy requirements for contributions towards affordable housing requirements at the relevant levels set out in the plan. A decision maker can give appropriate weight to emerging policies. Local authorities can request data on the price paid for land (or the price expected to be paid through an option or promotion agreement).'*

6.1.25 *'Plan makers should establish a reasonable premium to the landowner for the purpose of assessing the viability of their plan. This will be iterative process informed by professional judgement and must be based upon the best available evidence informed by cross sector collaboration. Market evidence can include benchmark land values from other viability assessments. Land transactions can be used by only as a cross check to other evidence. Any data used should reasonably identify any adjustments necessary to reflect the cost of policy compliance (*including *for affordable housing), or differences in the quality of land, site scale, market performance or different building use types and reasonable expectations of local landowners. Policy compliance means that the development complies fully with up to date plan policies including any policy requirements for contributions towards affordable housing requirements at the relevant levels set out in the plan. A decision maker can give appropriate weight to emerging policies. Local authorities can request data on the price paid for land (or the price expected to be paid through an option or promotion agreement).'*

6.1.26 In order to inform the BLVs for use here, we have reviewed existing evidence, previous viability studies, site specific viability assessments and in particular have had regard to published Government sources of land values for policy application[2].

[2] MHCLG: Land value estimates for policy appraisal 2019

The Government data provides industrial, office, residential and agricultural land value estimates for the local sub-region but not all areas are covered. This includes data for Uttlesford district in relation to residential land estimates. Not all areas are covered and as is the case in most LA areas, Uttlesford may well have varying characteristics. Therefore, where data is insufficient, we have made use of our own experience and judgement in order to utilise a 'best fit' from the available data. The benchmarks indicated within the appendices are therefore informed by this data and other sources as described above.

6.1.27 The residential land value estimates in particular require adjustment for the purposes of strategic viability testing due to the fact that a different assumptions basis is used in our study compared to the truncated valuation model used for the residential land value estimate. This (and other) viability assessments, assume all development costs are accounted for as inputs to the RLV appraisal, rather than those being reflected within a much higher, "serviced" i.e. "ready to develop" level of land value. The (former) MHCLG truncated valuation model provides a much higher level of land value as it assumes all land and planning related costs are discharged, assumes that there is a nil affordable housing requirement (whereas in practice the affordable housing requirement can impact land value by around 50% on a 0.5 ha site with 35% AH) with no CIL or other planning obligations allowance. That level of land value would also assume that full planning consent is in place, whereas the risk associated with obtaining planning consent can equate to as much as a 75% deduction when adjusting a consented site value to an unconsented land value starting point. Lower quartile build costs and a 17% developer's profit (compared to the assumed median build costs and 17.5% developer's profit used in this study) are additional assumptions that lead to a view of land value well above that used for comparison (benchmark purposes) in viability assessments such as this. So, the assessment approach (as relates to all land values) assumes all deductions from the GDV are covered by the development costs assumptions applied within the appraisals. In our view this would lead to a significantly reduced residential land value benchmark when taking into account all of those factors.

6.1.28 The figure that we consider representing the minimum land value likely to incentivise release for development under any circumstances in the local context is around £250,000/ha. Typically, we expect to apply this across the whole site area as part of a prudent assumptions approach, but with experience increasingly showing that the non-developable areas of larger schemes tending to grow, this needs to be considered in coming to overall BLVs that do not overstate the land

value influence on viability, given the increasing requirements that the developer will often need to meet. In our experience of dealing with site specific viability, greenfield land values tend to be assumed at minimum option agreements levels. These are typically around £100,000 and not exceeding £200,000 per gross acre (i.e. approx. £250,000 to a maximum of £500,000 per gross hectare and representing a 10 to 20 times uplift from existing use value). Land values at those levels are likely to be relevant to development on greenfield land (e.g. agricultural land or in cases of enhancement to amenity land value).

6.1.29 We consider £250,000 per gross hectare to be the lowest base point for enhancement to greenfield land values (with agricultural land reported by the VOA and a range of other sources to be valued at circa £20,000 - £25,000/ha in existing use). The upper-end of the above-noted range at £500,000 per gross hectare is in our view more appropriate for small, paddock type sites than large amounts of farmland/grassland.

6.1.30 Another point of triangulation on greenfield BLVs is to consider the developable area of the site in question, and apply a full BLV level assumption to that, then adding a much lower £ rate per hectare to the SANG/open space/non-developed areas. This is dependent on the level of open space within the development however typically leads to similar assumptions to those noted above.

6.1.31 When considering BLV it can also be helpful to review the uplift in £ terms as well as reviewing multiple of or percentage uplift from existing use value.

6.1.32 The EUV+ BLVs used within the study therefore range between £250,000/ha for greenfield land (including a significant uplift from existing agricultural values) to £3,000,000+/ha for upper PDL/Residential land values (with the PDL range tested starting at £500,000/ha. This is not to say that land value expectations in such scenarios would not go beyond these levels either – they could well do in a range of circumstances. There is evidence of higher values for commercial sites in the district (and our results indicate that acquisition of these sites could be supported in some scenarios) however these are likely to be viable in their existing use, i.e. high value, successful commercial sites and therefore less likely to be proposed for a change of use to residential.

6.1.33 Matters such as realistic site selection for the particular proposals, allied to realistic landowner expectations on site value, will continue to be vitally important. Even

moving away from a 'market value' led approach, site value needs to be proportionate to realistic development scope and site contracts, ensuring that headroom for supporting necessary planning obligations is not overly squeezed beneath the levels that should be achieved.

6.1.34 The latest RICS Guidance[3] (updated to reflect the new NPPF and PPG) refers to benchmark land value as follows *'The value to be established on the basis of the existing use value (EUV) plus a premium for the landowner (PPG, paragraph 013) or the alternative use value (AUV) in which the premium is already included. PPG paragraph 014 is clear that there 'may be a divergence between benchmark land values and market evidence; and plan makers should be aware that this could be due to different assumptions and methodologies used by individual developers, site promoters and landowners.'*

6.1.35 The Local Housing Delivery Group report[4] chaired by Sir John Harman (again pre-dating the new NPPF and PPG), notes that: '*Consideration of an appropriate Threshold Land Value needs to take account of the fact that future plan policy requirements will have an impact on land values and landowner expectations. Therefore, using a market value approach as the starting point carries the risk of building-in assumptions of current policy costs rather than helping to inform the potential for future policy. Reference to market values can still provide a useful 'sense check' on the threshold values that are being used in the model (making use of cost-effective sources of local information), but it is not recommended that these are used as the basis for the input into a model… We recommend that the Threshold Land Value is based on a premium over current use values and credible alternative use values.'*

6.1.36 The revisions to the Viability PPG and the new NPPF (in July 2018), as described above, now very clearly advise that land value should be based on the value of the existing use plus an appropriate level or premium or uplift to incentivise release of the land for development from its existing use.

6.1.37 Any overbid level of land value (i.e. incentive or uplifted level of land value) would be dependent on a ready market for the existing or other use that could be continued or considered as an alternative to pursuing the redevelopment option being assumed. The influences of existing/alternative use on site value need to be

[3] Assessing viability in planning under the National Planning Policy Framework 2019 for England
[4] Local Housing Delivery Group – Viability Testing Local Plans (June 2012)

carefully considered. At a time of low demand through depressed commercial property market circumstances, for example, we would not expect to see inappropriate levels of benchmarks or land price expectations being set for opportunities created from those sites. Just as other scheme specifics and appropriate appraisal inputs vary, so will landowner expectation.

6.1.38 In summary, reference to the land value benchmarks range as outlined within the report and shown within the Appendix II results summary tables footnotes (range overall £250,000 to £3,000,000/ha) have been formulated with reference to the principles outlined above and are considered appropriate.

Appendix S2-IV Ends - followed by Co-Star extracts (as Sub-Appendix S2-IVa).

For: Uttlesford District Council
Local Plan – Regulation 19

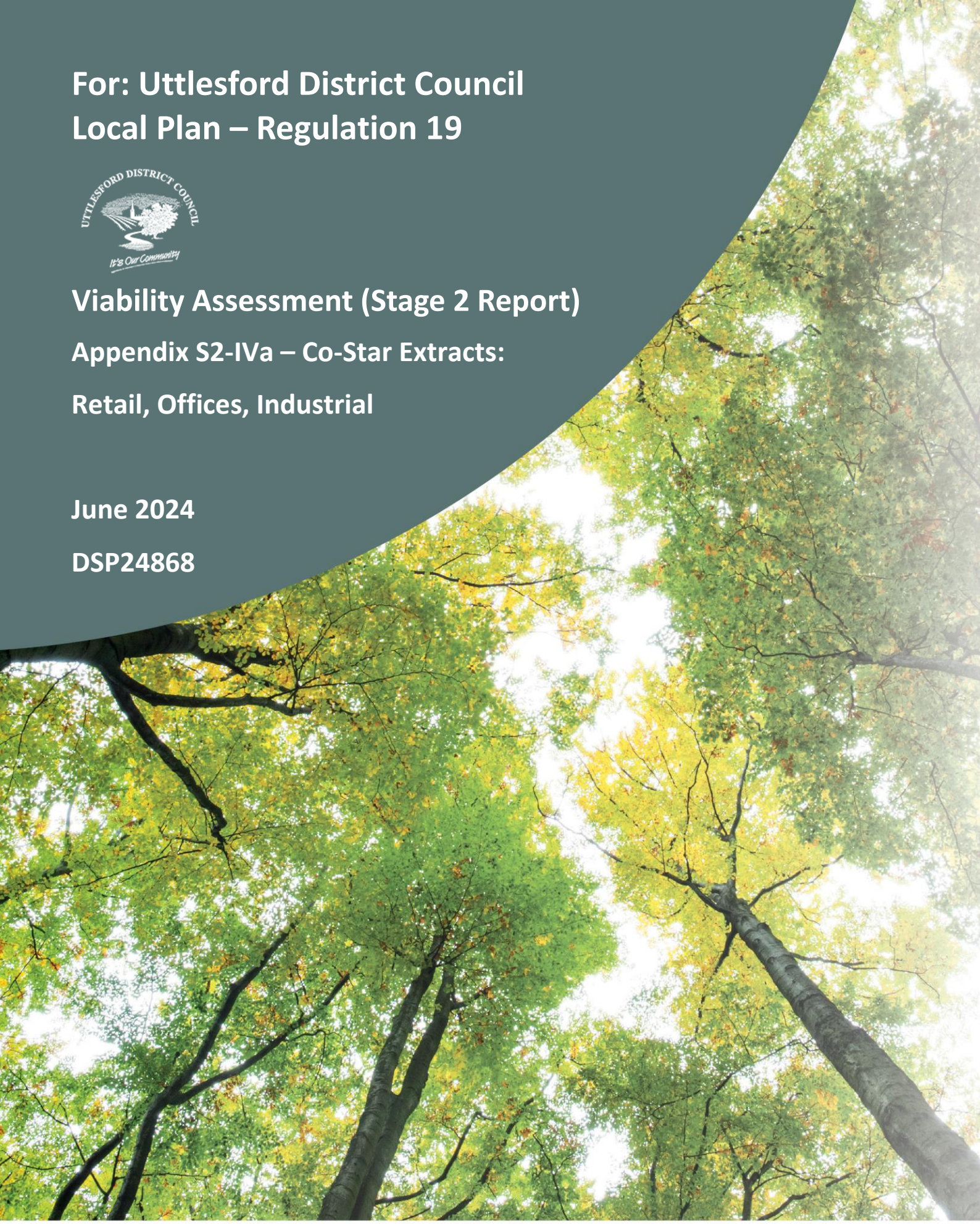
Viability Assessment (Stage 2 Report)

Appendix S2-IVa – Co-Star Extracts:

Retail, Offices, Industrial

June 2024

DSP24868



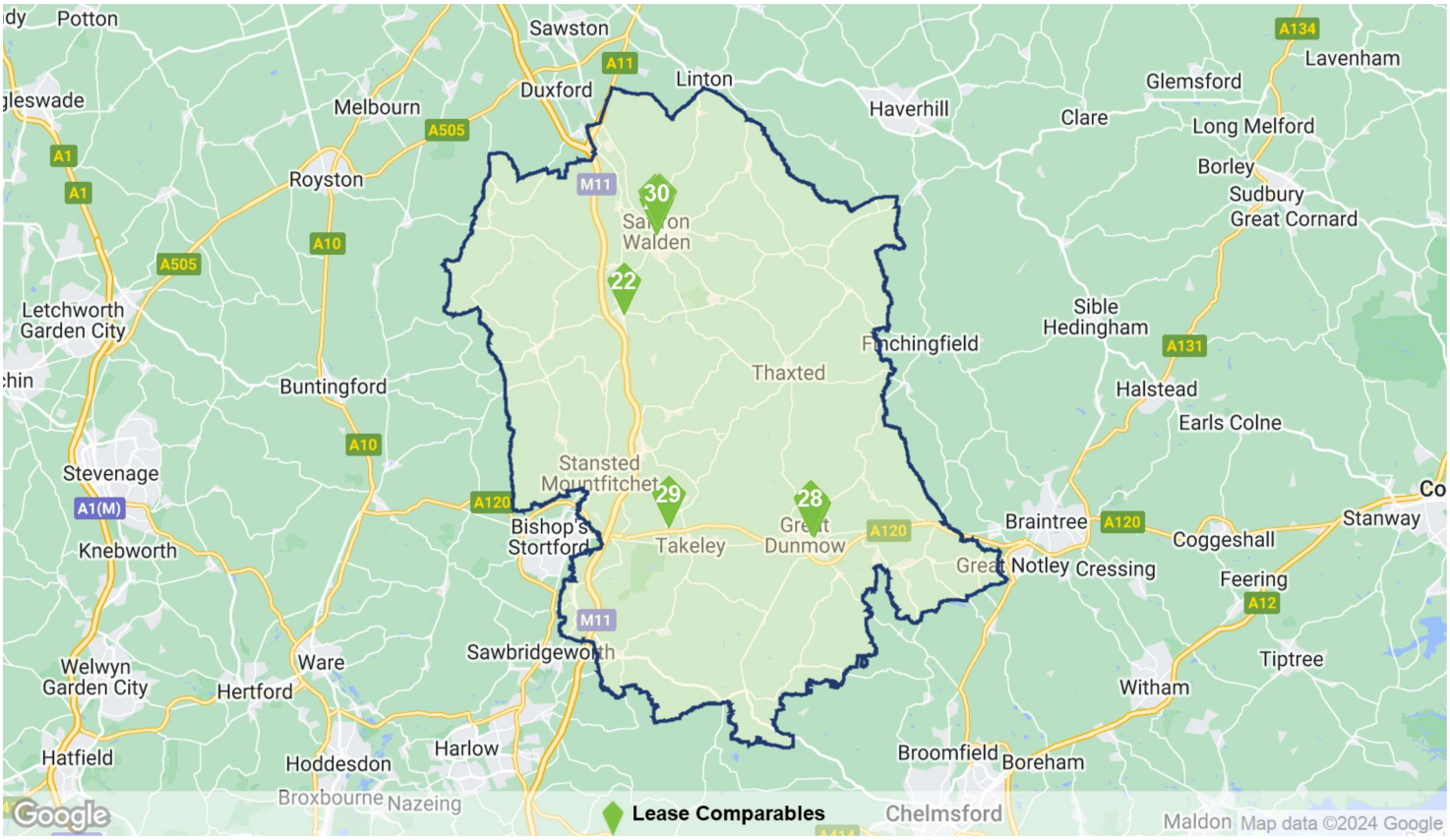
Dixon Searle Partnership
Ash House, Tanshire Park,
Shackleford Road, Elstead, Surrey, GU8 6LB
www.dixonsearle.co.uk

Lease Comps Summary

Lease Comps Report

Deals	Asking Rent Per SF	Achieved Rent Per SF	Avg. Months On Market
34	£26.12	£32.63	12

LEASE COMPARABLES



SUMMARY STATISTICS

Rent	Deals	Low	Average	Median	High
Asking Rent Per SF	30	£12.50	£26.12	£27.45	£51.47
Achieved Rent Per SF	12	£12.50	£32.63	£32.89	£42.50
Effective Rent Per SF	4	£16.14	£35.21	£38.81	£42.50
Asking Rent Discount	9	0.0%	11.2%	0.0%	30.0%
TI Allowance	-	-	-	-	-
Rent Free Months	6	0	4	0	12

Lease Attributes	Deals	Low	Average	Median	High
Months on Market	28	1	12	10	39
Deal Size	34	145	896	618	5,587
Deal in Months	17	36.0	87.0	60.0	259.0
Floor Number	34	BSMT	LBBY	GRND	GRND

Lease Comps Summary

Lease Comps Report

	Property Name - Address	Rating	Lease				Rents	
			SF Leased	Floor	Sign Date	Type	Rent	Rent Type
1	14 London Rd	★★☆☆☆	590	GRND	12/02/2024	New Lease	£20.34/fri	Asking
2	5-7 Market Row	★★★☆☆	410	GRND	12/02/2024	New Lease	£47.56	Asking
3	4 Emson Close	★★☆☆☆	555	GRND	23/01/2024	New Lease	£25.23	Asking
4	17 King St	★★☆☆☆	430	GRND	16/01/2024	New Lease	£48.26/fri	Asking
5	34 High St	★★☆☆☆	937	GRND	01/01/2024	New Lease	£24.01	Asking
6	Rose And Crown Walk	★★★☆☆	308	GRND	06/11/2023	New Lease	£40.58	Achieved
7	1 Emson Close	★★★☆☆	660	GRND	16/10/2023	New Lease	£25.76/fri	Asking
8	38 High St	★★★☆☆	646	GRND	03/10/2023	New Lease	£30.96/fri	Asking
9	14 High St	★★★☆☆	1,760	GRND	25/09/2023	New Lease	£16.76	Asking
10	1 George St	★★★☆☆	204	GRND	10/08/2023	New Lease	£51.47	Asking
11	2 Emson Close	★★★☆☆	467	GRND	12/05/2023	New Lease	£27.84/fri	Asking
12	14 High St	★★★☆☆	303	GRND	16/02/2023	New Lease	£39.60/fri	Asking
13	2-4 George St	★★★☆☆	757	GRND	23/01/2023	New Lease	£19.82/fri	Achieved
14	8-8A Cross St	★★★☆☆	915	GRND	13/12/2022	New Lease	-	-
14	8-8A Cross St	★★★☆☆	335	GRND	12/12/2022	New Lease	£38.81/fri	Effective
15	Abbey House 51 High St	★★☆☆☆	555	GRND	20/10/2022	New Lease	£30.63/fri	Achieved
16	17A George St	★★★☆☆	145	GRND	30/08/2022	New Lease	£40.00/fri	Asking
17	1-3 Market Hl	★★★☆☆	904	GRND	16/08/2022	New Lease	£32.63	Asking
18	12A Market Pl	★★★☆☆	5,587	GRND	13/07/2022	New Lease	£15.21	Asking
19	5 Cross St	★★☆☆☆	961	GRND	23/06/2022	New Lease	£27.06	Achieved
20	8 King St	★★☆☆☆	933	GRND	06/06/2022	New Lease	£40.73	Achieved

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Lease Comps Summary

Lease Comps Report

	Property Name - Address	Rating	Lease				Rents	
			SF Leased	Floor	Sign Date	Type	Rent	Rent Type
21	**34-36 High St**	★★☆☆☆	588	GRND	27/04/2022	New Lease	£42.52/iro	Asking
22	**Knights Garage** High St	★★★☆☆	758	GRND	31/01/2022	New Lease	£25.73	Asking
23	**11 High St**	★★★☆☆	1,350	GRND	09/12/2021	New Lease	£16.14/fri	Effective
24	**79 High St**	★★★☆☆	956	GRND	06/12/2021	New Lease	£18.31/fri	Asking
3	**4 Emson Close**	★★☆☆☆	555	GRND	08/10/2021	New Lease	£25.23/fri	Achieved
25	**Gallery on the park** White St	★★☆☆☆	440	BSMT	14/09/2021	New Lease	£12.50/fri	Achieved
26	**13 Debden Rd**	★★★☆☆	338	GRND	09/09/2021	New Lease	£32.54/fri	Asking
27	**12 King St**	★★☆☆☆	1,370	GRND	07/09/2021	New Lease	£34.67	Asking
28	**2 Market Pl**	★★☆☆☆	649	GRND	28/07/2021	New Lease	£24.65	Asking
14	**8-8A Cross St**	★★★☆☆	335	GRND	08/07/2021	New Lease	£38.81/fri	Effective
29	**Thremhall Av**	★★★☆☆	3,200	GRND	24/05/2021	Renewal	£42.50/fri	Effective
1	**14 London Rd**	★★☆☆☆	590	GRND	10/05/2021	New Lease	£20.34/fri	Asking
30	**6 King St**	★★☆☆☆	996	GRND	30/04/2021	New Lease	£35.14/fri	Achieved

Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
1	 14 London Rd Saffron Walden, CB11 4ED *Uttlesford Submarket*	Dorringtons	590 New Direct	Mar 2024 6 Years			
2	 5-7 Market Row Saffron Walden, CB10 1HB *Uttlesford Submarket*	J R Walden Limited	410 New Direct	Feb 2024		£8,483 PA	
3	 4 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		555 New Assignment	Feb 2024			
4	 17-21 King St Saffron Walden, CB10 1EU *Uttlesford Submarket*	FW Goddard Ltd	430 New Direct	Feb 2024		£8,470 PA	
5	 34 High St Dunmow, CM6 1AH *Uttlesford Submarket*		937 New Direct	Jan 2024			
6	 Rose And Crown Walk Saffron Walden, CB10 1JH *Uttlesford Submarket*	House Group Developments	308 New Direct	Nov 2023 3 Years	£12,500 PA	£3,043 PA	

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
7	1 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		660 New Direct	Nov 2023			
8	38 High St Saffron Walden, CB10 1EP *Uttlesford Submarket*	F.W.Goddard Ltd	646 New Direct	Nov 2023			
9	14 High St Dunmow, CM6 1AG *Uttlesford Submarket*	surrendered	1,760 New Direct	Oct 2023		£13,224 PA	
10	1 George St Saffron Walden, CB10 1EW *Uttlesford Submarket*	The Whitfield Group Ltd	204 New Direct	Sep 2023 5 Years		£2,644 PA	
11	2 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		467 New Direct	Jun 2023			
12	14 High St Saffron Walden, CB10 1AT *Uttlesford Submarket*		303 New Direct	Mar 2023			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
13	2-4 George St Saffron Walden, CB10 1EQ *Uttlesford Submarket*		757 New Direct	Jan 2023 5 Years	£15,000 PA		Jan 2026
14	8-8A Cross St Saffron Walden, CB10 1EX *Uttlesford Submarket*	The Goat & Grass Kounnis and Partners	915 New Assignment	Dec 2022 4 Years 6 Months		0 Mos £12,000 PA	
15	8-8A Cross St Saffron Walden, CB10 1EX *Uttlesford Submarket*	The Goat & Grass Kounnis and Partners	335 New Assignment	Dec 2022 3113 Days	£13,000 PA £13,000 PA	0 Mos £5,240 PA	Jul 2026
16	**Abbey House** 51 High St Saffron Walden, CB10 1AE *Uttlesford Submarket*	Tiber Windows Mysipp Trustees Limited	555 New Direct	Oct 2022 5 Years	£17,000 PA		
17	17A George St Saffron Walden, CB10 1EW *Uttlesford Submarket*		145 New Direct	Sep 2022			
18	1-3 Market Hl Saffron Walden, CB10 1HQ *Uttlesford Submarket*	My flair lady St Johns College	904 New Direct	Sep 2022			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
19	12A Market Pl Saffron Walden, CB10 1HR *Uttlesford Submarket*		5,587 New Direct	Dec 2022			
20	5 Cross St Saffron Walden, CB10 1EX *Uttlesford Submarket*		961 New Direct	Aug 2022 10 Years	£26,000 PA		Jun 2027
21	8 King St Saffron Walden, CB10 1ES *Uttlesford Submarket*	Monument Group Ltd	933 New Direct	Jul 2022 5 Years	£38,000 PA		
22	34-36 High St Saffron Walden, CB10 1EP *Uttlesford Submarket*		588 New Direct	May 2022 3 Years		£13,625 PA	
23	**Knights Garage** High St Saffron Walden, CB11 3PG *Uttlesford Submarket*	Mr Tony Knight	758 New Direct	Jan 2022			
24	11 High St Dunmow, CM6 1AB *Uttlesford Submarket*	Specsavers Prema Properties Limited	1,350 New Direct	Dec 2021 10 Years	£25,000 PA £21,796 PA	12 Mos at Start £11,976 PA	Dec 2027 Dec 2026

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
25	79-79A High St Dunmow, CM6 1AE *Uttlesford Submarket*	BRADMOSS LIMITED	956 New Direct	Dec 2021		£11,907 PA	
26	4 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*	One Flowers Ltd	555 New Direct	Oct 2021 3 Years	£14,000 PA	£5,922 PA	
27	**Gallery on the park** White St Dunmow, CM6 1BD *Uttlesford Submarket*		440 New Direct	Sep 2021 3 Years	£5,500 PA		
28	13 Debden Rd Saffron Walden, CB11 4AA *Uttlesford Submarket*	C H R Travel Europe	338 New Direct	Oct 2021		£3,683 PA	
29	12 King St Saffron Walden, CB10 1ES *Uttlesford Submarket*	Monument Group Ltd	1,370 New Direct	Oct 2021			
30	2 Market Pl Dunmow, CM6 1AT *Uttlesford Submarket*	Yogi (Properties) Limited	649 New Direct	Aug 2021			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
31	8-8A Cross St Saffron Walden, CB10 1EX *Uttlesford Submarket*	The Curious Goat Kounnis and Partners	335 New Direct	Jul 2021 10 Years	£13,000 PA £13,000 PA	0 Mos £5,240 PA	 Jul 2026
32	Thremhall Av Stansted, CM24 1PY *Uttlesford Submarket*	McDonald's Tabacon Group	3,200 Renewal Direct	Jul 2023 15 Years	£136,000 PA £136,000 PA	0 Mos £73,728 PA	 Jul 2023…
33	14 London Rd Saffron Walden, CB11 4ED *Uttlesford Submarket*	 Dorringtons	590 New Direct	Jun 2021 5 Years		 £5,389 PA	
34	6 King St Saffron Walden, CB10 1ES *Uttlesford Submarket*	Grape Tree Royal National Pension Fund Nurs…	996 New Direct	May 2021 10 Years	£35,000 PA	Spread Over	May 2026 May 2026

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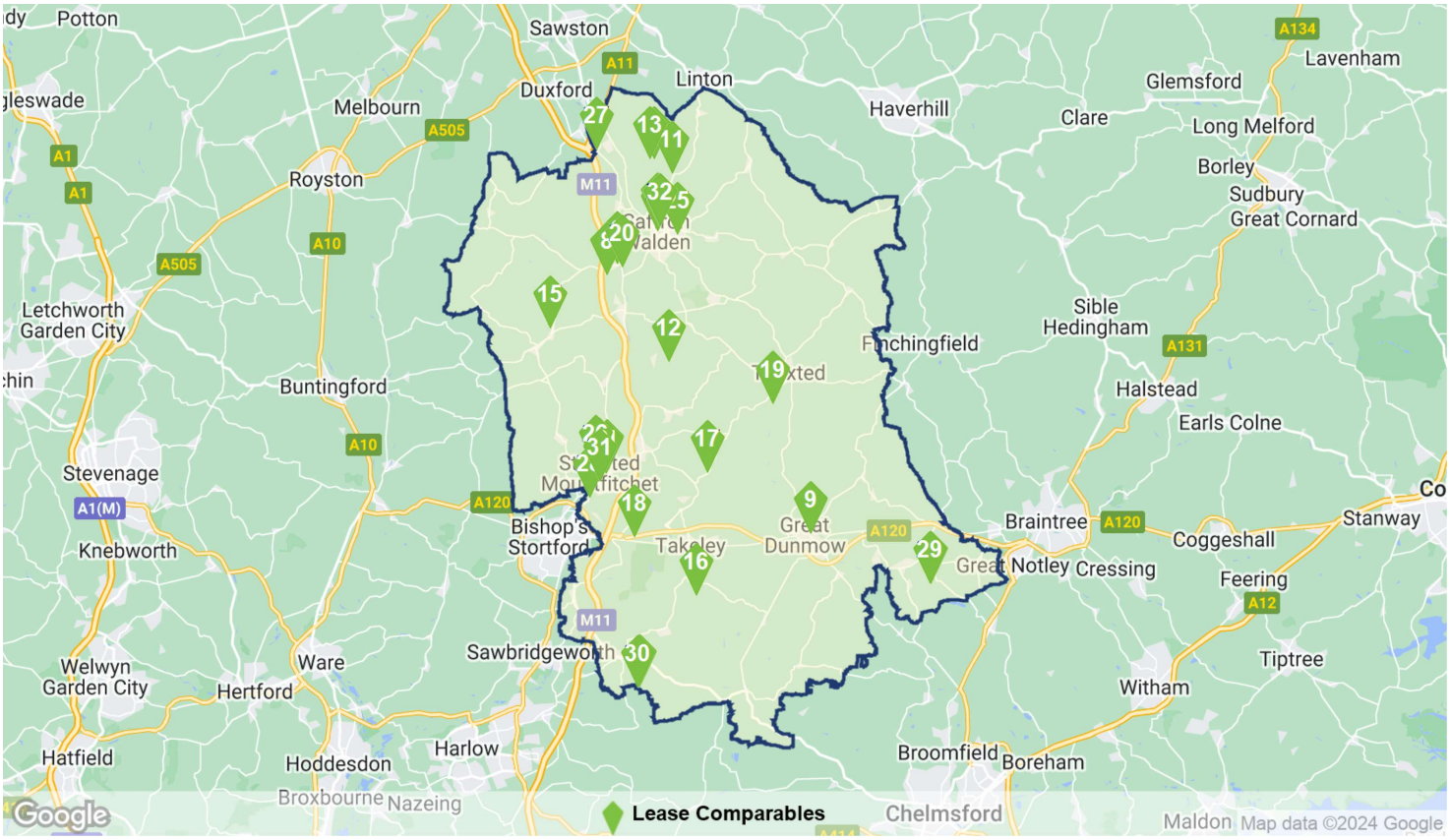
Lease Comps Summary

Lease Comps Report

Deals	Asking Rent Per SF	Achieved Rent Per SF	Avg. Months On Market
44	£12.96	£13.72	10

LEASE COMPARABLES



SUMMARY STATISTICS

Rent	Deals	Low	Average	Median	High
Asking Rent Per SF	29	£6.23	£12.96	£13.87	£52.08
Achieved Rent Per SF	8	£8.45	£13.72	£13.98	£52.08
Effective Rent Per SF	1	£13.01	£13.01	£13.01	£13.01
Asking Rent Discount	8	-0.2%	1.8%	0.0%	13.3%
TI Allowance	-	-	-	-	-
Rent Free Months	1	9	9	9	9

Lease Attributes	Deals	Low	Average	Median	High
Months on Market	43	1	10	6	36
Deal Size	44	50	1,261	835	11,518
Deal in Months	13	12.0	44.0	24.0	240.0
Floor Number	44	BSMT	GRND	GRND	2

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Lease Comps Summary

Lease Comps Report

	Property Name - Address	Rating	Lease				Rents	
			SF Leased	Floor	Sign Date	Type	Rent	Rent Type
1	**Rowe** 9 Emson Close	★★☆☆☆	185	GRND	29/12/2023	New Lease	-	-
2	**23-25 Lower St**	★★☆☆☆	350	1st	06/12/2023	New Lease	£10.00/fri	Asking
3	**Wenden Court** Station Rd	★★☆☆☆	1,169	GRND	09/10/2023	New Lease	£8.55	Achieved
4	**The Gallery** Sparrows Ln	★★☆☆☆	1,216	GRND	01/09/2023	New Lease	£12.82	Asking
5	**Mansion House** Chesterford Park	★★★★☆	954	GRND	04/06/2023	New Lease	-	-
6	**The Greens Building** Cambridge Rd	★★★☆☆	288	GRND	30/05/2023	New Lease	£52.08	Achieved
7	**26-28 Church St**	★★★☆☆	850	1st	15/05/2023	New Lease	£14.12/fri	Achieved
8	**Bulse Grange** Duck St	★★☆☆☆	329	GRND	15/05/2023	New Lease	£20.43/fri	Achieved
1	**Rowe** 9 Emson Close	★★☆☆☆	210	GRND	12/05/2023	New Lease	£14.00/iro	Asking
9	**1-3 White St**	★★☆☆☆	50	GRND	09/05/2023	New Lease	-	-
10	**24 Gold St**	★★★☆☆	1,456	GRND,1	25/04/2023	New Lease	£10.99/fri	Asking
1	**Rowe** 9 Emson Close	★★☆☆☆	230	GRND	13/03/2023	New Lease	£14.09/fri	Achieved
11	**Unit 1a Hall Farm** Little Walden Rd	★★☆☆☆	2,809	1st	01/03/2023	New Lease	£7.51	Asking
12	**Mole Hall** Cornells Ln	★★☆☆☆	1,537	GRND	19/02/2023	New Lease	£8.45/fri	Achieved
1	**Rowe** 9 Emson Close	★★☆☆☆	185	GRND	03/01/2023	New Lease	£13.95/fri	Asking
13	**Newham Building** Chesterford	★★★☆☆	11,518	GRND	01/01/2023	New Lease	-	-
14	**Hammerhill Studios** Stanbrook	★★☆☆☆	429	GRND	13/10/2022	New Lease	£15.38/fri	Asking
15	**Britannia House** Stickling Green Ln	★★☆☆☆	1,271	1st	04/10/2022	New Lease	£9.99/iro	Asking
16	**Hatfield Broad Oak**	★★★☆☆	633	GRND	07/09/2022	New Lease	£9.79	Asking
17	**The Roost** Woodgate Farm End	★★☆☆☆	692	GRND	05/09/2022	New Lease	£13.73/fri	Achieved
6	**The Greens Building** Cambridge Rd	★★★☆☆	1,934	1st	18/08/2022	New Lease	£15.00	Asking

Lease Comps Summary

Lease Comps Report

	Property Name - Address	Rating	Lease				Rents	
			SF Leased	Floor	Sign Date	Type	Rent	Rent Type
18	**The Lodge** Start Hl	★★☆☆☆	3,023	GRND,1	19/07/2022	New Lease	-	-
19	**Hammerhill Studios** Hamer Hl	★★★☆☆	1,789	1st	26/05/2022	New Lease	£11.00	Asking
20	**The Old Forge** London Rd	★★☆☆☆	226	1st	19/04/2022	New Lease	-	-
21	**1 Lower St**	★★☆☆☆	524	GRND	11/04/2022	New Lease	£16.98/iri	Asking
22	**Cock Green**	★★☆☆☆	1,203	GRND,1	29/03/2022	New Lease	£16.50	Asking
23	**10 Market Pl**	★★★☆☆	2,883	BSMT,G…	24/03/2022	New Lease	£13.01	Effective
24	**Rutland House** 4 Great Chesterford Ct	★★★☆☆	1,118	GRND,1-2	01/03/2022	New Lease	£13.41	Asking
25	**Angus House** Shire Hl	★★☆☆☆	1,504	GRND,1	14/12/2021	New Lease	£10.00/iri	Asking
20	**The Old Forge** London Rd	★★☆☆☆	310	1st	11/11/2021	New Lease	-	-
20	**The Old Forge** London Rd	★★☆☆☆	125	GRND	11/11/2021	New Lease	-	-
20	**The Old Forge** London Rd	★★☆☆☆	142	1st	11/11/2021	New Lease	-	-
26	**Bentfield Rd**	★★☆☆☆	1,362	GRND,1	25/10/2021	New Lease	£14.67	Asking
27	**Islay House** Great Chesterford Ct	★★☆☆☆	1,463	GRND	06/10/2021	New Lease	£15.72/fri	Asking
14	**Hammerhill Studios** Stanbrook	★★☆☆☆	429	GRND	06/08/2021	New Lease	-	-
4	**The Gallery** Sparrows Ln	★★☆☆☆	1,216	GRND	03/08/2021	New Lease	£12.83	Asking
28	**Sion Park** Stansted Rd	★★☆☆☆	2,301	GRND	14/07/2021	New Lease	-	-
1	**Rowe** 9 Emson Close	★★☆☆☆	820	1st	01/07/2021	New Lease	-	-
20	**The Old Forge** London Rd	★★☆☆☆	278	1st	03/06/2021	New Lease	-	-
20	**The Old Forge** London Rd	★★☆☆☆	382	1st	03/06/2021	New Lease	-	-
29	**The New Barn** Cock Green	★★★☆☆	2,910	GRND,1	01/06/2021	New Lease	£14.95	Asking
30	**The Foundry** Sparrows Ln	★★☆☆☆	2,095	GRND	25/05/2021	New Lease	£15.75	Asking

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Lease Comps Summary

Lease Comps Report

	Property Name - Address	Rating	Lease				Rents	
			SF Leased	Floor	Sign Date	Type	Rent	Rent Type
31	**Riverside Business Park** Stoney Common Rd	★★☆☆☆	295	GRND	24/04/2021	New Lease	-	-
32	**11 Emson Close**	★★★☆☆	791	1st	22/04/2021	New Lease	£11.38/fri	Asking

Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
1	**Rowe** 9 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		185 New Direct	Jan 2024			
2	23-25 Lower St Stansted, CM24 8LN *Uttlesford Submarket*		350 New Direct	Jan 2024			
3	**Wenden Court** Station Rd Saffron Walden, CB11 4LB *Uttlesford Submarket*		1,169 New Direct	Oct 2023 2 Years	£8.55/SF		
4	**The Gallery** Sparrows Ln Bishop's Stortford, CM22 7AT *Uttlesford Submarket*		1,216 New Direct	Sep 2023		£10.69/SF	
5	**Mansion House** Chesterford Park Saffron Walden, CB10 1XL *Uttlesford Submarket*	Aviva Investors Global Services Ltd	954 New Direct	Jun 2023		£20.79/SF	
6	**The Greens Building** Cambridge Rd Stansted, CM24 8BZ *Uttlesford Submarket*	Pim Trustees Ltd	288 New Direct	May 2023	£52.08/SF		

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
7	26-28 Church St Saffron Walden, CB10 1JQ *Uttlesford Submarket*	CASLP	850 New Sublease	May 2023 5 Years	£14.12/SF	£4.76/SF	
8	**Bulse Grange** Duck St Saffron Walden, CB11 4JU *Uttlesford Submarket*		329 New Direct	May 2023	£20.43/SF	£18.20/SF	
9	**Rowe** 9 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		210 New Direct	Jun 2023			
10	1-3 White St Dunmow, CM6 1BD *Uttlesford Submarket*	SGN Retail	50 New Direct				
11	24 Gold St Saffron Walden, CB10 1EJ *Uttlesford Submarket*	SWM (Properties) Ltd	1,456 New Direct	May 2023			
12	**Rowe** 9 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		230 New Direct	Mar 2023 1 Year	£14.09/SF		

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
13	**Unit 1a Hall Farm** Little Walden Rd Saffron Walden, CB10 1XA *Uttlesford Submarket*		2,809 New Direct	Mar 2023			
14	**Mole Hall** Cornells Ln Saffron Walden, CB11 3SP *Uttlesford Submarket*	Mutiny	1,537 New Direct	Feb 2023 3 Years	£8.45/SF	£4.30/SF	Feb 2024…
15	**Rowe** 9 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		185 New Direct	Feb 2023			
16	**Newham Building** Chesterford Saffron Walden, CB10 1XL *Uttlesford Submarket*	Flagship 86 Chesterford Park Limited	11,518 New Direct	Jan 2023 1 Year		£4.41/SF	
17	**Hammerhill Studios** Stanbrook Dunmow, CM6 2NH *Uttlesford Submarket*		429 New Direct	Nov 2022			
18	**Britannia House** Stickling Green Ln Saffron Walden, CB11 4QX *Uttlesford Submarket*		1,271 New Direct	Nov 2022		£3.96/SF	

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
19	Hatfield Broad Oak Bishop's Stortford, CM22 7JZ *Uttlesford Submarket*	Film Fixture Lighting Limited Rem Properties Ltd.	633 New Direct	Oct 2022 2 Years			
20	**The Roost** Woodgate Farm End Dunmow, CM6 2BN *Uttlesford Submarket*		692 New Direct	Oct 2022 5 Years	£13.73/SF		Sep 2025 Sep 2025
21	**The Greens Building** Cambridge Rd Stansted, CM24 8BZ *Uttlesford Submarket*	Pim Trustees Ltd	1,934 New Direct	Sep 2022 1 Year			
22	**The Lodge** Start Hl Bishop's Stortford, CM22 7WE *Uttlesford Submarket*		3,023 New Direct	Aug 2022			
23	**Hammerhill Studios** Hamer Hl Dunmow, CM6 2NH *Uttlesford Submarket*		1,789 New Direct	Jun 2022			
24	**The Old Forge** London Rd Saffron Walden, CB11 4JL *Uttlesford Submarket*		226 New Direct	May 2022			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
25	1 Lower St Stansted, CM24 8LN *Uttlesford Submarket*	Mr Leonard	524 New Direct	Apr 2022 3 Years			
26	Cock Green Dunmow, CM6 3LY *Uttlesford Submarket*		1,203 New Direct	Apr 2022			
27	10 Market Pl Saffron Walden, CB10 1JX *Uttlesford Submarket*	Pellys Solicitors Bolmuir Properties Limited	2,883 New Direct	Mar 2022 20 Years	£13.87/SF £13.01/SF	9 Mos at Start	Mar 2032… Mar 2026…
28	**Rutland House** 4 Great Chesterford Ct Saffron Walden, CB10 1PF *Uttlesford Submarket*	Surrey House Residents Associati…	1,118 New Direct	Mar 2022			
29	**Angus House** Shire Hl Saffron Walden, CB11 3AQ *Uttlesford Submarket*		1,504 New Direct	Jan 2022			
30	**The Old Forge** London Rd Saffron Walden, CB11 4JL *Uttlesford Submarket*		125 New Direct	Dec 2021			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
31	**The Old Forge** London Rd Saffron Walden, CB11 4JL *Uttlesford Submarket*		310 New Direct	Dec 2021			
32	**The Old Forge** London Rd Saffron Walden, CB11 4JL *Uttlesford Submarket*		142 New Direct	Dec 2021			
33	Bentfield Rd Stansted, CM24 8JG *Uttlesford Submarket*	City & Country Residential Limited	1,362 New Direct	Nov 2021			
34	**Islay House** Great Chesterford Ct Saffron Walden, CB10 1PF *Uttlesford Submarket*		1,463 New Direct	Nov 2021		£3.62/SF	
35	**Hammerhill Studios** Stanbrook Dunmow, CM6 2NH *Uttlesford Submarket*		429 New Direct	Sep 2021			
36	**The Gallery** Sparrows Ln Bishop's Stortford, CM22 7AT *Uttlesford Submarket*		1,216 New Direct	Sep 2021 1 Year			

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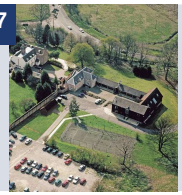
Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
37 	**Sion Park** Stansted Rd Bishop's Stortford, CM23 5PU *Uttlesford Submarket*	Global Self Drive	2,301 New Direct	Jul 2021			
38	**Rowe** 9 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		820 New Direct	Jul 2021			
39	**The Old Forge** London Rd Saffron Walden, CB11 4JL *Uttlesford Submarket*		278 New Direct	Jul 2021			
40	**The Old Forge** London Rd Saffron Walden, CB11 4JL *Uttlesford Submarket*		382 New Direct	Jul 2021			
41	**The New Barn** Cock Green Dunmow, CM6 3GY *Uttlesford Submarket*		2,910 New Direct	Jun 2021			
42	**The Foundry** Sparrows Ln Bishop's Stortford, CM22 7AT *Uttlesford Submarket*		2,095 New Direct	May 2021 1 Year			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
43	**Riverside Business Park** Stoney Common Rd Stansted, CM24 8PL *Uttlesford Submarket*	Mainline Networks Ltd	295 New Direct	Apr 2021			
44	11 Emson Close Saffron Walden, CB10 1HL *Uttlesford Submarket*		791 New Direct	May 2021 3 Years		£5.77/SF	

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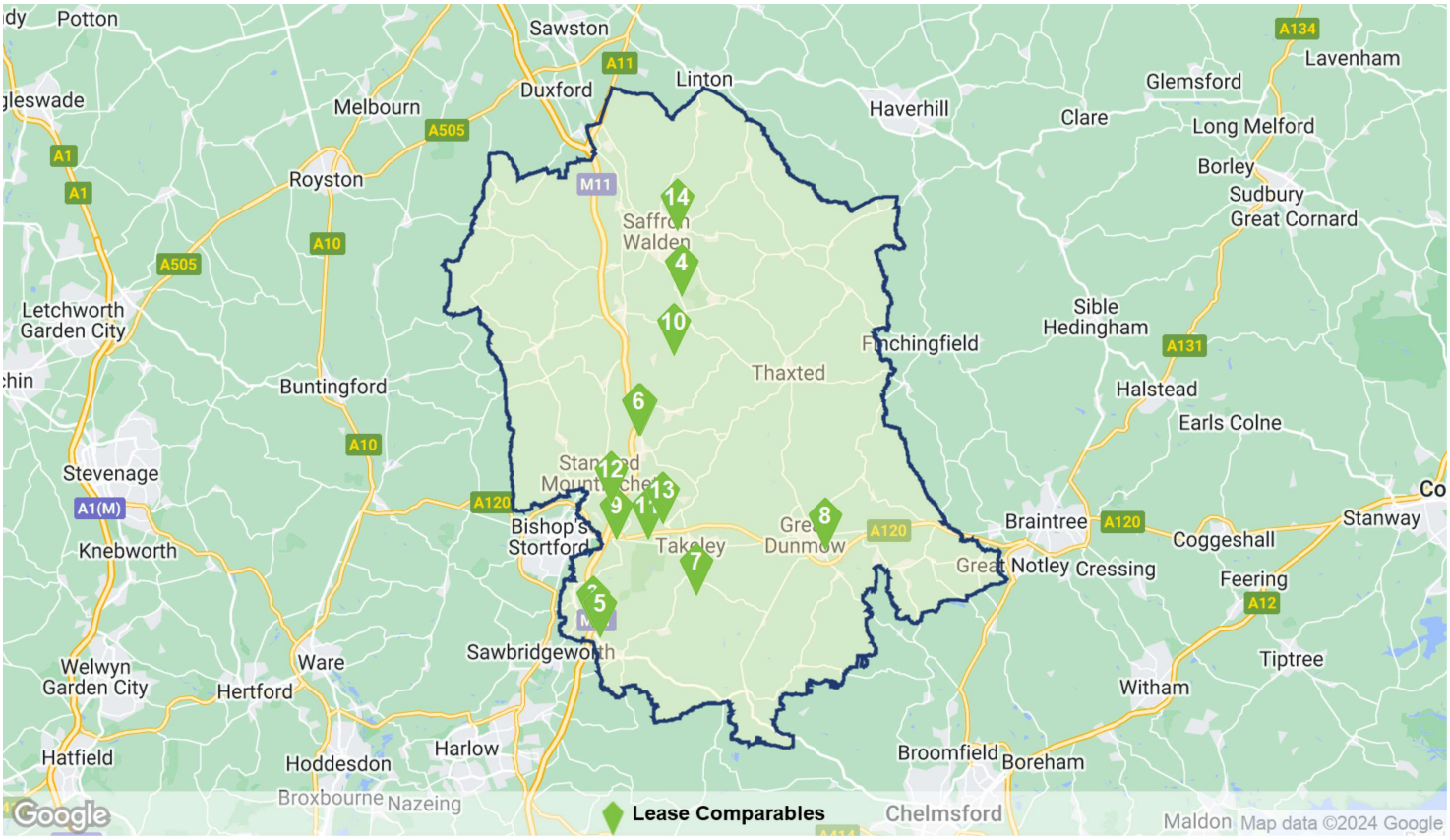
Lease Comps Summary

Lease Comps Report

Deals	Asking Rent Per SF	Achieved Rent Per SF	Avg. Months On Market
18	£7.64	£7.16	10

LEASE COMPARABLES



SUMMARY STATISTICS

Rent	Deals	Low	Average	Median	High
Asking Rent Per SF	16	£4.48	£7.64	£9.09	£12.00
Achieved Rent Per SF	3	£6.01	£7.16	£8.90	£10.00
Effective Rent Per SF	-	-	-	-	-
Asking Rent Discount	3	0.0%	0.2%	0.0%	3.2%
TI Allowance	-	-	-	-	-
Rent Free Months	-	-	-	-	-

Lease Attributes	Deals	Low	Average	Median	High
Months on Market	16	1	10	7	38
Deal Size	18	580	3,384	2,681	9,597
Deal in Months	5	36.0	43.0	36.0	60.0
Floor Number	18	GRND	GRND	GRND	MEZZ

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Lease Comps Summary

Lease Comps Report

	Property Name - Address	Rating	Lease				Rents	
			SF Leased	Floor	Sign Date	Type	Rent	Rent Type
1	**Jenkins Dr**	★★☆☆☆	628	GRND	01/12/2023	New Lease	-	-
2	**Jenkins Dr**	★★☆☆☆	1,177	GRND	16/11/2023	New Lease	£10.20/fri	Asking
3	**Storage Units At** Bridge Works	★★☆☆☆	2,867	GRND,1	23/10/2023	New Lease	£7.70/fri	Asking
4	**Bluefields Barn** Purton End	★★☆☆☆	8,734	GRND	09/10/2023	New Lease	£6.01/fri	Achieved
5	**Stonehall Farm** Stonehall Farm	★★☆☆☆	2,756	GRND	29/09/2023	New Lease	£7.50	Asking
6	**Jenkins Dr**	★★★☆☆	791	GRND	01/09/2023	New Lease	-	-
7	**Hatfield Brook Oak**	★★☆☆☆	884	GRND	01/05/2023	New Lease	£10.44	Asking
8	**Zone D** Chelmsford Rd	★★☆☆☆	716	GRND	03/11/2022	New Lease	£12.00/fri	Asking
9	**Start Hl**	★★★☆☆	8,011	GRND,1	13/10/2022	New Lease	£9.27/fri	Asking
10	**Cow Barn** Mole Hall Ln	★★☆☆☆	580	GRND	25/07/2022	New Lease	£9.40	Asking
11	**Dunmow**	★★★☆☆	4,779	GRND	10/01/2022	New Lease	£8.90/fri	Achieved
2	**Jenkins Dr**	★★☆☆☆	772	GRND	14/12/2021	New Lease	£10.49/fri	Asking
12	**Forest Hall Rd**	★★★☆☆	3,190	GRND,1	23/09/2021	New Lease	£9.80	Asking
13	**Taylors End Rd**	★★★☆☆	3,490	GRND	13/09/2021	New Lease	£8.60	Asking
12	**Forest Hall Rd**	★★★☆☆	8,742	GRND,1	01/08/2021	New Lease	£8.23	Asking
10	**Cow Barn** Mole Hall Ln	★★☆☆☆	605	GRND	01/07/2021	New Lease	£10.00/fri	Achieved
14	**Shire Hl**	★★☆☆☆	2,606	GRND,…	25/05/2021	New Lease	£8.25	Asking
4	**Bluefields Barn** Purton End	★★☆☆☆	9,597	GRND	21/04/2021	New Lease	£4.48	Asking

Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
1	Jenkins Dr Bishop's Stortford, CM22 6JX *Uttlesford Submarket*	Avon Estate	628 New Direct	Dec 2023			
2	Jenkins Dr Bishop's Stortford, CM22 6JX *Uttlesford Submarket*		1,177 New Direct	Dec 2023			
3	**Storage Units At** Bridge Works Bishop's Stortford, CM22 7RP *Uttlesford Submarket*		2,867 New Direct	Nov 2023			
4	**Bluefields Barn** Purton End Saffron Walden, CB11 3JT *Uttlesford Submarket*	RHD Logistics	8,734 New Direct	Oct 2023 4 Years	£6.01/SF	£0.14/SF	
5	**Stonehall Farm** Stonehall Farm Bishop's Stortford, CM22 7RS *Uttlesford Submarket*	The National Trust For Places Of H…	2,756 New Direct	Sep 2023 3 Years			
6	Jenkins Dr Bishop's Stortford, CM22 6JX *Uttlesford Submarket*	S-Katz Pension Fund	791 New Direct	Sep 2023			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
7	Hatfield Brook Oak Bishop's Stortford, CM22 7JZ *Uttlesford Submarket*		884 New Direct	May 2023		£3.10/SF	
8	**Zone D** Chelmsford Rd Dunmow, CM6 1XG *Uttlesford Submarket*	Saffron Waldon Property Limited	716 New Direct	Dec 2022			
9	Start Hl Bishop's Stortford, CM22 7DG *Uttlesford Submarket*	Ropemaker Properties Limited	8,011 New Assignment	Nov 2022			
10	**Cow Barn** Mole Hall Ln Saffron Walden, CB11 3SR *Uttlesford Submarket*	3sixty Automotive	580 New Direct	Aug 2022 3 Years			
11	Dunmow Bishop's Stortford, CM22 6LY *Uttlesford Submarket*		4,779 New Direct	Jan 2022	£8.90/SF		Jan 2025
12	Jenkins Dr Bishop's Stortford, CM22 6JX *Uttlesford Submarket*		772 New Direct	Jan 2022 3 Years			

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Lease Comparables

	Address	Tenant Landlord	SF Leased Type	StartDate Term	Starting Rent Effective Rent	Free Rent Rates	Breaks Reviews
13	Forest Hall Rd Stansted, CM24 8TY *Uttlesford Submarket*	Pulse Marketing Of Bishops Stortfo… 	3,190 New Direct	Oct 2021 			
14	Taylors End Rd Stansted, CM24 1RB *Uttlesford Submarket*	Clipstone 	3,490 New Direct	Oct 2021 			
15	Forest Hall Rd Stansted, CM24 8TY *Uttlesford Submarket*	Pulse Marketing Of Bishops Stortfo… 	8,742 New Direct	Sep 2021 			
16	**Cow Barn** Mole Hall Ln Saffron Walden, CB11 3SR *Uttlesford Submarket*		605 New Direct	Jul 2021 5 Years	£10.00/SF		
17	Shire Hl Saffron Walden, CB11 3AQ *Uttlesford Submarket*	R V L Holdings Plc 	2,606 New Direct	May 2021 			
18	**Bluefields Barn** Purton End Saffron Walden, CB11 3JT *Uttlesford Submarket*		9,597 New Direct	Apr 2021 			

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Uttlesford District Council Water Cycle Study – Stage 1

Final Report

August 2022

www.jbaconsulting.com

Uttlesford District Council

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Revision History

Revision Ref/Date	Amendments	Issued to
S3-P01 26/01/2022	Draft Report	Lois Bowser (UDC) John Rumble (Affinity Water) Darl Sweetland (Anglian Water) Nicky McHugh (Thames Water) Sue Hogarth (Environment Agency)
A1-C02 11/08/2022	Final Report	Lois Bowser (UDC)

Contract

This report describes work commissioned by Uttlesford District Council on 07 July 2021. Hannah Booth, James Fitton and Richard Pardoe of JBA Consulting carried out this work.

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Purpose

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

Acknowledgements

JBA Consulting would like to thank Uttlesford District Council, Affinity Water, Anglian Water, Thames Water and the Environment Agency for their assistance in preparing this report.

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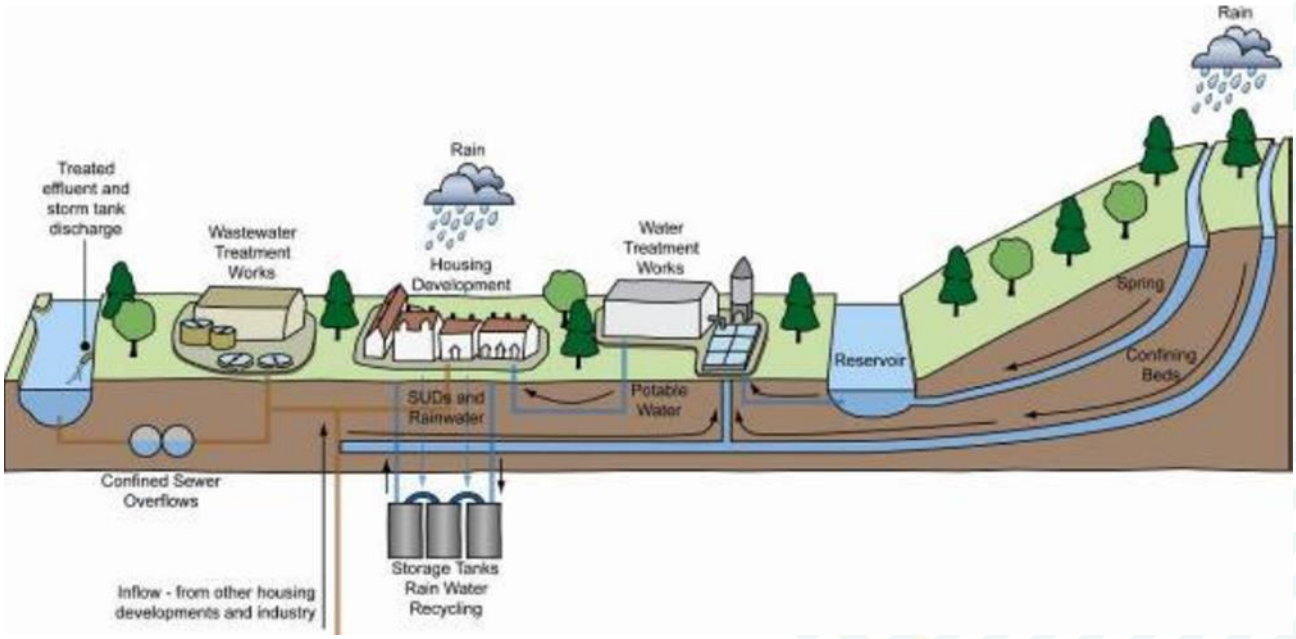
Executive summary

JBA Consulting was commissioned by Uttlesford District Council (UDC) to undertake a Water Cycle Study (WCS) for the Uttlesford District. The purpose of the WCS is to form part of a comprehensive and robust evidence base to inform the preparation of the new Local Plan, which will set out a vision and framework for development in the area up to 2040 and will be used to inform decisions on the location of future development.

Unmitigated future development and climate change can adversely affect the environment and water infrastructure capability. A WCS will provide the required evidence, together with an agreed strategy to ensure that planned growth occurs within environmental constraints, with the appropriate infrastructure in place in a timely manner so that planned allocations are deliverable.

New homes require the provision of clean water, safe disposal of wastewater and protection from flooding. The allocation of large numbers of new homes in certain locations may result in the capacity of existing available infrastructure being exceeded, a situation that could potentially cause service failures to water and wastewater customers, adverse impacts to the environment, or high costs for the upgrade of water and wastewater assets being passed on to the bill payers.

In addition to increased housing demand, future climate change presents further challenges to the existing water infrastructure network, including increased intensive rainfall events and a higher frequency of drought events. Sustainable planning for water must now take this into account. The water cycle can be seen in the figure below and shows how the natural and artificial processes and systems interact to collect, store or transport water in the environment.



Source: Environment Agency – Water Cycle Study Guidance

This Stage 1 Scoping Study will assist Uttlesford District Council to select and develop sustainable development allocations where there is minimal impact on the environment, water quality, water resources, infrastructure and flood risk. This has been achieved by identifying areas where there may be conflict between any proposed development, and the requirements of the environment (and the environmental legislative tests). Further work is recommended to be carried out within a Stage 2 Detailed Study.

The Water Cycle Study has been carried out in co-operation with the water companies, the Environment Agency (EA) whilst also using information from the neighbouring Local Planning Authorities (LPAs).

Uttlesford district council provided six spatial growth options for analysis in the scoping study. These are considered in each chapter of the WCS and a summary provided at the end.

Planned growth in and around Uttlesford is characterised in Section 2 of the report, before relevant environmental and water industry policy and legislation is presented in Section 3 to provide context for the following sections. The report is then divided into sections assessing the impact of growth on each topic in the water cycle. Finally, a summary is provided collating all of the information relating to the spatial growth options.

Mapping of each spatial growth options, and a summary of the known issues and constraints identified within each water framework directive catchment within Uttlesford is presented in Appendix A and B.

Water resources and supply

Uttlesford receives its water from Affinity Water (AfW), and the whole of Uttlesford is within its Stort Water Resource Zone (WRZ). The percentage growth rate allowed for in their Water Resource Management Plan (WRMP) for the Stort WRZ is less than the expected rate of growth within Uttlesford during the Local Plan period, however Affinity Water did not express any concerns with this higher level of growth. No constraints on water treatment, or the requirement for new strategic infrastructure were identified by AfW.

The Water Industry National Environment Programme (WINEP) is a set of actions that the EA have requested all 20 water companies operating in England to complete in a particular Asset Management Period (AMP) as part of their environmental commitments. A number of investigations are planned or underway to ensure that abstraction of water from both groundwater and rivers, is not leading to unsustainable reductions in flow, particularly in chalk streams. Development and population growth can increase abstraction, and so UDC have an opportunity to contribute to these actions indirectly by pursuing policies that promote water efficiency in new development.

It is widely recognised that the climate is changing and in response Uttlesford District Council declared a climate emergency in July 2019. Climate change is predicted to increase pressure on water resources, increasing the potential for a supply-demand deficit in the future, and making environmental damage from over abstraction of water resources more likely. Furthermore, the delivery of water and wastewater services and the heating of water in the home require high energy inputs, and therefore contribute directly to emissions of greenhouse gases. Water efficiency therefore reduces energy use and carbon emissions.

It is important therefore that new development does not result in an unsustainable increase in water abstraction. This can be done in a number of ways from reducing the water demand from new houses through to achieving "water neutrality" in a region by offsetting a new developments water demand by improving efficiency in existing buildings.

There is sufficient evidence to recommend the optional 110 litres per person per day design standard allowed under Building Regulations. However, within Uttlesford are two chalk stream catchments, the river Cam and River Stort and their tributaries. Both these rivers are failing to achieve Good Status under the Water Framework Directive, with one of the reasons cited being abstraction for public water supply which causes

low flows. It is important therefore that growth during the Local Plan period does not make this situation worse. A tighter water efficiency standard of 90 l/p/d is therefore recommended for all new build residential properties in order to minimise the new demand. It is recommended that all new non-residential properties achieve a score of "Outstanding" in the BREEAM New construction standard for water.

It is also recommended that the council explore policies that would achieve or approach water neutrality, and this will be explored further in the stage 2 WCS.

There is little different between the growth options from a water resources perspective, except that a new settlement may provide opportunities to maximise water efficiency to reduce overall water demand by provide strategic rainwater harvesting and greywater recycling infrastructure.

Wastewater network and treatment

Development in areas where there is limited wastewater network capacity will increase pressure on the network, increasing the risk of a detrimental impact on existing customers, and increasing the likelihood of storm overflow operation.

Anglian Water (AW) and Thames Water (TW) provide wastewater services for Uttlesford. Early engagement with developers, TW and AW is required, and further modelling of the network may be required in the Stage 2 WCS and at the planning application stage. Furthermore, in the TW and AW networks, there are areas where the current network is a combined sewer system, and further separation of foul and surface water may be required, as well as suitably designed SuDS.

Early engagement between Uttlesford District Council and TW/AW is also required to ensure that where strategic infrastructure is required, it can be planned in by TW/AW, and will not lead to any increase in discharges from sewer overflows.

There are 29 WwTW expected to serve growth in Uttlesford during the Local Plan period. Of these, six WwTWs may exceed their current maximum permitted dry weather flow as a result of growth in Uttlesford, with a further two very close to their permit. Many of these WwTW have planned upgrades which may alleviate some capacity issues. Early engagement between the Council and AW/TW is required to ensure that opportunities to accommodate this growth within existing upgrade schemes can be realised.

For smaller treatment works that may require upgrading to increase capacity, TW raised a concern that may not be room around the works to expand. This should be considered in Stage 2.

There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows contributing to a worsening of water quality in the area. Action should be taken by the water companies to address these overflows prior to an increase in wastewater demand being generated by new development. TW and AW have confirmed the importance of the investigations into storm overflow performance.

Both AW and TW were provided with the spatial growth options and were asked to comment. In general, wastewater treatment capacity can be provided where it is required, however there is a carbon cost where wastewater must be pumped over longer distances, and a significant financial cost should a new WwTW be required (although this would be accommodated within the water company's business plan). There may also be timing constraints to providing new wastewater infrastructure at this scale which may impact the delivery schedule of development.

Anglian Water proposed Option 2b (Great Chesterford) as their preferred option and stated the following:

"In taking forward the next stages of the Plan, Anglian Water would want to work with the Council, Affinity Water and Thames Water and the Environment Agency to ensure that an agreed approach was taken to the development of the evidence base for the Local Plan. Based on the options presented there looks to be a hybrid option between option 1c, which would utilise the existing headroom at WRC (referred to elsewhere in report as WwTW) and one of the new community options. The evidence base and decisions taken by the Council in advancing the Local Plan to adoption would also serve to support Anglian Water's business plans and the agreement of regulators to investment and where necessary changes to WRC permits."

Water quality and environmental impact

An increase in the discharge of effluent from Wastewater Treatment Works (WwTW) as a result of development and growth in the area in which they serve can lead to a negative impact on the quality of the receiving watercourse. Under the Water Framework Directive (WFD), a watercourse is not allowed to deteriorate from its current WFD classification (either as an overall watercourse or for individual elements assessed).

It is Environment Agency (EA) policy to model the impact of increasing effluent volumes on the receiving watercourses. Where the scale of development is such that a deterioration is predicted, a variation to the Environmental Permit (EP) may be required for the WwTW to improve the quality of the final effluent, so that the increased pollution load will not result in a deterioration in the water quality of the watercourse. This is known as "no deterioration" or "load standstill". The need to meet river quality targets is also taken into consideration when setting or varying a permit.

At this stage of the Local Plan process, a sensitivity analysis was appropriate, and carried out using the EA's SIMCAT water quality modelling tool. This modelled a 20% increase in the volume of treated wastewater discharged across every WwTW in the study area and investigated the response in water quality for Biochemical Oxygen demand (BOD), Ammonia and Phosphate.

Where water quality downstream of a WwTW in any given determinand deteriorates by 10% or more in response to a 20% increase in effluent flow, the sewer catchment can be said to be "more sensitive" to changes in effluent flow, and therefore growth. It can be seen that changes in the volume of treated wastewater in Uttlesford do not cause a significant response in the concentrations of ammonia within the study area in the north of Uttlesford with the exception of the River Pant. High sensitivity is observed for the River Chelmer as it passes Great Dunmow, which may be significant for the spatial growth options.

For BOD, more waterbodies are moderately sensitive with a 0 to 10% deterioration, again concentrated more in the south apart from the River Pant.

For phosphate the response is far more widespread, with many watercourses showing some sensitivity in particular the River Cam, Pincey Brook and the Stort. This is significant as the Cam and Stort are chalk streams and ecologically sensitive.

Detailed water quality modelling to test impact of proposed allocations is recommended in a Stage 2 WCS.

Thames Water indicated concerns about limits to certain chemicals such as Nickel that have been applied at some WwTWs. Consideration should also be given to these in Stage 2.

A screening exercise was undertaken to identify designated sites such as Sites of Special Scientific Interest (SSSIs) that could be impacted by a deterioration in water quality. These will be analysed further in Stage 2 as part of the detailed modelling study.

Development sites within the study area could be sources of diffuse pollution from surface runoff. SuDS are required on all development sites. Their design should consider both water quantity and water quality and site level investigations should be undertaken to define the most appropriate SuDS types for each specific development. Uttlesford District Council should be consulted at an early stage of development to ensure that SuDS are implemented and designed in response to site characteristics and policy factors.

Each growth option contains a high level of growth concentrated in a few locations. The additional volume of treated effluent this would generate has the potential to cause a deterioration in water quality if no mitigation is taken. Of particular concern is where this growth would be served by a WwTW discharging to a water course shown to be sensitive to changes in treated effluent volumes or is to an ecologically sensitive waterbody such as a chalk stream.

Modelling suggested that growth around Great Dunmow (utilised in all scenarios but particularly Option 2c) could cause a deterioration in the River Chelmer. It may be preferable for the new settlement to be served by Thames Water in this scenario.

Options 2a and 2b propose a lot of growth that would cause an increase in treated effluent in the River Stort and River Cam respectively (both Chalk Streams). Modelling showed Phosphate levels could be sensitive in these locations. And careful consideration should be given to whether this could be mitigated in these options.

Chalk Streams

A chalk stream is broadly defined as a river that derives most of its flow from chalk-fed groundwater, stores of underground water that are replenished when it rains. England is home to 85 per cent of the world's chalk streams. Chalk streams are an important and rare habitat and opportunities should be taken within the Local Plan to define policies to protect these river ecosystems.

In parallel to this WCS, a further report has been collated by JBA Consulting on the Chalk streams in Uttlesford. This made a number of policy recommendations which should be considered:

Measure type	Recommendation
Water efficiency	Recommendation 1 – Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford Recommendation 2 – Require all new non-residential buildings achieve BREEAM "Outstanding" for water throughout Uttlesford
Water neutrality	Recommendation 3 – Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study
Riparian Buffer Zone	Recommendation 4 – Apply a riparian buffer zone in chalk stream areas to exclude all development within the natural flood plain or 15m of the bank, whichever is larger. Recommendation 5 – Apply a vegetated buffer strips on agricultural land within 15m of a chalk stream
Cattle fencing	Recommendation 6 – Encourage responsible land management such as cattle fencing through the Nature Recovery Strategy
Education	Recommendation 7 – Undertake a public engagement exercise to raise awareness of chalk

	streams and encourage responsible riparian ownership
Sustainable Drainage Systems (SuDS)	Recommendation 8 – Enforce the SuDS hierarchy as defined in the Essex SuDS guidance with a focus on encouraging infiltration SuDS and deep borehole SuDS where appropriate.
Neighbouring authority engagement	Recommendation 9 – Continue and strengthen existing partnerships with neighbouring authorities and other stakeholders to define coordinated policies for chalk stream protection

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Abbreviations

AfW	Affinity Water
ALS	Abstraction Licensing Strategy
AMP	Asset Management Plan
AMR	Automatic Meter Reading
AONB	Area of Outstanding Natural Beauty
AP	Assessment Point
ASNW	Ancient Semi-Natural Woodland
AW	Anglian Water
BIDS	Business, Industrial, distribution and Storage
BOD	Biochemical Oxygen Demand
BREEAM	Building Research Establishment Environmental Assessment Methodology
CAMS	Catchment Abstraction Management Strategies
CAPEX	Capital Expenditure
CED	Common End Date
CFMP	Catchment Flood Management Plan
CfSH	Code for Sustainable Homes
CSO	Combined Sewer Overflow
DLUHC	Department for Levelling Up, Housing & Communities
DWF	Dry Weather Flow
DWI	Drinking Water Inspectorate
DWMP	Drainage and Wastewater Management Plan
EA	Environment Agency
EC	European Community
ECA	European Communities Act
EFI	Ecological Flow Indicator
EP	Environmental Permit
EU	European Union
FEH	Flood Estimation Handbook
FFT	Flow to Full Treatment
FWMA	Flood and Water Management Act
FZ	Flood Zone
GIS	Geographic Information Systems
HOF	Hands-Off Flow
HOL	Hands-off Level
HRA	Habitats Regulations Assessment
JBA	Jeremy Benn Associates
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
l/p/d	Litres per person per day
Ml/d	Mega (Million) litres per day

MHCLG	Ministry of Housing Communities and Local Government (replaced by DLUHC)
NH_4	Ammonia
NMP	Nutrient Management Plan
NPPF	National Planning Policy Framework
OAN	Objectively Assessed Need
OfWAT	Water Service Regulation Authority
OPEX	Operational Expenditure
OS	Ordnance Survey
P	Phosphorous
RAG	Red / Amber / Green assessment
RBD	River Basin District
RBMP	River Basin Management Plan
ReFH	Revitalised Flood Hydrograph
RoFSW	Risk of Flooding from Surface Water (replaced uFMfSW)
RQP	River Quality Planning tool
RZ	Resource Zone
SA	Sustainability Appraisals
SAC	Special Area of Conservation
SBP	Strategic Business Plan
SEA	Strategic Environmental Assessment
SfA	Sewers for Adoption
SFRA	Strategic Flood Risk Assessment
SHELAA	Strategic Housing and Economic Land Availability Assessment
SHMA	Strategic Housing Market Assessment
SPA	Special Protection Area
SPD	Supplementary Planning Document
SPZ	Source Protection Zone
SS	Suspended Solids
SSSI	Site of Special Scientific Interest
SU	Sewerage Undertaker
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
TW	Thames Water
UDC	Uttlesford District Council
UWWTD	Urban Waste Water Treatment Directive
WaSC	Water and Sewerage Company
WCS	Water Cycle Study
WFD	Water Framework Directive
WINEP	Water Industry National Environment Programme
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone
WTW	Water Treatment Works
WwTW	Wastewater Treatment Works

Glossary

Term	Description
Abstraction Point	The location where water is either taken or extracted from either a surface or groundwater waterbody.
Agricultural Management	The farming techniques and practices used to produce food and manage livestock.
Abstraction Licencing Strategy	The Abstraction Licencing Strategy sets out the Environment Agency's approach to managing new and existing abstraction and impoundments within their river management catchments.
Asset Management Plan (AMP) Period	Price limit periods in the water sector are sometimes known as Asset Management Plan (AMP) periods. The current period (2020-25) is commonly known as AMP 7 because it is the seventh price review period since privatisation of the water industry in 1989. AMP periods are five years in duration and begin on 1 April in the years ending in 0 or 5. Every five years the industry submits a Business Plan to OfWAT for a Price Review (PR). These plans set out the companies' operational expenditure (OPEX) and capital expenditure (CAPEX) required to maintain service standards, enhance service (for example where sewer flooding occurs), to accommodate growth and to meet environmental objectives defined by the Environment Agency. OfWAT assesses and compares the plans with the objective of ensuring what are effectively supply monopolies and operating efficiently.
Aquifer	An aquifer is a rock and/or sediment body that holds groundwater.
Chalk Stream	Chalk streams are rivers that flow across or are influenced by chalk bedrock. They are predominantly fed by underground chalk aquifers.
Dry Weather Flow	Dry weather flow is the average daily flow of wastewater to a waste water treatment works during a period without rain.
Effluent	Effluent discharge is the liquid waste produced from residential, commercial and industrial processes.

Environmental Flow Indicator	The Environmental Flow Indicator is the proportion of natural flows that are required to support the environment of a waterbody.
Groundwater Body	A Groundwater Body is the management unit under the Water Framework Directive which represents a distinct body of groundwater with its own hydrogeological characteristics.
Hands-off Flow	A condition attached to an abstraction licence which states that if a river flow falls below the level specified on the licence, the abstractor will be required to reduce or stop the abstraction.
Hands off Level	A river flow or borehole (groundwater) level below which an abstractor is required to reduce or stop abstraction.
Lead Local Flood Authority	A county council or unitary authority which leads in managing local flood risks (i.e., risks of flooding from surface water, ground water and ordinary (smaller) watercourses). Their duties are outlined in the Flood and Water Management Act.
Natural Flood Management	Natural flood management is the use of natural processes to reduce the risk of flooding and coastal erosion.
Per Capita Consumption	The per capita consumption is the average volume of water used by one person in a day. It is defined as the sum of the measured household consumption of clean water and unmeasured household consumption of clean water divided by the total household population. This is often expressed in litres per person per day (l/p/d)
Permitted Headroom	The difference between the volume of treated wastewater a treatment works is allowed to discharge under its environmental permit, and volume it currently discharges. It can be used to estimate the number of properties that could be connected to a WwTW catchment before a flow permit is exceeded.
Sustainable Urban Drainage Systems	Sustainable drainage systems are drainage solutions that provide a natural alternative to the direct channelling of surface water through an artificial networks of pipes and sewers to nearby watercourses.
Waterbodies	Water bodies constitute areas of water – both salt and fresh, large and small –

	which are distinct from one another in various ways. All surface waters (including rivers, lakes, estuaries and stretches of coastal water) and groundwaters have been divided up into discrete units called water bodies. Water bodies are the basic unit that are used to assess the quality of the water environment and to set targets for environmental improvements.
Water Framework Directive (WFD)	The Water Framework Directive is a river basin management planning system which was implemented to help protect and improve the ecological health of the UK's rivers, lakes, estuaries and coastal and groundwaters.
Water Framework Directive Classification Status	Rivers, lakes, estuaries and coastal waters can be awarded one of five WFD statuses: • High • Good • Moderate • Poor • Bad Groundwater can be awarded one of two statuses: • Good • Poor
Water Framework Directive – Reasons for not achieving good (RNAG)	Where a WFD element is classified as being at less than good status, a reason for the failure to meet the good status is attributed, including the sector deemed responsible or a pressure affecting a biological element.
Water Framework Directive objectives	The Water Framework Directive objectives are set out in Regulation 12 and Regulation 8 of the Water Environment Regulations 2017.
Water Industry National Environment Programme	The Water Industry National Environment Programme is the programme of work in which water companies in England must meet their obligations from environmental legislation and UK government policy.
Water Resource Management Plan (WRMP)	Water Resource Management Plans are statutory documents that all water companies must produce at least every five years. They set out how the water company intends to achieve a secure water supply for their customers while protecting and enhancing the environment.
Water Resource Zone (WRZ)	A Water Resource Zone is an area in which the abstraction and distribution of water is

	self-contained and is used to meet demand within that area.
Wastewater Treatment Works (WwTW)	A wastewater treatment works receive flows from the sewerage system and treats it so it can be discharged back into a river. They may also be called Sewage Treatment Works (STWs) or Water Recycling Centres (WRCs).

1 Introduction

1.1 Terms of reference

JBA Consulting was commissioned by Uttlesford District Council (UDC) to undertake a Water Cycle Study (WCS) for the Uttlesford District. The purpose of the WCS is to form part of a comprehensive and robust evidence base to inform the preparation of the new Local Plan, which will set out a vision and framework for development in the area up to 2040 and will be used to inform decisions on the location of future development.

Unmitigated future development and climate change can adversely affect the environment and water infrastructure capability. A WCS will provide the required evidence, together with an agreed strategy to ensure that planned growth occurs within environmental constraints, with the appropriate infrastructure in place in a timely manner so that planned allocations are deliverable.

Parallel to the WCS, JBA Consulting were asked to provide an evidence base to identify and characterise chalk streams and the pressures they are under and make recommendations for policies to protect them. This report should be referred to for detailed information on chalk streams, and its recommendations are reproduced within the WCS where appropriate.

1.2 Structure of report

The requirements and objectives of the WCS are set out in the section below. Planned growth in and around Uttlesford is characterised in Section 2 of the report, before relevant environmental and water industry policy and legislation is presented in Section 3 to provide context for the following sections. The report is then divided into sections assessing the impact of growth on each topic in the water cycle study. Finally, a summary is provided collating all of the information relating to the spatial growth options.

Mapping of each spatial growth options, and a summary of the known issues and constraints identified within each water framework directive catchment within Uttlesford is presented in Appendix A and B.

1.3 The Water Cycle

Planning Practice Guidance on Water Supply, Wastewater and Water Quality[1] describes a water cycle study as:

"a voluntary study that helps organisations work together to plan for sustainable growth. It uses water and planning evidence and the expertise of partners to understand environmental and infrastructure capacity. It can identify joined up and cost-effective solutions, that are resilient to climate change for the lifetime of the development.

The study provides evidence for Local Plans and sustainability appraisals and is ideally done at an early stage of plan-making. Local authorities (or groups of local authorities) usually lead water cycle studies, as a chief aim is to provide evidence for sound Local Plans, but other partners often include the Environment Agency and water companies."

The Environment Agency's guidance on WCS[2] recommends a phased approach:

- Stage 1: Scoping study, identifies if the water infrastructure capacity could constrain growth and if there are any gaps in the evidence you need to make this assessment. The scoping study will identify:
    - The area and amount of proposed development

1 Planning Practice Guidance: Water supply, wastewater and water quality, Department for Communities and Local Government (2014). Accessed online at: http://planningguidance.planningportal.gov.uk/blog/guidance/ on: 24/01/2022

2 Water Cycle Study Guidance, Environment Agency (2021). Accessed online at: https://www.gov.uk/guidance/water-cycle-studies on: 24/01/2022

- the existing evidence
- main partners to work with
- evidence gaps and constraints on growth

- Stage 2: Detailed study, to provide the evidence to inform an integrated water management strategy. It will identify the water and flood management infrastructure that will mitigate the risks from too little or too much water. It will also identify what you need to do to protect and enhance the water environment.

As a WCS is not a mandatory document, Local Planning Authorities are advised to prioritise the different stages of the WCS to integrate with their Local Plan programme. Figure 1.1 below shows the main elements that compromise the Water Cycle.

The natural water cycle describes the continuous transfers of water around the planet, from atmosphere to surface and back via evaporation, transpiration and precipitation, and the various flows and storage processes that occur. The artificial water cycle looks at the availability of water resources for human consumption, its treatment and supply to homes and business, its use and consequently the generation of wastewater. It then looks at how wastewater is taken away, treated, and finally what happens when it is returned to the environment.

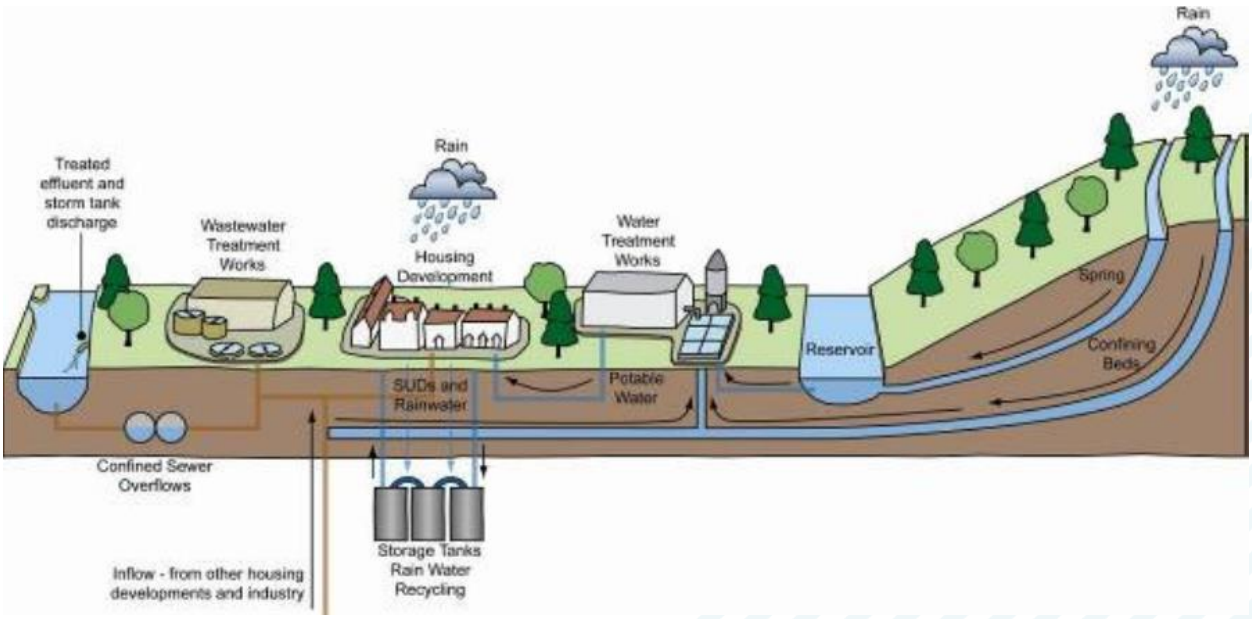

Figure 1.1 The Water Cycle

1.4 Impacts of Development on the Water Cycle

New homes require the provision of clean water, safe disposal of wastewater and limitation of flood risk. It is possible that allocating large numbers of new homes at some locations may result in the capacity of the existing available infrastructure being exceeded. This situation could potentially lead to service failures to water and wastewater customers, have adverse impacts on the environment or cause the high cost of upgrading water and wastewater assets being passed on to bill payers. Climate change presents further challenges such as increased intensity and frequency of rainfall and a higher frequency of drought events that can be expected to put greater pressure on the existing infrastructure. Development, when planned correctly, can also offer opportunities to reduce flood risk to existing properties and increase community resilience, contribute to nature recovery, and allow a collaborative approach to infrastructure.

1.5 Objectives

This Stage 1 scoping report is written to support the Uttlesford Local Plan Review. The WCS brief from Uttlesford District Council stated that the overall objective of the WCS is to understand the environmental and physical constraints of development and identify opportunities for more sustainable planning and improvements that may be required to achieve the required level of development.

Uttlesford District Council Members declared a climate emergency in late 2019 and set up a Climate Change Working Group with interim climate change guidance agreed by Council in early 2021. Climate change and the need to work towards net zero carbon is a fundamental driver to the new Local Plan and sets the context for the Local Plan policy as well as underlying the viability assessment of options for site allocation and the spatial strategy overall.

Of critical and regional importance is the protection of the chalk aquifer which partly underlies the district, along with the chalk streams fed by the aquifer. There is increasing concern from the Uttlesford District Council Members, the public and local environmental groups over low flows in these chalk streams and the impact of water supply and wastewater activities are having on these watercourses.

This WCS will therefore consider the following issues:

- Water resources, demand, and supply
- Wastewater infrastructure and treatment
- Water quality and environmental impact
- Flood risk and drainage
- Impact of water supply and wastewater on chalk streams
- The impact of climate change on water infrastructure.

1.6 Study Area

Uttlesford District Council covers an area of approximately 640 km^2 encompassing Saffron Walden, Great Dunmow, Stansted Mountfitchet and Thaxted and about 100 villages and hamlets in between. The district includes London Stansted Airport as well as major road and rail networks with links to London to the south and Cambridge to the north.

The district has a population of 89,179 (based on 2018 data) with the majority of residents living in Saffron Walden.

Several Environment Agency (EA) designated main rivers flow through Uttlesford. The borough contains the River Cam, Stort, Roding, Can, Chelmer, Ter, Pant and Pincey Brook.

Water supply services are provided by Affinity Water (AfW) and wastewater services are provided by Anglian Water (AW) and Thames Water (TW).

1.7 Authorities responsible for Water Resource and Wastewater Management in Uttlesford

Within the Uttlesford District there are a number of authorities and regulators responsible or involved in supplying, managing, and overseeing water supply, wastewater and the environment. The table below explains the responsibilities of various bodies within the district.

Table 1.1 Responsibilities of authorities within Uttlesford

Authority Name	Key Responsibilities of Different Authorities
Environment Agency	The EA are the environmental regulator in the UK with responsibilities for water quality, flood risk and administering licences for water abstraction. They are a statutory consultee for many development plan documents and for some planning applications. They advise on environmental and

	infrastructure capacity issues across the water cycle.
Natural England	Natural England are the Government's advisors on the natural environment, which they have a responsibility to protect and enhance. In a WCS they may provide information on the conservation objectives, and guidance on, the protection of designated sites.
Affinity Water	Affinity Water as the water supplier for the district has a statutory duty under the Water Industry Act to maintain an efficient and economical system of water supply within its area and supply households with a reliable and sufficient supply of water.
Anglian Water	Anglian Water is the sewerage undertaker for a large proportion of the district. Sewerage undertakers have a duty under the Water Industry Act to provide, improve and extend a system of public sewers (for both domestic and trade flows) so as to cleanse and maintain those sewers (and any lateral drain) to ensure that the area that they serve is effectually drained. There is also a duty to make provision for the emptying of those sewers, normally through sewage treatment works or where appropriate through discharges direct to watercourses.
Thames Water	Thames Water is the sewerage undertaker for a part of the district. As the sewerage undertaker for part of the District, Thames Water have the same responsibilities as Anglian Water to provide, improve and extend a system of public sewers (for both domestic and trade flows) and to make provision for the emptying of those sewers.

1.8 Record of Engagement

Preparation of a WCS requires significant engagement with stakeholders, within the Local Planning Authority area, with water and wastewater utilities, with the Environment Agency, and where there may be cross-boundary issues, with neighbouring local authorities. This section forms a record of engagement for the WCS.

1.8.1 Engagement

The preparation of this WCS was supported by the following engagement:

Inception meeting

Details	Scope of works and data collection requirements.

Neighbouring authorities

Engaged Parties	South Cambridgeshire District Council East Herts
Details	Request for water cycle studies conducted in their area, and housing growth that would be served by WwTW within or shared with Uttlesford District Council.

Collaboration with Water Companies

Engaged Parties	Thames Water

	Anglian Water Affinity Water
Details	Water company assessments of water and wastewater infrastructure and capacity constraints.

2 Future Growth in Uttlesford

2.1 Growth in Uttlesford

The current Local Plan dates from 2005. A replacement plan was submitted for examination but subsequently withdrawn in May 2020 in the light of the examining Inspectors' comments on the soundness of the plan. At the same time the Council resolved to commence a new Local Plan. The new plan must accommodate around 14,120 homes between 2020 and 2040. The council have opted to include a buffer of 20% to ensure sufficient growth can be delivered therefore a target of 16,944 houses are required to be delivered in the district.

2.2 Development sites in Uttlesford

2.2.1 Baseline growth

Some development is already planned either through sites allocated in the adopted local plan or sites with extant planning permission. These must be included in assessments of infrastructure capacity alongside proposed sites for adoptions in the new local plan. These sites were provided by UDC for use in the study.

2.2.2 Spatial growth options

Uttlesford District Council are at an early stage in their local plan process and have a number of spatial growth options to consider. The spatial growth options are different ways in which the overall housing need may be delivered, for example through growth in existing settlements or through the creation of a new settlement. These scenarios have been explained in further detail below in Table 2.1 and a summary of the issues and opportunities identified in the WCS is contained in Section 10. Mapping of each option can be found in Appendix A.

Table 2.1 Summary of spatial growth options

Settlement	Type	Option 1b- Increased growth at the Rural Centres and Local Rural Centres	Option 1c Increased growth at existing settlements with a train station	Option 2a- Ugley New Community	Option 2b- Great Chesterford New Community	Option 2c- Easton Park New Community	Option 2d- West of Hatfield Broad Oak New Community	Option 2e: East of Stebbing New Community
Saffron Walden	Rural Centre	2,159	2,127	697	697	697	697	697
Great Dunmow	Rural Centre	1,470	534	1,128	1,128	1,128	1,128	1,128
Stansted Mountfitchet	Rural Centre	2,215	3,185	815	815	815	815	815
Great Chesterford	Local Rural Centre	475	775	475	475	475	475	475
Elsenham	Local Rural Centre	150	350	150	150	150	150	150
Hatfield Heath	Local Rural Centre	0	0	0	0	0	0	0
Newport	Local Rural Centre	643	643	643	643	643	643	643
Takeley	Local Rural Centre	1,397	1,582	1,982	1,982	1,982	1,982	1,982
Thaxted	Local Rural Centre	602	312	602	602	602	602	602
Type A Villages	Other Villages	1,251	918	1,251	1,251	1,251	1,251	1,251
Type B Villages	Other Villages	327	384	987	987	987	987	987
New Settlement 1	New Settlement	N/A	N/A	2,000	2,000	2,000	2,000	2,000

2.3 Windfall

Windfall sites are sites that are not specifically allocated in the Local Plan. Local Plans usually provide an allowance to cover this circumstance, consistent with the National Planning Policy Framework (NPPF). For the purpose of the Stage 1 report windfall sites were distributed between WwTWs based on the proportion of the commitments at each WwTW. This will be revised in Stage 2. The windfall allowance of 1,710 homes was advised by Uttlesford District Council. This may change as a result of subsequent monitoring.

2.4 Growth outside Uttlesford

2.4.1 General approach

Where growth within a neighbouring Local Planning Authority (LPA) area may be served by infrastructure within or shared with Uttlesford, the LPA were contacted as part of a duty to cooperate request to provide information on:

- The latest growth forecast (housing and employment) for the district
- Details of future growth within the catchments of WwTW which serve part of their council area and Uttlesford.

Where specific trajectory was not given by the neighbouring councils, committed development was assumed to be spread evenly over the next five years (2020/21 to 2024/25) and Local Plan development was spread evenly from 2020/21 to the end of the Local Plan period.

2.4.2 East Hertfordshire District

East Hertfordshire District Council has provided information on significant sites which have been granted permission since 2018. Some of these sites would be served by the Bishops Stortford WwTW which is shared with the Uttlesford District.

Table 2.2 Summary of growth in the East Hertfordshire District served by infrastructure shared with Uttlesford

WwTW	Proposed number of dwellings	Potential Employment Space (m2)	Period
Bishops Stortford	4,581	48,720	2016-2038

2.4.3 Greater Cambridge Planning Authority

The Greater Cambridge Shared Planning team is a shared service for South Cambridgeshire District Council and Cambridge City Council.

The Greater Cambridge Shared Planning team has provided information on allocated sites in the planning area which have been granted permission since 2011. Some of these sites would be served by the Great Chesterford WwTW and Linton WwTW which are shared with the Uttlesford District.

Table 2.3 Summary of growth in the Greater Cambridge Planning Authority area served by infrastructure shared with Uttlesford

WwTW	Proposed number of dwellings	Potential Employment Space (m^2)	Period
Great Chesterford	1,500	186,250	2019-2030
Linton	126	32,490	2019-2025

3 Legislative and Policy Framework

3.1 Introduction

The following sections introduce several national, regional and local policies that must be considered by the LPA, water companies and developers during the planning stage. Key extracts from these policies relating to water consumption targets and mitigating the impacts on the water from the new development are summarised below.

3.2 National Policy

3.2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)[3] was published on 27th March 2012, as part of reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. A comprehensive revision was issued in July 2018. This was further revised in February 2019 and July 2021[4], but the changes were not significant from the July 2018 version for policy areas relevant to the WCS. The NPPF provides guidance to planning authorities to take account of flood risk and water and wastewater infrastructure delivery in their Local Plans. Key paragraphs include:

Paragraph 34:

> *"Plans should set out the contributions expected from development. This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure). Such policies should not undermine the deliverability of the plan."*

Paragraph 153:

> *"Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply..."*

Paragraph 174:

> *"…preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans".*

In March 2014, the Planning Practice Guidance was issued by the Department for Communities and Local Government, with the intention of providing guidance on the application of the National Planning Policy Framework (NPPF) in England. The DLUHC is in the process of updating the Guidance to consider the necessary 2018 and 2019 updates of the NPPF. Of the sections relevant to this study, only the Water Supply, Wastewater and Water Quality section has been updated.

- Flood Risk and Coastal Change[5]
- Water Supply, Wastewater and Water Quality[6].

3 National Planning Policy Framework, Department for Communities and Local Government (2012)
4 National Planning Policy Framework, Ministry of Housing, Communities and Local Government (2019). Accessed online at: https://www.gov.uk/government/publications/national-planning-policy-framework--2 on: 24/01/2022
5 Planning Practice Guidance: Flood Risk and Coastal Change, Department for Communities and Local Government (2014). Accessed online at: http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/ on: 24/01/2022.
6 Planning Practice Guidance: Water supply, wastewater and water quality, Department for Communities and Local Government (2014). Accessed online at: https://www.gov.uk/guidance/water-supply-wastewater-and-water-quality on: 24/01/2022

- Housing - Optional Technical Standards[7].

3.2.2 Planning Practice Guidance: Flood Risk and Coastal Change

Diagram 1 in the Planning Practice Guidance sets out how flood risk should be considered in the preparation of Local Plans (Figure 3.1). These requirements are addressed principally in the Council's Strategic Flood Risk Assessment.

3.2.3 Planning Practice Guidance: Water Supply, Wastewater and Water Quality

A summary of the specific guidance on how infrastructure, water supply, wastewater and water quality considerations should be accounted for in both plan-making and planning applications is summarised below in Figure 3.2.

7 Planning Practice Guidance: Housing - Optional Technical Standards, Department for Communities and Local Government (2014). Accessed online at: https://www.gov.uk/guidance/housing-optional-technical-standards on: 24/01/2022

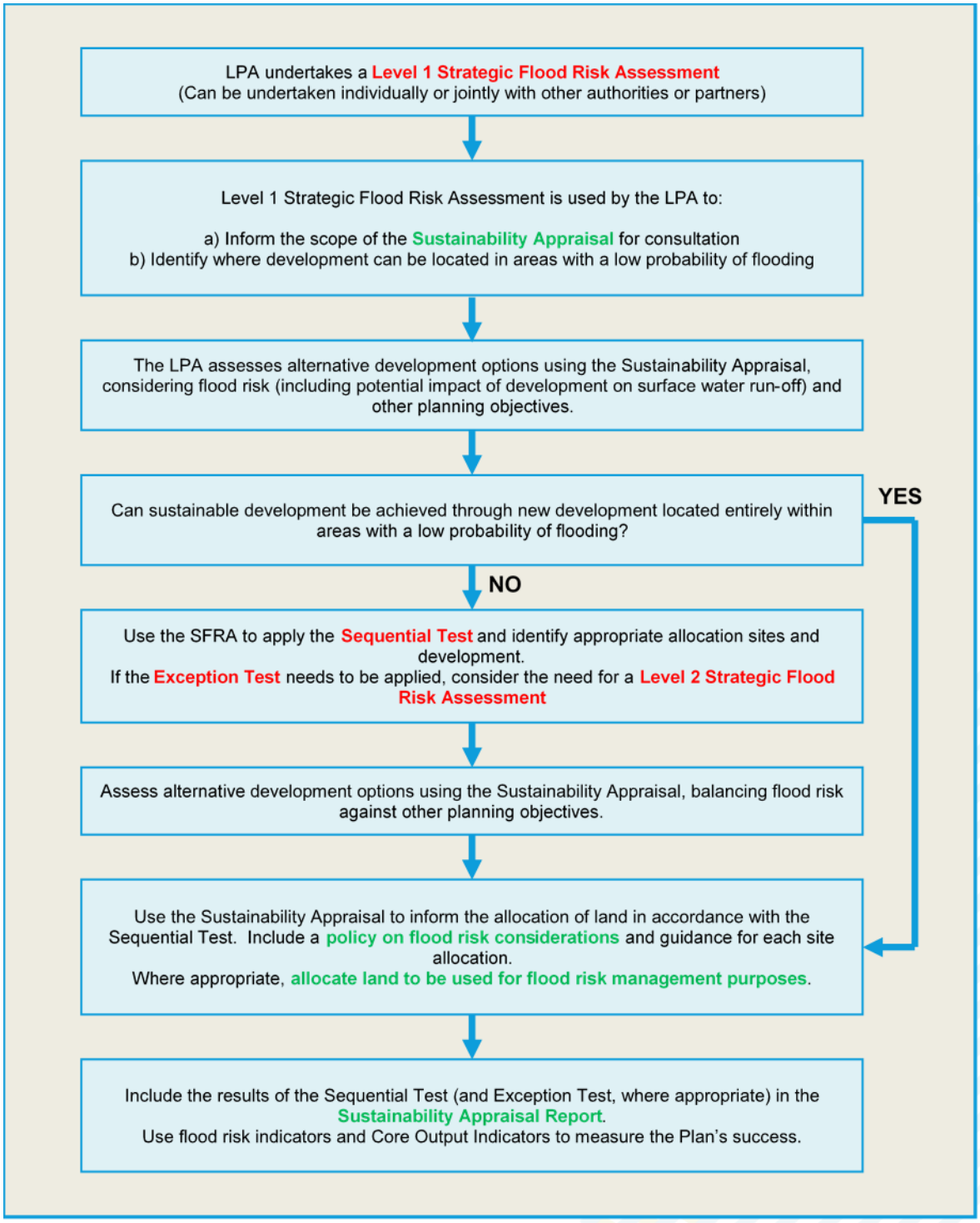

Figure 3.1 Flood Risk and the Preparation of Local Plans[8]

8 Based on Diagram 1 of NPPF Planning Practice Guidance: Flood Risk and Coastal Change (paragraph 004, Reference ID: 7-021-20140306

	Plan-making		Planning applications
Infrastructure	Identification of suitable sites for new or enhanced infrastructure. Consider whether new development is appropriate near to water and wastewater infrastructure. Phasing new development so that water and wastewater infrastructure will be in place when needed.	→	Wastewater considerations include: First presumption is to provide a system of foul drainage discharging into a public sewer. Phasing of development and infrastructure. Circumstances where package sewage treatment plants or septic tanks are applicable.
Water supply	Not Specified	→	Planning for the necessary water supply would normally be addressed through the Local Plan, exceptions might include: Large developments not identified in Local Plans; Where a Local Plan requires enhanced water efficiency in new developments.
Water quality	How to help protect and enhance local surface water and groundwater in ways that allow new development to proceed and avoids costly assessment at the planning application stage. The type or location of new development where an assessment of the potential impacts on water bodies may be required. Expectations relating to sustainable drainage systems.	→	Water quality is only likely to be a significant planning concern when a proposal would: Involve physical modifications to a water body; Indirectly affect water bodies, for example as a result of new development such as the redevelopment of land that may be affected by contamination etc. or through a lack of adequate infrastructure to deal with wastewater.
Wastewater	The sufficiency and capacity of wastewater infrastructure. The circumstances where wastewater from new development would not be expected to drain to a public sewer.	→	If there are concerns arising from a planning application about the capacity of wastewater infrastructure, applicants will be asked to provide information about how the proposed development will be drained and wastewater dealt with.
Cross-boundary concerns	Water supply and water quality concerns often cross local authority boundaries and can be best considered on a catchment basis. Recommends liaison from the outset.	→	No specific guidance (relevant to some developments).
SEA and Sustainability	Water supply and quality are considerations in strategic environmental assessment and sustainability appraisal ... sustainability appraisal objectives could include preventing deterioration of current water body status, taking climate change into account and seeking opportunities to improve water bodies.	→	No specific guidance (should be considered in applications).

Figure 3.2 PPG: Water supply, wastewater and water quality considerations for plan-making and planning applications

3.2.4 Planning Practice Guidance: Housing – Optional Technical Standards

This guidance, advises planning authorities on how to gather evidence to set optional requirements, including for water efficiency. It states that "all new homes already have to meet the mandatory national standard set out in the Building Regulations (of 125 litres/person/day). Where there is a clear local need, local planning authorities can set out Local Plan policies requiring new dwellings to meet the tighter Building Regulations optional requirement of 110 litres/person/day. Planning authorities are advised to consult with the EA and water companies to determine where there is a clear local need, and also to consider the impact of setting this optional standard on housing viability. A 2014 study[9] into the cost of implementing sustainability measures in housing found that meeting a standard of 110 litres per person per day would cost only £9 for a four-bedroom house. The evidence for adopting the optional requirements is outlined in section 4.3.1.

3.2.5 Building Regulations

The Building Regulations (2010) Part G[10] was amended in early 2015 to require that all new dwellings must ensure that the potential water consumption must not exceed 125 litres/person/day, or 110 litres/person/day where required under planning conditions.

3.2.6 BREEAM

The Building Research Establishment (BRE) publish an internationally recognised environmental assessment methodology for assessing, rating and certifying the sustainability of a range of buildings.

New homes are most appropriately covered by the Home Quality Mark[11], and commercial, leisure, educational facilities and mixed-use buildings by the Building Research Establishment Environmental Assessment Methodology (BREEAM) UK New Construction Standard[12].

Using independent, licensed assessors, BREEAM/HQM assesses criteria covering a range of issues in categories that evaluate energy and water use, health and wellbeing, pollution, transport, materials, waste, ecology and management processes.

In the Homes Quality Mark, 400 credits are available across 11 categories and lead to a star rating. 18 credits are available for water efficiency and water recycling. A greater number of credits are awarded for homes using water efficient fittings (with the highest score achieving 100l/p/d or less), and further credits are awarded for the percentage of water used in toilet flushing that is either sourced from rainwater or from grey water.

The BREEAM New Construction Standard awards credits across nine categories, four of which are related to water: water consumption, water monitoring, leak detection and water efficient equipment. This leads to a percentage score and a rating from "Pass" to "Outstanding".

The Council has the opportunity to seek BREEAM or HQM status for all new, residential and non-residential buildings.

3.2.7 Sustainable Drainage Systems (SuDS)

From April 2015, Local Planning Authorities (LPA) have been given the responsibility for ensuring that sustainable drainage is implemented on developments of 10 or more homes or other forms of major development through the planning system. Under the new

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9 Housing Standards Review: Cost Impacts, Department for Communities and Local Government (2014). Accessed online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/353387/021c_Cost_Report_11th_Sept_2014_FINAL.pdf on: 24/01/2022

10 The Building Regulations (2010) Part G - Sanitation, hot water safety and water efficiency, 2015 edition with 2016 amendments. HM Government (2016). Accessed online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/504207/BR_PDF_AD_G_2015_with_2016_amendments.pdf on: 24/01/2022

11 Home Quality Mark, BRE, (2018). Accessed online at: https://www.homequalitymark.com/professionals/standard/ on: 24/01/2022

12 2 BREEAM UK New Construction, BRE, (2018). Accessed online at: https://www.breeam.com/NC2018/ on: 24/01/2022

arrangements, the key policy and standards relating to the application of SuDS to new developments are:

- The National Planning Policy Framework, which requires that development in areas already at risk of flooding should give priority to sustainable drainage systems.
- The House of Commons written statement[13] setting out governments intentions that LPAs should "ensure that sustainable drainage systems for the management of run-off are put in place, unless demonstrated to be inappropriate" and "clear arrangements in place for ongoing maintenance over the lifetime of the development." This requirement is also now incorporated in the 2019 update of the NPPF (paragraph 165). In practice, this has been implemented by making Lead Local Flood Authorities (LLFAs) statutory consultees on the drainage arrangements of major developments.
- The Defra non-statutory technical standards for sustainable drainage systems[14]. These set out the government's high-level requirements for managing peak flows and runoff volumes, flood risk from drainage systems and the structural integrity and construction of SuDS. This very short document is not a design manual and makes no reference to the other benefits of SuDS, for example water quality, habitat and amenity.
- Essex County Council is the LLFA in the area and play a key role in ensuring that the proposed drainage schemes for all new developments comply with technical standards and policies in relation to SuDS. Essex County Council's "The Sustainable Drainage Systems Design Guide for Essex"[15] and contains guidance for the design and application of SuDS in Essex.
- An updated version of the CIRIA SuDS Manual[16] was published in 2015. The guidance covers the planning, design, construction and maintenance of SuDS for effective implementation within both new and existing developments. The guidance is relevant for a range of roles with the level of technical detail increasing throughout the manual. The guidance does not include detailed information on planning requirements, SuDS approval and adoption processes and standards, as these vary by region and should be checked early in the planning process.
- CIRIA also publish "Guidance on the Construction of SuDS" (C768)[17], which contains detailed guidance on all aspects of SuDS construction, with specific information on each SuDS component available as a downloadable chapter.
- Anglian Water provides guidance on their website in their Sustainable Drainage Systems[18]. Applications for SuDS adoptions should be made through their website.
- As of April 2020, the new Design and Construction Guidance (DCG)[19] came into force in England. This contains details of the water sector's approach to the adoption of SuDS, which meet the legal definition of a sewer. The guidance

13 Sustainable drainage systems: Written statement - HCWS161, UK Government (2014). Accessed online at: http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2014-12-18/HCWS161/ on: 24/01/2022
14 Sustainable Drainage Systems: Non-statutory technical standards for sustainable drainage systems, Defra (2015). Accessed online at: https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards on: 24/01/2022
15 The Sustainable Drainage Systems Design Guide for Essex (2021). Accessed online at: https://www.essexdesignguide.co.uk/suds on: 24/01/2022
16 The SuDS Manual (C753), CIRIA (2015).
17 Guidance on the Construction of SuDS (C768), CIRIA (2017), Accessed online at: https://www.ciria.org/ItemDetail?iProductcode=C768&Category=BOOK on: 24/01/2022
18 Towards Sustainable Water Stewardship. Anglian Water. Accessed online at: https://www.anglianwater.co.uk/siteassets/developers/aw_suds_manual_aw_fp_web.pdf on 24/01/2022
19 Water UK (2020) Sewerage Sector Guidance: Appendix C Design and Construction Guidance version 2. Accessed online at https://www.water.org.uk/sewerage-sector-guidance-approved-documents/ on 19/06/2020.

replaces the former, voluntary Sewers for Adoption guidance, as compliance by water companies in England is now mandatory.

3.3 Regional Policy

3.3.1 Catchment Flood Management Plans

Catchment Flood Management Plans (CFMP) are high level policy documents covering large river basin catchments. They aim to set policies for sustainable flood risk management for the whole catchment covering the next 50 to 100 years. The North Essex, Thames and Great Ouse CFMPs are the most relevant to Uttlesford.

3.3.2 Surface Water Management Plans (SWMPs)

SWMPs outline the preferred surface water management strategy in a given location and establish a long-term action plan to manage surface water. SWMPs are undertaken, when required, by LLFAs in consultation with key local partners who are responsible for surface water management and drainage in their area. Essex County Council has produced several around their LLFA area however none of these cover the study area.

3.3.3 Water Resource Management Plans

Water Resource Management Plans (WRMPs) are 25-year strategies that water companies are required to prepare, with updates every five years. In reality, water companies prepare internal updates more regularly. WRMPs are required to assess:

- Future demand (due to population and economic growth)
- Future water availability (including the impact of sustainability reductions)
- Demand management and supply-side measures (e.g., water efficiency and leakage reduction, water transfers and new resource development)
- How the company will address changes to abstraction licences
- How the impacts of climate change will be mitigated

Where necessary, they set out the requirements for developing additional water resources to meet growing demand and describe how the balance between water supply and demand will be balanced over the period 2015 to 2040.

- Using cost-effective demand management, transfer, trading and resource development schemes to meet growth in demand from new development and to restore abstraction to sustainable levels.
- In the medium to long term, ensuring that sufficient water continues to be available for growth and that the supply systems are flexible enough to adapt to climate change.

The Affinity Water WRMP covers Uttlesford and is reviewed in section 4.3.

3.3.4 Regional water resource planning

Water resource planning is taking an increasingly regional focus, recognising the need for collaboration between water companies and sectors in order to address the challenges of climate change, increasing demand for water and protecting the water environment. Five regional groupings having been formed, including the Water Resources South East (WRSE) group which covers Uttlesford. WRSE is an alliance of the six water companies in the south east, including Affinity Water that supplies Uttlesford. An advisory group consisting of their regulators (Environment Agency and Ofwat) and Defra regularly attend meetings of WRSE. A stakeholder advisory group has also been formed consisting of major abstractors, environmental stakeholders and local authorities. Their aim is to provide strategic oversight and co-ordination of water resources matters across the river catchments of the South East of England. This will ensure the sustainability of water resources in these catchments. It will also support activity aimed at enabling water resource resilience across England and

Wales, including promoting the development of a long-term strategic plan for water transfers.

WRSE are preparing a regional water resource plan for publication in 2023, which in turn will inform the next round of company WRMPs to be published in 2024. As part of this process, they have published an initial water resource position statement which sets out the water resources challenges and opportunities within the region.

3.4 Local Policy

3.4.1 Localism Act

The Localism Act (2011) changes the powers of local government, it re-distributes the balance of decision making from central government back to councils, communities and individuals. In relation to the planning of sustainable development, provision 110 of the Act places a duty to cooperate on Local Authorities. This duty requires Local Authorities to *"engage constructively, actively and on an ongoing basis in any process by means of which development plan documents are prepared so far as relating to a strategic matter"*[20].

The Localism Act also provides new rights to allow local communities to come together and shape the development and growth of their area by preparing Neighbourhood Development Plans, or Neighbourhood Development Orders, where the ambition of the neighbourhood is aligned with strategic needs and priorities for the area. This means that local people can decide where new homes and businesses should go and also what they should look like. As neighbourhoods draw up their proposals, Local Planning Authorities are required to provide technical advice and support.

3.5 International Environmental Policy

3.5.1 Ramsar

The Convention on Wetlands of International Importance, more commonly known as the Ramsar convention after the city where it was signed in 1971, aims to protect important wetland sites. Under the treaty, member counties commit to:

- Wise use of all their wetlands
- Designating sites for the Ramsar list of "Wetlands of International Importance" (Ramsar Sites) and their conservation
- Cooperating on transboundary wetlands and other shared interests.

"Wise use" of wetlands is defined under the convention as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development". A handbook on the wise use of wetlands is available from the Ramsar Convention Secretariat[21].

Ramsar Sites are designated by the National Administrative Authority, responsible for the Ramsar Convention in each country. In the case of the UK this is the Joint Nature Conservation Committee (JNCC).

In general, the designation of UK Ramsar sites is underpinned through prior notification of these areas as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife and Countryside Act 1981 (as amended). More recently, Paragraph 176 of the NPPF states that Ramsar sites should be given the same protection in the planning process as sites designated under the EU Habitats Directive.

3.6 European Environmental Policy

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20 Localism Act 2011: Section 110, UK Government (2011). Accessed online at: http://www.legislation.gov.uk/ukpga/2011/20/section/110 on: 24/01/2022

21 Wise use of wetlands, Ramsar Convention Secretariat (2010). Accessed online at: https://www.ramsar.org/sites/default/files/documents/library/hbk4-01.pdf on: 24/01/2022

3.6.1 Urban Wastewater Treatment Directive (UWWTD)

The UWWTD[22] is an EU Directive that concerns the collection, treatment and discharge of urban wastewater and the treatment and discharge of wastewater from certain industrial sectors. The objective of the Directive is to protect the environment from the adverse effects of wastewater discharges. More specifically Annex II A(a) sets out the requirements for discharges from urban wastewater treatment plants to sensitive areas which are subject to eutrophication. The Directive has been transposed into UK legislation through enactment of the Urban Waste Water Treatment (England and Wales) Regulations 1994 and 'The Urban Waste Water Treatment (England and Wales) (Amendments) Regulations 2003'.

3.6.2 Habitats Directive

The EU Habitats Directive aims to protect the wild plants, animals and habitats that make up our diverse natural environment. The directive created a network of protected areas around the European Union of national and international importance called Natura 2000 sites. These include:

- Special Areas of Conservation (SACs) - support rare, endangered or vulnerable natural habitats, plants and animals (other than birds).
- Special Protection Areas (SPAs) - support significant numbers of wild birds and habitats.

Special Protection Areas and Special Areas of Conservation are established under the EC Birds Directive and Habitats Directive respectively. The directive also protects over 1,000 animals and plant species and over 200 so called "habitat types" (e.g., special types of forests, meadows, wetlands, etc.), which are of European importance.

3.6.3 Bathing Water Directive

The Bathing Water Directive was first published in 2006 and has been transposed into English and Welsh law through enactment of the Bathing Water Regulations 2013 (supersedes the Bathing Water Regulations 2008). The aims of the directive are the protection of public health whilst bathing, standardisation of publicly available water quality information and to improve management practices at bathing waters.

The UK has over 600 designated bathing waters defined as areas of inshore waters designated for public swimming, these areas are typically characterised by large numbers of swimmers and visitors per year. Under law the Environment Agency are required to monitor water quality at these sites regularly (usually weekly) throughout the Bathing Water Season. In England the Bathing Water Season is between 15th May and 30th September.

Water quality standards are based on the incidence of potentially harmful bacteria, E. coli and intestinal enterococci and are categorised as 'excellent', 'good', 'sufficient' or 'poor' on the basis of bacteria levels. Sites are rated annually and on a short-term basis in response to any temporary pollution incidents. Blue flag designation is an international award given to beaches which meet stringent criteria on having excellent water quality and other facilities such as the provision of environmental information, lifeguards, toilets, and other facilities.

Achieving compliance with the Bathing Water Directive has driven some £2.5bn of investment by UK water companies since the early 1990s to reduce the impact of sewerage systems and treated wastewater discharges. Measures have included storage and surface water management to reduce storm overflow spills, moving or extending effluent outfalls and improving wastewater treatment, including ultra-violet (UV) treatment of final effluent.

By law under the Bathing Water Regulations 2013, the local council must display clear information at Bathing Waters about water quality and sources of pollution throughout the Bathing Season, as well as information on any temporary pollution incidents and how long these are expected to last. If Bathing Water is classed as poor the local council is required

22 UWWTD. Accessed online at: https://ec.europa.eu/environment/water/water-urbanwaste/index_en.html On: 24/01/2022.

to put up an "advice against bathing" symbol, though this does not mean the site is closed to the public.

In contrast to some other European nations, the UK has not previously designated stretches of river as bathing waters, however the first freshwater river bathing water was designated on the River Wharf in North Yorkshire in 2021, and across England there are numerous campaigns by NGOs and members of the public to designate other stretches of river. It is anticipated that this could lead to a significant expansion of the number of inland bathing waters.

3.6.4 The Water Framework Directive

The Water Framework Directive (WFD) was first published in December 2000 and transposed into English and Welsh law in December 2003. It introduced a more rigorous concept of what "good status" should mean than the previous environmental quality measures. The WFD estimated that 95% of water bodies were at risk of failing to meet "good status".

River Basin Management Plans (RBMP) are required under the WFD and document the baseline classification of each waterbody in the plan area, the objectives, and a programme of measures to achieve those objectives. Uttlesford falls within the Anglian River Basin District (RBD)[23] and in the Thames RBD[24]. Under the WFD the RBMPs, which were originally published in December 2009 were reviewed and updated in December 2015. A primary WFD objective is to ensure 'no deterioration' in environmental status, therefore all water bodies must meet the class limits for their status class as declared in the Anglian and Thames River Basin Management Plan. Another equally important objective requires all water bodies to achieve good ecological status. Future development needs to be planned carefully so that it helps towards achieving the WFD and does not result in further pressure on the water environment and compromise WFD objectives. The WFD objectives as outlined in the updated RBMPs are summarised below:

- Prevent deterioration of the status of surface waters and groundwater
- Achieve objectives and standards for protected areas
- Achieve good status for all water bodies or, for heavily modified water bodies and artificial water bodies, good ecological potential and good surface water chemical status
- Reverse any significant and sustained upward trends in pollutant concentrations in groundwater
- Stop discharges/emissions of priority hazardous substances into surface waters
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants

Local Planning Authorities (LPAs) must have regard to the Water Framework Directive as implemented in the Environment Agency's River Basin Management Plans. It is of primary importance when assessing the impact of additional wastewater flows on local river quality.

3.6.5 Protected Area Objectives

The WFD specifies that areas requiring special protection under other EC Directives, and waters used for the abstraction of drinking water, are identified as protected areas. These areas have their own objectives and standards.

Article 4 of the WFD required Member States to achieve compliance with the standards and objectives set for each protected area by 22 December 2015, unless otherwise specified in the Community legislation under which the protected area was established. Some areas

23 Anglian Basin District River Basin Management Plan: 2015, Environment Agency (2016). Accessed at: https://www.gov.uk/government/publications/anglian-river-basin-district-river-basin-management-plan on: 24/02/2022

24 River Thames River Basin Management Plan 2015-2021, Environment Agency, (2016). Accessed online at: https://www.gov.uk/government/publications/thames-river-basin-district-river-basin-management-plan on: 24/02/2022

may require special protection under more than one EC Directive or may have additional (surface water and/or groundwater) objectives. In these cases, all the objectives and standards must be met.

The types of protected areas are:

- Areas designated for the abstraction of water for human consumption (Drinking Water Protected Areas)
- Areas designated for the protection of economically significant aquatic species (Freshwater Fish and Shellfish)
- Bodies of water designated as recreational waters, including Bathing Waters;
- Nutrient-sensitive areas, including areas identified as Nitrate Vulnerable Zones under the Nitrates Directive or areas designated as sensitive under Urban Waste Water Treatment Directive (UWWTD)
- Areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection including relevant Natura 2000 sites

Many WFD protected areas coincide with water bodies; these areas will need to achieve the water body status objectives in addition to the protected area objectives. Where water body boundaries overlap with protected areas the most stringent objective applies; that is the requirements of one EC Directive should not undermine the requirements of another. The objectives for Protected Areas relevant to this study are as follows:

Drinking Water Protected Areas

- Ensure that, under the water treatment regime applied, the drinking water produced meets the requirements of the Drinking Water Directive plus any UK requirements to make sure that drinking water is safe to drink
- Ensure the necessary protection to prevent deterioration in the water quality in the protected area in order to reduce the level of purification treatment required

Economically Significant Species (Freshwater Fish Waters)

- Protect or improve the quality of running or standing freshwater to enable them to support fish belonging to indigenous species offering a natural diversity; or species, the presence of which is judged desirable for water management purposes by the competent authorities of the Member States

Nutrient Sensitive Areas (Nitrate Vulnerable Zones)

- Reduce water pollution caused or induced by nitrates from agricultural sources
- Prevent further such pollution

Nutrient Sensitive Areas (Urban Waste Water Treatment Directive)

- Protect the environment from the adverse effects of urban waste water discharges and waste water discharges from certain industrial sectors

Natura 2000 Protected Areas (water dependent SACs and SPAs)

The objective for Natura 2000 Protected Areas identified in relation to relevant areas designated under the Habitats Directive or Birds Directive is to:

- Protect and, where necessary, improve the status of the water environment to the extent necessary to achieve the conservation objectives that have been established for the protection or improvement of the site's natural habitat types and species of importance

3.6.6 Groundwater Source Protection Zones

The Environment Agency has a Groundwater Protection Policy to help prevent groundwater pollution. In conjunction with this the Environment Agency have defined groundwater

Source Protection Zones (SPZs) to help identify high risk areas and implement pollution prevention measures. The SPZs show the risk of contamination from activities that may cause pollution in the area, the closer the activity, the greater the risk. There are three main zones (inner, outer and total catchment) and a fourth zone of special interest which is occasionally applied.

Zone 1 (Inner protection zone)

This zone is designed to protect against the transmission of toxic chemicals and water-borne disease. It indicates the area in which pollution can travel to the borehole within 50 days from any point within the zone and applies at and below the water table. There is also a minimum 50 metre protection radius around the borehole.

Zone 2 (Outer protection zone)

This zone indicates the area in which pollution takes up to 400 days to travel to the borehole, or 25% of the total catchment area, whichever area is the largest. This is the minimum length of time the Environment Agency think pollutants need to become diluted or reduce in strength by the time they reach the borehole.

Zone 3 (Total catchment)

This is the total area needed to support removal of water from the borehole, and to support any discharge from the borehole.

Zone of special interest

This is defined on occasions, usually where local conditions mean that industrial sites and other polluters could affect the groundwater source even though they are outside the normal catchment.

The Environment Agency's approach to Groundwater protection[25] sets out a series of position statements that detail how the Environment Agency delivers government policy on groundwater and protects the resources from contamination. The position statements that are relevant to this study with regard to discharges to groundwaters, include surface water drainage and the use of SuDS, discharges from contaminated surfaces (e.g., lorry parks) and from treated sewage effluent.

3.6.7 European Derived Legislation and Brexit

Much of the legislation behind the regulation of the water environment derives from the UK enactment of European Union (EU) directives. Following the departure of the United Kingdom from the European Union on 31st January 2020, this legislation remains in force during the transition period, until 31st December 2020. The UK government has signalled that "the UK will in future develop separate and independent policies in areas such as … the environment … maintaining high standards as we do so."[26]

As the details of future changes to environmental regulation are not yet known, this study has used existing, European Union derived environmental legislation, most significantly the Water Framework Directive, to assess the environmental impacts of planned development during the plan period for the Local Plan. Should this situation change, a review of this Water Cycle Study may be required considering any new emerging regulatory regime.

3.7 UK Environmental Policy

3.7.1 Environment Act 2021

25 The Environment Agency's approach to groundwater protection, Environment Agency (2018). Accessed online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/598778/LIT_7660.pdf on: 24/01/2022

26 The Future Relationship between the UK and the EU (2020) Accessed online at: https://www.gov.uk/government/speeches/the-future-relationship-between-the-uk-and-the-eu on 24/01/2022

The Environment Act[27] came into UK law in November 2021 with the aim of protecting and enhancing the environment. The Act has objectives to improve air and water quality, biodiversity, waste reduction and resource efficiency. The implementation of the policies within the Environment Act has begun and legally binding environmental targets are being developed. This will be enforced by the newly created Office for Environmental Protection (OEP)[28].

The Environment Act (Part 5) contains policies concerning improvements to the water environment. These policies have the following aims:

- Effective collaboration between water companies through statutory water management plans
- Minimise damage water abstraction may cause on environment
- Modernise the process for modifying water and sewerage company licence conditions

Further to this, there is specific legislation regarding storm overflows aiming to reduce the discharge of untreated sewage into waterways. This plan includes requirements for water companies to:

- report on the discharges from storm overflows,
- monitor the quality of water potentially affected by discharges,
- progressively reduce the harm caused by storm overflows,
- report on elimination of discharges from storm overflows.

3.7.2 Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2010 (commonly referred to as the Habitats Regulations) consolidated the Conservation (Natural Habitats, &c.) Regulations 1994, and transposed the EU Habitats Directive in England and Wales. This was further amended in 2017.

The Habitats Regulations define the requirement for a Habitats Regulations Assessment (HRA) to be carried out. The purpose of this is to determine if a plan or project may affect the protected features of a "habitats site". These include:

- A special area of conservation (SAC)
- A site of Community Importance
- A site hosting a priority natural habitat type or priority species protected in accordance with Article 5(4) of the Habitats Directive
- A Special Protection Area (SPA)
- A potential SPA

All plans and projects (including planning applications) which are not directly connected with, or necessary for the conservation management of a habitat site require consideration of whether the plan or project is likely to have significant effects on that site.

This is referred to as the "Habitats Regulations Assessment screening" and should take into account the potential effects of both the plan/project itself and in combination with other plans or projects.

Part 6 of the conservation of Habitats and Species Regulations 2017 states that where the potential for likely significant effects cannot be excluded, a competent authority must make an appropriate assessment of the implications of the plan or project for that site, in view of the site's conservation objectives.

27 The Environment Act 2021, UK Government (2021). Accessed online at: https://www.legislation.gov.uk/ukpga/2021/30/part/5/enacted on: 25/01/2022
28 Office for Environmental Protection website: https://www.theoep.org.uk/office-environmental-protection

The competent authority may agree to the plan or project only after having ruled out adverse effects on the integrity of the habitats site.

If adverse effects cannot be rules out, and where there are no alternative solutions, the plan or project can only proceed if there are imperative reasons of over-riding public interest and if the necessary compensatory measures can be secured.

The "People over Wind" ECJ ruling (C-323/17) clarifies that when making screening decisions for the purposes of deciding whether an appropriate assessment is required, competent authorities cannot take into account any mitigation measures. This must be part of the appropriate assessment itself.

3.7.3 Wildlife and Countryside Act 1981

Sites of Special Scientific Interest (SSSI) are designated and legally protected under the Wildlife and Countryside Act 1981, Section 28G places a duty to take reasonable steps, consistent with the proper exercise of the authority's functions, to "further to the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest."[29]

The Government's 25-year Environment Plan[30] has a target of "restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term." In line with this, and the Wildlife and Countryside Act 1981, Local Authorities should look put forward options that contribute to conservation or restoration of favourable condition, and at the very least must not introduce policies that hinder the restoration of favourable condition by increasing existing issues.

A site is said to be in "favourable condition" when the designated feature(s) within a unit are being adequately conserved and the results from monitoring demonstrate that the feature(s) in the unit are meeting all the mandatory site-specific monitoring targets set out in the favourable condition targets (FCT).

3.7.4 The Natural Environment Rural Communities Act (NERC)

The Natural Environment and Rural Communities Act 2006 (commonly referred to the as the NERC Act), was intended to implement key aspects of the Government's Rural Strategy published in 2004 and established Natural England as a new independent body responsible for conserving, enhancing and managing England's natural environment.

Section 40 of the NERC Act places a duty to conserve biodiversity on public authorities, including Local Planning Authorities and water companies. "The public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."[31]

Section 41 requires the Secretary of State to publish and maintain a list of species and types of habitat which in the Secretary of State's opinion (in consultation with Natural England) are of "principal importance for the purpose of conserving biodiversity."

3.8 Water Industry Policy

3.8.1 The Water Industry in England

Water and sewerage services in England and Wales are provided by eleven Water and Sewerage Companies (WaSCs) and six 'water-only' companies. The central legislation relating to the industry is the Water Industry Act 1991. The companies operate as regulated monopolies within their supply regions, although very large water users and developments

29 Wildlife and Countryside Act 1981, HM Government (1981). Accessed online at: http://www.legislation.gov.uk/ukpga/1981/69/section/28G on: 24/01/2022
30 A Green Future: Our 25 Year Plan to Improve the Environment, HM Government (2018). Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf on: 24/01/2022
31 Natural Environment and Rural Communities Act 2006, HM Government (2006). Accessed online at: http://www.legislation.gov.uk/ukpga/2006/16/section/40 on: 24/01/2022

are able to obtain water and/or wastewater services from alternative suppliers - known as inset agreements.

The Water Act 2014 aims to reform the water industry to make it more innovative and to increase resilience to droughts and floods. Key measures could influence the future provision of water and wastewater services include:

- Non-domestic customers will be able to switch their water supplier and/or sewerage undertaker (from April 2017)
- New businesses will be able to enter the market to supply these services
- Measures to promote a national water supply network
- Enabling developers to make connections to water and sewerage systems

3.8.2 Regulations of the Water Industry

The water industry is primarily regulated by three regulatory bodies;

- The Water Services Regulation Authority (OfWAT) – economic/ customer service regulation
- Environment Agency - environmental regulation
- Drinking Water Inspectorate (DWI) - drinking water quality

Every five years the industry submits a Business Plan to OfWAT for a Price Review (PR). These plans set out the companies' operational expenditure (OPEX) and capital expenditure (CAPEX) required to maintain service standards, enhance service (for example where sewer flooding occurs), to accommodate growth and to meet environmental objectives defined by the Environment Agency. OfWAT assesses and compares the plans with the objective of ensuring what are effectively supply monopolies and operating efficiently. The industry is currently in Asset Management Plan 7 (AMP7) which runs from 2020 to 2025.

When considering investment requirements to accommodate growing demand, water companies are required to ensure a high degree of certainty that additional assets will be required before funding them. Longer term growth is, however, considered by the companies in their internal asset planning processes and in their 25-year Strategic Direction Statements and WRMPs.

3.8.3 Drainage and Wastewater Management Plans

The UK Water Industry Research (UKWIR) "21st Century Drainage" programme has brought together water companies, governments, regulators, local authorities, academics and environmental groups to consider how planning can help to address the challenges of managing drainage in the future. These challenges include climate change, population growth, urban creep and meeting the Water Framework Directive.

The group recognised that great progress has been made by the water industry in its drainage and wastewater planning over the last few decades, but that, in the future, there needs to be greater transparency and consistency of long-term planning. The Drainage and Wastewater Management Plan (DWMP) framework[32] sets out how the industry intends to approach these goals, with the objective of the water companies publishing plans by the end of 2022, in order to inform their business plans for the 2024 Price Review.

DWMPs will be prepared for wastewater catchments or groups of catchments and will encompass surface water sewers within those areas which do not drain to a treatment works. The framework defines drainage to include all organisations and all assets which have a role to play in drainage, although, as the plans will be water company led, it does not seek to address broader surface water management within catchments.

32 A framework for the production of Drainage and Wastewater Management Plans, UK Water Industry Research (2018). Accessed online at: http://www.water.org.uk/wp-content/uploads/2018/12/Water-UK-DWMP-Framework-Report-Main-Document.pdf on: 24/01/2022.

LPAs and LLFAs are recognised as key stakeholders and will be invited to join, alongside other stakeholders, the Strategic Planning Groups (SPGs) organised broadly along river basin district catchments.

DWMPs cannot inform this study, as the process is still at early stage. In the future, however, DWMPs will provide more transparent and consistent information on sewer flooding risks and the capacity of sewerage networks and treatment works, and this should be taken into account in SFRAs, Water Cycle Studies, as well as in site-specific FRAs and Drainage Strategies.

Whilst publication of Drainage and Wastewater Management Plans (DWMPs) is not scheduled until 2022/23, AW are currently developing their DWMP, which will be published in 2022. The latest information about the DWMP can be found on their website[33].

Thames Water are also currently developing their DWMP and will be consulting on proposals once draft plans have been developed. The latest information about the DWMP can be found on their website[34].

3.8.4 Developer Contributions and Utility Companies

Developments with planning permission have a right to connect to the public water and sewerage systems, however, there is no guarantee that the capacity exists to serve a development.

Developers may requisition a water supply connection or sewerage system or self-build the assets and offer these for adoption by the water company or sewerage undertaker. Self-build and adoption are usually practiced for assets within the site boundary, whereas requisitions are normally used where an extension of upgrading the infrastructure requires construction on third party land. The cost of requisitions is shared between the water company and developer as defined in the Water Industry Act 1991.

Where a water company is concerned that a new development may impact upon their service to customers or the environment (for example by causing foul sewer flooding or pollution) they may request the LPA to impose a Grampian condition, whereby the planning permission cannot be implemented until a third-party secures the necessary upgrading or contributions.

The above arrangements are third party transactions because the Town and Country Planning Act Section 106 agreements and Community Infrastructure Levy agreements may not be used to obtain funding for water or wastewater infrastructure.

3.8.5 Changes to Charging Rules for New Connections

OfWAT, the water industry's economic regulator, has published new rules covering how water and wastewater companies may charge customers for new connections[35]. These rules apply to all companies in England and will commence on 1st April 2018. The three relevant water companies for the study area have now published their charging arrangements which can be found in the footnotes[36,37,38]. The key changes include:

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33 Drainage and Wastewater Management Plan, Anglian Water. Accessed online at: https://www.anglianwater.co.uk/about-us/our-strategies-and-plans/drainage-and-wastewater-management-plan/ on: 24/01/2022
34 Drainage and Wastewater Management Plan, Thames Water. Accessed online at: https://www.thameswater.co.uk/about-us/regulation/drainage-and-wastewater-management on: 24/01/2022
35 Charging rules for new connection services (English undertakers), OfWAT (2017). Accessed online at: https://www.ofwat.gov.uk/publication/charging-rules-new-connection-services-english-undertakers/ on: 24/01/2022
36 Charging Arrangements for New Connections Services 2021/2022, Affinity Water Limited (2021). Accessed online at: https://www.affinitywater.co.uk/docs/developer/2021/NCCA-2021-22-Affinity-Water-04-02.pdf on: 24/01/2022
37 Developer Charging Arrangements, Anglian Water (2021)
Accessed online at: https://www.anglianwater.co.uk/siteassets/developers/help--advice/ds-charging-arrangements-2021-22-v2.pdf on: 24/01/2022
38 Charging arrangements for new connection services, Thames Water (2021) Accessed online at: https://www.thameswater.co.uk/media-library/home/developers/charges/2021/new-connection-charges-2021-22.pdf on: 24/01/2022

- More charges will be fixed and published on water company websites. This will provide greater transparency to developers and will also allow alternative connection providers to offer competitive quotations more easily
- There will be a fixed infrastructure charge for water and one for wastewater
- The costs of network reinforcement will no longer be charged directly to the developer in their connection charges. Instead, the combined costs of all of the works required on a company's networks, over a five-year rolling period, will be covered by the infrastructure charges paid for all new connections.
- The definition of network reinforcement has changed and will now apply only to works required as a direct consequence of the increased demand due to a development. Where the water company has not been notified of a specific development, for example when developing long-term strategic growth schemes, the expenditure cannot be recovered through infrastructure charges.

3.8.6 Design and Construction Guidance (DCG)

The Design and Construction Guidance, part of a new Codes for Adoption covering the adoption of new water and wastewater infrastructure by water companies, contains details of the water sector's approach to the adoption of SuDS, which meet the legal definition of a sewer. This replaces the formerly voluntary Sewers for Adoption The new guidance came into force in April 2020 and compliance by water companies in England is mandatory.

The standards, up to and including Sewers for Adoption Version 7, have included a narrow definition of sewers to mean below-ground systems comprising of gravity sewers and manholes, pumping stations and rising mains. This has essentially excluded the adoption of SuDS by water companies, with the exception of below-ground storage comprising of oversized pipes or chambers.

The new guidance provides a mechanism for water companies to secure the adoption of a wide range of SuDS components which are now compliant with the legal definition of a sewer. There are however several non- adoptable components such as green roofs, pervious pavements and filter strips. These components may still form part of a drainage design so long as they remain upstream of the adoptable components.

The Design and Construction Guidance states that the drainage layout of a new development should be considered at the earliest stages of design. It is hoped that the new guidance will lead to better managed and more integrated surface water systems which incorporate amenity, biodiversity and water quality benefits.

4 Water Resources and Water Supply

4.1 Introduction

4.1.1 Objectives

The aim of the water resources assessment is to ensure that sufficient water is available in the region to serve the proposed level of growth, and that it can be abstracted without a detrimental impact on the environment, both during the plan period and into the future. The report characterises the study area, identifying the key surface water and groundwater bodies, and local geology. It highlights the pressures on water resources in the region, identifies existing constraints on abstraction and provides evidence for adopting tighter water efficiency targets.

4.1.2 Surface Waters

Figure 4.1 shows the main watercourses within the study area, which are summarised below:

The **River Cam** rises to the north of Elsenham and flows in a northerly direction through Uttlesford before flowing out of the district to the north of Great Chesterford. The main tributaries are Debden Water, Wicken Water, Fulfen Slade and The Slade.

The **River Stort** flows through the western part of Uttlesford from its source to the north of Killem's Green before flowing out of the district to the west of Stansted Mountfitchet. Its tributaries include Stansted Brook and Bourne Brook.

Pincey Brook rises at Stansted Airport and flows south through the airport towards the southern boundary of the district.

The **River Roding** rises to the north of Molehill Green and flows in a southerly direction towards the southern boundary of the district.

The **River Can** is located in the southern part of the district and flows in a southerly direction towards the southern boundary. Parsonage Brook is a tributary of the River Can and flows into the river to the west of High Easter.

The **River Chelmer** rises at Debden Green and flows in a southerly direction towards the southern boundary of the district. The tributaries of the river include the Barnston Brook and the Stebbing Brook.

The **River Ter** flows through a small part of the south-eastern corner of the district.

The **River Pant** flows through the north-eastern part of the district. The river rises to the north of Rowney Corner and flows in an easterly direction towards the eastern boundary of the district.

4.1.3 Chalk Streams

Chalk streams are a globally rare habitat with 85% of the examples in the world found in England, two of which flow and rise in Uttlesford (River Stort and River Cam). The location of these rivers is shown in Figure 4.2 below. The chalk streams shown in this map have been identified by the recently published Natural England chalk stream mapping. Most of their flow derives from underground chalk aquifers rather than surface water runoff resulting in stable base flows. The chalk also has a filtering effect resulting in nutrient-poor and very clear water. Because their water sources are so pure, any agricultural or urban pollution can severely disrupt the ecology of a chalk stream, as can changes in flow.

The health of a chalk stream depends on three things - water quantity, water quality and physical habitat quality (has the stream been modified / constrained and are invasive species present).

Further information on chalk streams is found in the chalk Stream Evidence base prepared by JBA alongside this work.

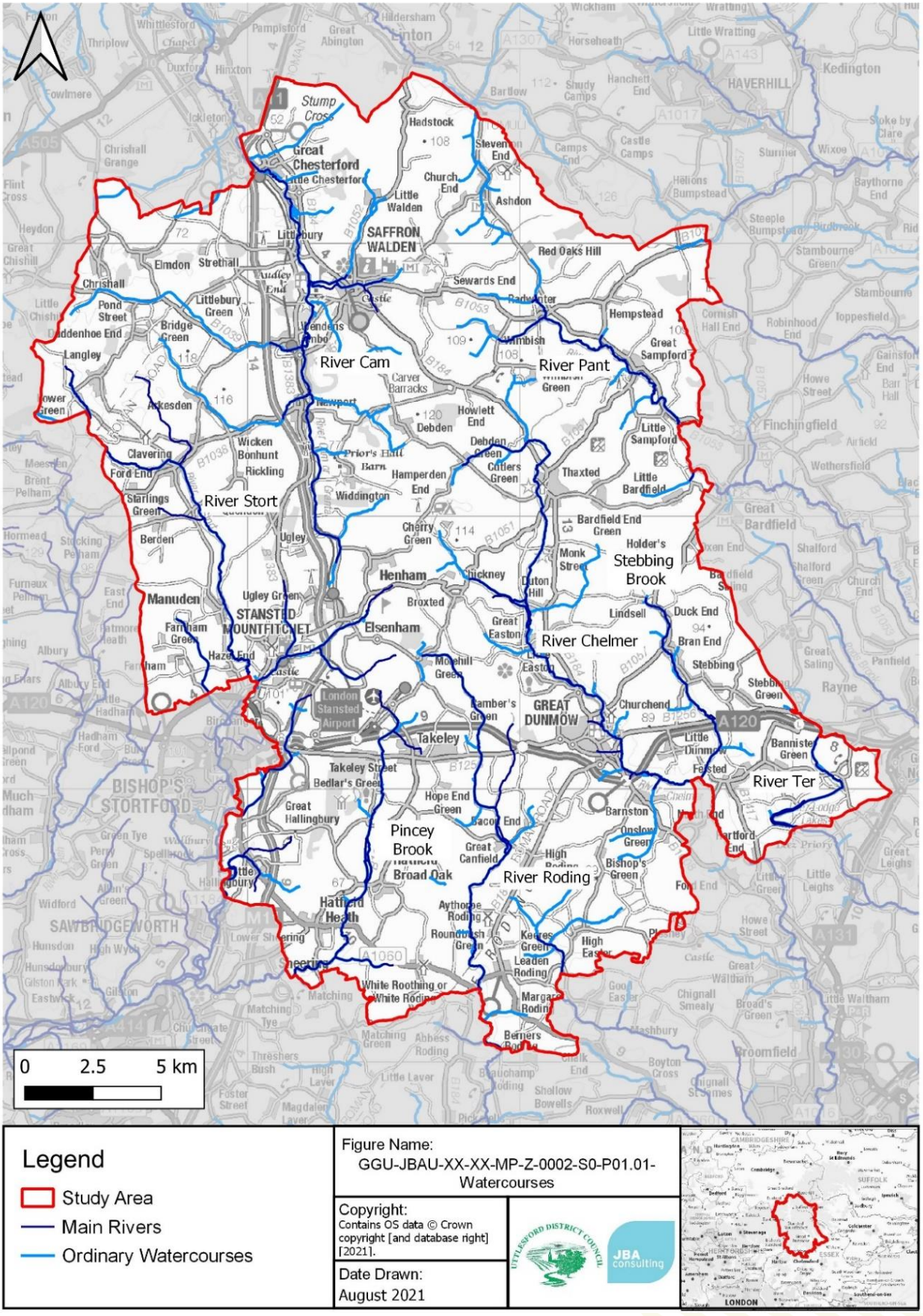

Figure 4.1 Significant watercourses within Uttlesford

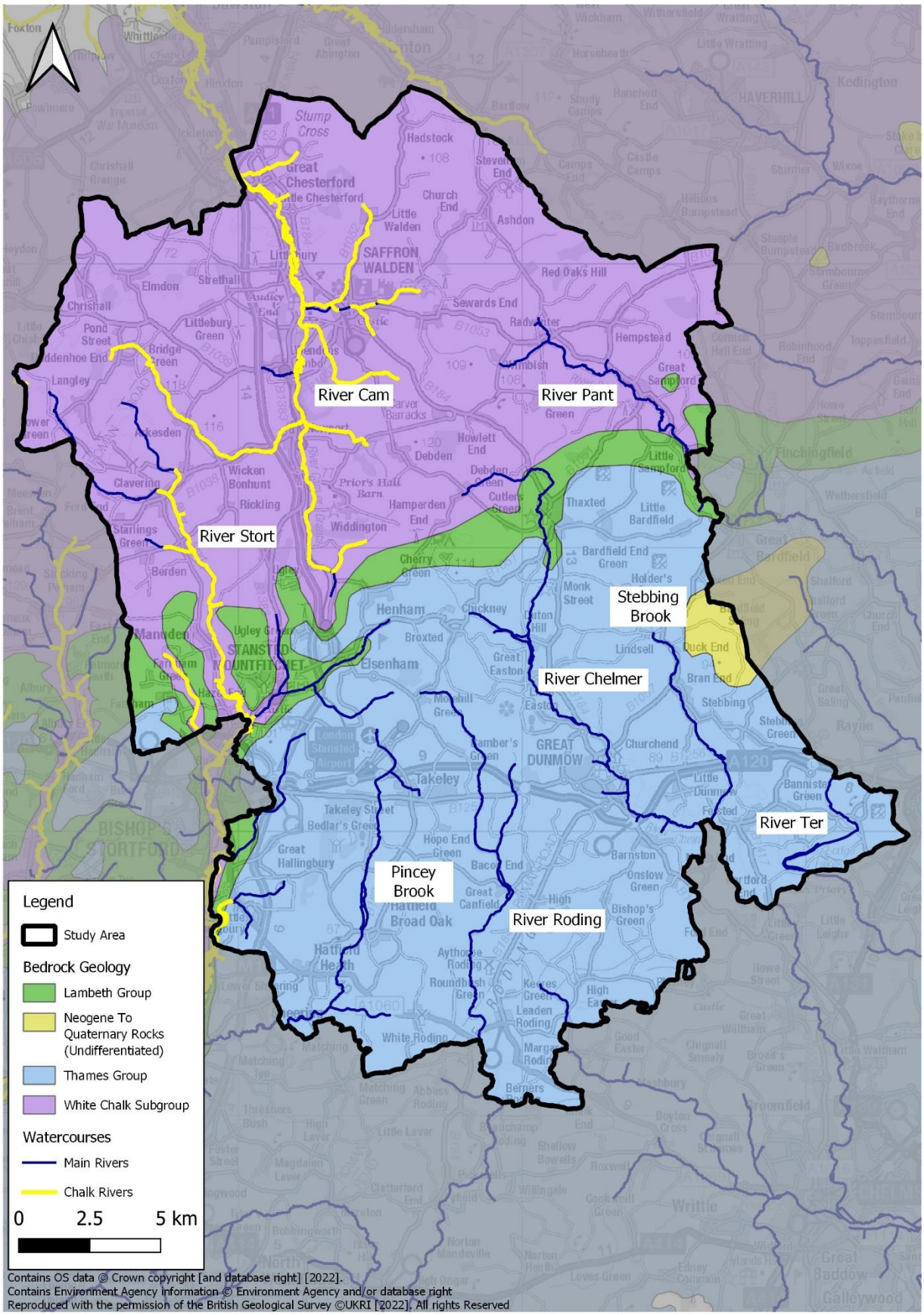

Figure 4.2 Chalk Streams in Uttlesford

4.1.4 Groundwaters

A WFD groundwater body represents a distinct body of groundwater flow with a coherent flow unit including recharge and discharge areas with little flow across the boundaries. There are seven groundwater bodies within the study area which are shown in Figure 4.3 and their corresponding WFD classification is summarised in Table 4.1 below. Most of these are found in the north of Uttlesford and are heavily influenced by the chalk geology. This has historically provided significant water resources for the region, however over-abstraction from these aquifers reduces flow in the chalk streams and their sensitive ecology that also relies on this flow. Several of the groundwater bodies in the study area have poor quantitative status, which in stated as being due to groundwater abstraction by the water industry and for agriculture. The effect of further abstraction in these areas could be a reduction in river flow in dependent surface waterbodies, or a deterioration in dependent water sensitive ecosystems.

Table 4.1 WFD status of groundwater bodies

Groundwater Body	Quantitative Status	Chemical Status	Overall Status - WFD Cycle 2 (2019)
Cam and Ely Ouse Chalk	Poor	Poor	Poor
Essex Gravels	Good	Poor	Poor
North Essex Chalk	Poor	Poor	Poor
North Essex Lower London Tertiaries	Poor	Good	Poor
North Mymms Tertiaries	Good	Good	Good
Upper Bedford Ouse Chalk	Poor	Poor	Poor
Upper Lee Chalk	Poor	Poor	Poor

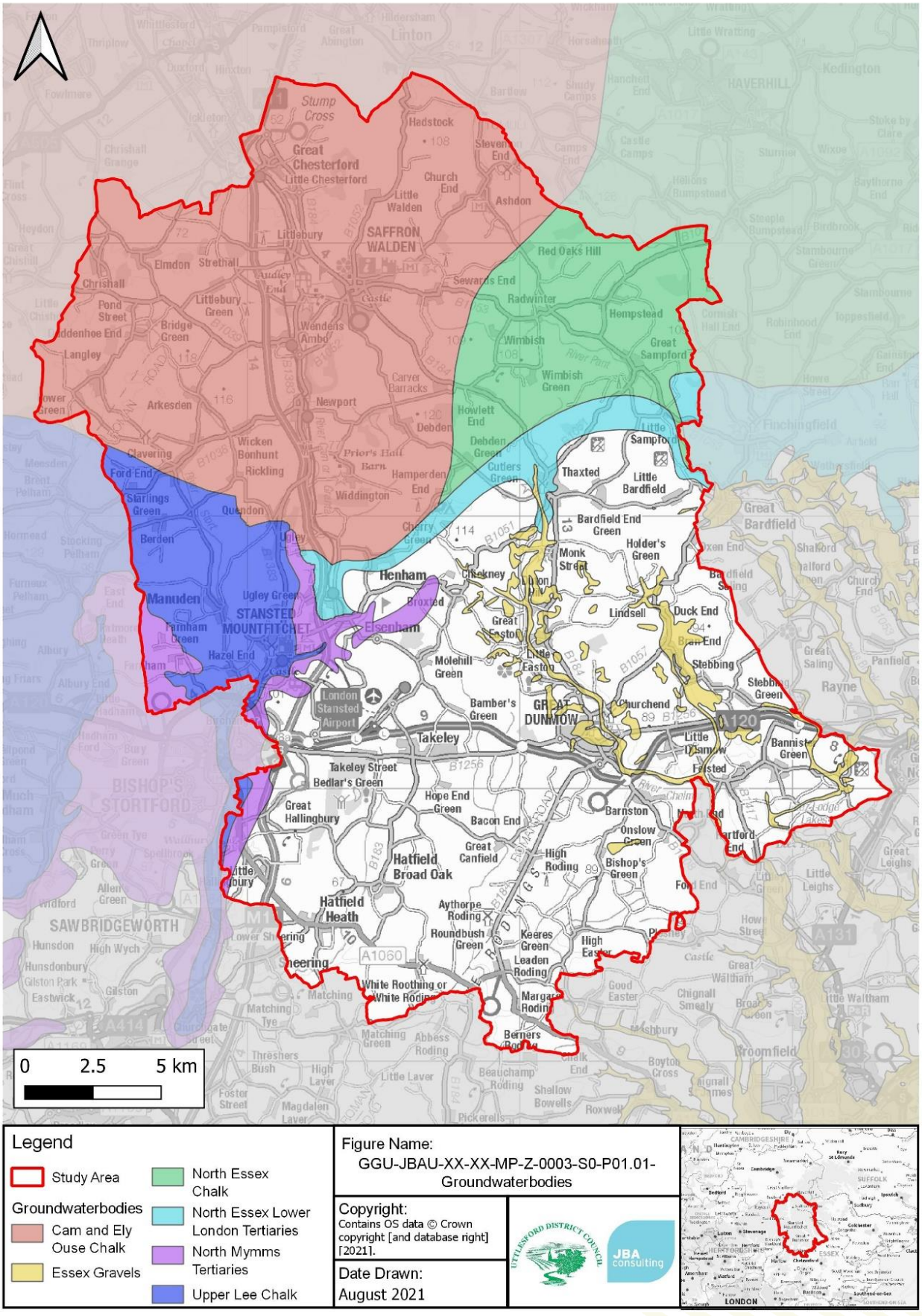

Figure 4.3 Groundwater bodies

4.1.5 Geology

The geology of the catchment can be an important influencing factor in the way that water runs off the ground surface, and also locally on the type of Sustainable Drainage System (SuDS) that is appropriate for development sites. This is primarily due to variations in the permeability of the surface material and bedrock stratigraphy.

Figure 4.4 shows the bedrock geology of the Uttlesford study area. The geology of Uttlesford is varied, and is predominantly divided into two main groups, Thames Group and White Chalk subgroup. The Thames Group is comprised of Clay, Silt, Sand and Gravel whereas the White Chalk subgroup is comprised of chalk. These groups are divided by an area of Lambeth Group which is comprised of Clay, Silt, Sand and Gravel.

Figure 4.5 shows superficial (at the surface) deposits of till in the majority of the district with small areas of sand and gravel overlaying a small part of the eastern and western parts of the district.

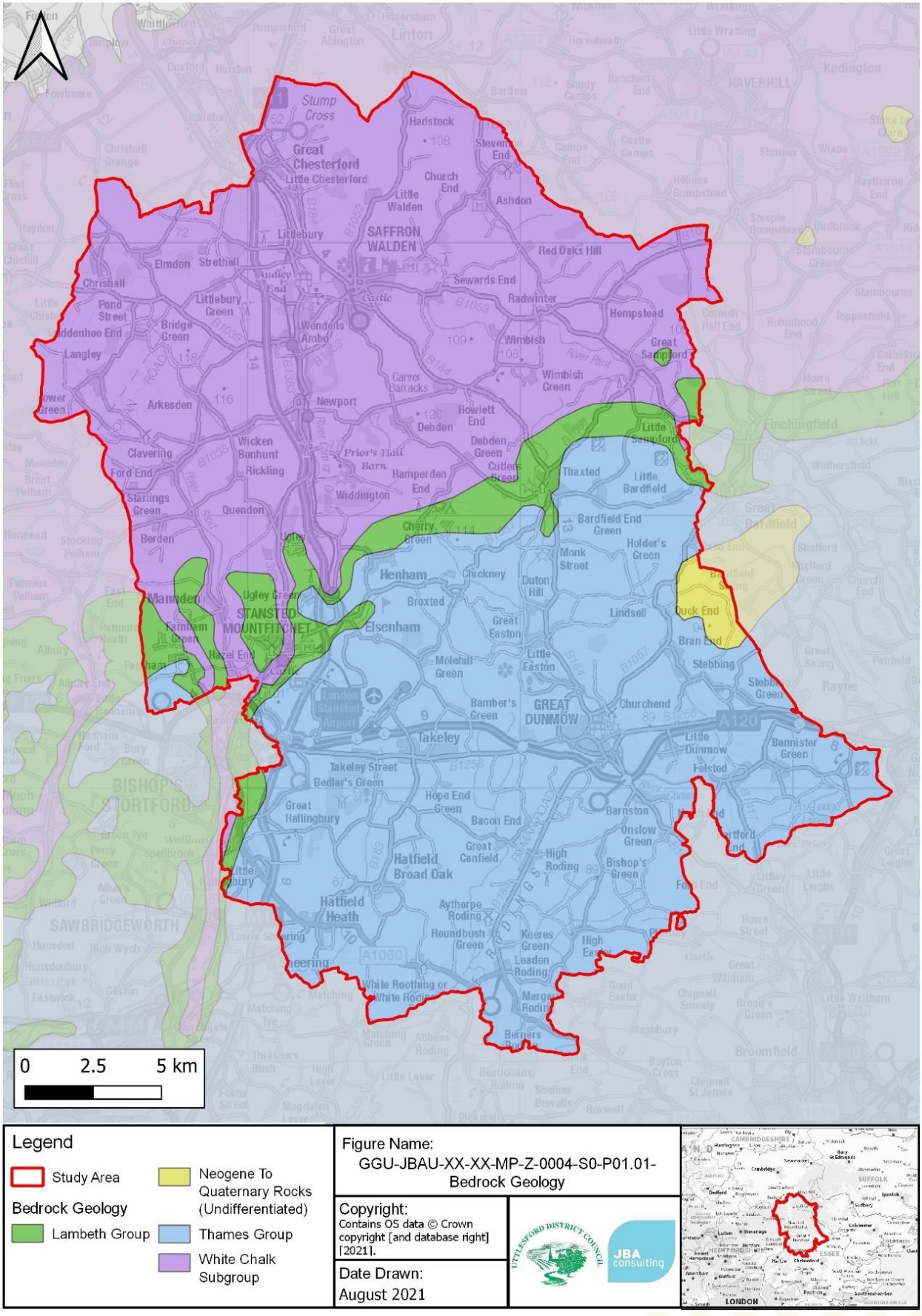

Figure 4.4 Bedrock geology of Uttlesford

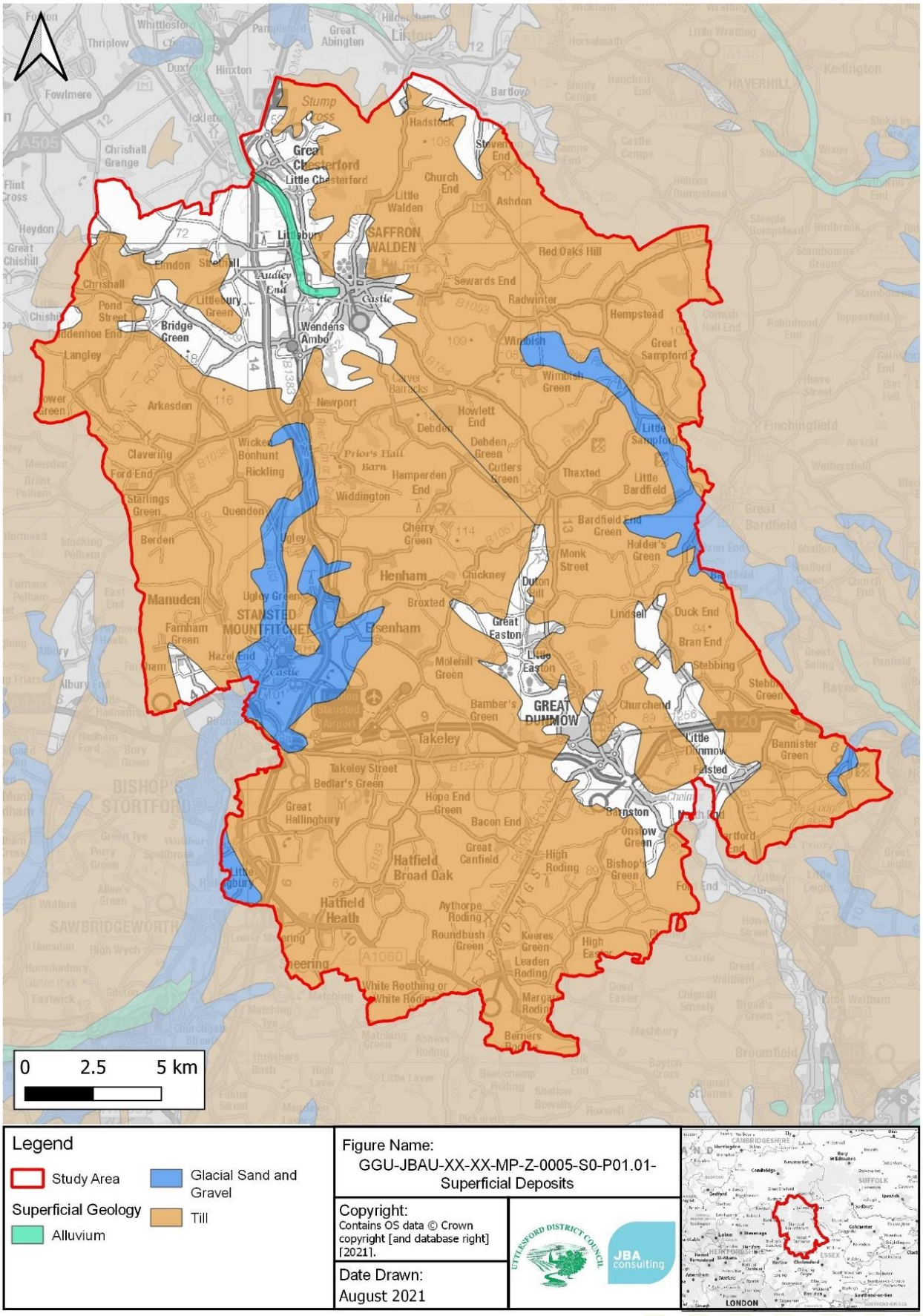

Figure 4.5 Superficial (at surface) geology of Uttlesford

4.2 Availability of Water Resources

4.2.1 Abstraction Licencing Strategy

The Environment Agency (EA), working through their Catchment Abstraction Management Strategy (CAMS) process, prepare an Abstraction Licensing Strategy (ALS) for each sub-catchment within a river basin. This licensing strategy sets out how water resources are managed in different areas of England and contributes to implementing the Water Framework Directive (WFD). The ALS report provides information on the resources available and what conditions might apply to new licences. The licences require abstractions to stop or reduce when a flow or water level falls below a specific threshold, as a restriction to protect the environment and manage the balance between supply and demand for water users. The CAMS process is published in a series of ALSs for each river basin.

All new licences, and some existing licenses, are time limited. This allows time for a periodic review of the specific area as circumstances may have changed since the licences were initially granted. These are generally given for a twelve-year duration, but shorter license durations may also be granted. This is usually based on the resource assessment and environmental sustainability. In some cases, future plans or changes may mean that the EA will grant a shorter time limited licence, so it can be re-assessed following the change. If a licence is only required for a short time period, it can be granted either as a temporary licence or with a short time limit. If a licence is considered to pose a risk to the environment it may be granted with a short time limit while monitoring is carried out. The licences are then replaced with a changed licence, revoked or renewed near to the expiry date.

The ALS are important in terms of the Water Resource Management Plan (WRMP) as this helps to determine the current and future pressures on water resources and how the supply and demand will be managed by the relevant water companies[39]. Uttlesford is covered by four ALS areas: Cam and Ely Ouse, Essex, Roding Beam and Ingrebourne, and the Upper Lee as shown in Figure 4.6 below.

39 Environment Agency (2021) Managing Water Abstraction. Accessed Online at: https://www.gov.uk/government/collections/water-abstraction-licensing-strategies-cams-process on: 24/01/2022

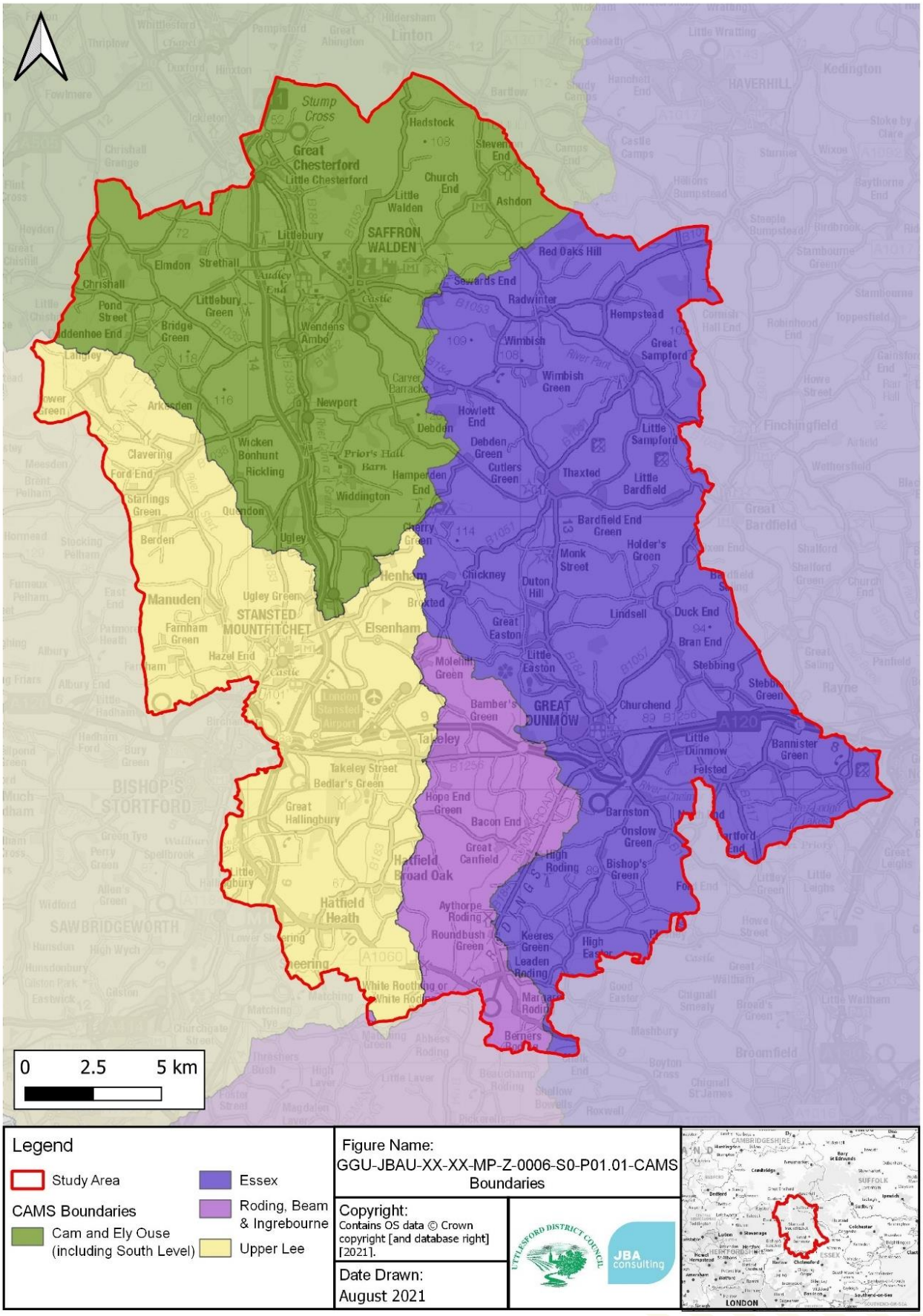

Figure 4.6 CAMS Boundaries covering Uttlesford

4.2.2 Resource Availability Assessment

In order to abstract surface water, it is important to understand what water resources are available within a catchment and where abstraction for consumptive purposes will not pose a risk to resources or the environment. The Environment Agency has developed a classification system which shows:

- The relative balance between the environmental requirements for water and how much has been licensed for abstraction
- whether there is more water available for abstraction in the area
- areas where abstraction may need to be reduced.

The availability of water for abstraction is determined by the relationship between the fully licensed (all abstraction licences being used to full capacity) and recent actual flows (amount of water abstracted in the last 6 years) in relation to the Environmental Flow Indicator (EFI). Results are displayed using different water resource availability colours, further explained in Table 4.2. In some cases, water may be scarce at low flows, but available for abstraction at higher flows. Licences can be granted that protect low flows, this usually takes the form of a "Hands-off Flow" (HOF) or Hands-off Level (HOL) condition on a licence.

Groundwater availability as a water resource is assessed similarly, unless better information on principle aquifers is available or if there are local issues that need to be taken into account.

Table 4.2 Implications of Surface Water Resource Availability Colours

Water Resource Availability Colour	Implications for Licensing
High hydrological regime	There is more water than required to meet the needs of the environment. Due to the need to maintain the near pristine nature of the water body, further abstraction is severely restricted.
Water available for licensing	There is more water than required to meet the needs of the environment. Licences can be considered depending on local/downstream impacts.
Restricted water available for licensing	Fully Licensed flows fall below the Environmental Flow Indicator (EFI). If all licensed water is abstracted there will not be enough water left for the needs of the environment. No new consumptive licences would be granted. It may also be appropriate to investigate the possibilities for reducing fully licensed risks. Water may be available via licence trading.
Water not available for licensing	Recent Actual flows are below the Environmental Flow Indicator (EFI). This scenario highlights water bodies where flows are below the indicative flow requirement to help support Good Ecological Status. No further licences will be granted. Water may be available via licence trading.
HMWBs (and /or discharge rich water bodies)	These water bodies have a modified flow that is influenced by reservoir compensation releases, or they have flows that are augmented. There may be water available for abstraction in discharge rich catchments.

Water resource availability is assessed under four different flow conditions:

- Q95 – very low flows which are exceeded 95% of the time
- Q70 – low flows which are exceeded 70% of the time
- Q50 – median flows which are exceeded 50% of the time
- Q30 – high flows which are exceeded 30% of the time

In some catchments this assessment may show that there is limited or no water available for abstraction at Q50 or Q70 but show that there is water available at lower flows. This is likely to be because most abstraction licences are limited using a 'Hands off Flow' or 'Hands off Level', therefore within the catchment less water is being abstracted at very low flows and there is water available. This may not be the case across all catchments and, particularly in heavily modified catchments, there may be other artificial influences impacting on catchment flows. For example, if there are a large number of discharges within the catchment or the flow is artificially augmented then this would artificially elevate flow particularly at lower flows. In some cases, the EA doesn't include this water in the amount available for licensing because it isn't guaranteed but flow can potentially be more available.

A summary of the water resource availability for the ALS areas in Uttlesford is summarised in Figure 4.7.

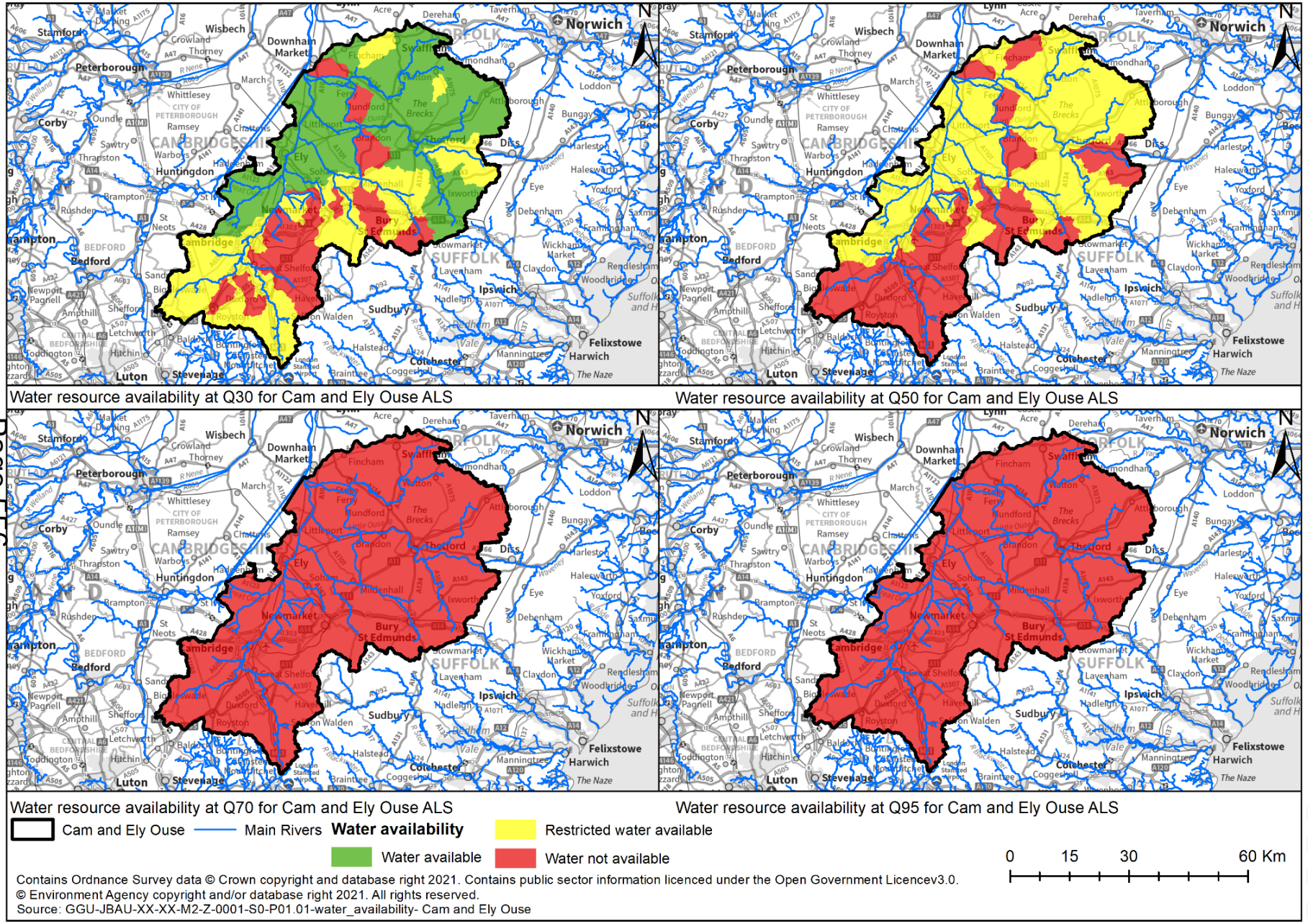

Figure 4.7 Water Resource Availability for the ALS areas in Uttlesford

4.2.3 Cam and Ely Ouse ALS

The Cam and Ely Ouse ALS[40], covers an area of approximately 3,664 km^2. It is characterised by the East Anglian Chalklands in the south, Brecklands in the north and South Level Fenland to the west. Land use is predominantly arable agriculture.

The catchment incorporates the following rivers and their tributaries:

- River Cam
- River Wissey
- Little Ouse
- River Lark

All of these rivers drain to the Ely Ouse that discharges to sea at Denver.

There are two important aquifers in the catchment:

- A larger Chalk aquifer underlies the eastern and central part of the ALS area.
- The Lower Greensand aquifer outcrops further west and is separated from the chalk by a layer of gault clay.

There are 17 APs within the Cam and Ely Ouse ALS, two of which fall within Uttlesford, AP2 and AP3. Currently there is restricted water available for licensing at these APs.

The groundwater availability in the Cam and Ely Ouse ALS region is guided by the surface water assessment unless specific information on principal aquifers exists or local issues that need protecting overrule it.

Consumptive groundwater licences which do not have a direct impact upon main river flows may be permitted but may be subject to restrictions such as prescribed groundwater levels. Restrictions will be determined on a case-by-case basis, dependent upon the nature and scale of any abstraction.

Resource availability for the APs within Uttlesford are presented in Figure 4.8. During Q30 flow conditions, restricted water is available for licencing in AP3, and no water is available for licencing in AP2. In Q50, Q75 and Q95, water availability is not available across AP2 and AP3.

40 Cam and Ely Ouse abstraction licensing strategy, Environment Agency (2020). Accessed online at: https://www.gov.uk/government/publications/cam-and-ely-ouse-abstraction-licensing-strategy/cam-and-ely-ouse-abstraction-licensing-strategy on: 24/01/2022

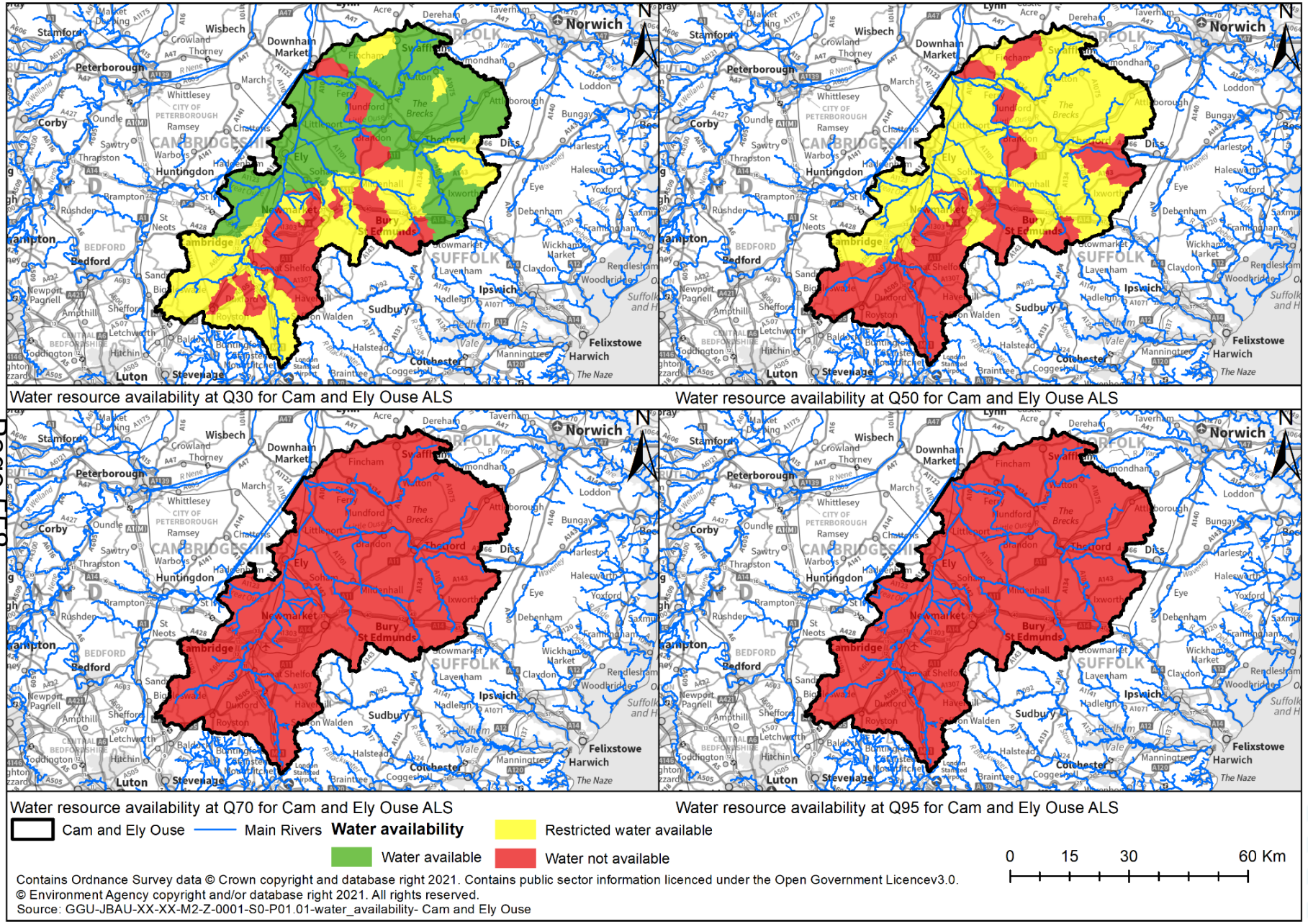

Figure 4.8 Water Resource Availability of the Cam and Ely Ouse ALS

4.2.4 Essex ALS

The Essex ALS[41], covers an area of approximately 2,920km^2 and incorporates a large part of Essex.

The catchment incorporates the following rivers and their tributaries:

- River Stour
- River Colne
- River Pant
- River Blackwater
- River Chelmer
- River Crouch
- Asheldham Brook
- River Roach

There are two important aquifers in the catchment:

- An area of shallow groundwater in the south of the Essex County.
- A confined chalk aquifer underlying the entire Essex County.

There are 19 APs within the Essex including 3 tidal AP's, two of which fall within Uttlesford, AP15, AP17 and AP19. Currently there is restricted water available for licensing at these APs.

The groundwater availability in the Essex ALS region is guided by the surface water assessment unless specific information on principal aquifers exists or local issues that need protecting overrule it.

The confined chalk groundwater in the Essex area is fully committed and no further consumptive abstraction can be considered.

Resource availability for the APs within Uttlesford are presented in Figure 4.9. In Q30, Q50, Q75 and Q95, water is not available across AP15, AP17 and AP19.

41 Essex abstraction licensing strategy, Environment Agency (2017). Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/636594/ALS_2017_Essex.pdf on: 24/01/2022

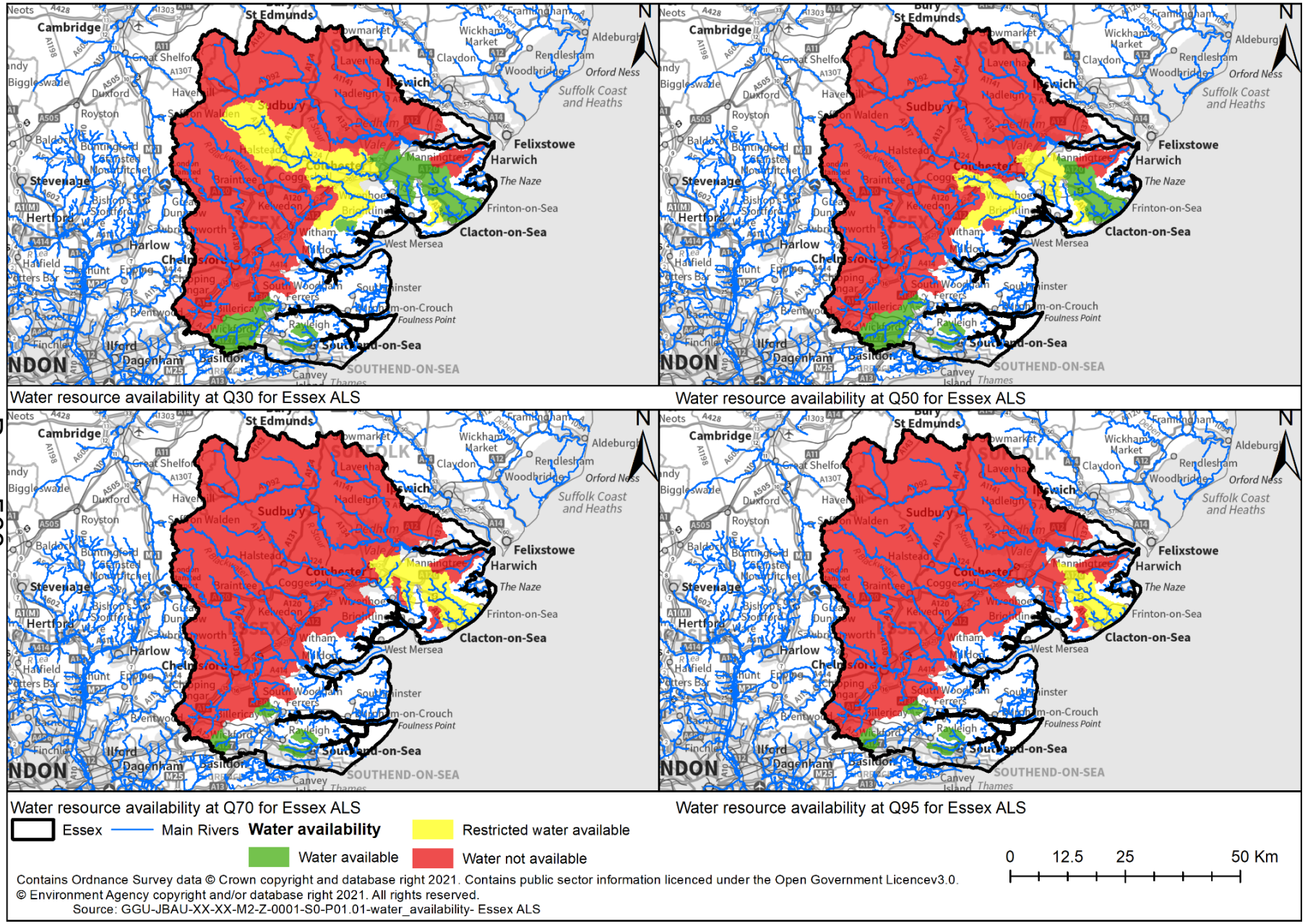

Figure 4.9 Water Resource Availability of the Essex ALS

4.2.5 Roding, Beam, Ingrebourne and Mardyke Abstraction Licensing Strategy ALS

The Roding, Beam, Ingrebourne, and Mardyke ALS[42], is in the Thames river basin district. The catchment is situated to the east of the River Thames basin and includes parts of Essex and east London. The southern boundary is the River Thames. The area extends from Barking to Canvey Island in the south, and to Takeley in the north.

The catchment incorporates the following rivers and their tributaries:

- Cripsey Brook
- River Roding
- River Beam
- River Ingrebourne
- River Mardyke
- Seven Kings River

There are 8 APs within the Roding, Beam, Ingrebourne and Mardyke ALS, one of which fall within Uttlesford, AP1. Currently there is restricted water available for licensing in this AP.

The groundwater availability in the northern part of the ALS (included in the study area) is covered under the Essex ALS region is guided by the surface water assessment unless specific information on principal aquifers exists or local issues that need protecting overrule it.

The confined chalk groundwater in the Essex area is fully committed and no further abstraction is possible.

Resource availability for the APs within Uttlesford are presented in Figure 4.10. In Q30, Q50, Q75 and Q95, water is not available across AP15, AP17 and AP19.

42 Roding, Beam, Ingrebourne and Mardyke abstraction licensing strategy, Environment Agency (2020). Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/792309/_Roding_Beam_Ingrebourne_and_Mardyke_Abstraction_Licensing_Strategy.pdf on: 24/01/2022

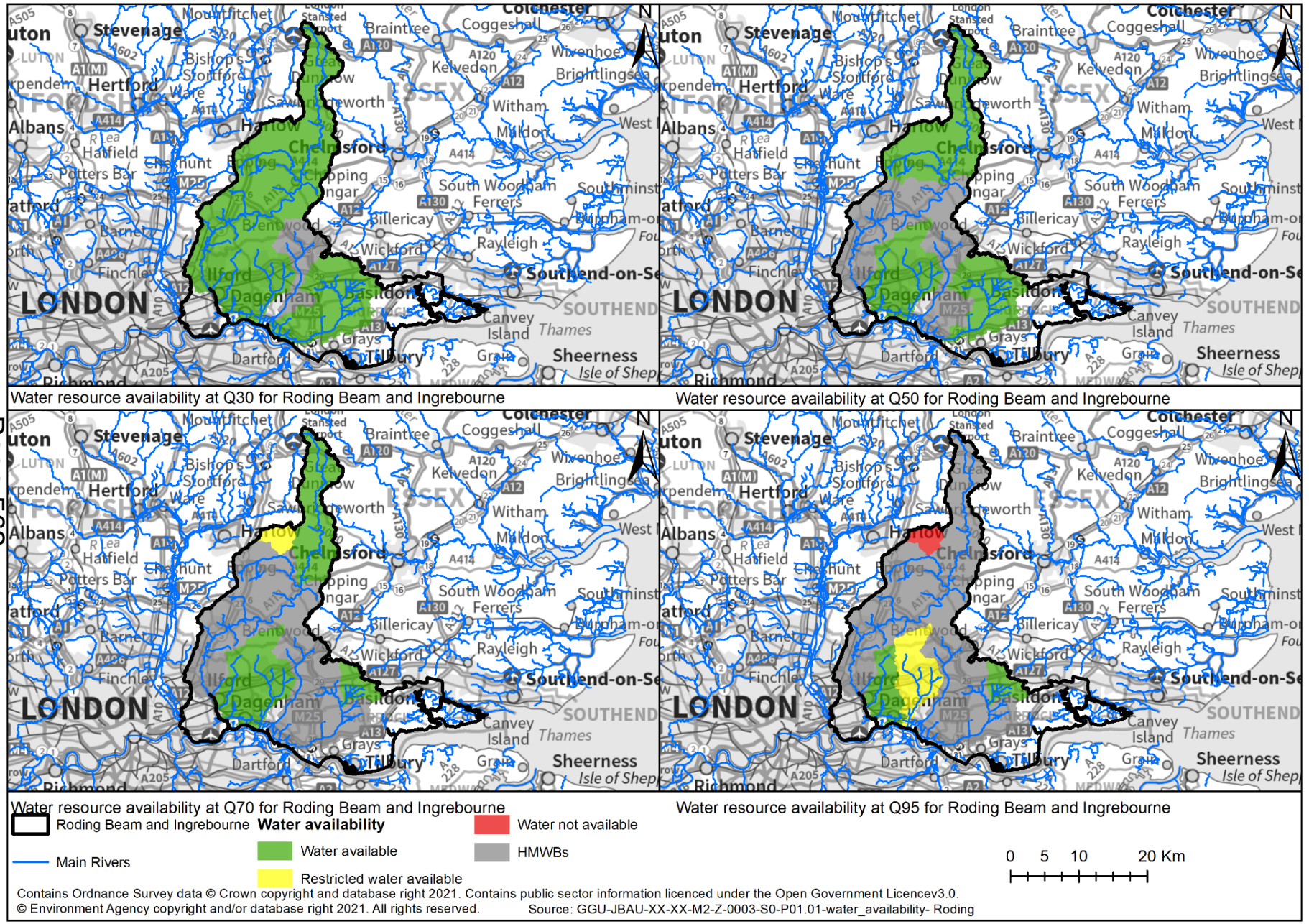

Figure 4.10 Water Resource Availability of the Roding, Beam, Ingrebourne and Mardyke ALS

4.2.6 Upper Lee ALS

The Upper Lee ALS[43] covers an area that drains into the River Lee from its source near Luton, downstream to Fieldes Weir to north-east of Hoddesdon, where the River Stort meets the Lee.

The catchment incorporates the following rivers and their tributaries:

- Upper Lee
- Mimram
- Beane
- Rib
- Ash
- Stort

There are 13 APs within the Upper Lee ALS, two of which fall within Uttlesford, AP2 and AP4. Currently there is restricted water available for licensing in these APs.

The catchment lies predominantly on unconfined Chalk, and as a result the River Lee and tributaries are mainly fed by the underlying groundwater aquifer. For this reason, in these areas the water availability for groundwater is considered the same as for surface water in the Upper Lee ALS.

Resource availability for the APs within Uttlesford are presented in Figure 4.11. In Q30, Q50, Q75 and Q95, water is not available across AP2 and AP4.

43 Upper Lee abstraction licensing strategy, Environment Agency (2019). Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/792373/Upper_Lee_Abstraction_Licensing_Strategy.pdf on: 24/01/2022

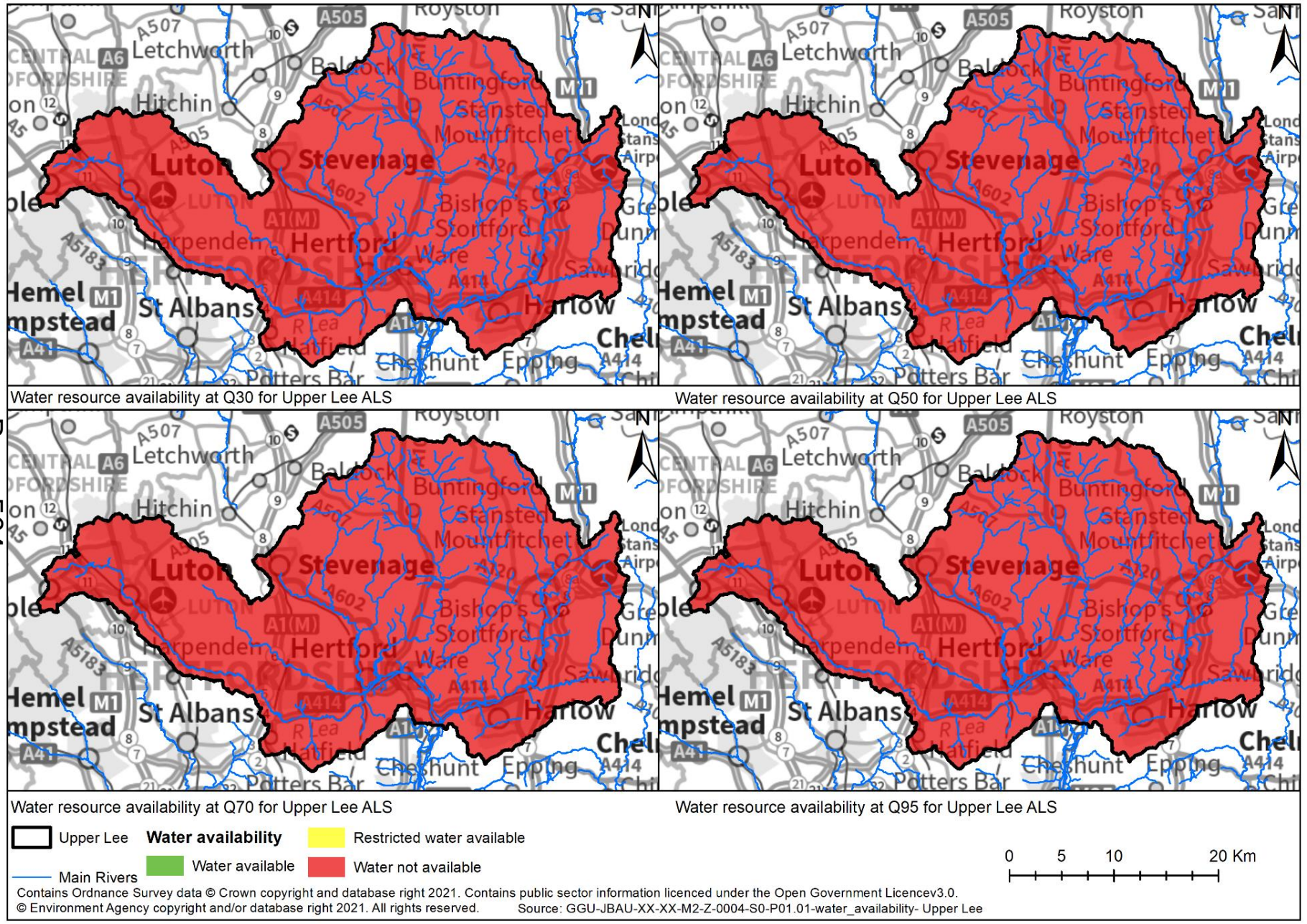

Figure 4.11 Water Resource Availability of the Upper Lee ALS

4.3 Water Resource Assessment: Water Resource Management Plans

4.3.1 Introduction

When new development within a Local Planning Authority is being planned, it is important to ensure that there are sufficient water resources in the area to cover the increase in demand without risk of shortages in the future or during periods of high demand, and without causing a negative impact on the waterbodies from which water is abstracted.

The aim of this assessment was to compare the future additional demand as a result of development proposed within the emerging Local Plan, with the demand allowed for by Affinity Water and in their Water Resource Management Plans.

The water resources assessment has been carried out utilising two approaches; initially by reviewing the Water Resource Management Plan (WRMP) and secondly by providing the water company with a growth estimate allowing them to assess the impact of planned growth on their water resource zone.

4.3.2 Affinity Water

Affinity Water (AfW) is responsible for supplying the Uttlesford with water (see Figure 4.12). For the purposes of water resources planning, the AfW supply area is divided into eight Water Resources Zones (WRZs) which vary greatly in scale and have unique water resource concerns. Uttlesford is covered by the Stort (WRZ5) WRZ which is located in the Central supply area.

Water Resource Planning

Affinity Water divide their supply area into eight water resource zones - which are defined by the EA as areas in which the management of supply and demand is largely self-contained and where the supply infrastructure is linked such that customers within the zone experience the same risk of supply failure. Uttlesford is covered by the Stort WRZ which sits in their Central region (consisting of six adjacent WRZs).

Within a WRZ a customer may receive their water from anywhere within the zone, and not necessarily from the nearest source.

Each water company must publish a Water Resources Management Plan (WRMP), a 25-year strategy (updated every five years), which assesses future demand, water availability, demand management measures and how the impact of climate change will be mitigated. Where necessary they also set out the requirements for developing additional water resources to meet growing demand and reductions in abstraction from other sources to meet

4.3.3 Anglian Water

Anglian Water were contacted during the WCS as the wastewater provider, but also provided useful comment on water resources in Uttlesford:

"Whilst Affinity Water supplies water to the whole of Uttlesford, Anglian Water has two water abstraction points to the east of the River Pant, within Uttlesford District and Anglian Water currently exports 85Ml/d to Affinity Water supplied from Grafham Water. Anglian Water, as part of the Water Resources East emerging regional plan is working with Affinity Water to bring forward new water supply options. These may include an Anglian to Affinity water transfer in part supplied by a new reservoir in South Lincolnshire in the 2030s. These new supply options may enable the transfer from Grafham Water to Affinity to be reduced, freeing up that water supply to serve expanding and new communities in Greater Cambridge, for example. In terms of the quantum and spatial distribution of growth in Uttlesford these strategic water resource options could come on stream in the mid- 2030s

and so could be a factor for growth including potential new settlements towards the end of the plan period."

"In the short to medium term all water companies are working with the Environment Agency to consider how to deliver sustainability reductions to reduce the abstraction of water from groundwater. Anglian Water's work to reduce abstraction from groundwater sources is set out in our 2019 Water Resource Management Plan. If further sustainability reductions are required ahead of the timescales we are currently planning for then Anglian Water and other water companies would need to consider bringing forward new supply options as well as measures to reduce demand including mandating within Local Plans much higher levels of water efficiency in new development."

4.3.4 Methodology

The Affinity Water – Water Resources Management Plan 2019[44] was reviewed. Attention was mainly focussed upon:

- The available water resources and future pressures which may impact upon the supply element of the supply/demand balance
- The allowance within those plans for housing and population growth and its impact upon the demand side of the supply/demand balance

The Ministry for Housing, Communities and Local Government (MHCLG) 2018-based estimates of household growth up to 2041 has been used to estimate the present-day number of houses in Uttlesford.

44 Water Resources Management Plan 2019, Affinity Water (2019). Accessed online at: https://www.affinitywater.co.uk/corporate/plans/water-resources-plan on: 19/12/2021

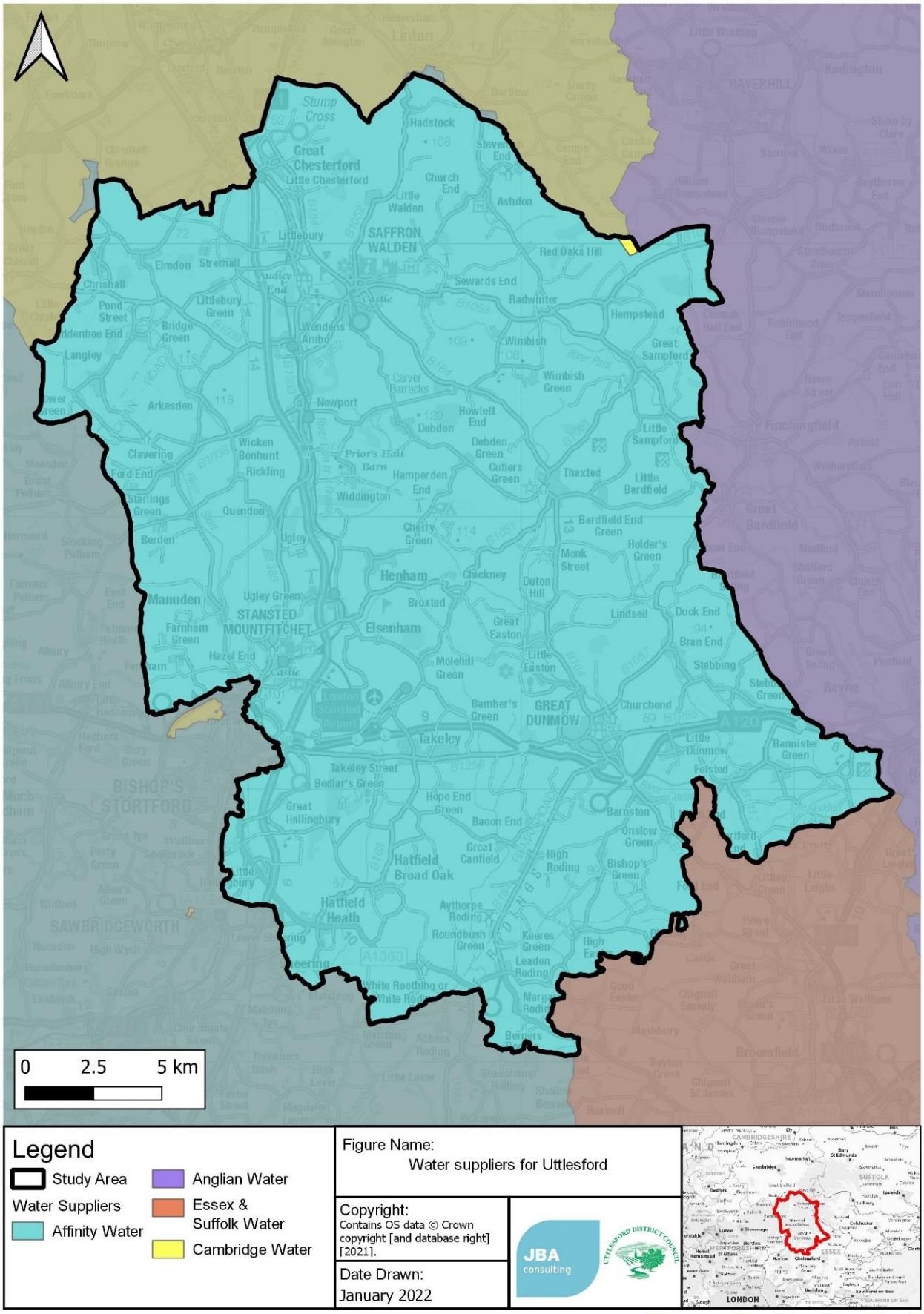

Figure 4.12 Water supply companies in Uttlesford

4.3.5 Stort WRZ present and future Water Supply-Demand Balance

Across the AfW Central region, around 60% of water supply comes from groundwater sources with the remaining 40% being abstracted from surface water sources on the River Thames or imported from neighbouring water companies.

AfW have implemented the strategic transfers across the Central region to made sure that they are able to fully share water between the individual zones that make up the Central region. This will help to help balance the supply and demand required in those zones in the future. Water is also shared between Anglian Water and Affinity Water to help both companies meet water supply shortfalls in their WRZs.

The AfW's WRMP identifies a shortfall in water supply in their central region under drought conditions of 43Ml/d by 2025 and 256Ml/d by 2080 if no action were taken. This is due in part to actions on AfW to reduce abstraction from chalk catchments as part of their environmental responsibilities, the impact of climate change, and population increase.

Alternative ways of meeting customer demand need to be found as current water sources become unreliable. The water company aims to do this by ensuring their plan:

- Is adaptive, flexible and supported by customers and stakeholders
- Improves drought resilience of water supplies for customers
- Contributes to the protection of rare Chalk stream habitats by reducing abstraction from Chalk sources
- Prioritises reducing demand
- Ensures timely delivery of the appropriate strategic supply infrastructure

To do this, AfW is proposing to implement the following demand management measures in their plan.

- Reduce network leakage
- Installing more water meters in homes and businesses
- Provide customers with more regular information on how much water they are using
- Provide customers and communities with water audits to encourage them to become more water efficient
- Support a national water efficiency campaign and work with Government to introduce new policies to reduce consumption
- Work with retailers to improve water efficiency of businesses.

AfW are also proposing to introduce the following measures to increase the supply in the Stort WRZ:

- Looking at strategic schemes to maintain a resilient supply including transfers of bulk water and the South East strategic Reservoir in Oxfordshire.
- Maximise use of existing sources of water, including full use of imports of water

AfW are aiming to help reduce the amount of water taken from existing Chalk sources and not develop any new Chalk groundwater sources in the Central region.

4.3.1 Population and household growth

Table 4.3 shows the household growth forecasts for the Stort WRZ which serves growth in Uttlesford.

The household projections (2018 ONS dataset) predict an increase in the number of households in Uttlesford of 23% during the plan period, however if growth occurs according to the housing need (16,944 houses including a 20% buffer), the percentage growth would be much higher at 46%. This is also significantly higher than the average growth expected in the WRMP19 plan for the water resource zone. The overall level of

growth within Uttlesford was communicated to Affinity Water, who did not identify any concerns about being able to supply that level of increase during the plan period. However, it should be ensured that the increased level of growth is factored into future updates of the WRMP so that it is taken into account in supply demand balance calculations.

Commercial or industrial development which has a particularly high water demand (for example paper production or food production) that is expected to be delivered during the plan period should be identified and discussed early with Affinity Water.

There has been a recent increase in per capita consumption (PCC) due to the impact of Covid-19, and it is not yet known if PCC will return to pre-pandemic levels or to the planned downward trend.

Table 4.3 Comparison of household growth forecasts (Affinity Water)

Forecast	2020	2040	% increase
MHCLG 2018-based forecast – Uttlesford	36,297	44,718	23%
Expected growth in Local Plan period	36,297	+ 16,944	46%
WRMP Forecast – Stort	141,970	178,800	26%

4.3.2 Summary

The whole of Uttlesford is within the Stort WRZ. AfW's WRMP highlights a deficit between supply and demand forecast and defines the actions required to achieve a supply demand balance to prevent the risk of future environmental deterioration.

The percentage growth rate in the WRMP for the Stort WRZ is less than the expected rate of growth within Uttlesford, however Affinity Water did not express any concerns with this level of growth.

Although AfW has not relied on new homes being more water-efficient than existing metered homes, the opportunity, through the planning system, to ensure that new homes do meet the higher standard of domestic water usage, at no significant additional cost to the developer, would be in line with general principals of sustainable development, and reducing energy consumed in the treatment and supply of water.

No constraints on treatment or strategic infrastructure requirements were identified.

4.4 Water Environment National Environment Programme Measures

The Water Industry National Environment Programme (WINEP) is a set of actions that the EA have requested all 20 water companies operating in England to complete in a particular Asset Management Period (AMP) as part of their environmental commitments. Actions may include investigations or actual measures, examples could be reductions in abstraction in a particular river to maintain flow to support WFD objectives, or a reduction in phosphate pollution in a catchment through upgrades to a WwTW.

Table 4.4 and Table 4.5 show WINEP actions relating to water resources in groundwater and surface waterbodies respectively. Actions relating to water quality are presented in section 8 (Water Quality).

A number of investigations are planned or underway to ensure that abstraction of water from both groundwater and rivers, is not leading to a reduction in flow, particularly in chalk streams. Development and population growth can increase abstraction, and so UDC have an opportunity to contribute to these actions indirectly by pursuing policies that promote water efficiency in new development.

Table 4.4 WINEP actions on Groundwater bodies in Uttlesford

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Cam and Ely Ouse Chalk	EAN00015, EAN00016, EAN00017, EAN00018, EAN00034	7AF100043	DEBDEN ROAD, SAFFRON WALDEN NEWPORT	Investigation and options appraisal This is an investigation to determine whether increased use of groundwater abstraction will cause deterioration of the status of the groundwater body. If it is shown that increased abstraction causes deterioration of status, then the investigation needs to look at the costs of options to provide alternative sources of public water supply. It is the opinion of EA that increased use of the licence beyond maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3 may cause deterioration.
Cam and Ely Ouse Chalk	EAN00453	7AF200012	Newport PS nitrate investigation	Investigation To investigate the current inputs of nitrate to groundwater and gain a more detailed understanding of the likely long-term trends in nitrate groundwater concentrations at the abstraction. The concentrations of nitrate at the abstraction show rising trend in nitrate concentrations, which has increased rapidly since 2016, posing a risk of exceeding the drinking water standard in the future.
North Essex Chalk	EAN02374 EAN00005 EAN02375 EAN00006	7AF100006	SPRINGWELL SOURCE UTTLESFORD BRIDGE SOURCE WENDEN	Investigation and options appraisal Investigate whether abstraction is causing a failure of the status of North Essex Chalk groundwater body. Ensure No deterioration due to planned abstraction

Table 4.5 WINEP actions on surface waterbodies in Uttlesford

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Chelmer (u/s Gt. Easton)	EAN00002 EAN00001	7AF100001	CHELMER - Armitage Bridge, Thaxted / Bolford Street, Thaxted and Mill Lane Gt Dunmow CHELMER - Hempstead	Investigation and options appraisal Affinity to establish what extent planned abstraction and changes in the use of licences 8/37/31/*G/0042 and 8/37/35/*G/0023 might cause deterioration of flow / ecological status of the waterbody and to identify suitable options to ensure risk is removed.
Cam (US Newport)	EAN00013 EAN00035	7AF100033	NEWPORT	Sustainability Change This is an implementation scheme to prevent deterioration of flows in these rivers. EA will seek to cap abstraction licences based on maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3.
Wicken Water	EAN00028 EAN00010 EAN00014	7AF100033	UTTLESFORD BRIDGE SOURCE WENDEN NEWPORT	Sustainability Change This is an implementation scheme to prevent deterioration of flows in these rivers. EA will seek to cap abstraction licences based on maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3.
Wendon Brook	EAN00024 EAN00030 EAN00012	7AF100033	DEBDEN ROAD, SAFFRON WALDEN UTTLESFORD BRIDGE SOURCE WENDEN	Sustainability Change This is an implementation scheme to prevent deterioration of flows in these rivers. EA will seek to cap abstraction licences based on maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3.
Cam (Newport to Audley End)	EAN00026 EAN00029 EAN02413 EAN00011 EAN00019	7AF100034	SPRINGWELL SOURCE UTTLESFORD BRIDGE SOURCE UTTLESFORD BRIDGE SOURCE WENDEN	Sustainability Change This Scheme for flow improvement for River Cam has three aspects. 1. EA to seek to cap the licence to prevent deterioration based on maximum peak use 2005 to 2015 rounded to nearest 1000 m3. 2. Carry out river restoration works (Options 19, 20 and 21 from options appraisal). 3. Change the flow trigger condition on Uttlesford/Springwell licence from 12.72 Ml/d to 15.64 Ml/d.

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
			DEBDEN ROAD, SAFFRON WALDEN	
Cam (Audley End to Stapleford)	EAN00023 EAN00385 EAN00036 EAN00025 EAN00027 EAN02412 EAN00037	7AF100034	DEBDEN ROAD, SAFFRON WALDEN RIVER RESTORATION: IMPLEMENTATION SCHEME NEWPORT SPRINGWELL SOURCE UTTLESFORD BRIDGE SOURCE UTTLESFORD BRIDGE SOURCE WENDEN	Sustainability Change This Scheme for flow improvement for River Cam has three aspects. 1. EA to seek to cap the licence to prevent deterioration based on maximum peak use 2005 to 2015 rounded to nearest 1000 m^3. 2. Carry out river restoration works (Options 19, 20 and 21 from options appraisal). 3. Change the flow trigger condition on Uttlesford/Springwell licence from 12.72 Ml/d to 15.64 Ml/d.
Stort and Bourne Brook	HNL00026 HNL00023 HNL00028 HNL00022	7AF100075	NORTH STORTFORD PUMPING STATION STANSTED MOUNTFITCHET PUMPING STATION STANSTED PUMPING STATION THE CAUSEWAY BISHOPS STORTFORD	Investigation and Options Appraisal WFD Flow investigation – no details given
Stort (at Clavering)	HNL00025 HNL00030	7AF100078	STANSTED MOUNTFITCHET PUMPING STATION STANSTED PUMPING STATION	Investigation and Options Appraisal WFD Flow investigation – no details given
Chelmer (u/s Gt. Easton)	EAN00166 EAN00167	7AW100280	CHELMER / Bocking	Investigation and Options Appraisal To establish to what extent planned AWS abstraction might cause deterioration of flow / ecological status of

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
			CHELMER / Codham Mill	the waterbody before 2027, and to identify suitable options to ensure this risk is removed.

4.5 Chalk Streams

4.5.1 Overview

UDC asked JBA to prepare a separate Chalk Stream evidence base alongside the WCS, and this should be referred to for more detailed information on the pressures on the chalk streams in Uttlesford and options to protect them.

A chalk stream is broadly defined as a river that derives most of its flow from chalk-fed groundwater. Chalk streams flow from chalk aquifers, stores of underground water that are replenished when it rains. England is home to 85 per cent of the world's chalk streams. These rivers, together with the chalk aquifer from which they spring, are crucial water resources providing millions of people with water as well as supporting unique ecosystems. Businesses and farms also rely on chalk streams as without a reliable water source they would not be able to operate.

During the summer months when temperatures are higher and plants are using water, rainfall is less effective at recharging the aquifer. This as well as the impacts of climate change results in many of the rivers and streams being dry for much of the year along long sections of their course.

Balancing the needs of people and the environment is a challenge and it is getting harder. Population growth, particularly in the southeast, means that more and more water is required at a time when climate change is reducing the amount of water that is available.

The Environment Agency's 'Reasons for Not Achieving Good' database indicates that one of the reasons for some of the watercourses in the district are not meeting 'Good' WFD standards can be related to groundwater and surface water abstractions.

As noted in Section 4.2, for the majority of flow periods for the rivers in Uttlesford, there is insufficient water to permit more to be abstracted. This has been enforced by the Environment Agency to protect and preserve these streams and to limit any additional damage as a result of abstraction. Further information on the work the Environment Agency and Affinity Water are doing to reduce the impact of abstraction on chalk streams and find alternative sources of water is explained below.

4.5.2 Environment Agency

The Environment Agency has been working to limit the damage dry weather can cause and to ensure that water supplies are sustainable for the future. This includes taking immediate action to restrict the amount of water taken, developing long-term plans to reduce reliance on chalk streams, working with partners on projects to improve water quality and stepping in to limit damage to wildlife and the environment when river levels are too low.

They have also been working to make sure that water abstractions are sustainable. The Environment Agency regulate water abstraction through their licensing system. By reviewing licences and reducing the amount of water people can take the Environment Agency have returned 16 billion litres of water back to chalk aquifers and streams since 2008 and removed the risk of another 14.9 billion litres being taken[45].

The Environment Agency have also been working with water companies to find long term solutions for water supply by finding alternative water supply sources and reducing demand such as new reservoirs and pipes to transfer water from other parts of the country.

4.5.3 Affinity Water

AW's supply area contains many chalk streams. These chalk streams have been historically modified e.g., straightened, deepened, widened, which can make their habitat less suitable. Affinity Water have been working to support customers to reduce their water usage as well as their own leakage. They have also been working to reduce the amount of water being

[45] Protecting our precious chalk streams, Environment Agency (2019) Accessed online at: https://environmentagency.blog.gov.uk/2019/10/02/protecting-our-precious-chalk-streams/ on: 24/01/2022

abstracted from Chalk Streams (see WINEP actions above). A reduction in abstraction means more water is left in the environment, contributing towards the protection of rare chalk streams.

AW confirmed that they cannot guarantee at this stage there won't be a requirement for a new source or new infrastructure. It would however be their responsibility to ensure that no adverse environmental impacts would arise from any new infrastructure or source of water.

4.6 Water demand reduction

4.6.1 Water efficiency

It is widely recognised that the climate is changing and in response Uttlesford District Council declared a climate emergency in July 2019,[46]. Climate change is predicted to increase pressure on water resources, increasing the potential for a supply-demand deficit in the future, and making environmental damage from over abstraction of water resources more likely. Furthermore, the delivery of water and wastewater services and the heating of water in the home require high energy inputs, and therefore contribute directly to emissions of greenhouse gases. Water efficiency therefore reduces energy use and carbon emissions.

It is important therefore that new development does not result in an unsustainable increase in water abstraction. This can be done in a number of ways from reducing the water demand from new houses through to achieving "water neutrality" in a region by offsetting a new developments water demand by improving efficiency in existing buildings.

It is for Local Authorities to establish a clear need to adopt the tighter water efficiency target through the building regulations. This should be based on:

- Existing sources of evidence such as:
  - The Environment Agency classification of water stress
  - Water resource management plans produced by water companies
  - River Basin Management Plans which describe the river basin district and the pressure that the water environment faces. These include information on where water resources are contributing to a water body being classified as 'at risk' or 'probably at risk' of failing to achieve good ecological status, due to low flows or reduced water availability.
- Consultations with the local water and sewerage company, the Environment Agency and catchment partnerships
- Consideration of the impact on viability and housing supply of such a requirement

4.6.2 Water Stress

Water stress is a measure of the level of demand for water (from domestic, business and agricultural users) compared to the available freshwater resources, whether surface or groundwater. Water stress causes deterioration of the water environment in both the quality and quantity of water, and consequently restricts the ability of a waterbody to achieve a "Good" status under the WFD.

The Environment Agency has undertaken an assessment of water stress across the UK. This defines a water stressed area as where:

- "The current household demand for water is a high proportion of the current effective rainfall which is available to meet that demand; or
- The future household demand for water is likely to be a high proportion of the effective rainfall available to meet that demand.

46 Meeting of Council, 30th July 2019, Uttlesford District Council, 2019. Accessed online at: https://www.uttlesford.gov.uk/article/5768/The-council-and-climate-change on: 24/01/2022

In the Environment Agency assessment[47] the Affinity Water supply regions was classified as being an area of serious water stress.

4.6.3 River Basin Management Plans

One of the challenges identified in the River Basin Management Plan (RBMP) for the Anglian and Thames Basins are alterations to "natural flow levels of water". The management recommendations from both RBMP's are listed below:

- **Government and agencies (Environment Agency)** grant licences under the Water Resources Act 1991 to regulate how much water is taken from rivers, lakes estuaries and groundwater. The Environment Agency reviews the sustainability of time-limited abstraction licences as they expire, and the licence holders seek replacement licences.
- **All sectors** take up or encourage water efficiency measures, including water industry work on metering, leakage, audits, providing water efficient products, promoting water efficiency and education.
- **Local Government** sets out local plan policies requiring new homes to meet the tighter water efficiency standard of 110 litres per person per day as described in Part G of Schedule 1 to the Building Regulations 2010.
- **Industry manufacturing and other business** implement tighter levels of water efficiency, as proposed by changes to the Building Regulations.
- **Agriculture and rural land management** manage demand for water and use water more efficiently to have a sustainable water supply for the future.
- **Local government** commissions water cycle studies to inform spatial planning decisions around local water resources.

The RBMP goes on to state that "dealing with unsustainable abstraction and implementing water efficiency measures is essential to prepare and be able to adapt to climate change and increased water demand in the future."

4.6.4 Domestic and sectoral water use

Uttlesford is within the Water Resources South East (WRSE) regional water resources planning group. WRSE have published their Emerging Regional Plan for South East England[48], which contains information on the split of public and non-public water demand (Figure 4.13). In the southeast region overall, there is a very low percentage (3%) of water demand coming from non-public water supply, with the main component being agriculture, the paper industry and power generation.

47 Water Stressed Areas - Final Classification, Environment Agency and Natural Resources Wales (2021). Accessed online at: https://www.gov.uk/government/publications/water-stressed-areas-2021-classification on: 24/01/2022

48 Futureproofing our water supplies – A consultation on our emerging regional plan for south east England, WRSE (2022). Accessed online at: https://ehq-production-europe.s3.eu-west-1.amazonaws.com/a0f0a11747d3ad85fdda8dcc9d33d19eff03a90a/original/1642162818/9c27989a9ef054b5157625386340727a_WRSE_Regional_Plan_Jan_22_consultation_doc_FINAL%21.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIBJCUKKD4ZO4WUUA%2F20220707%2Feu-west-1%2Fs3%2Faws4_request&X-Amz-Date=20220707T084622Z&X-Amz-Expires=300&X-Amz-SignedHeaders=host&X-Amz-Signature=e39c518707635cf8ad8b25a69b555fc279cf8492cd34707949a76c58f11ca606 on: 07/07/2022

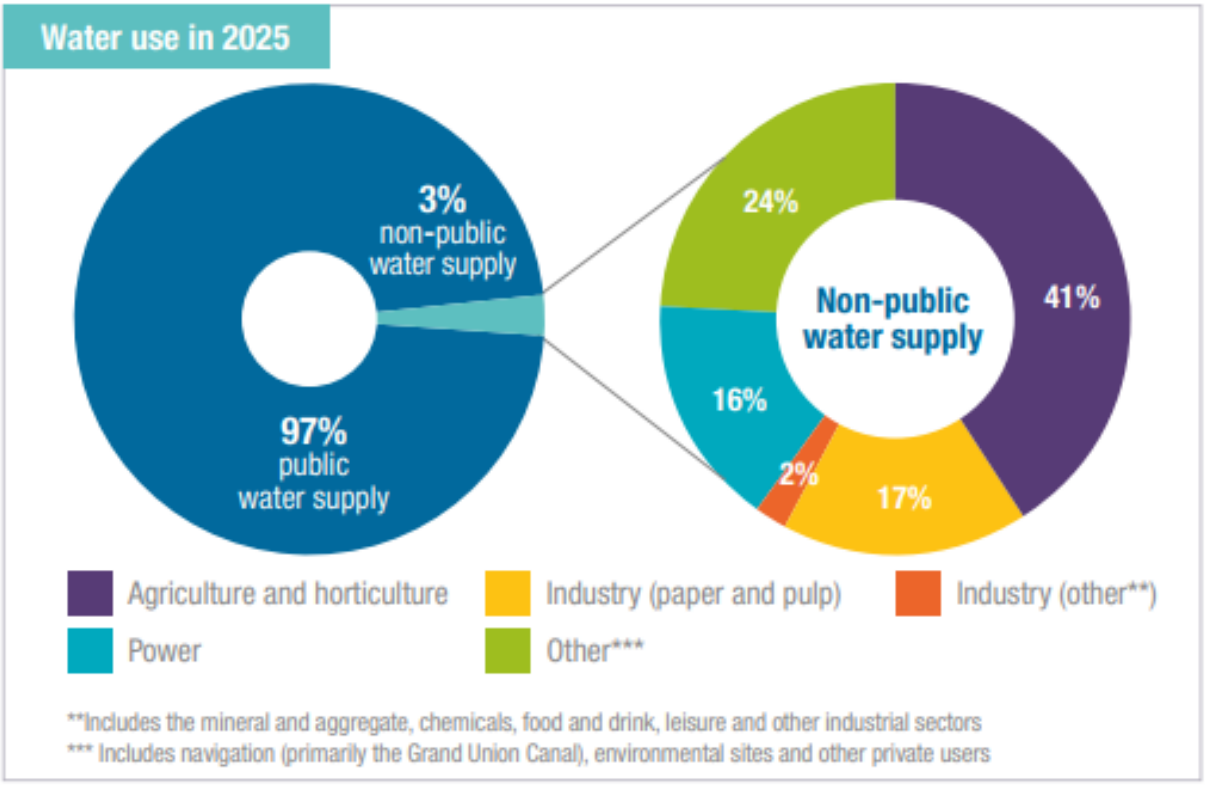

Figure 4.13 Water use by sector in the WRSE region

Uttlesford is on the north east extremity of the WRSE region, and the land use in this area is quite different to the rest of the region – which includes London. The Affinity Water WRMP shows a split of household to non-household demand for the Stort WRZ of 44.07 Ml/d for household to 14.46 Ml/d for non-household[49] reflecting the different mix of water demand in this area.

4.6.5 National Water Resources Framework

A new National Framework for Water Resources was published by the Government in March 2020[50]. This outlines the water resources challenges facing England and sets out the strategic direction for the work being carried out by regional water resource groups.

A range of options were explored, and the most ambitious scenarios rely on policy change to introduce mandatory labelling of water using fittings and associated standards. The Government is currently reviewing policy on water efficiency following a recent consultation. The framework proposes that regional groups plan to help customers reduce their water use to around 110 l/p/d. This is achievable without policy interventions.

This aligns with the tighter standard of 110 l/p/d per day as described in building regulations. However, in order to achieve an average of 110 l/p/d across the UK, including existing housing, a water efficiency target for new build housing of 110 l/p/d or higher would make this harder to achieve. New build housing should therefore be lower than 110 l/p/d.

4.6.6 Impact on viability

As outlined in section 3.8, the cost of installing water-efficient fittings to target a per capita consumption of 110l/d has been estimated as a one-off cost of £9 for a four-bedroom house. Research undertaken for the devolved Scottish and Welsh governments indicated potential

49 Based on Water Resources Market Information tables for WRZ5 DYAA (28-05-2020)
50 National Water Resources Framework, Environment Agency (2020). Accessed online at: https://www.gov.uk/government/publications/meeting-our-future-water-needs-a-national-framework-for-water-resources on: 24/01/2022

annual savings on water and energy bills for householders of £24-£64 per year as a result of such water efficiency measures. Water efficiency is therefore not only viable but of positive economic benefit to both private homeowners and tenants.

4.6.7 Further analysis of the cost of going further than 110 l/p/d will be considered in the stage 2 WCS.Water neutrality concept

Water neutrality is a relatively new concept for managing water resources, but one that is receiving increased interest as deficits in future water supply/demand are identified. The definition adopted by the Government and the Environment Agency[51] is:

> ***"For every development, total water use in the wider area after the development must be equal to or less than total water use in the wider area before development".***

It is useful to also refer to the refined definition developed by Ashton:

"For every new significant development, the predicted increase in total water demand in the region due to the development should be offset by reducing demand in the existing community, where practical to do so, and these water savings must be sustained over time" (V Ashton, 2014)[52]

This definition states the need to sustain water saving measures over time, and the wording "predicted increase in total water demand" reflects the need for water neutrality to be designed in at the planning stage.

Both definitions refer to water use in the region or "wider area", and the extent of this area should be appropriate to local authority boundaries, water resource zones, or water abstraction boundaries depending on what is appropriate for that particular location. For instance, if a development site is in an area of water stress relating to a particular abstraction source, offsetting water use in a neighbouring town that is served by a different water source will not help to achieve water neutrality.

In essence water neutrality is about accommodating growth in a region without increasing overall water demand.

Water neutrality can be achieved in a number of ways:

- Reducing leakage from the water supply networks
- Making new developments more water-efficient
- "Offsetting" new demand by retrofitting existing homes with water-efficient devices
- Encouraging existing commercial premises to use less water
- Implementing metering and tariffs to encourage the wise use of water
- Education and awareness-raising amongst individuals

Suggestions for water-efficiency measures are listed in Figure 4.14 below.

4.6.8 Consumer water efficiency measures

Many interventions are designed to reduce water use if operated in a particular way, and so rely on the user being aware and engaged with their water use. The educational aspect is therefore important to ensure that homeowners are aware of their role in improving water efficiency. Figure 4.14 shows water efficiency measures that can be made by consumers.

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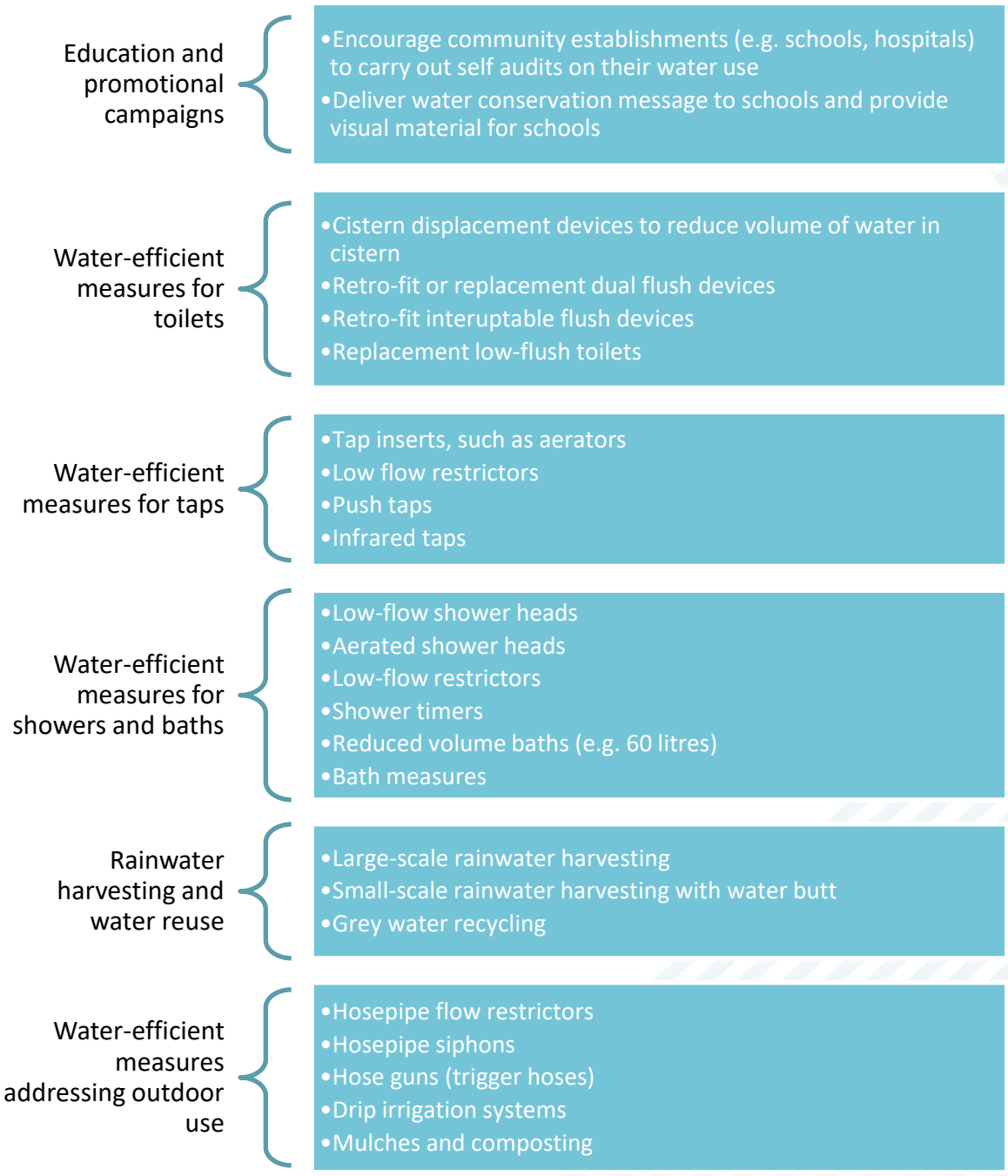
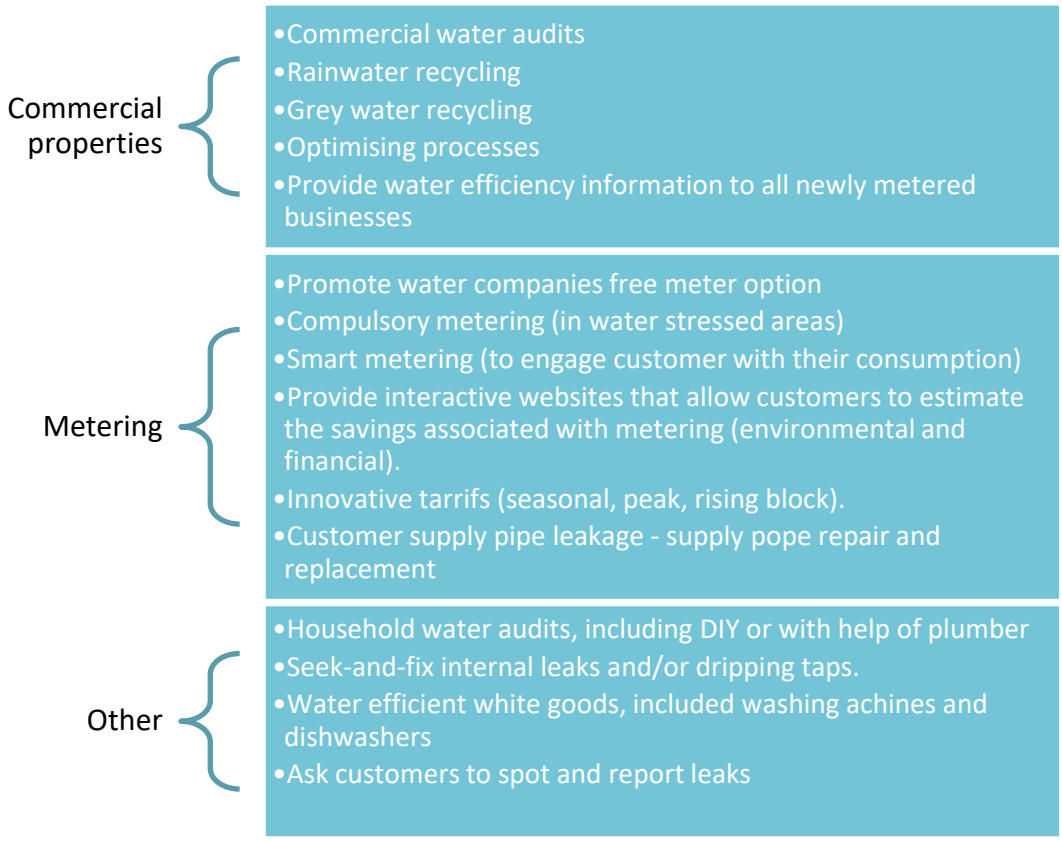
51 Water Neutrality: An improved and expanded water resources management definition (SC080033/SR1), Environment Agency, 2009. Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291675/scho1009bqzr-e-e.pdf on: 24/01/2022

52 Water Resources in the Built Environment, edited by Booth and Charlesworth (2014). Published by Wiley.


Education and promotional campaigns
•Encourage community establishments (e.g. schools, hospitals) to carry out self audits on their water use
•Deliver water conservation message to schools and provide visual material for schools
Water-efficient measures for toilets
•Cistern displacement devices to reduce volume of water in cistern
•Retro-fit or replacement dual flush devices
•Retro-fit interuptable flush devices
•Replacement low-flush toilets
Water-efficient measures for taps
•Tap inserts, such as aerators
•Low flow restrictors
•Push taps
•Infrared taps
Water-efficient measures for showers and baths
•Low-flow shower heads
•Aerated shower heads
•Low-flow restrictors
•Shower timers
•Reduced volume baths (e.g. 60 litres)
•Bath measures
Rainwater harvesting and water reuse
•Large-scale rainwater harvesting
•Small-scale rainwater harvesting with water butt
•Grey water recycling
Water-efficient measures addressing outdoor use
•Hosepipe flow restrictors
•Hosepipe siphons
•Hose guns (trigger hoses)
•Drip irrigation systems
•Mulches and composting



Source: Adapted from Booth and Charleswell 2014

Figure 4.14 Consumer water-efficiency measures

4.6.9 Rainwater and Greywater Recycling

Rainwater harvesting

Rainwater recycling or rainwater harvesting (RwH) is the capture of water falling on buildings, roads or pathways that would normally be drained via a surface water sewer, infiltrate into the ground or evaporate. In the UK this water cannot currently be used as a drinking water supply as there are strict guidelines on potable water, but it can be used in other systems within domestic or commercial premises.

Systems for collection of rainwater can be simple water butts attached to a drainpipe on a house, or it could be a complex underground storage system, with pumps to supply water for use in toilet flushing and washing machines. By utilising rainwater in this way there is a reduced dependence on mains water supply for a large proportion of the water use in a domestic property.

Benefits of RwH

- **RwH reduces the dependence on mains water supply – reducing bills for homeowners and businesses**
- **Less water needs to be abstracted from river, lakes and groundwater**
- **Stormwater is stored in a RwH system reducing the peak runoff leaving a site providing a flood risk benefit (for smaller storms)**
- **By reducing surface water flow, RwH can reduce the first flush effect whereby polluted materials adhering to pavement surfaces during dry periods are removed by the first flush of water from a storm and can cause pollution in receiving watercourses.**

Challenges of RwH

- **Dependency on rainfall can limit availability of harvested rainwater during drought and hot weather events.**
- **Increased capital (construction) costs to build rainwater harvesting infrastructure into new housing (£2,674 for a 3/4bed detached home)**
- **Payback periods are long as the cost of water is low so there is little incentive for homeowners to invest. For further information see: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/353387/021c_Cost_Report_11th_Sept_2014_FINAL.pdf**

Greywater harvesting

Greywater refers to water that has been "used" in the home in appliances such as washing machines, showers and hand basins. Greywater recycling or greywater harvesting (GwH) is the treatment and re-use of this water in other systems such as for toilet flushing. By their nature, GwH systems require more treatment and are more complex than RwH systems, and there are limited examples of their use in the UK.

Greywater re-use refers to systems where wastewater is taken from source and used without further treatment. An example of this would be water from a bath or shower being used on plants in the garden. This sort of system is easy to install and maintain, however as mentioned above the lack of treatment to remove organic matter means the water cannot be stored for extended periods.

Greywater recycling refers to systems where wastewater undergoes some treatment before it is used again. These systems are complex and require a much higher level of maintenance than RwH or greywater re-use systems.

Domestic water demand can be significantly reduced by using GwH, and unlike with a RwH system where the availability of water is dependent on the weather, the source of water is usually constant (for instance if it is from bathing and showering). However, the payback period for a GwH system is usually long, as the initial outlay is large, and the cost of water relatively low. Viability of greywater systems for domestic retrofit applications is therefore currently limited. However, communal systems may offer more opportunities where the cost can be shared between multiple households particularly on larger new build developments, or in new settlements.

4.6.10 Energy and Water use

According to EU statistics (Eurostat 2017), 17% of the UK's domestic energy usage is for water heating. If less water was being used within the home, for instance through more water efficient showers, less water would need to be heated, and overall domestic energy usage would be reduced.

In 2020-2021 the Government is consulted on a Future Homes Standard that will involve changes to Part L (conservation of fuel and power) of the Building Regulations for new dwellings[53]. Unfortunately, this fails to identify the role of water efficiency in the home in also reducing energy usage.

4.6.11 Funding for water neutrality

Water neutrality is unlikely to be achieved by just one type of measure, and likewise it is unlikely to be achieved by just one funding source. Funding mechanisms that may be available could be divided into the following categories:

- Infrastructure-related funding (generally from developer payments)
- Fiscal incentives at a national or local level to influence buying decisions of households and businesses
- Water company activities, either directly funded by the five-year price review or as a consequence of competition and individual company strategies
- Joint funding through energy efficiency schemes (and possibly to integrate with the heat and energy saving strategy).

Currently in the UK, the main funding resource for the delivery of water efficiency measures is the water companies, with some discretionary spending by property owners or landlords. For water neutrality to be achieved, policy shifts may be required in order to increase investment in water efficiency. Possible measures could include:

- Further incentivisation of water companies to reduce leakage and work with customers to reduce demand
- Require water efficient design in new development
- Developer funding to contribute towards encouraging water efficiency measures
- Require water efficient design in refurbishments when a planning application is made
- Tighter standards on water using fittings and appliances.

4.7 Spatial growth options

All of Uttlesford lies within the same water resource zone, water is provided from a number of sources in the WRZ and distributed around the study area. As the total amount of growth is similar in each of the spatial growth options, there is little difference between them from a water resources perspective based on location. The options were presented to Affinity Water who confirmed that each option could be accommodated within their existing plans.

However new settlements can offer opportunities to reduce the demand for water when compared to a strategy distributed growth throughout the study area. Policies can be implemented to require a higher level of water efficiency that is allowed for in building regulations, but greater gains can be made in strategic developments or new settlements where communal infrastructure, and largescale rainwater harvesting, or greywater recycling can be provided more efficiently and more cost effectively.

No specific preference is given to any of the five new settlement options from the perspective of water resources and efficiency.

4.8 Chalk streams

The chalk stream evidence base prepared in parallel with the WCS identified abstraction for public water supply as a significant issue for the chalk stream catchments. Further unmitigated growth could increase water demand – and therefore the volume that needs to be abstracted from chalk aquifers. Investigations are underway by AfW and the EA into

53 The Future Homes Standard: changes to Part L and Part F of the Building Regulations for new dwellings. Accessed online at: https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings on: 25/01/2022.

sustainable abstraction, however water demand from the local plan should be minimised where possible. The chalk stream evidence base recommends aligning with the Catchment Based Approach Chalk Stream Strategy target of 90 l/p/d in chalk stream catchments. As Uttlesford lies entirely within one water resource zone, this target should apply to the whole of Uttlesford.

In addition, water demand from non-household demand could be minimised by required all new build non-residential buildings to achieve "Outstanding" for water under the BREEAM New Construction standard.

4.9 Conclusions

Uttlesford receives its water from Affinity Water (AfW), and the whole of Uttlesford is within its Stort Water Resource Zone (WRZ). The percentage growth rate allowed for in their Water Resource Management Plan (WRMP) for the Stort WRZ is less than the expected rate of growth within Uttlesford during the Local Plan period, however Affinity Water did not express any concerns with this higher level of growth. No constraints on water treatment, or the requirement for new strategic infrastructure were identified by AfW.

The Water Industry National Environment Programme (WINEP) is a set of actions that the EA have requested all 20 water companies operating in England to complete in a particular Asset Management Period (AMP) as part of their environmental commitments. A number of investigations are planned or underway to ensure that abstraction of water from both groundwater and rivers, is not leading to unsustainable reductions in flow, particularly in chalk streams. Development and population growth can increase abstraction, and so UDC have an opportunity to contribute to these actions indirectly by pursuing policies that promote water efficiency in new development.

It is widely recognised that the climate is changing and in response Uttlesford District Council declared a climate emergency in July 2019. Climate change is predicted to increase pressure on water resources, increasing the potential for a supply-demand deficit in the future, and making environmental damage from over abstraction of water resources more likely. Furthermore, the delivery of water and wastewater services and the heating of water in the home require high energy inputs, and therefore contribute directly to emissions of greenhouse gases. Water efficiency therefore reduces energy use and carbon emissions.

It is important therefore that new development does not result in an unsustainable increase in water abstraction. This can be done in a number of ways from reducing the water demand from new houses through to achieving "water neutrality" in a region by offsetting a new developments water demand by improving efficiency in existing buildings.

There is sufficient evidence to recommend the optional 110 litres per person per day design standard allowed under Building Regulations. However, within Uttlesford are two chalk stream catchments, the river Cam and River Stort and their tributaries. Both these rivers are failing to achieve Good Status under the Water Framework Directive, with one of the reasons cited being abstraction for public water supply which causes low flows. It is important therefore that growth during the Local Plan period does not make this situation worse. A tighter water efficiency standard of 90 l/p/d is therefore recommended for all new build residential properties in order to minimise the new demand. It is recommended that all new non-residential properties achieve a score of "Outstanding" in the BREEAM New construction standard for water.

It is also recommended that the council explore policies that would achieve or approach water neutrality, and this will be explored further in the stage 2 WCS.

4.10 Recommendations

The recommendations for water resources are provided in Table 4.6 below.

Table 4.6: Recommendations for water resources

Action	Responsibility	Timescale
Continue to regularly review forecast and actual household growth across the supply region through WRMP Annual Update reports, and where significant change is predicted, engage with Local Planning Authorities.	AfW	Ongoing
Provide yearly profiles of projected housing growth to water companies to inform the WRMP update.	Uttlesford Council	Ongoing
Use planning policy to require a minimum water efficiency of 90 l/p/d for new build housing.	Uttlesford Council	In Uttlesford LP
Use planning policy to require new build non-residential development to achieve "Outstanding" for water in the BREEAM New Construction standard.	Uttlesford Council	In Uttlesford LP
The concept of water neutrality has the potential to provide a benefit in improving resilience to climate change and enabling all waterbodies to be brought up to Good status. Explore further with the water companies and the Environment Agency how the Council's planning and climate change policies can encourage this approach. This approach could have particular application in strategic sites and new settlements	Uttlesford Council, EA, AfW	In LP and Climate Change Action Plan
Larger residential developments (including new settlements), and commercial developments should consider incorporating greywater recycling and/or rainwater harvesting into development at the master planning stage in order to reduce water demand.	Uttlesford Council, AfW	In Uttlesford LP
Water companies should advise Uttlesford Council of any strategic water resource infrastructure developments within the study, where these may require safeguarding of land to prevent other type of development occurring.	AfW, Uttlesford Council	Part of Uttlesford LP process

5 Water Supply Infrastructure

5.1 Introduction

An increase in water demand due to growth can exceed the hydraulic capacity of the existing supply infrastructure. This is likely to manifest itself as low pressure at times of high demand. An assessment is required to identify whether the existing infrastructure is adequate or whether upgrades will be required. The time required to plan, obtain funding and construct major pipeline works can be considerable and therefore water companies and planners need to work closely together to ensure that the infrastructure is able to meet growing demand.

Water supply companies make a distinction between supply infrastructure, the major pipelines, reservoirs and pumps that transfer water around a WRZ, and distribution systems, smaller scale assets which convey water around settlements to customers. This outline study is focused on the supply infrastructure. It is expected that developers should fund water company impact assessments and modelling of the distribution systems to determine requirements for local capacity upgrades to the distribution systems.

In addition to the work undertaken by water companies, there are opportunities for the local authority and other stakeholders to relieve pressure on the existing water supply system by increasing water efficiency in existing properties. This can contribute to reducing water consumption targets and help to deliver wider aims of achieving water neutrality.

A cost-effective solution can be for local authorities to co-ordinate with water supply companies and "piggyback" on planned leakage or metering schemes, to survey and retrofit water efficient fittings into homes[54]. This is particularly feasible within property owned or managed by the local authorities, such as social housing.

5.2 Methodology

At Stage 1 the WCS identifies existing constraints and opportunities in the water supply network. The spatial growth options were shown to AfW who were asked to provide comments on the relative difficulty of accommodating each option.

A site-by-site assessment of the impact of the preferred spatial growth option on the water supply network will be conducted in Stage 2. AfW have provided guidance on the format required for growth information to be provided to them to allow this modelling to be conducted.

5.3 Impact of Spatial Growth Options

The spatial growth options were presented to AfW who confirmed that there were no "showstoppers" and the level of development in each case did not pose any concerns. In order to assess the impact of each option on their water supply network, each option would need to be modelled to determine the resulting drop in pressure in the network. This has not been performed in the Stage 1 WCS due to time constraints.

Development in areas where there is little existing network is likely to require new infrastructure or reinforcement of the network to maintain pressure, particularly at the periphery of the network. AfW has a statutory duty to provide a water supply to development sites, however if significant new infrastructure is required, some constraints may be placed on the phasing of development sites to ensure that infrastructure is in place prior to development being occupied.

54 Water Efficiency Retrofitting: A Best Practice Guide, Waterwise (2009). Accessed online at: http://www.waterwise.org.uk/wp-content/uploads/2018/01/Waterwise-2009_Water-efficiency-Retrofitting_Best-practice.pdf on: 24/01/2022

5.4 Recommendations

Table 5.1 Recommendations for water supply infrastructure

Action	Responsibility	Timescale
Undertake network modelling where appropriate as part of the planning application process to ensure adequate provision of water supply is feasible	AfW Uttlesford Council	As part of the planning process
Uttlesford Council and Developers should engage early with AfW to ensure infrastructure is in place prior to occupation.	Uttlesford Council AfW Developers	Ongoing

6 Wastewater Collection

6.1 Sewerage undertakers

Thames Water (TW) and Anglian Water (AW) are the Sewerage Undertakers (SU) for the study area. The role of the sewerage undertaker includes the collection and treatment of wastewater from domestic and commercial premises, and in some areas, it also includes the drainage of surface water from building curtilages to combined or surface water sewers. It excludes, unless adopted by the SU, systems that do not connect directly to the wastewater network, e.g., Sustainable Drainage Systems (SuDS) or highway drainage.

Increased wastewater flows into collection systems due to growth in populations or per-capita consumption can lead to an overloading of the infrastructure, increasing the risk of sewer flooding and, where present, increasing the frequency of discharges from storm overflows. There has been a recent increase in per capita consumption (PCC) due to the impact of Covid-19, and it is not yet known if PCC will return to pre-pandemic levels or to the planned downward trend. In JBA's analysis, the average 2020 PCC values from AfW's WRMP have been used and no assumptions about long term trends have been used. This may result in an underestimate of water demand (and wastewater generation) in the short term as the Covid-19 effect isn't accounted for but is considered to be a conservative approach over the whole of the plan period.

Headroom at Wastewater Treatment Works (WwTW) can be eroded by growth in population or per-capita consumption, requiring investment in additional treatment capacity. As the volumes of treated effluent rises, even if the effluent quality is maintained, the pollutant load discharged to the receiving watercourse will increase. In such circumstances the Environment Agency as the environmental regulator, may tighten consented effluent consents to achieve a "load standstill", i.e., ensuring that as effluent volume increases, the pollutant discharged does not increase. Again, this would require investment by the water company to improve the quality of the treated effluent. Consents can also be tightened to prevent a deterioration in water quality due to growth, or to achieve environmental objectives.

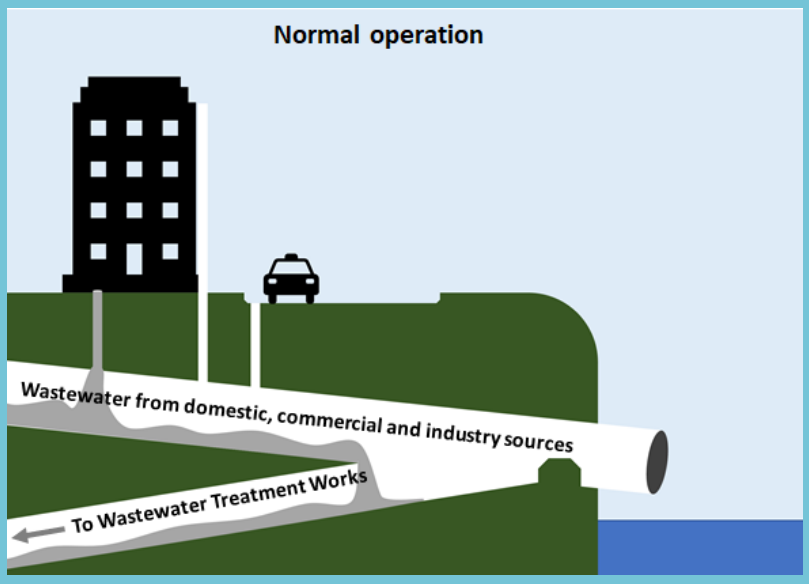
In combined sewerage systems, or foul systems with surface water misconnections, there is potential to create headroom in the system, thus enabling additional growth, by the removal of surface water connections. This can most readily be achieved during the redevelopment of brownfield sites which have combined sewerage systems, where there is potential to discharge surface waters via sustainable drainage systems (SuDS) to groundwater, watercourses or surface water sewers.

TW and AW are supportive of the use of SuDS and SuDS principles to manage surface water run-off. They recommend that the Drainage Hierarchy is used to direct surface water to natural outfall routes such as infiltration to the ground or into watercourses, before utilising sewers, as supported by paragraph 80 of the NPPF. Surface water should also not be permitted to connect to a foul sewer.

Storm Overflows

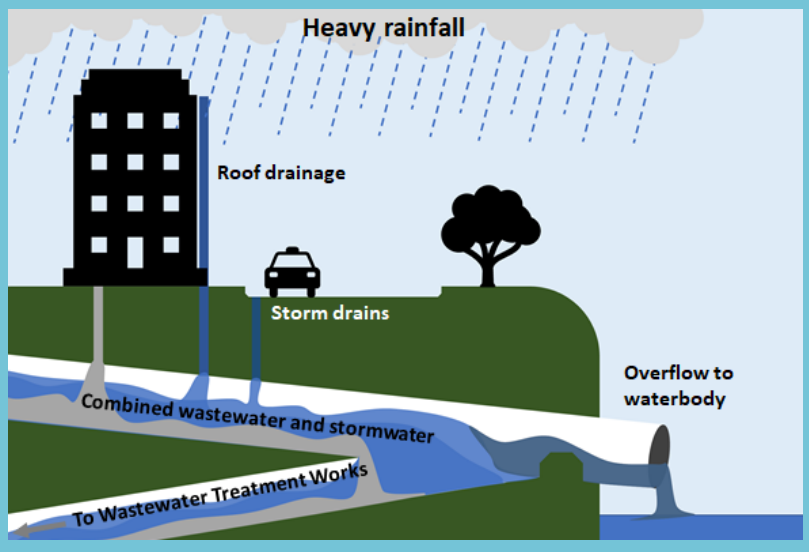
Storm overflows are an essential component in the sewer network – however when they operate frequently, they can cause environmental damage.

They occur on combined sewer systems where the sewer takes both foul flow (sewage from homes and offices) and rainwater runoff. In normal conditions all of this flow passed through the sewer network and is treated at a wastewater treatment works.



In periods of exceptional rainfall, the capacity in a combined sewer may be used up by the additional flow from rooftops and storm drains. Once the capacity is exceeded, wastewater would back up into homes, businesses and on to roads. A storm overflow acts as a relief valve, preventing this from happening.

Storm overflows become problematic then they are operating in moderate or light rainfall – possibly in breach of their permit.



6.2 Methodology

6.2.1 Sewerage System Capacity Assessment

New residential developments and new employment land add pressure to the existing sewerage systems. An assessment is required to identify the available capacity within the existing systems, and the potential to upgrade overloaded systems to accommodate future growth. The scale and cost of upgrading works may vary significantly depending upon the location of the development in relation to the network itself and the receiving WwTW.

It may be the case that an existing sewerage system is already working at its full capacity and further investigations have to be carried out to define which solution is necessary to implement an increase in its capacity. New infrastructure may be required if, for example, a site is not served by an existing system. Such new infrastructure will normally be secured through private third-party agreements between the developer and utility provider.

Sewerage Undertakers must consider the growth in demand for wastewater services when preparing their five-yearly Strategic Business Plans (SBPs) which set out investment for the next Asset Management Plan (AMP) period. Typically, investment is committed to provide new or upgraded sewerage capacity to support allocated growth with a high certainty of being delivered. Additional sewerage capacity to service windfall sites, smaller infill development or to connect a site to the sewerage network across third party land is normally funded via developer contributions, as third-party arrangements between the developer and utility provider.

6.2.2 Storm overflow assessment

The Environment Act now requires water companies to report and monitor storm overflows as well as reduce the harm caused to the rivers they discharge to. There are 13 network storm overflows present in Uttlesford (more overflows exist at WwTWs), the location of these is shown in Figure 6.1 below which also includes storm overflows at WwTWs which are listed in section 7.6.

The Storm Overflow Taskforce[55] has agreed a long-term goal to end the damaging pollution caused by the operation of storm overflows. An important component of this is the monitoring of overflows, and a target has been set to monitor the frequency and duration of operation at all storm overflows by 2023[56]. This is called Event Duration Monitoring (EDM). The EDM dataset (based on the 12,000 storm overflows monitored in 2020) has been used to provide information on storm overflows in Uttlesford. Both Thames Water and Anglian Water have confirmed that work is currently underway to investigate storm overflows with the long-term aim of reducing the number of operations of the CSOs and rectifying issues at those treatment works.

In comparison to some urban areas or large cities, Uttlesford has relatively few storm overflows. The EA have threshold of 60 operations in a year (based on 1 years data, 40 if based on 3 years), above which a storm overflow should be investigated. No network storm overflows in Uttlesford have exceeded this figure as shown in Table 6.1. In this report storm overflows associated with WwTWs have been moved to the next section.

Further unmitigated development within Uttlesford could cause the frequency or duration of operation of storm overflows to increase.

There are opportunities through the planning system to ease pressure on the wastewater network by separating foul and storm flow in existing combined systems, and not allowing new surface water connections. Surface water can also be better managed by retrofitting

55 Made up of Defra, the EA, Ofwat, Consumer Council for Water, Blueprint for Water and Water UK
56 Event Duration Monitoring – lifting the lid on storm overflows, Environment Agency (2021). Accessed online at: https://environmentagency.blog.gov.uk/2021/03/31/event-duration-monitoring-lifting-the-lid-on-storm-overflows/ on: 24/01/2022

SuDS in existing residential areas, and in new development, ensuring SuDS are incorporated into designs at the master planning stage to maximise the potential benefits.

Table 6.1 Network storm overflow frequency of operation and duration

Overflow	Operator	Number of operations in 2020	Duration of operation in 2020 (hours)	Number of operations in 2021	Duration of operation in 2021 (hours)
Birchanger – Duck End	Thames Water	0	0	0	0
Cage End Sewage Pumping Station	Thames Water	11	47	22	131
Canfield End Sewage Pumping Station	Thames Water	1	3	7	23
Castle Street/High Street	Anglian Water	0	0	46	70
Garnets Sewage Pumping Station	Thames Water	5	11	4	30
Great Dunmow STW PS	Anglian Water	EDM to be installed by December 2023			
Gt Easton – Bridgefoot TPS	Anglian Water	Not monitored	Not monitored	9	83
Little Chesterford	Anglian Water	EDM to be installed by December 2023			
Saffron Walden-George Abbey OV	Anglian Water	EDM to be installed by December 2023			
Saffron Walden-Victoria Thx Ov	Anglian Water	3	1	1	1
SO Gasworks Crossroads	Anglian Water	EDM to be installed by December 2023			
Thaxted Park Street	Anglian Water	33	50	31	51
Wicken Bonhunt PS	Anglian Water	EDM to be installed by December 2023			

Anglian Water provided the following comment on storm overflows:

"The DWMP will include Anglian Water's proposed investments to tackle Combined Sewer Overflows (CSO). CSOs are a legacy asset and until replaced they act as a necessary safety valve in old sewerage systems, to protect homes and businesses from flooding during heavy rainfall. One of Anglian Water's four long-term ambitions is to improve the ecological condition of our catchments, and we've written into our constitution the requirement to act to create social and environmental prosperity in every decision we take. We have been addressing CSOs over many years, tackling those that pose an environmental risk first, then working through the rest."

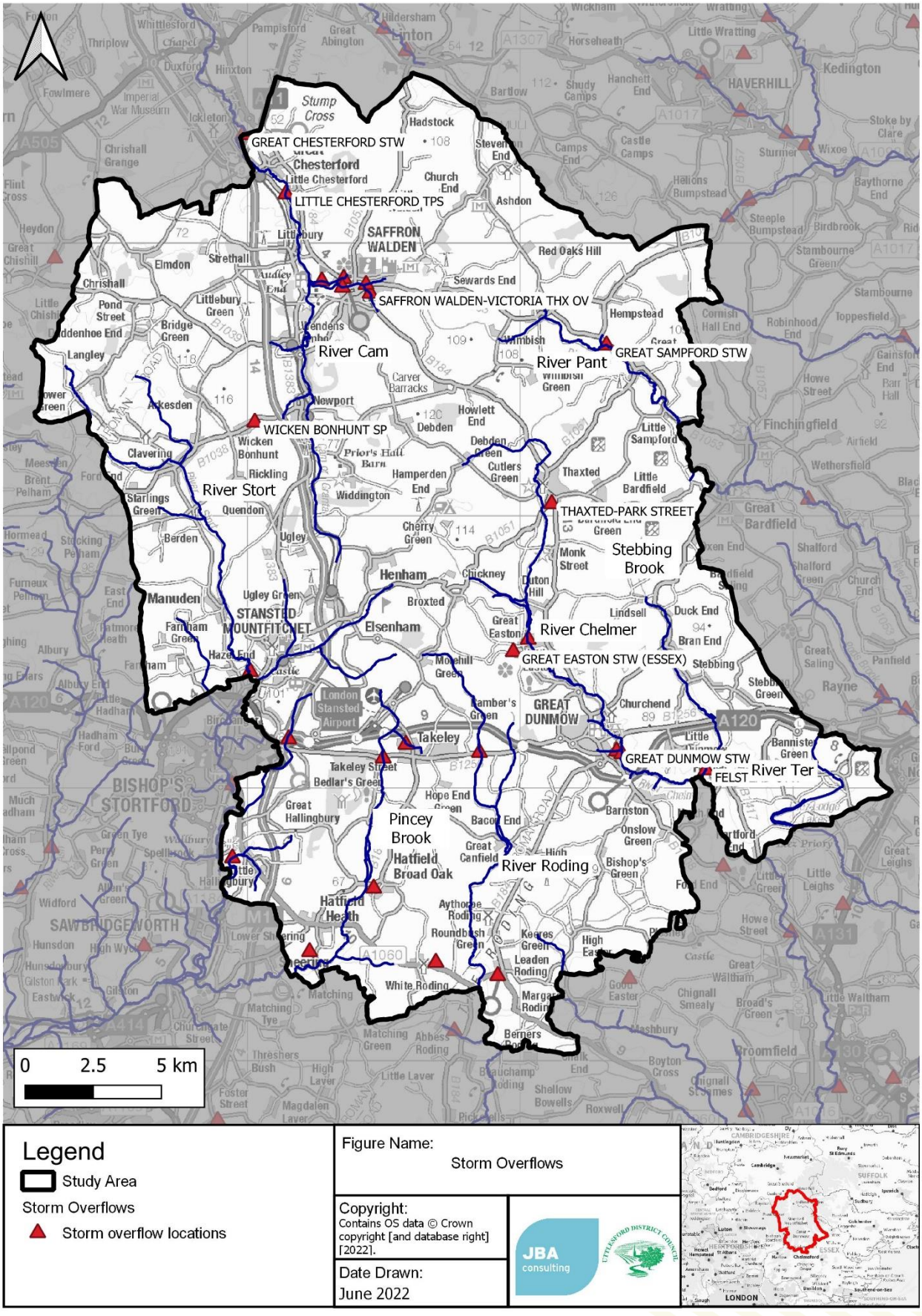


Figure 6.1 Storm Overflow locations

6.3 Spatial growth options

The spatial growth options were presented to both Thames Water and Anglian Water who provided comments on the impact on their networks.

In general, any development where there is none previously will require new sewer infrastructure. Spatial growth options concentrating growth in a new settlement would require the most extensive "new" infrastructure, but multiple developments on the periphery of an existing network may also require extensive reinforcement of the network. Network modelling was not carried out in Stage 1 due to time constraints but should be conducted by the wastewater providers in Stage 2.

No particular network constraints were identified associated with any of the spatial growth options; however, Thames Water made the general comment that network issues were likely around Uttlesford due to the small diameter pipes present. In particular they highlighted limited capacity around Bishops Stortford. The network in this area would be difficult to upgrade without significant disruption to residents. In Option 1b and 1c there is significant growth in this area that could utilise the existing network. This is slightly reduced in all the spatial growth options containing a new settlement, apart from Option 2c where the new settlement (Easton Park) may be served by Bishops Stortford. The Great Easton Park new settlement could be served by either Thames Water or Anglian Water, or a combination of the two. Should this option be taken forward, an early discussion between the water companies, taking into account the relative capacity in each company's network, and the environmental capacity of the receiving watercourse.

Anglian Water commented that growth should not be directed towards parts of the network where the frequency and/or duration of the operation of storm overflows is high until work to improve storm overflow performance is complete.

Further comments on wastewater treatment are contained in Section 7 and Section 10.

6.4 Conclusions

Development in areas where there is limited wastewater network capacity will increase pressure on the network, increasing the risk of a detrimental impact on existing customers, and increasing the likelihood of storm overflow operation. Early engagement with developers, TW and AW is required, and further modelling of the network may be required in the Stage 2 WCS and at the planning application stage. Furthermore, in the TW and AW networks, there are areas where the current network is a combined sewer system, and further separation of foul and surface water may be required, as well as suitably designed SuDS.

Early engagement between developers, Uttlesford District Council and TW and AW is recommended to allow time for the strategic infrastructure required to serve these developments to be planned.

6.5 Recommendations

Table 6.2 Recommendations from wastewater network assessment

Action	Responsibility	Timescale
Early engagement between Uttlesford District Council and TW/AW is required to ensure that where strategic infrastructure is required, it can be planned in by TW/AW, and will not lead to any increase in discharges from sewer overflows.	Uttlesford District Council and TW/AW	Ongoing
Take into account wastewater infrastructure constraints in phasing development in partnership with the sewerage undertaker	Uttlesford District Council and TW/AW	Ongoing

Developers will be expected to work with the sewerage undertaker closely and early in the planning promotion process to develop an Outline Drainage Strategy for sites. The Outline Drainage strategy should set out the following: What – What is required to serve the site Where – Where are the assets / upgrades to be located When – When are the assets to be delivered (phasing) Which – Which delivery route is the developer going to use s104 s98 s106 etc. The Outline Drainage Strategy should be submitted as part of the planning application submission, and where required, used as a basis for a drainage planning condition to be set.	Uttlesford District Council and Developers	Ongoing
Developers will be expected to demonstrate to the Lead Local Flood Authority (LLFA) that surface water from a site will be disposed using a sustainable drainage system (SuDS) with connection to surface water sewers seen as the last option. New connections for surface water to foul sewers will be resisted by the LLFA.	Developers LLFA	Ongoing

7 Wastewater Treatment

7.1 Wastewater Treatment Works in Uttlesford

AW and TW provide wastewater services for development in Uttlesford. Thames Water refer to their wastewater processing plants as Wastewater Treatment Works (WwTW) whereas Anglian Water refer to theirs as Water Recycling Centres (WRCs). They may also be referred to as Sewage Treatment Works (STW) in some documents and date sources. For the purposes of this report, both Thames Water and Anglian Water's wastewater processing plants will be referred to as WwTWs.

Three WwTWs are located outside of the Uttlesford boundary which serve growth within the study area. These are Great Chesterford, Linton and Bishops Stortford WwTWs. The location of the WwTWs in and around Uttlesford are shown in Figure 7.1 below.

Sites already allocated in the adopted local plan, or already in the planning system (commitments) as well as an allowance for windfall, were assigned to a WwTW using the sewerage drainage area boundaries provided by each SU to set a baseline for WwTW capacity. Actual connection of a development site to a particular WwTW may be different and will depend on the capacity of the receiving works, and the local sewer network.

Some of the committed and completed sites did not fall within the catchment boundary of any WwTW. Many of these are small and widely distributed throughout the study area with a total of 93 houses resulting from these sites. Very small developments in rural areas may be suitable for on-site treatment and discharge, however the Environment Agency will not usually permit this where there is a public sewerage system within a distance calculated as 30m per dwelling. There is therefore a localised risk to water quality if all of these small developments were to be served by septic tanks, especially where there are clusters of small-scale new development. This is also the case for the potential allocations contained within the spatial growth options particularly where growth is assigned to smaller villages.

Opportunities should be sought to provide a public wastewater treatment solution where development could be clustered - particularly in the chalk stream areas in the north.

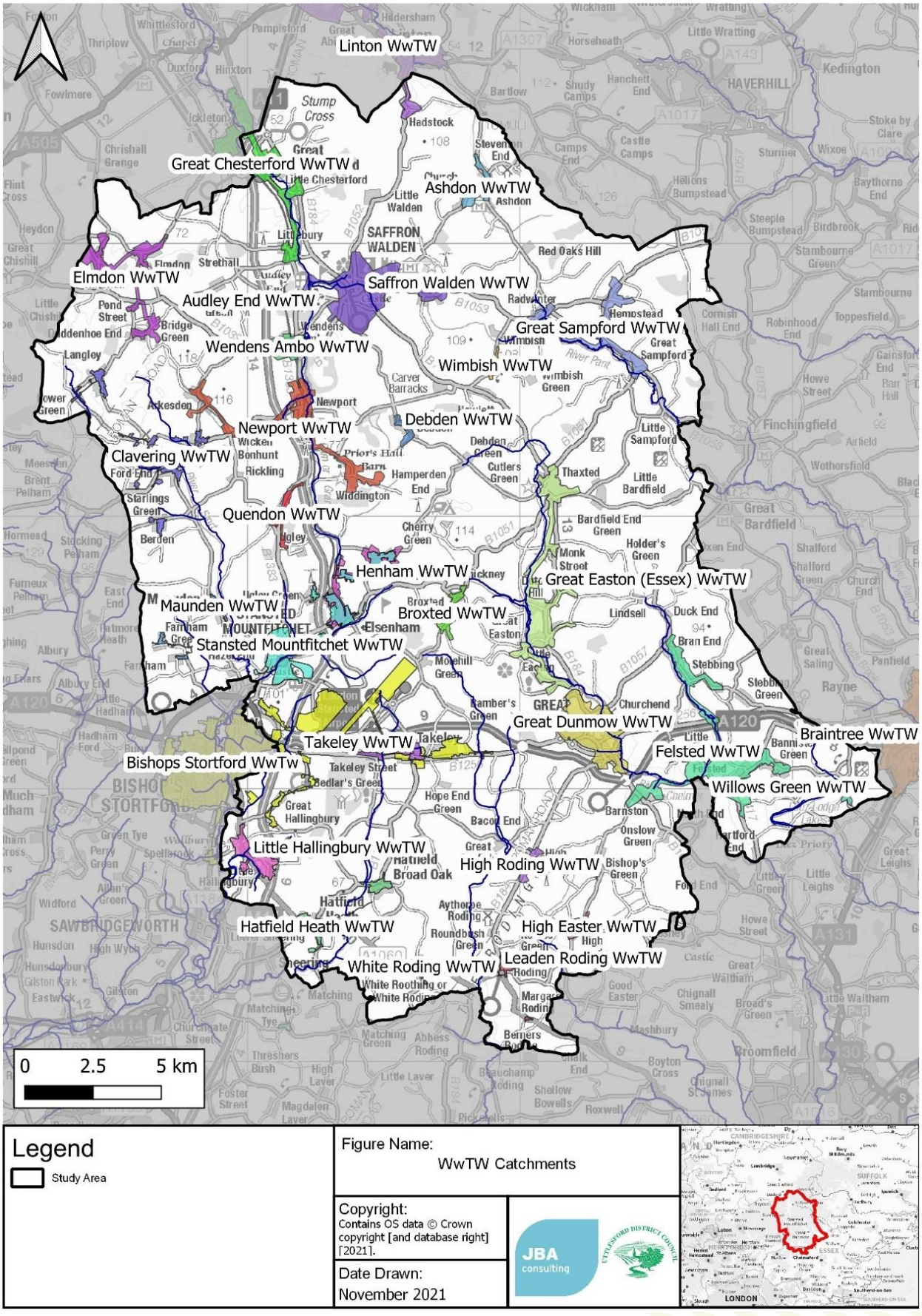


Figure 7.1 WwTW catchments serving Uttlesford

7.2 Wastewater Treatment Works Flow Permit Assessment

7.2.1 Introduction

The Environment Agency is responsible for regulating sewage discharge releases via a system of Environmental Permits (EPs). Monitoring for compliance with these permits is the responsibility of both the EA and the plant operators. Figure 7.2 summarises the different types of wastewater releases that might take place, although precise details vary from works to works depending on the design.

During dry weather, the final effluent from the WwTW should be the only discharge (1). With rainfall, the storm tanks fill and eventually start discharging to the watercourse (2) and Combined Sewer Overflows (CSOs) upstream of the storm tanks start to operate (3). The discharge of storm sewage from treatment works is allowed only under conditions of heavy rain or snow melt, and therefore the flow capacity of treatment systems is required to be sufficient to treat all flows arising in dry weather and the increased flow from smaller rainfall events. After rainfall, storm tanks should be emptied back to full treatment, freeing their capacity for the next rainfall event.

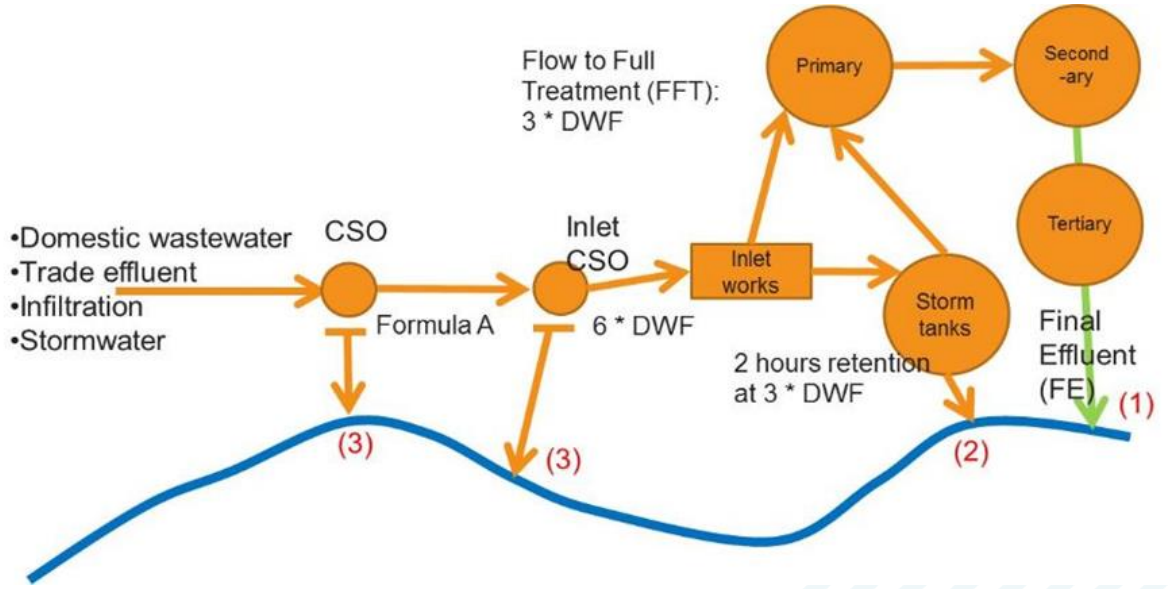


Figure 7.2 Overview of typical combined sewerage system and WwTW discharges

Environmental permits are used alongside water quality limits as a means of controlling the pollutant load discharged from a water recycling centre to a receiving watercourse. Sewage flow rates must be monitored for all WwTWs where the permitted discharge rate is greater than 50 m^3/day in dry weather.

Permitted discharges are based on a statistic known as the Dry Weather Flow (DWF). As well as being used in the setting and enforcement of effluent discharge permits, the DWF is used for WwTW design, as a means of estimating the 'base flow' in sewerage modelling and for determining the flow at which discharges to storm tanks will be permitted by the permit (Flow to Full Treatment, FFT).

WwTW Environmental Permits also consent for maximum concentrations of pollutants, in most cases Suspended Solids (SS), Biochemical Oxygen Demand (BOD) and Ammonia (NH4). Some works (usually the larger works) also have permits for Phosphorous (P). These are determined by the Environment Agency with the objective of ensuring that the receiving watercourse is not prevented from meeting its environmental objectives, with specific regard to the Chemical Status element of the Water Framework Directive (WFD) classification.

Increased domestic population and/or employment activity can lead to increased wastewater flows arriving at a WwTW. Where there is insufficient headroom at the works to treat these flows, this could lead to failures in flow consents.

7.3 Methodology

An assessment of WwTW capacity was carried out by JBA using measured flow data supplied by the water companies. The process was as follows:

- AW and TW provided their calculated 80th percentile exceedance flow statistic for each WwTW.
- Sites already in the planning system, windfall and neighbouring authority growth was assigned to a WwTW using the sewerage drainage area boundaries.
- For each site, the future DWF was calculated using the occupancy rates and per-capita consumption values obtained from the Water Resource Management Plans (Table 7.1), and the assumption that 95% of water used is returned to sewer. Permitted headroom was used as a substitute for actual designed hydraulic capacity for each WwTW being assessed.
- For employment sites, wastewater was demand was estimated based on the predicted number of new employees. Floor space, employment use types, and employment densities were used to estimate the number of employees.

Table 7.1 Per capita consumption values used in water demand calculations

Water Company	Water Resource Zone	Occupancy rate (persons per dwelling)	Per capita residential consumption (m3/person/day)	Per capita employment consumption (m^3/person/day)
Affinity Water	Stort	2.6	0.128	0.1

7.4 Results

A map showing estimated capacity at each WwTW is shown in Figure 7.3 and in Table 7.2 below. It should be noted that this map represents the remaining capacity (number of houses) once all committed sites are built and does not take into account planned increases in treatment capacity.

The following definition was used by JBA to score each WwTW:

Capacity for growth during local plan period	Limited capacity during local plan period	Issues identified – WwTW capacity could be a constraint to growth

Limited capacity for growth exists at WwTWs in Uttlesford once development already planned is taken into account. AW and TW currently have upgrades planned at many WwTWs already, it is important that both the current commitments in the planning system, neighbouring authority growth, and development sites allocated in the Uttlesford LP are taking into consideration when upgrades are planned.

Braintree was not originally included in the study as it was thought no growth from Uttlesford would be served by it. However, it may serve one of the spatial growth options and should be assessed in the Stage 2 study.

Where a WwTW is likely to exceed its permit, the permit would be reviewed by the EA and if a higher flow consent was agreed, a tighter permit limit for substance concentrations is very likely to be required. In some cases this may not be possible if that means concentrations tighter than the Technically Accepted Limit (TAL) which is 0.25 mg/l for P for example. This will be assessed in the Stage 2 study.

Table 7.2 Summary of WwTW flow assessment

WwTW	Proposed housing growth over Local Plan period – before allocations	Proposed employment growth over Local Plan period – before allocations (m^2)	Approximate remaining headroom (no. dwellings)	Does DWF flow exceed permitted flow over local plan period before allocations? (JBA assessment)
Ashdon	0	0	1,285	No
Audley End	0	0	Unknown	N/A- No flow meter at site - capacity could not be assessed. Site is unlikely to have significant capacity
Bishops Stortford	4,626	64,220	13,449	No
Braintree*	Unknown	Unknown	Unknown	Not assessed in this study
Broxted WwTW	10	0	Unknown	N/A- No flow meter at site - capacity could not be assessed. Site is unlikely to have significant capacity
Clavering WwTW	9	0	0	Yes
Debden WwTW	0	0	247	No
Elmdon WwTW	0	0	434	No
Felstead WwTW	156	0	0	Yes
Great Chesterford WwTW	1,566	189,985	0	Yes
Great Dunmow WwTW	2,310	706	0	Yes
Great Easton WwTW	101	0	68	No

WwTW	Proposed housing growth over Local Plan period – before allocations	Proposed employment growth over Local Plan period – before allocations (m^2)	Approximate remaining headroom (no. dwellings)	Does DWF flow exceed permitted flow over local plan period before allocations? (JBA assessment)
Great Sampford WwTW	5	0	0	Yes
Hatfield Heath WwTW	20	0	353	No
High Easter WwTW	0	0	172	No
High Roding WwTW	5	0	17	No
Leaden Roding WwTW	0	0	296	No
Linton WwTW	126	32,490	845	No
Little Hallingbury WwTW	0	0	924	No
Manuden WwTW	0	0	581	No
Newport WwTW	133	0	0	Yes
Quendon WwTW	28	0	135	No
Saffron Walden WwTW	587	6,884	3,390	No
Stansted Mountfitchet WwTW	357	1,264	2,140	No
Takeley WwTW	93	6,556	1,089	No
Wendens Ambo WwTW	23	0	Unknown	N/A- No flow meter at site - capacity could not be assessed. Site is unlikely to have significant capacity

WwTW	Proposed housing growth over Local Plan period – before allocations	Proposed employment growth over Local Plan period – before allocations (m^2)	Approximate remaining headroom (no. dwellings)	Does DWF flow exceed permitted flow over local plan period before allocations? (JBA assessment)
White Roding WwTW	17	0	425	No
Willows Green	0	0	Unknown	N/A- No flow meter at site - capacity could not be assessed. Site is unlikely to have significant capacity
Wimbish	0	0	Unknown	N/A- No flow meter at site - capacity could not be assessed. Site is unlikely to have significant capacity

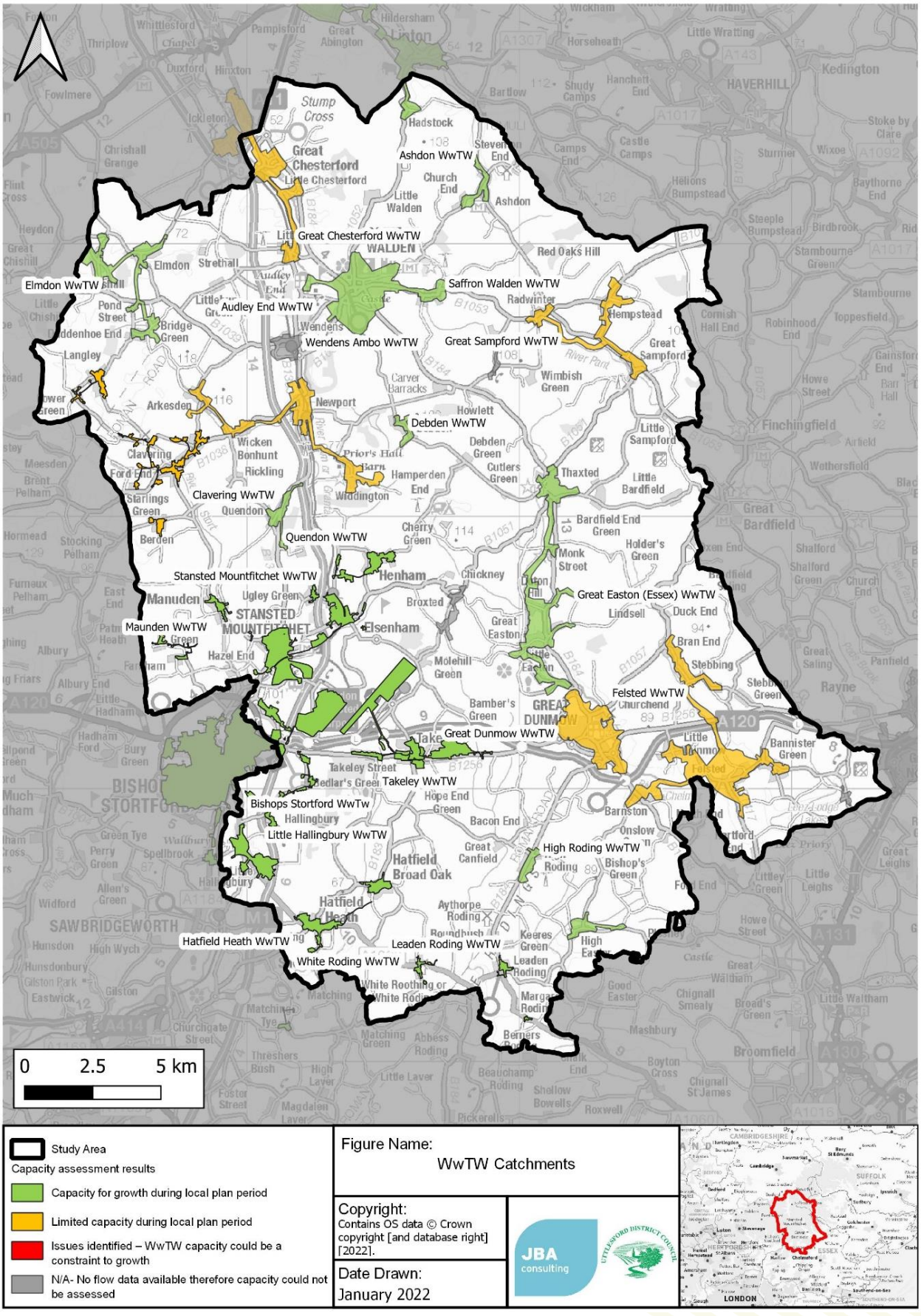


Figure 7.3 WwTW flow capacity RAG results

7.5 Chalk Streams

The Environment Agency's 'Reason for Not Achieving Good' database indicates that one of the reasons for many of the watercourses in the district are not meeting Good WFD status can be related to wastewater discharge. Because their water sources are so pure any agricultural or urban pollution can severely disrupt the ecology of chalk streams. The impact of wastewater discharges will be modelled both as a sensitivity test in Stage 1 and in detail in Stage 2.

7.6 Storm tank overflows

Table 7.3 presents performance of storm tank overflows at WwTWs in Uttlesford. Three of these were operating above the threshold for investigations in 2020 (which are underway), all of these are operated by Thames Water. Hatfield Heath and Takeley are particularly poorly performing operating for over 1,000 hours in 2020 and have deteriorated in 2021.

Four of the storm overflows discharge into chalk stream catchments. Three appear to be operating at a fairly low level (1 to 8 hours total duration in 2020). However, Stansted Mountfitchet WwTW which discharges to the, River Stort operated 39 times in 2020 for a total duration of 305 hours and 383 hours (approximately 4% of the year) in 2021. This level of operation is below the current threshold for investigation (60 operations in one year), but due to the sensitivity of the habitat it discharges to, this should be raised with Thames Water.

Where a storm tank overflow is operating in periods of moderate or light rainfall, or even in dry conditions it indicates either an infiltration problem within the network, or that the WwTW or its storm tanks are undersized for the population served. Further development within a catchment that has a poorly performing storm tank overflow is likely to exacerbate the issue.

The local plan can contribute to this by encouraging the use of SuDS to divert storm water away from the sewer network, reducing the volume that reaches the WwTW.

Table 7.3 WwTW storm overflow frequency of operation and duration

WwTW	Operator	Number of operations in 2020	Duration of operation in 2020 (hours)	Number of operations in 2021	Duration of operation in 2021 (hours)
Felsted WwTW	Anglian Water	Not monitored	Not monitored	43	548
Great Chesterford WwTW	Anglian Water	6	3	2	3
Great Dunmow WwTW	Anglian Water	Not monitored	Not monitored	34	214
Great Easton WwTW	Anglian Water	Not monitored	Not monitored	31	465
Great Sampford WwTW	Anglian Water	Not monitored	Not monitored	2	8
Hatfield Heath WwTW	Thames Water	113	2096	131	2603
Leaden Roding	Thames Water	61	482	0	0

WwTW					
Little Chesterford WwTW	Anglian Water	EDM to be installed by December 2023			
Little Hallingbury WwTW	Thames Water	59	876	59	970
Saffron Walden WwTW	Anglian Water	5	8	7	7
Saffron Walden WwTW (Inlet SO)	Anglian Water	Not monitored	Not monitored	13	19.25
Stansted Mountfitchet WwTW	Thames Water	39	305	30	383
Takeley WwTW	Thames Water	74	1062	90	1281
White Roding WwTW	Thames Water	Commissioned in 2020 - full year data expected			

7.7 Spatial growth options

The spatial growth options were presented to Thames Water and Anglian Water who were asked to comment on the impact on their WwTWs.

TW have expressed concern about increased growth served by Bishops Stortford and Stansted Mountfitchet WwTWs. Both these works have recently been given a new chemical permit (Nickel) and further growth in this area may make it harder to meet this permit. This would affect both rural centre growth in Options 1b and 1c, and the new settlement at Ugley in Option 2a and Easton Park in Option 2c. A growth scheme is already underway at Stansted Mountfitchet to accommodate planned growth in this area. The scheme is currently at the design phase and will be delivered by 2023. TW should ensure that there is sufficient headroom incorporated into the design to accommodate whichever spatial growth option is chosen, or that there is sufficient scope to provide this capacity at a later date if required.

Hatfield Heath is described as "poorly performing", with the storm overflow at the WwTWs a particular concern due to the current high frequency of spills. The new Settlement in Hatfield Broad Oak in Option 2d would result in a significant upgrade at this WwTW or a new treatment works to serve this growth. Should additional treatment capacity be provided, additional storm storage must also be provided to ensure that growth does not exacerbate the storm overflow issue.

Capacity constraints were identified at Takeley, and it is unlikely that growth in Option 2c could be served by this works without significant upgrades.

In general TW expressed the view that a new WwTW would be the least favourable option for TW.

Anglian Water provided a detailed assessment of each spatial growth option which is contained in 10.3.

For Option 1b and 1c Saffron Waldon WwTW has the capacity to serve the expected growth without requiring expansion. Great Dunmow WwTW is currently being upgraded to ensure

future compliance. Growth in this area should planned for the later stages of the local plan to enable investment by Anglian Water in the Great Dunmow WwTW from 2025 onwards.

AW suggest that Great Chesterford has the largest available headroom, and the growth proposed in Option 1b and 1c could be accommodated without expansion, with Option 2b requiring expansion much later in the plan period. However once existing commitments are taken into account, this headroom may be used up much earlier. This should be explored further with AW in Stage 2.

They commented that they have a preference for Option 1c over 1b as it utilises existing wastewater treatment capacity more effectively, has lower embedded operational carbon and enables investment in WwTWs that will need upgrading to be planned and funded in alignment with Anglian Water's regulated investment plans.

7.8 Conclusions

Great Chesterford, Great Dunmow, Felsted, Clavering, Great Sampford and Newport WwTWs may exceed their current maximum permitted DWF over the Local Plan period as a result of potential growth in Uttlesford, with Great Easton and High Roding WwTWs also predicted to be very close to capacity. Many of these WwTW have currently planned upgrades which may alleviate some capacity issues. Early engagement between the Council and AW/TW is required to ensure that opportunities to accommodate this growth within existing upgrade schemes can be realised.

For smaller treatment works that may require upgrading to increase capacity, TW raised a concern that may not be room around the works to expand. This should be considered in Stage 2.

There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows contributing to a worsening of water quality in the area. Action should be taken by the water companies to address these overflows prior to an increase in wastewater demand being generated by new development. TW and AW have confirmed the importance of the investigations into storm overflow performance.

7.9 Recommendations

Table 7.4 Recommendations for wastewater treatment

Action	Responsibility	Timescale
Early engagement with AW and TW is required to ensure that provision of WwTW capacity is aligned with delivery of development.	Uttlesford District Council	Ongoing
Provide Annual Monitoring Reports to AW and TW detailing projected housing growth.	AW and TW	Ongoing
AW and TW to assess growth demands as part of their wastewater asset planning activities and feedback to the Council if concerns arise.	Uttlesford District Council	Ongoing

8 Water Quality

8.1 Introduction

An increase in the discharge of effluent from Wastewater Treatment Works (WwTW) as a result of development and growth in the area in which they serve can lead to a negative impact on the quality of the receiving watercourse. Under the Water Framework Directive (WFD), a watercourse is not allowed to deteriorate from its current WFD classification (either as an overall watercourse or for individual elements assessed).

It is Environment Agency (EA) policy to model the impact of increasing effluent volumes on the receiving watercourses. Where the scale of development is such that a deterioration is predicted, a variation to the Environmental Permit (EP) may be required for the WwTW to improve the quality of the final effluent, so that the increased pollution load will not result in a deterioration in the water quality of the watercourse. This is known as "no deterioration" or "load standstill". The need to meet river quality targets is also taken into consideration when setting or varying a permit.

The Environment Agency operational instructions on water quality planning and no-deterioration are currently being reviewed. Previous operational instructions[57] (now withdrawn) set out a hierarchy for how the no-deterioration requirements of the WFD should be implemented on inland waters. The potential impact of development should be assessed in relation to the following objectives:

- **Could the development cause a greater than 10% deterioration in water quality?** This objective is to ensure that all the environmental capacity is not taken up by one stage of development and there is sufficient capacity for future growth.
- **Could the development cause a deterioration in WFD class of any element assessed?** This is a requirement of the Water Framework Directive to prevent a deterioration in class of individual contaminants. The "Weser Ruling"58 by the European Court of Justice in 2015 specified that individual projects should not be permitted where they may cause a deterioration of the status of a water body. If a water body is already at the lowest status ("bad"), any impairment of a quality element was considered to be a deterioration. Emerging practice is that a 3% limit of deterioration is applied.
- **Could the development alone prevent the receiving watercourse from reaching Good Ecological Status (GES) or Potential?** Is GES possible with current technology or is GES technically possible after development with any potential WwTW upgrades.

The overall WFD classification of a water body is based on a wide range of ecological and chemical classifications. This assessment focuses on three physico-chemical quality elements; Biochemical Oxygen Demand (BOD), Ammonia, and Phosphate.

8.2 Methodology

8.2.1 General approach

In the Stage 1 WCS, while the spatial growth options are still being developed, it was proposed to carry out a sensitivity analysis of the waterbodies in Uttlesford to changes in the volume of treated effluent rather than a detailed modelling study which will form part of Stage 2. This section presents the current WFD status of waterbodies in Uttlesford (Cycle 2 2016), any actions relating to water quality that are included in the WINEP, and a sensitivity analysis.

57 Water Quality Planning: no deterioration and the Water Framework Directive, Environment Agency (2012). Accessed online at: http://www.fwr.org/WQreg/Appendices/No_deterioration_and_the_WFD_50_12.pdf on: 05/07/2021

58 PRESS RELEASE No 74/15, European Court of Justice (2015). Accessed online at: https://curia.europa.eu/jcms/upload/docs/application/pdf/2015-07/cp150074en.pdf on: 05/07/2021

8.2.2 Water quality sensitivity assessment

SIMCAT is used by the Environment Agency to model water bodies and identify where permit changes are needed to prevent deterioration or improve water quality as well as supporting decision making to guide development to locations where environmental deterioration will be reduced. SIMCAT is a 1D stochastic, steady state, deterministic model which represents inputs from point-score effluent discharges and the behaviour of solutes in the river.

The software can simulate inputs of discharge and water quality data and statistically distribute them from multiple effluent sources along a river reach. It uses the Monte Carlo method for distribution that randomly models up to 2,500 boundary conditions. The simulation calculates the resultant water quality as the calculations cascade further downstream.

Once the distribution results have been produced, an assessment can be undertaken on the predicted mean and ninetieth percentile concentrations.

The study area is covered by three SIMCAT models:

- Thames model
- East Anglia model
- Wash model

Within SIMCAT, the determinands modelled were Biochemical Oxygen Demand (BOD), Ammonia (NH_4) and Phosphorus (P).

The following methodology was used:

- Run SIMCAT with current flow data and extract water quality outputs for ammonia, biochemical oxygen demand (BOD) and phosphate.
- Increase effluent flows at WwTWs by 20% to account for potential future development.
- Re-run SIMCAT with higher effluent flows and extract relevant river water quality data
- Compare the two model runs for all three water quality indicators and categorise the percentage change

Where water quality downstream of a WwTW in any given determinand deteriorates by 10% or more in response to a 20% increase in effluent flow, the sewer catchment can be said to be "more sensitive" to changes in effluent flow, and therefore growth. It should be noted that this assessment takes the existing SIMCAT model based on 2010-12 data and increases flow by a consistent figure across the whole model. In some cases, a WwTW may be able to accommodate a higher flow, in other cases, a 20% increase may not be likely or feasible. This assessment therefore just highlights the relative risk of deterioration.

This analysis also does not take into account planned changes in permits at WwTWs that would have the effect of improving water quality.

8.3 Results

8.3.1 Water Framework Directive Overview

The Water Framework Directive (WFD) aims to ensure "no deterioration" in the environmental status of rivers and sets objectives to improve rivers to meet "good" status. LPAs must have regard to the WFD and associated statutory objectives as implemented in the EA's River Basin Management Plans (RBMPs).

Figure 8.1 shows the overall WFD classification (2019) for waterbodies in Uttlesford. This is broken down in Table 8.1 into the determinants usually assessed in WCSs for each of the waterbodies that are predicted to receive additional effluent from growth during the plan period. Several of the WwTWs discharge to small watercourses which are not within the WFD classifications.

Within Uttlesford only one river (Wendon Brook - a tributary of the Cam) has an overall status of "good", the majority have moderate status, four have "poor" status and one (Stansted Brook) has a classification of "bad" - which is the lowest status possible.

The overall WFD status is made of Ecological and Chemical status, which are further broken down into sub-elements, the measurement of which is prioritised for each waterbody based on its characteristics and risk, hence not all elements are reported for each river. The WFD classification for invertebrates shows a wide variation across the study area with some waterbodies classed as "high" (the highest status possible) and one classified as Bad (Stansted Brook). Invertebrate status is an indicator of the overall health of the aquatic ecology.

Maps showing the WFD Ecological Status, Fish Status and Invertebrates status of the waterbodies in Uttlesford are also shown below in Figure 8.1 to Figure 8.4.

8.3.2 Chalk streams

Two Rivers within Uttlesford (Stort and Cam) are designated as chalk streams. A third (River Pant) although part of the catchment is underlain by chalk, there are also significant superficial deposits, and much of the catchment is underlain by London Clay. It does not therefore have the characteristics of a chalk stream. The Cam is considered to have "Poor" status under the Water Framework Directive, and the Stort is considered to be moderate. Both of the rivers cited pollution from wastewater treatment works (WwTW) as a reason for not achieving good status. Pollution from agricultural runoff is also a significant factor. In the River Cam, surface water abstraction (agriculture) and groundwater abstraction (both agriculture and water industry) are cited as reasons for not achieving good status, low river flow can exacerbate water quality issues as a reduction in reduction in river flow can increase the concentration of pollutants as less dilution is available.

A WCS can influence discharges from WwTWs, and abstraction by the water industry, and diffuse pollution from new development, but it has limited influence over existing industry and agriculture as these are not typically covered by local plan policy. However, given the rural nature of much of Uttlesford, the Stage 2 WCS will consider how the Local Plan, together with the emerging new regime for agricultural subsidies and the requirement of the Environment Act 2021 to prepare Local Nature Recovery Strategies, might promote an integrated approach to land use, spatial planning, and nature recovery planning.

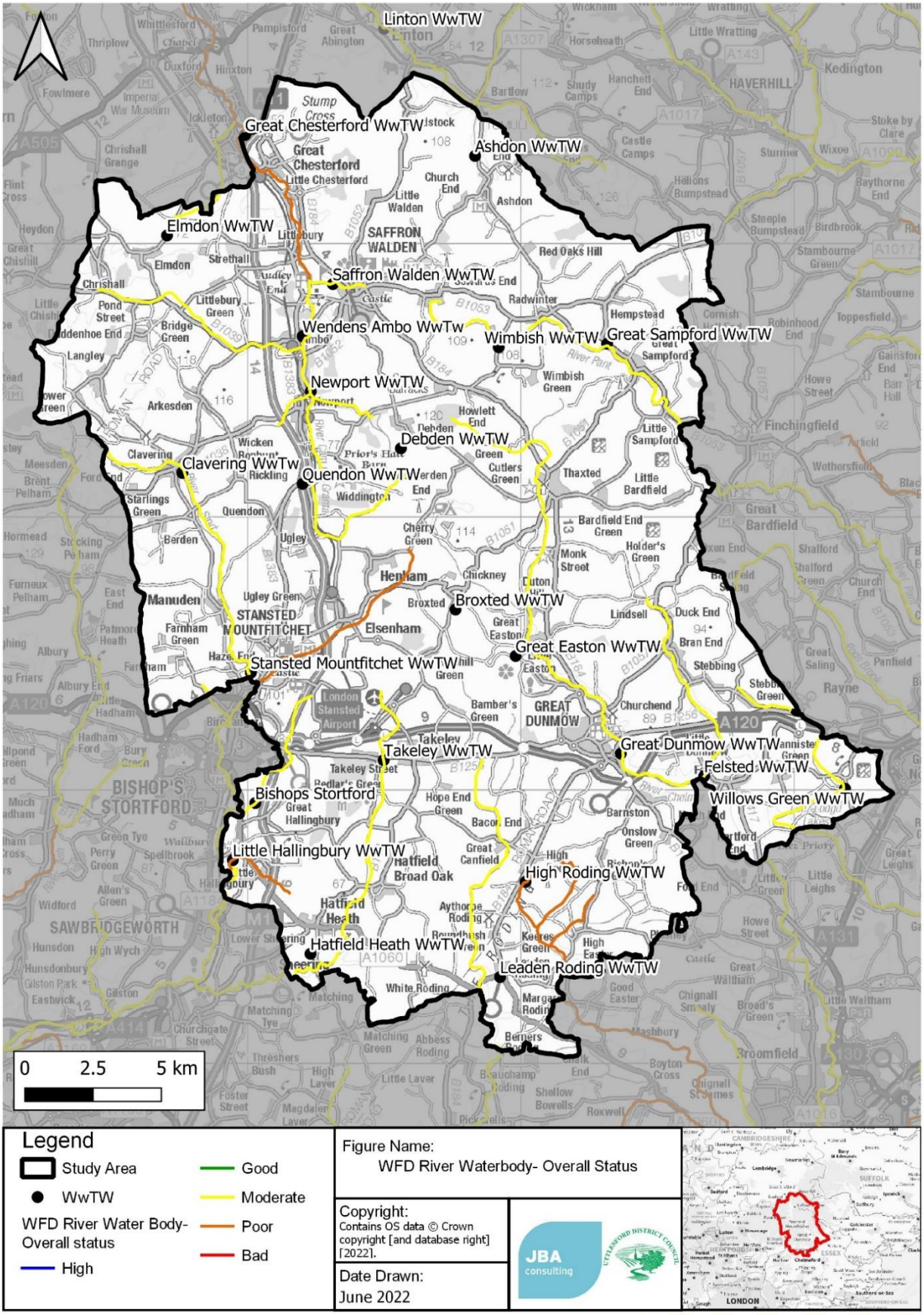


Figure 8.1 WFD Cycle 2 Classification (2019) status of waterbodies in Uttlesford

Table 8.1: 2019 WFD classifications for waterbodies acting as discharge point for WwTW within study area

WwTW	Receiving Waterbody	Overall Status	BOD	Ammonia	Phosphate
Ashdon	Granta	Moderate	N/A	High	Poor
Audley End	Cam (Newport to Audley End)	Moderate	N/A	High	Bad
Bishops Stortford	Great Hallingbury Brook	Moderate	N/A	High	Poor
Broxted	Chelmer (Gt. Easton - R. Can)	Moderate	High	High	Poor
Clavering	Stort (at Clavering)	Moderate	N/A	High	Moderate
Debden	Debden Water	Moderate	N/A	N/A	N/A
Elmdon	Tributary of Cam	Moderate	N/A	High	Moderate
Felsted	Stebbing Brook	Moderate	N/A	High	High
Great Chesterford	Cam (Audley End to Stapleford)	Poor	N/A	High	Poor
Great Dunmow	Chelmer (Gt. Easton - R. Can)	Moderate	High	High	Poor
Great Easton (Essex)	Chelmer (Gt. Easton - R. Can)	Moderate	High	High	Poor
Great Sampford	Pant	Moderate	N/A	High	Moderate
Hatfield Heath	Pincey Brook	Moderate	N/A	High	Poor
High Easter	Can	Poor	N/A	High	Moderate

WwTW	Receiving Waterbody	Overall Status	BOD	Ammonia	Phosphate
High Roding	Can	Poor	N/A	High	Moderate
Leaden Roding	Upper Roding (to Cripsey Brook)	Moderate	N/A	High	Poor
Linton	Granta	Moderate	N/A	High	Poor
Little Hallingbury	Little Hallingbury Brook	Poor	N/A	High	Moderate
Maunden	Stort (at Clavering)	Moderate	N/A	High	Moderate
Newport	Cam (Newport to Audley End)	Moderate	N/A	High	Bad
Quendon	Cam (US Newport)	Moderate	N/A	High	Moderate
Saffron Walden	Slade	Moderate	N/A	Good	Poor
Stansted Mountfitchet	Stort and Bourne Brook	Moderate	N/A	High	Moderate
Takeley	Pincey Brook	Moderate	N/A	High	Poor
Wendens Ambo	Cam (Newport to Audley End)	Moderate	N/A	High	Bad
Willows Green	Ter	Moderate	N/A	High	Poor
Wimbish	Pant	Moderate	N/A	High	Moderate

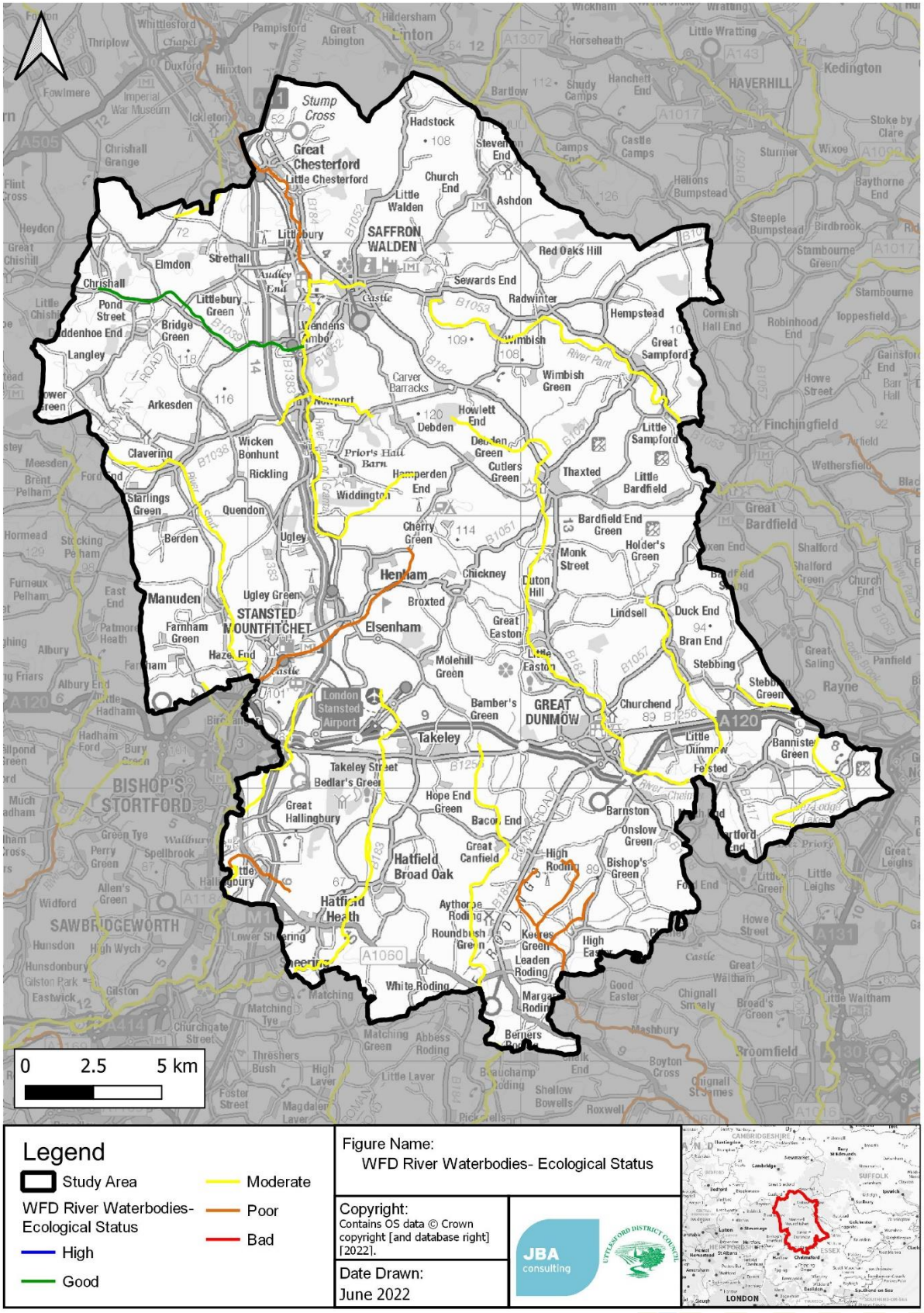


Figure 8.2 WFD Cycle 2 (2019) Ecological status of waterbodies in Uttlesford

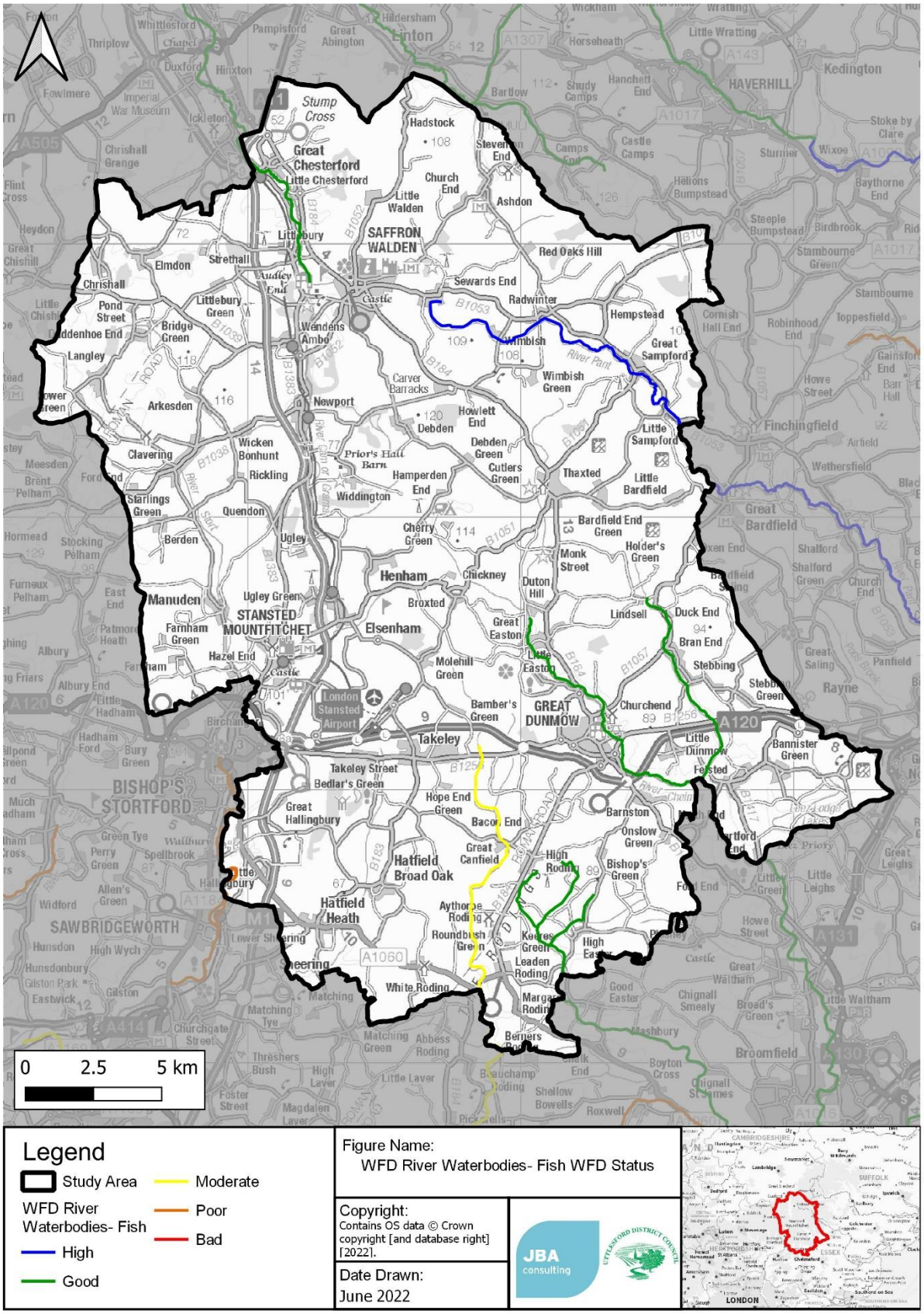


Figure 8.3 WFD Cycle 2 (2019) Fish status of waterbodies in Uttlesford

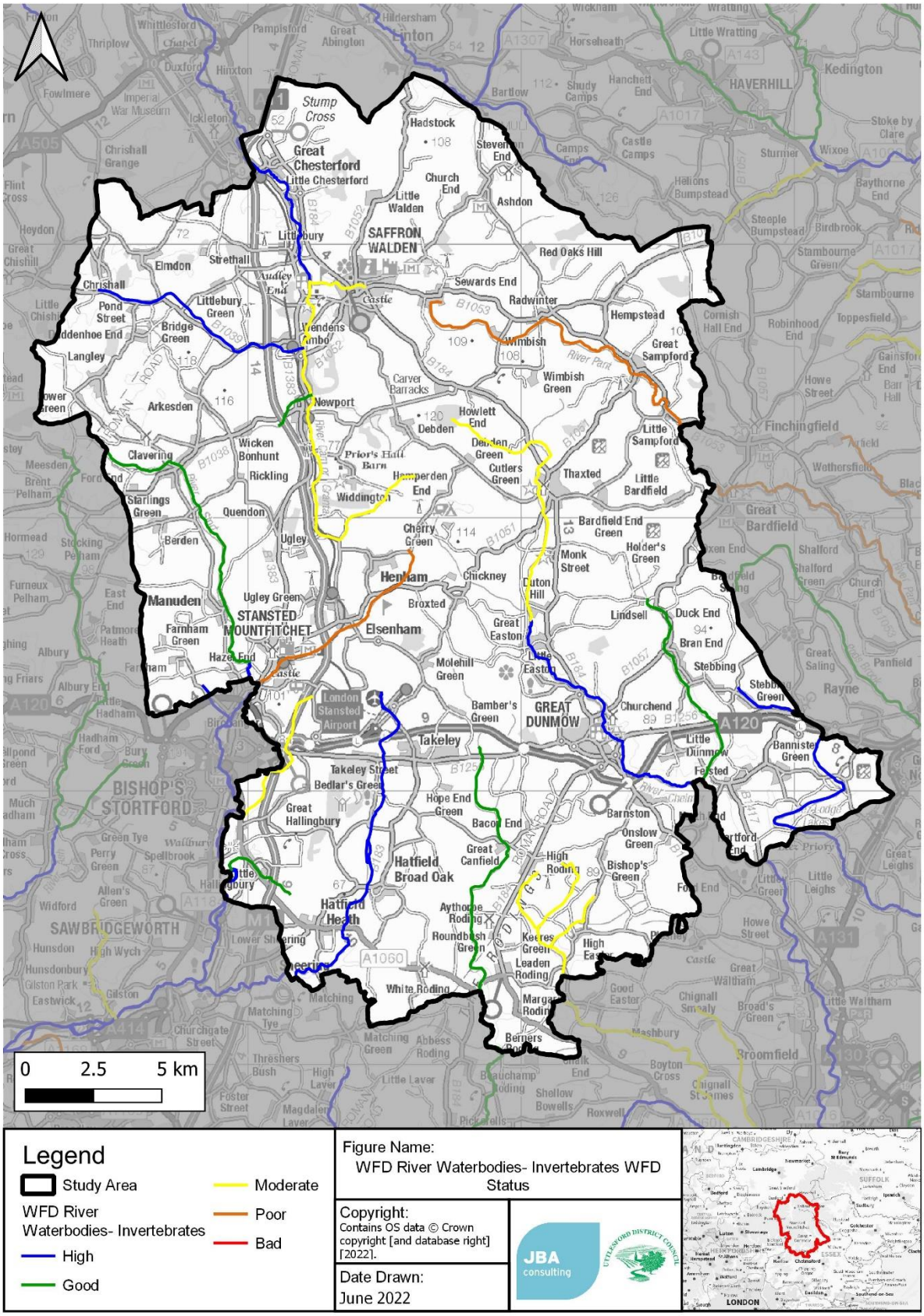


Figure 8.4 WFD Cycle 2 (2019) Invertebrates status of waterbodies in Uttlesford

8.3.3 Chemical Assessment

Thames Water identified that Nickel had been added onto the permit of some of their WwTWs. Further assessment will be completed at Stage 2 of the WCS using the EA's MPer (Metals Permitting) assessment tool to assess the likelihood of a deterioration in Nickel concentration in the receiving waterbody for specific WwTWs.

8.3.4 Priority substances

As well as the physico-chemical water quality elements (BOD, Ammonia, Phosphate etc.) addressed above, a watercourse can fail to achieve Good Ecological Status due to exceeding permissible concentrations of hazardous substances. Currently 33 substances are defined as hazardous or priority hazardous substances, with others under review. Such substances may pose risks both to humans (when contained in drinking water) and to aquatic life and animals feeding in aquatic life. These substances are managed by a range of different approaches, including EU and international bans on manufacturing and use, targeted bans, selection of safer alternatives and end-of-pipe treatment solutions. There is considerable concern within the UK water industry that regulation of these substances by setting permit values which require their removal at wastewater treatment works will place a huge cost burden upon the industry and its customers, and that this approach would be out of keeping with the "polluter pays" principle.

Consideration should be given to how the planning system might be used to manage priority substances:

- Industrial sources – whilst this report covers potential employment sites, it doesn't consider the type of industry and therefore likely sources of priority substances are unknown. It is recommended that developers should discuss potential uses which may be sources of priority substances from planned industrial facilities at an early stage with the EA and, where they are seeking a trade effluent consent, with the sewerage undertaker.
- Agricultural sources - There is limited scope for the planning system to change or regulate agricultural practices. UK water companies are involved in a range of "Catchment-based Approach" schemes aimed at reducing diffuse sources of pollutants, including agricultural pesticides.
- Surface water runoff sources - some priority substances e.g. heavy metals, are present in urban surface water runoff. It is recommended that future developments would manage these sources by using SuDS that provide water quality treatment, designed following the CIRIA SuDS Manual. This is covered in more detail in section 9.5.2.
- Domestic wastewater sources - some priority substances are found in domestic wastewater as a result of domestic cleaning chemicals, detergents, pharmaceuticals, pesticides or materials used within the home. Whilst an increase in the population due to housing growth could increase the total volumes of such substances being discharged to the environment, it would be more appropriate to manage these substances through regulation at source, rather than through restricting housing growth through the planning system.

No further analysis of priority substances will be undertaken as part of this study.

8.4 WINEP

The actions from the Water Industry National Environment Programme that relate to water quality are presented in Table 8.2 and show that most WwTWs in the study area have an action against them. In most cases these include monitoring of storm overflows and the volume of sewage being treated. In many a permit condition to limit the concentration of phosphate in the treated effluent is being applied in order to improve downstream water quality.

Table 8.2 WINEP Actions relating to water quality

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Cam (Newport to Audley End)	EAN00512	7AW200095	Newport STW	Continuous discharge Proposed Phosphate permit (1mg/l Annual average (AA))
Brookhouse Brook	HNL00213	7AF200012	Theydon Bois Sewage Treatment Works	Continuous discharge Proposed Phosphate permit (0.25mg/l AA)
Cam (Audley End to Stapleford)	EAN01290 EAN01291	7AW200866 7AW200867	Great Chesterford STW	EDM FFT Monitoring
Cam (Audley End to Stapleford)	EAN01890 EAN01891 EAN01892	7AW201466 7AW201467 7AW201468	Sawston STW	EDM FFT Monitoring Increase in FFT
Cam (Newport to Audley End)	EAN00512	7AW200095	Newport STW	Proposed Phosphate permit (1mg/l AA)
Cam (US Newport)	EAN00522	7AW200105	Quendon STW	Proposed Phosphate permit (1mg/l AA)
Chelmer	EDM00317	7AW300389	Great Dunmow STW	Intermittent Discharge U_MON2
Chelmer	EDM00227	7AW300299	Great Easton STW (Essex)	Intermittent Discharge U_MON2
Chelmer	EDM00114	7AW300186	Paxton STW	Intermittent Discharge U_MON2
Chelmer (Gt. Easton - R. Can)	EAN01302 EAN01303	7AW200878 7AW200879	Great Dunmow STW	EDM FFT Monitoring
Chelmer (Gt. Easton - R. Can)	EAN01306 EAN01307 EAN01309	7AW200882 7AW200883 7AW200885	Great Easton STW (Essex)	EDM FFT Monitoring Increase in Storm Storage

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Cripsey Brook	HNL00211	7TW200100	Epping (Fiddlers Hamlet) Sewage Treatment Works	Proposed Phosphate permit (0.25mg/l AA)
Cripsey Brook	HNL00210	7TW200099	Moreton Sewage Treatment Works	Proposed Phosphate permit (0.25mg/l AA)
Cripsey Brook	HNL00208	7TW200097	North Weald Sewage Treatment Works	Proposed Phosphate permit (0.25mg/l AA)
Cripsey Brook	HNL00209	7TW200098	Thornwood Common Sewage Treatment Works	Proposed Phosphate permit (0.25mg/l AA)
Great Hallingbury Brook	FLO01238 HNL00226 FLO01239	7TW300155 7TW200115 7TW300154	Bishops Stortford Sewage Treatment Works	EDM Proposed Phosphate permit (0.25mg/l AA) FFT monitoring
Little Hallingbury Brook	HNL00128 HNL00163 HNL00227	7TW200029 7TW200064 7TW200116	Little Hallingbury Sewage Treatment Works	EDM FFT monitoring Proposed Phosphate permit (0.25mg/l AA)
Lower Roding (Cripsey Bk to Loughton)	HNL00212	7TW200101	Stanford Rivers Sewage Treatment Works	Proposed Phosphate permit (0.25mg/l AA)
Pant	EAN01323 EAN01324	7AW200899 7AW200900	Great Sampford STW	EDM FFT Monitoring
Pant	EAN02239 EAN02240	7AW201815 7AW201816	Wethersfield STW	EDM FFT Monitoring
Pincey Brook	HNL00125 HNL00160 HNL00229	7TW200026 7TW200061 7TW200118	Hatfield Heath Sewage Treatment Works	EDM FFT monitoring Proposed Phosphate permit (0.9mg/l AA)
Pincey Brook	HNL00136 HNL00171 HNL00180 HNL00228 HNL00254	7TW200037 7TW200072 7TW200081a 7TW200117 7TW200081b	Takeley Sewage Treatment Works	EDM FFT monitoring Upper Tier BOD:50mg/l upper limit Proposed Phosphate permit (0.9mg/l AA) Upper Tier Ammonia 20mg/l

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
River Cam	EDM00090	7AW300162	Lt Chesterford-TPS	Intermittent Discharge U_MON2
River Lymn / Steeping	EDM00161	7AW300233	Springfield-Uplands SP	Intermittent Discharge U_MON2
Slade	EAN01878 EAN01879 EAN01880	7AW201454 7AW201455 7AW201456	Saffron Walden STW	EDM FFT Monitoring Increase in FFT
Soham Lode	EDM00192	7AW300264	Wicken Bonhunt-SP	Intermittent Discharge U_MON2
Stebbing Brook	EAN01197 EAN01198 EAN01199	7AW200773 7AW200774 7AW200775	Felsted STW	EDM FFT Monitoring Increase in Storm Storage
Stort (at Clavering)	CHM00269	7TW300021	Clavering	Investigation Sewer catchment investigations to find sources of HBCDD and/or cypermethrin, and/or river investigations into PFOS sources
Stort (at Clavering)	HNL00223	7TW200112	Clavering Sewage Treatment Works	Proposed Phosphate permit (0.3mg/l AA)
Stort (at Clavering)	HNL00224	7TW200113	Manuden Sewage Treatment Works	Proposed Phosphate permit (0.3mg/l AA)
Stort and Bourne Brook	CHM00310 HNL00135 HNL00170 HNL00225	7TW300062 7TW200036 7TW200071 7TW200114	Stansted Mountfitchet Sewage Treatment Works	Proposed Nickel permit (5.7 ug/l (dissolved mean) EDM FFT monitoring Proposed Phosphate permit (0.25mg/l AA)
Stort and Navigation, B Stortford to Harlow	HNL00238	7TW200127	Hunsdon Mead - SSSI	Joint investigation with Thames Water and Natural England. Investigation to consider impact of phosphate loading on SSSI and how best TWUL might deliver the reduction in P needed to meet their fair share for CSMG targets for the SSSI
Ter	EAN00608	7AW200186	Great Leighs STW	UWWTD Conditions to be added to the permit

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Upper Roding (to Cripsey Brook)	HNL00110 HNL00145	7TW200011 7TW200046	Abbess Roding Sewage Treatment Works	EDM FFT monitoring
Upper Roding (to Cripsey Brook)	HNL00127 HNL00162	7TW200028 7TW200063	Leaden Roding Sewage Treatment Works	EDM FFT monitoring
Upper Roding (to Cripsey Brook)	FLO01299 HNL00141 HNL00176	7TW300194 7TW200042 7TW200077	White Roding Sewage Treatment Works	The WwTW storm tank capacity must be increased to 68 litres/head or to 2 hours at max flow through the tanks. EDM FFT monitoring
Upper Roding (to Cripsey Brook)	FLO01300 HNL00144 HNL00179	7TW300195 7TW200045 7TW200080	Willingale Sewage Treatment Works	The WwTW storm tank capacity must be increased to 68 litres/head or to 2 hours at max flow through the tanks. EDM FFT monitoring
Upper Witham	EDM00174	7AW300246	Saffron Walden-George Abbey Ov	Intermittent Discharge U_MON2

U_MON2 – Urban pollution monitoring

FFT monitoring – Monitoring of Flow to Full Treatment – the volume of wastewater that is treated

EDM – Event Duration Monitoring – monitoring of the operation of storm overflows

8.5 Water quality modelling

The sensitivity analysis was conducted using the EA's SIMCAT models and the results are shown in Figure 8.5 to Figure 8.7 below. Where water quality downstream of a WwTW in any given determinand deteriorates by 10% or more in response to a 20% increase in effluent flow, the sewer catchment can be said to be "more sensitive" to changes in effluent flow, and therefore growth. It can be seen that changes in the volume of treated wastewater in Uttlesford do not cause a significant response in the concentrations of ammonia within the study area in the north of Uttlesford with the exception of the River Pant. High sensitivity is observed for the River Chelmer as it passed Great Dunmow, which may be significant for the spatial growth options.

For BOD, more waterbodies are moderately sensitive with a 0 to 10% deterioration, again concentrated more in the south apart from the River Pant.

For phosphate the response is far more widespread, with many watercourses showing some sensitivity in particular the River Cam, Pincey Brook and the Stort. This is significant as the Cam and Stort are chalk streams and ecologically sensitive.

It should be noted that as reported in Table 8.2, an implementation or tightening of the environmental permit for phosphate is included as a WINEP action at many of the WwTWs in the area. It is therefore possible that the response to an increase in the discharge of treated effluent would be reduced in future more detailed modelling. However, there is a potential for growth served by WwTWs on the Cam and Storm to cause a deterioration in Phosphate and an impact on the aquatic ecology of those rivers that must be carefully considered.

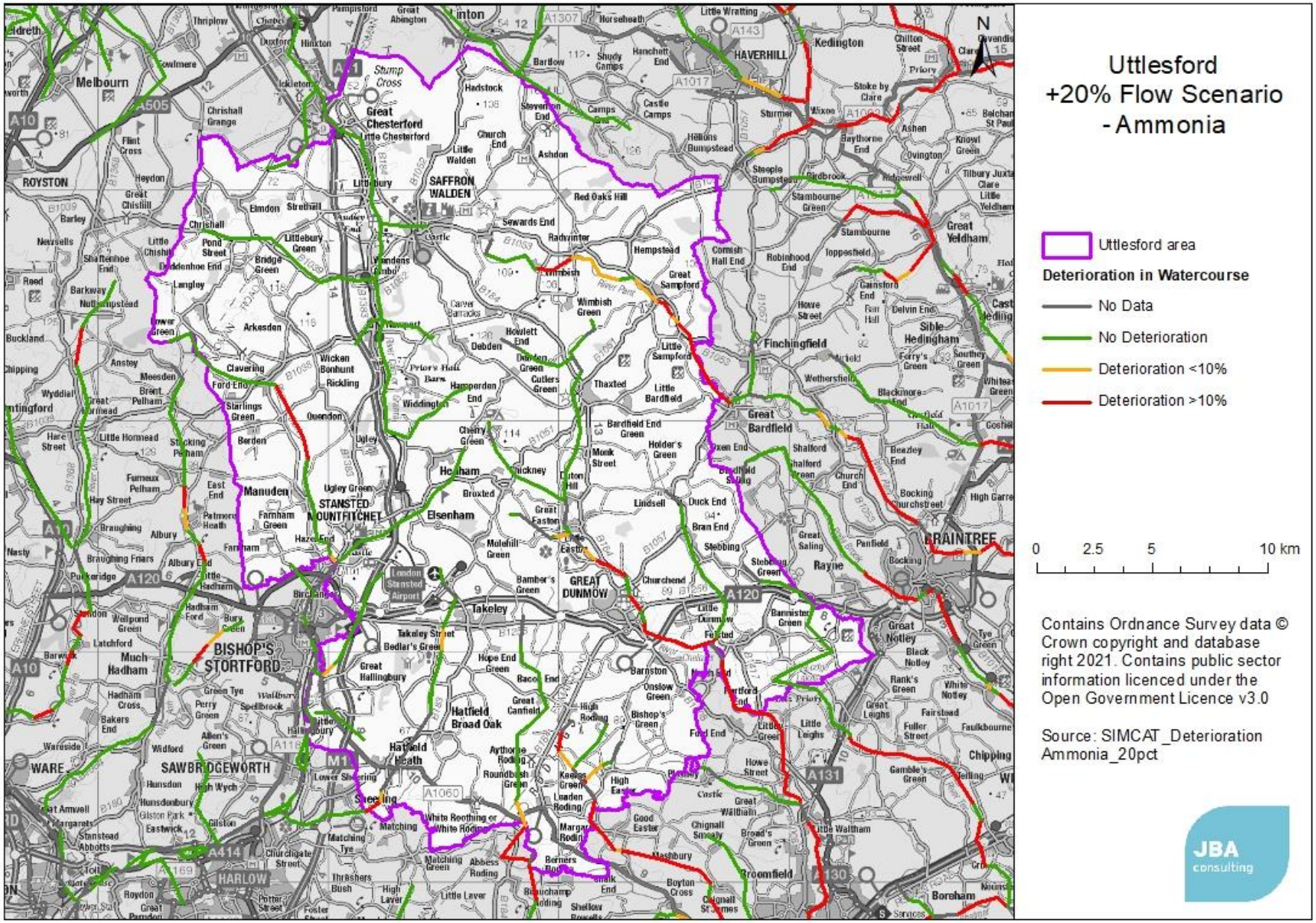


Figure 8.5 Sensitivity analysis for Ammonia

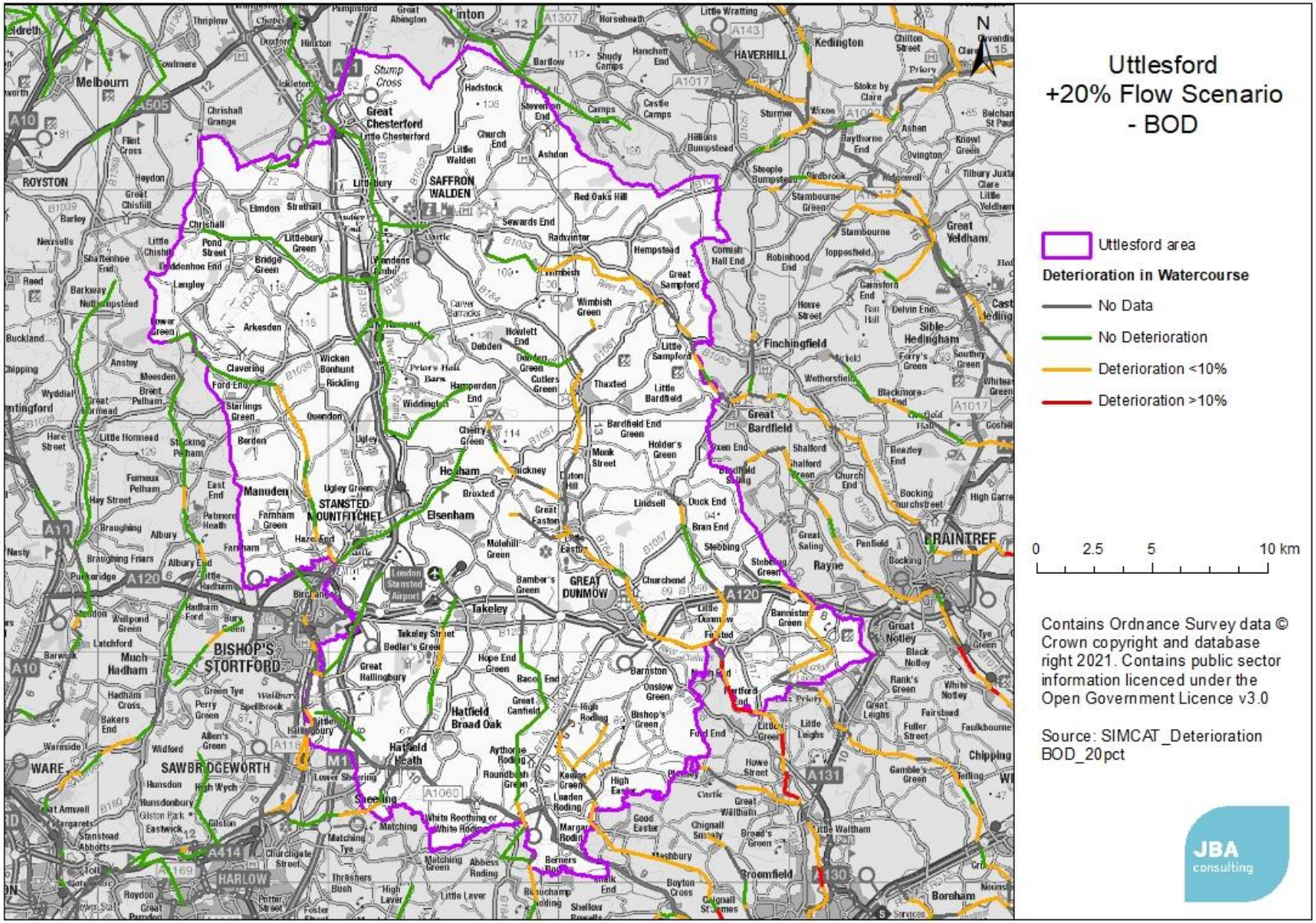
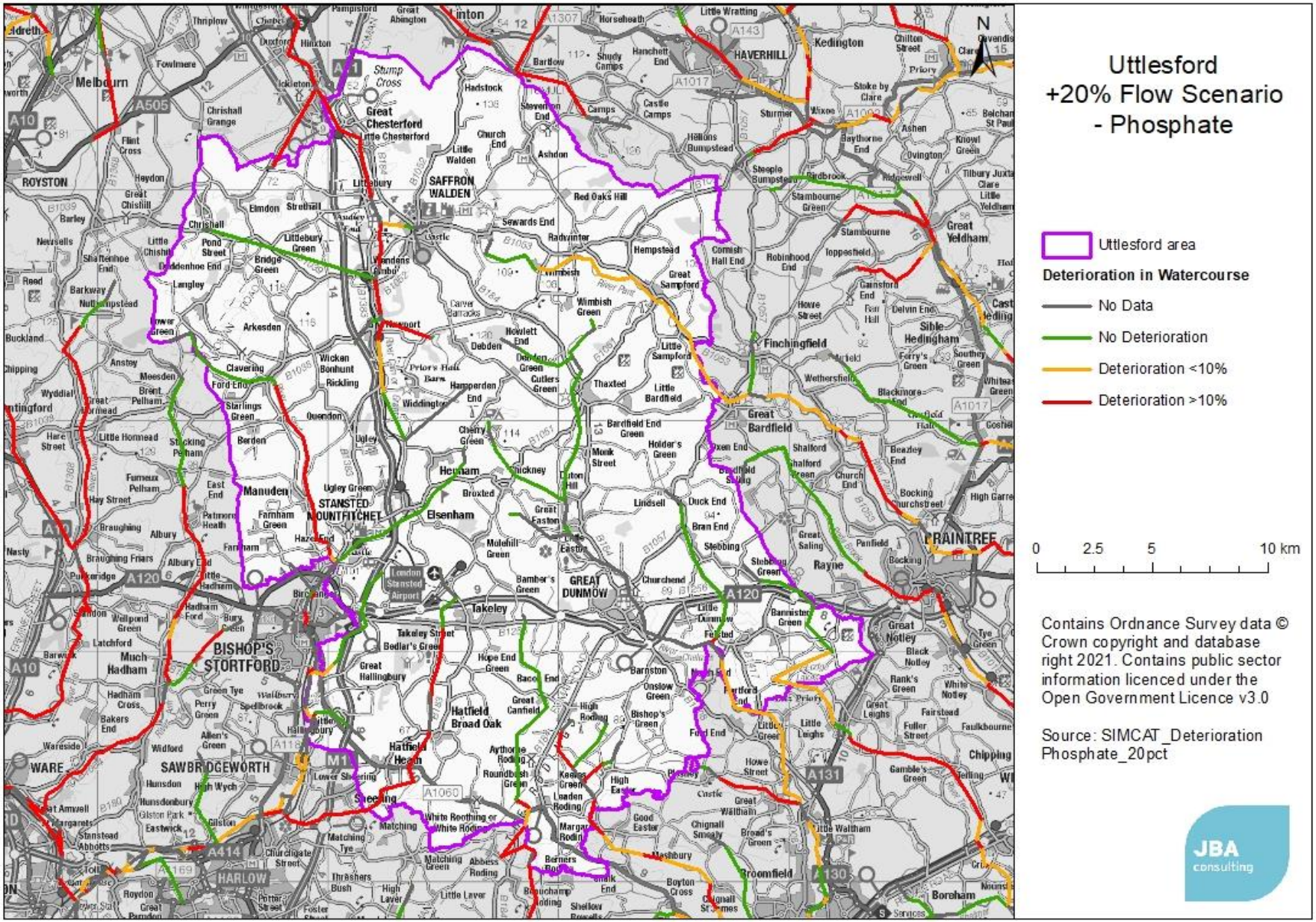


Figure 8.6 Sensitivity analysis for BOD


Uttlesford
+20% Flow Scenario
- Phosphate
Uttlesford area
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
0
2.5
5
10 km
Contains Ordnance Survey data © Crown copyright and database right 2021. Contains public sector information licenced under the Open Government Licence v3.0
Source: SIMCAT_Deterioration Phosphate_20pct
JBA consulting
N
SAFFRON WALDEN
HAVERHILL
Great Chesterford
Melbourn
ROYSTON
Great Dunmow
Stansted Mountfitchet
Bishop's Stortford
Sawbridgeworth
Hatfield Broad Oak
Hatfield Heath
Takeley
Elsenham
Henham
Manuden
Great Bardfield
Finchingfield
Great Yeldham
Braintree
Rayne
Great Notley
Ware
Harlow
Broomfield
Boreham
Takeley Street
Great Hallingbury
Little Hallingbury
Thaxted
Wimbish
Debden
Newport
Clavering
Arkesden
Quendon
Berden
Farnham
Albury
Much Hadham
Little Hadham
Sheering
Matching
Matching Tye
Matching Green
Little Laver
High Laver
Roydon
Great Parndon
Stansted Abbotts
Hunsdon
Eastwick
Gilston
Widford
Wellpond Green
Latchford
Hadham Ford
Hadham Cross
Perry Green
Green Tye
Spellbrook
Bishop's Green
Hockerill
Hockerill Bridge
Stansted Airport
Molehill Green
Lindsell
Duck End
Bran End
Stebbing
Great Saling
Panfield
Bocking
Bocking Churchstreet
High Garrett
Great Leighs
Little Leighs
Chipping
Rank's Green
White Notley
Fairstead
Faulkbourne
Fuller Street
Gamble's Green
Howe Street
Great Waltham
Little Waltham
Chignall Smealy
Chignall St James
Broad's Green
Good Easter
Margaret Roding
Leaden Roding
Roding Green
Aythorpe Roding
Roundbush Green
White Roothing
White Roothing End
Abbess Roding
Berners Roding
Shellow Bowells
Boyton Cross
Shalford
Shalford Green
Church End
Beazley End
Bardfield End Green
Holder's Green
Oxen End
Little Bardfield
Great Sampford
Little Sampford
Radwinter
Sewards End
Hempstead
Cornish Hall End
Robinhood End
Stambourne
Stambourne Green
Toppesfield
Gaunsford End
Delvin End
Sible Hedingham
Ferry's Green
Southey Green
Wethersfield
Blackmore End
Whitehall Green
Castle Hedingham
Ridgewell
Ashen
Ovington
Knowl Green
Tilbury Juxta Clare
Little Yeldham
Baythorne End
Hallons Bumpstead
Castle Camps
Shudy Camps
Horseheath
Little Wratting
Kedington
Chilton Street
Stoke by Clare
Sturmer
Wixoe
Haverhill
Bartlow
Hadstock
Linton
Pampisford
Great Abington
Little Abington
Hinxton
Duxford
Ickleton
Chrishall
Chrishall Grange
Flint Cross
Fowlmere
Heydon
Great Chishill
Little Chishill
Barley
Nuthampstead
Barkway
Reed
Buckland
Anstey
Meesden
Brent Pelham
Furneux Pelham
Hare Street
Little Hormead
Great Hormead
Wyddial
Braughing
Braughing Friars
Albury End
Pye Corner
Nasty
Farnham Green
Hazel End
Ugley
Ugley Green
Stocking Pelham
Patmore Heath
Berden
Starlings Green
Ford End
Clavering
Wicken Bonhunt
Rickling
Rickling Green
Pond Street
Littlebury
Littlebury Green
Bridge Green
Langley
Shortenhoe End
Deadenhoe End
Chishall
Elmdon
Strethall
Duddenhoe End
Nuthampstead
Lower Green
Buckland
Chipping
Wyddial
Great Hormead
Little Hormead
Hare Street
Furneux Pelham
Hay Street
Braughing
Albury
Nasty
Farnham
Albury End
Pye Corner
Puckeridge
Wellpond Green
Latchford
Much Hadham
Little Hadham
Hadham Ford
Hadham Cross
Perry Green
Green Tye
Spellbrook
Bishop's Green
Sheering
Matching
Matching Tye
Matching Green
Little Laver
High Laver
Roydon
Great Parndon
Stansted Abbotts
Hunsdon
Eastwick
Gilston
Widford
Wellpond Green
Latchford
Hadham Ford
Hadham Cross
Perry Green
Green Tye
Spellbrook
Bishop's Green
Hockerill
Hockerill Bridge
Stansted Airport
Molehill Green
Lindsell
Duck End
Bran End
Stebbing
Great Saling
Panfield
Bocking
Bocking Churchstreet
High Garrett
Great Leighs
Little Leighs
Chipping
Rank's Green
White Notley
Fairstead
Faulkbourne
Fuller Street
Gamble's Green
Howe Street
Great Waltham
Little Waltham
Chignall Smealy
Chignall St James
Broad's Green
Good Easter
Margaret Roding
Leaden Roding
Roding Green
Aythorpe Roding
Roundbush Green
White Roothing
White Roothing End
Abbess Roding
Berners Roding
Shellow Bowells
Boyton Cross
Shalford
Shalford Green
Church End
Beazley End
Bardfield End Green
Holder's Green
Oxen End
Little Bardfield
Great Sampford
Little Sampford
Radwinter
Sewards End
Hempstead
Cornish Hall End
Robinhood End
Stambourne
Stambourne Green
Toppesfield
Gaunsford End
Delvin End
Sible Hedingham
Ferry's Green
Southey Green
Wethersfield
Blackmore End
Whitehall Green
Castle Hedingham
Ridgewell
Ashen
Ovington
Knowl Green
Tilbury Juxta Clare
Little Yeldham
Baythorne End
Hallons Bumpstead
Castle Camps
Shudy Camps
Horseheath
Little Wratting
Kedington
Chilton Street
Stoke by Clare
Sturmer
Wixoe
Haverhill
Bartlow
Hadstock
Linton
Pampisford
Great Abington
Little Abington
Hinxton
Duxford
Ickleton
Chrishall
Chrishall Grange
Flint Cross
Fowlmere
Heydon
Great Chishill
Little Chishill
Barley
Nuthampstead
Barkway
Reed
Buckland
Anstey
Meesden
Brent Pelham
Furneux Pelham
Hare Street
Little Hormead
Great Hormead
Wyddial
Braughing
Braughing Friars
Albury End
Pye Corner
Nasty
Farnham Green
Hazel End
Ugley
Ugley Green
Stocking Pelham
Patmore Heath
Berden
Starlings Green
Ford End
Clavering
Wicken Bonhunt
Rickling
Rickling Green
Pond Street
Littlebury
Littlebury Green
Bridge Green
Langley
Shortenhoe End
Deadenhoe End
Chishall
Elmdon
Strethall
Duddenhoe End
Nuthampstead
Lower Green
Buckland
Chipping
Wyddial
Great Hormead
Little Hormead
Hare Street
Furneux Pelham
Hay Street
Braughing
Albury
Nasty
Farnham
Albury End
Pye Corner
Puckeridge
Wellpond Green
Latchford
Much Hadham
Little Hadham

8.6 Spatial growth options

The sensitivity analysis indicated which watercourses could be sensitive to an increase in treated effluent from growth. This was considered alongside the spatial growth options and a following observations made:

Ammonia and BOD

In all the spatial growth options a large amount of growth is focussed on Great Dunmow, albeit slightly less in option 1b. Additional wastewater flows in this area could cause a deterioration in ammonia in the River Chelmer. In each spatial growth option, a tightening of the ammonia permit at Great Dunmow, and other WwTWs upstream may need to be considered.

Option 2C includes a new settlement at Great Easton Park which may be served by Great Dunmow WwTW adding a further 2,000 houses into this catchment. Consideration should be given to whether this growth should be served by a Thames Water catchment to the east.

The results are similar for BOD in this area.

Option 2e includes a new settlement East of Stebbing that may be served by Braintree WwTW. The watercourses downstream of Braintree WwTW show a high sensitivity in the ammonia results to increases in wastewater and as in Option 2c, a tightening of the permit may be required.

Phosphate

All of the growth options contain significant growth around Stansted Airport, Saffron Waldon, Stansted Mountfitchet which are all in areas sensitive to changes in treated wastewater flow.

WINEP actions to implement or tighten the Phosphate consent in the environmental permit at the WwTWs serving these areas, may prevent a proportion of this deterioration which will be shown by modelling in Stage 2. However, where a WINEP action is aimed at achieving good ecological status – this outcome is still required, and so further improvement may be necessary to accommodate growth, and still achieve the environmental objective.

Options 2a and 2b which contain new settlements at Ugley and Great Chesterford have the potential to cause a deterioration downstream in the River Cam and Stort. This is of concern as both rivers are chalk streams and ecologically sensitive.

Option 2d would increase flows at Hatfield Takeley and Further modelling is required to produce a more accurate estimate of likely deterioration, but further catchment-based measures (outlined in 9.5) may be required alongside a tightening of WwTW permits in order to accommodate this growth.

8.7 Conclusions

Growth during the local plan period will increase the discharge of treated wastewater from WwTWs in Uttlesford. There is a potential for this to cause a deterioration in water quality in the receiving watercourses and this must be carefully considered. A significant deterioration in water quality is not acceptable under the Water Framework Directive.

Water quality modelling to test potential impacts is recommended in a Stage 2 WCS.

Thames Water indicated concerns about limits to certain chemicals such as Nickel that have been applied at some WwTWs. Consideration should also be given to these in Stage 2.

8.8 Recommendations

Table 8.3 Table of recommendations for water quality

Action	Responsibility	Timescale
Provide annual monitoring reports to TW and AW detailing projected housing growth in the Local Authority	Uttlesford	Ongoing
When preferred options for growth are identified, undertake water quality impact modelling as part of a Stage 2 WCS.	Uttlesford	Ongoing
Take into account the full volume of growth (from Uttlesford and neighbouring authorities) within the catchment when considering WINEP schemes or upgrades at WwTW	TW and AW	Ongoing

9 Environmental Opportunities and Constraints

9.1 Introduction

Development has the potential to cause an adverse impact on the environment through a number of routes, such as worsening of air quality, pollution to the aquatic environment or disturbance to wildlife. In the context of a Water Cycle Study, the impact of development on the aquatic environment is under assessment.

A source-pathway-receptor approach can be taken to investigate the risk and identify where further assessment or action is required.

9.2 Sources of pollution

Water pollution is usually categorised as either diffuse or point source. Point source sources come from a single well-defined point, an example being the discharge from a WwTW.

Diffuse pollution is defined as "unplanned and unlicensed pollution from farming, old mine workings, homes and roads. It includes urban and rural activity and arises from industry, commerce, agriculture and civil functions and the way we live our lives."

Examples of diffuse sources of water pollution include:

- Contaminated runoff from roads – this can include metals and chemicals
- Drainage from housing estates
- Misconnected sewers (foul drains to surface water drains)
- Accidental chemical/oil spills from commercial sites
- Surplus nutrients, pesticides and eroded soils from farmland
- Septic tanks and non-mains sewer systems

The most likely sources of diffuse pollution from new developments include drainage from housing estates, runoff from roads and discharges from commercial and industrial premises. The pollution risk posed by a site will depend on the sensitivity of the receiving environment, the pathway between the source of the runoff and the receiving waters, and the level of dilution available. After or during heavy rainfall, the first flush of water carrying accumulated dust and dirt is often highly polluting.

Whilst the threat posed by an individual site may be low, a number of sites together may pose a cumulative impact within the catchment.

Runoff from development sites should be managed by a suitably designed SuDS scheme, more information on SuDS can be found in section 9.5.2. Potential impacts on receiving surface waters include the blanketing of riverbeds with sediment, a reduction in light penetration from suspended solids, and a reduction in natural oxygen levels, all of which can lead to a loss in biodiversity.

9.3 Pathways

Pollutants can take a number of different pathways from their source to a "receptor" – a habitat or species that can be impacted. This could be overland via surface water flow paths, via the river system, or via groundwater or a combination of all three.

9.4 Receptors

A receptor in this case is a habitat or species that is adversely impacted by a pollutant. Both the rivers and groundwater as well as being pathways, can also be considered to be receptors. Groundwater bodies are also given a status under the WFD which is reported in Section 4.1.4 for the groundwater bodies across Uttlesford.

Within the study area and downstream are many sites with environmental designations such as:

- Special Areas of Conservation (SAC)

- Special Protection Areas (SPA)
- Sites of Special Scientific Interest (SSSI)
- Ramsar sites (Wetlands of International Importance)
- Priority Habitats and Priority Headwaters

A description of these, and the relevant legislation that defines and protects them, can be found in section 3.

In order to identify protected sites that may be at risk, Flood Zone 2 from the Risk of Flooding from Rivers and the Sea mapping was used to define an area that was either adjacent to a river or could be reasonably expected to receive surface water from a river. Where a WwTW was present in the catchment upstream of the protected site, it was considered that there was a risk of deterioration in water quality due to growth during the local plan period, and the first WwTW upstream of the site is reported in the table (other WwTWs must also be considered in future analysis). Where there were no WwTWs serving growth upstream, risk of deterioration is considered to be low, and would not be shown by water quality modelling. However, in these cases the overall catchment water quality should be considered where for example they are designated for migratory fish species that may spend part of their lifecycle elsewhere in the catchment.

Priority Habitats are available to view on the DEFRA Magic Map website[59].

The environmental designated sites which may be impacted by change in discharge from the WwTW upstream are listed below in Table 9.1 and sites within Uttlesford are shown in Figure 9.1. there are no SACs, SPA or Ramsar sites with in Uttlesford, however they are present downstream and adjacent to watercourses that could be affected by an increased in effluent flow from within Uttlesford.

Table 9.1 Protected sites which could be affected by a change in WwTW discharge

Site	Reference	Catchment	First Upstream WwTW
Ramsar (Wetlands of International Importance)			
The Wash	UK11072	Wash	GREAT CHESTERFORD STW
Wicken Fen	UK11077	Wash	GREAT CHESTERFORD STW
Lee Valley	UK11034	Thames	LITTLE HALLINGBURY STW
Dersingham Bog	UK11019	Wash	GREAT CHESTERFORD STW
Benfleet and Southend Marshes	UK11006	Thames	LITTLE HALLINGBURY STW
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK11007	East Anglia	FELSTEAD STW
Dengie (Mid-Essex Coast Phase 1)	UK11018	East Anglia	FELSTEAD STW

59 DEFRA Magic Map- https://magic.defra.gov.uk/magicmap.aspx

Ouse Washes	UK11051	Wash	GREAT CHESTERFORD STW
Colne Estuary (Mid-Essex Coast Phase 2)	UK11015	East Anglia	FELSTEAD STW
Thames Estuary & Marshes	UK11069	Thames	LITTLE HALLINGBURY STW
Special Areas of Conservation (SAC)			
The Wash & North Norfolk Coast	UK0017075	Wash	GREAT CHESTERFORD STW
Essex Estuaries	UK0013690	East Anglia	FELSTEAD STW
Ouse Washes	UK0013011	Wash	GREAT CHESTERFORD STW
Special Protection Areas (SPA)			
Greater Wash	UK9020329	Wash	GREAT CHESTERFORD STW
Outer Thames Estuary	UK9020309	Thames	LITTLE HALLINGBURY STW
Benfleet and Southend Marshes	UK9009171	Thames	LITTLE HALLINGBURY STW
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK9009245	East Anglia	FELSTEAD STW
Ouse Washes	UK9008041	Wash	GREAT CHESTERFORD STW
Lee Valley	UK9012111	Thames	LITTLE HALLINGBURY STW
The Wash	UK9008021	Wash	GREAT CHESTERFORD STW
Dengie (Mid-Essex Coast Phase 1)	UK9009242	East Anglia	FELSTEAD STW
Thames Estuary & Marshes	UK9012021	Thames	LITTLE HALLINGBURY STW
Sites of Special Scientific Interest (SSSI)			
Upware North Pit	TL544727	Wash	GREAT CHESTERFORD STW
Cam Washes	TL538728	Wash	GREAT CHESTERFORD STW
Shippea Hill	TL637850	Wash	GREAT CHESTERFORD STW
Rye Meads	TL387102	Thames	LITTLE HALLINGBURY STW

Stallode Wash, Lakenheath	TL675853	Wash	GREAT CHESTERFORD STW
Islington Heronry	TF568159	Wash	GREAT CHESTERFORD STW
Thorley Flood Pound	TL489181	Thames	BISHOP'S STORTFORD WWTW
Upware South Pit	TL539709	Wash	GREAT CHESTERFORD STW
Vange & Fobbing Marshes	TQ733839	Thames	LITTLE HALLINGBURY STW
Waltham Abbey	TL375019	Thames	LITTLE HALLINGBURY STW
Walthamstow Marshes	TQ351875	Thames	LITTLE HALLINGBURY STW
Chingford Reservoirs	TQ370953	Thames	LITTLE HALLINGBURY STW
Ely Pits and Meadows	TL558807	Wash	GREAT CHESTERFORD STW
Alder Carr	TL542489	Wash	ASHDON WATER RECYCLING CENTRE
Breckland Farmland	TL760783	Wash	GREAT CHESTERFORD STW
Walthamstow Reservoirs	TQ351891	Thames	LITTLE HALLINGBURY STW
Curtismill Green	TQ518963	Thames	LEADEN RODING STW
Wicken Fen	TL554701	Wash	GREAT CHESTERFORD STW
The Wash	TF537402	Wash	GREAT CHESTERFORD STW
Dengie	TM042032	East Anglia	FELSTEAD STW
Mucking Flats and Marshes	TQ698791	Thames	LITTLE HALLINGBURY STW
South Thames Estuary and Marshes	TQ805794	Thames	LITTLE HALLINGBURY STW
Turnford & Cheshunt Pits	TL370027	Thames	LITTLE HALLINGBURY STW

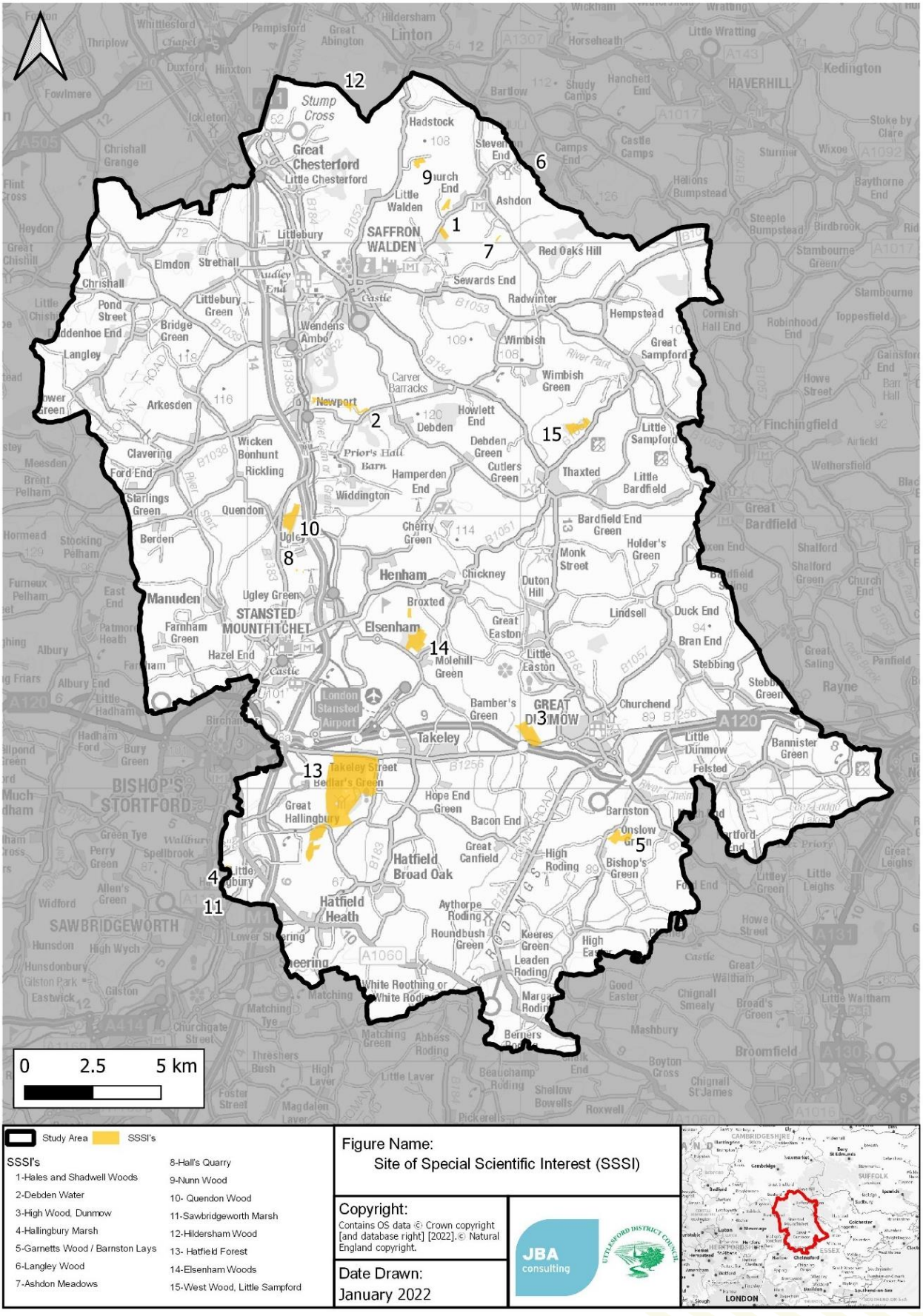


Figure 9.1 Sites of Special Scientific Interest (SSSI) in Uttlesford

9.5 Protection and mitigation

9.5.1 Groundwater Protection

Groundwater is an important source of water in England and Wales.

The Environment Agency is responsible for the protection of "controlled waters" from pollution under the Water Resources Act 1991. These controlled waters include all watercourses and groundwater contained in underground strata.

The zones are based on an estimate of the time it would take for a pollutant which enters the saturated zone of an aquifer to reach the source of abstraction or discharge point (Zone 1 = 50 days, Zone 2 = 400 days, Zone 3 is the total catchment area). The Environment Agency will use SPZs (alongside other datasets such as the Drinking Water Protected Areas (DrWPAs) and aquifer designations as a screening tool to show:

- Areas where the EA would object in principle to certain potentially polluting activities, or other activities that could damage groundwater,
- Areas where additional controls or restrictions on activities may be needed to protect water intended for human consumption,
- How it prioritises responses to incidents.

The EA have published a position paper[60] outlining its approach to groundwater protection which includes direct discharges to groundwater, discharges of effluents to ground and surface water runoff. This is of relevance to this water cycle study where a development may manage surface water through SuDS.

Sewage and Trade Effluent

Discharge of treated sewage of $2m^3$ per day or less to ground are called small sewage discharges (SSDs). The majority of SSDs do not require an environmental permit if they comply with certain qualifying conditions. A permit will be required for all SSDs in source protection zone 1 (SPZ1).

For treated sewage effluent discharges, the EA requires the use of shallow infiltration systems, which maximise the attenuation within the drainage blanket and the underlying unsaturated zone. Whilst some sewage effluent discharges may not pose a risk to groundwater quality individually, the cumulative risk of pollution from aggregations of discharges can be significant. Improvement or pre-operational conditions may be imposed before granting an environmental permit. The EA will only agree to developments where the addition of new sewage effluent discharges to ground in an area of existing discharges is unlikely to lead to an unacceptable cumulative impact.

Generally, the Environment Agency will only agree to developments involving release of sewage effluent, trade effluent or other contaminated discharges to ground if it is satisfied that it is not reasonable to make a connection to the public foul sewer. The EA would normally expect to only permit new private discharges where the distance to connect to the nearest public sewer exceeds the number of dwellings multiplied by 30m. So, for example, a development of 100 dwellings would need to be more than 3km from a public sewer. The developer would have to provide evidence of why the proposed development cannot connect to the foul sewer in the planning application. This position will not normally apply to surface water run-off via sustainable drainage systems and discharges from sewage treatment works operated by sewerage undertakers with appropriate treatment and discharge controls.

Deep infiltration systems (such as boreholes and shafts) are not generally accepted by the EA for discharge of sewage effluent as they bypass soil layers and reduce the opportunity for attenuation of pollutants.

60 The Environment Agency's approach to groundwater protection, Environment Agency (2018). Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692989/Envirnment-Agency-approach-to-groundwater-protection.pdf on: 24/01/2022

Discharges of surface water run-off to ground at sites affected by land contamination, or from sites for the storage of potential pollutants are likely to require an environmental permit. This could include sites such as garage forecourts and coach and lorry parks. These sites would be subject to a risk assessment with acceptable effluent treatment provided.

Discharge of Clean Water

"Clean water" discharges such as runoff from roofs or from roads, may not require a permit. However, they are still a potential source of groundwater pollution if they are not appropriately designed and maintained.

Where infiltration SuDS schemes are proposed to manage surface runoff they should:

- Be suitably designed;
- Meet Government non-statutory technical standards[61] for sustainable drainage systems – these should be used in conjunction with the NPPF and PPG; and
- Use a SuDS management treatment train

A hydrogeological risk assessment is required where infiltration SuDS is proposed for anything other than clean roof drainage in a SPZ1.

Source Protection Zones in Uttlesford

Source protection zones (SPZs) form a key part of the Environment Agency's approach to controlling the risk to groundwater supplies from potentially polluting activities and accidental releases of pollutants.

The Source Protection Zones (SPZs) that are present in the Uttlesford area are shown in Figure 9.2.

The Environment Agency's Manual for the Production of Groundwater Source Protection Zones[62], details position statements which provide information about the Environment Agency's approach to managing and protecting groundwater.

Proposed development locations within or close to Source Protection Zones, should be assessed in relation to the relevant Environment Agency position statements.

61 Sustainable Drainage Systems: non-statutory technical standards, Department for Environment, Food & Rural Affairs (2015). Accessed online at: https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards on: 24/01/2022

62 Manual for the Production of Groundwater Source Protection Zones, Environment Agency (2019). Accessed online at: https://www.gov.uk/government/publications/groundwater-source-protection-zones-spz-production-manual on: 24/01/2022

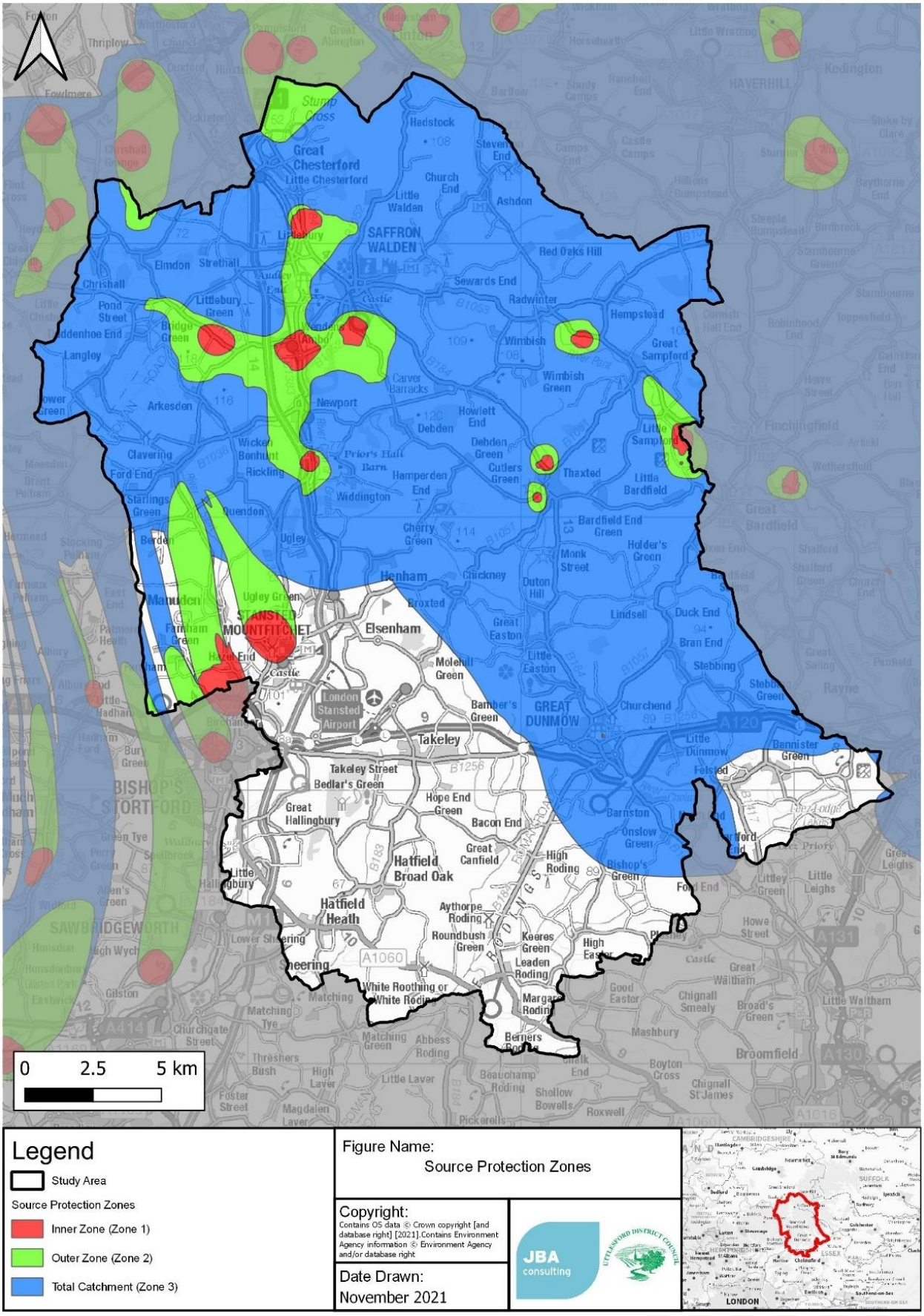


Figure 9.2 Source Protection Zones in the Study Area

9.5.2 Surface Water Drainage and SuDS

Since April 2015[63], management of the rate and volume of surface water has been a requirement for all major development sites, through the use of Sustainable Drainage Systems (SuDS).

Lead Local Flood Authorities (LLFAs) are the statutory consultees to the planning system for surface water management within major development, which covers the following development scenarios:

- 10 or more dwellings
- a site larger than 0.5 hectares, where the number of dwellings is unknown
- a building greater than 1,000 square metres
- a site larger than 1 hectare

SuDS are drainage features which attempt to replicate natural drainage patterns, through capturing rainwater at source, and releasing it slowly into the ground or a water body. They can help to manage flooding through controlling the quantity of surface water generated by a development and improve water quality by treating urban runoff. SuDS can also deliver multiple benefits, through creating habitats for wildlife and green spaces for the community. SuDS also have the advantage of providing effective Blue and Green infrastructure and ecological and public amenity benefits when designed and maintained properly.

National standards on the management of surface water are outlined within the Defra Non-statutory Standards for Sustainable Drainage Systems[64]. The CIRIA C753 SuDS Manual[65] and Guidance for the Construction of SuDS[66] provide the industry best practice guidance for design and management of SuDS

Local guidance, provided by the Lead Local Flood Authorities covering the study area, is detailed below:

- Essex County Council is a Lead Local Flood Authority. The Essex County Council sustainable drainage systems handbook[67] contains advice from the LLFA relating to surface water drainage and sets out the minimum operating requirements as required in the National Planning Policy Framework (NPPF). The SPD provides guidance on the approach that should be taken to SuDS in new developments in Uttlesford so as to manage and mitigate surface water flood risk.

9.5.3 Chalk Streams

Chalk streams are a unique habitat which support a range of rare ecosystems. In their healthy state, chalk streams provide a clean, well oxygenated and high in calcium environment which supports many aquatic creatures such as trout, salmon, invertebrates. The aquatic plants unique to chalk streams provide an in-stream habitat on which everything else depends. The chalk also acts as a buffer against floods and droughts, which means that they provide good refuge for flow vulnerable species such as water vole.

The majority of chalk streams have been modified to a degree, often many times. Chalk streams are very low-energy systems and are mostly incapable of erasing a modification once it has occurred. A chalk stream's geomorphology is essential to its biodiversity. A physically intact, natural and stable river is far more able to tolerate pollution and

63 House of Commons: Written Statement (HCWS161) Written Statement made by: The Secretary of State for Communities and Local Government (Mr Eric Pickles) on 18 Dec 2014. Accessed online at: https://www.parliament.uk/documents/commons-vote-office/December%202014/18%20December/6.%20DCLG-sustainable-drainage-systems.pdf on: 24/01/2022

64 Sustainable Drainage Systems, Non-statutory technical standards for sustainable drainage systems, DEFRA (2015). Accessed online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-standards.pdf on: 24/01/2022

65 CIRIA Report C753 The SuDS Manual, CIRIA (2015). Accessed online at: https://www.ciria.org/Memberships/The_SuDs_Manual_C753_Chapters.aspx on: 24/01/2022

66 Guidance on the Construction of SuDS (C768), CIRIA (2017), Accessed online at: https://www.ciria.org/ItemDetail?iProductcode=C768&Category=BOOK on: 24/01/2022

67 Sustainable Drainage Systems design guide, Essex County Council (2020). Accessed online at: https://www.essexdesignguide.co.uk/media/2404/suds-design-guide-2020.pdf on: 24/01/2022

abstraction than a heavily modified one. The confined, straightened, impounded chalk stream cannot cope with floods and droughts in the same way a natural river can. Pollutants can get trapped more easily into a modified system and tend to become trapped in a river that lacks its natural physical function (meandering and flooding). In-stream structures, such as weirs and sluices, also do damage as they prevent re-colonisation of wildlife after extreme events, and prevent inappropriate sediment being removed from the river. Connections with man-made waterways can also bring a problematic influx of warm, silty, nutrient-rich water.

The evidence base for chalk streams created in parallel to the WCS made the following recommendations to protect and enhance chalk streams:

Measure type	Recommendation
Water efficiency	Recommendation 1 – Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford Recommendation 2 – Require all new non-residential buildings achieve BREEAM "Outstanding" for water throughout Uttlesford
Water neutrality	Recommendation 3 – Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study
Riparian Buffer Zone	Recommendation 4 – Apply a riparian buffer zone in chalk stream areas to exclude all development within the natural flood plain or 15m of the bank, whichever is larger. Recommendation 5 – Apply a vegetated buffer strips on agricultural land within 15m of a chalk stream
Cattle fencing	Recommendation 6 – Encourage responsible land management such as cattle fencing through the Nature Recovery Strategy
Education	Recommendation 7 – Undertake a public engagement exercise to raise awareness of chalk streams and encourage responsible riparian ownership
Sustainable Drainage Systems (SuDS)	Recommendation 8 – Enforce the SuDS hierarchy as defined in the Essex SuDS guidance with a focus on encouraging infiltration SuDS and deep borehole SuDS where appropriate.
Neighbouring authority engagement	Recommendation 9 – Continue and strengthen existing partnerships with neighbouring authorities and other stakeholders to define coordinated policies for chalk stream protection

More details of these recommendations can be found within the chalk stream evidence base.

9.5.4 Use of SuDS in Water Quality Management

SuDS allow the management of diffuse pollution generated by urban areas through the sequential treatment of surface water reducing the pollutants entering lakes and rivers, resulting in lower levels of water supply and wastewater treatment being required. This treatment of diffuse pollution at source can contribute to meeting WFD water quality targets, as well as national objectives for sustainable development.

This is usually facilitated via a SuDS Management Train of a number of components in series that provide a range of treatment processes delivering gradual improvement in water quality and providing an environmental buffer for accidental spills or unexpected high pollutant loadings from the site. Considerations for SuDS design for water quality are summarised in Figure 9.3 below.

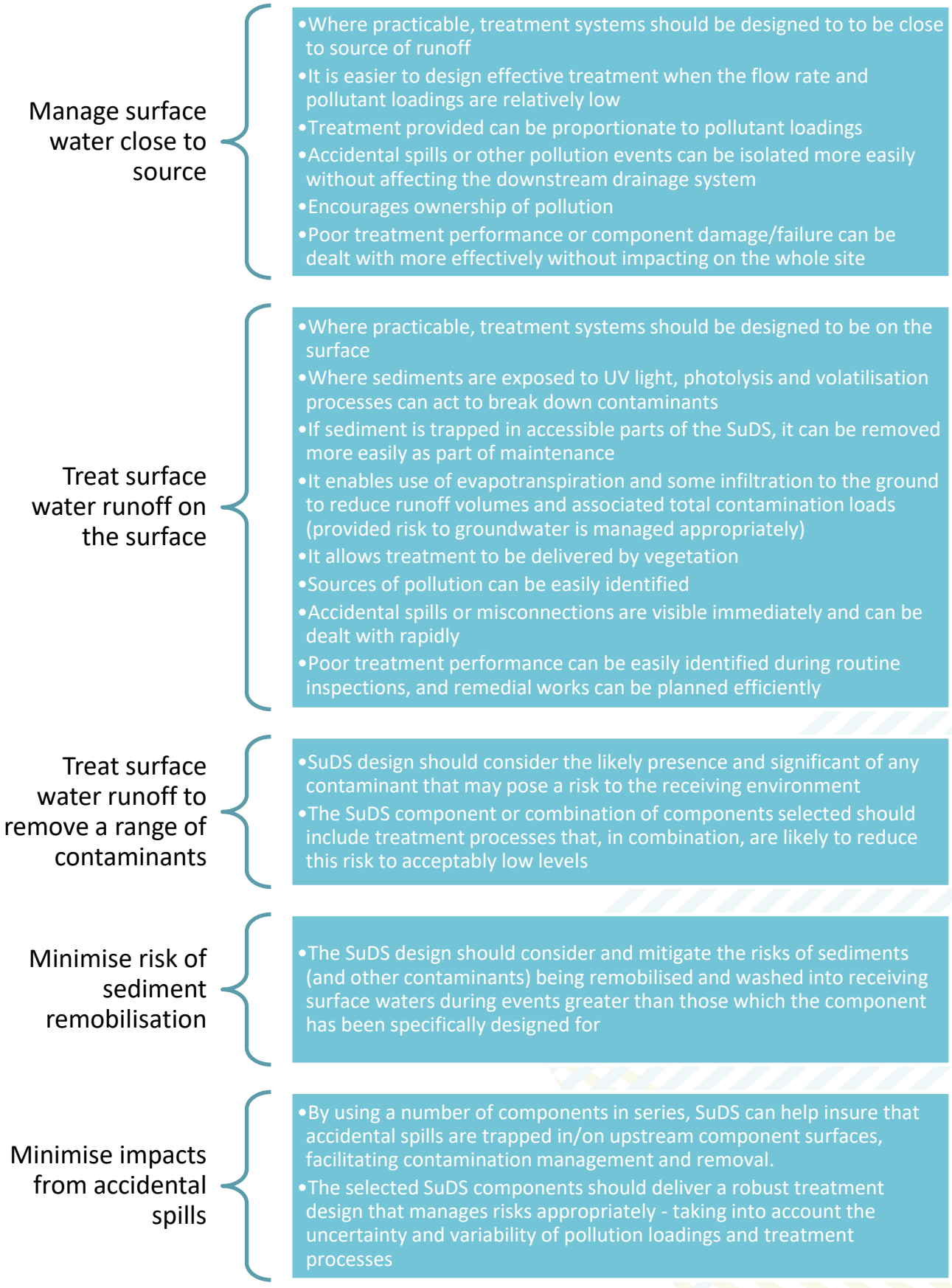


Figure 9.3 Considerations for SuDS Design for Water Quality

Managing pollution close to its source can help keep pollutant levels and accumulation rates low, allowing natural processes to be more effective. Treatment can often be delivered

within the same components that are delivering water quantity design criteria, requiring no additional cost or land-take.

SuDS designs should control the 'first flush' of pollutants (usually mobilised by the first 5mm of rainfall) at source, to ensure contaminants are not released from the site. Best practise is that no runoff should be discharged from the site to receiving watercourses or sewers for the majority of small (e.g., less than 5mm) rainfall events.

Infiltration techniques will need to consider Groundwater Source Protection Zones and are likely to require consultation with the Environment Agency. Early consideration of SuDS within master planning will typically allow a more effective scheme to be designed.

9.5.5 Additional Benefits

Flood Risk

The Strategic Flood Risk Assessment contains recommendations for SuDS to manage surface water on development sites, with the primary aim of reducing flood risk.

SuDS are most effective at reducing flood risk for relatively high intensity, short and medium duration events, and are particularly important in mitigating potential increases in surface water flooding, sewer flooding and flooding from small and medium sized watercourses resulting from development.

Water Resources

A central principle of SuDS is the use of surface water as a resource. Traditionally, surface water drainage involved the rapid disposal of rainwater, by conveying it directly into a sewer or wastewater treatment works.

SuDS techniques such as rainwater harvesting, allow rainwater to be collected and re-used as non-potable water supply within homes and gardens, reducing the demand on water resources and supply infrastructure.

Climate Resilience

Climate projections for the UK suggest that winters may become milder, and wetter and summers may become warmer, but with more frequent higher intensity rainfall events, particularly in the south east. This would be expected to increase the volume of runoff, and therefore the risk of flooding from surface water, and diffuse pollution, and reduce water availability.

SuDS offer a more adaptable way of draining surfaces, controlling the rate and volume of runoff leaving urban areas during high intensity rainfall, and reducing flood risk to downstream communities through storage and controlled release of rainwater from development sites.

Through allowing rainwater to soak into the ground, SuDS are effective at retaining soil moisture and groundwater levels, which allows the recharge of the watercourses and underlying aquifers. This is particularly important where water resource availability is limited, and likely to become increasingly scarce under future drier climates.

Biodiversity

The water within a SuDS component is an essential resource for the growth and development of plants and animals, and biodiversity benefits can be delivered even by very small, isolated schemes. The greatest value can be achieved where SuDS are planned as part of a wider green landscape, providing important habitat, and wildlife connectivity. With careful design, SuDS can provide shelter, food, foraging and breeding opportunities for a variety of species including plants, amphibians, invertebrates, birds, bats and other animals.

Amenity

Designs using surface water management systems to help structure the urban landscape can enrich its aesthetic and recreational value, promoting health and well-being and supporting green infrastructure. Water managed on the surface rather than underground can help reduce summer temperatures, provide habitat for flora

and fauna and act a resource for local environmental education programmes and working groups and directly influence the sense of community in an area.

9.5.6 Suitable SuDS Techniques

The hydraulic and geological characteristics of each property development site across Uttlesford should be assessed to identify the most appropriate forms of surface water management and any constraining factors to the utilisation of SuDS. These assessments are designed to inform the early-stage site planning process and should be followed up the site-specific detailed drainage assessments.

Appropriate SuDS techniques have been categorised into five main groups, as shown in Table 9.2. Further site-specific investigation should be conducted to determine what SuDS techniques could be used on a particular development, informed by detailed ground investigations.

Table 9.2: Summary of SuDS Categories

SuDS Type	Technique
Source Controls	Green Roof, Rainwater Harvesting, Pervious Pavements, Rain Gardens
Infiltration	Infiltration Trench, Infiltration Basin, Soakaway
Detention	Pond, Wetland, Subsurface Storage, Shallow Wetland, Extended Detention Wetland, Pocket Wetland, Submerged Gravel Wetland, Wetland Channel, Detention Basin
Filtration	Surface Sand filter, Sub-Surface Sand Filter, Perimeter Sand Filter, Bioretention, Filter Strip, Filter Trench
Conveyance	Dry Swale, Under-drained Swale, Wet Swale

9.5.7 Natural Flood Management

Natural Flood Management (NFM) is used to protect, restore, and re-naturalise the function of catchments and rivers to reduce flood risk. A wide range of techniques can be used that aim to reduce flooding by working with natural features and processes in order to store or slow down flood waters before they can damage flood risk receptors (e.g., people, property, infrastructure, etc.). NFM involves taking action to manage flood and coastal erosion risk by protecting, restoring, and emulating the natural regulating functions of catchments, rivers, floodplains, and coasts. Techniques and measures, which could be applied in Uttlesford include:

- Peatland and moorland restoration in upland catchments
- Offline storage areas
- Re-meandering streams
- Targeted woodland planting
- Reconnection and restoration of functional floodplains
- Restoration of rivers and removal of redundant structures
- Installation or retainment of large woody material in river channels
- Improvements in management of soil and land use
- Creation of rural and urban SuDS

In 2017, the Environment Agency published on online evidence base[68] to support the implementation of NFM and with JBA produced maps showing locations with the potential for NFM measures[69]. These maps are intended to be used alongside the evidence directory to help practitioners think about the types of measure that may work in a catchment and the best places in which to locate them. There are limitations with the maps; however, it is a useful tool to help start dialogue with key partners.

9.5.8 Multiple Benefits of NFM

In addition to flood risk benefits, there are also significant benefits in other areas such as habitat provision, air quality, climate regulation and water quality.

Many NFM measures have the ability to reduce nutrient and sediment sources by reducing surface runoff flows from higher ground, reducing soil erosion, trapping sediment at the edge of agricultural land, or encouraging deposition of sediments behind natural dams upstream in watercourses.

Suitable techniques may include:

- Leaky dams
- Woodland planting
- Buffer strips
- Runoff retention ponds
- Land management techniques (soil aeration, cover crops etc.)

68 Working with natural processes to reduce flood risk, Environment Agency (2018). Accessed online at: https://www.gov.uk/government/publications/working-with-natural-processes-to-reduce-flood-risk on: 24/01/2022

69 Mapping the potential for working with natural process, Environment Agency and JBA (2017). Accessed online at: https://www.arcgis.com/home/item.html?id=7315f9439988472a2a2702aa8564455438 on: 24/01/2022

Case Study – Black Brook Slow the Flow

Four engineered log dams were installed on Black Brook at an estimated cost of £2,000, funded by Natural England and the Environment Agency to restore Stanley Bank SSSI. The scheme aimed to improve habitat and reduce the risk of flooding. However, the scheme also resulted in reduced levels of phosphate and nitrate in Black Brook, with phosphate concentrations falling by 3.6mg/l. By 2035, it is predicted that 792m^3 of sediment will be stored in three ponds retained by the jams.

Reproduced from Case Study 17. Black Brook Slow the Flow, St Helens, Norbury, Rogers and Brown, EA WwNP Evidence Base 2017. Photograph taken on 8 May 2015; courtesy of Matthew Catherall

9.5.9 Integrated Constructed Wetlands

An integrated constructed wetland (ICW) is an artificial wetland created for the purpose of treating polluted water, whether this is municipal wastewater, grey water from residential properties, or agricultural runoff.

They are usually unlined, free surface flow wetlands, designed to contain and treat influents within emergent vegetated areas.

Defra carried out a systematic review of the effectiveness of various wetland types, including ICWs for mitigating agricultural pollution such as phosphate and nitrate. The overall conclusion was that all wetland types are very effective at reducing major nutrients and suspended sediments, with the exception of nitrite in ICWs. Nitrate is only reduced when passing through overland buffer strips and through constructed wetlands with vegetation, where the systematic review showed a mean reduction of 29% across the evidence included in the study.

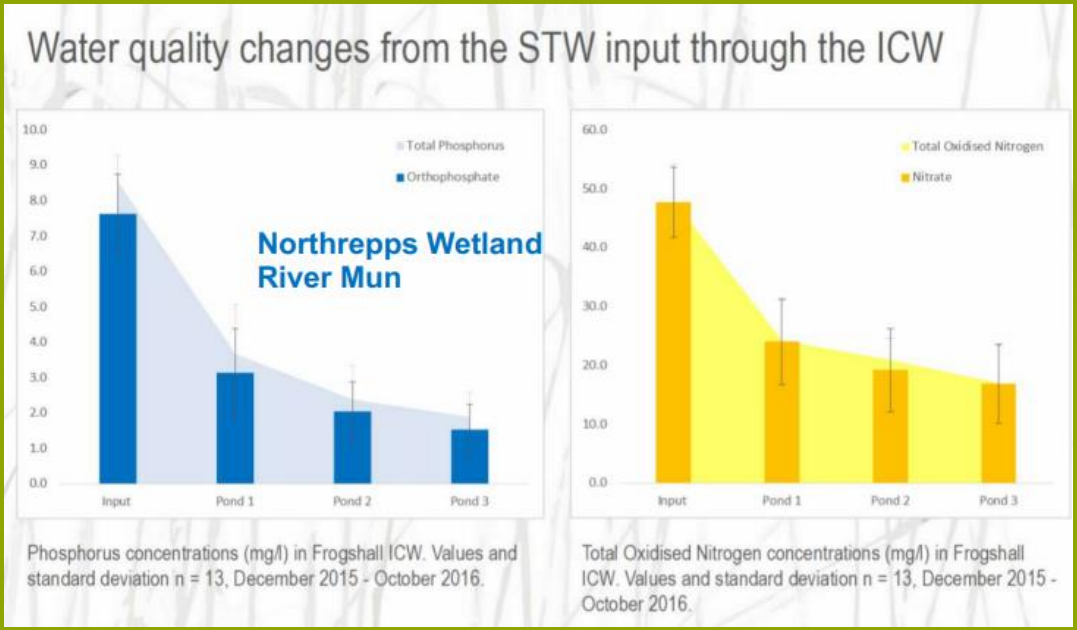
The mean reduction in Total Phosphorus across the evidence base was 78%.

Case Study – Frogshall ICW

The Upper River Mun in Norfolk was experiencing chronic pollution, and a loss in biodiversity in the river. Investigation found that nutrients from a Sewage Treatment Works upstream were contributing to this issue.

A pilot ICW was created consisting of three shallow ponds, filled with 18,000 emergent aquatic plants, and the outfall from the treatment works was diverted to pass through the wetland.

Early monitoring has shown that 90% of the phosphate is being removed by the wetland, and a large increase in biodiversity downstream observed.



Reproduced from "Stripping the Phosphate" a presentation by the Norfolk Rivers Trust (2018).
https://www.theriverstrust.org/media/2018/08/2.-Stripping-the-phosphate-David-Diggens-Norfolk-Rivers-Trust.pdf

9.5.10 Agricultural Management

The Environment Agency's 'Reason for Not Achieving Good' database indicates that one of the reasons for some of the watercourses in the district are not meeting 'Good' WFD standards can be related to agriculture and rural land use. The cause of this includes pollution from fertilisers, manures, pesticides and soils washing into streams when it rains or percolating into the groundwater. Other pressures from agriculture include deepening, widening or re-routing of streams for land drainage, gravel removal and bankside erosion.

There is a big potential to improve water quality by interventions aimed at agricultural sources, especially considering the measures already taken by the water companies to reduce their contribution to phosphate load.

Potential schemes could include:

- Buffer strips
- Cross slope tree planting
- Runoff retention basins

- Contour ploughing
- Cover crops

There is considerable overlap with NFM measures, and the challenges are also very similar. Exact impacts are difficult to measure, although modelling tools such as Farmscoper[70] exist to help with this. Once a scheme is implemented it relies on the landowner to continue to maintain it in order to maintain the mitigation benefit.

Funding for agricultural interventions could come from Catchment Sensitive Farming or a Payment for Ecosystem Services approach.

Case Study – Wessex Water - EnTrade

Wessex Water catchment team used EnTrade to invite farmers to bid to grow cover crops over winter to reduce the nitrogen leaching into the watercourse.

This avoided the need to upgrade Dorchester WwTW to provide the same nitrogen removal capacity.

A trial auction was held in 2015, and two further auctions have since taken place attracting 557 bids from 63 farmers to save 153 tonnes of nitrogen.

"Using EnTrade to create a market in measures to deliver reductions in nitrogen has delivered a 30% saving for Wessex Water compared to traditional catchment approaches."

Ruth Barden, Director of Environmental Strategy, Wessex Water

9.5.11 Barriers

Whilst there are many benefits to implementing NFM and constructed wetlands, or modifying agricultural practises, the impact of these techniques is hard to quantify, and relies on ongoing maintenance to maintain that benefit. Where a potential scheme is not on a development site it will also require permission and support of the landowner. It may not be possible to influence this through planning policy.

9.5.12 Conclusions

- The potential impact of development on a number of protected sites such as SAC, SPAs, Ramsar sites and SSSIs within, or downstream of the study area

70 Farmscoper webpage, ADAS (2020). https://www.adas.uk/Service/farmscoper Accessed on 24/01/2022

should be carefully considered in future plan making. There are also a larger number of Priority Habitats and Priority Rivers.

- There are a number of Groundwater Source Protection Zones, primarily in central and eastern areas of the study area. The impact of future development on groundwater should be investigated fully.
- Development sites within the study area could be sources of diffuse pollution from surface runoff.
- SuDS are required on all development sites. Their design should consider both water quantity and water quality and site level investigations should be undertaken to define the most appropriate SuDS types for each specific development.
- Opportunities exist for these SuDS schemes to offer multiple benefits of flood risk reduction, amenity value and biodiversity.
- Uttlesford District Council should be consulted at an early stage of development to ensure that SuDS are implemented and designed in response to site characteristics and policy factors.
- In the wider area, opportunities exist to implement natural flood management techniques to achieve multiple benefits of flood risk, water quality and habitat creation.

9.6 Recommendations

The recommendations for managing environmental constraints and potential opportunities in Uttlesford is identified below in Table 9.3.

Table 9.3: Recommendations from Environmental Constraints and Opportunities Section

Action	Responsibility	Timescale
Consider the environmental impact of development on protected sites downstream of receiving wastewater treatment works in the Habitats Regulations Assessment	Uttlesford Council	Local Plan Development
The Local Plan should include policies that require all development proposals with the potential to impact on areas with environmental designations to be considered in line with the relevant legislation and where stated, in consultation with Natural England (for national and international designations and priority habitats).	Uttlesford Council	Ongoing
The Local Plan should include policies that require development sites to adopt SuDS to manage water quality of surface runoff.	Uttlesford Council	Ongoing
In partnership, identify opportunities for incorporating SuDS into open spaces and green infrastructure, to deliver strategic flood risk management and meet WFD water quality targets.	Uttlesford Council, AW, TW, EA	Ongoing
Developers should include the design of SuDS at an early stage to maximise the benefits of the scheme	Developers	Ongoing

Action	Responsibility	Timescale
Work with developers to discourage connection of new developments into existing surface water and combined sewer networks. Prevent connections into the foul network, as this is a significant cause of sewer flooding.	Uttlesford Council Developers	Ongoing
Opportunities for Natural Flood Management that include schemes aimed at reducing / managing runoff should be considered to reduce nutrient and sediment pollution within Uttlesford.	Uttlesford Council EA and NE	Ongoing

10 Review of each development scenarios

10.1 Overview

Seven spatial growth options were provided for consideration by UDC. These include two options which focus growth on existing settlements, and five that focus growth in a new settlement. Every option is a combination of sites already in the planning system, growth in the rural centres of Saffron Waldon, Great Dunmow and Stansted Mountfitchet and growth in Local Rural Centres (Great Chesterford, Elsenham, Hatfield Heath, Newport, Takeley, and Thaxted). In options 2a to 2e, the amount of growth in the rural centres is reduced and a new settlement provided in its place. These have been mapped in Appendix A

These growth options were discussed with the water and wastewater companies and compared to the various assessments conducted in this WCS.

Anglian Water provided a general response on the spatial growth options for their area:

"In reviewing spatial options Anglian Water takes the view that there are no showstoppers to the options only that each option may require a higher level of investment which would need to be agreed by regulators and indeed a long lead in time in order for that investment to be undertaken. Consequently, Councils which have a five-year housing land supply and are looking at growth from year 5 onwards may conclude that growth identified in adopted Local Plans will be included within Anglian Water's next five- year plan. The December 2023 date for the new Local Plan will enable growth in Uttlesford to be planned for in Anglian Water's 2025-30 Plan (AMP8) which will also consider investment in water recycling capacity needed up to 2050."

Thames Water did not breakdown their comments by spatial growth option, but did provide some comments on individual treatment works that have been applied to the summary tables below.

10.2 Relative ranking of settlements by water company

"Anglian Water would rank option 1c above 1b as 1c utilises existing WRC treatment capacity more effectively, has lower embedded and operational carbon costs and enables investment in WRC that will need upgrading to be planned and funded in alignment with Anglian Water's regulated investment plans. Deferment of that investment to later in the Plan period also potentially enables emerging nature- based solutions to be tried and tested elsewhere and then applied in Uttlesford."

"Anglian Water's rank of Options 2a – 2e, on the basis of the limited information provided and the criteria of the deliverability of wastewater infrastructure and Climate Change objectives is set out below."

Rank	Option
1	2b
2	2c
3	2e

"We have not taken a view on options 2a and 2d as these sites are entirely within the area served by Thames Water. "

"Our experience in Cambridgeshire is that new communities are highly likely to expand further after reaching their original allocation size. This is because when the locations are selected to be accessible be road and rail and within a buoyant economy, they continue to a be a sustainable location which can efficiently grow with the addition of supporting social, economic, transport, blue-green and utility infrastructure. We have no set preferred size for a new community as the water infrastructure is often most economically and environmentally provided by linking to existing facilities. The case for new infrastructure

and to construct a lower carbon and potentially (part) nature-based solution would be strongest when supporting a larger allocation was to be delivered over a shorter timescale.

One observation on density is that higher density development can reduce the embedded carbon costs of utility infrastructure. Higher density development can also enable more land to be retained for green- blue infrastructure including Sustainable Drainage, which also then provides greater resilience for climate change and adaptation."

Thames Water did not provide a relative ranking of options served by them.

10.2.1 Overall Summary

The tables contained in Section 10.3 contain detailed information from the water companies on each of the spatial growth options. When combined with information from the various section of the WCS report, the following conclusions can be drawn.

Water resources and supply

There is a little difference between the options from a water resources perspective, except that a new settlement may provide opportunities to maximise water efficiency to reduce overall water demand by provide strategic rainwater harvesting and greywater recycling infrastructure.

Wastewater network and treatment

In general, wastewater treatment capacity can be provided where it is required, however there is a carbon cost where wastewater must be pumped over longer distances, and a significant financial cost should a new WwTW be required (although this would be accommodated within the water company's business plan). There may also be timing constraints to providing new wastewater infrastructure at this scale which may impact the delivery schedule of development.

Anglian Water proposed Option 2b (Great Chesterford) as their preferred option and stated the following:

"In taking forward the next stages of the Plan, Anglian Water would want to work with the Council, Affinity Water and Thames Water and the Environment Agency to ensure that an agreed approach was taken to the development of the evidence base for the Local Plan. Based on the options presented there looks to be a hybrid option between option 1c, which would utilise the existing headroom at WRC and one of the new community options. The evidence base and decisions taken by the Council in advancing the Local Plan to adoption would also serve to support Anglian Water's business plans and the agreement of regulators to investment and where necessary changes to WRC permits."

Water quality and environmental impact

Each growth option contains a high level of growth concentrated in a few locations. The additional volume of treated effluent this would generate has the potential to cause a deterioration in water quality if no mitigation is taken. Of particular concern is where this growth would be served by a WwTW discharging to a water course shown to be sensitive to changes in treated effluent volumes or is to an ecologically sensitive waterbody such as a chalk stream.

Modelling suggested that growth around Great Dunmow (utilised in all scenarios but particularly Option 2c) could cause a deterioration in the River Chelmer. It may be preferable for the new settlement to be served by Thames Water in this scenario.

Options 2a and 2b propose a lot of growth that would cause an increase in treated effluent in the River Stort and River Cam respectively (both Chalk Streams). Modelling showed Phosphate levels could be sensitive in these locations. And careful consideration should be given to whether this could be mitigated in these options.

10.3 Summary of Development scenarios

10.3.1 Option 1b Increased growth at the Rural Centres and Local Rural Centres

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	Wastewater services are provided by Anglian Water: "Growth at most of the locations on the south east edge of Saffron Walden has previously been identified through approaches to Anglian Water. The sites' locations within or adjacent to the Saffron Walden sewer catchment area enables proximate connections to the existing network. Based on the average household size of 2.40 people in the OAN the allocation equates to 5,376 people. No investment is planned at the Saffron Walden WRC. The WRC has headroom to cater for a further 2,900 homes/ 6800 people being served from the Saffron Walden WRC catchment. The planned growth of 2159 homes to 2040 under option 1b can be accommodated without expansion of the WRC. The Saffron Waldon sites in option 1b are therefore a low carbon and low- cost growth option for Anglian Water customers. On the issue of CSOs at Saffron Walden measures Anglian Water is spending £0.435m in AMP7. A further £8.8m is being spent by Anglian Water to increase drainage capacity in Saffron Waldon which will reduce the risk of flooding and remove surface water which may end up in the public sewer network. This consequently further reduces the risk of flooding discharges from CSOs or increases the available capacity at the WRC."
Rural Centres	Great Dunmow (Anglian Water)	"Great Dunmow is east of the Anglian Water and Thames Water statutory wastewater service area boundary. As part of early engagement on the Drainage and wastewater management plan (DWMP) in 2021 Anglian Water identified that the WRC is over-capacity as its performance has been affected by previous development in the area. Anglian Water is undertaking works in AMP7 to make the WRC compliant. The planned growth of growth under option 1b would be 1470 homes/ 3660 people. If this level of growth is selected for Great Dunmow, then it should be planned for the later stages of the Local Plan to enable investment by Anglian Water in the Great Dunmow WRC from 2025 onwards. Decisions of growth and wastewater options can then be informed by Anglian Water's current programme of flow monitor installations assessing the impact of recently built and occupied new homes. The option to treat wastewater from Great Dunmow growth in the Thames area would be a high carbon solution involving new network, infrastructure, and pumping."
Rural Centres	Stansted Mountfitchet (Thames Water)	"New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment.

Growth Type	Settlement	Comments
		JBA's headroom assessment indicates that the level of growth proposed in Option 1b would result in Stansted Mountfitchet WwTW being close to its capacity by the end of the plan period.
Local Rural Centres	Newport and Thaxted (Anglian Water)	"The Newport and Thaxted (Great Easton) WRCs are relatively small and have limited headroom. The planned levels of growth under option 1b would rapidly take up that headroom within a few years of the commencement of development. The distance of proposed sites from WRC means that growth at Thaxted will involve pumping sewage with potential need for new pumping capacity. This will have construction and operational carbon costs. If option1b is selected, then the level of growth – 643 homes at Newport and 602 at Thaxted should be phased for the later stages of the Plan and certainly after 2030 to enable Anglian Water to secure regulator agreement to expansion/ supplement provision to existing WRCs."
Local Rural Centres	Great Chesterford (Anglian Water)	"Of the three Local Rural Centres shown in option1b Great Chesterford has the largest available headroom. The 475 homes proposed up to 2040 could be serviced from the existing WRC without a need to expand. The sites shown in option b are sustainably located near to the WRC or within the sewer catchment being and expansion of existing sites. Purely based on wastewater capacity the Great Chesterford sites could be brought forward early in the Plan period and at a higher delivery rate should other locations/ sites have deliverability issues. Growth at the average rate and scale proposed in option 1b could also continue to 2060 should suitable sites come forward."
Local Rural Centres	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW which, while it is likely to have capacity for this level of growth in Option 1b in isolation, in combination with growth from the Rural Centre this WwTW is likely to be at or close to exceeding its flow permit. Growth here needs to be considered alongside the Rural Centre.
Local Rural Centres	Hatfield Heath (Thames Water)	No comments were made by TW No growth is proposed in Option 1b at Hatfield Heather. Growth around the settlement of Hatfield Heath would likely to be served by Hatfield Heath WwTW which was identified as a high-risk spiller with capacity concerns by TW.
Local Rural Centres	Takeley (Thames Water)	Growth around Takeley could be served by Takeley WwTW or by the neighbouring Bishops Stortford WwTW. TW reported that Takeley "STW works well, however it is very small and major upgrades will be needed to accommodate proposed growth". JBA's analysis suggests that this WwTW has issues with its storm

Growth Type	Settlement	Comments
		overflow which should be considered should growth be served by this WwTW (overflow operated 76 times in 2020 for over 1000 hours in total). TW also noted that "There is an ongoing modelling study to assess impact of proposed growth at Takeley sewerage network." Growth may be better served by Bishops Stortford WwTW which has capacity in all scenarios.
Villages	Various	"The location of the sites to provide the 1578 homes under option 1b has not been provided. The headroom of smaller WRC varies considerably and so it is not possible to provide a generic position on the deliverability of wastewater infrastructure to support the growth."
New Settlements		N/A

10.3.2 Option 1c Increased growth at existing settlements with a train station

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	"As the quantum of growth for option 1b and 1c (2159 v 2127 homes) is similar the comments for 1c mirror those for 1b."
	Great Dunmow (Anglian Water)	"Although the size of growth proposed reduces from 1470 to 534 homes from option 1b to 1c the current non availability of headroom at the Great Dunmow means that the comments remain the same. The reduction in the number sites, though not taking forward those in the north east quadrant of the town does on first analysis look to be an effective way to ensure that infrastructure investment by all service providers including utilities is efficiently focused reducing costs and carbon. An allocation of 534 homes would be more deliverable in the later stages of the Plan and enable Anglian Water to seek approval for and make investment in the WRC ahead of the planned growth."
	Stansted Mountfitchet (Thames Water)	"New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment. JBA's headroom assessment indicates that the level of growth proposed in Option 1c would result in Stansted Mountfitchet WwTW exceeding its flow permit – requiring an increase in its permit and/or an upgrade to treatment capacity by the end of the plan period.
Local Rural Centres	Newport and Thaxted (Anglian Water)	"The removal of an allocation at Newport and the reduction to 312 new homes at Thaxted (Great Easton) WRCs through the increase in allocations elsewhere including at Stansted recognises that the

		Newport and Thaxted have existing constrained infrastructure. The quantum of development at Thaxted enables great flexibility on when it could be brought forward in the Plan period. Given the limited capacity at the Newport WRC, Anglian Water would still need to include the uplift in capacity in draft investment plans to be approved and constructed ahead of the sites being built out and occupied."
	Great Chesterford (Anglian Water)	"An increase to new 775 homes at Great Chesterford can be accommodated at the Great Chesterford WRC without further expansion in treatment capacity. As with other development locations the focus of development on a limited number of sites in close proximity is likely to require upgrades to the wastewater network and measures sought from developments to reduce the amount of surface water managed via the public sewers. That network upgrade and site locality specific drainage solution would be funded by developers."
	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW which, while it is likely to have capacity for this level of growth in Option 1c in isolation, in combination with growth from the Rural Centre this WwTW is likely to exceed its flow permit. Growth here needs to be considered alongside the Rural Centre.
	Hatfield Heath (Thames Water)	As Option 1b
	Takeley (Thames Water)	As Option 1b
Villages	Various	"The location of the sites to provide the 1578 homes under option 1b has not been provided. The headroom of smaller WRC varies considerably and so it is not possible to provide a generic position on the deliverability of wastewater infrastructure to support the growth."
New Settlements		N/A

10.3.3 Option 2a Ugley New Community

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	"The reduction in the quantum of growth through the increase in allocations at locations without wastewater treatment capacity (existing and new settlements) does not effectively utilise the existing infrastructure to support growth. Option 2a has higher capital costs and is more carbon intensive that option 1b and 1c."
	Great Dunmow (Anglian Water)	"Increasing growth to 1128 homes would require significant investment by Anglian Water and our customers early in the Plan period to ensure

		headroom was available to accommodate prolonged expansion."
	Stansted Mountfitchet (Thames Water)	Growth here is likely to be served by Stansted Mountfitchet WwTW. "New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment. JBA's headroom assessment indicates that whilst the WwTW is likely to have capacity for growth from the Rural Centre in 2a, in combination with the Local Rural Centre and the new settlement at Ugley, the level of growth proposed in Option 2a would result in Stansted Mountfitchet exceeding its flow permit by the end of the plan period.
Local Rural Centres	Newport and Thaxted (Anglian Water)	"As the size of growth is the same in option 2a as 1b see comments above for 1b. In summary the allocation of more growth to Newport and Thaxted would require investment by Anglian Water and funded through customer's bills instead of using existing capacity at Great Chesterfield."
	Great Chesterford (Anglian Water)	As above
	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW which, whilst it is likely to have capacity for this level of growth in Option 2a and from the Rural Centre in isolation, in combination with growth from the new settlement at Ugley, this WwTW is likely to exceed its flow permit. Growth here needs to be considered alongside the Rural Centre and new settlement.
	Hatfield Heath (Thames Water)	As Option 1b
	Takeley (Thames Water)	As Option 1b
Villages	Various	As option 1a and 1b
New Settlements	Ugley	"As the allocation is west of the M11 it is within Thames Water's service area. As set out above the cost to customers and in carbon is likely to be higher for a new community than using existing infrastructure. The scale of the allocation potentially enables a new facility to be built which would likely have lower operational carbon costs."

10.3.4 Option 2b Great Chesterford New Community

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	"As the size of growth is the same in option 2b as 2a, see comments above for 2a."

	Great Dunmow (Anglian Water)	"As the size of growth is the same in option 2b as 2a, see comments above for 2a."
	Stansted Mountfitchet (Thames Water)	Growth here is likely to be served by Stansted Mountfitchet WwTW. "New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment. JBA's headroom assessment indicates that the WwTW is likely to have capacity for growth from the Rural Centre in 2b, and the Local Rural Centre (Elsenham)
Local Rural Centres	Newport and Thaxted (Anglian Water)	As the size of growth is the same in option 2b as 2a, see comments above for 2a.
	Great Chesterford (Anglian Water)	"An increase to new 775 homes at Great Chesterford can be accommodated at the Great Chesterford WRC without further expansion in treatment capacity. As with other development locations the focus of development on a limited number of sites in close proximity is likely to require upgrades to the wastewater network and measures sought from developments to reduce the amount of surface water managed via the public sewers. That network upgrade and site locality specific drainage solution would be funded by developers."
	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW. Growth in Option 2b from Elsenham and from the Rural Centre should be able to be accommodated within the flow permit of this WwTW. Growth here needs to be considered alongside the Rural Centre.
	Hatfield Heath (Thames Water)	As Option 1b
	Takeley (Thames Water)	As Option 1b
Villages	Various	"The location of the sites to provide the 1578 homes under option 2b has not been provided. The headroom of smaller WRC varies considerably and so it is not possible to provide a generic position on the deliverability of wastewater infrastructure to support the growth."
New Settlements	Great Chesterfield (Anglian Water)	"Option 2b proposes both 475 homes at incremental expansion sites and 2000 homes in a new community before 2040. Subsequent growth of between 3,000 and 7,000 homes is then proposed between 2040 and 2060. As a new community it is likely that the site would take between 5 and 10 years to commence. On the basis of a 2028 commencement for the new community and a steady build out of the 475 homes from other sites across the Plan period the existing headroom at the Great Chesterford WRC would be used up in 2032.

		The Great Chesterford new community would to the north east of the existing settlement on land south west of Linton in South Cambridgeshire. If we use an assumption that Linton will not expand before 2040 then the Linton WRC headroom could be utilised to serve the north east part of Great Chesterford. The combination of using Great Chesterford and Linton WRC would then require additional WRC capacity to be provided in or about 2038 to enable the continued expansion of the new community to 2040 and then to 2060 to serve the further three to seven thousand homes."

10.3.5 Option 2c Easton Park New Community

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	"As the size of growth is the same in option 2c as 2a, see comments above for 2a."
	Great Dunmow (Anglian Water)	"As the size of growth is the same in option 2c as 2a, see comments above for 2a."
	Stansted Mountfitchet (Thames Water)	Growth here is likely to be served by Stansted Mountfitchet WwTW. "New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment. JBA's headroom assessment indicates that the WwTW is likely to have capacity for growth from the Rural Centre in 2c, and the Local Rural Centre (Elsenham)
Local Rural Centres	Newport and Thaxted (Anglian Water)	"As the size of growth is the same in option 2c as 2a, see comments above for 2a."
	Great Chesterford (Anglian Water)	"As the size of growth is the same in option 2c as 2a, see comments above for 2a."
	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW. Growth in Option 2c from Elsenham and from the Rural Centre should be able to be accommodated within the flow permit of this WwTW. Growth here needs to be considered alongside the Rural Centre.
	Hatfield Heath (Thames Water)	As Option 1b
	Takeley (Thames Water)	As Option 1b
Villages	Various	"The location of the sites to provide the 1578 homes under option 2c has not been provided. The headroom of smaller WRC varies considerably and so

		it is not possible to provide a generic position on the deliverability of wastewater infrastructure to support the growth."
New Settlements	Easton Park (Thames Water and Anglian Water)	"The majority allocation is within Thames Water's service area. As set out above the cost to customers and in carbon is likely to be higher for a new community than using existing infrastructure. The scale of the allocation potentially enables a new facility to be built which would likely have lower operational carbon costs. As the option 2c allocation is 2000 homes before 2040 and then three to seven thousand homes to 2060 the timing of the call on Anglian Water wastewater infrastructure is unknown. If the parts of the site closest to Great Dunmow came forward first, then the closest sewer catchment areas and WRCs would be Great Easton – which serves Thaxted and Great Dunmow. As set out above neither has current significant headroom. A 2028 start date for the new community if it were within the Anglian Water area would require the inclusion of funding for expansion of either WRC or a new facility in the next AMP (2025-30) which would be confirmed in 2023/24."

10.3.6 Option 2d West of Hatfield Broad Oak New Community

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	"As the size of growth is the same in option 2d as 2a, see comments above for 2a."
	Great Dunmow (Anglian Water)	"As the size of growth is the same in option 2d as 2a, see comments above for 2a."
	Stansted Mountfitchet (Thames Water)	Growth here is likely to be served by Stansted Mountfitchet WwTW. "New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment. JBA's headroom assessment indicates that the WwTW is likely to have capacity for growth from the Rural Centre in 2d, and the Local Rural Centre (Elsenham)
Local Rural Centres	Newport and Thaxted (Anglian Water)	"As the size of growth is the same in option 2d as 2a, see comments above for 2a."
	Great Chesterford (Anglian Water)	"As the size of growth is the same in option 2d as 2a, see comments above for 2a."
	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW. Growth in Option 2d from Elsenham and from the Rural Centre should be able

		to be accommodated within the flow permit of this WwTW. Growth here needs to be considered alongside the Rural Centre.
	Hatfield Heath (Thames Water)	No comments were provided by TW No growth in the Local Rural Centre is proposed in this option. See new settlement below.
	Takeley (Thames Water)	As Option 1b
Villages	Various	"The location of the sites to provide the 1578 homes under option 2d has not been provided. The headroom of smaller WRC varies considerably and so it is not possible to provide a generic position on the deliverability of wastewater infrastructure to support the growth."
New Settlements	Hatfield Heath	Growth here would be served by either Hatfield Heath WwTW or Little Hallingbury or pumped north to Bishops Stortford WwTW. TW commented that Hatfield Heath is a high-risk WwTW and a high spiller (from its storm overflow). They also identified significant capacity concerns. The JBA headroom assessment indicated a capacity of approx. 350 houses. A significant upgrade to the WwTW would therefore be required. Little Hallingbury WwTW is headroom for approx. 900 houses so could accommodate a proportion of this growth (assuming environmental capacity in the receiving watercourse). Pumping to Bishops Stortford WwTW would be a solution from a capacity point of view but would come at an operational carbon cost. Anglian Water also commented on this option: "As the allocation is adjacent to M11 A1060 and it is within Thames Water's service area. As set out above the cost to customers and in carbon is likely to be higher for a new community than using existing infrastructure. The scale of the allocation including 3000 homes after 2060 potentially enables a new facility to be built which would likely have lower operational carbon costs." TW stated in discussions that a new WwTW would generally be a least preferred option.

10.3.7 Option 2e East of Stebbing New Community

Growth Type	Settlement	Comments
Rural Centres	Saffron Waldon (Anglian Water)	"As the size of growth is the same in option 2e as 2a, see comments above for 2a."

	Great Dunmow (Anglian Water)	"As the size of growth is the same in option 2e as 2a, see comments above for 2a."
	Stansted Mountfitchet (Thames Water)	Growth here is likely to be served by Stansted Mountfitchet WwTW. "New growth scheme in AMP7 to accommodate new permitted growth in and around Stansted Mountfitchet. The scheme is at design phase and will be delivered by 2023." The impact of this scheme on headroom is unknown so cannot be considered in this assessment. JBA's headroom assessment indicates that the WwTW is likely to have capacity for growth from the Rural Centre in 2e, and the Local Rural Centre (Elsenham)
Local Rural Centres	Newport and Thaxted (Anglian Water)	"As the size of growth is the same in option 2e as 2a, see comments above for 2a."
	Great Chesterford (Anglian Water)	"As the size of growth is the same in option 2e as 2a, see comments above for 2a."
	Elsenham (Thames Water)	No comments were made by TW Growth here is likely to be served by Stansted Mountfitchet WwTW. Growth in Option 2e from Elsenham and from the Rural Centre should be able to be accommodated within the flow permit of this WwTW. Growth here needs to be considered alongside the Rural Centre.
	Hatfield Heath (Thames Water)	As option 1b.
	Takeley (Thames Water)	As Option 1b
Villages	Various	"The location of the sites to provide the 1578 homes under option 2e has not been provided. The headroom of smaller WRC varies considerably and so it is not possible to provide a generic position on the deliverability of wastewater infrastructure to support the growth."
New Settlements	East of Stebbing	"The land identified for the new community at Stebbing is not served by any of the existing WRCs in Uttlesford district. There may be an option to connect into the Braintree network and WRC to the east. However, whilst Braintree WRC has current headroom the growth planned for Braintree would have first call on this capacity. This is on the basis of the relative costs and carbon impacts to serve the two growth locations. The comments above on the forward planning, funding approval, lead in times and carbon costs and opportunities for a new facility to serve the new community apply to Option 2e."

11 Summary and overall conclusions

11.1 Conclusions

Assessment	Conclusion
Water resources	• Both WRZs in the study area are classed as being under serious water stress – justifying the more stringent target of 110 l/p/d under building regulations. The strategic direction in the UK set out in the new National Water Resources Framework is to attain an average household water efficiency of 110 l/p/d by 2050. This also aligns with the recommendation in the River Basin Management Plan aimed at reducing the impact of abstraction. There would also be a positive economic impact for residents in terms of reduced energy and water bills. • There is sufficient evidence to recommend the optional 110 litres per person per day allowed under Building Regulations. However, within Uttlesford are two chalk stream catchments, the river Cam and River Stort and their tributaries. Both these rivers are failing to achieve Good Status under the Water Framework Directive, with one of the reasons cited being abstraction for public water supply which causes low flows. It is important therefore that growth during the local plan period does not make this situation worse. A tighter water efficiency standard of 90 l/p/d is therefore recommended for all new build residential properties in order to minimise the new demand. It is recommended that all new non-residential properties achieve a score of "Outstanding" in the BREEAM New construction standard for water. • It is also recommended that the council explore policies that would achieve or approach water neutrality, and this will be explored further in the stage 2 WCS.A comparison was carried out between the level of growth anticipated in the water resource management plan, and Uttlesford's housing need. The Uttlesford Local Plan review is expected to result in significantly higher growth than the average percentage growth in the rest of the WRZ. Future updates to the WRMP should include this higher growth rate.
Water supply infrastructure	• Modelling of the water supply network was not carried out in Stage 1 • Affinity Water did not identify any showstoppers and the level of growth proposed did not cause any concern. • AfW has a statutory duty to provide a water supply to development sites, however if significant new infrastructure is required, some constraints may be placed on the phasing of development sites to ensure that infrastructure is in place prior to development being occupied.
Wastewater collection	• Development in areas where there is limited wastewater network capacity will increase pressure on the network, increasing the risk of a detrimental impact on existing customers, and increasing the likelihood of storm overflow operation. Early engagement with developers, TW and AW is required, and further modelling of the network may be required in the Stage 2 WCS and at the planning application stage. Furthermore, in the TW and AW networks, there are areas where the current network is a combined sewer system, and further separation of foul and surface water may be required, as well as suitably designed SuDS. If there are areas where the current network is a combined sewer system, further

Assessment	Conclusion
	separation of foul and surface water may be required, as well as suitably designed SuDS. • Early engagement between developers, Uttlesford District Council and TW and AW is recommended to allow time for the strategic infrastructure required to serve these developments to be planned.
Wastewater Treatment assessment	• JBA performed a headroom assessment comparing the current dry weather flow (DWF) at each WwTW to the permitted flow and adding the additional effluent from committed growth in the local plan period. • Great Chesterford, Great Dunmow, Felsted, Clavering, Great Sampford and Newport WwTWs may exceed their current maximum permitted DWF over the Local Plan period as a result of potential growth in Uttlesford, with Great Easton and High Roding WwTWs also predicted to be very close to capacity. Many of these WwTW have currently planned upgrades which may alleviate some capacity issues. Early engagement between the Council and AW/TW is required to ensure that opportunities to accommodate this growth within existing upgrade schemes can be realised. • For smaller treatment works that may require upgrading to increase capacity, TW raised a concern that may not be room around the works to expand. This should be considered in Stage 2. • There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows contributing to a worsening of water quality in the area. Action should be taken by the water companies to address these overflows prior to an increase in wastewater demand being generated by new development. TW and AW have confirmed the importance of the investigations into storm overflow performance.
Water Quality	• Growth during the local plan period will increase the discharge of treated wastewater from WwTWs in Uttlesford. There is a potential for this to cause a deterioration in water quality in the receiving watercourses and this must be carefully considered. • Modelling indicated a number of watercourses in the study area that may be sensitive to increases in treated effluent. Further modelling will be required in Stage 2. • Thames Water indicated concerns about limits to certain chemicals such as Nickel that have been applied at some WwTWs. Consideration should also be given to these in Stage 2.
Environmental Constraints and Opportunities	• The potential impacts of development on a number of protected sites such as SAC, SPAs, SSSIs and Ramsar sites within, or downstream of the study area should be carefully considered in future plan making. There are also a larger number of Priority Habitats and Priority Rivers. • There are a number of Groundwater Source Protection Zones, primarily in central and eastern areas of the study area. The impact of future development on groundwater should be investigated fully. • Development sites within the study area could be sources of diffuse pollution from surface runoff.

Assessment	Conclusion
	• SuDS are required on all development sites. Their design must consider both water quantity and water quality and site level investigations should be undertaken to define the most appropriate SuDS types for each specific development. • Opportunities exist for these SuDS schemes to offer multiple benefits of flood risk reduction, amenity value and biodiversity. • Uttlesford District Council should be consulted at an early stage of development to ensure that SuDS are implemented and designed in response to site characteristics and policy factors. • In the wider area, opportunities exist to implement natural flood management techniques to achieve multiple benefits of flood risk, water quality and habitat creation. • A chalk stream evidence base was prepared in parallel to the WCS. Several recommendations were made to protect and enhance chalk streams in Uttlesford which are listed in Section 9.5.3.

11.2 Recommendations

Aspect	Action	Responsibility	Timescale
Water Resources	Continue to regularly review forecast and actual household growth across the supply region through WRMP Annual Update reports, and where significant change is predicted, engage with Local Planning Authorities.	AfW	Ongoing
	Provide yearly profiles of projected housing growth to water companies to inform the WRMP.	UDC	Annually
	Use planning policy to require a minimum water efficiency of 90 l/p/d for new build housing.	Uttlesford Council	In Uttlesford LP
	Use planning policy to require new build non-residential development to achieve "Outstanding" for water in the BREEAM New Construction standard.	Uttlesford Council	In Uttlesford LP
	The concept of water neutrality has potentially a lot of benefit in terms of resilience to climate change and enabling all waterbodies to be brought up to Good status. Explore further with the water companies and the Environment Agency how the Council's planning and climate change policies can encourage this approach. This approach could have particular application in strategic sites and new settlements	UDC, EA, AfW	In LP and Climate Change Action Plan

Aspect	Action	Responsibility	Timescale
	Larger residential developments, including new settlements), and commercial developments should consider incorporating greywater recycling and/or rainwater harvesting into development at the master planning stage in order to reduce water demand.	UDC, AfW	In Uttlesford LP
	Water companies should advise Uttlesford Council of any strategic water resource infrastructure developments within the study, where these may require safeguarding of land to prevent other type of development occurring.	AfW, UDC	As part of Uttlesford LP process
Water Supply	Undertake network modelling where appropriate as part of the planning application process to ensure adequate provision of water supply is feasible	AfW, UDC	As part of planning process
	Development of sites indicated as requiring further modelling or upgrades to capacity should be aligned with provision of infrastructure. Early collaboration between UDC, developers and AfW is required.	UDC, AfW Developers	Ongoing
Wastewater Collection	Early engagement between Uttlesford District Council and TW/AW is required to ensure that where strategic infrastructure is required, it can be planned in by TW/AW, and will not lead to any increase in discharges from sewer overflows.	UDC, TW/AW	Ongoing
	Take into account wastewater infrastructure constraints in phasing development in partnership with the sewerage undertaker	UDC, AW/TW	Ongoing
	Developers will be expected to work with the sewerage undertaker closely and early in the planning promotion process to develop an outline Drainage Strategy for sites. The Outline Drainage strategy should set out the following: What – What is required to serve the site Where – Where are the assets / upgrades to be located	Developers, AW/TW, UDC	Ongoing

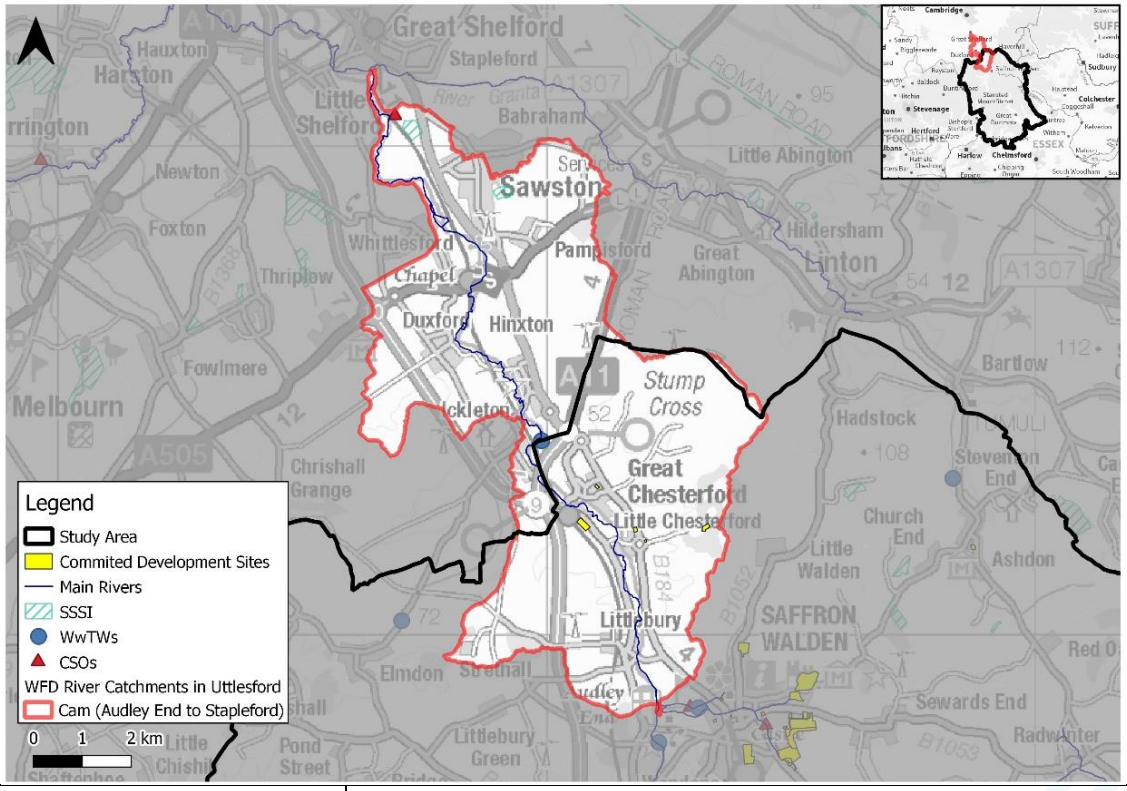
Aspect	Action	Responsibility	Timescale
	When – When are the assets to be delivered (phasing) Which – Which delivery route is the developer going to use, i.e., s104 s98 s106 etc. The Outline Drainage Strategy should be submitted as part of the planning application submission, and where required, used as a basis for a drainage planning condition to be set.		
	Developers will be expected to demonstrate to the Lead Local Flood Authority (LLFA) that surface water from a site will be disposed using a sustainable drainage system (SuDS) with connection to surface water sewers seen as the last option. New connections for surface water to foul sewers will be resisted by the LLFA.	Developers LLFA	Ongoing
Wastewater Treatment	Early engagement with AW and TW is required to ensure that provision of WwTW capacity is aligned with delivery of development.	UDC	During Local Plan Review process
	Provide Annual Monitoring Reports to AW and TW detailing projected housing growth.	UDC, AW/TW, EA	Ongoing
	AW and TW to assess growth demands as part of their wastewater asset planning activities and feedback to the Council if concerns arise.	AW/TW	Ongoing
Water Quality	Provide annual monitoring reports to AW/TW detailing projected housing growth in UDC	UDC	Ongoing
	When preferred options for growth are identified, undertake water quality impact modelling as part of a Stage 2 WCS.	UDC	Stage 2 WCS
	Take into account the full volume of growth (from UDC and neighbouring authorities) within the catchment when considering WINEP schemes or upgrades at WwTW	AW / TW	Ongoing
Environment	Consider the environmental impact of development on protected sites downstream of receiving wastewater treatment works in the Habitats Regulations Assessment	UDC	Local Plan development

Aspect	Action	Responsibility	Timescale
	The recommendations within the Chalk Stream evidence base should be adopted.	UDC	Local Plan development
	The Local Plan should include policies that require all development proposals with the potential to impact on areas with environmental designations to be considered in line with the relevant legislation and where stated, in consultation with Natural England (for national and international designations and priority habitats).	UDC	Local Plan development
	The Local Plan Review should include policies that require development sites to adopt SuDS to manage water quality of surface runoff.	UDC	Local Plan development
	In partnership, identify opportunities for incorporating SuDS into open spaces and green infrastructure, to deliver strategic flood risk management and meet WFD water quality targets.	UDC, AW / TW, EA	Ongoing
	Developers should include the design of SuDS at an early stage to maximise the benefits of the scheme	Developers	Ongoing
	Work with developers to discourage connection of new developments into existing surface water and combined sewer networks. Prevent connections into the foul network, as this is a significant cause of sewer flooding.	UDC Developers	Ongoing
	Opportunities for Natural Flood Management that include schemes aimed at reducing / managing runoff should be considered to reduce nutrient and sediment pollution within Uttlesford	UDC, EA, NE	Ongoing

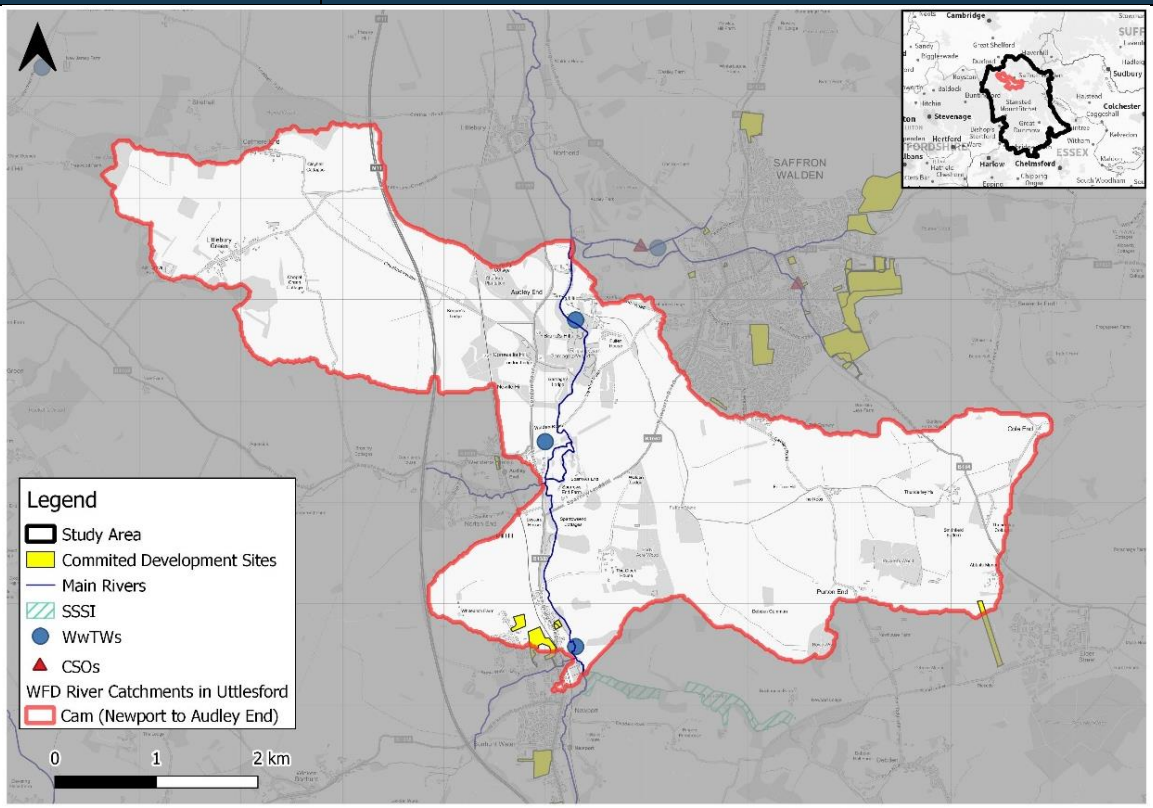
Appendices

A Spatial Development Option Sites mapping

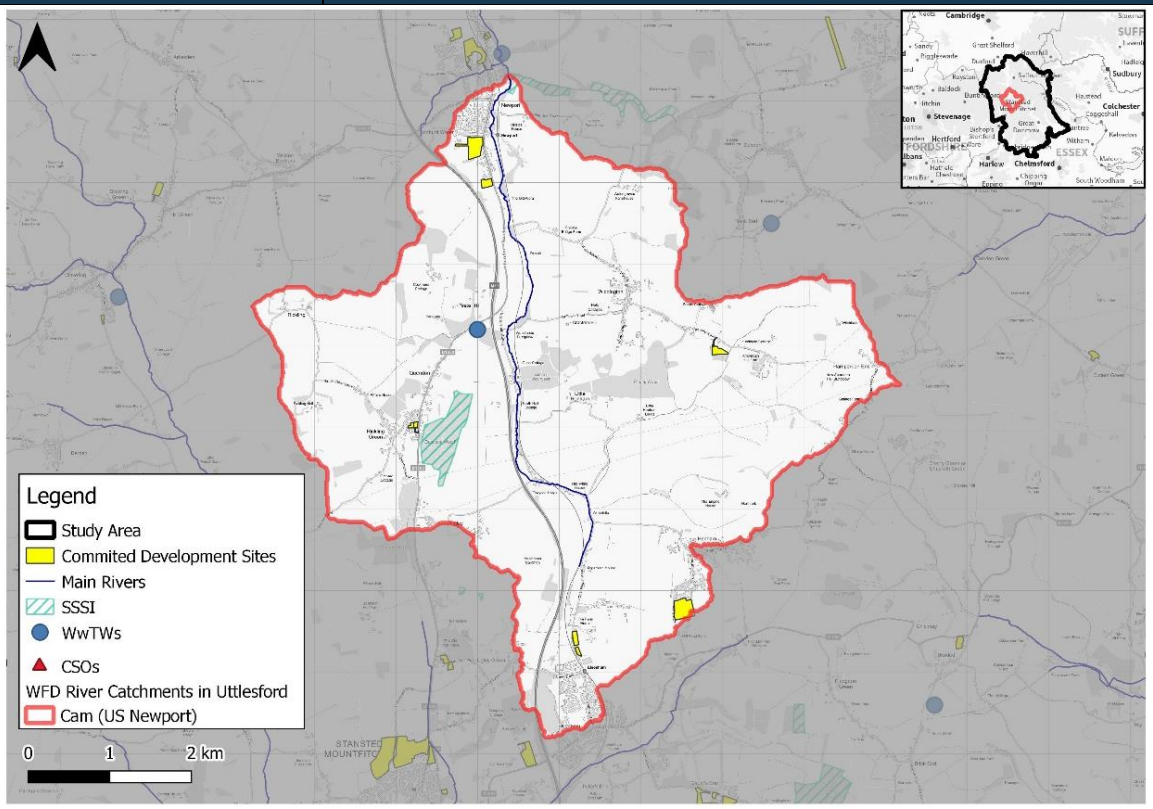
B WFD Catchment summaries

WFD Catchment name	Cam (Audleys End to Stapleford)
	
WwTWs	• Great Chesterford WwTW – Capacity likely to be used early in plan period based on just current commitments • One development site not within sewer catchment
Chalk Stream	• Yes - River Cam
Storm Overflows	• Great Chesterford WwTW and Sawston WwTW (outside district) storm overflows. Both of these are located downstream of the Uttlesford District. Operating below threshold for investigation.
How many development sites are located in the catchment?	• Commitments and Consents - 5 Sites- 19 houses and 3,735m^2 of employment land • New Settlement - Great Chesterford in Option 2b
WFD Status (2019)	• Overall Status - Poor • Ammonia - High • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, industry, and agriculture and rural land management are impacting flow, physical modification and point sources, leading to increased levels of phosphate and changes in the hydrological regime.

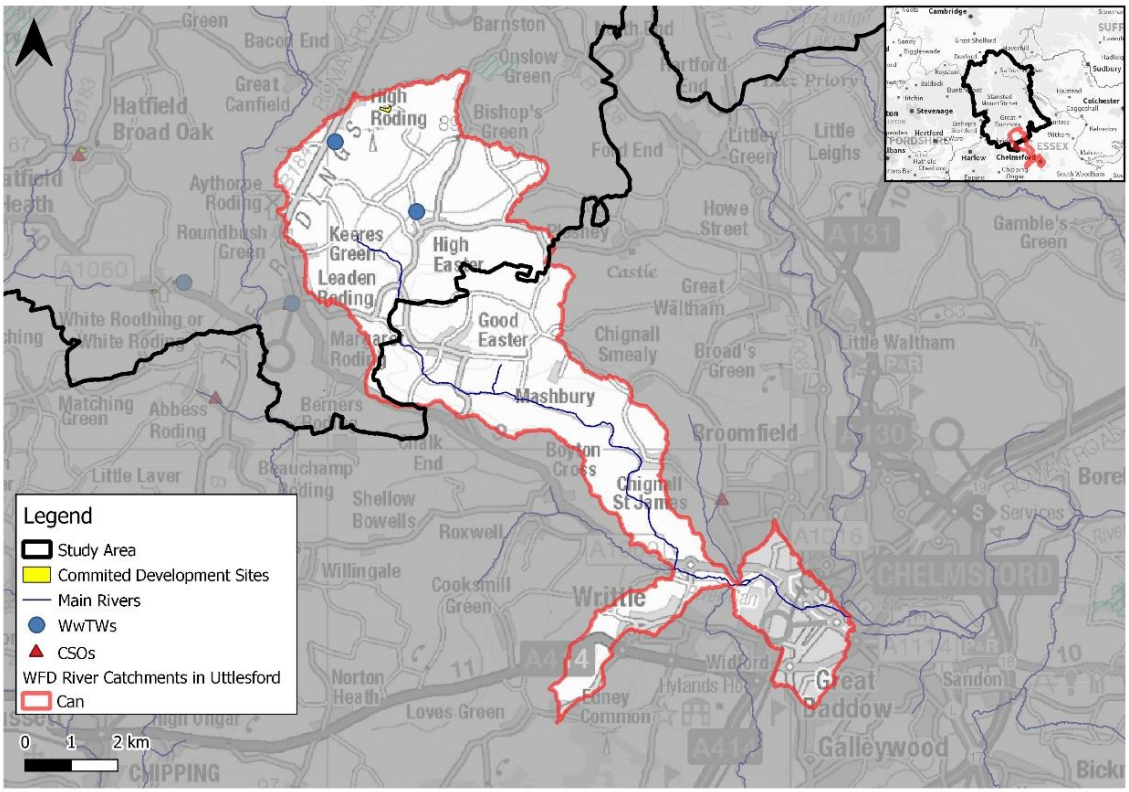
Potential issues in the catchment	• Chalk stream (Cam) present in catchment. • Discharge from industry and sewers has prevented the catchment from achieving good status. • Storm overflow present – but is performing ok • The Great Chesterford new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

WFD Catchment name	Cam (Newport to Audley End)
	
WwTWs	• Newport WwTW – currently at DWF permit limit • Wendens Ambo WwTW – flow not monitored – small WwTW with limited capacity • Audleys End WwTW - flow not monitored – small WwTW with limited capacity
Chalk Stream	• Yes- River Cam
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 3 Sites- 43 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Bad • Reasons for not achieving good status:

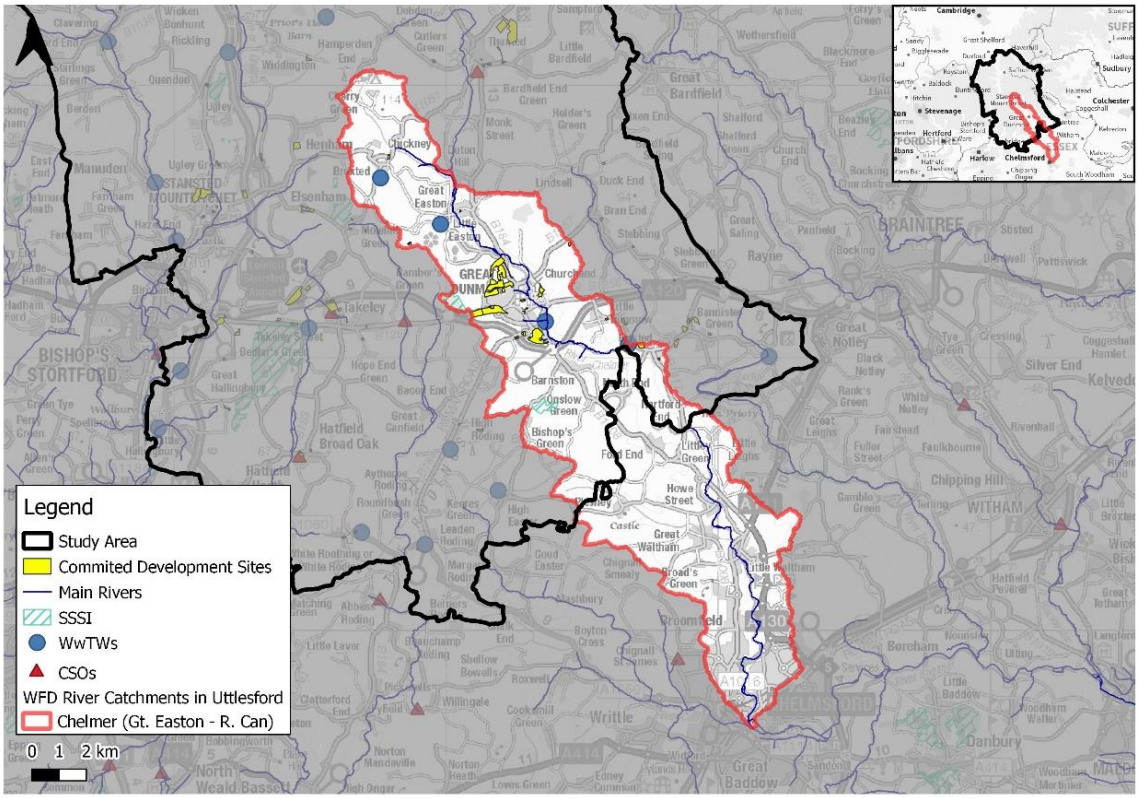
	The water industry, and agriculture and rural land management are impacting the flow and point sources, leading to increased levels of phosphate and changes in the hydrological regime.
Potential issues in the catchment	• Chalk stream present (Cam) • Discharge from industry and sewers has prevented the catchment from achieving good status. • Committed development in the WFD catchment falls into the Newport WwTW catchment.

WFD Catchment name	Cam (US Newport)
	
WwTWs	• Quendon WwTW – has capacity after commitments (135 dwellings) • One development site is located outside of the Quendon WwTW catchment.
Chalk Stream	• Yes- River Cam
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 8 Sites - 178 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate

	• Reasons for not achieving good status: The water industry, and agriculture and rural land management are impacting point and diffuse sources, the flow and physical modification, leading to increased levels of phosphate, dissolved oxygen, and changes to the hydrological regime and invertebrates.
Potential issues in the catchment	• Discharge from sewage discharge, poor nutrient management, groundwater abstraction and land drainage has prevented the catchment from achieving good status. • Committed development in the WFD catchment falls into the Quendon and Stansted Mountfitchet WwTW catchments.

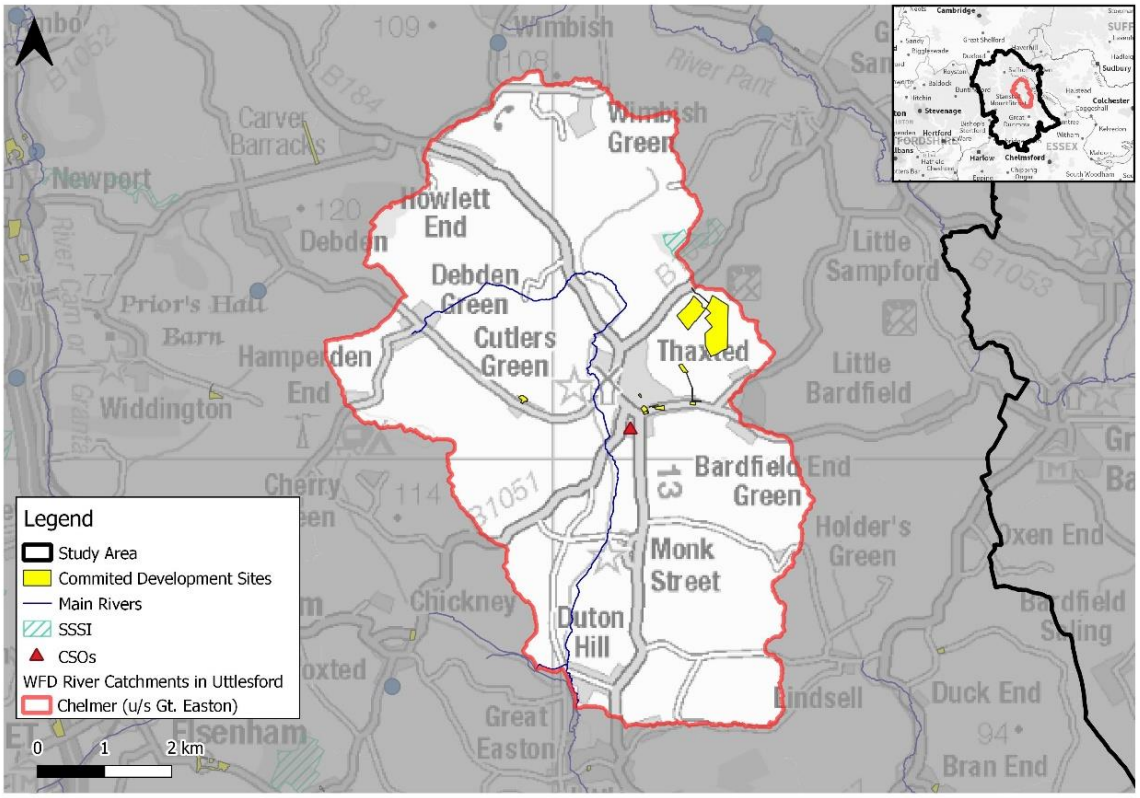
WFD Catchment name	Can
	
WwTWs	• High Roding WwTW – has capacity after commitments (17 houses) • High Easter WwTW – has capacity after commitments (172 houses) • One development site is located outside of the High Roding and High Easter WwTW catchments.
Chalk Stream	• No
Storm Overflows	• None
How many	• Commitments and Consents - 1 Site - 5 houses

development sites are located in the catchment?	• New Settlement - None
WFD Status (2019)	• Overall Status - Poor • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry, agriculture and rural land management and industry are impacting point and diffuse sources and physical modification, leading to increased levels in phosphate and changes to levels of invertebrates and fish.
Potential issues in the catchment	• Discharge from sewage discharge, agriculture and trade discharge have prevented the catchment from achieving good status.

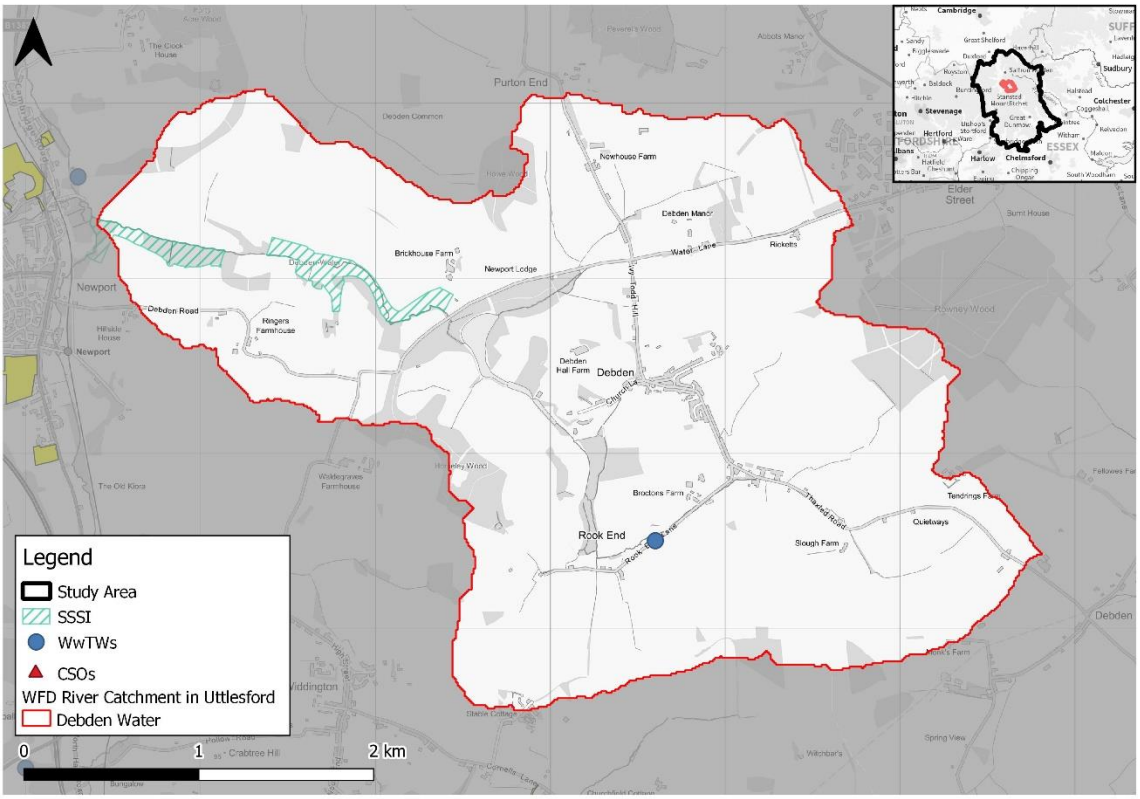
WFD Catchment name	Chelmer (Gt Easton- River Can)
	
WwTWs	• Broxted WwTW- flow not monitored – small WwTW with limited capacity • Great Easton WwTW – capacity available after commitments (68 houses) • Great Dunmow WwTW – currently over capacity – scheme in AMP7 to make works compliant • Felsted – currently over capacity

Chalk Stream	• No
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 25 Site- 2,249 houses and 705m^2 of employment land • New Settlement - Easton Park in Option 2c
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - High • Phosphate - Poor • Reasons for not achieving good status: The water industry, agriculture and rural land management, and urban and transport are impacting point and diffuse sources, and physical modification, leading to changes in the levels of phosphate, dissolved oxygen and fish.
Potential issues in the catchment	• Discharge from sewage discharge, agriculture and trade discharge have prevented the catchment from achieving good status. • Several of the WwTWs in the catchment are already shown to be exceeding their permit as a result of committed development. Additional capacity would need to be provided should further development be planned • A significant amount of new development is proposed in this catchment. The increase in flow into the Great Dunmow and Great Easton WwTWs could have a significant effect on water quality in the catchment and required modelling

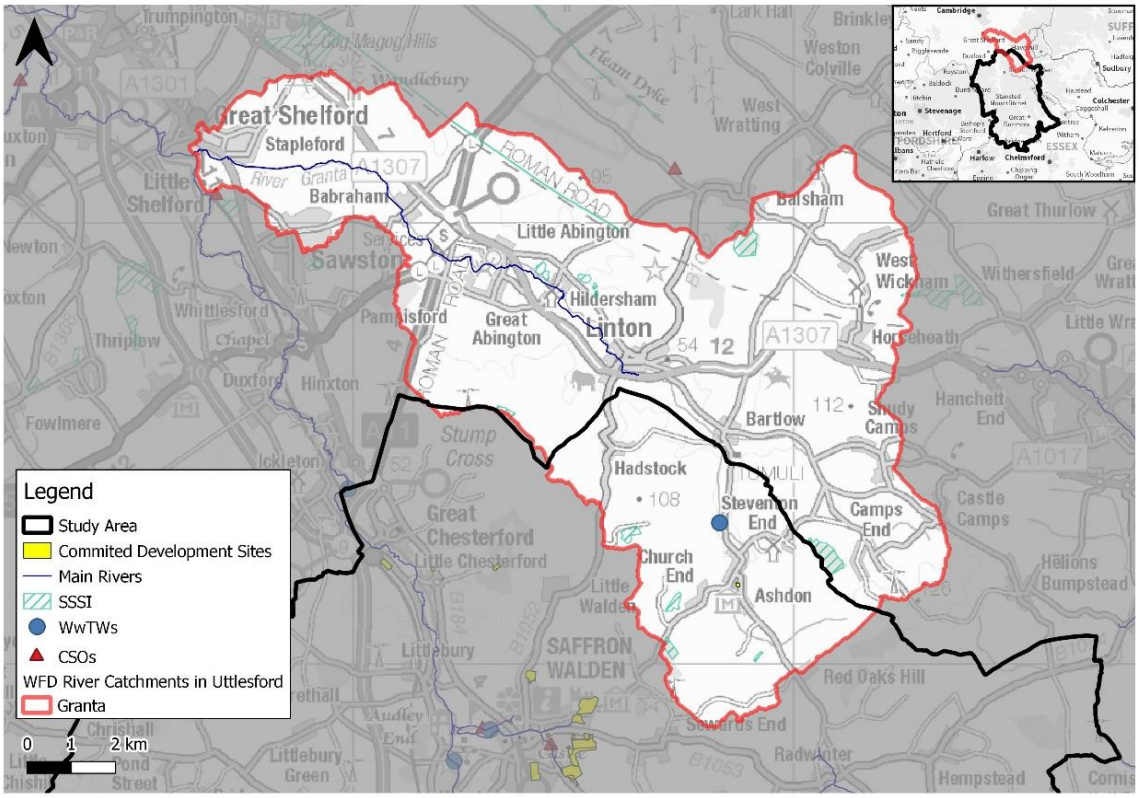
WFD Catchment name	Chelmer (u/s Gt Easton)



WwTWs	• None
Chalk Stream	• Partially - The upper parts of the watercourse are underlain by chalk
Storm Overflows	• Thaxted - Park Street
How many development sites are located in the catchment?	• Commitments and Consents - 10 Sites- 108 houses • New Settlement- None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Good • Reasons for not achieving good status: The agriculture and rural land management sector is impacting diffuse sources, leading to changes in levels of dissolved oxygen, phosphate and invertebrates.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Transport drainage and poor nutrient management have prevented catchment from achieving good status. • The Thaxted Park Street Storm Overflow operated 33 times in 2020 for a period of 49.5 hours. This is above the threshold of an investigation by the Environment Agency.

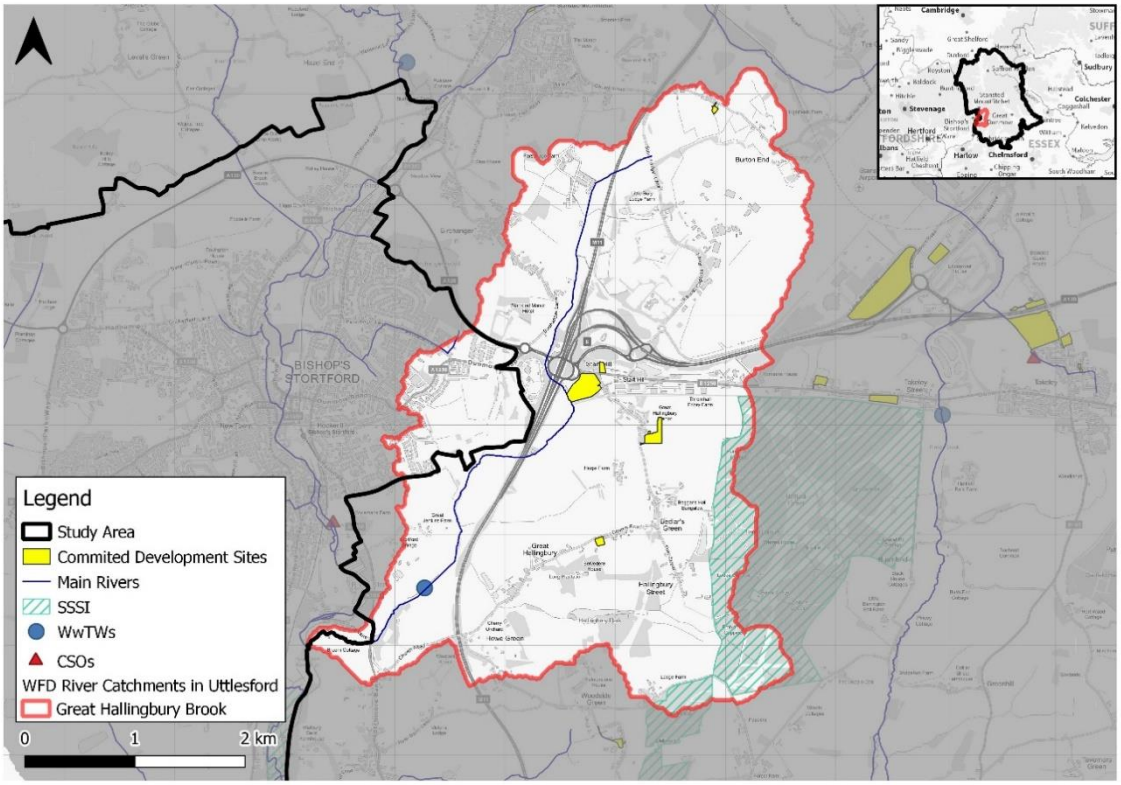
WFD Catchment name	Debden Water
	
WwTWs	• Debden WwTW – has capacity after commitments (247 houses)
Chalk Stream	• Yes - The catchment is underlain by chalk (headwaters of Cam)
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - None • New Settlement - None
WFD Status (2019)	• Overall Status - Poor • Ammonia - N/A • BOD - N/A • Phosphate - N/A • Reasons for not achieving good status: The water industry is impacting physical modification leading to changes in mitigation measures assessments.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer.

WFD Catchment name	Granta

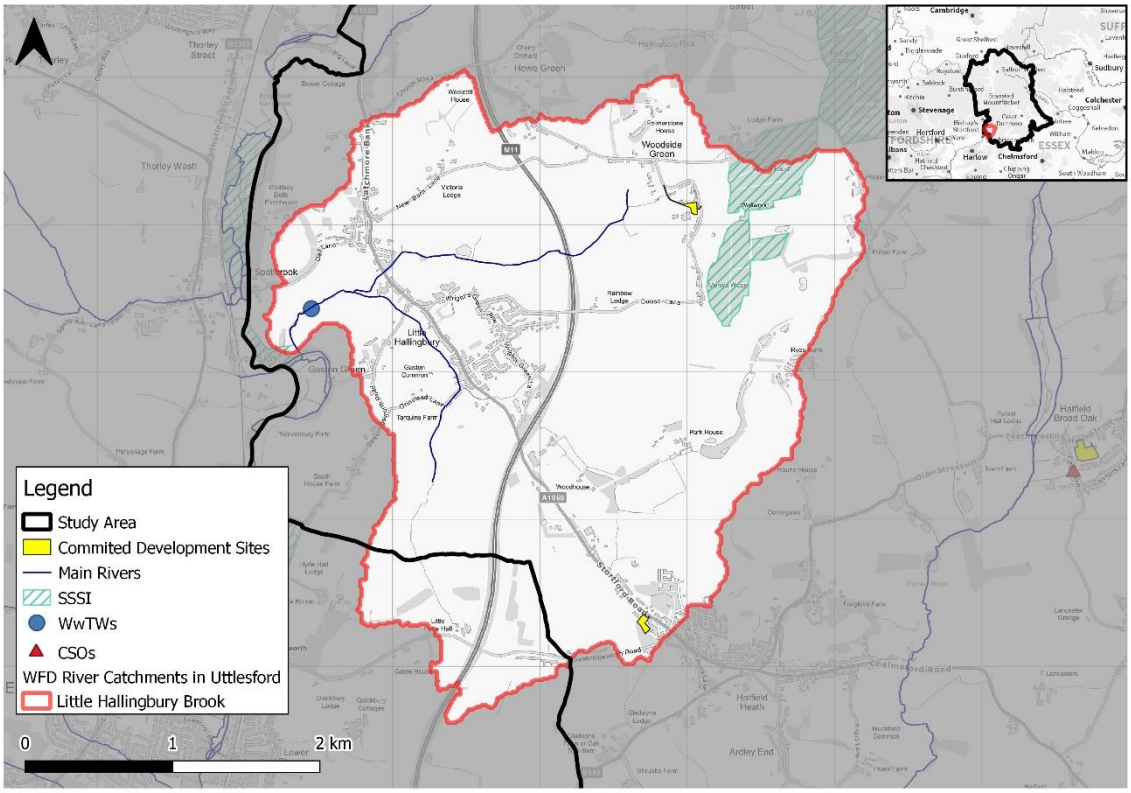


WwTWs	• Ashdon WwTW – has capacity (1,285 houses)
Chalk Stream	• Yes - The catchment is underlain by chalk.
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents – none • New Settlement - none
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD – N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, and agriculture and rural land management are affecting the flow and point sources, leading to changes in the hydrological regime and phosphate levels.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Discharge from abstractions and sewage discharge has prevented the catchment from achieving good status.

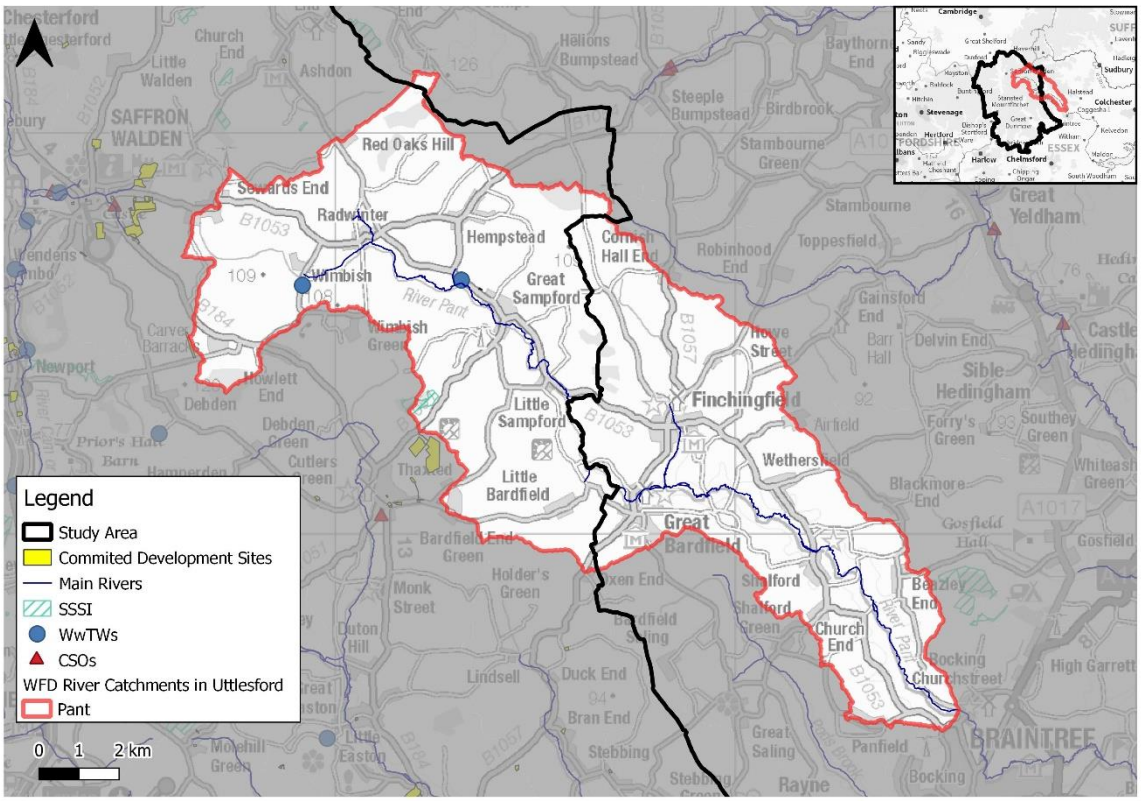
WFD Catchment name	Great Hallingbury Brook



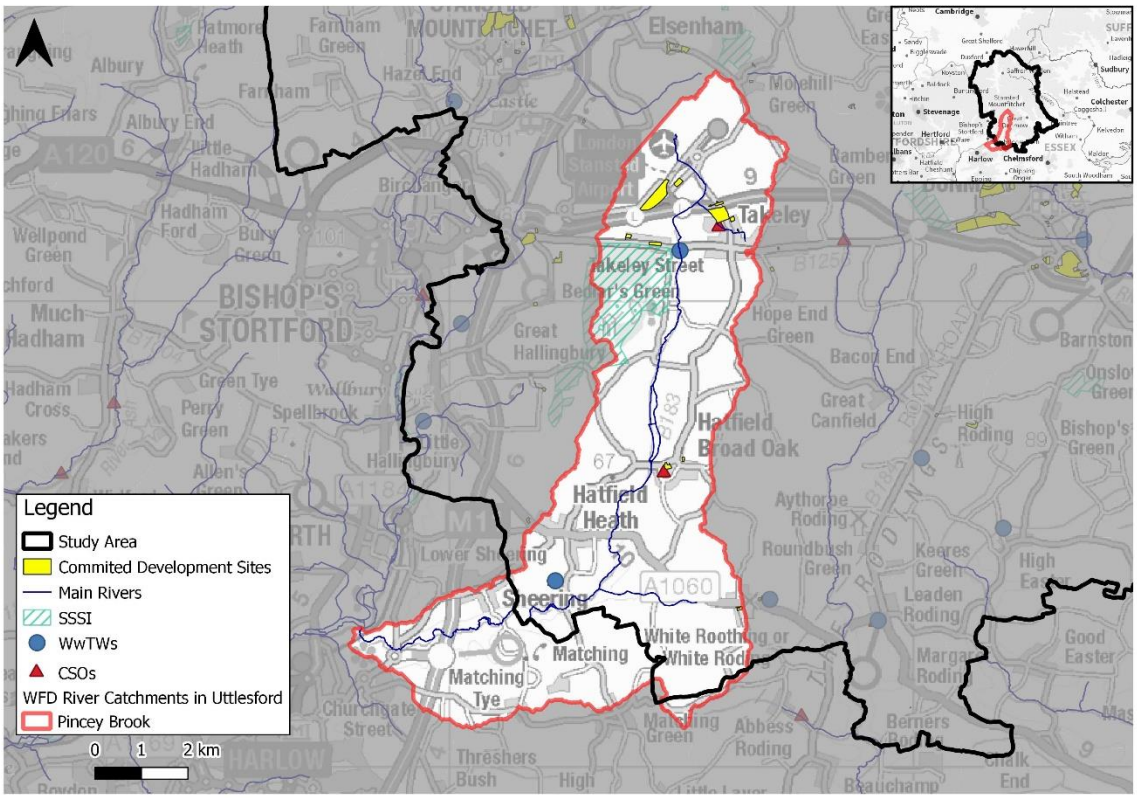
WwTWs	• Bishops Stortford WwTW – has capacity after commitments (13,449 houses) • One site is outside of the Bishops Stortford WwTW catchment.
Chalk Stream	• No
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 5 Sites- 39 houses • New Settlement- • None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry and urban and transport sectors are impacting point and diffuse sources, leading to changes in phosphate, and macrophytes and phytobenthos combined levels.
Potential issues in the catchment	• The Bishops Stortford WwTW drains into the Great Hallingbury Brook • Discharge from WwTWs and the water industry have prevented the catchment from achieving good status. • An increase in growth which will be served by the Bishops Stortford WwTW is likely to put significant pressure onto the dilution potential of the Great Hallingbury Brook.

WFD Catchment name	Little Hallingbury Brook
	
WwTWs	• Little Hallingbury WwTW – has capacity after commitments (924 houses) • One development site is located outside of the Little Hallingbury WwTW catchment.
Chalk Stream	• No
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 2 Sites- 10 houses • New Settlement - West of Hatfield Broad Oak in Option 2d
WFD Status (2019)	• Overall Status - Poor • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The agriculture and rural land management, and urban and transport sectors are impacting diffuse and point sources, and physical modification, leading to increased levels of phosphate and macrophytes and phytobenthos combined.

Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse may therefore predominantly fed by the chalk aquifer. • Agriculture and transport drainage have prevented the catchment from achieving good status. • The West of Hatfield Broad Oak new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

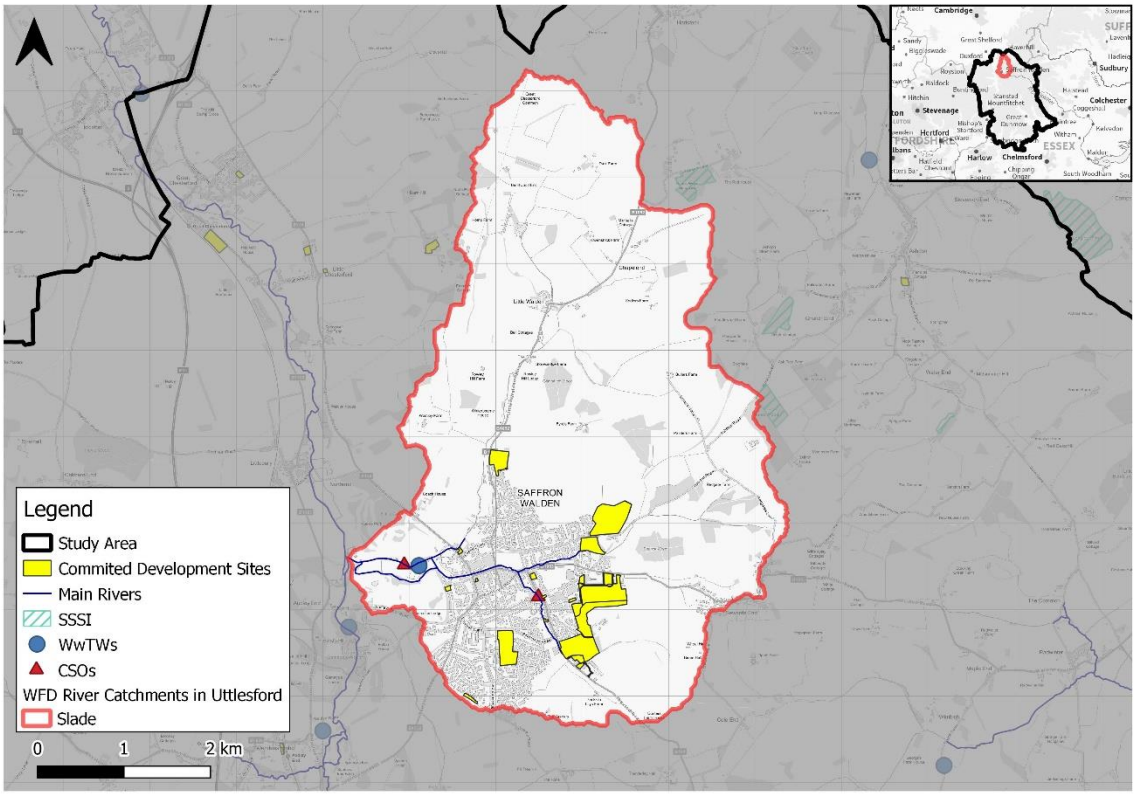
WFD Catchment name	Pant
	
WwTWs	• Wimbish WwTW – flow not monitored so unable to assess capacity – likely to be minimal • Great Sampford WwTW – currently • Treatment work capacity • Wimbish- Capacity not assessed as flow was not measured at the WwTW. • Great Sampford – likely to be close to or exceeding its DWF permit during the plan period after commitments • One development site is located outside of any public sewer catchment.
Chalk Stream	• No – although the bedrock in this region is partially chalk, the watercourse itself does not have the characteristics of a chalk stream, and is partially underlain by London Clay.

Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 1 Site- 5 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD – N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry, agriculture and rural land management, and industry are impacting point and diffuse sources, and physical modification, leading to changes in levels of phosphates, dissolved oxygen and invertebrates.
Potential issues in the catchment	• Discharge from industrial and sewers has prevented the catchment from achieving good status.

WFD Catchment name	Pincey Brook
	
WwTWs	• Takeley WwTW – has capacity after commitments (1,089 houses) • Hatfield Heath WwTW – has capacity after development (353 houses)
Chalk Stream	• No
Storm Overflows	• Garnets SPS and the Cage End SPS. The

	Garnets SPS discharged five times for a total of 11 hours. The Cage End SPS discharged 11 times in 2020 for a total of 47 hours. • Storm overflows at Takeley WwTW and Hatfield Heath WwTW are poorly performing and under investigation (>40 spills per year and over 1000 hours duration in 2020)
How many development sites are located in the catchment?	• Commitments and Consents – Sites - 118 houses and 22,056m^2 of employment land • New Settlement - West of Hatfield Broad Oak
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry and agriculture and rural land management sectors are impacting diffuse and point sources, leading to changes in phosphate and dissolved oxygen levels.
Potential issues in the catchment	• Discharge from sewers and agriculture has prevented the catchment from achieving good status. • Storm overflows at Takeley and Hatfield Heath WwTW operated above the threshold to trigger an investigation. Unmitigated growth in this area is likely to exacerbate this issue and cause a deterioration in water quality • The West of Hatfield Broad Oak new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

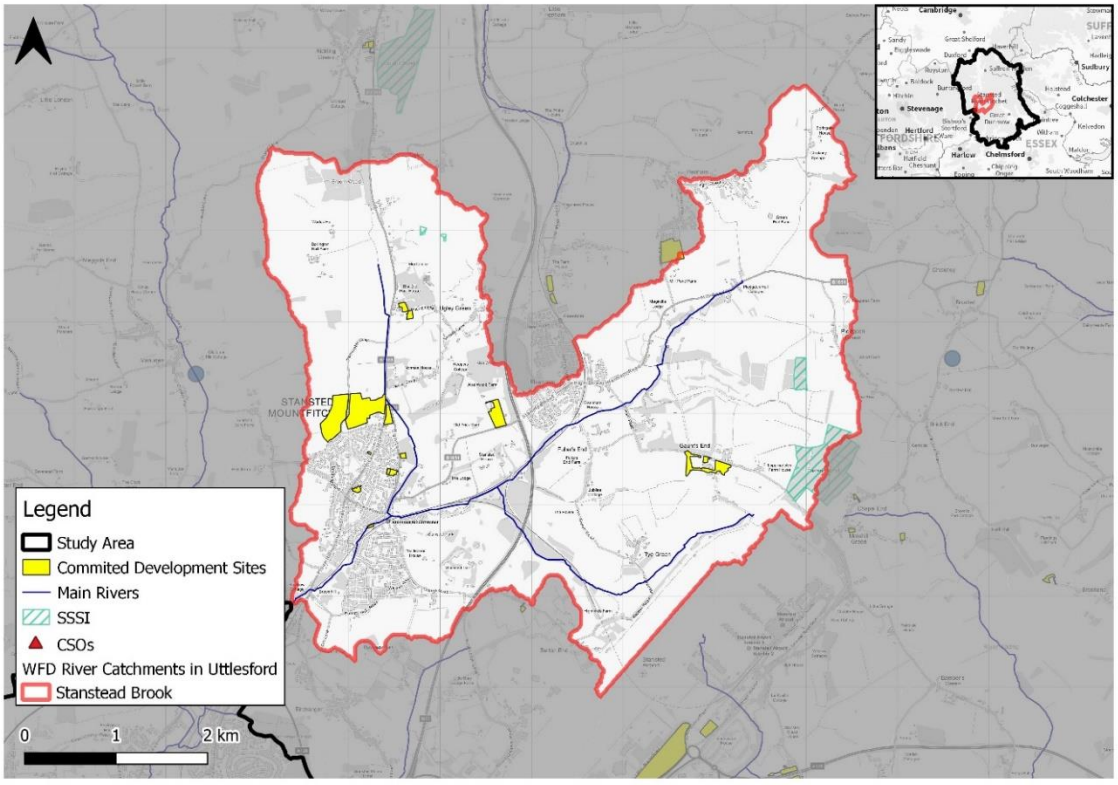
WFD Catchment name	Slade



WwTWs	• Saffron Walden WwTW – has capacity after commitments (3,390 houses)
Chalk Stream	• Yes - River Slade (tributary of Cam)
Storm Overflows	• Saffron Walden WwTW and Saffron Walden Victoria THX OV storm overflows. The Saffron Walden WwTW storm overflow discharged five times for a total of 7.75 hours. The Saffron Walden Victoria THX OV discharged 3 times in 2020 for a total of 1 hour.
How many development sites are located in the catchment?	• Commitments and Consents - 18 Sites - 424 houses and 6,884m^2 of employment land • New Settlement - Great Chesterford
WFD Status (2019)	• Overall Status - Moderate • Ammonia - Good • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, agriculture and rural land management, and urban and transport sectors are impacting the flow, point sources and physical modification, leading to changes in phosphate, and macrophytes and phytobenthos combined levels and invertebrates.

Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Discharge from sewers, urbanisation and agriculture has prevented the catchment from achieving good status. • The Great Chesterford new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to. Significant development is also proposed around Saffron Walden which would put further pressure on the watercourse – which is a tributary of the River Cam (chalk stream)

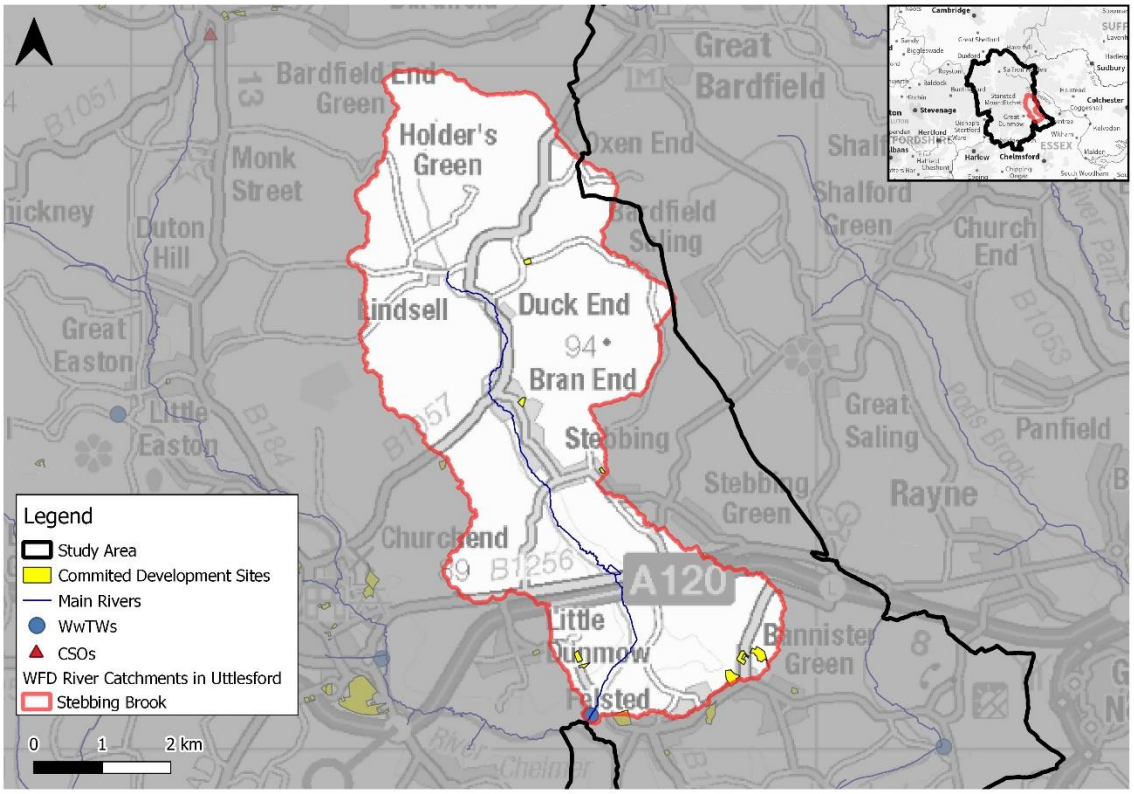
WFD Catchment name	Stanstead Brook



WwTWs	• None
Chalk Stream	• Partially - Part of the watercourse is underlain by chalk with parts of the catchment underlain by are underlain by Lambeth Group and Thames Group bedrock formations.
Storm Overflows	• None
How many development sites are located in the catchment	• Commitments and Consents – Sites - 349 houses and 8242m^2 of employment land • New Settlement - Ugley
WFD Status (2019)	• Overall Status - Poor

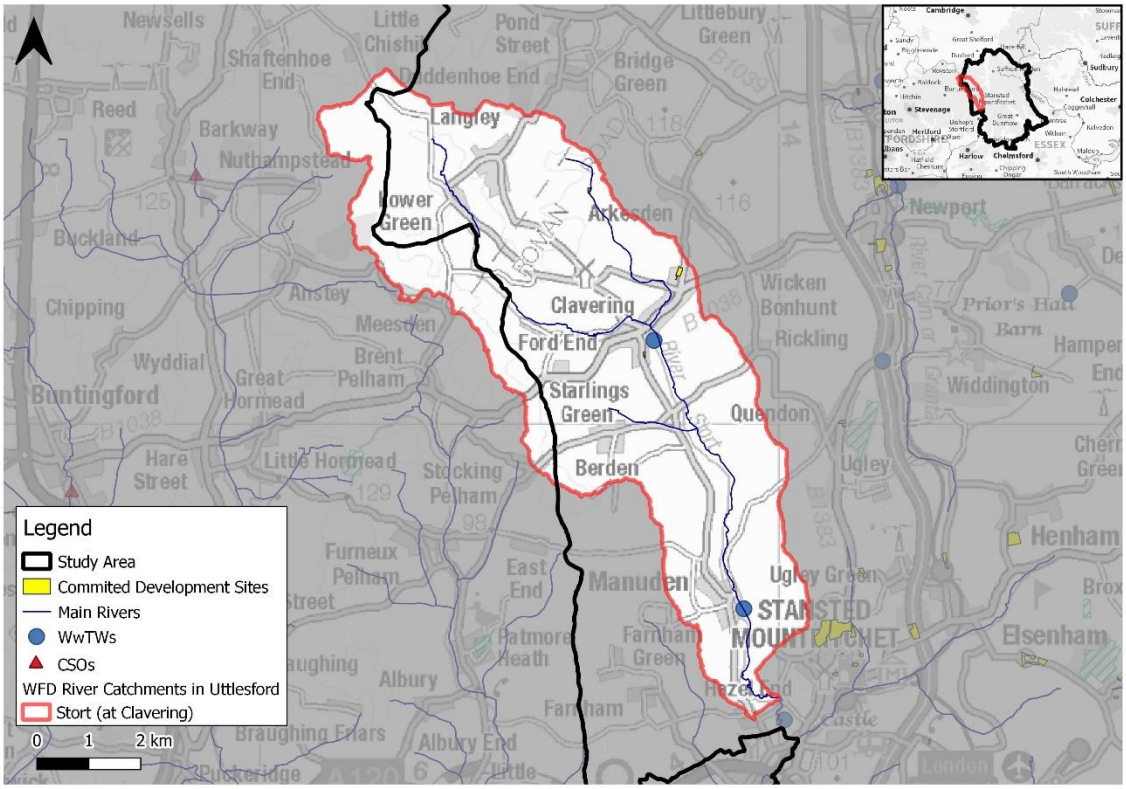
	• Ammonia - High • BOD - N/A • Phosphate - Good • Reasons for not achieving good status: Mining and quarrying are impacting point sources and flow, leading to changes in the hydrological regime and invertebrates.
Potential issues in the catchment	• Part of the catchment is underlain by a chalk and the watercourse is likely to be fed by the chalk aquifer. • Mining and quarrying activity is thought to be the cause of the watercourse not achieving good status due (ecological elements). • Further deterioration in a waterbody already classified as "Bad" would be unacceptable • The Ugley new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

WFD Catchment name	Stebbing Brook

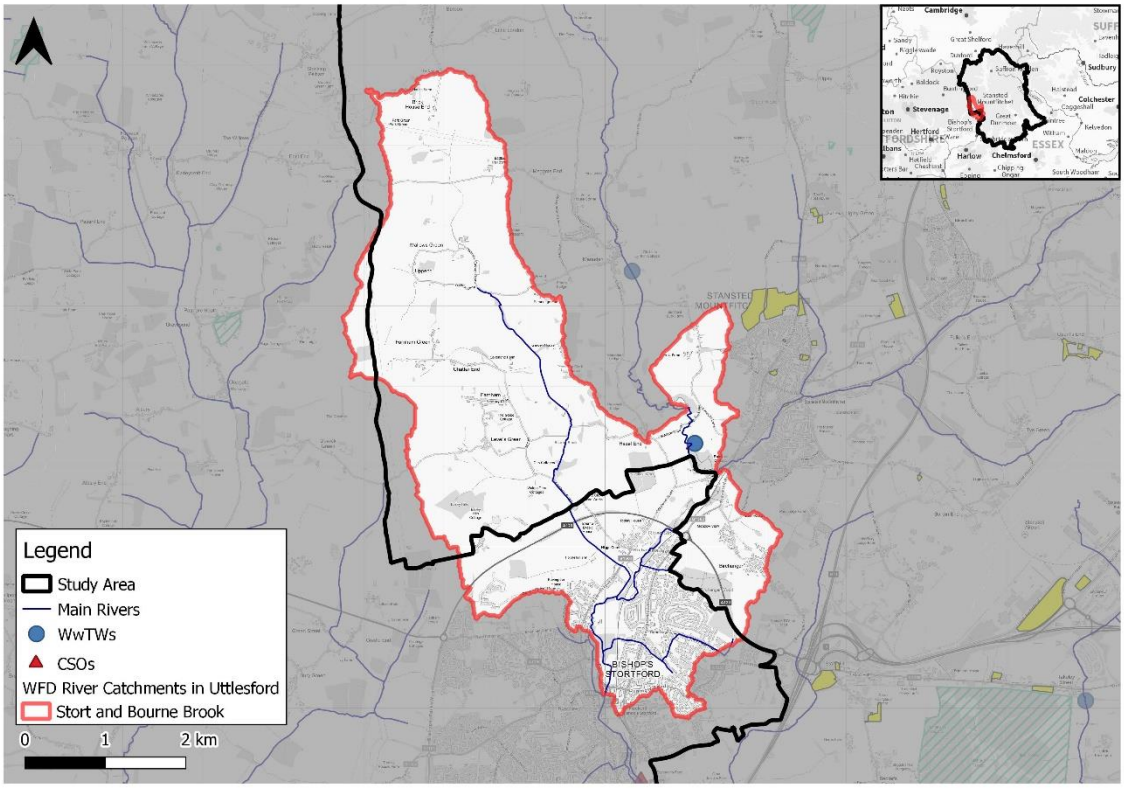


WwTWs	• Felsted WwTW – currently at or exceeding its DWF permit • One development site is located outside of a public sewer catchment
Chalk Stream	• No
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 10 Sites- 78 houses and 562m^2 of employment land • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - High • Reasons for not achieving good status: None provided.
Potential issues in the catchment	• A small amount of development is proposed around the urban areas in the catchment – however there is little wastewater capacity in this area.

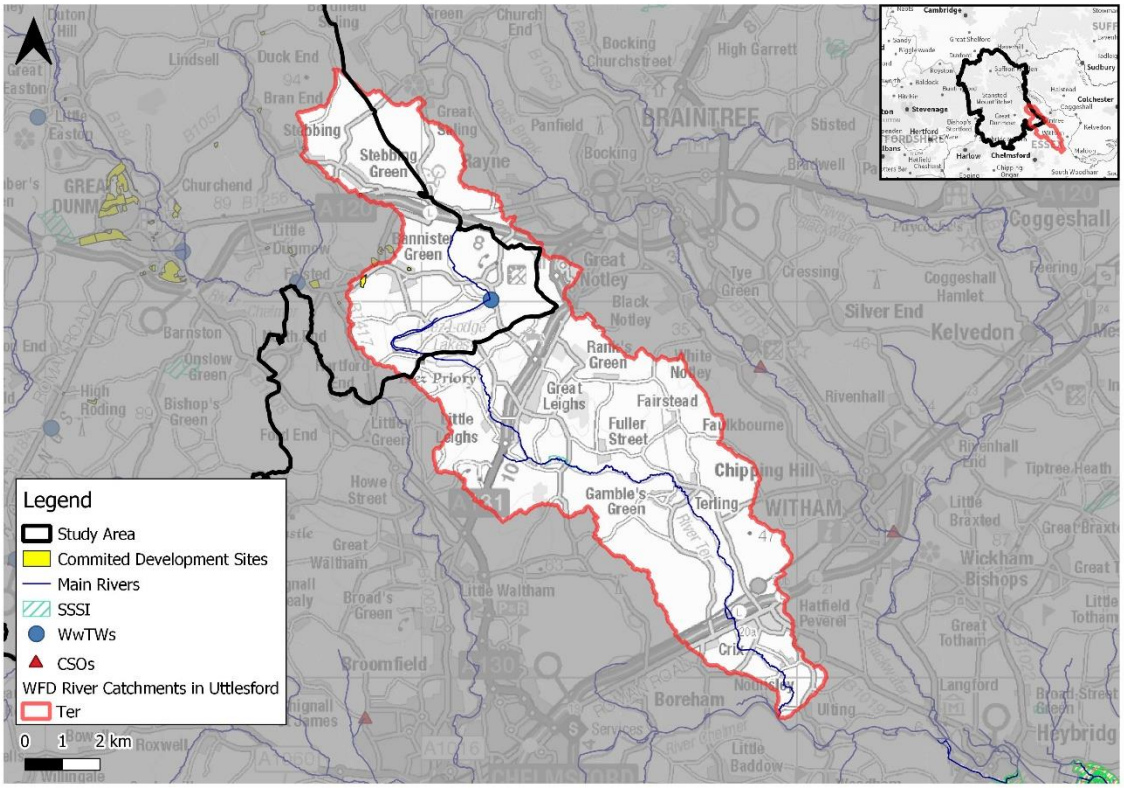
WFD Catchment name	Stort (at Clavering)



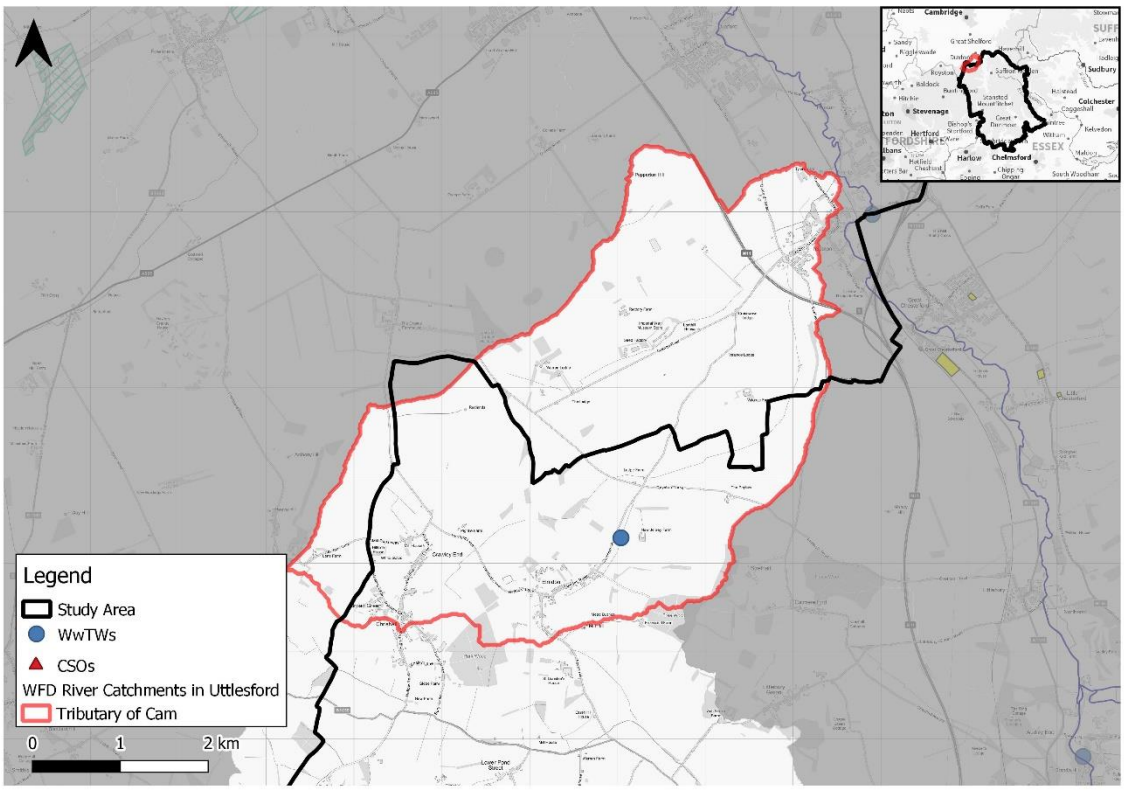
WwTWs	• Maunden WwTW – has capacity after commitments (581 houses) • Clavering WwTW – currently at or exceeding its DWF permit • One development site is located outside of a public sewer catchment.
Chalk Stream	• Yes - River Stort
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 3 Sites - 9 houses and 1,594m^2 of employment land • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry and agriculture and rural land management sectors are impacting point and diffuse sources, and suspect data, leading to changes in phosphate and dissolved oxygen levels, and the hydrological regime.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Discharge from sewers and poor soil management has prevented the catchment from achieving good status.

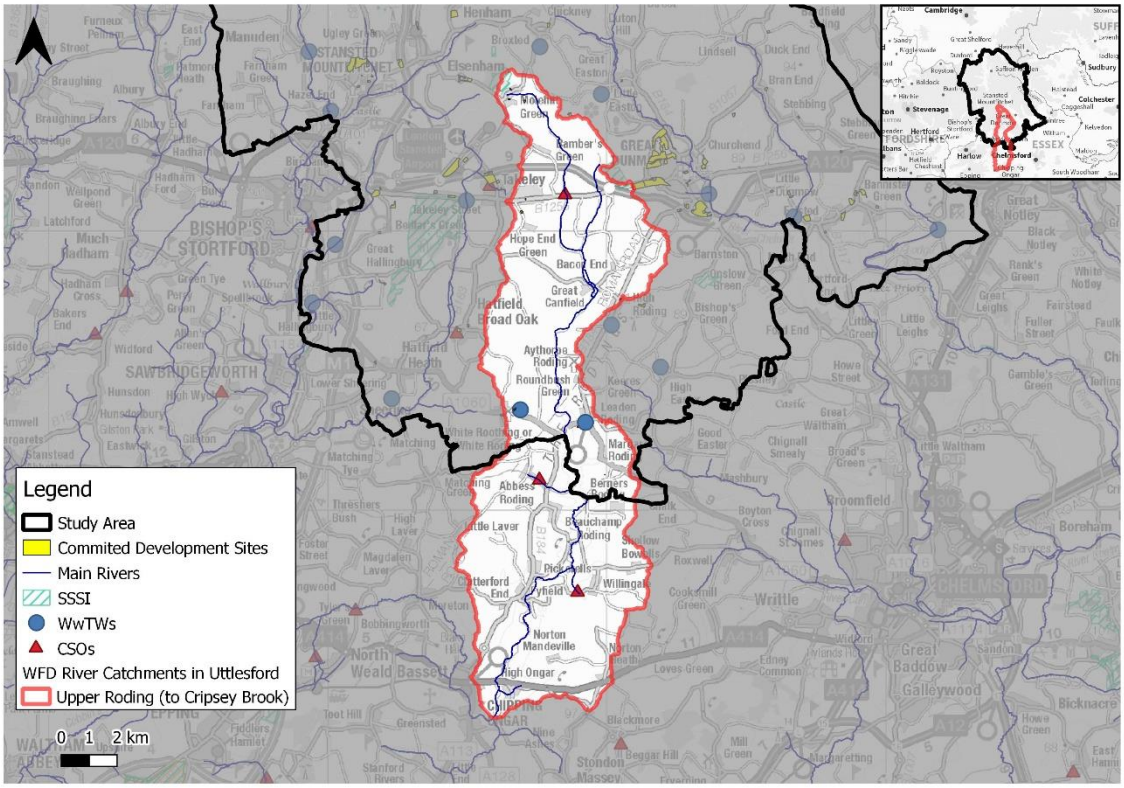
WFD Catchment name	Stort and Bourne Brook
	
WwTWs	• Stansted Mountfitchet WwTW – has capacity (2,140 houses) • New Nickel permit being applied and TW have expressed concerns about future growth preventing this being met
Chalk Stream	• Yes - River Stort and Bourne Brook
Storm Overflows	• The Stansted Mountfitchet WwTW storm overflow discharged 39 times in 2020 for a total of 305 hours – under threshold for investigation but this is into a chalk stream so should be addressed.
How many development sites are located in the catchment?	• Commitments and Consents - None • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry is impacting point sources, leading to increased phosphate and dissolved oxygen levels.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer.

	• Sewage discharge has prevented the catchment from achieving good status. • The Stansted Mountfitchet Storm Overflow discharges to a chalk stream and its impact should be addressed. Further unmitigated growth could exacerbate this

WFD Catchment name	Ter
	
WwTWs	• Willows Green WwTW – flow not monitored so unable to assess capacity – likely to be minimal • One development site is located outside of a public sewer catchment.
Chalk Stream	• No
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 3 Sites- 44 houses • New Settlement - East of Stebbing
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, agriculture and rural land management, and urban and transport sectors are impacting diffuse and point sources, leading to increased levels of phosphate.

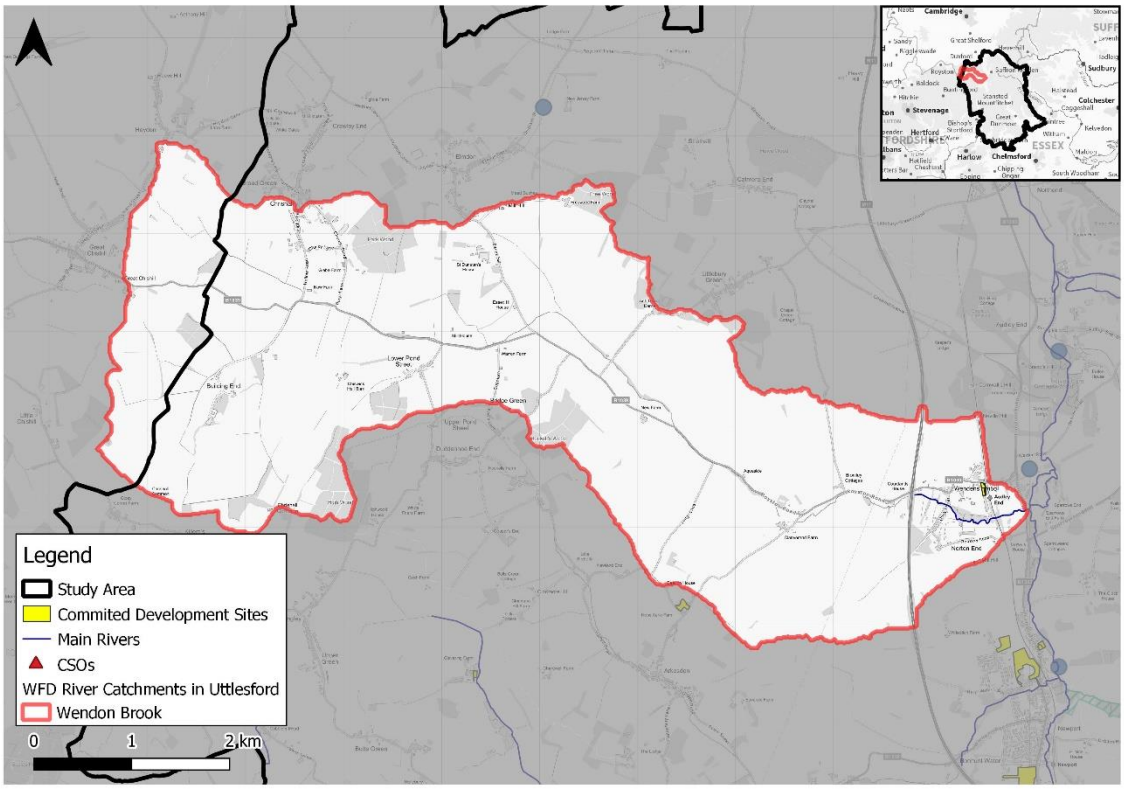
Potential issues in the catchment	• Discharge from industrial and sewers has prevented the catchment from achieving good status.

WFD Catchment name	Tributary of the Cam
	
WwTWs	• Elmdon WwTW – has capacity after commitments (434 houses)
Chalk Stream	• Yes - River Cam
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - None • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry is impacting point sources and flow, leading to changes in phosphate and dissolved oxygen levels, and invertebrates.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Sewage discharge and groundwater abstraction have prevented the catchment from achieving good status.

WFD Catchment name	Upper Roding (Cripsey Brook)
	
WwTWs	• White Roding WwTW – flow not monitored so unable to assess capacity – likely to be minimal • Leaden Roding WwTW – has capacity (296 houses) • Four development sites are located outside of a public sewer catchment.
Chalk Stream	• No
Storm Overflows	• Canfield End SPS, White Roding WwTW, Leaden WwTW, Abbess Roding (outside the district) and Willingdale WwTW (outside the district). The Canfield End SPS storm overflow discharged once for 3 hours in 2020. The White Roding WwTW storm overflow discharged 80 times in 2020 for a total of 710 hours. The Leaden Roding storm overflow discharged 61 times in 2020 for a total of 482 hours.
How many development sites are located in the catchment?	• Commitments and Consents - 7 Sites- 45 houses and 6m^2 of employment land • New Settlement - Easton Park
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The agriculture and rural land management sector is impacting point and diffuse sources, and physical modification, leading to changes in levels

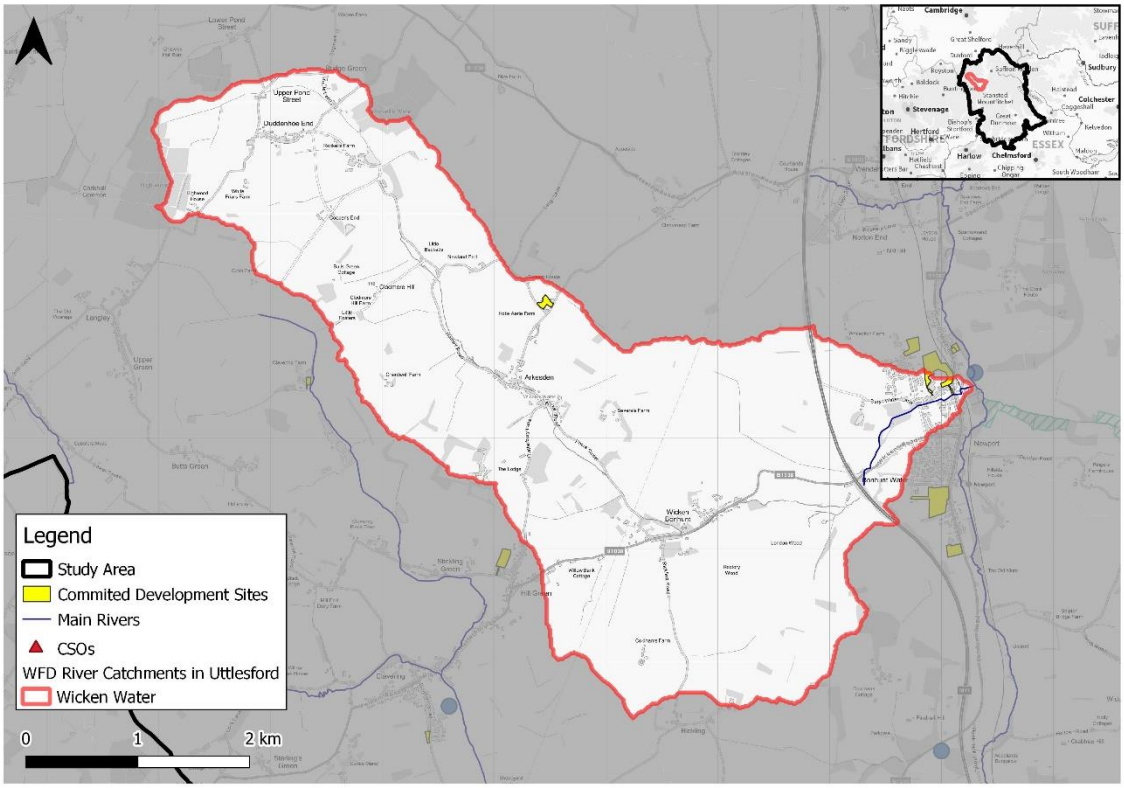
	of phosphate, fish, and macrophytes and phytobenthos combined.
Potential issues in the catchment	• Private sewage treatment is noted as a reason for not achieving good. Further growth outside of a public sewer catchment may exacerbate this • Agriculture and rural land management have also prevented the catchment from achieving good status. • The White Roding and Leaden Roding WwTW Storm Overflows operated above the threshold of an investigation by the Environment Agency. • Significant development is proposed within the catchment and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

WFD Catchment name	Wendon Brook



WwTWs	• None
Chalk Stream	• Yes - Wendon Brook
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 2 Sites- 23 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A

	• Phosphate - Good • Reasons for not achieving good status: The agriculture and rural land management, and water industry are impacting flow and diffuse sources, leading to changes in the hydrological regime and phosphate levels.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Surface and groundwater abstraction has caused some elements to not achieve good status.

WFD Catchment name	Wicken Water
	
WwTWs	• None
Chalk Stream	• Yes - Wicken Water (trib of Cam)
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 2 Sites- 24 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - High • Reasons for not achieving good status: None provided.

Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer.

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Uttlesford District Council Water Cycle Study - Stage 2

Final

A1-C03

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July 2024

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Contract

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This report describes work commissioned by Uttlesford District Council, by an instruction dated 16 February 2024. The Client's representative for the contract was Tim Fearn of Uttlesford District Council. Richard Pardoe and Sue Jones of JBA Consulting carried out this work.

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Abbreviations

AfW	Affinity Water
ALS	Abstraction Licencing Strategy
AMP	Asset Management Plan
AMP7	Seventh Asset Management Plan period (runs 2020-2025)
AW	Anglian Water
BNG	Biodiversity Net Gain
BRE	Building Research Establishment
CaBA	Catchment Based Approach
CAMS	Catchment Abstraction Management Strategy
CAPEX	Capital Expenditure
CFMP	Catchment Flood Management Plan
CIRIA	Company providing research and training in the construction industry
CIWEM	Chartered Institution of Water and Environmental Management
CSO	Combined Sewer Overflow (usually referred to as storm overflows)
DCG	Design and Construction Guidance
DEFRA	Department of the Environment, Food and Rural Affairs
DrWPA	Drinking Water Protected Areas
DWMP	Drainage and Wastewater Management Plan
DYAA	Dry Year Annual Average
EA	Environment Agency
EC	European Community
FCT	Favourable Condition Targets
FRA	Flood Risk Assessment
FWMA	Flood and Water Management Act
GEP	Good Ecological Potential
GES	Good Ecological Status
GIS	Geographical Information System
GWMU	Groundwater Management Unit
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HoF	Hands-off Flow
HoL	Hands-off Level
ID	Identifier
IWM	Integrated Water Management
JNCC	Joint Nature Conservation Committee

LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
LNRS	Local Nature Recovery Strategy
LPA	Local Planning Authority
l/p/d	Litres per person per day
NBS	Nature Based Solutions
NE	Natural England
NFM	Natural Flood Management
NPPF	National Planning Policy Framework
OEP	Office for Environmental Protection
OfWAT	Water Services Regulation Authority
PPG	Planning Practice Guidance
PTP	Package Treatment Plant
RBD	River Basin District
RBMP	River Basin Management Plan
rdWRMP	Revised Draft Water Resources Management Plan
REUL	Retained European Union Law
SABs	SuDS Approval Bodies
SAC	Special Area of Conservation
SFRA	Strategic Flood Risk Assessment
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
STW	Sewage Treatment Works
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
TW	Thames Water
UDC	Uttlesford District Council
UKWIR	UK Water Industry Research
uPBT	Ubiquitous, Persistent, Bioaccumulative or Toxic
UWWTD	Urban Wastewater Treatment Directive
WaSC	Water and Sewerage Company
WCS	Water Cycle Study
WFD	Water Framework Directive

WINEP	Water Industry National Environment Programme
WRC	Water Recycling Centre
WRE	Water Resources East
WRSE	Water Resources South East
WRMP	Water Resources Management Plan
WRZ	Water Resources Zone
WwTW	Wastewater Treatment Works

Definitions

Term	Description
Abstraction Point	The location where water is either taken or extracted from either a surface or groundwater waterbody.
Agricultural Management	The farming techniques and practices used to produce food and manage livestock.
Abstraction Licencing Strategy	The Abstraction Licencing Strategy sets out the Environment Agency's approach to managing new and existing abstraction and impoundments within their river management catchments.
Asset Management Plan (AMP) Period	Price limit periods in the water sector are sometimes known as Asset Management Plan (AMP) periods. The current period (2020-25) is commonly known as AMP 7 because it is the seventh price review period since privatisation of the water industry in 1989. AMP periods are five years in duration and begin on 1 April in the years ending in 0 or 5. Every five years the industry submits a Business Plan to OfWAT for a Price Review (PR). These plans set out the companies' operational expenditure (OPEX) and capital expenditure (CAPEX) required to maintain service standards, enhance service (for example where sewer flooding occurs), to accommodate growth and to meet environmental objectives defined by the Environment Agency. OfWAT assesses and compares the plans with the objective of ensuring what are effectively supply monopolies and operating efficiently.

Term	Description
Aquifer	An aquifer is a rock and/or sediment body that holds groundwater.
Dry Weather Flow	Dry weather flow is the average daily flow of wastewater to a waste water treatment works during a period without rain.
Effluent	Effluent discharge is the liquid waste produced from residential, commercial and industrial processes.
Environmental Flow Indicator	The Environmental Flow Indicator (EFI) is the proportion of natural flows that are required to support the environment of a waterbody.
Groundwater Body	A Groundwater Body is the management unit under the Water Framework Directive which represents a distinct body of groundwater with its own hydrogeological characteristics.
Lead Local Flood Authority	A county council or unitary authority which leads in managing local flood risks (i.e., risks of flooding from surface water, ground water and ordinary (smaller) watercourses). Their duties are outlined in the Flood and Water Management Act.
Natural Flood Management	Natural flood management is the use of natural processes to reduce the risk of flooding and coastal erosion.
Per Capita Consumption	The per capita consumption is the average volume of water used by one person in a day. It is defined as the sum of the measured household consumption of clean water and unmeasured household consumption of clean water divided by the total household population. This is often expressed in litres per person per day (l/p/d).
Permitted Headroom	The difference between the volume of treated wastewater a treatment works is allowed to discharge under its environmental permit, and volume it currently discharges. It can be used to estimate the number of properties that could be connected to a WwTW catchment before a flow permit is exceeded.

Term	Description
Sustainable Drainage Systems (SuDS)	Sustainable drainage systems are drainage solutions that provide a natural alternative to the direct channelling of surface water through an artificial networks of pipes and sewers to nearby watercourses.
Waterbodies	Water bodies constitute areas of water – both salt and fresh, large and small – which are distinct from one another in various ways. All surface waters (including rivers, lakes, estuaries and stretches of coastal water) and groundwaters have been divided up into discrete units called water bodies. Water bodies are the basic unit that are used to assess the quality of the water environment and to set targets for environmental improvements.
Water Framework Directive (WFD)	The Water Framework Directive is a river basin management planning system which was implemented to help protect and improve the ecological health of the UK's rivers, lakes, estuaries and coastal and groundwaters.
Water Framework Directive Classification Status	Rivers, lakes, estuaries and coastal waters can be awarded one of five WFD statuses: High, Good, Moderate, Poor or Bad Groundwater can be awarded one of two statuses: Good or Poor.
Water Framework Directive – Reasons for not achieving good (RNAG)	Where a WFD element is classified as being at less than good status, a reason for the failure to meet the good status is attributed, including the sector deemed responsible or a pressure affecting a biological element.
Water Framework Directive objectives	The Water Framework Directive objectives are set out in Regulation 12 and Regulation 8 of the Water Environment Regulations 2017.
Water Industry National Environment Programme	The Water Industry National Environment Programme is the programme of work in which water companies in England must meet their obligations from environmental legislation and UK government policy.
Water Resource Management Plan	Water Resource Management Plans are

Term	Description
(WRMP)	statutory documents that all water companies must produce at least every five years. They set out how the water company intends to achieve a secure water supply for their customers while protecting and enhancing the environment.
Water Resource Zone (WRZ)	A Water Resource Zone is an area in which the abstraction and distribution of water is self-contained and is used to meet demand within that area.
Wastewater Treatment Works (WwTW)	A wastewater treatment works receives flows from the sewerage system and treats it so it can be discharged back into a river. They may also be called Sewage Treatment Works (STWs) or Water Recycling Centres (WRCs).

Executive Summary

JBA Consulting was commissioned by Uttlesford District Council to undertake a Stage 2 Water Cycle Study (WCS) as part of the evidence base for their local Plan. This builds on the Stage 1 Scoping study completed in 2022. It should be read alongside the Chalk Stream Evidence Base.

Unmitigated future development and climate change can adversely affect the environment and water infrastructure capability. A WCS will provide the required evidence, together with an agreed strategy to ensure that planned growth occurs within environmental constraints, with the appropriate infrastructure in place in a timely manner so that planned allocations are deliverable.

New homes require the provision of clean water, safe disposal of wastewater and protection from flooding. The allocation of large numbers of new homes in certain locations may result in the capacity of existing available infrastructure being exceeded, a situation that could potentially cause service failures to water and wastewater customers, adverse impacts to the environment, or high costs for the upgrade of water and wastewater assets being passed on to the bill payers.

In addition to increased housing demand, future climate change presents further challenges to the existing water infrastructure network, including increased intensive rainfall events and a higher frequency of drought events. Sustainable planning for water must now take this into account.

A forecast of growth during the Local Plan period was collated based on information provided by UDC. This included:

- Preferred allocations
- Commitments (sites already within the planning system)
- Recent completions
- Windfall

Neighbouring authorities that share infrastructure with Uttlesford were also contacted for information on their growth forecasts. From this an estimate of water and wastewater demand at the site and Local Authority level was created for use within the WCS assessments.

The focus in the report is on the nine preferred allocations. These were shared with Affinity Water (AfW) in their role as water supplier for the region, and Anglian Water (AW) and Thames Water (TW) as the sewerage undertakers, for them to assess the impact of the sites on their networks and wastewater treatment works (WwTW).

Water resources

Water resources in the UK are under considerable pressure. The Environment Agency have stated that "the scale of the challenge we face increases with time and, by 2050, we are looking at a shortfall of nearly 5 billion litres of water per day between the sustainable water supplied available and the expected demand.". The National Water Resources

Framework sets the objective to reduce the average per capita consumption in the UK to 110l/p/d by 2050. This is now part of the Environmental Improvement Plan (EIP) and water companies Water Resource Management Plans (WRMPs). Within Defra's Plan for Water is the commitment to review Building Regulations and a target of 100l/p/d in water stressed areas is suggested.

The Future Homes Hub, who are supporting Defra to produce a roadmap to greater water efficiency propose a staged reduction in PCC, with a target of 100l/p/d in water stressed areas in place from 2025, and a reduced target of 90l/p/d in place by 2030 (depending on market conditions and customer acceptance). The Catchment Based Approach (CaBA) Chalk Stream Strategy recommends a target of 90l/p/d in chalk stream catchments, and the Government's EIP states that the Chalk Stream Strategy should be supported.

This study recommends that as a minimum the proposed new Building Regulations target of 100l/p/d outlined in Defra's Plan for Water be adopted across Uttlesford. This should be achieved using a fittings-based approach. This should be supported by the requirement for non-household development to achieve three credits in the assessment category WAT01 of the BREEAM UK New Construction Standard. The Local Plan should allow for a future reduction in the Building Regulations target to 90l/p/d in 2030. Developers should be encouraged to achieve 90l/p/d or lower, especially on larger strategic sites aligning with the Chalk Stream Strategy.

Water supply

It is likely that upgrades to the water supply network will be required in order to serve the preferred allocations without a detriment to existing customers. Modelling by AfW may be required to define the extent of these upgrades. Early engagement between developers. UDC and AfW is needed to ensure that these upgrades are in place prior to occupation of the developments.

Wastewater network

AW and TW provided an assessment of the preferred allocations. This was split into foul network and surface water network. In the foul network assessment, four sites were given a "green" assessment confirming there was sufficient capacity within the network to incorporate these sites and no further infrastructure was likely to be required. Two sites (Land east of Shire Hill Farm and south of Radwinter Road, and Land south of A120/North of Stortford Road) were given an "amber" assessment, reflecting the need for some additional infrastructure. The Land at Warrens Farm and Land at Warish Hall Farm was given a "red" assessment by Thames Water along with the comment that the "scale of development is likely to require upgrades to the wastewater network". No particular constraints were identified by Thames Water. One further site was not assessed by Thames Water (Gaunts End, Elsenham) as it is not in an area currently served by a public sewer. Thames Water were contacted for clarification on these two sites but had not responded at the time of writing. Further investigation may be required in order to understand any implications for Uttlesford.

In the surface water assessment, two sites were given a "green" assessment confirming there was sufficient capacity within the network to incorporate these sites and no further infrastructure was likely to be required. Four sites were given an "amber" assessment reflecting the limited surface water network in some areas, and some local flood risk. A further three sites were not assessed as two were in an area without public sewerage (one of these sites has private sewerage). No reason was given for the third site.

Early engagement is required with Anglian Water and Thames Water to ensure that the required infrastructure is in place prior to occupation, and a wastewater solution defined where one does not currently exist.

The Environment Act now requires water companies to report and monitor storm overflows as well as reduce the harm caused to the rivers they discharge to. There are 28 storm overflows in Uttlesford, 18 on the network, and 10 at WwTWs. In comparison to some urban areas or large cities, Uttlesford has relatively few storm overflows on the sewer network. The Storm Overflow Assessment Framework (SOAF) set a threshold of 60 operations in a year (based on 1 years' data, 50 if based on 2 years data, and 40 if based on 3 years), above which a storm overflow should be investigated. One of the storm overflows (White Roding) was operating above this threshold between 2021 and 2023.

The Storm Overflow Reduction Plan which was published in 2022 sets an objective that "storm overflows will not be permitted to discharge above an average of ten rainfall events per year by 2050". Six of the 18 monitored storm overflows are operating on average above ten times per year so may require action to meet the long-term target.

There are opportunities through the planning system to ease pressure on the wastewater network by separating foul and storm flow in existing combined systems, and not allowing new surface water connections. Surface water can also be better managed by retrofitting SuDS in existing residential areas, and in new development, ensuring SuDS are incorporated into designs at the master planning stage to maximise the potential benefits.

Wastewater treatment

A capacity assessment was undertaken by JBA comparing the future flow from each WwTW (the current actual flow and the forecast additional flow from growth), with the permit limit. Eight of the WwTWs in the study area are expected to be close to or exceeding their permit during the Local Plan period. An increase in the permit limit, and / or upgrades to treatment capacity may be required at these WwTWs in order to accommodate planned growth.

It is important that when planning upgrades at WwTW that the full quantum of growth, including from neighbouring LPAs is taken into account. Population estimates within Anglian Water's Drainage and Wastewater Management Plan suggest that they may have underestimated growth within the catchments of Great Dunmow and Saffron Walden WwTWs.

There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows contributing to a worsening of water quality in the area.

Action should be taken by the water companies to address these overflows prior to an increase in wastewater demand being generated by new development.

Water quality

Water quality modelling was performed using the Environment Agency's SIMCAT modelling tool. A baseline scenario was run, updating the existing EA model to the latest flow from WwTW to account for growth since the model was created. A future scenario was then run using the growth forecast for the end of the Local Plan period and the results compared to check for deterioration in water quality. A further test then investigated whether deterioration could be prevented by improvements in upstream treatment. The modelling indicates the growth during the Local Plan period could result in a significant deterioration (10% or over or deterioration in class) in water quality at five WwTWs (Takeley, Great Easton, Great Dunmow, Debden and Great Chesterford). In all cases, this deterioration could be prevented by improvements in treatment.

The modelling also looks at whether growth during the Local Plan period could prevent good ecological status being achieved in the future. The results showed that growth alone will not prevent good ecological status being prevented in the future should improvements in upstream water quality be made, except for Takeley, where environmental capacity could be a constraint to growth.

An additional modelling scenario was run where the additional demand from growth expected to be served by Takeley WwTW was applied to Bishops Stortford WwTW rather than Takeley WwTW. This represents either the new developments being connected to Bishops Stortford, or an equivalent flow being diverted into Bishops Stortford via an adjustment to the sewer network where the two catchments are adjacent.

The feasibility of connecting new developments to Bishops Stortford WwTW or diverting flow has not been assessed and should be discussed with Thames Water.

Transfer of additional flow from commitments and allocations around Takeley and Great Dunmow to Bishops Stortford may be possible providing agreement from Thames Water that there is sufficient capacity at the WwTW to receive additional flow.

Where a WwTW is shared with a neighbouring authority, coordination of growth plans in collaboration with Thames Water and Anglian Water is essential to ensure that infrastructure is in place prior to development to prevent a breach of the environmental permit.

Environmental impact

The potential impact of development on a protected sites within and downstream of Uttlesford should be considered in future plan making. This applies to both the impact of abstraction and of additional wastewater discharge as well as the impact of surface water runoff.

Water quality modelling has predicted a significant deterioration in the river adjacent to four SSSIs within Uttlesford. At two of these sites, deterioration could be prevented by improvements in treatment upstream. At Little Hallingbury Marsh SSSI and Thorley Flood

Pound SSSI, deterioration in the adjacent river could not be prevented, and the predicted deterioration in BOD remains at 11%. The actual concentration remains within High class and returns to less than 10% further downstream.

Further investigation may be required on these sites, in consultation with NE to ensure that the status of these sites is not affected (in line with the requirements of the Wildlife and Countryside Act). This is a cumulative impact of growth in both Uttlesford and East Hertfordshire with 90% of the growth coming from East Hertfordshire. Engagement between the two councils is required to understand and mitigate this cumulative impact.

Four Preferred Allocations are located within groundwater Source Protection Zones. The EA has published management advice for development within these zones (outlined in 9.5.4).

Development sites within the study area could be sources of diffuse pollution from surface runoff. SuDS are required on all development sites. Their design should consider both water quantity and water quality and site-level investigations should be undertaken to define the most appropriate SuDs types for each specific development. Opportunities exist for SuDS to offer multiple benefits of flood risk reduction, amenity value and biodiversity. Consideration should be given to infiltration and deep borehole SuDS within chalk stream catchments to aid replenishment of the chalk aquifer. Uttlesford District Council should be consulted at an early stage of development to ensure that SuDS are implemented and designed in response to site characteristics and policy factors.

In the wider area, opportunities exist to implement natural flood management techniques to achieve multiple benefits of flood risk, water quality and habitat creation.

1 Introduction

1.1 Terms of reference

JBA Consulting was commissioned by Uttlesford District Council to undertake a Stage 2 Water Cycle Study (WCS) as part of the evidence base for their local Plan. This builds on the Stage 1 Scoping study completed in 2022. It should be read alongside the Chalk Stream Evidence Base.

1.2 Structure of report

The requirements and objectives of the WCS are set out in the section below. Environmental, planning and water industry policy and legislation relevant to development and water is summarised in Section 2. This is a full update to the chapter contained in Stage 1, and contains new policy published since the Stage 1. Growth within and sharing infrastructure with Uttlesford is summarised in Section 3. This provides an outline of the Preferred Allocations and is the basis for the assessments throughout the study. Sections 4 to 9 assess the impact of the growth forecast on each element of the water cycle. A summary of the conclusions and recommendations is contained in section 10.

1.3 The Water Cycle

Planning Practice Guidance on Water Supply, Wastewater and Water Quality (Department for Levelling Up, Housing and Communities, 2019) describes a water cycle study as:

“a voluntary study that helps organisations work together to plan for sustainable growth. It uses water and planning evidence and the expertise of partners to understand environmental and infrastructure capacity. It can identify joined up and cost-effective solutions, that are resilient to climate change for the lifetime of the development.

The study provides evidence for Local Plans and sustainability appraisals and is ideally done at an early stage of plan-making. Local authorities (or groups of local authorities) usually lead water cycle studies, as a chief aim is to provide evidence for sound Local Plans, but other partners often include the Environment Agency and water companies.”

The Environment Agency's guidance on WCS (Environment Agency, 2021a) recommends a phased approach:

- Stage 1: Scoping study, identifies if the water infrastructure capacity could constrain growth and if there are any gaps in the evidence you need to make this assessment. The scoping study will identify:
  - The area and amount of proposed development
  - the existing evidence
  - main partners to work with
  - evidence gaps and constraints on growth
- Stage 2: Detailed study, to provide the evidence to inform an integrated water management strategy. It will identify the water and flood management

infrastructure that will mitigate the risks from too little or too much water. It will also identify what you need to do to protect and enhance the water environment.

As a WCS is not a mandatory document, Local Planning Authorities are advised to prioritise the different stages of the WCS to integrate with their Local Plan programme. Figure 1.1 below shows the main elements that compromise the Water Cycle.

The natural water cycle describes the continuous transfers of water around the planet, from atmosphere to surface and back via evaporation, transpiration and precipitation, and the various flows and storage processes that occur. The artificial water cycle looks at the availability of water resources for human consumption, its treatment and supply to homes and business, its use and consequently the generation of wastewater. It then looks at how wastewater is taken away, treated, and finally what happens when it is returned to the environment.

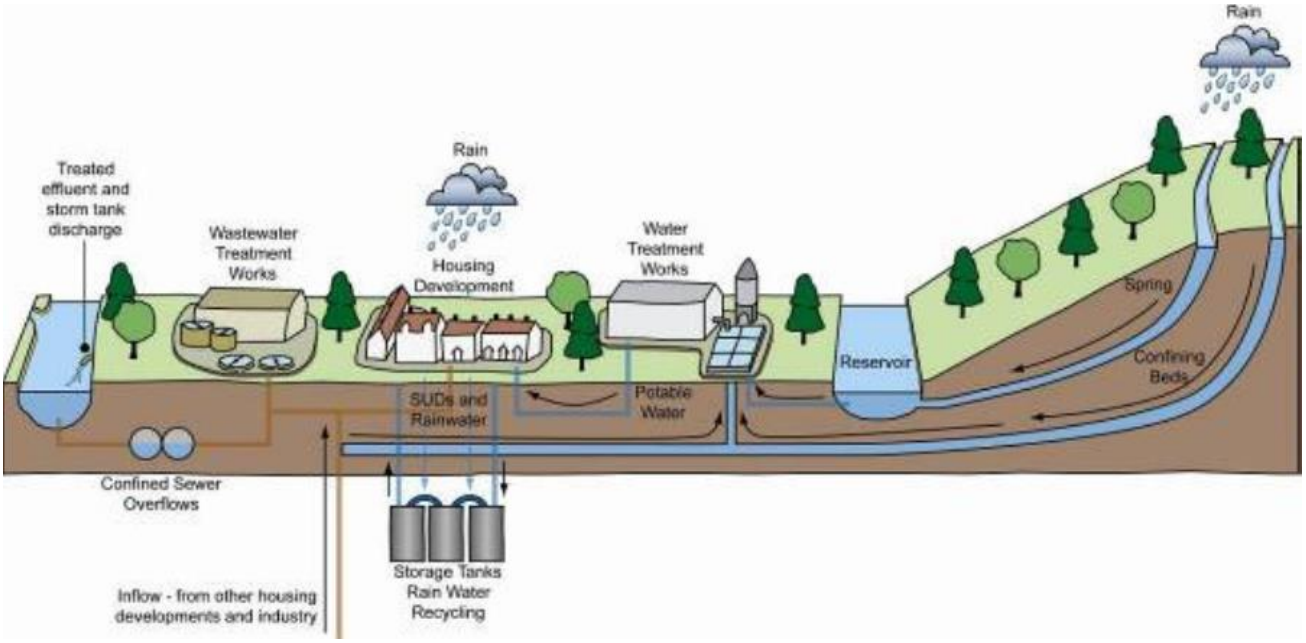

Figure 1.1 The Water Cycle

1.4 Impacts of Development on the Water Cycle

New homes require the provision of clean water, safe disposal of wastewater and limitation of flood risk. It is possible that allocating large numbers of new homes at some locations may result in the capacity of the existing available infrastructure being exceeded. This situation could potentially lead to service failures to water and wastewater customers, have adverse impacts on the environment or cause the high cost of upgrading water and wastewater assets being passed on to bill payers. Climate change presents further challenges such as increased intensity and frequency of rainfall and a higher frequency of drought events that can be expected to put greater pressure on the existing infrastructure. Development, when planned correctly, can also offer opportunities to reduce flood risk to existing properties and increase community resilience, contribute to nature recovery, and allow a collaborative approach to infrastructure.

1.5 Objectives

This Stage 2 Detailed WCS report has been prepared to support the Uttlesford Local Plan Review. The WCS brief from Uttlesford District Council stated that the overall objective of the WCS is to understand the environmental and physical constraints of development and identify opportunities for more sustainable planning and improvements that may be required to achieve the required level of development.

Uttlesford District Council Members declared a climate emergency in 2019 and set up a Climate Change Working Group with interim climate change guidance agreed by Council in 2021. Climate change and the need to work towards net zero carbon is a fundamental driver to the new Local Plan and sets the context for the Local Plan policy as well as underlying the viability assessment of options for site allocation and the spatial strategy overall.

Of critical and regional importance is the protection of the chalk aquifer which partly underlies the district, along with the chalk streams fed by the aquifer. There is increasing concern from the Uttlesford District Council Members, the public and local environmental groups over low flows in these chalk streams and the impact of water supply and wastewater activities are having on these watercourses.

This WCS will therefore consider the following issues:

- Water resources, demand, and supply
- Wastewater infrastructure and treatment
- Water quality and environmental impact
- Impact of water supply and wastewater on chalk streams
- The impact of climate change on water infrastructure

2 Policy and legislation

2.1 Introduction

The following sections introduce several national, regional, and local policies that must be considered by the Local Planning Authority (LPA), water companies and developers during the planning stage. Key extracts from these policies are presented as well as links to the full text. Whilst care has been taken to ensure that the information presented in this report was up to date at the time of writing, policy and guidance can change rapidly and the reader should ensure that the most up to date information is sought.

References contained within this section (and elsewhere in the report) can be found at the back of this report.

2.2 Plan-making

The National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2023) was originally published in 2012, as part of reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth.

Local Plans are the primary mechanism by which plan-led spatial planning is implemented in England. Local Plans must be prepared by Local Planning Authorities (LPAs) and include:

- Strategic policies which set out the "overall strategy for the pattern, scale and design duality of places", including for the provision of infrastructure, transportation and community facilities.
- Non-strategic policies, which "set out more detailed policies for specific areas, neighbourhoods or types of development. This can include allocating sites, the provision of infrastructure and community facilities at a local level."

Under the Localism Act (HM Government, 2011) new rights were provided to allow local communities to come together and shape the development and growth of their area by preparing Neighbourhood Development Plans, or Neighbourhood Development Orders, where the ambition of the neighbourhood is aligned with strategic needs and priorities for the area. Neighbourhood Plans can make non-strategic policies, aligned to the strategic policies of the Local Plan. As neighbourhoods draw up their proposals, Local Planning Authorities are required to provide technical advice and support to communities.

2.3 Water and the Planning System

2.3.1 National Planning Policy Framework and water

The NPPF provides guidance to planning authorities to take account of flood risk and water and wastewater infrastructure delivery in their Local Plans. Key paragraphs include:

- Paragraph 34: “Plans should set out the contributions expected from development. This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure). Such policies should not undermine the deliverability of the plan.”
- Paragraph 158: “Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply...”
- Paragraph 180e: “…preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans”.

2.3.2 Planning Practice Guidance overview

Planning Practice Guidance (PPG) was originally issued in 2014 by the Department for Communities and Local Government, with the intention of providing guidance on the application of the NPPF. The individual guidance documents are updated periodically. The following guidance documents are particularly relevant to a WCS:

- Water Supply, Wastewater and Water Quality (HM Government, 2019)
- Housing - Optional Technical Standards (HM Government, 2015a)

2.3.3 PPG - Water Supply, Wastewater and Water Quality

Two key passages from the PPG (Para 002) provide an overview of what needs to be considered by plan-making authorities, and provide a basis for the work contained in a WCS or IWMS:

"Early discussions between strategic policy-making authorities and water and sewerage companies can help to ensure that proposed growth and environmental objectives are reflected in company business plans. Growth that requires new water supply should also be reflected in companies' long-term water resources management plans. This will ensure that the necessary infrastructure is funded through the water industry's price review."

"Strategic policy-making authorities will also need to consider the objectives in the government’s 25 Year Environment Plan to reduce the damaging abstraction of water from rivers and groundwater, and to reach or exceed objectives for rivers, lakes, coastal and ground waters that are specially protected."

A summary of the advice for plan-makers and for planning applications is contained below but it is recommended that the full text is reviewed.

Plan-making considerations - Infrastructure (Para 005)

- Identification of suitable sites for new or enhanced infrastructure, including the location of existing and proposed development.
- Consider whether new development is appropriate near to water and wastewater infrastructure (for example due to odour concerns).
- Phasing new development so that water and wastewater infrastructure will be in place when needed. Infrastructure should also be in place before any environmental effects occur on designated sites of importance for biodiversity.

Plan-making considerations - Water quality (Para 006)

- How to help protect and enhance local surface water and groundwater in ways that allow new development to proceed and avoids costly assessment at the planning application stage.
- The type or location of new development where an assessment of the potential impacts on water bodies may be required.
- Whether measures to improve water quality, (e.g., SuDS schemes) can be used to address water quality in addition to flood risk.

Plan-making considerations - Wastewater (Para 007)

- The sufficiency and capacity of wastewater infrastructure.
- The circumstances where wastewater from new development would not be expected to drain to a public sewer (such as via a package treatment sewage treatment works or septic tank).
- The capacity of the environment to receive effluent from development without preventing statutory objectives being met.

Early engagement with the LPA, the EA, and relevant water and sewerage companies can help establish whether any particular water and wastewater issues need to be considered.

Considerations for planning applications - Water supply (Para 016)

Water supply planning would normally be addressed through the LPA's strategic policies and reflected in the water companies WRMPs. Water supply is therefore unlikely to be a consideration for most planning applications. However, some exceptions might include:

- Large developments not identified in plans that are likely to require a large volume of water; and/or
- significant works required to connect the water supply; and/or
- where a plan requires enhanced water efficiency in new development as part of a strategy to manage water demand locally.

Considerations for planning applications - Water quality (Para 016)

Water quality is only likely to be a significant planning concern where a proposal would:

- Involve physical modifications to a water body such as flood storage areas, channel diversions and dredging, removing natural barriers, construction of new

locks, new culverts, major bridges, new barrages or dams, new weirs, and removal of existing weirs; and/or

- indirectly affect water bodies, for example:
  - As a result of new development such as the redevelopment of land that may be affected by contamination, mineral workings, water and wastewater treatment, waste management facilities and transport scheme including culverts and bridges.
  - Result in runoff into surface water sewers that drain directly, or via a combined sewer, into sensitive waterbodies e.g., waterbodies with a local, national or international habitat designation.
  - Through a lack of adequate infrastructure to deal with wastewater.
  - Through a local of adequate infrastructure to deal with wastewater where development occurs in an area where there is strategic water quality plan e.g., a nutrient management plan, River Basin Management Plan, Water Cycle Study, Diffuse Water Pollution plan or sewerage undertakers' drainage strategy which set out strategies to manage water quality locally and help deliver new development.

2.3.4 PPG - Housing - Optional Technical Standards

This guidance advises planning authorities on how to gather evidence to set optional requirements, including for water efficiency. It states that “all new homes already must meet the mandatory national standard set out in the Building Regulations (of 125 litres /person /day). Where there is a clear local need, local planning authorities can set out Local Plan policies requiring new dwellings to meet the tighter Building Regulations optional requirement of 110 litres/person/day. Planning authorities are advised to consult with the EA and water companies to determine where there is a clear local need, and also to consider the impact of setting this optional standard on housing viability.

The evidence for adopting the optional requirements is outlined in section 4.5. Viability is reviewed in section 2.4.4.

2.3.5 PPG - Climate Change

This guidance (Department for Levelling Up, Housing and Communities, 2019) advises how to identify suitable mitigation and adaptation measures in the planning process to address the impacts of climate change. Planning can help increase resilience to climate change impact through the location, mix and design of development. There is a statutory duty on local planning authorities to include policies in their Local Plan to tackle climate change and its impact.

2.3.6 Levelling-up and Regeneration Act 2023

The Levelling-up and Regeneration Act (HM Government, 2023) aims to support the Government's commitment to reducing geographical disparities between different parts of the UK. Within the Act are several parts relating to the water environment.

Part 7 relates to nutrient pollution standards. Where the Secretary of State considers that a habitats site that is wholly or partly in England is in an unfavourable condition by virtue of pollution from nutrients in water comprising phosphorus or compounds, or nitrogen or compounds, the Secretary of State may designate the catchment area for the habitats site as a phosphorus or nitrogen sensitive area.

It requires sewerage undertakers in England to upgrade phosphorus or nitrogen significant plants in its sewerage system by 2030 in order to meet phosphorus or nitrogen pollution standards.

A phosphorus or nitrogen significant plant is defined as one that discharges treated effluent into a sensitive catchment area and is not exempt in relation to the pollution standard. Unless otherwise defined, the treatment standard for phosphorous is 0.25mg/l, and for nitrogen is 10mg/l.

2.4 Water and design

2.4.1 Building Regulations

The Building Regulations (2010) Part G was amended in early 2015 to require that all new dwellings must ensure that the potential water consumption must not exceed 125 litres/person/day, or 110 litres/person/day where required under planning conditions (HM Government, 2015b) (see 2.3.4).

The Environmental Improvement Plan (discussed in 2.7.2) contains a commitment to consider a new standard for new homes in England of 105 litres per person per day (l/p/d) and 100 l/p/d where there is a clear local need, such as in areas of serious water stress. Whilst this new standard is only under consideration, it demonstrates the direction of travel for water efficiency standards, and it is highly likely that this or a similar standard will be adopted.

2.4.2 Building Research Establishment

The Building Research Establishment (BRE) publish an internationally recognised environmental assessment methodology for assessing, rating, and certifying the sustainability of a range of buildings.

New homes are most appropriately covered by the Home Quality Mark (BRE, 2023a), and commercial, leisure, educational facilities and mixed-use buildings by the Building Research Establishment Environmental Assessment Methodology (BREEAM) UK New Construction Standard (BRE, 2018b).

Using independent, licensed assessors, BREEAM/HQM assesses criteria covering a range of issues in categories that evaluate energy and water use, health and wellbeing, pollution, transport, materials, waste, ecology, and management processes.

In the Homes Quality Mark, 400 credits are available across 11 categories and lead to a star rating. 18 credits are available for water efficiency and water recycling. A greater number of credits are awarded for homes using water efficient fittings (with the highest score achieving 100l/p/d or less), and further credits are awarded for the percentage of water used in toilet flushing that is either sourced from rainwater or from grey water.

The BREEAM New Construction Standard awards credits across nine categories, four of which are related to water: water consumption, water monitoring, leak detection and water efficient equipment. This leads to a percentage score and a rating from “Pass” to “Outstanding”.

Through the Local Plan, the Council has the opportunity to seek BREEAM or HQM status for all new, residential, and non-residential buildings.

2.4.3 Energy and Water

18% of the UK’s domestic energy usage is for water heating (Department for Energy Security and Net Zero, 2022). If less water was being used within the home, for instance through more water efficient showers, less water would need to be heated, and overall domestic energy usage would be reduced.

The Government is currently analysing the results of a 2019 consultation on a Future Homes Standard that will involve changes to Part L (conservation of fuel and power) of the Building Regulations for new dwellings. Whilst there is no direct mention of water efficiency in this consultation, there is an important link between water use and energy use, and therefore between water use and the whole-life carbon cost of developments.

2.4.4 Viability

The evidence for the costs of meeting the optional 110l/p/d water efficiency target in new homes indicate that the costs are minimal:

- A 2014 study into the cost of implementing sustainability measures in housing found that meeting a standard of 110 litres per person per day would cost only £12 (at 2023 prices) for a four-bedroom house (EC Harris, 2014).

- The Committee on Climate Change report - UK Housing: Fit for the Future - stated that the cost of "requiring all homes in England to be built to 110 l/p/d is possible under Part G of regulations and would be no additional cost." (Committee on Climate Change, 2019)
- Heating water accounts for 18% of energy used in the home (Department for Energy Security and Net Zero, 2022) This would cost a 2-3 person, 3-bed household an average of £352 per year in energy at 2023 costs (British Gas, 2023). Water efficiency is therefore not only viable but of positive economic benefit to both private homeowners and tenants.

There is less evidence available on the costs of going below 110l/p/d. The Sussex North Water Neutrality Strategy (JBA Consulting, 2022) found that the additional cost to meet 85l/p/d using water efficient fittings would be between £349 and £431 per dwelling, or £1,049 to £1,531 where white-goods appliances would not otherwise have been installed in the dwelling (2022 prices).

2.5 The Water Industry

2.5.1 The Water Industry in England

Water and sewerage services in England and Wales are provided by eleven Water and Sewerage Companies (WaSCs) and six ‘water-only’ companies. The central legislation relating to the industry is the Water Industry Act 1991. The companies operate as regulated monopolies within their supply regions, although very large water users and developments are able to obtain water and/or wastewater services from alternative suppliers - known as inset agreements.

The Water Act 2014 aims to reform the water industry to make it more innovative and to increase resilience to droughts and floods. Key measures could influence the future provision of water and wastewater services include:

- Non-domestic customers are able to switch their water supplier and/or sewerage undertaker;
- new businesses will be able to enter the market to supply these services;
- measures to promote a national water supply network; and
- enabling developers to make connections to water and sewerage systems.

The water industry is primarily regulated by three regulatory bodies:

- **Economic regulation:** Office of Water Services (Ofwat) are the economic regulator. They have a statutory duty to protect the interests of consumers, ensuring water companies carry out their functions (customer service standards, environmental rules, drinking water standards etc) and can finance them. Part of this role is setting the limits on pricing of water and sewerage services.
- **Environmental regulation:** The Environment Agency are the environmental regulator. They are responsible for monitoring the impact of the water industry (as

well as others) on the environment and issuing permits for abstraction of water and discharge of wastewater.

- **Drinking water regulation:** Finally, the Drinking Water Inspectorate (DWI) implement standards for drinking water and can take enforcement measures against water companies if those standards are not met.

2.5.2 Planning and funding of the water industry

The water industry works on a five-year cycle called the Asset Management Plan period or AMP periods. Every five years a water company submits a Business Plan to Ofwat for a Price Review. These plans set out the companies' operational expenditure (OPEX) and capital expenditure (CAPEX) required to maintain service standards, enhance service (for example where sewer flooding occurs), to accommodate growth and to meet environmental objectives defined by the Environment Agency. Ofwat assesses and compares the plans with the objective of ensuring what are effectively supply monopolies are operating efficiently, and that the company is meeting its obligations. It then sets the allowable price increase for consumers based on the retail prices index, the business plan, and taking into consideration affordability for consumers. The current AMP period is AMP 7 (2020-2025), and the price of water for this period was set by Ofwat late in 2019 in a process referred to as Price Review 19 (PR19). The new price came into effect in April 2020. The next price review will be 2024 (PR24) and will set prices from 2025 to 2030. This system gives stability in pricing. Within this price review process there may also be incentives and penalties on the water company for exceeding or failing to meet targets.

When considering investment requirements to accommodate growing demand, water companies are required to ensure a high degree of certainty that additional assets will be required before funding them. Longer term growth is, however, considered by the companies in their internal asset planning processes and in their 25-year Strategic Direction Statements and Water Resource Management Plans (WRMPs).

The Water Industry National Environment Programme (WINEP) is a set of actions that are defined by the EA and given to all water companies operating in England for completion during a particular AMP period. The aim of the programme is to support the objectives in the Environment Act, Water Framework regulations, Habitats regulations and other environmental objectives. Examples of typical actions could include investigations into the sustainability of an abstraction, a reduction in an abstraction to support river flows, or new permit limits at a wastewater treatment works.

Water and wastewater infrastructure requires significant lead-times to plan, obtain planning and other permissions, finance and construct. The time required to provide new or upgraded infrastructure to serve a development or a larger spatial plan is highly locally specific. The following is provided as an indicative guide to lead-times.

Table 2.1: Indicative lead-times (years) for new infrastructure to serve development

Scale of development	Water supply	Water resources	Wastewater network	Wastewater treatment
Minor	1	N/A	1	N/A
Major	1-3	5-10	1-5	3-5
Strategic / Plan	3-5	10-20	5-10	5-10

2.5.3 Planning for Water

Water resource management plans

Water Resource Management Plans (WRMPs) are 25-year strategies that water companies are required to prepare, with updates every five years. In reality, water companies prepare internal updates more regularly. WRMPs are required to assess:

- Future demand (due to population and economic growth).
- Future water availability (including the impact of sustainability reductions).
- Demand management and supply-side measures (e.g., water efficiency and leakage reduction, water transfers and new resource development).
- How the company will address changes to abstraction licences.
- How the impacts of climate change will be mitigated.
- Where necessary, they set out the requirements for developing additional water resources to meet growing demand and describe how the balance between water supply and demand will be balanced over the period 2015 to 2040.
- Using cost-effective demand management, transfer, trading and resource development schemes to meet growth in demand from new development and to restore abstraction to sustainable levels.
- In the medium to long term, ensuring that sufficient water continues to be available for growth and that the supply systems are flexible enough to adapt to climate change.

Affinity Water's revised draft WRMP for 2024 is published here and is reviewed in detail for the study area in section 4.3.

Drought Plan

Linked to the WRMP is a water company's drought plan. This is a requirement under the Water Industry Act 1991 (as amended by the water Act 2003). A water company must state how it will maintain a secure water supply and protect the environment during dry weather and drought. The plan will contain:

- Drought triggers - these are points where a water company will take action to manage supply and demand. They are based on monitoring of rainfall levels, river flows, groundwater levels and reservoir stocks.
- Demand management actions - how a water company will reduce demand for water during a drought. Actions that save water before taking more water from the environment must be prioritised. These could include:

- reducing leakage;
- carrying out water efficiency campaigns with customers;
- reducing mains pressure; and
- restricting water use, for example through temporary use bans which limit hosepipe and sprinkler use.

- Supply management actions - how a water company will maintain water supply during a drought. Actions that have the least effect on the environment must be prioritised. This could include:
  - carrying out engineering work to improve its supply;
  - transferring water in bulk from other water companies;
  - using drought permits and drought orders to abstract more water;
  - using desalination - permanent or temporary plants; and
  - using tankers to supply customers with water directly.
- Extreme drought management actions - the actions it could take in an extreme drought. These could delay the need to use emergency restrictions standpipes and rota cuts.
- Communicating during a drought - a water company must set out how it will communicate in a clear and timely way during a drought with customers, partners or other stakeholders.
- Environmental assessment, monitoring and mitigation. A drought plan must include:
  - an environmental assessment;
  - an environmental monitoring plan for each supply management action; and
  - details of mitigation measures the company plans to take for each supply management action.
- End of a drought - a water company must explain how it will identify when a drought is over or ending and the actions it will take during this stage, communicate this information to customers, and review its performance.

Regional water resource planning

Water resource planning is taking an increasingly regional focus, recognising the need for collaboration between water companies and sectors in order to address the challenges of climate change, increasing demand for water and protecting the water environment. Five regional groupings having been formed, including the Water Resources South East (WRSE) group which covers Uttlesford District Council. An advisory group consisting of their regulators (Environment Agency and Ofwat) and Defra regularly attend meetings of WRSE.

WRSE published a revised draft Regional Water Resources Plan in 2023 (WRSE, 2023). Their planning process informed the next round of company WRMPs to be published in 2024. The final version of the regional plan will be published later in 2024 once the Southern Water WRMP is complete.

2.5.4 Planning for Wastewater

21st Century Drainage

The UK Water Industry Research (UKWIR) “21st Century Drainage” programme has brought together water companies, governments, regulators, local authorities, academics, and environmental groups to consider how planning can help to address the challenges of managing drainage in the future. These challenges include climate change, population growth, urban creep and meeting the Water Framework Directive.

The group recognised that great progress has been made by the water industry in its drainage and wastewater planning over the last few decades, but that, in the future, there needs to be greater transparency and consistency of long-term planning. The Drainage and Wastewater Management Plan (DWMP) framework (Water UK, 2018) sets out how the industry intends to approach these goals. Companies were required to published finalised DWMPs in 2023 to inform their business plans for the 2024 Price Review.

Drainage and Wastewater Management Plans (DWMPs)

DWMPs are consistently structured plans delivered at three spatial scales; company-wide, regional groupings and individual wastewater catchments. The framework defines drainage to include all organisations and all assets which have a role to play in drainage, although, as the plans will be water company led, it does not seek to address broader surface water management within catchments.

LPAs and LLFAs are recognised as key stakeholders and are invited to join, alongside other stakeholders, the Strategic Planning Groups (SPGs) organised broadly along river basin district catchments.

DWMPs aim to provide more transparent and consistent information on sewer flooding risks and the capacity of sewerage networks and treatment works, and this should be taken into account in SFRAs, Water Cycle Studies, as well as in site-specific FRAs and Drainage Strategies.

Anglian Water's final DWMP is published here.

Thames Water's final DWMP is published here. Both plans have been taken into account in Sections 6 and 7. Interactive mapping for both plans is also available via the links to allow readers to view the status of individual WwTWs.

2.5.5 Developer Contributions and connection charges

A significant part of water company business is the interface with developers to facilitate connection to the public water supply and sewerage systems, through their developer services functions. Developments with planning permission have a right to connect to the public water and sewerage systems, (where this is for domestic use), however, there is no guarantee that the capacity exists to serve a development.

Developers may requisition a water supply connection or sewerage system or self-build the assets and offer these for adoption by the water company or sewerage undertaker. Self-build and adoption are usually practiced for assets within the site boundary, whereas

requisitions are normally used where an extension of upgrading the infrastructure requires construction on third party land. The cost of requisitions is shared between the water company and developer as defined in the Water Industry Act 1991.

The above arrangements are third party transactions because the Town and Country Planning Act Section 106 agreements and Community Infrastructure Levy agreements may not be used to obtain funding for water or wastewater infrastructure.

OfWAT, the water industry's economic regulator, published revised rules covering how water and wastewater companies may charge customers for new connections (OfWAT, 2020). These rules have applied to all companies in England since April 2018. The key changes include:

- More charges will be fixed and published on water company websites. This will provide greater transparency to developers and will also allow alternative connection providers to offer competitive quotations more easily.
- There will be a fixed infrastructure charge for water and one for wastewater.
- The costs of network reinforcement will no longer be charged directly to the developer in their connection charges. Instead, the combined costs of all of the works required on a company's networks, over a five-year rolling period, will be covered by the infrastructure charges paid for all new connections.
- The definition of network reinforcement has changed and will now apply only to works required as a direct consequence of the increased demand due to a development. Where the water company has not been notified of a specific development, for example when developing long-term strategic growth schemes, the expenditure cannot be recovered through infrastructure charges.

Affinity Water publish their charging arrangements annually here. These include incentives to encourage good design by developers, including:

- A discount of £18 per plot when an approved Plumber or Groundworker is used for external pipework;
    - The discount is only applicable to the customer side pipework that is external to the property/premises;
    - The approved contractor must be certified for ‘underground pipework’ activities;
    - A Water Industry Approved Plumbers Scheme (WIAPS) certificate must be provided for each plot whereby the discount has been applied;
    - Affinity Water reserve the right to carry out Water Regulations inspections to ensure the certified work meets the requirements under the Water Supply (Water Fittings) Regulations 1991;
    - This discount applies where call off connection requests occur within the relevant charging year and will not be retrospectively levied.
- A discount to the infrastructure charge for new homes where there is evidence of water efficiency design to a standard of 110 litres (or less) per person per day. The discount was -£589 per infrastructure charge in 2024/25.

Anglian Water publish their charging arrangements here.

- They offer an environmental incentive including a reduction in the sewerage infrastructure charge if a sustainable surface water discharge method is used as an alternative.

Thames Water publish their charging arrangements here.

- They offer a wastewater incentive for reducing run-off leaving the development into their sewerage network. There are two options for achieving this discount:
  - Reduction of surface water run-off discharged to the Thames Water network: the development utilises SuDS which reduces the overall volume discharged to their network by 95% or more, based on a 1-year return period.
  - Removal of all surface water run-off discharged to the Thames Water network: the development has no surface water connection to their network or utilises SuDS so that all surface water flows outfall to ground/watercourse and ultimately the development discharges zero flows to their network.
- The discount is £30 per property in the 2023-24 charging arrangements, and applicants must provide evidence that the development's planning consent and associated drainage strategy meet the requirements above.

2.5.6 Water companies and the planning system

Water companies are currently not statutory consultees to planning applications, although they do monitor planning applications and respond to potentially significant applications, or where requested to do so by the LPA. Defra are intending to consult on making water companies statutory consultees for some applications (Department for Environment, Food & Rural Affairs, 2023).

Where a water company is concerned that a new development may impact upon their service to customers or the environment (for example by causing foul sewer flooding or pollution) they may request the LPA to impose a Grampian condition, whereby the planning permission cannot be implemented until a third-party secures the necessary upgrading or contributions.

Defra has issued National Policy Statements (NPSs) on Nationally Significant Infrastructure Projects (NSIPs) for wastewater (Department of Environment, Food & Rural Affairs, 2012) and water (Department of Environment, Food & Rural Affairs, 2023), to be used as the primary basis when considering applications for Development Consent Orders (DCOs).

2.6 Flood Risk and Surface Water

2.6.1 Flood and Water Management Act 2010

The Flood and Water Management Act (FWMA) aims to improve both flood risk management and the way water resources are managed (HM Government, 2010).

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.

Schedule 3 of the Act has not been enacted in England, but this is expected to be implemented in 2024. The enactment of schedule 3 will have the following implications for the planning process:

- Designation of local authorities as SuDS Approval Bodies (SAB) which have a duty to adopt new drainage systems.
- The cessation of the automatic right for new developments to connect to the existing sewer system.
- Developers must ensure that drainage systems are built as per the approved drainage plan that complied with mandatory national standards as outlined in the NPPF and the PPG.

2.6.2 Local Flood Risk Management Strategy (LFRMS)

Local Flood Risk Management Strategies set out how Lead Local Flood Authorities (LLFA) will manage local flood risk from surface water runoff, groundwater and ordinary watercourses, for which they have a responsibility as LLFA. They also set out the work that other Risk Management Authorities are doing to manage flood risk within the area.

The Essex County Council (ECC) Local Flood Risk Management Strategy (Essex County Council, 2018) sets out the following objectives:

- To provide a clear explanation of everyone's responsibilities.
- To make sure people understand their risk of flooding and think about how this is communicated.
- To explain how flood risk in Essex is assessed and how work is prioritised.
- To clearly set out ECC's work so that communities and businesses can make decisions about how they manage flood risk.
- To ensure that planning decisions properly consider flooding and the future impact of any development.
- To state how information is shared and how EEC work with other authorities.
- To ensure that emergency plans and responses to flood incidents are effective and that communities are prepared for flooding.
- To encourage innovative new thinking, considering community needs, while working with the existing natural and built environment.
- To highlight where further detailed information and legislation regarding flooding can be found.

2.6.3 Strategic Flood Risk Assessment (SFRA)

All LPAs are required, under NPPF, to prepare a SFRA, which forms a key part of the evidence base for their Local Plan. The SFRA must consider flood risks from all sources, collating up-to-date flood risk data and in some cases developing new flood risk modelling. The SFRA is used to inform the Sequential Test, by which Local Plan allocations should be sequentially selected to direct development towards areas of lower flood risk, taking into consideration the vulnerability to flooding of the proposed land use. Uttlesford District Council's current SFRA was published in 2021 (JBA Consulting, 2021) and is currently being updated. A level 2 SFRA is currently being prepared to support the Reg. 19 consultation.

2.6.4 Surface Water Management Plan

Surface Water Management Plans (SWMPs) outline the preferred surface water management strategy in a given location and establish a long-term action plan to manage surface water. SWMPs are undertaken, when required, by LLFAs in consultation with key local partners who are responsible for surface water management and drainage in their area. Essex County Council has published SWMPs for 10 locations across the county. One location, the Lower Sheering SWMP, intersects the Uttlesford study area to the east of Hatfield Heath (ECC, 2022).

2.6.5 Sustainable Drainage Systems

From April 2015, Local Planning Authorities (LPA) have been given the responsibility for ensuring that sustainable drainage is implemented on developments of ten or more homes or other forms of major development through the planning system. Under the new arrangements, the key policy and standards relating to the application of SuDS to new developments are:

- The National Planning Policy Framework, which requires that development in areas already at risk of flooding should give priority to sustainable drainage systems.
- The House of Commons written statement (Pickles, 2014) setting out governments intentions that LPAs should “ensure that sustainable drainage systems for the management of run-off are put in place, unless demonstrated to be inappropriate” and “clear arrangements in place for ongoing maintenance over the lifetime of the development.” This requirement is also now incorporated in the 2019 update of the NPPF (paragraph 165). In practice, this has been implemented by making Lead Local Flood Authorities (LLFAs) statutory consultees on the drainage arrangements of major developments.
- The Defra non-statutory technical standards for sustainable drainage systems (HM Government, 2015c). These set out the government’s high-level requirements for managing peak flows and runoff volumes, flood risk from drainage systems and the structural integrity and construction of SuDS. This very

short document is not a design manual and makes no reference to the other benefits of SuDS, for example water quality, habitat, and amenity.

Essex County Council are the LLFA and play a key role in ensuring that the proposed drainage schemes for all new developments comply with technical standards and policies in relation to SuDS. Further information on surface water drainage can be found here.

An updated version of the CIRIA SuDS Manual was published in 2015. The guidance covers the planning, design, construction and maintenance of SuDS for effective implementation within both new and existing developments. The guidance is relevant for a range of roles with the level of technical detail increasing throughout the manual. The guidance does not include detailed information on planning requirements, SuDS approval and adoption processes and standards, as these vary by region and should be checked early in the planning process. The manual itself can be found here.

CIRIA also publish “Guidance on the Construction of SuDS” (C768), which contains detailed guidance on all aspects of SuDS construction, with specific information on each SuDS component available as a downloadable chapter. The downloadable chapter is available here.

Affinity Water provides guidance in their Affinity Water Design Construction Specification Document available here. Applications for projects should be made through their website.

Anglian Water provides guidance for developers here, and a SuDS Adoption Manual is also available online.

Thames Water do not publish any SuDS guidance themselves, but refer instead to the CIRIA SuDS Manual referred to above.

2.6.6 Design and Construction Guidance

The Design and Construction Guidance (DCG), part of a new Codes for Adoption covering the adoption of new water and wastewater infrastructure by water companies, contains details of the water sector’s approach to the adoption of SuDS, which meet the legal definition of a sewer. This replaces the formerly voluntary Sewers for Adoption The new guidance came into force in April 2020 and compliance by water companies in England is mandatory.

The previous standards, up to and including Sewers for Adoption Version 7, included a narrow definition of sewers to mean below-ground systems comprising of gravity sewers and manholes, pumping stations and rising mains. This essentially excluded the adoption of SuDS by water companies, except for below-ground storage comprising of oversized pipes or chambers.

The new guidance provides a mechanism for water companies to secure the adoption of a wide range of SuDS components which are now compliant with the legal definition of a sewer. There are however several non- adoptable components such as green roofs, pervious pavements, and filter strips. These components may still form part of a drainage design so long as they remain upstream of the adoptable components.

The Design and Construction Guidance states that the drainage layout of a new development should be considered at the earliest stages of design. It is hoped that the new guidance will lead to better managed and more integrated surface water systems which incorporate amenity, biodiversity, and water quality benefits.

2.7 Environmental Protection and Biodiversity

2.7.1 The Environment Act 2021

The Environment Act (HM Government, 2021) came into UK law in November 2021 with the aim of protecting and enhancing the environment. The Act has objectives to improve air and water quality, biodiversity, waste reduction and resource efficiency. The implementation of the policies within the Environment Act has begun and legally binding environmental targets are being developed. This will be enforced by the newly created Office for Environmental Protection (OEP, more information available here).

The Environment Act (Part 5) contains policies concerning improvements to the water environment. These policies have the following aims:

- Effective collaboration between water companies through statutory water management plans.
- Minimise the damage that water abstraction may cause on environment.
- Modernise the process for modifying water and sewerage company licence conditions.

Further to this, there is specific legislation regarding storm overflows aiming to reduce the discharge of untreated sewage into waterways. This plan includes requirements for water companies to:

- report on the discharges from storm overflows;
- monitor the quality of water potentially affected by discharges;
- progressively reduce the harm caused by storm overflows; and
- report on elimination of discharges from storm overflows.

2.7.2 25-year Environment Plan

The Environmental Improvement Plan (EIP) is the first revision of the 25-year environment plan (25YEP) published in 2018. It contains ten goals which are shown in Figure 2.1. The full text of the EIP can be found here. Government must review and revise the plan, if needed, every five years to ensure continued progress against the ten 25YEP goals.

Of particular importance to a WCS is Goal 3 - Clean and plentiful water.

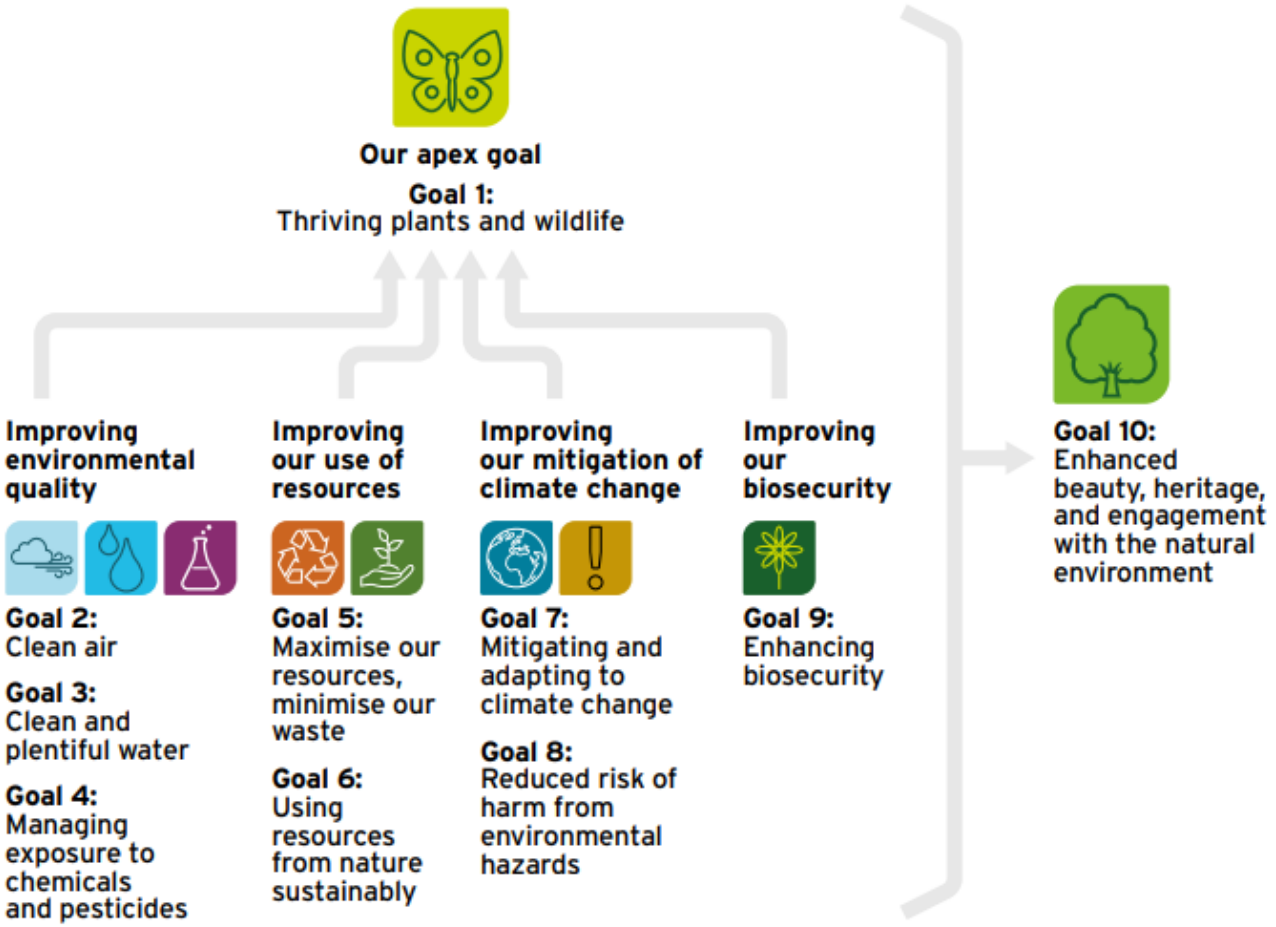

Figure 2.1 The 10 Environmental Improvement Plan goals

Under Goal 3 - Clean and plentiful water, there are eight sets of targets and commitments relating to different aspects of the water environment:

- "Reduce nitrogen, phosphorus, and sediment pollution from agriculture into the water environment by at least 40% by 2038, compared to a 2018 baseline, with an interim target of 10% by 31 January 2028, and 15% in catchment containing protected sites in unfavourable condition due to nutrient pollution by 2028.
- Reduce phosphorus loadings from treated wastewater by 50% by 2028 and 80% by 2038 against a 2020 baseline.
- Halve the length of rivers polluted by harmful metals from abandoned mines by 2038, against a baseline of around 1,500km (approximately 930 miles).
- Reduce the use of public water supply in England per head of population by 20% from the 2019-20 baseline, 2038, with interim targets of 9% by 2027 and 14% by 2032, and to reduce leakage by 20% 2027 and 30% by 2032.
- Restore 75% of our water bodies to good ecological status.
- Water companies to cut leaks by 50% by 2050. Leakage will be cut by 20% by 2027 and 30% by 2032.
- Require water companies to have eliminated all adverse ecological impact from sewage discharges at all sensitive sites by 2035, and at all overflows by 2050.

- Target a level of resilience to drought so that emergency measures are needed only once in 500-years."

To deliver these goals, the EIP outlines action across these areas:

- Ensure water companies are delivering on our targets and commitments through enhanced transparency and monitoring mechanisms in the Environment act, targeted enforcement from regulators and increasing the maximum fines.
- Direct water company fines relating to environmental breaches to improving the water environment.
- Crack down on sewage pollution by holding water companies to account for delivering the targets set out in the Storm Overflows Discharge Reduction Plan.
- Require water companies to upgrade 160 of their wastewater treatment works to meet the strictest phosphorus limits by 2028, and upgrade a further 400 by 2038, to reduce harmful nutrient pollution from wastewater.
- Reduce agricultural pollution across England by paying farmers to protect and enhance watercourses through new farming schemes and investing in improved slurry storage and management through our grants, providing advice to farmers to improve their practices through the expanded Catchment Sensitive Farming partnership scheme, and ensuring farmers are meeting legal standards of responsible farming through our expanded and targeted farm visits programme.
- Increase our resilience to drought by working with regulators and water companies to reduce household and non-household water use, and ensuring water companies are delivering a 50% reduction in leakage by 2050.
- Roll out new water efficiency labelling and deliver our ten actions in the Roadmap to Water Efficiency in new developments.
- Deliver a ten-fold increase in the Water and Abandoned Metal Mines programme, upscaling the existing three treatment schemes with 40 more by 2038, to tackle harmful pollutants from abandoned metal mines.
- Protect our chalk streams by supporting the Chalk Stream Strategy.
- Make Sustainable Drainage Systems mandatory in new developments subject to final decisions, following consultation, on scope, threshold and process.

Progress towards delivering the EIP will be monitored annually.

2.7.3 Defra Plan for Water

Defra's Plan for Water (Department for Environment, Food & Rural Affairs, 2023) provides further detail on the actions towards achieving Goal 3 of the EIP23. It promotes an integrated approach to water management as the foundation of the plan. Whilst many of the actions contained within the Plan for Water are outside of the responsibilities of areas of influence of the LPAs, the following summarises those actions that LPAs should have regard to:

- Require standardised sustainable drainage systems (SuDS) in new housing developments in 2024, subject to final decisions on scope, threshold, and process following consultation in 2023.

- Designate all chalk catchments as water stressed and high priority under the sewer overflows reduction plan, driving action to improve water management.
- The plan reflects the predicted 4 billion litre per day (4,000 ml/d) gap between supply and demand across England and contains measures to both boost supply and reduce demand. Of interest to LPAs is the plan to reduce demand which will address half of the gap.
- A key component in reducing demand for water is improving water efficiency and there is a target under the Environment Act to reduce the use of public water supply in England per head of population by 20% by 2038.A road map on water efficiency in new developments and retrofits has been developed with ten actions to improve water efficiency:
    - Action 1 - Implement schedule 3 to the Flood and Water Management Act 2010. The 2024 consultation will consider rainwater harvesting in developing the statutory SuDS National Technical Standards.
    - Action 2 - Review the Water Supply (Water Fittings) Regulations 1999, the Water Supply (Water Quality) Regulations 2016 and/or any other relevant legislation to address wasteful product issues with toilets and enable new water efficient technologies.
    - Action 3 – Develop clear guidance on ‘water positive’ or ’net zero water’ developments and roles for developers and water companies.
    - Action 4 – Review water efficiency options in planning, building regulations and through voluntary schemes for non-household buildings.
    - Action 5 – Work with Ofwat to ensure the water industry can play a central role in retrofitting water efficient products in households, businesses, charities and the public sector.
    - Action 6 – Work across government to integrate water efficiency into energy efficiency advice and retrofit programmes.
    - Action 7 - Review the Building Regulations 2010, and the water efficiency, water reuse and drainage standards including considering a new standard for new homes in England of 105l/p/d and 100 l/p/d where there is a clear local need.
    - Action 8 –Mandatory water efficiency labelling scheme.
    - Action 9 – Investigate dual pipe systems (rainwater harvesting) and water reuse options for new housing development as part of the review of the planning framework.
    - Action 10 – Enable innovative water efficiency approaches in buildings, including technologies and approaches to funding and maintenance.

2.7.4 Biodiversity Net Gain

Biodiversity net gain (BNG) is designed to contribute to the recovery of nature while developing land. The principle is that the natural environment is in measurably better state after development than it was before. The Environment Act 2021 requires all planning

permissions granted in England (except for small sites) to achieve 10% BNG since January 2024. This was also required on small sites since April 2024.

Defra publishes a biodiversity metric tool, the latest version of which must be used for calculating the BNG deriving from a proposed development.

2.7.5 Local Nature Recovery Strategy

The Environment Act (HM Government, 2021) also established a duty to prepare, by March 2025, Local Nature Recovery Strategies (LNRS), recognising that England is one of the most nature-depleted countries in the world. Essex County Council are the authority responsible for preparing the LNRS In the study area. They are tasked with working with local partners to agree priorities for nature recover and identify "practical, achievable proposals" (Department for Environment Food & Rural Affairs, 2023) to address these priorities. The LNRS should also co-ordinate with neighbouring strategies to form a national Nature Recovery Network.

There is a close linkage with BNG, as developments proposing to create, enhance or recover habitat in locations mapped by the LNRS receive a higher value in the biodiversity metric calculator than in other locations.

2.7.6 Storm Overflow Reduction Plan

The Environment Act placed a legal duty on water companies to progressively reduce the adverse impacts of discharges from storm overflows. The storm overflow reduction plan (Department for Environment, Food & Rural Affairs, 2023) sets the following targets:

- By 2035, water companies will have: improved all overflows discharging into or near every designated bating water; and improved 75% of overflows discharging to high priority sites.
- By 2050, no storm overflows will be permitted to operate outside of unusually heavy rainfall or to cause any adverse ecological harm.

There is also an expectation that water companies ensure their infrastructure keeps pace with increasing external pressures, such as urban growth and climate change, without these pressures leading to greater numbers of discharges.

2.7.7 The Water Framework Directive (WFD) and Water Environment Regulations

Introduction

The European Union Water Framework Directive (WFD) 2000 is currently transposed into English and Welsh law by the Water Environment Regulations (HM Government, 2017). They apply to all waterbodies (watercourses, canals, lakes, estuaries and coastal waters), with the objective of meeting Good Ecological Status (GES) or, where heavily modified, Good Ecological Potential (GEP) To meet GES or GEP, a water body must achieve a good or high score for all elements - in the case of surface water, these are biological, physico-chemical, specific pollutants and hydromorphology (Figure 2.2). UK policy remains to meet GES or GEP for all waterbodies by 2027.

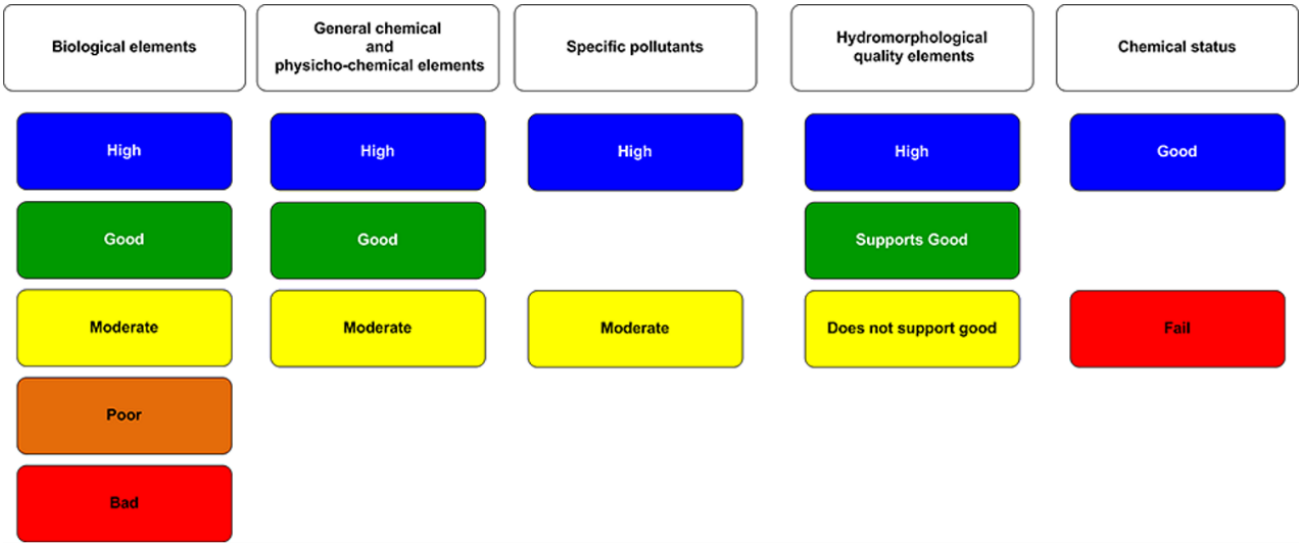

Figure 2.2: Status classification for surface water

(Environment Agency, 2023a)

Chemical Status is separately assessed. The Water Framework Directive and the EA recognise a group of ubiquitous chemicals which are persistent, bioaccumulative or toxic (uPBT), and without which over 90% of England's waterbodies would achieve Good Chemical Status. Mercury, PFOS and PBDE are the most ubiquitous causes of failures. Due to the persistent nature of these chemicals, the date for getting all waterbodies to Good Chemical Status is set for 2063.

River Basin Management Plans

River Basin Management Plans (RBMP) are required under the WFD and document the baseline classification of each waterbody in the plan area, the objectives, and a programme of measures to achieve those objectives. Uttlesford falls within both the Anglian (Environment Agency, 2022) and Thames RBDs (Environment Agency, 2024). The third cycle RBMPs were published in 2022. A primary WFD objective is to ensure 'no deterioration' in environmental status, therefore all water bodies must meet the class limits for their status class as declared in the Anglian and Thames River Basin Management Plan. Another equally important objective requires all water bodies to achieve good ecological status. Future development needs to be planned carefully so that it helps towards achieving the WFD and does not result in further pressure on the water environment and compromise WFD objectives. The WFD objectives as outlined in the updated RBMPs are summarised below:

- Preventing deterioration of the status of surface waters and groundwater.
- Achieving objectives and standards for protected areas.
- Aiming to achieve good status for all water bodies.
- Reversing any significant and sustained upward trends in pollutant concentrations in groundwater.
- Cessation of discharges, emissions and losses of priority hazardous substances into surface waters.

- Progressively reducing the pollution of groundwater and preventing or limiting the entry of pollutants.
- Local Planning Authorities (LPAs) must have regard to the Water Framework Directive as implemented in the RBMPs. It is of primary importance when assessing the impact of additional wastewater flows on local river quality.
- Alongside the RBMP documents, the data behind them can be explored further using the Catchment Data Explorer (Environment Agency, 2023a) and map viewer (Environment Agency, 2023b).

Protected Area Objectives

The Water Environment Regulations specify that areas requiring special protection under other EC Directives, and waters used for the abstraction of drinking water, are identified as protected areas. These areas have their own objectives and standards.

Some areas may require special protection under more than one piece of EU-derived legislation or may have additional (surface water and/or groundwater) objectives. In these cases, all the objectives and standards must be met.

The types of protected areas are:

- Areas designated for the abstraction of water for human consumption (Drinking Water Protected Areas);
- areas designated for the protection of economically significant aquatic species (Freshwater Fish and Shellfish);
- bodies of water designated as recreational waters, including Bathing Waters;
- nutrient-sensitive areas, including areas identified as Nitrate Vulnerable Zones under the Nitrates Directive or areas designated as sensitive under Urban Waste Water Treatment Regulations; and
- areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in their protection including relevant Natura 2000 sites.

2.7.8 Conservation of Habitats Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2010 (commonly referred to as the Habitats Regulations) consolidated the Conservation (Natural Habitats, &c.) Regulations 1994, and transposed the EU Habitats Directive in England and Wales which was aimed at protecting plants, animals and habitats that make up the natural environment. The regulations were further amended in 2017.

The Habitats Regulations define the requirement for a Habitats Regulations Assessment (HRA) to be carried out. The purpose of this is to determine if a plan or project may affect the protected features of a "habitats site". These include:

- A Special Area of Conservation (SAC) or candidate SAC.
- A Site of Community Importance (SCI).
- A site hosting a priority natural habitat type or priority species protected in accordance with Article 5(4) of the Habitats Directive.
- A Special Protection Area (SPA) or potential SPA.
- Ramsar sites.

All plans and projects (including planning applications) which are not directly connected with, or necessary for the conservation management of a habitat site require consideration of whether the plan or project is likely to have significant effects on that site.

This is referred to as the "Habitats Regulations Assessment screening" and should take into account the potential effects of both the plan/project itself and in combination with other plans or projects.

Part 6 of the conservation of Habitats and Species Regulations 2017 states that where the potential for likely significant effects cannot be excluded, a competent authority must make an appropriate assessment of the implications of the plan or project for that site, in view of the site's conservation objectives.

The competent authority may agree to the plan or project only after having ruled out adverse effects on the integrity of the habitats site.

If adverse effects cannot be ruled out, and where there are no alternative solutions, the plan or project can only proceed if there are imperative reasons of over-riding public interest and if the necessary compensatory measures can be secured.

The "People over Wind" ECJ ruling (C-323/17) clarifies that when making screening decisions for the purposes of deciding whether an appropriate assessment is required, competent authorities cannot take into account any mitigation measures. This must be part of the appropriate assessment itself.

The implementation of the Conservation of Habitats Regulations have had particular significant implications in two areas related to water and planning:

- Nutrient Neutrality. Natural England (NE) has identified a number of catchment areas where Habitats Sites are in unfavourable condition due to eutrophication (an excess of the nutrients phosphorous and/or nitrogen in water). NE have

advised that developments in these catchments must demonstrate that they do not cause harm, and that one way to do this is to introduce mitigation measures in the catchment area which offset the additional nutrients emitted as a result of the development, an approach known as nutrient neutrality. There are no parts of the study area which are currently within a nutrient neutrality catchment area, however NE may designate additional areas in the future.

- Water Neutrality. Natural England (NE) has issued a position statement that it cannot be concluded with sufficient certainty that groundwater abstractions in the Arun Valley, West Sussex are causing no adverse effect on Habitats Sites. NE have advised that developments in Sussex North Water Resource Zone must demonstrate that they do not cause harm, and that one way to do this is to introduce mitigation measures in the zone which offset the additional water consumed as a result of the development, an approach known as water neutrality. There are no parts of the study area which are currently within a water neutrality zone, however NE may designate additional areas in the future.
- Both nutrient and water neutrality designations have resulted in significant impacts on the granting of planning permission in the designated areas.

2.7.9 Wildlife and Countryside Act

Sites of Special Scientific Interest (SSSI) are designated and legally protected under the Wildlife and Countryside Act 1981, Section 28G places a duty to take reasonable steps, consistent with the proper exercise of the authority's functions, to "further to the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest." (HM Government, 1981).

The Government's 25-year Environment Plan has a target of "restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term." In line with this, and the Wildlife and Countryside Act 1981, Local Authorities should look put forward options that contribute to conservation or restoration of favourable condition, and at the very least must not introduce policies that hinder the restoration of favourable condition by increasing existing issues.

A site is said to be in "favourable condition" when the designated feature(s) within a unit are being adequately conserved and the results from monitoring demonstrate that the feature(s) in the unit are meeting all the mandatory site-specific monitoring targets set out in the favourable condition targets (FCT).

2.7.10 Ramsar

The Convention on Wetlands of International Importance, more commonly known as the Ramsar convention, aims to protect important wetland sites. Member counties commit to:

- Wise use of all their wetlands.
- Designating sites for the Ramsar list of "Wetlands of International Importance" (Ramsar Sites) and their conservation.

- Cooperating on transboundary wetlands and other shared interests.
- “Wise use” of wetlands is defined under the convention as “the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development” (Ramsar Convention Secretariat, 2010).
- In the UK, Ramsar Sites are designated by the Joint Nature Conservation Committee (JNCC).

In general, the designation of UK Ramsar sites is underpinned through prior notification of these areas as Sites of Special Scientific Interest (SSSIs). Additionally, the NPPF states that Ramsar sites should be given the same protection in the planning process as sites designated under the EU Habitats Directive.

2.7.11 Bathing Water Regulations

The Bathing Water Directive was first published in 2006 and are currently transposed into English and Welsh law through the Bathing Water Regulations 2013. The aims of the directive are the protection of public health whilst bathing, standardisation of publicly available water quality information and to improve management practices at bathing waters.

The UK has over 600 designated bathing waters defined as areas of inshore waters designated for public swimming, these areas are typically characterised by large numbers of swimmers and visitors per year. The Environment Agency are required to monitor water quality at these sites regularly (usually weekly) throughout the Bathing Water season, between 15th May and 30th September.

Water quality standards are based on the incidence of potentially harmful bacteria, E. coli and intestinal enterococci and are categorised as ‘excellent’, ‘good’, ‘sufficient’ or ‘poor’ on the basis of bacteria levels. Sites are rated annually and on a short-term basis in response to any temporary pollution incidents.

Achieving compliance with the Bathing Water Directive has driven some £2.5bn of investment by UK water companies since the early 1990s to reduce the impact of sewerage systems and treated wastewater discharges. Measures have included storage and surface water management to reduce storm overflow spills, moving or extending effluent outfalls and improving wastewater treatment, including ultra-violet (UV) treatment of final effluent.

In contrast to some other European nations, the UK has not previously designated stretches of river as bathing waters, however five new inland bathing waters have been designated since 2021, and across England there are numerous campaigns by NGOs and members of the public to designate other stretches of river. Defra has published guidance on applying for bathing water status, including a requirement for at least 100 bathers per day during the season (Department for the Environment, Food and Rural Affairs, 2023).

2.7.12 Environmental Permitting Regulations

Environmental permitting is a process used to manage and regulate activities which may cause harm to the environment. The Environmental Permitting Regulations (HM

Government, 2016) were introduced in order to streamline a wide-ranging number of environmental permitting laws under one set of regulations. These include permits for emissions to air, water and land, and cover a range of industrial sectors and waste management streams.

Of particular relevance to this study are the regulations for permitting sewage effluent discharges to surface waters and groundwaters, known as water discharge activities (Environment Agency, 2022).

- The regulations are used to permit discharges from water company and private wastewater treatment works, and for sewer overflows.
- The Environment Agency will usually object to applications for a new private Package Treatment Plan (PTP) or septic tank where it is feasible to connect the development to a public sewerage system. A general rule of 30m per dwelling is used to define a reasonable distance from the site boundary to a public sewer. Hence a development of 10 homes should connect to a public sewer within 300m of the boundary, unless there are significant barriers, such as a river or motorway. A similar rule of thumb applies to non-household development where the maximum discharge volume in cubic metres is divided by 0.75 and the result multiplied by 30 metres to obtain the distance over which a connection would typically be made.
- Where an existing or new development treats its own wastewater, a PTP must be installed if the discharge is directly to surface water. Where the discharge is to ground, a PTP or septic tank may be used, but must be connected to a suitably designed drainage field.

2.7.13 Groundwater protection

Under the regulations, the EA have published a set of position statements on protecting groundwater from various activities (Environment Agency, 2018). The position statements that are relevant to this study with regard to discharges to groundwaters, include surface water drainage and the use of SuDS, discharges from contaminated surfaces (e.g., lorry parks) and from treated sewage effluent.

The EA also maintain a set of maps of Source Protection Zones (SPZs) to help identify high risk areas within which pollution prevention measures should be implemented. The SPZs show the risk of contamination to public water supplies from activities that may cause pollution in the area, the closer the activity, the greater the risk:

- **Zone 1 (Inner protection zone)** This zone is designed to protect against the transmission of toxic chemicals and water-borne disease. It indicates the area in which pollution can travel to the borehole within 50 days from any point within the zone and applies at and below the water table. There is also a minimum 50 metre protection radius around the borehole.
- **Zone 2 (Outer protection zone)** This zone indicates the area in which pollution takes up to 400 days to travel to the borehole, or 25% of the total catchment

area, whichever area is the largest. This is the minimum length of time the Environment Agency think pollutants need to become diluted or reduce in strength by the time they reach the borehole.

- **Zone 3 (Total catchment)** This is the total area needed to support removal of water from the borehole, and to support any discharge from the borehole.
- **Zone of special interest** This is defined on occasions, usually where local conditions mean that industrial sites and other polluters could affect the groundwater source even though they are outside the normal catchment.

2.8 Summary of key new and emerging policy and legislation

The policy and legislation covering the water environment, water and wastewater services and planning is wide and frequently changing. The new and emerging policy and legislation below have been identified as particularly important for consideration in the development of the Local Plan:

- Schedule 3 of the Flood and Water Management Act is expected to be enacted in England in 2024. This will designate Lead Local Flood Authorities as SuDS Approval Bodies (SABs) with a duty to adopt new SuDS and removing the automatic right to connect to public sewers.
- Defra have signalled their intention, with the Plan for Water, to review the water efficiency standards for new homes, including consideration of a new national 105l/p/d standard and 100l/p/d where there is a clear local need.
- All development sites will be expected to demonstrate at least a 10% net-gain in biodiversity from 2024.
- The designation of specific catchments in England as requiring to demonstrate Nutrient Neutrality under the Conservation of Habitats Regulations has led to significant limitations to development in these areas, as well as the development of offsetting schemes to enable nutrient-neutral development. The government (Defra, 2024) has instructed competent authorities (including LPAs) undertaking HRAs for development draining via a sewer to a wastewater treatment works in nutrient sensitive areas to consider that the nutrient pollution standard will be met by 2030. At the time of writing, this notice was the subject of a legal challenge.
- Similarly, the availability of water resources, and the impact of new water demand on the environment, has led to restrictions on granting planning permission in Sussex North WRZ and a requirement to demonstrate water-neutral development in Cambridge Water WRZ. It is anticipated that LPAs will be increasingly required to demonstrate that there will be sufficient water resources to supply development without causing further harm to the environment through the life of their Local Plans.

3 Future Growth in Uttlesford

3.1 Introduction

The following section summarises how Uttlesford is expected to grow during the Local Plan period and allows a forecast to be created that can be used to predict the volume of water and wastewater required in the future and the resulting pressure on water infrastructure. This forecast consists of:

- Preferred allocations - sites planned to be allocated in the Local Plan (shown in Figure 3.1).
- Commitments - sites with extant planning permission.
- Recent completions - sites completed in the last year that may not yet appear in flow data provided by the water companies - for this study 2022/23 data was used.
- Windfall - sites that have not been specifically identified in the Local Plan.
- Neighbouring authority growth - growth served by infrastructure within or shared with Uttlesford.

Information on potential sites and expected growth during the plan period was provided by UDC and collated into a forecast for housing and employment floor space. East Hertfordshire and Greater Cambridge were also contacted for their growth forecasts.

3.2 Growth in Uttlesford

3.2.1 Preferred options allocations

UDC have identified nine preferred allocations for inclusion in the draft Local Plan which are shown in Table 3.1 below. The location of these is shown in Figure 3.1.

Table 3.1 Preferred allocations

Site name	Map Ref.	Number of dwellings	Employment floorspace
Land east of Station Road, Elsenham	6	150	-
Land east of High Lane and Land at Walpole Meadows, Stansted Mountfitchet	4	390	-
Land off The Broadway and Land east of B1008, Great Dunmow	9	884	-
Land east of Shire Hill Farm and south of Radwinter Road, Saffron Walden	5	879	8,000m^2 Mixed B
Land at Warrens Farm and Land at Warish Hall Farm, Little Canfield and Takeley	3	1,546	-
Land at Gaunts End, Elsenham	1	-	1,950m^2 B1a

Site name	Map Ref.	Number of dwellings	Employment floorspace
Land north of Takeley Street, Takeley	7	-	8,500m^2 E(g)iii/B2 and B8
Land at Little Chesterford Research Park	2	-	3,450m^2 B1c
Land south of A120/North of Stortford Road, Great Dunmow	8	-	9,500m^2 E(g)iii/B2 and B8
Total	-	3,849	31,400m^2

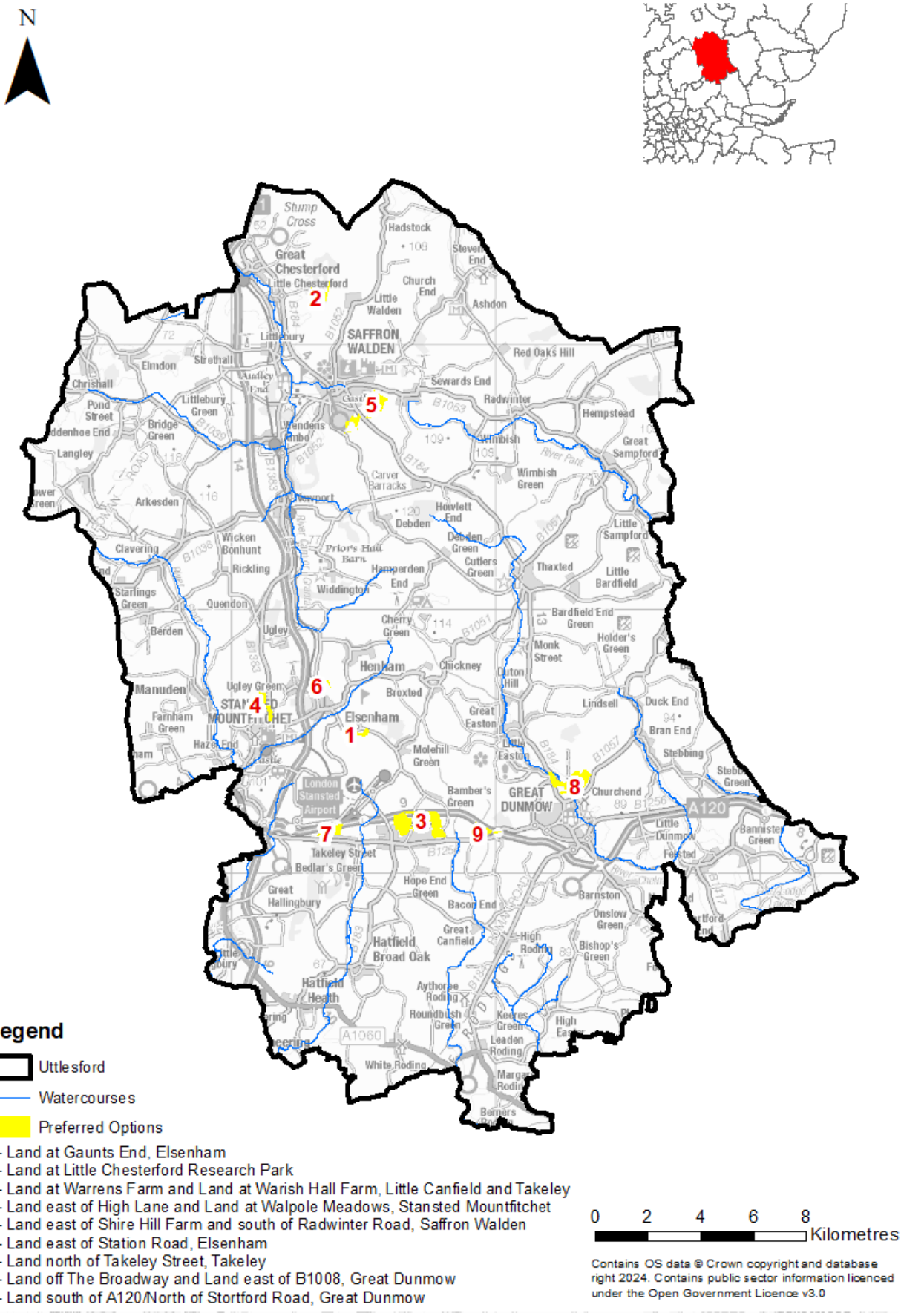

Figure 3.1 Preferred allocations

3.2.2 Commitments and completions

Existing commitments and recent completions were provided by UDC showing the position on 30 November 2023. This consists of 609 residential sites, providing 8,508 dwellings, and 59 employment sites providing 238,200m^2 of employment floorspace.

3.2.3 Windfall

Windfall sites are sites that have not been specifically identified in the Local Plan. They often comprise previously developed sites that have unexpectedly become available. UDC provided an estimate of 1,650 dwellings during the Local Plan period to account for windfall growth. By its nature, it is not known where windfall growth will occur, however in general, windfall growth often occurs in built-up areas where other growth is planned. Windfall growth has therefore been distributed between WwTW in the study area based on the distribution of existing commitments and allocations. Table 3.2 shows this distribution.

Table 3.2 Distribution of windfall growth

WwTW	Assumed number of dwellings during plan period
Ashdon WwTW	1
Bishops Stortford WwTW	221
Broxted WwTW	1
Clavering WwTW	9
Debden WwTW	4
Elmdon WwTW	1
Felsted WwTW	57
Great Chesterford WwTW	28
Great Dunmow WwTW	481
Great Easton (Essex) WwTW	175
Great Sampford WwTW	0
Hatfield Heath WwTW	5
High Easter WwTW	0
High Roding WwTW	1
Leaden Roding WwTW	0
Little Hallingbury WwTW	2
Manuden WwTW	9
Newport WwTW	26
No public sewer	71
Saffron Walden WwTW	277
Stansted Mountfitchet WwTW	222
Takeley WwTW	57
Wendens Ambo WwTW	1

WwTW	Assumed number of dwellings during plan period
Willows Green WwTW	0
Wimbish WwTW	1
Total	1,650

3.3 Growth outside Uttlesford

3.3.1 General approach

Where growth within a neighbouring Local Authority area may be served by infrastructure within or shared with Uttlesford, it is important to take this into account when considering infrastructure capacity or environmental impact. The wastewater catchments provided by AW and TW were used to identify where infrastructure could be shared across boundaries. Neighbouring authorities to Uttlesford are shown in Figure 3.2. East Hertfordshire and Greater Cambridge share wastewater catchments with Uttlesford. Bishops Stortford WwTW serves the town of Bishops Stortford in East Herts as well as areas around Stansted Airport, and Great Chesterford WwTW and Linton WwTW are shared with Greater Cambridge in the North. Both neighbouring authorities were contacted in order to obtain their forecast for growth during the plan period, and a summary of this information is provided in the sections below.

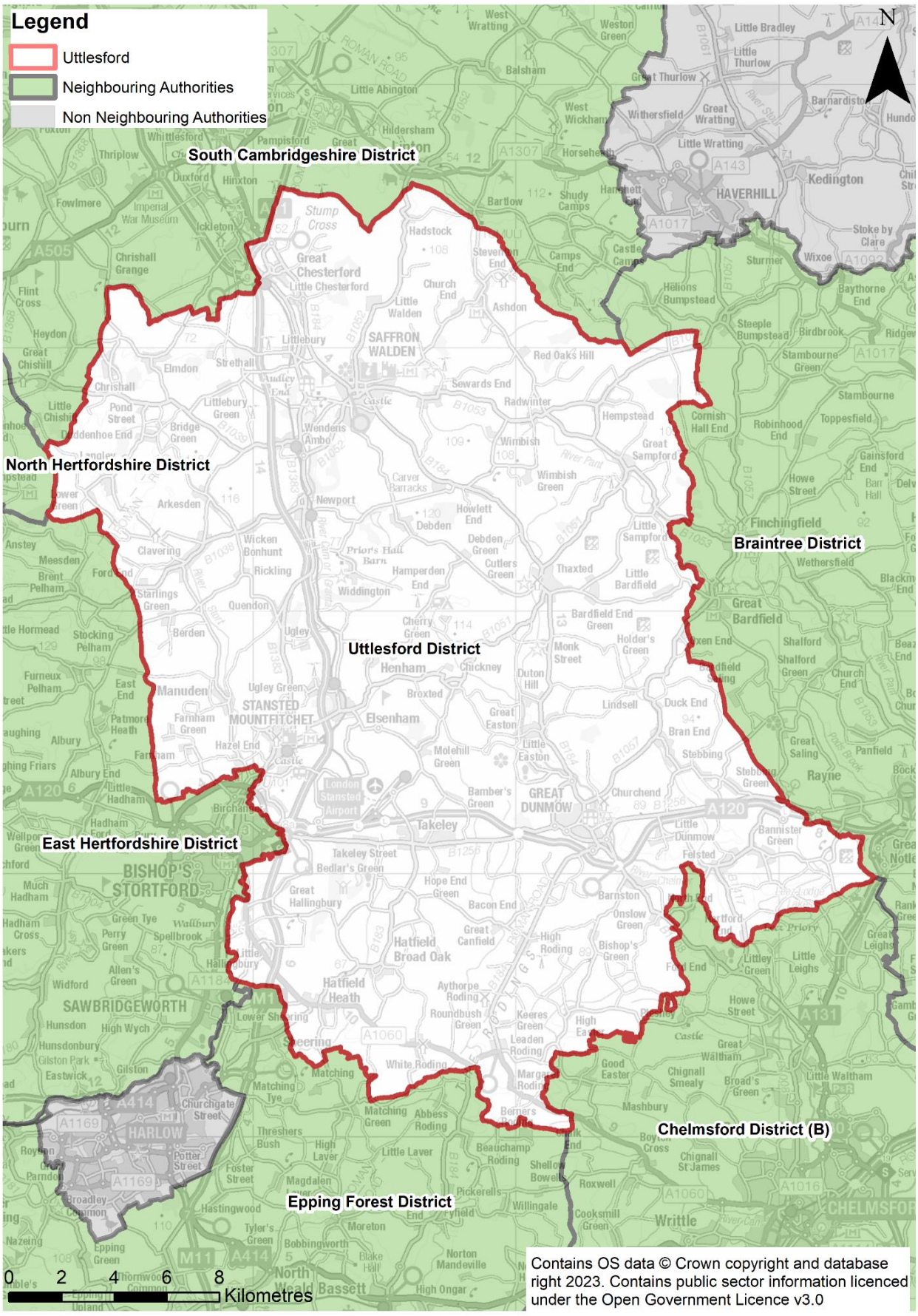

Figure 3.2 Neighbouring authorities to Uttlesford

3.3.2 East Hertfordshire District Council

Growth in around the town of Bishops Stortford is expected to be served by Bishops Stortford WwTW, a summary of this growth is shown in Table 3.3. The level of growth within this catchment is much higher than the level of growth from Uttlesford, and higher than the growth forecast provided for Stage 1. It is therefore important for UDC to engage with East Herts and TW to ensure the full forecast of growth from both LPAs when capacity upgrades at this WwTW are considered.

Table 3.3 Growth from East Hertfordshire

WwTW	Residential	Employment
Bishops Stortford	17,377 dwellings on 22 sites	78,686m^2 on 10 sites

3.3.3 Greater Cambridge Planning Authority

Two catchments in the north of the study area serve growth in both Uttlesford and Greater Cambridge. A summary of this growth is shown in Table 3.4

Table 3.4 Growth from Greater Cambridge

WwTW	Residential	Employment
Great Chesterford	1,500 dwellings on 1 site	508m^2 on 1 site One further site did not have a floorspace estimate but was expected to result in 4,000 additional employees.
Linton	None identified	47,269m^2 on 5 sites

4 Water resources

4.1 Status of water resources in Uttlesford

4.1.1 Water resources in the UK

It is important to set water resources in Uttlesford within the context of the overall national picture.

The Environment Agency (Environment Agency, 2024) have published a summary of the revised draft regional and Water Resources Management Plans which includes their view on the overall state of water resources in the UK and the challenges the country faces. They state that:

- "In England, our climate is changing, our population is growing, and as a nation we want an improved environment along with a thriving economy, enabled by resilient water supplied. Action is required now to meet these objectives".
- "The scale of the challenge we face increases with time and, by 2050, we are looking at a shortfall of nearly 5 billion litres of water per day between the sustainable water supplied available and the expected demand."
- "Demand reductions are crucial, particularly in the short term. The Environment Act 2021 sets a target to reduce the use of public water supply in England, per head of population, by 20% by 2037-38 from the 2019-20 baseline."
- "Government will be looking to water companies to act quickly and take significant steps forward on installing smart meters and delivering on their wider water efficiency commitments and reducing leakage. This will happen alongside the introduction of a mandatory water label which will enable water efficient decisions across the country. The government has also committed to review water efficiency requirements of building regulations which will be a key action to ensure new homes are water efficient."

There have been several important documents published in recent years, all highlighting the growing awareness and concern about this issue. The National Water Resources Framework led to the creation of the regional water resources planning groups and defined the objective to achieve an average household water efficiency of 110l/p/d by 2050 (including existing housing).

The Government's Environmental Improvement Plan published in January 2023 contains a roadmap for improving water efficiency in new developments and retrofits. This contains an action to review Building Regulations (2010) and consider a new standard for new homes in England of 105 l/p/d and 100 l/p/d where there is a clear local need, such as in areas of serious water stress. Whilst this is not current policy, it is likely that a tighter standard than the 110 l/p/d will be adopted in Building Regulations early in the Local Plan period.

4.1.2 Water Resource Zone in Uttlesford

Affinity Water provide the water supply to Uttlesford and to neighbouring areas to the south and west. They divide their supply area into eight water resource zones - which are defined by the EA as areas in which the management of supply and demand is largely self-contained and where the supply infrastructure is linked such that customers within the zone experience the same risk of supply failure. Uttlesford is covered by the Stort WRZ which sits in their Central region (consisting of six adjacent WRZs). The extent of this WRZ is shown in Figure 4.1.

Within a WRZ a customer may receive their water from anywhere within the zone, or from water transferred from other zones, and not necessarily from the nearest source. For this reason, it is not possible to say that an individual development site will increase abstraction from a particular water source. It is for the water company to balance the water sources they have to provide a sufficient supply for the WRZ, while meeting their environmental obligations.

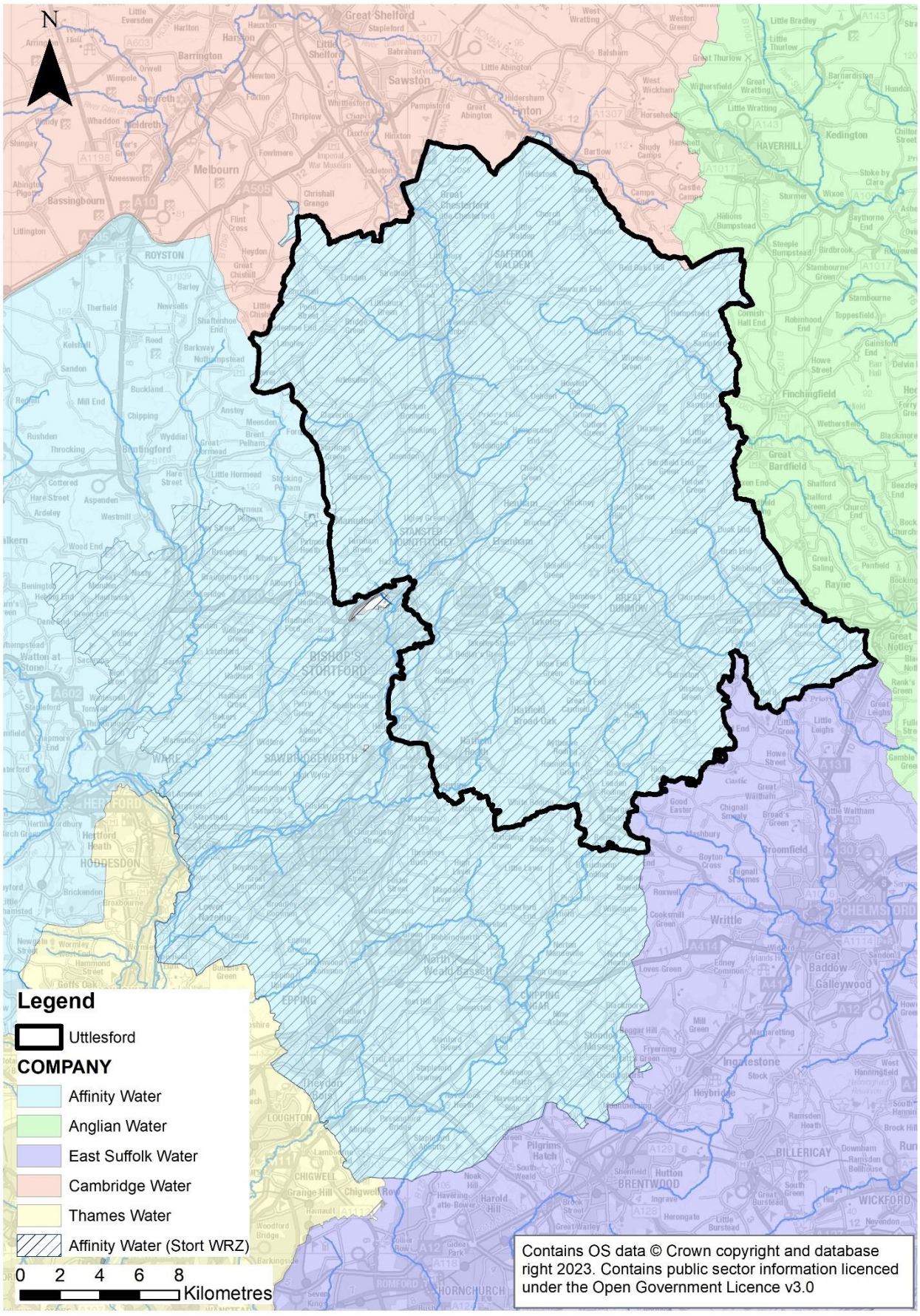

Figure 4.1 Water Resource Zone supplying Uttlesford

4.1.3 Water stress

Water stress is a measure of the level of demand for water (from domestic, business and agricultural users) compared to the available freshwater resources, whether surface or groundwater. Water stress causes deterioration of the water environment in both the quality and quantity of water, and consequently restricts the ability of a waterbody to achieve a "Good" status under the Water Framework Directive.

- The Environment Agency has undertaken an assessment of water stress across the UK. This defines a water stressed area as where:
- "The current household demand for water is a high proportion of the current effective rainfall which is available to meet that demand; or
- The future household demand for water is likely to be a high proportion of the effective rainfall available to meet that demand.

In the Environment Agency assessment (Environment Agency, 2021b) the Affinity Water supply region was classified as being an area of serious water stress.

4.1.4 Chalk streams

The north-western part of Uttlesford District is drained by two chalk streams, the River Stort and River Cam, and their tributaries. A chalk stream is broadly defined as a river that derives most of its flow from chalk-fed groundwater. Chalk streams flow from chalk aquifers, stores of underground water that are replenished by rainfall. England is home to 85 per cent of the world's chalk streams. These rivers, together with the chalk aquifer from which they spring, are crucial water resources providing millions of people with water as well as supporting unique ecosystems. Businesses and farms also rely on chalk streams as without a reliable water source they would not be able to operate.

During the summer months when temperatures are higher and plants are using water, rainfall is less effective at recharging the aquifer. In many cases, this can cause sections of chalk streams to be dry for much of the year. This natural hydrological variation – which can vary from year to year, is separate to the artificial impact of over-abstraction.

Balancing the needs of people and the environment is a challenge and it is getting harder. Population growth, particularly in the south and east of England, means that more and more water is required at a time when climate change is reducing the amount of water that is available.

England's chalk streams are therefore under considerable pressure. The Environment Agency's 'Reasons for Not Achieving Good' database indicates that one of the reasons for some of the watercourses in the district are not meeting 'Good' Water Framework directive (WFD) standards can be related to groundwater and surface water abstractions. Other pressures on chalk streams include pollution from wastewater discharges and agriculture, encroachment by development.

Chalk streams are an important and rare habitat and opportunities should be taken within the Local Plan to define policies to protect these river ecosystems. The Chalk Stream report

prepared by JBA alongside the WCS (June 2024) provides an evidence base to identify and characterise the chalk rivers in Uttlesford and recommends policies to protect them.

Figure 4.2 shows the location of the chalk streams in Uttlesford, a brief description of these is contained in Section 2.3 of the chalk Stream report. The River Bourne is labelled in Figure 4.2 as a possible chalk stream. It is a tributary of the River Granta (and eventually the River Cam) but it is not included in the Natural England mapping, however it is listed in Appendix H of the CaBA chalk Stream Strategy as a chalk stream. The river flows south to north through the village of Ashdon. North of Ashdon the geology mapping does not show any superficial geology overlaying the chalk bedrock suggesting the river may be directly connected to the chalk. South of Ashdon, a superficial layer of Til is present which may prevent this connectivity, so chalk may have less influence on the river. Further investigation may be required into the flow regime of this river in order to define whether the whole or part of the River Bourne should be classified as a chalk stream.

Should the River Bourne not be classified as a true chalk stream along part of its length, it should be noted that it is a tributary to a chalk stream and so development, agriculture and other activities may still have an influence on chalk streams downstream.

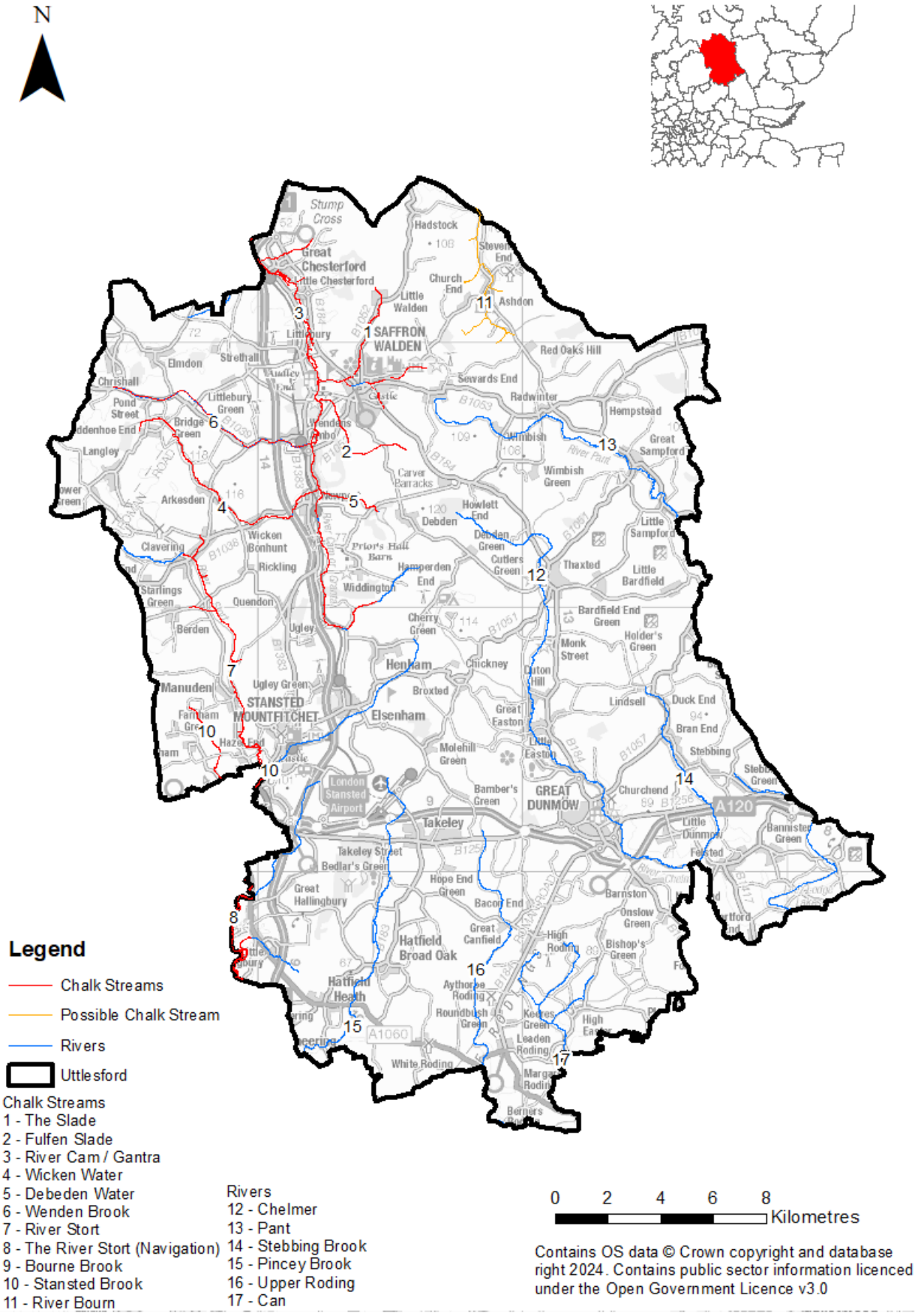

Figure 4.2 Chalk Streams in Uttlesford

4.2 Water resources - regional planning

The Water Resources South East (WRSE) plan covers a period out to 2075 and seeks to:

- Ensure there is enough water for a growing population and to support economic growth.
- Improve the environment by leaving more water in the region's rivers, streams and underground sources.
- Increase the region's resilience to severe drought and other extreme shocks and stresses.
- Addresses the impacts of climate change on demand for water and how much is available.

The regional plan is aligned to the National Water Resources Framework and is also used in the individual water company WRMPs. As stated in Stage 1, Uttlesford is on the very edge of the WRSE area and water use in Uttlesford may not be representative of the WRSE region as a whole, with a greater focus on agriculture and irrigation shown by water use in the Stort WRZ.

The majority of the total water needed in the first 15 years of the regional plan period will come from reducing how much water is used (demand management), and how much is wasted through leakage. The plan also outlines longer term water resource options including transfers of water into the southeast and between water companies, new reservoirs, water recycling schemes and desalination plants and additional storage.

By 2035 the regional plan proposes to:

- Complete the construction of one new reservoir in Hampshire and start to build one new reservoir in Oxfordshire (SESRO) and one in Kent.
- Develop an inter-regional water transfer scheme using the Grand Union Canal to transfer water from the midlands to the southeast.
- Develop six water recycling schemes in London, Kent, West Sussex, Hampshire and the Isle of Wight.
- Develop six groundwater schemes across the region to store extra water in these sources.

Between 2035 and 2075 the plan proposes to:

- Complete the construction of the new reservoirs in Oxfordshire and Kent and construct new reservoirs in West Sussex and East Sussex.
- Build six desalination plants in Kent and West Sussex.
- Develop eleven groundwater schemes across the region.
- Develop three more water recycling schemes in Kent, West Sussex and East Sussex.
- Develop new transfers from new strategic sources of water (such as reservoirs) to move more water around the southeast.

The regional plan outlines the "environmental ambition" for the southeast region, including both the Water Industry National Environmental Programme (WINEP) (which takes a

relatively short term view to be compliant with environmental legislation and is summarised in section 4.4), and a longer term view accounting for climate change and longer term water availability.

Affinity Water's Stort WRZ has one of the largest reductions in deployable output (DO) in the WRSE area in the "High environmental ambition scenario".

4.3 Water Resources Management Plan

4.3.1 Overview

Water Resource Management Plans (WRMPs) are 50-year strategies that water companies are required to prepare, with full updates every five years. WRMPs are required to assess:

- Future demand (due to population and economic growth).
- Future water availability (including the impact of sustainability reductions).
- Demand management and supply-side measures (e.g., water efficiency and leakage reduction, water transfers and new resource development).
- How the company will address changes to abstraction licences.
- How the impacts of climate change will be mitigated.
- Where necessary, they set out the requirements for developing additional water resources to meet growing demand and describe how the balance between water supply and demand will be balanced over the next 50 years.
- Using cost-effective demand management, transfer, trading, and resource development schemes to meet growth in demand from new development and to restore abstraction to sustainable levels.
- In the medium to long term, ensuring that sufficient water continues to be available for growth and that the supply systems are flexible enough to adapt to climate change.

Affinity Water (AFW) is responsible for supplying the whole of Uttlesford with water. The AW supply area is divided into eight WRZs. Uttlesford is covered by the Stort WRZ.

Across the Affinity Water region as a whole, approximately 65% of water supply comes from groundwater sources, and the remainder is from surface water, principally the River Thames.

4.3.2 Best Value Plan

Affinity Water's revised draft plan (rdWRMP24) contains their "best value" plan consisting of four main elements:

- "Demand management: an integrated demand management strategy that encompasses households, non-households (commercial properties) and leakage. Our demand management strategy also includes potential government initiatives relating to water use in appliances and water consumption in new properties.
- Strategic level supply schemes: these schemes represent the best value for development in the near term.

- Supply network modifications and smaller supply schemes: these represent the best value to manage needs in the short term and to support the strategic supply schemes in the longer term.
- Adaptive Strategy: our strategy, derived from regional level assessments is adaptive. This means that it allows us to monitor supply and demand conditions and modify our investments accordingly to deliver the best value for our customers."

Sustainability reductions are planned reductions in the amount of water than is abstracted from the environment, in particular from the chalk aquifers. Affinity Water have a programme of sustainability reductions planned in response to Environment Agency requirements. To achieve these, alternative sources of water (or reduced demand) are needed.

Additional to sustainability reductions, AfW have included catchment and nature-based solutions which complement the proposed reductions in abstraction and will provide additional environmental resilience in the Chalk catchments. These types of solutions also contribute towards natural capital and biodiversity net gain.

In line with Ofwat requirements, AfW have taken an adaptive planning approach to the WRMP. This acknowledges the uncertainties in supply and demand and future environmental policy as well as allowing future advances in technology to be taken into account in the long-term plan. The plan contains "trigger points" where a decision can be taken to switch to a different "pathway" in the plan, for example if climate change is having more of an impact than expected, the plan can be adapted to take this intro account and a different set of actions adopted.

4.3.3 Demand management

As outlined the WRSE draft regional plan, demand management forms 50% of the strategy to achieve their Environmental Ambitions whilst managing pressure on water resources from growth. This consists of a mix of household and non-household measures, alongside leakage reduction.

Household demand:

Measures include:

- Smart metering
- Home water efficiency checks
- Flow restrictors
- Reducing waste and plumbing losses

AfW have also included Government supported demand management reductions such as Water labelling (similar to energy labelling on electrical appliances) and changes to building regulations within their calculations in order to achieve the national target of 110l/p/d (average across whole country) by 2050. They state that this has been done due to the challenges unique to their supply area which has one of the highest per capita consumption

of any water company area (161 l/p/d compared with the UK average of 146l/p/d between 2020 and 2023) (Discover Water, 2024).

The Governments EIP states that every water company must reduce household water use to 122l/p/d by 31st March 2038 and achieve 110l/p/d dry year annual average household water use by 2050.

AfW state that without Government support, PCC could only be reduced to 133.3l/p/d in their area. This means that in their preferred plan, by 2050 there are 83Ml/d of company led savings and 117Ml/d of Government led savings. The rdWRMP therefore contains an element of risk as this part of the plan is outside their control, but without it AfW will not meet the national target.

Non-household demand:

The regulator (OfWAT) has signalled that they expect non-household demand management to contribute meaningfully to WRMPs. AfW's preferred strategy is to roll out smart metering to non-household properties and use the data to share usage patterns and eventually set up a market where retailers, service providers and customers can use the data to implement cost-effective interventions. This also includes Business Water Efficiency Checks.

Leakage reduction:

AfW are committed to a 50% reduction in leakage by 2050. This includes fixing leaks in the network as well as a programme of mains renewals to prevent leakage recurrence.

4.3.4 Supply schemes

Up to 2030 water supply schemes in the Affinity Water area include transfers between WRZs (with enabling mains reinforcement), and enhancement to treatment capacities. None of these schemes are In the Stort WRZ.

Beyond 2030, the plan consists of linkages to connect the Grand Union Canal scheme into WRZ3 and on to WRZ5 (the Stort WRZ supplying Uttlesford) as well as benefits from the new reservoir in Oxfordshire via a transfer from Thames Water.

The Grand Union Canal scheme utilises the existing canal and a new pipeline to convey recycled wastewater from Minworth Advanced Water Treatment Works on the edge of Birmingham in the Severn Trent Water area to areas of water deficit in Affinity Water's supply area. Water will then be abstracted and treated prior to distribution to customers. This will provide up to 50Ml/d by 2031/32 with potential for a further 50Ml/d by 2040-2050 if required.

4.4 Water Industry National Environment Programme

WINEP actions relating to water resources were presented in Stage 1. The updated WINEP programme for AMP (2025-2030) is due to be launched in April 2025. A draft version is currently being used by water companies in the creation of their business plans but was not available within the timescale of this WCS.

4.5 Water efficiency in Uttlesford

4.5.1 Baseline water demand

Table 4.1 shows the water demand from residential and employment sites in a business-as-usual scenario. This uses the mean PCC for a metered property contained in Affinity Water's WRMP for 2023/24. The majority of additional water demand during the plan period comes from residential sites, and for both residential and employment sites, the majority of water demand is expected to come from existing commitments.

Table 4.1 Baseline water demand from residential and employment sites

Type	Dwellings	Residential demand (Ml/d)	Employment floorspace (m^2)	Employment demand (Ml/d)	Total demand (Ml/d)
Commitments	8,508	2.74	238,200	0.83	3.57
Allocations	3,889	1.25	31,400	0.11	1.36
Windfall	1,650	0.53	-	-	0.53
Total	14,047	4.52	269,600	0.94	5.46

4.5.2 Water efficiency standards

Household

The average household PCC in the Stort WRZ that supplies Uttlesford is 128l/p/d, less than the average for the wider Affinity Water area.

Building regulations currently state that new build housing should achieve a minimum of 125 l/p/d. A tighter target of 110l/p/d is allowed if the local authority can establish a clear need based on available evidence (such as in an area of water stress). New build housing in the study area is currently built to the optional target in Building Regulations of 110l/p/d.

Water resources are under significant pressure in the UK, and the direction of travel in water resources planning is to reduce per capita consumption in new build development below the optional building regulations standard of 110 l/p/d. The Defra Plan for Water proposes changes to building regulations to include a target of 105l/p/d and 100l/p/d in water stressed areas.

Within Part G of the Building Regulations, the water efficiency target of 110l/p/d can be achieved either through the calculation method or the fittings approach. It is strongly recommended that the fittings-based approach is required. This approach provides clear flowrate and volume metrics for each fitting or appliance. This provides a greater confidence that the 110l/p/d target will be met once constructed. Insight gained from a recent Thames Water study of customers with smart meters (unpublished) showed that where the calculation method was applied, households did not achieve the intended performance level. Table 4.2 below reproduces Table 2.2 of Part G which defined the maximum consumption for the following fittings:

Table 4.2 Maximum fittings consumption level (110l/p/d standard)

Water fitting	Maximum consumptions
WC	4/2.6 litres dual flush
Shower	8 l/min
Bath	170 litres
Basin taps	5 l/min
Sink taps	6 l/min
Dishwasher	1.25 l/place setting
Washing machine	8.17 l/kilogram

Some LPAs are now going further than building regulations and adopting Local Plan policies requiring tighter water efficiency standards where there is a clear local need, including:

- Southern Water have committed in their Water Resource Management Plan to a water efficiency policy that aims to achieve a PCC of 100 l/p/d across the whole of their supply area by 2040. Southern Water advises Councils that a target of 100 l/p/d should be adopted in policy for new build properties, and 80l/p/d for strategic developments where master planning and community level schemes can provide greater benefits. Concerns over the impact of abstraction on an SAC and Ramsar site have led to the Sussex North WRZ being designated as a water neutrality area and a target of 85l/p/d across all residential development in the WRZ has been recommended (JBA Consulting, 2022). This has been successfully adopted in Crawley Borough Council's Local Plan.
- Within Greater Cambridge, the Environment Agency are objecting to planning applications due to concerns over future water resource availability. A target of 80l/p/d is being explored by the planning authority.

Ofwat published a study in 2018 into the long-term potential for reductions in household water demand (Artesia Consulting, 2018). In this report, different scenarios for future water use were created based on a range of drivers, public acceptance, policy ambition, and factors such as climate change, resulting in different levels of ambition in terms of the scope for PCC reduction in 50 years' time.

Their research showed that a demand as low as 49l/p/d was possible with high tech solutions such as waterless toilets, integration of "smart" devices, innovative tariffs and "pay-per-use" services. As this study requires the development and adoption of new technology, and a significant shift in behaviour, we consider it to be too ambitious for application across all new housing at present. However, it provides a useful indication for what might be achieved in the future.

An ambitious but more realistic scenario was modelled where water scarcity is widely recognised as an important issue, markets in water resources and water services results in widespread competition and local providers delivering integrated services. It includes extensive use of RwH and GwR as well as some smart devices. This scenario resulted in a PCC of 62 l/p/d.

The Ofwat report also presents a scenario based on the installation of water efficient fittings, changing behaviours (less baths, minimising running taps etc.), maximising use of eco settings on appliances such as washing machines and dishwashers, and the use of water butts in the garden. In this scenario, a water use of 86 l/p/d was achieved.

This is supported by research conducted by the Energy Saving Trust (EST) that showed that the best commercially available domestic technology could achieve 95 l/p/d, and the best commercially available technology (including non-domestic technology) could achieve 85 l/p/d.

The Future Homes Hub was established to "facilitate the collaboration needed within and beyond the new homes sector to help meet the climate and environmental challenges ahead" (Future Homes Hub, 2024). It consists of representatives from the building industry, regulators, water companies, and environmental groups. Defra asked them to support them in the creation of the roadmap towards greater water efficiency. They have proposed a road map for water efficient homes in England and sets out a framework for the homebuilding sector to work in partnership with other stakeholders such as the water sector, local authorities and regulators to deliver it. The proposed roadmap is shown in Figure 4.3 below and outlines a staged approach to reducing per capita consumption. It also allows for a tighter figure of 90l/p/d by 2025 in seriously water stressed areas to enable sustainable growth.

Figure 4.3 Future Homes Hub proposed water efficiency roadmap

Non-household

As outlined in section 2.4.2, the council has the opportunity to use the BREEAM UK New Construction Standard to require a higher standard of water efficiency from non-household buildings. Under the assessment category WAT01, credits are offered corresponding to different levels in improvement over the baseline for that type of building.

Table 4.3 BREEAM New Construction Standard outline

Number of credits	% Improvement required over baseline
1	12.5
2	25
3	40
4	50
5	55
5 + 1 exemplary performance credit	65

4.5.3 Impact of different standards

Table 4.1 shows that the majority of water demand during the Local Plan period is from commitments, i.e., sites that already have planning permission in some form. It may not be possible for a new water efficiency policy to influence those sites if full planning permission has been granted. It is assumed in the analysis below that a tighter efficiency standard can only be applied to the preferred allocations and windfall sites. Opportunities may exist on sites with outline permission for a tighter standard to be required which may result in a higher demand saving.

Four scenarios are presented in Table 4.4 with their resulting water demand saving by the end of the plan period.

Table 4.4 Water demand reduction by efficiency scenarios

Scenario	Residential demand (Ml/d)	Employment demand (Ml/d)	Total demand (Ml/d)	Demand saving by 2041	Percentage reduction
Business as usual - 110/l/p/d	3.86	0.95	4.82	-	-
100l/p/d and BREEAM WAT01 (3 credits)	3.72	0.91	4.63	0.18	4%
90l/p/d and BREEAM	3.59	0.91	4.50	0.32	7%

Scenario	Residential demand (Ml/d)	Employment demand (Ml/d)	Total demand (Ml/d)	Demand saving by 2041	Percentage reduction
WAT01 (3 credits)					
80l/p/d and BREEAM WAT01 (4 credits)	3.45	0.90	4.35	0.47	11%

4.5.4 Water neutrality

The concept of water neutrality is receiving more attention. Water neutrality is defined as:

“For every new development, total water use in the region after the development must be equal to or less than the total water-use in the region before the new development.” (Booth & Charlesworth, 2014).

It can be achieved at different levels from individual dwellings to Local Authority areas.

Achieving water neutrality involves a twin track approach. First the demand for water from the new development must be reduced as far as is practicable, then this remaining demand should be "offset" within the region (this could be done by reducing water demand in existing buildings by the same volume as the increase in demand from new buildings).

In following this approach, the volume that requires offsetting can be reduced, reducing the cost of the overall scheme. This is noted in the Waterwise neutrality definition, and they define three steps to achieve water neutrality in their recent review:

- Reduce water demand in the new development through improvements in efficiency.
- Re-use water where possible.
- And finally offset the remaining water demand from new development.

Reducing demand as far as practicable can be achieved by new build housing; employment and schools being built to higher standards of water efficiency. For residential properties, this would mean going further than current building regulations (which contain an optional standard of 110 l/p/d), and for new non-household development this would mean achieving a high score within the water (Wat 01 Water Consumption) issue category for BREEAM New Construction Standard, leading to a percentage reduction compared to baseline standards.

Building to tighter water efficiency standards will reduce the work required to offset the remaining demand, but it does come at an additional financial cost. This cost must be balanced with the cost of offsetting, as well as the certainty of delivering the desired impact overall. Less stringent water efficiency standards for new development would commensurately increase the need for offsetting elsewhere. Therefore, the potential to

achieve greater water efficiency in new build, and the scope to offset the water demand impacts from development, is a delicate balance that also needs to be considered.

The remaining demand once tighter water efficiency standards have been applied, must be offset by reducing water demand elsewhere in the WRZ. This could include measures such as household and non-household visits, flow restrictors, retrofitting of rainwater harvesting (RwH) or greywater recycling (GwR) systems, extending the coverage of water metering and leakage reduction.

The delivery of offsetting measures could take several forms, including:

- individual developers arranging their own offsets;
- market-led schemes; and
- Local Authority-led scheme(s).

If water neutrality at the Local Authority level were to be attempted., it is important that the benefits of demand reduction, or offsetting measures are not double counted as there may be significant overlap with water company actions in their WRMP.

4.5.5 Financial viability of water efficiency

As outlined in Section 2.4.4, the cost of installing water-efficient fittings to target a per capita consumption of 110l/d has been estimated as a one-off cost of £9 for a four-bedroom house. Engagement with developers and information from Defra that emerged as part of the Sussex North Water Neutrality Strategy (JBA Consulting, 2022) indicated that a target of 100l/p/d could be achieved with "minimal additional cost". Research undertaken for the devolved Scottish and Welsh governments indicated potential annual savings on water and energy bills for householders of £24-£64 per year as a result of such water efficiency measures. Water efficiency is therefore not only viable but of positive economic benefit to both private homeowners and tenants. In addition, financial incentives are available from the water companies to developers to encourage water-efficient design.

Research published by BRE (BRE, 2018) on the delivery of sustainable buildings reports that the cost of achieving lower BREEAM ratings incurs little or no additional cost and targeting higher BREEAM ratings incurs a typical cost of less than 2% above the baseline. The same study reports that the cost of achieving 3 credits in WAT01 (a 40% reduction in water consumption for baseline) would be £13,361 and payback could be achieved between 1 and 2.5 years depending on the price of water.

Affinity Water offer a discount to the infrastructure charge of £589 where evidence of the intention to install water efficient fittings to achieve a water efficiency of 110l/p/d or less can be provided as part of the planning application. 110l/p/d is the current building regulations target so this incentive will not drive water efficiency beyond a business-as-usual approach. Affinity Water should consider modifying the requirement to 90l/p/d or less or offering a tiered approach to their incentives in order to encourage more water efficient designs.

4.6 Conclusions and recommendations

Water resources in the UK are under considerable pressure. The Environment Agency have stated that "the scale of the challenge we face increases with time and, by 2050, we are looking at a shortfall of nearly 5 billion litres of water per day between the sustainable water supplied available and the expected demand."

The National Water Resources Framework sets the objective to reduce the average per capita consumption in the UK to 110l/p/d by 2050. This is now part of the Environmental Improvement Plan and water companies WRMPs. Within Defra's Plan for Water is the commitment to review Building Regulations and a target of 100l/p/d in water stress areas is suggested.

The Future Homes Hub, who are supporting Defra to produce a roadmap to greater water efficiency propose a stages reduction in PCC, with a target of 100l/p/d in water stressed areas in place from 2025, and a reduced target of 90l/p/d in place by 2030 (depending on market conditions and customer acceptance).

The Catchment Based Approach (CaBA) Chalk Stream Strategy recommends a target of 90l/p/d in chalk stream catchments. The Government's EIP states that the Chalk Stream Strategy should be supported.

The analysis contained in the WCS shows that a 0.18Ml/d reduction in water demand (approximately 4%) would be achieved if the target of 100l/p/d were adopted immediately, accompanies by an equivalent non-household target. A greater saving could be made if some of the dwellings already in the planning system could also be built to a higher standard. If the target of 90l/p/d were adopted, the reduction in water demand is estimated to be 0.32Ml/d (7%).

Affinity Water's rdWRMP outlines how the challenges of an increasing population and climate change will be met alongside their environmental obligations. Within the Stort WRZ this includes reductions in abstraction from chalk stream catchments. In order to achieve the long-term goal of reducing PCC to 110l/p/d, a significant demand management programme is planned. This includes Government backed activities that are outside the control of Affinity Water. A tighter water efficiency target for new build housing has not been included in Affinity Water's plan, however, any reduction in PCC would provide additional headroom in the WRMP and help manage uncertainty in their demand management plan.

This study recommends that as a minimum the proposed new Building Regulations target of 100l/p/d outlined in Defra's Plan for Water be adopted across Uttlesford. This should be achieved using a fittings-based approach.

This should be supported by the requirement for non-household development to achieve three credits in the assessment category WAT01 of the BREEAM UK New Construction Standard.

The Local Plan should allow for a future reduction in the Building Regulations target to 90l/p/d in 2030.

Developers should be encouraged to achieve 90l/p/d or lower, especially on larger strategic sites aligning with the Chalk Stream Strategy.

Table 4.5 Recommendations for water resources

Action	Responsibility	Timescale
Continue to regularly review forecast and actual household growth across the supply region through WRMP Annual Update reports, and where significant change is predicted, engage with Local Planning Authorities.	Affinity Water	Ongoing
Provide yearly updates of projected housing growth to water companies to inform WRMP updates.	Uttlesford District Council	Ongoing
Use planning policy to require a water efficiency standard of 100l/p/d to be achieved using the fittings-based approach. The policy should allow for a future reduction in the water efficiency target.	Uttlesford District Council	In Local Plan
Developers should be encouraged to achieve 90l/p/d or lower, especially on larger strategic sites aligning with the Chalk Stream Strategy	Uttlesford District Council	In Local Plan
This should be supported by the requirement for non-household development to achieve three credits in the assessment category WAT01 of the BREEAM UK New Construction Standard.	Uttlesford District Council	In Local Plan

Action	Responsibility	Timescale
Larger residential developments and commercial developments should consider incorporating greywater recycling and/or rainwater harvesting into development at the master planning stage in order to reduce water demand.	Uttlesford District Council	Ongoing
Affinity Water should consider modifying their water efficiency incentive scheme to include an incentive for development achieving 90l/p/d or less, or a tiered approach to encourage water efficient design.	Affinity Water	In next iteration of the New Connection Charging Arrangements.

5 Water supply

5.1 Introduction

An increase in water demand due to growth can exceed the hydraulic capacity of the existing supply infrastructure. This is likely to manifest itself as low pressure at times of high demand. An assessment is required to identify whether the existing infrastructure is adequate or whether upgrades will be required. The time required to plan, obtain funding and construct major pipeline works can be considerable and therefore water companies and planners need to work closely together to ensure that the infrastructure is able to meet growing demand.

In Stage 1 a high-level overview of the impact of the spatial growth options was presented and comments sought from Affinity Water who supply water to the whole of Uttlesford.

5.2 Methodology

A list of potential allocations was provided to AfW as part of the Regulation 18 consultation in December 2023. This has been used to inform the Stage 2 assessment.

5.3 Results

5.3.1 Location of existing supply network

No development is permitted within a specified distance of water mains. For example, there should be no building, planting or other heavy earth works within a minimum of 4m of trunk and raw water trunk mains. For other mains there is a minimum of 2-3m no dig exclusion zone, unless mains are to be diverted. The costs of diverting mains would need to be met by the developer.

A guide to working near AfW's assets can be found here:

https://www.affinitywater.co,uk/docs.developer/Building-Near_Pipes-Apparatus-Guide-17-04-2019.pdf

Local Authorities can obtain free infrastructure maps from AfW as well as supplying infrastructure information under a non-disclosure agreement.

It is recommended that developers engage with AfW early in the planning process to ensure that any direct impacts on the water supply network are addressed early.

5.3.2 Impact on supply network

AfW modelled the impact of the growth scenario provided to them by UDC for the Regulation 18 consultation. A total additional demand of 5.99Ml/d was estimated by AfW, slightly higher than the current estimate based on the preferred allocations.

In their Regulation 18 representation they noted that "the pressures at the critical points in the network due to the new developments are such that major reinforcements in the

network in the Uttlesford District Council area will be required. This normally means new pipelines although in some cases new pumping stations will also be required. There is sufficient water supply in the region."

"All the proposed reinforcement will aim to recover the current level of service and the loss of capacity in the network due to the additional load imposed by all projected development."

"All projections of infrastructure capacity are subject to developers and customers reducing their PCC (Per Capita Consumption) in accordance with our WRMP (Water Resources Management Plan) through the development of water-efficient buildings; and encouraging customers to save water."

"We continually monitor the performance of our distribution system and put in place measures to ensure high quality water supply and pressures are maintained. We will continue to work with the local planning authority and developers to ensure that infrastructure is in place in line with the pace of development and that realistic forecasts of development phasing are used to plan the infrastructure needs. Water companies have a duty to supply water for domestic purposes to customers under Section 52 of the Water Industry Act 1991 and are hence obliged to connect developments to the network once planning permission has been received. Any localised upgrades to existing supply networks are likely to be funded from the usual water developer requisitions and investment processes."

5.4 Conclusions and recommendations

5.4.1 Conclusions

It is likely that upgrades to the water supply network will be required in order to serve the preferred allocations without a detriment to existing customers. Modelling by AfW may be required to define the extent of these upgrades. Early engagement between developers. UDC and AfW is needed to ensure that these upgrades are in place prior to occupation of the developments.

5.4.2 Recommendations

Table 5.1 Recommendations for water supply infrastructure

Action	Responsibility	Timescale
Undertake network modelling where appropriate to ensure adequate provision of water supply to new sites without detriment to existing customers and feedback to UDC on implications for phasing of sites.	Affinity Water	Early in Local Plan period
Early engagement is required with AfW to ensure infrastructure is in place prior to occupation.	Developers and UDC	Early in Local Plan period
UDC should obtain infrastructure maps from AfW to ensure existing water supply infrastructure is taken into account in site layout.	UDC and Developers	At master planning stage

6 Wastewater network

6.1 Introduction

Thames Water (TW) and Anglian Water (AW) are the Sewerage Undertakers (SU) for the study area. The role of the sewerage undertaker includes the collection and treatment of wastewater from domestic and commercial premises, and in some areas, it also includes the drainage of surface water from building curtilages to combined or surface water sewers. It excludes, unless adopted by the SU, systems that do not drain building curtilages, including highway drainage and land drainage systems.

At Stage 1 AW and TW provided high level comments on each of the spatial growth options. No particular network constraints were identified associated with any of the options apart from a general comment from TW that network issues were likely around Uttlesford due to the small diameter pipes present. AW also commented that growth should not be directed towards parts of the network where the frequency and/or duration of the operation of storm overflows is high until work to improve storm overflow performance is complete.

An assessment of the preferred allocations is required in the Stage 2 study.

Since the Stage 1 report, an additional two years of storm overflow data is available, and the requirement for all storm overflows to be monitored came into force in December 2023. The storm overflow assessment can now show a more complete picture of performance in the study area.

6.2 Sewerage system capacity assessment

6.2.1 Methodology

AW and TW were provided details of the preferred allocations and asked to assess the impact of these sites on the wastewater network. The following red/amber/green definition was used by the water companies to score each site:

GREEN	AMBER	RED
Network improvements unlikely to be required	Network improvements may be required	Network improvements likely to be required

The assessment was divided into foul sewer network and surface water sewer assessments.

A red assessment does not mean that a site cannot or should not be developed (unless stated in the comments), and instead reflects the requirement for extensive new infrastructure to order to accommodate the site. It should be remembered that the water companies have a statutory duty to serve new development under the Water Industry Act 1991.

6.2.2 Results

Figure 6.1 and Figure 6.2 show the results of the foul sewer and surface water network assessments. These are also summarised in Table 6.1.

Land east of Station Road, Elsenham (Anglian Water)

This site has been given a "green" assessment and is likely to be accommodated without significant additional infrastructure.

Land east of High Lane and Land at Walpole Meadows, Stansted Mountfitchet (Thames Water)

This site has been given a green rating for foul sewerage, and an amber rating for surface water network reflecting the limited surface water sewers in that area. Consideration should be given to how surface water will be disposed of on this site, following the drainage hierarchy. As this site is within an area of chalk geology, consideration should be given to disposing of surface water via infiltration to aid recharge of the chalk aquifer.

Land off The Broadway and Land east of B1008, Great Dunmow (Anglian Water)

Anglian Water gave this site an amber rating for both foul and surface water reflecting the existing flood risk on the site. The site should be sequentially planned to avoid this flood risk, and a drainage strategy should demonstrate that the foul network will not be exposed to flooding from the River Chelmer.

Land east of Shire Hill Farm and south of Radwinter Road, Saffron Walden (Anglian Water)

An amber rating for foul sewerage has been given to this site. Anglian Water note that there is no acute risk, but the cumulative loading on the storm overflow should be planned for and the network will be vulnerable to creep.

Opportunities should be taken within the catchment for the storm overflow to separate foul and surface water to relieve pressure on the overflow. No surface water assessment was provided by AW, however due to its location within the River Cam catchment, care should be taken to ensure surface water is managed using a SuDS treatment train to prevent a deterioration in water quality in the sensitive chalk catchment. Infiltration SuDS may be appropriate to contribute to recharge of the chalk aquifer.

Land at Warrens Farm and Land at Warish Hall Farm, Little Canfield and Takeley Thames Water)

A red assessment has been given to this site by TW for foul sewerage with the comment "The scale of development is likely to require upgrades to the wastewater network infrastructure". No particular constraints have been identified by Thames Water. An amber assessment was given for surface water but was not accompanied by any comments. Thames Water have been asked to clarify this rating and any implications for UDC but had not responded at the time of writing. Further investigation is therefore required in order to understand any implications for the phasing of this site.

Land at Gaunts End, Elsenham

Thames Water have commented that the land at Gaunts End, Elsenham is in an area not currently served by a public sewer system and no further assessment or comment was provided. This site is 650m from the sewer catchment for Bishops Stortford WwTW (operated by TW) and this study has assumed that a connection would be made into this WwTW. Anglian Water's Stansted Mountfitchet WwTW is also 950m to the north. Early engagement with TW to agree a wastewater solution for this site is required. This could be either a connection into Bishops Stortford WwTW or a package treatment plant.

Based on the predicted number of employees for a site of this size, the volume of wastewater generated would be approximately 23 cubic metres per day. Using the rule of thumb outlined in 2.7.12, a connection to the public sewer would be expected up to 920m from this site. A connection to Bishops Stortford WwTW is therefore likely.

Land north of Takeley Street, Takeley

This site has been given a "green" assessment and is likely to be accommodated without significant additional infrastructure.

Land at Little Chesterford Research Park (no public sewer)

Little Chesterford Research Park is not served by a public sewer system and has its own private WwTW. A representative for the Research Park has confirmed that a new Moving Bed Biofilm Reactor (MBBR) unit is being installed in addition to the existing Submerged Aerated Filter (SAF) WwTW to address issues with non-compliance of their discharge and provide capacity for the next five years. Beyond this, further installation works are being considered. Surface water is managed on the site using balancing ponds which outfall to local watercourses.

Land south of A120/North of Stortford Road, Great Dunmow (Anglian Water)

This site has been given a green rating for foul sewerage, and an amber rating for surface water network reflecting the limited surface water sewers in that area. Consideration should be given to how surface water will be disposed of on this site, following the drainage hierarchy.

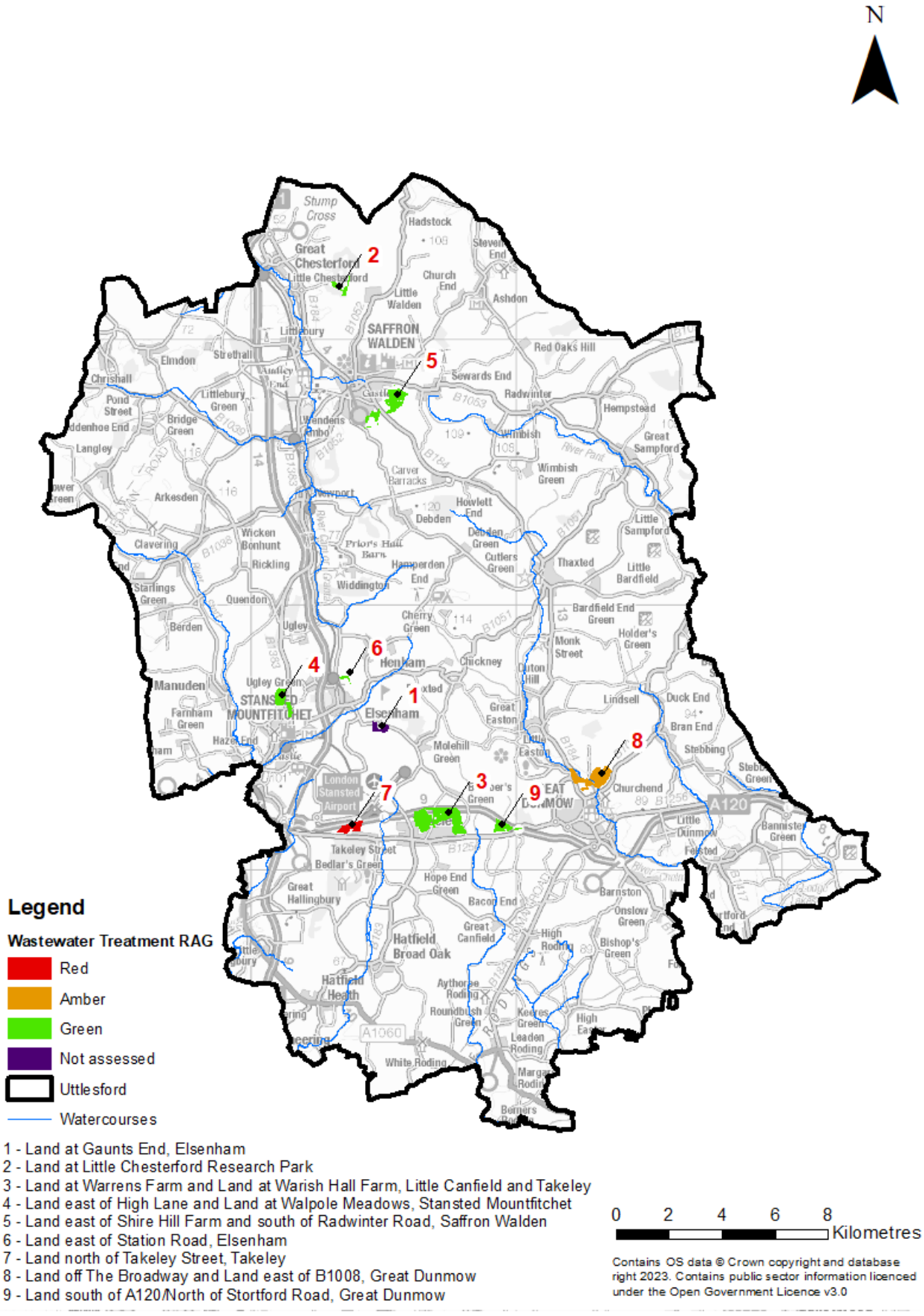

Figure 6.1 Foul network assessment

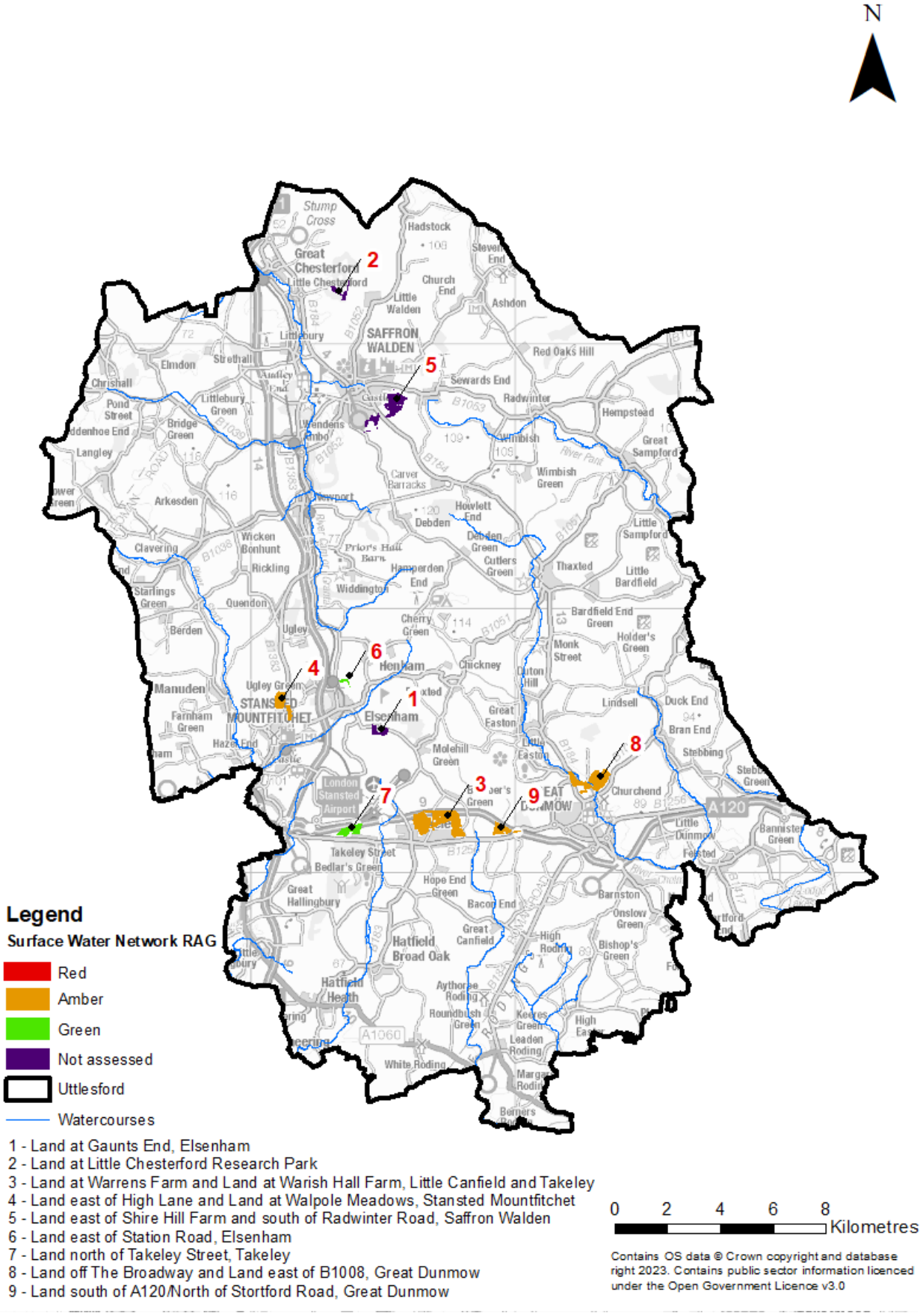

Figure 6.2 Surface water network assessment

Table 6.1 Water company assessment of wastewater infrastructure

Site	Expected growth	Foul sewer network assessment	Comments	Surface water sewer assessment	Comments
Land east of Station Road, Elsenham		Green	N/A	Green	N/A
Land east of High Lane and Land at Walpole Meadows, Stansted Mountfitchet	390 dwellings	Green	N/A	Amber	Limited SW public sewers
Land off The Broadway and Land east of B1008, Great Dunmow	884 dwellings	Amber	Existing flood risk in some parts of the network; potentially related to river flooding	Amber	Undeveloped land on the northeast of the town includes zone 3 flood risk area. Ensuring new FW network is not exposed to this river flooding potential is complex
Land east of Shire Hill Farm and south of Radwinter Road, Saffron Walden	879 dwellings / 8,000sqm	Amber	No significant acute risk but cumulative loading on CSO will need to be planned for. Network will be vulnerable to creep	Not assessed	
Land at Warrens Farm and Land at Warish Hall Farm, Little Canfield and Takeley	1,546 dwellings	Red	The scale of development/s is likely to require upgrades to the wastewater network infrastructure. (TW have been asked	Amber	No comments provided by TW

Site	Expected growth	Foul sewer network assessment	Comments	Surface water sewer assessment	Comments
			to clarify these comments but have not responded).		
Land at Gaunts End, Elsenham	1950sqm	Not assessed	Area not currently served by a public sewer system	Not assessed	Area not currently served by a public sewer system
Land north of Takeley Street, Takeley	8,500sqm	Green		Green	
Land at Little Chesterford Research Park	3,450sqm	Not assessed		Not assessed	
Land south of A120/North of Stortford Road, Great Dunmow	9,500sqm	Green		Amber	Limited SW public sewers

6.3 Storm overflows

Storm overflows are an essential component in the sewer network – however when they operate, they can cause environmental damage. They occur on combined sewer systems where the sewer takes both foul flow (sewage from homes and offices) and rainwater runoff. In normal conditions all of this flow passed through the sewer network and is treated at a wastewater treatment works. In periods of exceptional rainfall, the capacity in a combined sewer may be used up by the additional flow from rooftops and storm drains. Once the capacity is exceeded, wastewater would back up into homes, businesses and on to roads. A storm overflow acts as a relief valve, preventing this from happening.

Storm overflows become problematic when they operate frequently in moderate or light rainfall, or for long periods as a result of groundwater infiltration in the sewerage system – possibly in breach of their permit.

The Environment Act now requires water companies to report and monitor storm overflows as well as reduce the harm caused to the rivers they discharge to. There are 18 network storm overflows and 10 WwTW storm tank overflow present in Uttlesford, the location of these is shown in Figure 6.3. Storm tank overflows at WwTWs are assessed in Section 6.4.

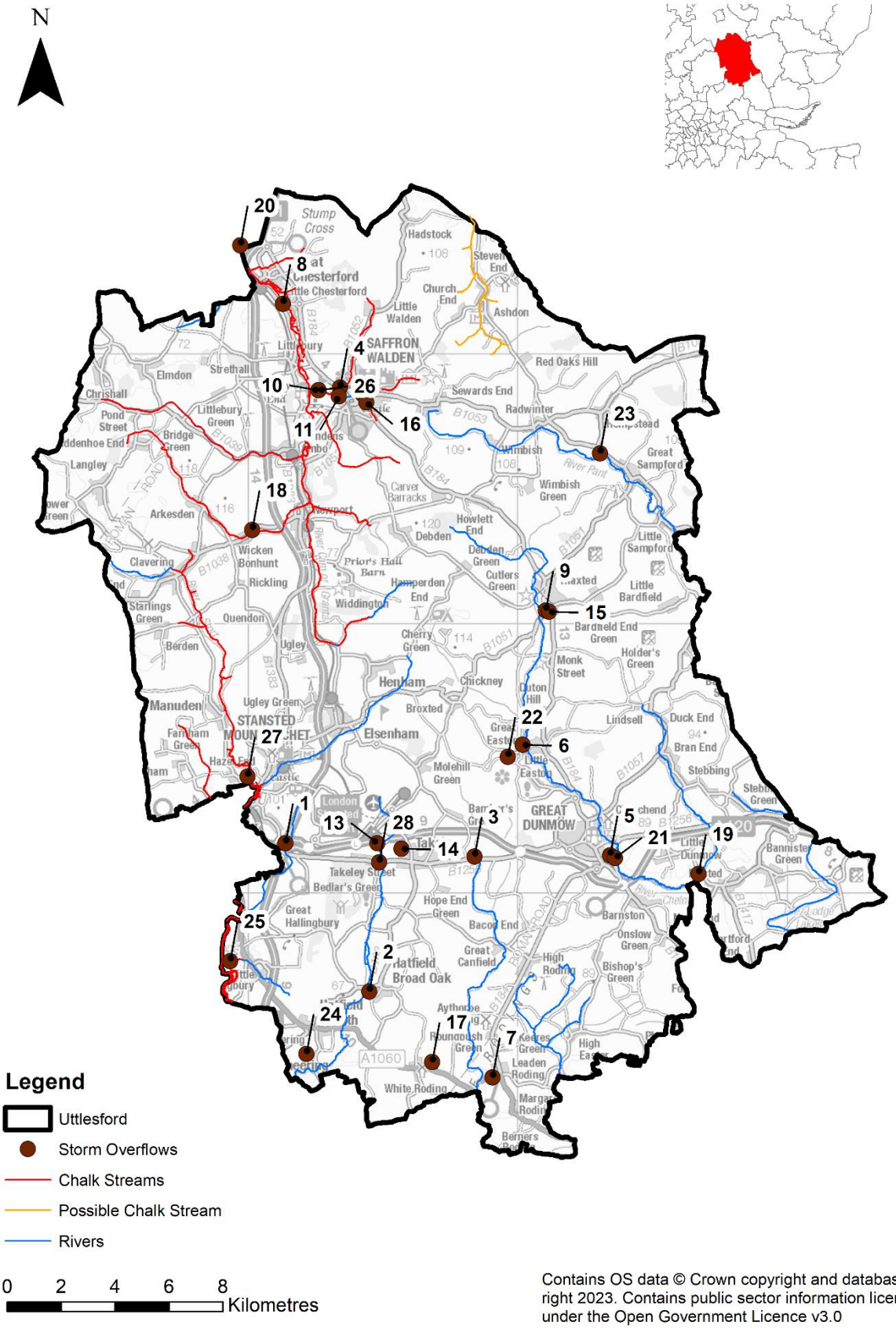

Figure 6.3 Location of storm overflows in Uttlesford

*Refer to Table 6.3 and Table 7.4 for Details of each storm overflows

The Storm Overflow Taskforce (made up of Defra, the EA, Ofwat, Consumer Council for Water, Blueprint for Water and Water UK) has agreed a long-term goal to end the damaging pollution caused by the operation of storm overflows. An important component of this is the monitoring of overflows, and a target was set to monitor the frequency and duration of operation at all storm overflows by 2023 (Environment Agency, 2021). This is called Event Duration Modelling (EDM). The EDM dataset (which contains performance data on the 16,710 storm overflows monitored in 2023) has been used to provide information on storm overflows in Uttlesford. Both Thames Water and Anglian Water have confirmed that work is currently underway to investigate storm overflows with the long-term aim of reducing the number of operations of the storm overflows.

In comparison to some urban areas or large cities, Uttlesford has relatively few storm overflows on the sewer network. The SOAF set a threshold of 60 operations in a year (based on 1 years' data, 50 if based on 2 years data, and 40 if based on 3 years), above which a storm overflow should be investigated. As shown in Table 6.3, one of the monitored storm overflows (White Roding) was operating above this threshold between 2021 and 2023. The Storm Overflow Reduction Plan (Defra, 2022) which was published in August 2022 sets an objective that "storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050". 6 of the 18 monitored storm overflows are operating on average above 10 times per year so may require action to meet the long-term target. A red/amber/green assessment was applied to the storm overflows in Uttlesford. The criteria applied is shown in Table 6.2.

In this report storm overflows associated with WwTWs are contained in section 7.3.

Some of the preferred option sites are in the vicinity of storm overflows as shown in Figure 6.6 and Figure 6.7. Unmitigated development within Uttlesford could cause the frequency or duration of operation of storm overflows to increase. There are opportunities through the planning system to ease pressure on the wastewater network by separating foul and storm flow in existing combined systems, and not allowing new surface water connections. Surface water can also be better managed by retrofitting SuDS in existing residential areas, and in new development, ensuring SuDS are incorporated into designs at the master planning stage to maximise the potential benefits.

According to Water UK, there are 26 storm overflows in Uttlesford (Water UK, 2024) (which includes overflows on the network and at WwTW). Analysis in this report shows 28, which may be because there are additional overflows now monitored since the Water UK data was published. Of these 14 have improvement planned aimed at reducing the number of spills. Six of these are expected to be improved by a method involving nature-based solutions, which could include retrofitted sustainable drainage systems (SuDS) and wetland treatment systems. The plan is expected to prevent 85 spills by 2030 and 405 spills by 2050, a 14% and 69% reduction respectively, relative to a 2020 baseline.

The new minimum requirement for all overflows is that they meet a ‘rainfall target’ of 10 spills per year. Figure 6.4 shows the percentage of storm overflows in Uttlesford meeting this target now and (forecast) in the period up to 2050 as improvements are made. Other improvements may occur at the same time, as necessary, to further reduce spills. Present-

day statistics are based on EDM coverage in 2022 when 90% of storm overflows had monitoring. Coverage by monitoring in 2022 varied by water company. At the end of 2023 there was 100% coverage. Figure 6.5 shows the corresponding number of spills as improvements are made.

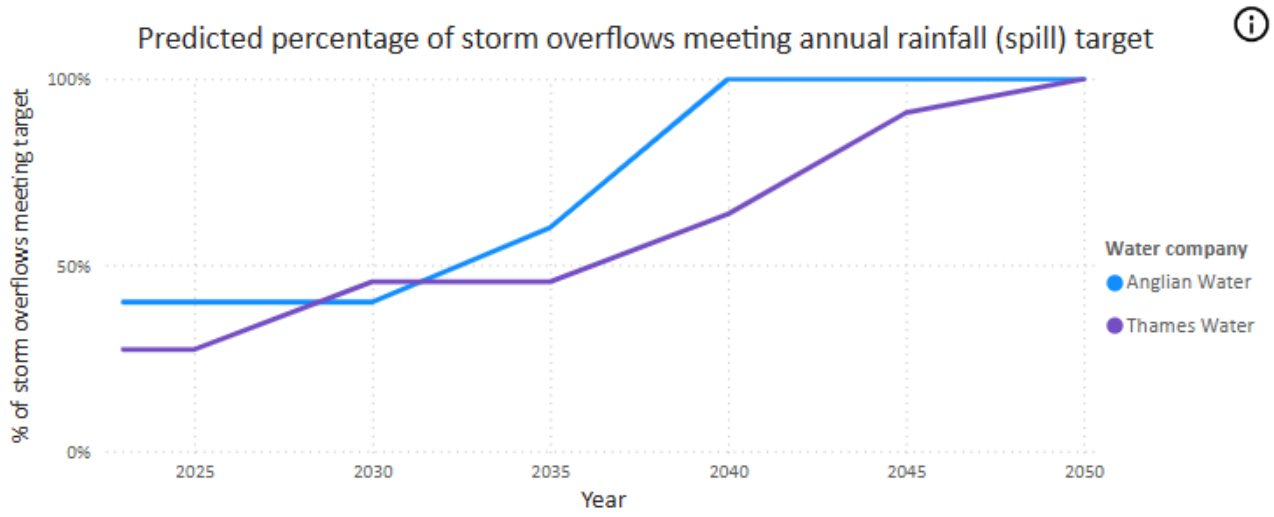

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Figure 6.4: Percentage of storm overflows in Uttlesford meeting annual spill targets

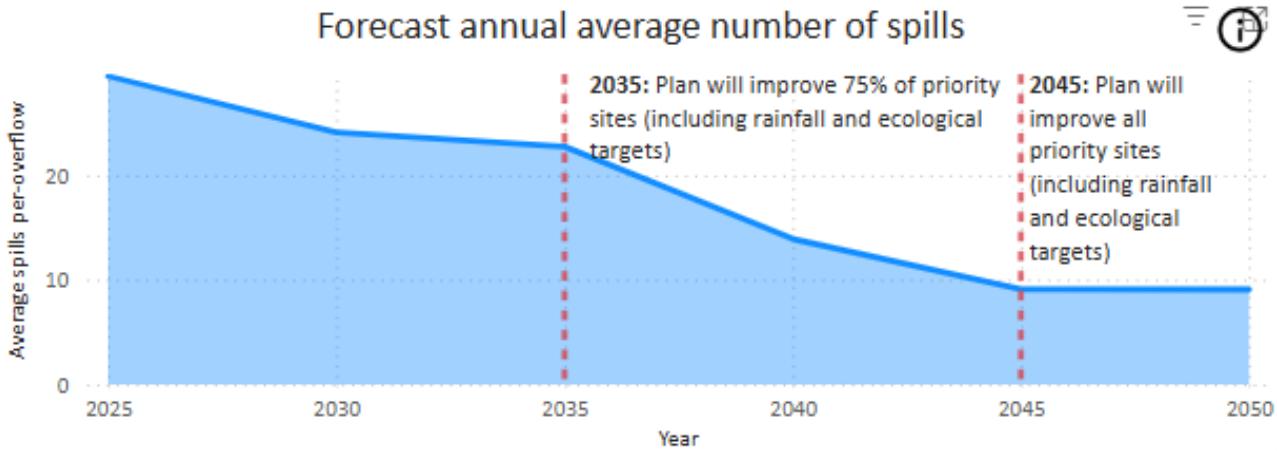

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Figure 6.5: Forecast number of spills

Table 6.2 Storm overflow assessment criteria

Sewer Overflows RAG Score	Number of operations per year (average of available data)	Commentary
Green	0-10	Overflow is currently operating within the long-term (2050) target. Need to ensure that this is maintained in the long-term considering upstream development, climate change and urban creep.

Sewer Overflows RAG Score	Number of operations per year (average of available data)	Commentary
Amber	11-49	An investigation is not required at present, but improvements will need to be made in the network and/or catchment to meet the long-term target.
Red	50+	The overflow may already be operating beyond the threshold which would trigger an investigation. Upstream development could further increase the discharge frequency, so mitigation should be required prior to significant development.

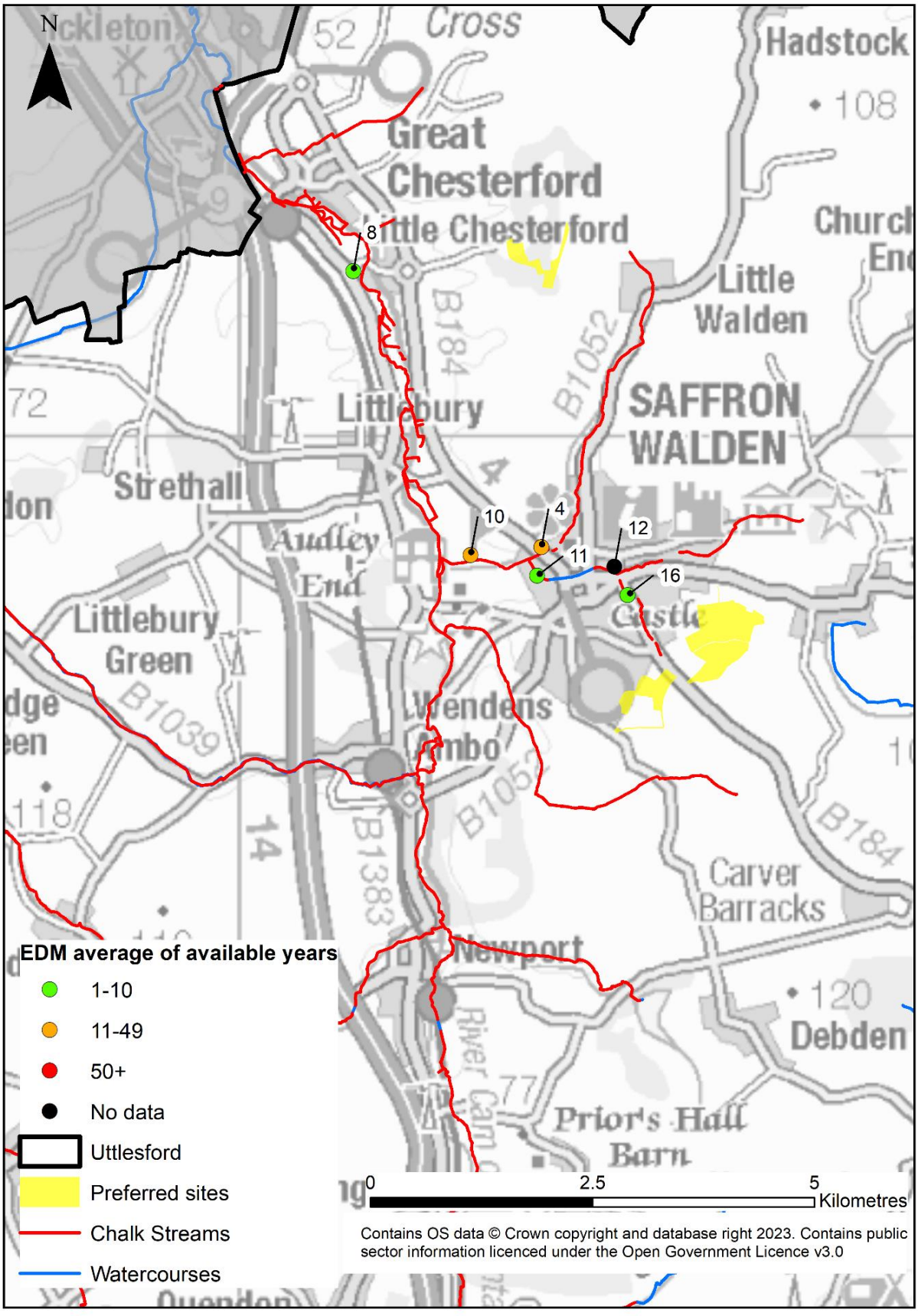


Figure 6.6 Preferred option sites in proximity to storm overflows (Saffron Walden)

*Refer to Table 6.3 for details of each storm overflow

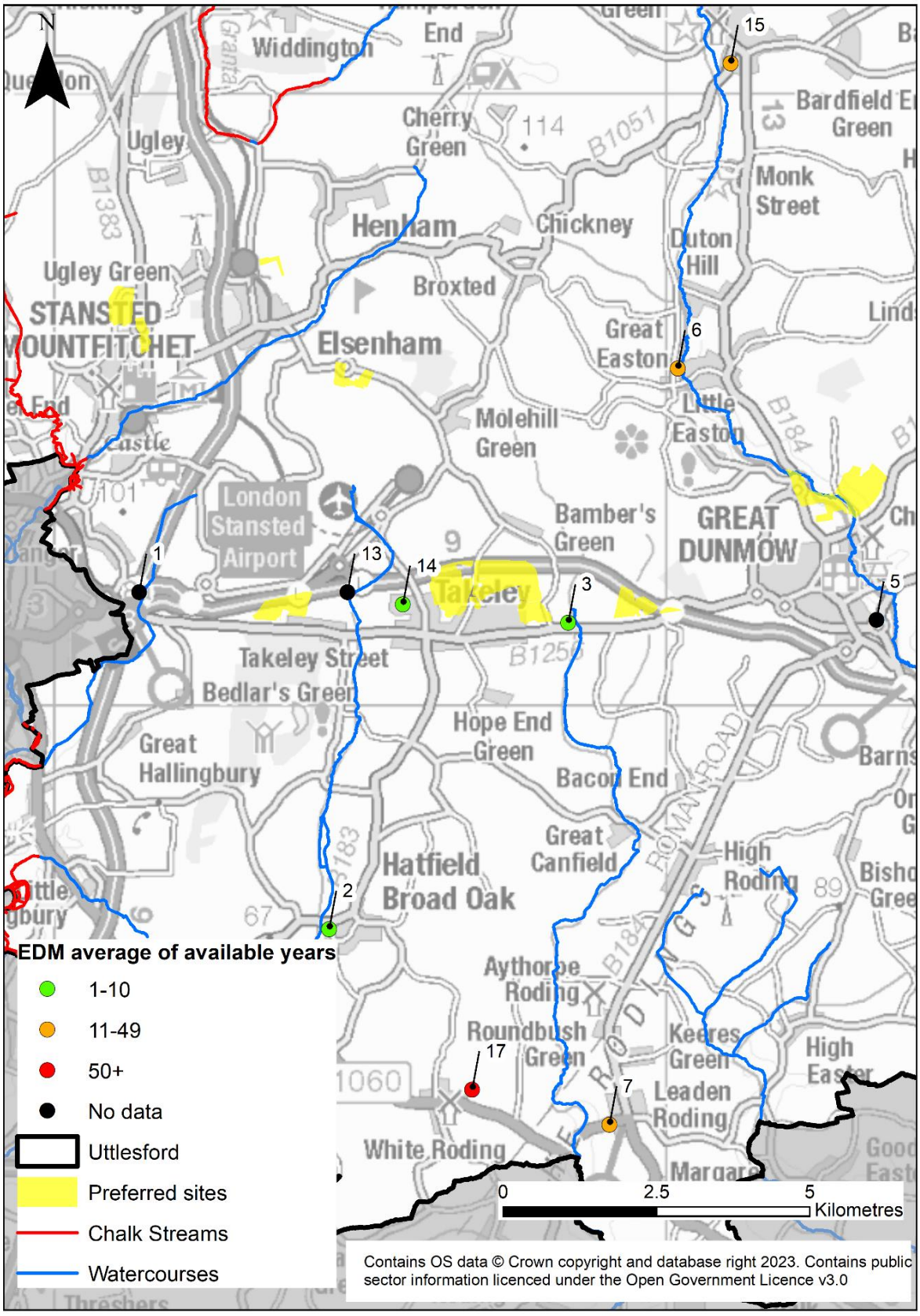


Figure 6.7 Preferred option sites in proximity to storm overflows (Stansted, Great Dunmow and Takeley)

*Refer to Table 6.3 for details of each storm overflow

Table 6.3: Network storm overflow assessment

Overflow	Storm Overflow Number	Number of operations in 2021	Duration of operations in 2021 (hours)	Number of operations in 2022	Duration of operations in 2022 (hours)	Number of operations in 2023	Duration of operations in 2023 (hours)	Above threshold for investigation ? (Y/N)
Birchanger - Duck End/ TEMP.0455	1	No data	No data	No data	No data	No data	No data	No data
CAGE END PUMPING STATION, CAGE END/ Hatfield Broad Oak Cage End/ CLCP.0111/ TEMP.1114	2	22	130.72	4	15.85	5	24	N
Canfield End, Little Canfield/ TEMP.0596	3	7	22.59	3	35.49	0	0	N
CASTLE STREET/HIGH STREET/ EPRRB3894EG	4	46	69.75	28	14.5	17	6	N
GREAT DUNMOW STW/ ASENF15793	5	No data	No data	No data	No data	No data	No data	No data
GT EASTON - BRIDGEFOOT TPS/ ASENF10513	6	9	82.5	6	37.25	29	292	N
Leaden Roding WWTW/ CSSC.1400	7	No data	No data	No data	No data	14	93	N

Overflow	Storm Overflow Number	Number of operations in 2021	Duration of operations in 2021 (hours)	Number of operations in 2022	Duration of operations in 2022 (hours)	Number of operations in 2023	Duration of operations in 2023 (hours)	Above threshold for investigation ? (Y/N)
LITTLE CHESTERFORD/ ASCNF2425	8	No data	No data	No data	No data	3	5.25	N
Park Street CSO/ AW2NF/E03779/1/1	9	No data	No data	No data	No data	No data	No data	No data
SAFFRON WALDEN WRC/ ASCNF1184	10	13	19.25	17	13	26	15.5	N
SAFFRON WALDEN-GEORGE ABBEY OV/ ASCNF2319	11	No data	No data	No data	No data	4	1.5	N
SO GASWORKS CROSSROADS/ ASCNF10057	12	No data	No data	No data	No data	No data	No data	No data
Stansted Airport SPS/ TEMP.1976	13	No data	No data	No data	No data	No data	No data	No data
Takeley - Garnets/ TEMP.2042	14	4	29.96	6	30.97	0	0	N
THAXTED - PARK STREET CSO/ AW2NFE03679	15	31	51.25	24	38.5	38	52	N

Overflow	Storm Overflow Number	Number of operations in 2021	Duration of operations in 2021 (hours)	Number of operations in 2022	Duration of operations in 2022 (hours)	Number of operations in 2023	Duration of operations in 2023 (hours)	Above threshold for investigation ? (Y/N)
THAXTED ROAD/VICTORIA AVE CSO/ EPRNB3691VH	16	1	1	0	0	2	0.5	N
White Roding WWTW/ CSSC.1455	17					93	398.75	Y
WICKEN BONHUNT PS/ ASCNF11524	18	No data	No data	No data	No data	2	9.75	N

6.4 Conclusions and recommendations

AW and TW provided an assessment of the preferred allocations. This was split into foul network and surface water network.

In the foul network assessment, four sites were given a "green" assessment confirming there was sufficient capacity within the network to incorporate these sites and no further infrastructure was likely to be required. Two sites (Land east of Shire Hill Farm and south of Radwinter Road, and Land south of A120/North of Stortford Road) were given an "amber" assessment, reflecting the need for some additional infrastructure. The Land at Warrens Farm and Land at Warish Hall Farm was given a "red" assessment by Thames Water along with the comment that the "scale of development is likely to require upgrades to the wastewater network". No particular constraints were identified by Thames Water. One further site was not assessed by Thames Water (Gaunts End, Elsenham) as it is not in an area currently served by a public sewer.

Clarifications were sought from Thames Water on their assessments including any implications for the phasing of the site at Warrens Farm. No response was received at the time writing. Further discussions with TW are therefore required. It should be remembered that no constraints have been identified by TW, and the water companies have a statutory duty to serve new development under the Water Industry Act 1991.

In the surface water assessment, two sites were given a "green" assessment confirming there was sufficient capacity within the network to incorporate these sites and no further infrastructure was likely to be required. Four sites were given an "amber" assessment reflecting the limited surface water network in some areas, and some local flood risk. A further three sites were not assessed as two were in an area without public sewerage (one of these sites has private sewerage). No reason was given for the third site.

Early engagement is required with Anglian Water and Thames Water to ensure that the required infrastructure is in place prior to occupation, and where a wastewater solution defined where one does not currently exist.

The Environment Act now requires water companies to report and monitor storm overflows as well as reduce the harm caused to the rivers they discharge to. There are 28 storm overflows in Uttlesford, 18 on the network, and 10 at WwTWs.

In comparison to some urban areas or large cities, Uttlesford has relatively few storm overflows on the sewer network. The SOAF set a threshold of 60 operations in a year (based on 1 years' data, 50 if based on 2 years data, and 40 if based on 3 years), above which a storm overflow should be investigated. One of the storm overflows (White Roding) was operating above this threshold between 2021 and 2023. The Storm Overflow Reduction Plan which was published in 2022 sets an objective that "storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050". Six of the 18 monitored storm overflows are operating on average above 10 times per year so may require action to meet the long-term target.

There are opportunities through the planning system to ease pressure on the wastewater network by separating foul and storm flow in existing combined systems, and not allowing new surface water connections. Surface water can also be better managed by retrofitting SuDS in existing residential areas, and in new development, ensuring SuDS are incorporated into designs at the master planning stage to maximise the potential benefits.

Table 6.4 Recommendations for wastewater network

Action	Responsibility	Timeframe
Early engagement between UDC and AW/TW is required to ensure that where strategic infrastructure is required, it can be planned in by AW/TW, and will not lead to any increase in discharges from sewer overflows.	UDC, Developers, AW/TW	Early in the LP process
Take into account wastewater infrastructure constraints in phasing development in partnership with the sewerage undertaker	UDC, AW/TW	Ongoing
Developers will be expected to work with the sewerage undertaker closely and early in the planning promotion process to develop an Outline Drainage Strategy for sites. The Outline Drainage strategy should demonstrate the wastewater assets required, their locations including points of connection to the public foul sewerage, whether the site drainage will be adopted by the water company and if any sewer requisitions will be required.	UDC, AW/TW and developers	Ongoing
Drainage strategy for "Land off the Broadway and Land east of B1008, Great Dunmow" site should demonstrate that the foul network will not be exposed to flooding from the River Chelmer.	Developer	During planning process
Developers will be expected to demonstrate to the Lead Local Flood Authority (LLFA) that surface water from a site will be disposed using a sustainable drainage system (SuDS) with connection to surface water sewers seen as the last option. New connections for surface water to foul sewers will be resisted by the LLFA, Anglian Water and Thames Water	LLFA and developers	Ongoing
A wastewater solution for the "Land at Gaunts End, Elsenham" is required. It is recommended that UDC / Developers engage with Thames Water early in LP period to ensure provision of any additional infrastructure can be aligned with development of this site.	UDC, Developers, TW	Early in LP period

7 Wastewater treatment

7.1 Introduction

Uttlesford has 31 Wastewater Treatment Works (WwTW) within or serving population within Uttlesford which are shown in Figure 7.1 below. Of these 24 are expected to serve growth within the Local Plan period. Thames Water refer to their wastewater processing plants as Wastewater Treatment Works (WwTW) whereas Anglian Water refer to theirs as Water Recycling Centres (WRCs). They may also be referred to as Sewage Treatment Works (STW) in some documents and data sources. For the purposes of this report, both Thames Water and Anglian Water's wastewater processing plants will be referred to as WwTWs.

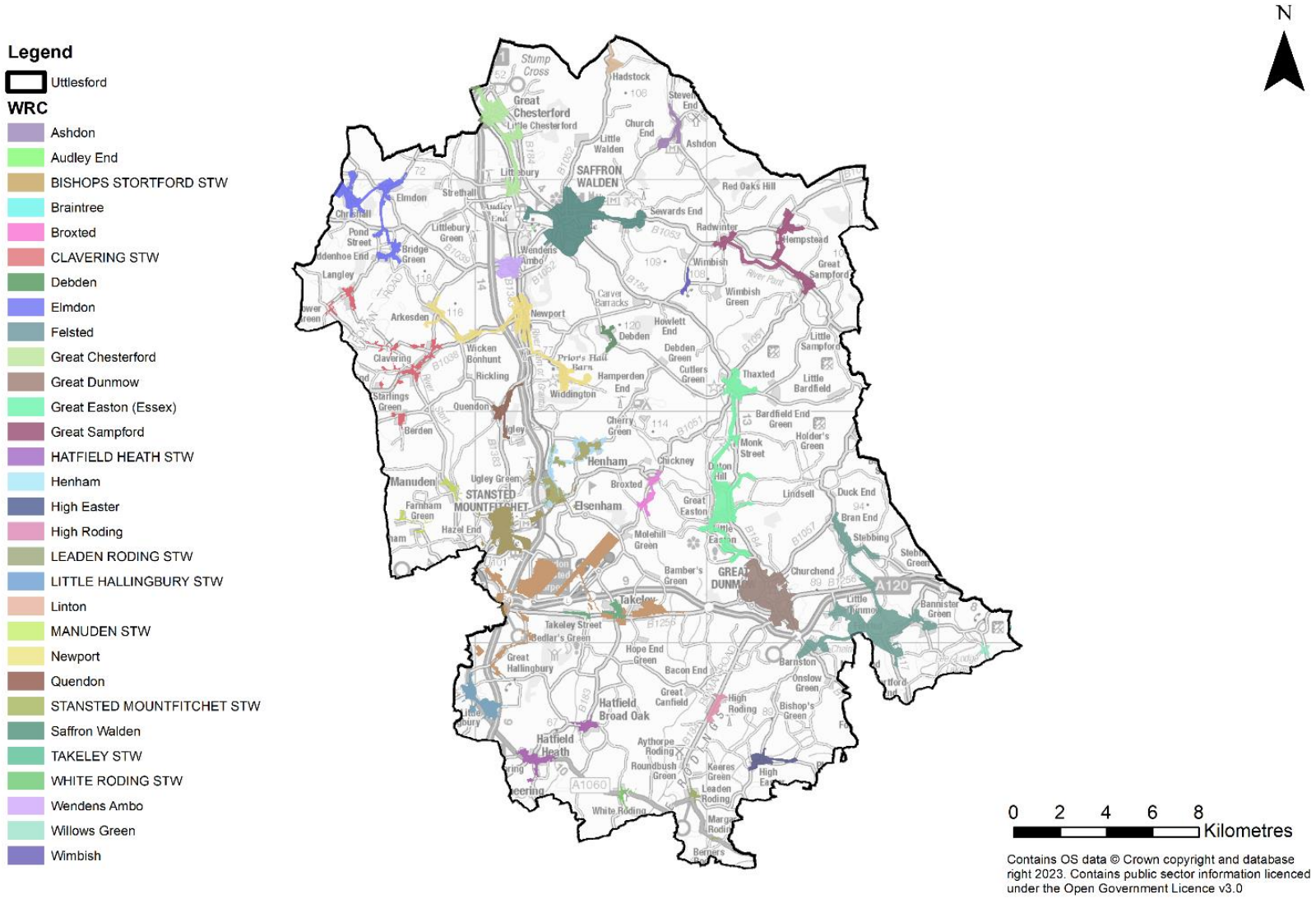


Figure 7.1 WwTW catchments serving Uttlesford

There are also 605 dwellings and 25,850m^2 of employment land planned that is not served by a public sewerage system. These are mostly small sites and widely distributed throughout the study area. Very small developments in rural areas may be suitable for on-site treatment and discharge, however the Environment Agency will not usually permit this where there is a public sewerage system within a distance calculated as 30m per dwelling. There is therefore a localised risk to water quality if all of these small developments were to be served by septic tanks, especially where there are clusters of small-scale new development.

Opportunities should be sought to provide a public wastewater treatment solution where development could be clustered - particularly in the chalk stream areas in the north.

7.2 Capacity assessment

7.2.1 Introduction

New residential developments and new employment land add pressure to the existing treatment works. An assessment is required to identify the available capacity within the existing WwTWs, and the potential to upgrade overloaded systems to accommodate future growth. The scale and cost of upgrading works may vary significantly depending upon the location of the development in relation to the network itself and the receiving WwTW.

The Environment Agency is responsible for regulating sewage discharge releases via a system of Environmental Permits (EPs). Monitoring for compliance with these permits is the responsibility of both the EA and the plant operators.

Figure 7.2 summarises the different types of wastewater releases that might take place, although precise details vary from works to works depending on the design.

During dry weather, the final effluent from the WwTW should be the only discharge (1). With rainfall, the storm tanks fill and eventually start discharging to the watercourse (2) and Combined Sewer Overflows (CSOs) upstream of the storm tanks start to operate (3). The discharge of storm sewage from treatment works is allowed only under conditions of heavy rain or snow melt, and therefore the flow capacity of treatment systems is required to be sufficient to treat all flows arising in dry weather and the increased flow from smaller rainfall events. After rainfall, storm tanks should be emptied back to full treatment as soon as reasonably possible, freeing their capacity for the next rainfall event.

Environmental permits are used alongside water quality limits as a means of controlling the pollutant load discharged from a WwTW to a receiving watercourse. Sewage flow rates must be monitored for all WwTWs where the permitted discharge rate is greater than 50 m^3/day in dry weather.

Permitted discharges are based on a statistic known as the Dry Weather Flow (DWF). As well as being used in the setting and enforcement of effluent discharge permits, the DWF is used for WwTW design, as a means of estimating the ‘base flow’ in sewerage modelling and for determining the Flow to Full Treatment, (FFT), the minimum flow which must

undergo full treatment, and above which additional flow is permitted to pass to the storm tanks (Figure 7.2).

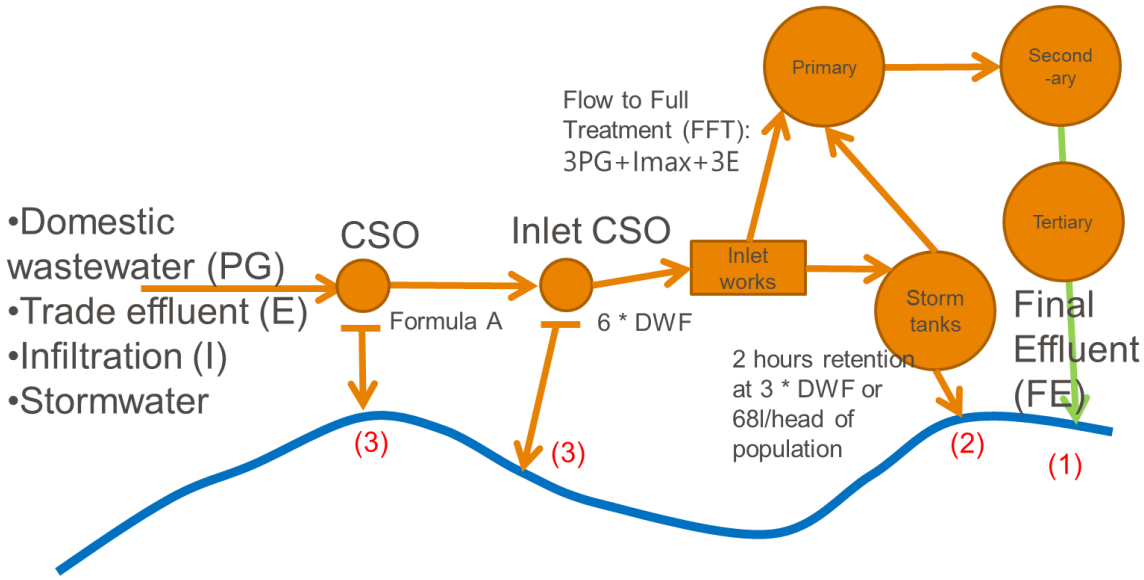


Figure 7.2 Overview of typical combined sewerage system and WwTW discharges

7.2.2 Methodology

An assessment of WwTW capacity was carried out by JBA using measured flow data supplied by the water companies. The process was as follows:

- AW and TW provided their Dry Weather Flow (DWF) statistics, and from this the 20th percentile (80% exceedance flow) for 2021-2023 was calculated. The flow data was processed to remove zero values and low outlier values which would artificially reduce the measured DWF.
- Preferred allocations, windfall and existing commitments were assigned to a WwTW using the sewerage drainage area boundaries provided by AW and TW.
- For each residential site, the future DWF was calculated using the occupancy rates and per-capita consumption values obtained from the Water Resource Management Plans, and the assumption that 95% of water used is returned to sewer. Permitted headroom was used as a substitute for actual designed hydraulic capacity for each WwTW being assessed.
- For employment sites, the net floorspace provided by UDC was used to estimate the number of employees using the employment use class, and standard densities from the Employment Density Guide 3rd Edition (Homes & Communities Agency, 2015). A standard figure of 0.1m^3/employee/day was then used to estimate water demand on each site.
- The current and estimated future flow was then compared to the permitted flow obtained from the Environment Agency “Consented Discharges to Controlled Waters with Conditions” database.
- Headroom (expressed the number of homes that could be accommodated before the permit is exceeded) was estimated by calculating the difference between the

current and permitted flow and using the occupancy and per capita consumption for the WRZ the sewer catchment is in to provide an estimate for the number of houses.

- A red/amber/green score was then assigned to each WwTW based on whether it was likely to exceed its permitted flow.
- The following red/amber/green traffic light definition was used to score each WwTW:

GREEN	AMBER	RED
Sufficient capacity to accommodate growth	Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified. (Based on less than 10% headroom remaining)	WwTW Capacity may be a constraint to growth (defined by Water Company)

The preferred option sites were also provided to AW and TW for them to assess the impact on their WwTW using the RAG criteria with comments were appropriate.

7.2.3 Results

Table 7.1 shows the results of the WwTW capacity assessment. 13 WwTWs are expected to have capacity for the growth planned throughout the plan period. 12 WwTWs likely to be close to or exceed their permit during the plan period. An increase in flow permit, and/or upgrades to treatment capacity will be required at these WwTW.

Where a WwTW is likely to exceed its permit, the permit would be reviewed by the EA and if a higher flow consent was agreed, a tighter permit limit for substance concentrations is very likely to be required. In some cases, this may not be technically feasibly possible if that means concentrations tighter than the Technically Accepted Limit (TAL) which is 0.25 mg/l for phosphate for example.

AW and TW provided an assessment of the preferred allocations. The results of this assessment are shown in Table 7.1 and graphically in Figure 7.3.

Saffron Walden WwTW (Anglian Water)

AW state that Saffron Walden WwTW has "Sufficient headroom available at the WRC - dependent on existing commitments. WRC proposed to go to TAL (technically achievable limits) for phosphorus in AMP8 as part of WINEP obligations." JBA's analysis suggests that Saffron Walden WwTW is likely to be close to or exceeding its flow permit by the end of AMP9 (2035) once all planned growth is taken into account. Engagement between AW and UDC should ensure that the entire quantum of growth is taken into account in any AMP9 upgrade plans. The Level 3 catchment summary for Saffron Walden in AW's DWMP shows

a 2021 population of 18,273 increasing to 19,599 by 2035 and 21,106 by 2050. Growth within the Local Plan period is predicted to produce 2,361 dwellings suggesting AW may have underestimated growth within this catchment.

Great Dunmow WwTW (Anglian Water)

"Insufficient headroom available - proposed growth scheme for delivery in early AMP8 for additional treatment capacity due to growth which will also require a new DWF permit. WRC also proposed to go to TAL for phosphorus in AMP8 as part of WINEP obligations"

This is confirmed by JBA's analysis showing that Great Dunmow WwTW is currently at its permit limit (based on the 80th exceedance percentile - compliance is measured against the 90th percentile).

The Level 3 catchment summary within AW's DWMP shows the population within the Great Dunmow WwTW catchment is expected to grow from 9,654 in 2021 to 10,409 by 2035 and 11,267 by 2050. Growth within the Local Plan period is expected to produce 4,097 dwellings, of which 2,732 dwellings are from sites already in the planning system. This suggests Anglian Water have significantly underestimated growth within this catchment. It is important that AW ensure that the full quantum of growth has been taken into account in the AMP8 upgrade scheme (or subsequent future upgrades).

Stansted Mountfitchet WwTW (Thames Water)

JBA's analysis suggests that Stansted Mountfitchet WwTW is likely to be close to or exceeding its flow permit by the end of AMP9 (2035). TW have stated that a growth upgrade is currently planned for AMP8 (2025-2030). TW should ensure that the full quantum of growth (including both current commitments and preferred option allocations) is taken into account in the AMP8 growth upgrade scheme.

Bishops Stortford (Thames Water)

JBA's analysis suggests that Bishops Stortford WwTW is likely to be close to or exceeding its flow permit by the end of AMP9 (2035) once all planned growth - particularly from neighbouring authorities is taken into account. TW have given this WwTW a "green" assessment noting that it has good headroom available. TW should ensure that capacity is monitored during AMP8 and a growth scheme planned early AMP9 in order to accommodate longer term growth.

The water quality assessment (section 8.2.3) shows that growth during the Local Plan period could prevent good ecological status being achieved in the future at Takeley WwTW (should improvements be made upstream that would enable this). Diverting growth from Takeley into Bishops Stortford WwTW would prevent this issue and would not significantly impact the assessment at Bishops Stortford WwTW. If this were pursued as an option, future capacity upgrades would need to take this into account.

Takeley WwTW (Thames Water)

JBA's analysis suggests that there is sufficient headroom at Takeley WwTW to accommodate all planned growth within this catchment during the LP period (water quality concerns are noted in Section 8). TW have given the site at North Takeley Street a "red" assessment stating that the WwTW is not scoped for growth specific enhancements in AMP8 and that they were unable to determine the size of the site. It should be noted that TW were provided a shapefile of the site and accompanying information stating the employment floorspace and the employment type proposed.

Upgrades are planned for this site to ensure permit compliance and to reduce storm overflow discharges - these two schemes are forecasted AMP8 delivery.

In Stage 1 TW reported that Takeley “STW works well, however it is very small and major upgrades will be needed to accommodate proposed growth”. JBA’s analysis suggests that this WwTW has issues with its storm overflow which should be considered should growth be served by this WwTW (overflow operated 76 times in 2020 for over 1,000 hours in total). TW also noted that “There is an ongoing modelling study to assess impact of proposed growth at Takeley sewerage network.”

Table 7.1 WwTW capacity assessment

WwTW name	Predicted housing during LP period (no. dwellings)	Predicted employment during LP period (sqm)	Estimated remaining capacity at end of Local Plan period (dwellings)	JBA Capacity Assessment
Ashdon WwTW	6	-	173	GREEN - Sufficient capacity to accommodate growth
Bishops Stortford WwTW	19,262	27,8887	-10,067	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.
Broxted WwTW	5	432.2	Unable to calculate	AMBER - No flow monitoring at this WwTW. Unlikely to be significant capacity for growth
Clavering WwTW	75	1767	19	GREEN - Sufficient capacity to accommodate growth
Debden WwTW	32		296	GREEN - Sufficient capacity to accommodate growth
Elmdon WwTW	7		388	GREEN - Sufficient capacity to accommodate growth
Felsted WwTW	483	1,983	813	GREEN - Sufficient capacity to accommodate growth
Great Chesterford WwTW	1,740	5,494	-2,729	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.

WwTW name	Predicted housing during LP period (no. dwellings)	Predicted employment during LP period (sqm)	Estimated remaining capacity at end of Local Plan period (dwellings)	JBA Capacity Assessment
Great Dunmow WwTW	4,097	2,990	-6,634	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.
Great Easton (Essex) WwTW	1,493	6,918.9	-1,936	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.
Great Sampford WwTW	2		-88	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.
Hatfield Heath WwTW	46		676	GREEN - Sufficient capacity to accommodate growth
High Easter WwTW	0	120	186	GREEN - Sufficient capacity to accommodate growth
High Roding WwTW	9		177	GREEN - Sufficient capacity to accommodate growth
Leaden Roding WwTW	3		300	GREEN - Sufficient capacity to accommodate growth

WwTW name	Predicted housing during LP period (no. dwellings)	Predicted employment during LP period (sqm)	Estimated remaining capacity at end of Local Plan period (dwellings)	JBA Capacity Assessment
Linton WwTW		47269	1,452	GREEN - Sufficient capacity to accommodate growth
Little Hallingbury WwTW	16		1,113	GREEN - Sufficient capacity to accommodate growth
Manuden WwTW	73	188	608	GREEN - Sufficient capacity to accommodate growth
Newport WwTW	219	10.2	-389	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.
No public sewer	605	25,856.1	N/A	AMBER - Wastewater solution required for these sites
Saffron Walden WwTW	2,361	12,800	-816	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.
Stansted Mountfitchet WwTW	1,889	2,614	-331	AMBER - Likely to be close to or exceed permit during plan period. Upgrades and / or a change to permit limit may be required. No significant constraints have been identified.

WwTW name	Predicted housing during LP period (no. dwellings)	Predicted employment during LP period (sqm)	Estimated remaining capacity at end of Local Plan period (dwellings)	JBA Capacity Assessment
Takeley WwTW	486	8,500	739	GREEN - Sufficient capacity to accommodate growth
Wendens Ambo WwTW	5	235	Unable to calculate	AMBER - No flow monitoring at this WwTW. Unlikely to be significant capacity for growth
Willows Green WwTW	3	20	Unable to calculate	AMBER - No flow monitoring at this WwTW. Unlikely to be significant capacity for growth
Wimbish WwTW	7		Unable to calculate	AMBER - Descriptive permit with no flow monitoring at this WwTW. Unlikely to be significant capacity for growth

Note: this includes growth from neighbouring LPAs

Table 7.2 Water company assessment of WwTWs

Site	WwTW	Proposed growth	Water company assessment	Comments
Land east of Station Road, Elsenham	Stansted Mountfitchet WwTW	150 dwellings	GREEN	Growth Upgrade for AMP8 (subject to Ofwat's final determination of our PR24 business plan)
Land east of High Lane and Land at Walpole Meadows, Stansted Mountfitchet	Stansted Mountfitchet WwTW	390 dwellings	GREEN	Growth Upgrade for AMP8 (subject to Ofwat's final determination of our PR24 business plan)
Land off The Broadway and Land east of B1008, Great Dunmow	Great Dunmow WwTW	884 dwellings	AMBER	Insufficient headroom available - proposed growth scheme for delivery in early AMP8 for additional treatment capacity due to growth which will also require a new DWF permit. WwTW also proposed to go to TAL for phosphorus in AMP8 as part of WINEP obligations
Land east of Shire Hill Farm and south of Radwinter Road, Saffron Walden	Saffron Walden WwTW	879 dwellings, 8,000sqm	GREEN	Sufficient headroom available at the WwTW - dependent on existing commitments. WwTW proposed to go to TAL (technically achievable limits) for phosphorus in AMP8 as part of WINEP obligations.
Land at Warrens Farm and Land at Warish Hall Farm, Little Canfield and Takeley	Bishops Stortford WwTW	1,546 dwellings	GREEN	"WINEP Programme Delivery forecasted for AMP8. The site manages flow well & has good headroom with regards to its permit's quality limits"
Land at Gaunts End, Elsenham	Bishops Stortford WwTW probable	1,950sqm	AMBER	Area not currently served by public sewer system

Site	WwTW	Proposed growth	Water company assessment	Comments
Land north of Takeley Street, Takeley	Takeley WwTW	8,500sqm	RED	"Takeley STW WINEP programme currently forecasted for 2027 delivery. Other upgrades are planned for this site to ensure permit compliance and to reduce storm overflow discharges - these two schemes are forecasted AMP8 delivery. This site is currently not scoped for growth specific enhancements in AMP8"
Land at Little Chesterford Research Park	Private WwTW	3,450sqm	AMBER	
Land south of A120/North of Stortford Road, Great Dunmow	Bishops Stortford WwTW	9,500qm	GREEN	"WINEP Programme Delivery forecasted for AMP8. The site manages flow well & has good headroom with regards to its permit's quality limits"

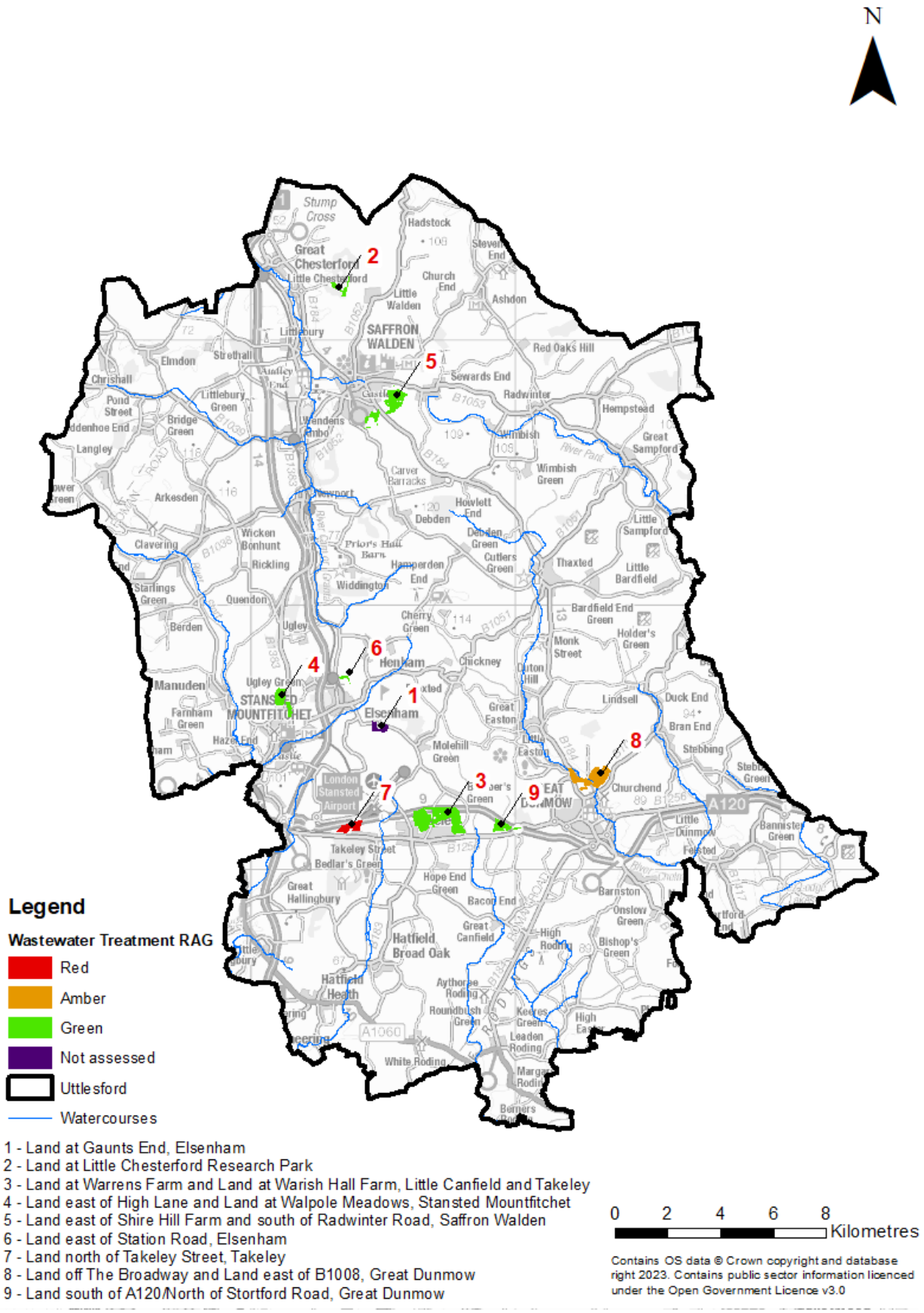


Figure 7.3 WwTW capacity assessment

7.3 Storm overflows at wastewater treatment works

Table 7.4 presents performance of storm tank overflows at WwTWs in Uttlesford. Ten overflows are present and of these, four are operating above the threshold for an investigation and these are shown in Table 7.3 with the stated reason for the poor performance.

Table 7.3 Overflows above threshold for investigation

Overflow name / permit reference	Comments
Hatfield Heath WwTW / CSSC.0261	Asset maintenance issue
Great Easton (Essex) STW / ASENF10268	Confirmed exceptional weather - remaining spills not above SOAF threshold.
Little Hallingbury WwTW / CSSC.0263	Hydraulic capacity issue
Takeley STW / TEMP.2948	Hydraulic capacity issue

Where a storm tank overflow is operating in periods of moderate or light rainfall, or even in dry conditions it indicates either an infiltration problem within the network, the WwTW or its storm tanks are undersized for the population served, or that there are potential operational issues at the WwTW. Further development within a catchment that has a poorly performing storm tank overflow is likely to exacerbate the issue.

The local plan can contribute to this by encouraging the use of SuDS to divert storm water away from the sewer network, reducing the volume that reaches the WwTW. This opportunity is greatest at brownfield sites connected to existing combined sewerage systems.

Table 7.4 Storm tank overflow assessment

Overflow	Storm Overflow Number	Number of operations in 2021	Duration of operations in 2021 (hours)	Number of operations in 2022	Duration of operations in 2022 (hours)	Number of operations in 2023	Duration of operations in 2023 (hours)	Above threshold for investigation? (Y/N)
Felsted (LR Chelmer) STW/ AW2NF911	19	43	548.25	0	0	0	0	N
Great Chesterford WRC/ AWCNF11340	20	2	3	4	2	1	0.25	N
Great Dunmow STW/ ASENF12255	21	34	214.47	15	87.75	42	392.42	N
Great Easton (Essex) STW/ ASENF10268	22	31	464.5	33	268.26	106	1341.15	Y
Great Sampford STW/ ASENF1084	23	2	8	1	0.25	2	2.73	N
Hatfield Heath WwTW/ CSSC.0261	24	131	2602.86	70	1234.65	120	2289.75	Y
Little	25	59	969.55	31	404.9	61	846.75	Y

Overflow	Storm Overflow Number	Number of operations in 2021	Duration of operations in 2021 (hours)	Number of operations in 2022	Duration of operations in 2022 (hours)	Number of operations in 2023	Duration of operations in 2023 (hours)	Above threshold for investigation? (Y/N)
Hallingbury WwTW/ CSSC.0263								
Saffron Walden WRC/ ASCNF1184	26	7	7	8	6.75	1	0.5	N
Stansted Mountfitchet WwTW/ CLCR.0165	27	30	383.07	17	146.47	35	352.25	N
Takeley STW/ TEMP.2948	28	90	1281.03	50	701.28	81	1207.75	Y

7.4 Conclusions and recommendations

A capacity assessment was undertaken by JBA comparing the future flow from each WwTW (the current actual flow and the forecast additional flow from growth), with the permit limit. Eight of the WwTWs (listed in Table 7.1) in the study area are expected to be close to or exceeding their permit during the Local Plan period. An increase in the permit limit, and / or upgrades to treatment capacity may be required at these WwTWs in order to accommodate the planned growth. It is important that when planning upgrades at WwTW that the full quantum of growth, including from neighbouring LPAs is taken into account. Population estimates within Anglian Water's Drainage and Wastewater Management Plan suggest that they may have underestimated growth within the catchments of Great Dunmow and Saffron Walden WwTWs. Equivalent data is not published within Thames Water's DWMP, so it was not possible to assess this.

Where new infrastructure or upgrades to existing infrastructure may be required, engagement between UDC and the water company is required to ensure that delivery of this infrastructure is aligned with delivery of development sites. Grampian conditions may be sought by the water company should development be in advance of the necessary infrastructure.

There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows contributing to a worsening of water quality in the area. Action should be taken by the water companies to address these overflows prior to an increase in wastewater demand being generated by new development.

Table 7.5 Recommendations for wastewater treatment

Action	Responsibility	Timescale
Early engagement with Anglian Water and Thames Water is required to ensure that provision of WwTW capacity is aligned with delivery of development.	UDC	Ongoing
AW should ensure that the growth forecasts used for planning upgrades at Great Dunmow and Saffron Walden WwTW take into account a sufficient level of growth.	AW	Ongoing
Provide Annual Monitoring Reports to Anglian Water and Thames Water detailing projected housing growth.	UDC	Ongoing
Anglian Water and Thames Water to assess growth demands as part of their wastewater asset planning activities and feedback to the Council if concerns arise.	UDC	Ongoing

8 Water quality

8.1 Introduction

An increase in the discharge of effluent from Wastewater Treatment Works (WwTW) because of development and growth in the area in which they serve can lead to a negative impact on the quality of the receiving watercourse. Under the Water Framework Directive (WFD), a watercourse is not allowed to deteriorate from its current WFD classification (either as an overall watercourse or for individual elements assessed).

It is Environment Agency (EA) policy to model the impact of increasing effluent volumes on the receiving watercourses. Where the scale of development is such that a deterioration is predicted, a variation to the Environmental Permit (EP) may be required for the WwTW to improve the quality of the final effluent, so that the increased pollution load will not result in a deterioration in the water quality of the watercourse. This is known as "no deterioration" or "load standstill". The need to meet river quality targets is also taken into consideration when setting or varying a permit.

The Environment Agency operational instructions on water quality planning and no-deterioration are currently being reviewed. Previous operational instructions (Environment Agency, 2012) (now withdrawn) set out a hierarchy for how the no-deterioration requirements of the WFD should be implemented on inland waters. The potential impact of development should be assessed in relation to the following objectives:

- Could the development cause a greater than 10% deterioration in water quality? This objective ensures that all the environmental capacity is not taken up by one stage of development and there is sufficient capacity for future growth.
- Could the development cause a deterioration in WFD class of any element assessed? This is a requirement of the Water Framework Directive to prevent a deterioration in class of individual contaminants. The "Weser Ruling" (European Union, 2015) by the European Court of Justice in 2015 specified that individual projects should not be permitted where they may cause a deterioration of the status of a water body. If a water body is already at the lowest status ("bad"), any impairment of a quality element was considered to be a deterioration. Emerging practice is that a 3% limit of deterioration is applied.
- Could the development alone prevent the receiving watercourse from reaching Good Ecological Status (GES) or Potential? Is GES possible with current technology or is GES technically possible after development with any potential WwTW upgrades.

The overall WFD classification of a water body is based on a wide range of ecological and chemical classifications. This assessment focuses on three physico-chemical quality elements; Biochemical Oxygen Demand (BOD), Ammonia, and Phosphate as set out in the EA guidance (Environment Agency, 2014).

BOD – Biochemical Oxygen Demand

BOD is a measure of how much organic material – sewage, sewage effluent or industrial effluent – is present in a river. It is defined as the amount of oxygen taken up by micro-organisms (principally bacteria) in decomposing the organic material in a water sample stored in darkness for 5 days at 20°C. Water with a high BOD has a low level of dissolved oxygen. A low oxygen content can have an adverse impact on aquatic life.

Ammonia

Nitrogen is an essential nutrient required by all plants and animals for the formation of amino acids. In its molecular form nitrogen cannot be used by most aquatic plants, and so it is converted into other forms. One such form is ammonia (NH_3). This may then be oxidized by bacteria into nitrate (NO_3) or nitrite (NO2). Ammonia may be present in water in either the unionized form NH_3 or the ionized form NH_4. Taken together these forms are called Total Ammonia Nitrogen.

Although ammonia is a nutrient, in high concentrations it can be toxic to aquatic life, in particular fish, affecting hatching and growth rates.

The main sources in rivers include agricultural sources, (fertilizer and livestock waste), residential sources (ammonia containing cleaning products and septic tank leakages), industrial processes and WwTWs.

Phosphate

Phosphorus is a plant nutrient and elevated concentrations in rivers can lead to accelerated plant growth of algae and other plants. Its impact on the composition and abundance of plant species can have adverse implications for other aspects of water quality, such as oxygen levels. These changes can cause undesirable disturbances to other aquatic life such as invertebrates and fish.

Phosphorus (P) occurs in rivers mainly as Phosphate (PO_4), which are divided into Orthophosphates (reactive phosphates), and organic Phosphates.

Orthophosphates are the main constituent in fertilizers used in agriculture and domestic gardens and provide a good estimation of the amount of phosphorus available for algae and plant growth and is the form of phosphorus that is most readily utilized by plants.

Organic phosphates are formed primarily by biological processes and enter sewage via human waste and food residues. Organic phosphates can be formed from orthophosphates in biological treatment processes or by receiving water biota.

Although it is phosphorus in the form of phosphates that is measured as a pollutant, the term phosphorus is often used in water quality work to represent the total phosphorus containing pollutants.

8.2 Water quality modelling

8.2.1 General approach

SIMCAT is used by the Environment Agency to model water bodies and identify where permit changes are needed to prevent deterioration or improve water quality as well as supporting decision making to guide development to locations where environmental deterioration will be reduced. SIMCAT is a 1D model which represents inputs from both point-source effluent discharges and diffuse sources, and the behaviour of solutes in the river.

SIMCAT can simulate inputs of discharge and water quality data and statistically distribute them from multiple effluent sources along the river reach. It uses the Monte Carlo method for distribution that randomly models up to 2,500 boundary conditions. The simulation calculates the resultant water quality as the calculations cascade further downstream.

Once the distribution results have been produced, an assessment can be undertaken on the predicted mean and ninetieth percentile concentrations or loads compared to the Environmental Quality Standards.

The study area is covered by the Thames, Wash and East Anglia SIMCAT models.

Within SIMCAT, the determinands modelled were Biochemical Oxygen Demand (BOD), Ammonia (NH4) and Phosphorus (P). In fresh waterbodies, phosphate is usually the limiting nutrient for algal growth. However, in marine environments, nitrogen is considered to be the limiting nutrient.

The methodology followed is summarised in Figure 8.1 below. In this flow chart, all of the questions in the top row must be answered.

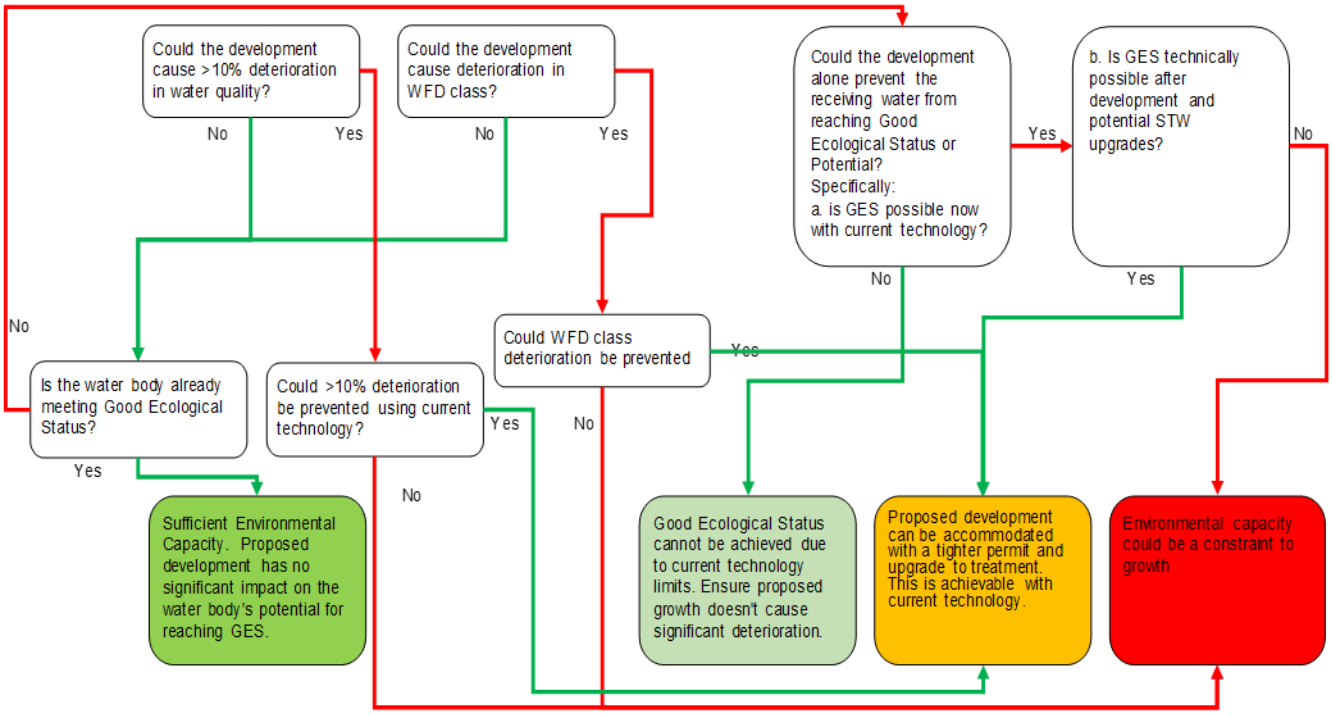


Figure 8.1 Water quality impact assessment following EA guidance

Where modelling indicated growth may lead to a deterioration in the watercourse, or where the watercourse is not currently meeting at least a 'Good' class for each determinant, the models were used to test whether this could be addressed by applying stricter discharge limits. In such cases, a Technically Achievable Limit (TAL) was considered.

The EA advised that the following permit values are achievable using treatment at TAL, and that these values should be used for modelling all WwTW potential capacity irrespective of the existing treatment technology and size of the works:

- Ammonia (90%ile): 1 mg/l
- BOD (90%ile): 5 mg/l
- Phosphorus (mean): 0.25 mg/l

This assessment did not take into consideration whether it is feasible to upgrade each existing WwTW to TAL due to constraints of costs, timing, space, carbon costs etc.

8.2.2 Methodology

The study area is covered by the Thames, Wash and East Anglia SIMCAT models developed by the Environment Agency. The models have been largely based on observed flow and quality data for the period 2014-2020. A widespread update of the models, and the resultant recalibration were not within scope of this project. It was therefore agreed with the EA to update just the effluent flow at WwTWs receiving growth in the study area. Consequently, the modelling work presented should be used to identify areas at risk of water quality deterioration, but not for permit setting.

Flow data from the last three years for each WwTW in the study area was supplied by Thames Water and Anglian Water and used to update the model. Several of the WwTWs in the study area already had upgrades completed in AMP6 or planned in AMP7, which would be expected to improve water quality at those locations. These were therefore factored into the model by applying the updated permit limit where it was less than the current discharge in the model. The model was then run in its updated form to set a 2024 baseline. It is expected that further upgrades to WwTWs will be planned in AMP8 (2025-30) which will be defined in the AMP8 WINEP and the business plans for AW and TW. As these documents have not yet been published, AMP8 schemes have not been factored into the modelling.

Additional effluent flow from growth during the Local Plan Update period was added to current flow at WwTWs receiving growth and the model re-run as a future scenario.

Some smaller WwTWs within the model have descriptive permits which do not set specific numerical limits for DWF and effluent quality, and do not have flow monitoring in place. The models are calibrated to observed water quality measurements and represent the overall water quality in the catchment well, however at a local scale some of these smaller WwTWs are not well represented and do not have discharge data or have pollutant discharges modelled as a load in kilograms rather than an effluent flow and concentration. Broxted and Willows Green WwTWs have descriptive permits.

No deterioration test

The results from the baseline and future versions of the model were compared to assess the predicted percentage deterioration for each of the modelled determinands. WFD targets for each river reach were provided by the EA and used to determine if there was a risk of a class deterioration.

Where a deterioration of 10% or greater was predicted or a change in class (considered to be a significant deterioration under WFD) a further test was conducted to see if this deterioration could be prevented by upgrades to treatment processes. This used another version of the model with each WwTW set to operate at their Technically Achievable Limit (TAL).

Good ecological status assessment

Where treatment at TAL and reductions in diffuse sources in the present day could improve water quality to achieve Good Ecological Status (GES), it is important to understand whether this could be compromised as a result of future growth within the catchment.

Guidance from the EA suggests breaking this down in to two questions:

a) Is GES possible now with current technology?

b) Is GES technically possible after development and any potential WwTW upgrades?

If the answer to questions a) and b) are both ‘Yes’ or both ‘No’ then the development can be assessed as having no significant impact on the water bodies potential for reaching GES, i.e., the development alone is not preventing GES from being achieved.

If the answer to a) is 'Yes' and the answer for b) is 'No' then development is having a significant impact, i.e., before development GES could be achieved with upstream improvements, and after growth the additional effluent from growth prevents GES being achieved.

The possible answers are summarised in Table 8.1.

Run type 9 within SIMCAT was used which assumes that upstream flow at each treatment works is at good ecological status. This simulates improvements being made in upstream water quality. The water quality of the discharge from each WwTW in order to maintain GES is then calculated by the model.

Table 8.1 Possible GES assessment results

Predicted to achieve GES after growth	Could achieve GES today with improvements in upstream water quality? (a)	Could achieve GES in the future with improvements in upstream water quality? (b)	Assessment Result
YES	N/A	N/A	GREEN - Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.
NO	YES	YES	AMBER - Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology.
NO	NO	NO	YELLOW - Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration.
NO	YES	NO	RED - Environmental capacity could be a constraint to growth.

8.2.3 Results

The first test applied compares the future scenario to the baseline and assesses whether a significant deterioration in water quality occurs – either a 10% deterioration in water quality or a deterioration in WFD class. Where, a significant deterioration is predicted, the TAL

scenario then assesses whether this deterioration could be prevented by improvements in treatment processes.

Table 8.2 below summarises the results of the water quality assessments. Where a “green” score is given, deterioration was less than 10% for each determinand, and no change in WFD class is predicted. Where an “amber assessment is given, a 10% deterioration or change in WFD class is predicted, but this could be prevented by improvements in treatment technology. In these cases, upgrades may therefore be required at that WwTW or at WwTW upstream.

A “red” assessment would be given where a significant deterioration in water quality is predicted, and it cannot be prevented by improvements in treatment processes.

Five of the twenty-four WwTWs serving growth during the plan period are predicted to experience a significant deterioration, with a greater than 10% deterioration in BOD predicted at Takeley, Great Dunmow and Great Easton WwTWs, which in the case of Great Easton WwTW may be accompanied by a deterioration in WFD class from Moderate to Poor. At Great Dunmow WwTW a deterioration in phosphate of greater than 3% is also predicted. As this watercourse is already within the Bad class, this is considered to be a significant deterioration. A greater than 10% deterioration in ammonia is predicted at Great Easton and Debden WwTW, and in Phosphate at Great Chesterford WwTW. All of the above deteriorations can be prevented by improvements in treatment.

In the initial modelling, it was predicted that a 24% deterioration in ammonia may occur downstream of Gret Dunmow WwTW. The modelling showed that this could not be prevented by improvements in treatment. Further investigation of the current performance of Great Dunmow using the EA Water Quality Data Archive showed that the WwTW was operating at a higher standard than suggested by the SIMCAT model (which is based on 2014-2020 data). The modelling was re-run using data from the last three years for ammonia, and whilst a significant deterioration in ammonia was still predicted, it could now be prevented by improvements in treatment.

In this assessment, improvements in treatment processes have been modelled by assuming the WwTW is operating TAL. It has not investigated the feasibility of upgrading individual WwTWs. This should be performed by Thames Water and Anglian Water who have the detailed knowledge of their assets, and the Environment Agency who are responsible for setting permit limits at WwTW. AW in their response to the draft Stage 2 WCS stated that permit limits at Great Dunmow and Saffron Walden WwTWs will be tightened to TAL for Phosphate during AMP8. Permit limit changes at other WwTWs may already be planned in AMP8.

Appendix A maps the predicted deterioration in water quality visually for Ammonia, BOD and Phosphate in the future, and the predicted deterioration if WwTWs were performing at the technically achievable limit.

The first set of maps in Appendix A.1 shows the modelled results if wastewater discharges increased by the volume predicted during the Local Plan period. They show a result at the

point of mixing (i.e., where the WwTW discharges) and the results downstream in the river. These are colour coded based on whether deterioration is greater (red) or less than (amber) 10%. Areas where no deterioration is predicted are coloured green.

The second set of maps in Appendix A.2 shows the modelled results in the TAL scenario, where each WwTW has been upgraded to the technically achievable limit. This shows areas where deterioration could not be prevented. In each case this is less than 10%.

The growth stated in Table 8.2 includes recent completions and neighbouring authority growth as well as growth from within Uttlesford District.

Table 8.2 WFD assessment results

WwTW	Could the development cause a greater than 10% deterioration in water quality for one or more of Ammonia, BOD, or Phosphate?	Could the development cause a deterioration in WFD class of any element?	Can a deterioration of >10% or in class be prevented by treatment at TAL
ASHDON STW	No	No	Yes
BISHOPS STORTFORD STW	No	No	Yes
BROXTED STW	No	No	Yes
CLAVERING STW	No	No	Yes
DEBDEN STW	Yes – 14% deterioration in Ammonia	No	Yes
ELMDON STW	No	No	Yes
FELSTED(LR CHELMER)	No	No	Yes
GREAT CHESTERFORD STW	Yes – 29% deterioration in Phosphate	No	Yes
GREAT DUNMOW STW	Yes – 20% deterioration in Ammonia, 11% deterioration in BOD, and 18% deterioration in Phosphate	No	Yes

WwTW	Could the development cause a greater than 10% deterioration in water quality for one or more of Ammonia, BOD, or Phosphate?	Could the development cause a deterioration in WFD class of any element?	Can a deterioration of >10% or in class be prevented by treatment at TAL
GREAT EASTON(ESSEX)	Yes – 23% deterioration in Ammonia, 13% deterioration in BOD, and 21% deterioration in Phosphate which is at Bad WFD status	Yes – (BOD deteriorates from Moderate status to Poor)	Yes
GREAT SAMPFORD STW	No	No	Yes
HATFIELD HEATH STW	No	No	Yes
HIGH EASTER STW	No	No	Yes
HIGH RODING STW	No	No	Yes
LEADEN RODING STW	No	No	Yes
LINTON STW	No	No	Yes
LITTLE HALLINGBURY STW	No	No	Yes
MANUDEN STW	No	No	Yes
NEWPORT STW	No	No	Yes
SAFFRON WALDEN STW	No	No	Yes
STANSTED MOUNTFITCHET STW	No	No	Yes
TAKELEY STW	Yes – 15% deterioration in BOD	No	Yes
WENDENS AMBO STW	No	No	Yes
WILLOWS GREEN STW	No	No	Yes

Table 8.3 summarises the results of the GES assessment outlined in section 8.2.2. Four different assessments are possible which are shown in Table 8.1 above.

- If good ecological status is predicted to be achieved within the receiving waterbody following growth during the plan period, a green assessment is given. In this case, it can be said that there is environmental capacity to accommodate growth.
- Where GES is not currently being achieved but could be achieved if upstream water quality were improved, then an amber score is given – growth could be accommodated without preventing a waterbody achieving GES in the future.
- Where GES cannot be achieved either today or in the future, despite upgrades in treatment processes, and improvements in upstream water quality, then a yellow assessment is given – and it can be said that GES cannot be achieved due to the limits of current technology. Growth alone is not predicted to prevent GES being achieved in the future.
- Should GES be achievable today, but not in the future due to growth, a red assessment would be given, and it can be said that environmental capacity could be a constraint to growth, i.e., growth alone could prevent good ecological status being achieved in the future.

Table 8.3 GES assessment results

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
ASHDON STW	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER-Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
BISHOPS STORTFORD STW	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	YELLOW-Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration
BROXTED STW	N/A	N/A	N/A
CLAVERING STW	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	YELLOW-Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration
DEBDEN STW	GREEN-Sufficient environmental capacity. Proposed	GREEN-Sufficient environmental capacity. Proposed	AMBER-Proposed development can be accommodated

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
	development has no significant impact on the water body's potential for meeting GES.	development has no significant impact on the water body's potential for meeting GES.	with a tighter permit and upgrade to treatment. This is achievable with current technology
ELMDON STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
FELSTED (LR CHELMER)	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
GREAT CHESTERFORD ST	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
GREAT DUNMOW STW	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER-Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
GREAT EASTON(ESSEX)	AMBER-Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology	AMBER-Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology	YELLOW-Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration
GREAT SAMPFORD STW	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER-Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
HATFIELD HEATH STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
HIGH EASTER STW	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
HIGH RODING STW	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
LEADEN RODING STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the	GREEN- Sufficient environmental capacity. Proposed development has no significant	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
	water body's potential for meeting GES.	impact on the water body's potential for meeting GES.	treatment. This is achievable with current technology
LINTON STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
LITTLE HALINGBURY STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
MANUDEN STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
NEWPORT STW	GREEN- Sufficient environmental	GREEN- Sufficient environmental	AMBER- Proposed development can

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
	capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
SAFFRON WALDEN STW	YELLOW-Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration	AMBER-Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology	YELLOW-Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration
STANSTED MOUNTFITCHET STW	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN-Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	YELLOW-Good ecological status cannot be achieved due to current technology limits. Ensure proposed growth doesn't cause significant deterioration

WwTW	Ammonia assessment	Biochemical Oxygen Demand (BOD) assessment	Phosphate assessment
TAKELEY STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	RED- Environmental capacity could be a constraint to growth
WENDENS AMBO STW	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	GREEN- Sufficient environmental capacity. Proposed development has no significant impact on the water body's potential for meeting GES.	AMBER- Proposed development can be accommodated with a tighter permit and upgrade to treatment. This is achievable with current technology
WILLOWS GREEN STW	N/A	N/A	N/A

At Takeley, the modelling predicts that Good Ecological status cannot be achieved due to future growth, a situation that would not be allowed under the WFD.

As such an additional future scenario has been run with the additional demand from commitments, allocations and windfall expected to be served by Takeley during the Local Plan period applied to Bishops Stortford WwTW. This represents a future scenario where either the new developments are connected to Bishops Stortford rather than Takeley, or an equivalent flow is diverted into Bishops Stortford via an adjustment to the sewer network where the two catchments are adjacent. Bishops Stortford WwTW is a larger treatment works, the catchment of which is adjacent to the sewer catchment for Takeley WwTW.

Results show that the additional flow does not significantly impact the deterioration at Bishops Stortford which remains <10%. Diversion of this flow allows GES for Phosphate to be achieved at Takeley.

Whilst this assessment shows that deterioration would be prevented, Thames Water have not confirmed whether this additional growth can be accommodated at Bishops Stortford.

The feasibility of connecting new developments to Bishops Stortford or diverting flow have also not been assessed.

8.3 Priority substances

As well as the physico-chemical water quality elements (BOD, Ammonia, Phosphate etc.) addressed above, a watercourse can fail to achieve Good Ecological Status due to exceeding permissible concentrations of hazardous substances. Currently 33 substances are defined as hazardous or priority hazardous substances, with others under review. Such substances may pose risks both to humans (when contained in drinking water) and to aquatic life and animals feeding in aquatic life. These substances are managed by a range of different approaches, including EU and international bans on manufacturing and use, targeted bans, selection of safer alternatives and end-of-pipe treatment solutions. There is considerable concern within the UK water industry that regulation of these substances by setting permit values which require their removal at wastewater treatment works will place a huge cost burden upon the industry and its customers, and that this approach would be out of keeping with the "polluter pays" principle.

We also consider how the planning system might be used to manage priority substances:

- Industrial sources – whilst this report covers potential employment sites, it doesn't consider the type of industry and therefore likely sources of priority substances are unknown. It is recommended that developers should discuss potential uses which may be sources of priority substances from planned industrial facilities at an early stage with the EA and, where they are seeking a trade effluent consent, with the sewerage undertaker.
- Agricultural sources - There is limited scope for the planning system to change or regulate agricultural practices. UK water companies are involved in a range of “Catchment-based Approach” schemes aimed at reducing diffuse sources of pollutants, including agricultural pesticides.
- Surface water runoff sources - some priority substances e.g., heavy metals, are present in urban surface water runoff. It is recommended that future developments would manage these sources by using SuDS that provide water quality treatment, designed following the CIRIA SuDS Manual. This is covered in more detail in the Stage 1 report (Section 9).
- Domestic wastewater sources - some priority substances are found in domestic wastewater as a result of domestic cleaning chemicals, detergents, pharmaceuticals, pesticides or materials used within the home. Whilst an increase in the population due to housing growth could increase the total volumes of such substances being discharged to the environment, it would be more appropriate to manage these substances through regulation at source, rather than through restricting housing growth through the planning system.

No further analysis of priority substances will be undertaken as part of this study.

8.4 Conclusions and recommendations

8.4.1 Conclusions

The modelling indicates the growth during the Local Plan period could result in a significant deterioration (10% or over or deterioration in class) in water quality at five WwTWs (Takeley, Great Easton, Great Dunmow, Debden and Great Chesterford). In all cases, this deterioration could be prevented by improvements in treatment. Some tightening of permit limits may already be planned in AMP8 but details have not yet been published.

Growth alone will not prevent good ecological status being prevented in the future should improvements in upstream water quality be made with the exception of Takeley, where environmental capacity could be a constraint to growth.

An additional modelling scenario was run where the additional demand from growth expected to be served by Takeley WwTW was applied to Bishops Stortford rather than Takeley. This represents either the new developments being connected to Bishops Stortford, or an equivalent flow being diverted into Bishops Stortford via an adjustment to the sewer network where the two catchments are adjacent.

The feasibility of connecting new developments to Bishops Stortford WwTW or diverting flow has not been assessed and should be discussed with Thames Water.

Where a WwTW is shared with a neighbouring authority, coordination of growth plans in collaboration with Thames Water and Anglian Water is essential to ensure that infrastructure is in place prior to development to prevent a breach of the environmental permit.

8.4.2 Recommendations

Table 8.4 Recommendations for water quality

Actions	Responsibility	Timescale
Provide annual monitoring reports to TW and AW detailing projected housing growth in the Local Authority	UDC	Ongoing
Take into account the full volume of growth (From UDC and neighbouring authorities) within the catchment	TW and AW	Ongoing
Identify the feasibility of new development expected to connect to Takeley WwTW being connected to Bishops Stortford, or an equivalent	TW and the site promoters	Early in Local Plan period

Actions	Responsibility	Timescale
flow diverted.		

9 Environmental impact

9.1 Introduction

Development has the potential to cause an adverse impact on the environment through a number of routes, such as worsening of air quality, pollution to the aquatic environment or disturbance to wildlife. In the context of a Water Cycle Study, the impact of development on the aquatic environment is assessed. This chapter considered both water quantity (impact of abstraction) and water quality (impact of wastewater discharge and runoff) on protected sites.

A source-pathway-receptor approach can be taken to investigate the risk and identify where further assessment or action is required.

In Stage 1, a screening exercise was conducted to identify protected sites (such as SSSIs) that could be impacted by changes in Water Quality. The Stage 2 analysis will build on this and link it to the water quality results presented in section 8, as well as identifying protected sites that could be impacted by increases in abstraction.

Section 9.5 of the Stage 1 report also outlined the benefits of SuDS and Natural Flood Management which offer opportunities to manage surface water to achieve multiple benefits. The recommendations from that section have been reproduced in Stage 2.

9.2 Impact of abstraction

9.2.1 Overview

Abstraction of water within a catchment, either from groundwater or surface water sources, is necessary to provide a public water supply, for industrial processes and for agriculture. When the volume of water being abstracted becomes too high, it can cause environmental damage by reducing river flow, or lowering the water table.

Changes in river flow can impact sensitive ecosystems, for example Trout require a clean gravel bed to lay their eggs. A reduction in river flow can cause sediment to build up, blocking the spaces the fish require to lay their eggs impacting their reproductive cycle. Changes in groundwater levels can also affect the flow regime in rivers and can cause drying of wetland sites.

Chalk stream catchments are particularly sensitive to changes in groundwater levels.

The precise location of abstraction points for public water supply in England is not available for reasons of national security. Furthermore, water demand within a WRZ can be met by anywhere within that WRZ, or from a neighbouring WRZ if the transfer between WRZs is used to provide some of the water available for use. It is therefore not possible to trace an

impact of an individual development site back to a particular water abstraction and therefore to an environmental impact. The assessments in this report therefore rely on information in the public domain.

9.2.2 Methodology

Uttlesford is served by Affinity Water via its Stort WRZ. Abstraction either from surface water sources or from groundwater sources can occur anywhere within this zone. However, the impact of the abstraction could be felt outside of the WRZ within the same groundwater body, or downstream in surface waterbodies. In both cases this could be well outside the LPA boundary.

Groundwater dependent terrestrial ecosystems (GWDTEs)

Figure 9.1 shows a schematic of how GWDTEs were identified. The LPA boundary is within a WRZ. Water abstracted anywhere within that WRZ could be used to serve growth within the LPA. In the diagram below, there are two abstraction points. Abstraction 1 could impact an area outside of the both the LPA boundary and the WRZ. However, there are no protected sites within that groundwater body. Abstraction 2 also impacts an area both within and outside of the LPA boundary. Protected site A is within the WRZ but may not be impacted directly by an abstraction. Protected site B is outside of the WRZ and outside of the groundwater body containing an abstraction and is therefore unlikely to be impacted by growth. Protected site 3 is within a groundwater body containing an abstraction. There is a risk that an increase in abstraction could impact the protected site.

The location of abstraction points within the study area is not known, and so the approach must be taken that GWDTE anywhere within the combined extent of the WRZ and groundwater bodies overlapping the WRZ could be impacted by an increase in abstraction.

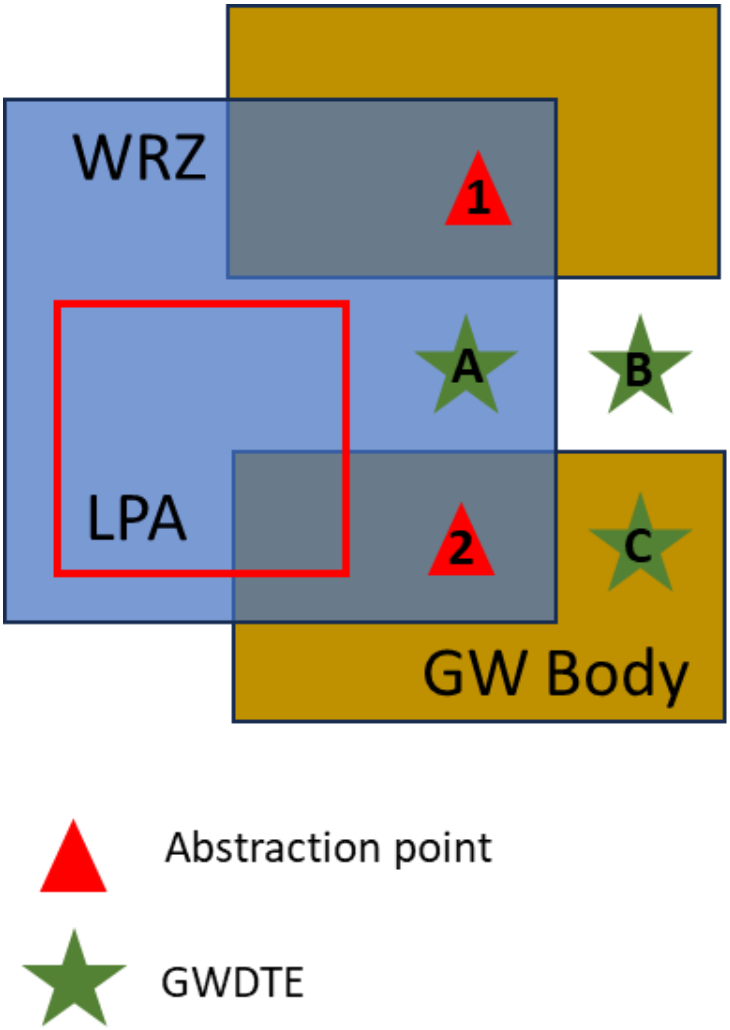


Figure 9.1 Definition of groundwater study area

The following procedure was followed:

- Define study area - based on extent of WRZ and WFD Groundwater bodies that overlap with the WRZs.
- Identify Groundwater Dependent Terrestrial Ecosystems (GWDTE) within the study area using the EA's GWDTE dataset.
- Identify GWDTEs that are within groundwater bodies with flow identified as a Significant Water Management Issue (SWMI).

Surface water-based ecosystems

Figure 9.2 shows a schematic of how protected sites on surface waterbodies were identified. As in the groundwater example, water could be abstracted from anywhere within the WRZ. Protected site A is downstream of an abstraction and so could be impacted by changes in river flow resulting from the abstraction. Protected site B whilst further downstream in the river basin, it is on a tributary not connected with the WRZ, abstraction is unlikely to have an impact. Protected site C is upstream of the abstraction so would not be impacted.

As with the groundwater abstractions, their location was not available as part of this study. The approach is therefore taken that any protected site directly on a waterbody that flows through or is downstream of the WRZ could be impacted by abstraction. Protected sites upstream or on tributaries that have not flowed through the WRZ are ignored.

In order to identify protected sites that may be at risk, Flood Zone 2 from the Risk of Flooding from Rivers and the Sea mapping was used to define an area that was either adjacent to a river or could be reasonably expected to receive surface water from a river.

The following procedure was followed:

- Define study area - based on extent of WRZ and WFD Surface water bodies that overlap with the WRZs.
- Identify protected sites within the study area.
- Filter these based on their proximity to waterbodies within the study area defined using flood zone 2 as a proxy.
- Identify the protected sites within a catchment where flow is recorded as a significant water management issue.

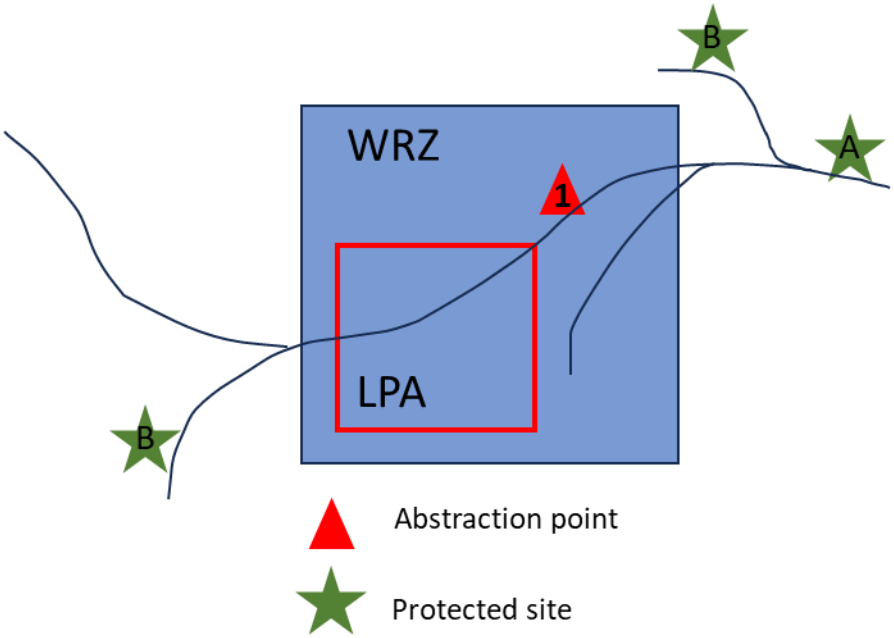


Figure 9.2 Definition of surface water study area

9.2.3 Results

There are 99 Groundwater Dependent Terrestrial Ecosystems (GWTDEs) that are within a groundwater body that overlaps with the Stort WRZ. These are shown in Figure 9.3 and presented in Appendix C. 15 of these are in groundwater bodies where flow is noted as a significant water management issue (SWMI) - either due to groundwater or surface water abstraction.

There are 84 SSSIs that are adjacent to waterbodies within the Stort WRZ and downstream of Uttlesford. There are also 19 SPAs, 11 SACs, and 14 Ramsar sites. These are shown in

Figure 9.4 and presented in Appendix D. 34 of these have flow abstraction from surface water) identified as a significant water management issue.

Some of the SSSIs are also designated as Ramsar sites, SACs or SPAs and are also included in Appendix D.

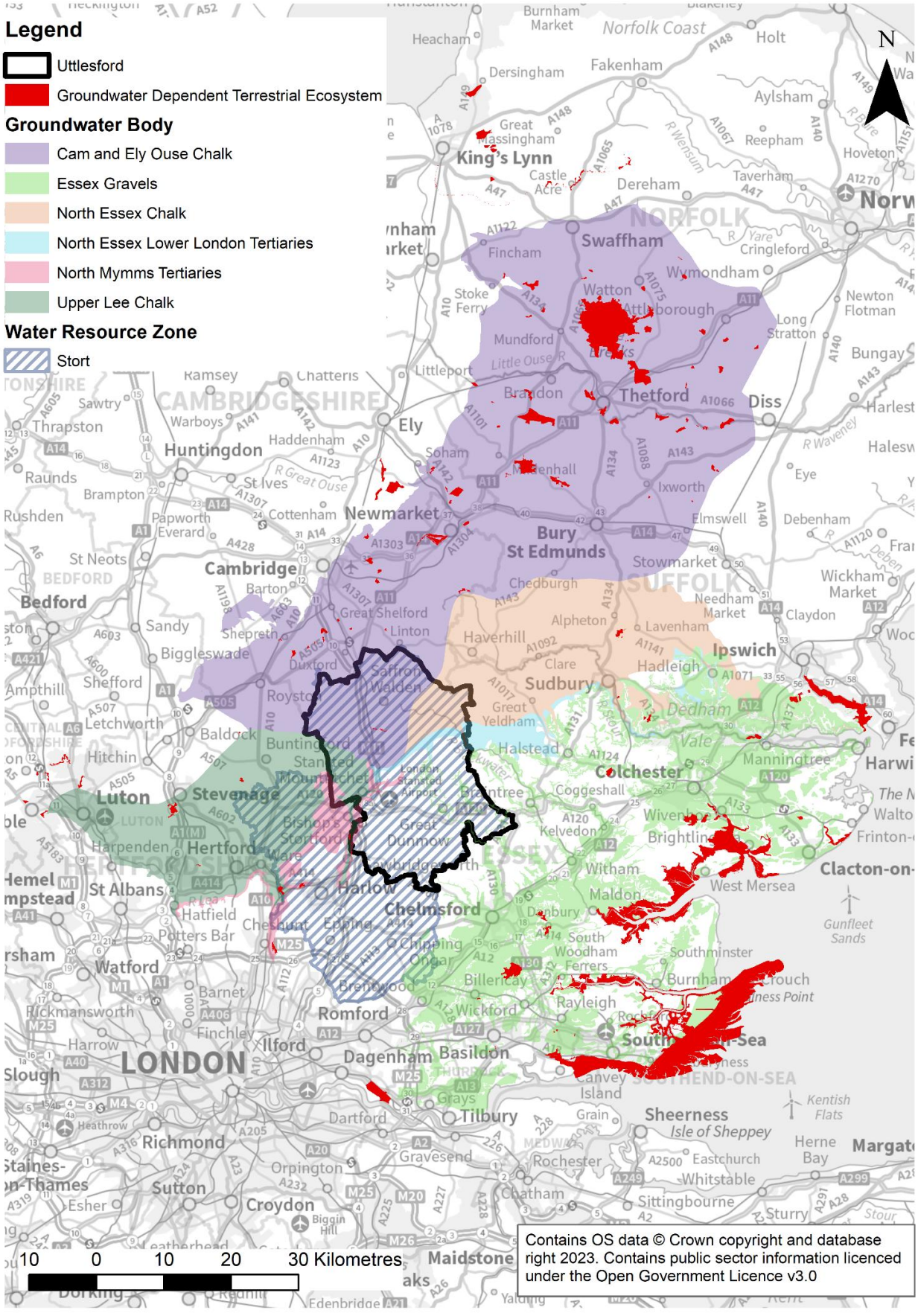


Figure 9.3: GWDTE within and downstream of the Stort WRZ and Uttlesford

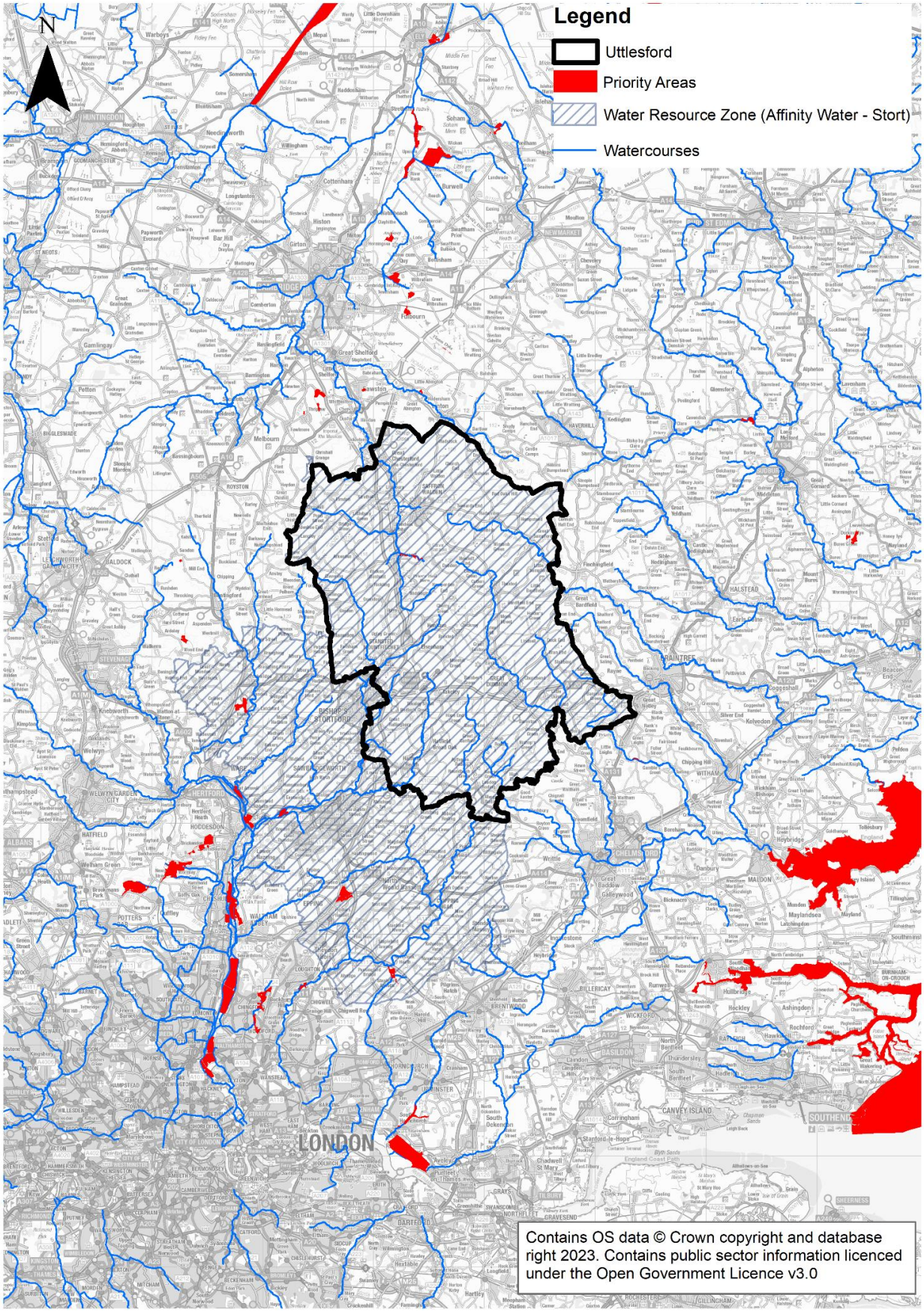


Figure 9.4: Protected areas within and downstream of the Stort WRZ and Uttlesford

9.3 Impact of wastewater discharges

9.3.1 Sites with environmental designations

A receptor in this case is a habitat or species that is adversely impacted by a pollutant. Both the rivers and groundwater as well as being pathways, can also be considered to be receptors. Groundwater bodies are also given a status under the WFD which is reported in section 4.1.4 of the Stage 1 report for the groundwater bodies across Uttlesford.

Within the study area and downstream are many sites with environmental designations such as:

- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Sites of Special Scientific Interest (SSSI)
- Ramsar sites (Wetlands of International Importance)
- Priority Habitats and Priority Headwaters

Protected sites within Uttlesford can be seen in Section 9.2.3.

9.3.2 Methodology

The Stage 1 WCS identified protected sites that may be at risk following a source-pathway-receptor approach. Sites within Uttlesford and downstream of each WwTW serving growth to the tidal limit were noted.

In order to identify which of the protected sites may be at risk, Flood Zone 2 from the Risk of Flooding from Rivers and the Sea mapping was used to define an area that was either beside a river or could be reasonable expected to receive surface water from a river during times of flood. Where a WwTW serving growth in the plan period was present in the catchment upstream of the protected site, this site was taken forward for further assessment.

Where there were no WwTW serving growth upstream, these protected sites were discounted as no deterioration would be predicted in a water quality model, and the impact would be expected to be minimal. However, in these cases the overall catchment water quality should be considered where for example they are designated for migratory fish species that may spend part of their lifecycle elsewhere in the catchment.

Whilst deterioration in water quality may not always lead to a significant impact at a protected site such as a SSSI, modelled deterioration can be used to highlight areas of risk for further analysis in the Habitats Regulations Assessment.

9.3.3 Results

At four protected sites downstream of WwTWs serving growth during the Local Plan period a significant deterioration in water quality is predicted. These are shown in Table 9.1. At two of these (Debden Water SSSI and Sawbridgeworth Marsh) that deterioration could be prevented by improvements in upstream treatment. However, in two locations (Little Hallingbury Marsh SSSI and Thorley Flood Pound SSSI) deterioration could not be prevented, and the predicted deterioration in BOD remains at 11%. The concentration of BOD in the river at these sites remains at "High" class (which is the highest / best classification in the Water Framework Directive).

Both Little Hallingbury Marsh and Thorley Flood Pound are areas of lowland Fen, Marsh and Swamp and are currently in favourable condition (Natural England, 2016). This site may be sensitive to changes in water quality in the river, however it is not certain whether a deterioration within the High class could have an impact on the condition of the SSSI. Further investigation may be required in consultation with NE to ensure that the condition status of these sites is not affected, in-line with the requirements of the Wildlife and Countryside Act.

The majority of growth within the catchment of Bishops Stortford WwTW is from the East Hertfordshire District Council (1885 dwellings from Uttlesford and 17,377 dwellings from East Herts), and the water quality modelling has taken both growth forecasts into account. Engagement with East Hertfordshire District Council is therefore required in order to understand and mitigation the cumulative impact of their combined growth.

Table 9.1 Water quality impact on protected sites

SSSI name	% deterioration Ammonia	% deterioration BOD	% deterioration Phosphate	Can deterioration be prevented by treatment at TAL?
Debden Water	15%	0%	3%	Yes
Little Hallingbury Marsh	8%	13%	6%	No – BOD deterioration remains at 11%
Sawbridgeworth Marsh	2%	12%	6%	Yes
Thorley Flood Pound	9%	13%	6%	No – BOD deterioration remains at 11%

9.4 Chalk stream protection

Alongside the Water Cycle Study, a Chalk Stream Evidence Base was prepared. This identified the pressures chalk streams are under, and recommended policies to protect

them. The north and west part of Uttlesford District is drained by two chalk streams, the River Stort and River Cam, and their tributaries. These are shown in Figure 9.5. A further river in the north-east (River Bourn) is identified within the index of chalk streams which forms part of the CaBA Chalk Stream Strategy. However, it may not be acting as a chalk stream along its entire length. North of Ashdon, the geology mapping shows that river may be well connected to the underlying chalk bedrock, however within and south of Ashdon there is a superficial layer that may prevent this interaction. Further investigation is required to confirm its status.

Figure 9.5 Location of Chalk Streams in Uttlesford

A chalk stream is broadly defined as a river that derives most of its flow from chalk-fed groundwater. Chalk streams flow from chalk aquifers, stores of underground water that are replenished from rainfall. England is home to 85 per cent of the world's chalk streams. These rivers, together with the chalk aquifer from which they spring, are crucial water resources providing millions of people with water as well as supporting unique ecosystems. Businesses and farms also rely on chalk streams as without a reliable water source they would not be able to operate.

Balancing the needs of people and the environment is a challenge and it is getting harder. Population growth, particularly in the south and east of England, means that more and more water is required at a time when climate change is reducing the amount of water that is available.

England's chalk streams are therefore under considerable pressure. The Environment Agency's 'Reasons for Not Achieving Good' database indicates that one of the reasons for some of the watercourses in the district not meeting 'Good' Water Framework directive (WFD) standards can be related to groundwater and surface water abstractions. Other pressures on chalk streams include pollution from wastewater discharges and agriculture, encroachment by development.

Chalk streams are an important and rare habitat and opportunities should be taken within the Local Plan to define policies to protect these river ecosystems. The Chalk Stream Evidence Base makes the following recommendations that can be adopted by Uttlesford District Council to provide greater protection for chalk streams and mitigate the impacts of development during the Local Plan period:

Table 9.2 Recommendations from Chalk Stream Evidence Base

Measure type	Recommendation
Water efficiency	Recommendation 1 – Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford. Recommendation 2 – Require all new non-residential buildings achieve BREEAM "Outstanding" for water throughout Uttlesford.
Water neutrality	Recommendation 3 – Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study.
Riparian Buffer Zone	Recommendation 4 – Apply a riparian buffer zone in chalk stream areas to exclude all development within the natural flood plain or 15m of the bank, whichever is larger. A buffer of 10m should be applied to ditches that feed chalk streams. Recommendation 5 – Apply a vegetated buffer strip on agricultural land within 15m of a chalk stream and 10m from a ditch feeding a chalk stream.
Cattle fencing	Recommendation 6 – Encourage responsible land management such as cattle fencing through the Nature Recovery Strategy.

Measure type	Recommendation
Education	Recommendation 7 – Undertake a public engagement exercise to raise awareness of chalk streams and encourage responsible riparian ownership.
Sustainable Drainage Systems (SuDS)	Recommendation 8 – Enforce the SuDS hierarchy as defined in the Essex SuDS guidance with a focus on encouraging infiltration SuDS and deep borehole SuDS where appropriate.
Neighbouring authority engagement	Recommendation 9 – Continue and strengthen existing partnerships with neighbouring authorities and other stakeholders to define coordinated policies for chalk stream protection

9.5 Groundwater protection

9.5.1 Overview

Groundwater is an important source of water in England and Wales.

The Environment Agency is responsible for the protection of "controlled waters" from pollution under the Water Resources Act 1991. These controlled waters include all watercourses and groundwater contained in underground strata.

The zones are based on an estimate of the time it would take for a pollutant which enters the saturated zone of an aquifer to reach the source of abstraction or discharge point (Zone 1 = 50 days, Zone 2 = 400 days, Zone 3 is the total catchment area). The Environment Agency will use SPZs (alongside other datasets such as the Drinking Water Protected Areas (DrWPAs) and aquifer designations as a screening tool to show:

- Areas where the EA would object in principle to certain potentially polluting activities, or other activities that could damage groundwater,
- Areas where additional controls or restrictions on activities may be needed to protect water intended for human consumption,
- How it prioritises responses to incidents.

The EA have published a position paper outlining its approach to groundwater protection which includes direct discharges to groundwater, discharges of effluents to ground and surface water runoff. This is of relevance to this water cycle study where a development may manage surface water through SuDS. This paper can be found here.

9.5.2 Sewage and Trade Effluent

Discharge of treated sewage of 2m^3 per day or less to ground are called small sewage discharges (SSDs). The majority of SSDs do not require an environmental permit if they comply with certain qualifying conditions. A permit will be required for all SSDs in source protection zone 1 (SPZ1).

For treated sewage effluent discharges, the EA requires the use of shallow infiltration systems, which maximise the attenuation within the drainage blanket and the underlying unsaturated zone. Whilst some sewage effluent discharges may not pose a risk to groundwater quality individually, the cumulative risk of pollution from aggregations of discharges can be significant. Improvement or pre-operational conditions may be imposed before granting an environmental permit. The EA will only agree to developments where the addition of new sewage effluent discharges to ground in an area of existing discharges is unlikely to lead to an unacceptable cumulative impact.

Generally, the Environment Agency will only agree to developments involving release of sewage effluent, trade effluent or other contaminated discharges to ground if it is satisfied that it is not reasonable to make a connection to the public foul sewer. The EA would normally expect to only permit new private discharges where the distance to connect to the nearest public sewer exceeds the number of dwellings multiplied by 30m. So, for example, a development of 100 dwellings would need to be more than 3km from a public sewer. The developer would have to provide evidence of why the proposed development cannot connect to the foul sewer in the planning application. This position will not normally apply to surface water run-off via sustainable drainage systems and discharges from sewage treatment works operated by sewerage undertakers with appropriate treatment and discharge controls.

Deep infiltration systems (such as boreholes and shafts) are not generally accepted by the EA for discharge of sewage effluent as they bypass soil layers and reduce the opportunity for attenuation of pollutants.

Discharges of surface water run-off to ground at sites affected by land contamination, or from sites for the storage of potential pollutants are likely to require an environmental permit. This could include sites such as garage forecourts and coach and lorry parks. These sites would be subject to a risk assessment with acceptable effluent treatment provided.

9.5.3 Discharge of Clean Water

“Clean water” discharges such as runoff from roofs or from roads, may not require a permit. However, they are still a potential source of groundwater pollution if they are not appropriately designed and maintained.

Where infiltration SuDS schemes are proposed to manage surface runoff they should:

- Be suitably designed;
- meet Government non-statutory technical standards for sustainable drainage systems – these should be used in conjunction with the NPPF and PPG; and
- use a SuDS management treatment train

A hydrogeological risk assessment is required where infiltration SuDS is proposed for anything other than clean roof drainage in a SPZ1.

9.5.4 Source Protection Zones in Uttlesford

Source protection zones (SPZs) form a key part of the Environment Agency's approach to controlling the risk to groundwater supplies from potentially polluting activities and accidental releases of pollutants.

The Source Protection Zones (SPZs) that are present in the Uttlesford area are shown in Figure 9.6.

The Environment Agency's Manual for the Production of Groundwater Source Protection Zones, details position statements which provide information about the Environment Agency's approach to managing and protecting groundwater.

Proposed development locations within or close to Source Protection Zones, should be assessed in relation to the relevant Environment Agency position statements.

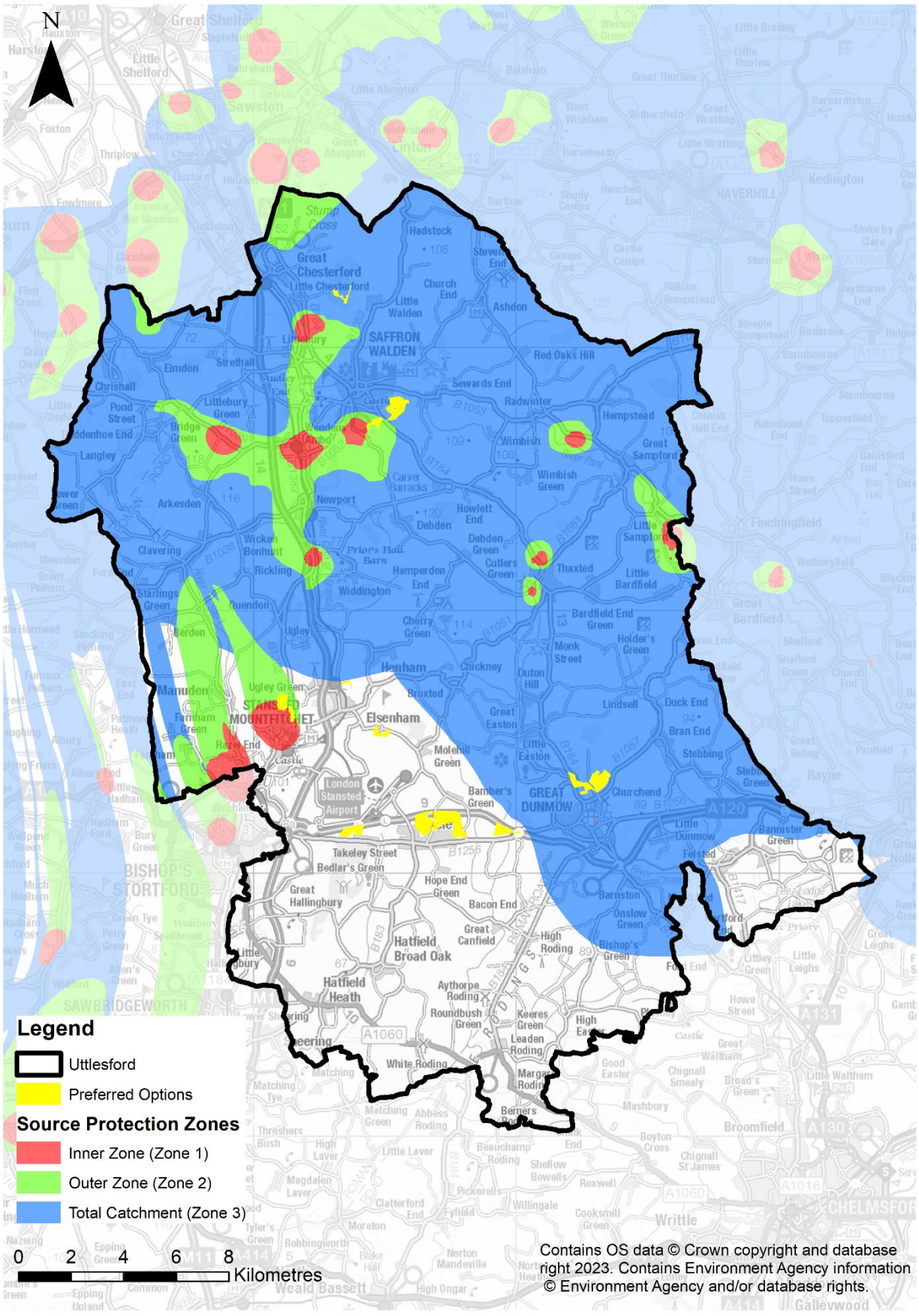


Figure 9.6: Source Protection Zones (SPZs) in Uttlesford

Table 9.3 Preferred allocations within SPZs

Source Protection Zone	Sites	Management advice / EA position statement
Zone 1 – Inner Protection Zone	No allocations identified	G2 – Inside SPZ1 all sewage effluent discharges to ground must have an environmental permit. G4 – Inside SPZ1 the EA will object to any new trade effluent, storm overflow from sewage system or other significantly contaminated discharges to ground where the risk of groundwater pollution is high and cannot be adequately mitigated. G12 – Discharge of clean roof water to ground is acceptable both within and outside SPZ1, provided all roof water down-pipes are sealed against pollutants entering the system from surface runoff, effluent disposal or other forms of discharge. The method of discharge must not create new pathways for pollutants to groundwater or mobilise contaminant already in the ground. No permit is required if these criteria are met. G13 – Where infiltration SuDS are proposed for anything other than clean roof drainage in a SPZ1, a hydrogeological risk assessment should be undertaken, to ensure that the system does not pose an unacceptable risk to the source of supply. SuDS schemes must be suitably designed.
Zone 2 – Outer Protection Zone	- Land east of High Lane and Land at Walpole Meadows, Stansted Mountfitchet (Small area) - Land east of Shire Hill Farm and south of Radwinter Road, Saffron Walden	A hydrogeological risk assessment is not a requirement for SuDS schemes, however they should still be “suitably designed”, for instance following best practice guidance in the CIRIA SuDS Design Manual.
Zone 3 – Total Catchment	- Land east of High Lane and Land at Walpole Meadows, Stansted Mountfitchet	A hydrogeological risk assessment is not a requirement for SuDS schemes, however they should still be “suitably designed”, for instance following best

Source Protection Zone	Sites	Management advice / EA position statement
	- Land off The Broadway and Land east of B1008, Great Dunmow - Land east of Shire Hill Farm and south of Radwinter Road, Saffron Walden - Land at Little Chesterford Research Park	practice guidance in the CIRIA SuDS Design Manual.

9.6 Conclusions and recommendations

- The potential impact of development on a protected sites within and downstream of Uttlesford should be considered in future plan making. This applies to both the impact of abstraction and of additional wastewater discharge as well as the impact of surface water runoff.
- Water quality modelling has predicted a significant deterioration in the river adjacent to four SSSIs within Uttlesford. At two of these sites, deterioration could be prevented by improvements in treatment upstream. At Little Hallingbury Marsh SSSI and Thorley Flood Pound SSSI, deterioration could not be prevented, and the predicted deterioration in BOD remains at 11%. Further investigation may be required on these sites, in consultation with NE to ensure that the status of these sites is not affected (in line with the requirements of the Wildlife and Countryside Act). This is a cumulative impact of growth in both Uttlesford and East Hertfordshire with 90% of the growth coming from East Hertfordshire. Engagement between the two councils is required to understand and mitigate this cumulative impact.
- Four Preferred Allocations are located within groundwater Source Protection Zones. The EA has published management advice for development within these zones. This can be accessed here.
- Development sites within the study area could be sources of diffuse pollution from surface runoff.
- SuDS are required on all development sites. Their design should consider both water quantity and water quality and site-level investigations should be undertaken to define the most appropriate SuDs types for each specific development.
- Opportunities exist for SuDS to offer multiple benefits of flood risk reduction, amenity value and biodiversity.
- Consideration should be given to infiltration and deep borehole SuDS within chalk stream catchments to aid replenishment of the chalk aquifer.

- Uttlesford District Council should be consulted at an early stage of development to ensure that SuDS are implemented and designed in response to site characteristics and policy factors.
- In the wider area, opportunities exist to implement natural flood management techniques to achieve multiple benefits of flood risk, water quality and habitat creation.

Table 9.4 Recommendations for environmental protection

Action	Responsibility	Timescale
Consider the environmental impact of development on protected sites downstream of receiving wastewater treatment works in the Habitats Regulations Assessment	Uttlesford District Council	Local Plan development
The Local Plan should include policies that require all development proposals with the potential to impact on areas with environmental designations to be considered in line with the relevant legislation and where stated, in consultation with Natural England (for national and international designations and priority habitats).	Uttlesford District Council	Local Plan development
The Local Plan should include policies that require development sites to adopt SuDS to manage water quality of surface runoff.	Uttlesford District Council	Local Plan development
In partnership, identify opportunities for incorporating SuDS into open spaces and green infrastructure, to deliver strategic flood risk management and meet WFD water quality targets.	Uttlesford District Council, Developers, Anglian Water, Thames Water, Environment Agency.	Ongoing
Developers should include the design of SuDS at an early stage to maximise	Developers	Ongoing

Action	Responsibility	Timescale
the benefits of the scheme.		
Opportunities for Natural Flood Management that include schemes aimed at reducing / managing runoff should be considered to reduce nutrient and sediment pollution within Uttlesford.	Uttlesford District Council, Environment Agency, Natural England.	Ongoing
Have regard to the Chalk Stream recommendations from the Chalk Stream Evidence Base when preparing Local Plan policies.	Uttlesford District Council	Local Plan development

10 Summary and overall conclusions

10.1 Conclusions

Table 10.1 Summary of conclusions

Assessment	Conclusion
Water resources	• Water resources in the UK are under considerable pressure. The Environment Agency have stated that "the scale of the challenge we face increases with time and, by 2050, we are looking at a shortfall of nearly 5 billion litres of water per day between the sustainable water supplied available and the expected demand." • The National Water Resources Framework sets the objective to reduce the average per capita consumption in the UK to 110l/p/d by 2050. This is now part of the Environmental Improvement Plan and water companies WRMPs. Within Defra's Plan for Water is the commitment to review Building Regulations and a target of 100l/p/d in water stress areas is suggested. • The Future Homes Hub, who are supporting Defra to produce a roadmap to greater water efficiency propose a stages reduction in PCC, with a target of 100l/p/d in water stressed areas in place from 2025, and a reduced target of 90l/p/d in place by 2030 (depending on market conditions and customer acceptance). • The Catchment Based Approach (CaBA) Chalk Stream Strategy recommends a target of 90l/p/d in chalk stream catchments. The Government's EIP states that the Chalk Stream Strategy should be supported. • The analysis contained in the WCS shows that a 0.18Ml/d reduction in water demand (approximately 4%) would be achieved if the target of 100l/p/d were adopted immediately, accompanied by an equivalent non-household target. A greater saving could be made if some of the dwellings already in the planning system could also be built to a higher standard. If the target of 90l/p/d were adopted, the reduction in water demand is estimated to be 0.32Ml/d (7%). • Affinity Water's rdWRMP outlines how the challenges of an increasing population and climate change will be met alongside their environmental obligations. Within the Stort WRZ this includes reductions in abstraction from chalk stream catchments. In order to achieve the long-term goal of

Assessment	Conclusion
	reducing PCC to 110l/p/d, a significant demand management programme is planned. This includes Government backed activities that are outside the control of Affinity Water. A tighter water efficiency target for new build housing has not been included in Affinity Water's plan, however, any reduction in PCC would provide additional headroom in the WRMP and help manage uncertainty in their demand management plan. • This study recommends that as a minimum the proposed new Building Regulations target of 100l/p/d outlined in Defra's Plan for Water be adopted across Uttlesford. This should be achieved using a fittings-based approach. • This should be supported by the requirement for non-household development to achieve three credits in the assessment category WAT01 of the BREEAM UK New Construction Standard. • The Local Plan should allow for a future reduction in the Building Regulations target to 90l/p/d in 2030. • Developers should be encouraged to achieve 90l/p/d or lower, especially on larger strategic sites aligning with the Chalk Stream Strategy.
Water supply	• It is likely that upgrades to the water supply network will be required in order to serve the preferred allocations without a detriment to existing customers. • Modelling by AfW may be required to define the extent of these upgrades. • Early engagement between developers. UDC and AfW is needed to ensure that these upgrades are in place prior to occupation of the developments.
Wastewater network	• AW and TW provided an assessment of the preferred allocations. This was split into foul network and surface water network. • In the foul network assessment, four sites were given a "green" assessment confirming there was sufficient capacity within the network to incorporate these sites and no further infrastructure was likely to be required. Two sites (Land east of Shire Hill Farm and south of Radwinter Road, and Land south of A120/North of Stortford Road) were given an "amber" assessment, reflecting the need for some additional infrastructure. The Land at Warrens Farm and Land at Warish Hall Farm was given a "red" assessment by Thames Water along with the comment that the "scale of development is

Assessment	Conclusion
	likely to require upgrades to the wastewater network". No particular constraints were identified by Thames Water, who have not responded to requests for clarification. One further site was not assessed by Thames Water (Gaunts End, Elsenham) as it is not in an area currently served by a public sewer. It is expected that a connect would be made to Bishops Stortford WwTW. • In the surface water assessment, two sites were given a "green" assessment confirming there was sufficient capacity within the network to incorporate these sites and no further infrastructure was likely to be required. Four sites were given an "amber" assessment reflecting the limited surface water network in some areas, and some local flood risk. A further three sites were not assessed as two were in an area without public sewerage (one of these sites has private sewerage). No reason was given for the third site. • Early engagement is required with Anglian Water and Thames Water to ensure that the required infrastructure is in place prior to occupation, and where a wastewater solution defined where one does not currently exist. • The Environment Act now requires water companies to report and monitor storm overflows as well as reduce the harm caused to the rivers they discharge to. There are 28 storm overflows in Uttlesford, 18 on the network, and 10 at WwTWs. • In comparison to some urban areas or large cities, Uttlesford has relatively few storm overflows on the sewer network. • The SOAF set a threshold of 60 operations in a year (based on 1 years' data, 50 if based on 2 years data, and 40 if based on 3 years), above which a storm overflow should be investigated. One of the storm overflows (White Roding) was operating above this threshold between 2021 and 2023. • The Storm Overflow Reduction Plan which was published in 2022 sets an objective that "storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050". Six of the 18 monitored storm overflows are operating on average above 10 times per year so may require action to meet the long-term target. • There are opportunities through the planning system to ease pressure on the wastewater network by separating foul and storm flow in existing combined systems, and not allowing new surface water connections. Surface water can also be

Assessment	Conclusion
	better managed by retrofitting SuDS in existing residential areas, and in new development, ensuring SuDS are incorporated into designs at the master planning stage to maximise the potential benefits.
Wastewater treatment	• A capacity assessment was undertaken by JBA comparing the future flow from each WwTW (the current actual flow and the forecast additional flow from growth), with the permit limit. Eight of the WwTWs (listed in Table 7.1) in the study area are expected to be close to or exceeding their permit during the Local Plan period. An increase in the permit limit, and / or upgrades to treatment capacity may be required at these WwTWs in order to accommodate the planned growth. • It is important that when planning upgrades at WwTW that the full quantum of growth, including from neighbouring LPAs is taken into account. • Population estimates within Anglian Water's Drainage and Wastewater Management Plan suggest that they may have underestimated growth within the catchments of Great Dunmow and Saffron Walden WwTWs. Equivalent data is not published within Thames Water's DWMP, so it was not possible to assess this. • There are a number of poorly performing storm tank overflows at WwTWs in Uttlesford. Growth within these catchments could result in an increase in the operations of these overflows contributing to a worsening of water quality in the area. • Action should be taken by the water companies to address these overflows prior to an increase in wastewater demand being generated by new development.
Water quality	• The modelling indicates the growth during the Local Plan period could result in a significant deterioration (10% or over or deterioration in class) in water quality at five WwTWs (Takeley, Great Easton, Great Dunmow, Debden and Great Chesterford). In call cases, this deterioration could be prevented by improvements in treatment. Some tightening of permit limits may already be planned in AMP8 but details have not yet been published. • Growth alone will not prevent good ecological status being prevented in the future should improvements in upstream water quality be made with the exception of Takeley, where environmental capacity could be a constraint to growth.

Assessment	Conclusion
	• An additional modelling scenario was run where the additional demand from growth expected to be served by Takeley WwTW was applied to Bishops Stortford rather than Takeley. This represents either the new developments being connected to Bishops Stortford, or an equivalent flow being diverted into Bishops Stortford via an adjustment to the sewer network where the two catchments are adjacent. • The feasibility of connecting new developments to Bishops Stortford WwTW or diverting flow has not been assessed and should be discussed with Thames Water. • Transfer of additional flow from commitments and allocations around Takeley and Great Dunmow to Bishops Stortford may be possible providing agreement from Thames Water that there is sufficient capacity at the WwTW to receive additional flow. • Where a WwTW is shared with a neighbouring authority, coordination of growth plans in collaboration with Thames Water and Anglian Water is essential to ensure that infrastructure is in place prior to development to prevent a breach of the environmental permit

Assessment	Conclusion
Environmental impact	• The potential impact of development on a protected sites within and downstream of Uttlesford should be considered in future plan making. This applies to both the impact of abstraction and of additional wastewater discharge as well as the impact of surface water runoff. • Water quality modelling has predicted a significant deterioration in the river adjacent to four SSSIs within Uttlesford. At two of these sites, deterioration could be prevented by improvements in treatment upstream. At Little Hallingbury Marsh SSSI and Thorley Flood Pound SSSI, deterioration could not be prevented, and the predicted deterioration in BOD remains at 11%. • Further investigation may be required on these sites, in consultation with NE to ensure that the status of these sites is not affected (in line with the requirements of the Wildlife and Countryside Act). This is a cumulative impact of growth in both Uttlesford and East Hertfordshire with 90% of the growth coming from East Hertfordshire. Engagement between the two councils is required to understand and mitigate this cumulative impact. • Four Preferred Allocations are located within groundwater Source Protection Zones. The EA has published management advice for development within these zones. • Development sites within the study area could be sources of diffuse pollution from surface runoff. • SuDS are required on all development sites. Their design should consider both water quantity and water quality and site-level investigations should be undertaken to define the most appropriate SuDs types for each specific development. • Opportunities exist for SuDS to offer multiple benefits of flood risk reduction, amenity value and biodiversity. • Consideration should be given to infiltration and deep borehole SuDS within chalk stream catchments to aid replenishment of the chalk aquifer. • Uttlesford District Council should be consulted at an early stage of development to ensure that SuDS are implemented and designed in response to site characteristics and policy factors. • In the wider area, opportunities exist to implement natural flood management techniques to achieve multiple benefits of flood risk, water quality and habitat creation.

10.1.1 Recommendations

Table 10.2 Summary of recommendations

Aspect	Action	Responsibility	Timescale
Water resources	Continue to regularly review forecast and actual household growth across the supply region through WRMP Annual Update reports, and where significant change is predicted, engage with Local Planning Authorities.	Affinity Water	Ongoing
Water resources	Provide yearly updates of projected housing growth to water companies to inform WRMP updates.	Uttlesford District Council	Ongoing
Water resources	Use planning policy to require a water efficiency standard of 100l/p/d to be achieved using the fittings-based approach. The policy should allow for a future reduction in the water efficiency target.	Uttlesford District Council	In Local Plan
Water resources	Developers should be encouraged to achieve 90l/p/d or lower, especially on larger strategic sites aligning with the Chalk Stream Strategy	Uttlesford District Council	In Local Plan
Water resources	This should be supported by the requirement for non-household development to achieve three credits in the assessment category WAT01 of the BREEAM UK New Construction Standard.	Uttlesford District Council	In Local Plan
Water resources	Larger residential developments and commercial developments should consider incorporating greywater recycling and/or rainwater harvesting into development at the master planning stage in order to reduce water demand.	Uttlesford District Council	Ongoing
Water resources	Affinity Water should consider modifying their water efficiency incentive scheme to include an incentive for development	Affinity Water	In next iteration of the New Connection Charging

Aspect	Action	Responsibility	Timescale
	achieving 90l/p/d or less, or a tiered approach to encourage water efficient design.		Arrangements.
Water supply	Undertake network modelling where appropriate to ensure adequate provision of water supply to new sites without detriment to existing customers and feedback to UDC on implications for phasing of sites.	Affinity Water	Early in Local Plan period
Water supply	Early engagement is required with AfW to ensure infrastructure is in place prior to occupation.	Developers and UDC	Early in Local Plan period
Water supply	UDC should obtain infrastructure maps from AfW to ensure existing water supply infrastructure is taken into account in site layout.	UDC and Developers	At master planning stage
Wastewater network	Early engagement between UDC and AW/TW is required to ensure that where strategic infrastructure is required, it can be planned in by AW/TW, and will not lead to any increase in discharges from sewer overflows.	UDC, Developers, AW/TW	Early in the LP process
Wastewater network	Take into account wastewater infrastructure constraints in phasing development in partnership with the sewerage undertaker	UDC, AW/TW	Ongoing
Wastewater network	Developers will be expected to work with the sewerage undertaker closely and early in the planning promotion process to develop an Outline Drainage Strategy for sites. The Outline Drainage strategy should demonstrate the wastewater assets required, their locations including points of connection to the public foul sewerage, whether the site drainage will be adopted by	UDC, AW/TW and developers	Ongoing

Aspect	Action	Responsibility	Timescale
	the water company and if any sewer requisitions will be required.		
Wastewater network	Drainage strategy for "Land off the Broadway and Land east of B1008, Great Dunmow" site should demonstrate that the foul network will not be exposed to flooding from the River Chelmer.	Developer	During planning process
Wastewater network	Developers will be expected to demonstrate to the Lead Local Flood Authority (LLFA) that surface water from a site will be disposed using a sustainable drainage system (SuDS) with connection to surface water sewers seen as the last option. New connections for surface water to foul sewers will be resisted by the LLFA.	LLFA and developers	Ongoing
Wastewater network	A wastewater solution for the "Land at Gaunts End, Elsenham" is required. It is recommended that UDC / Developers engage with Thames Water early in LP period to ensure provision of any additional infrastructure can be aligned with development of this site.	UDC, Developers, TW	Early in LP period
Wastewater treatment	Early engagement with Anglian Water and Thames Water is required to ensure that provision of WwTW capacity is aligned with delivery of development.	UDC	Ongoing
Wastewater treatment	AW should ensure that the growth forecasts used for planning upgrades at Great Dunmow and Saffron Walden WwTW take into account a sufficient level of growth.	AW	Ongoing
Wastewater treatment	Provide Annual Monitoring Reports to Anglian Water and	UDC	Ongoing

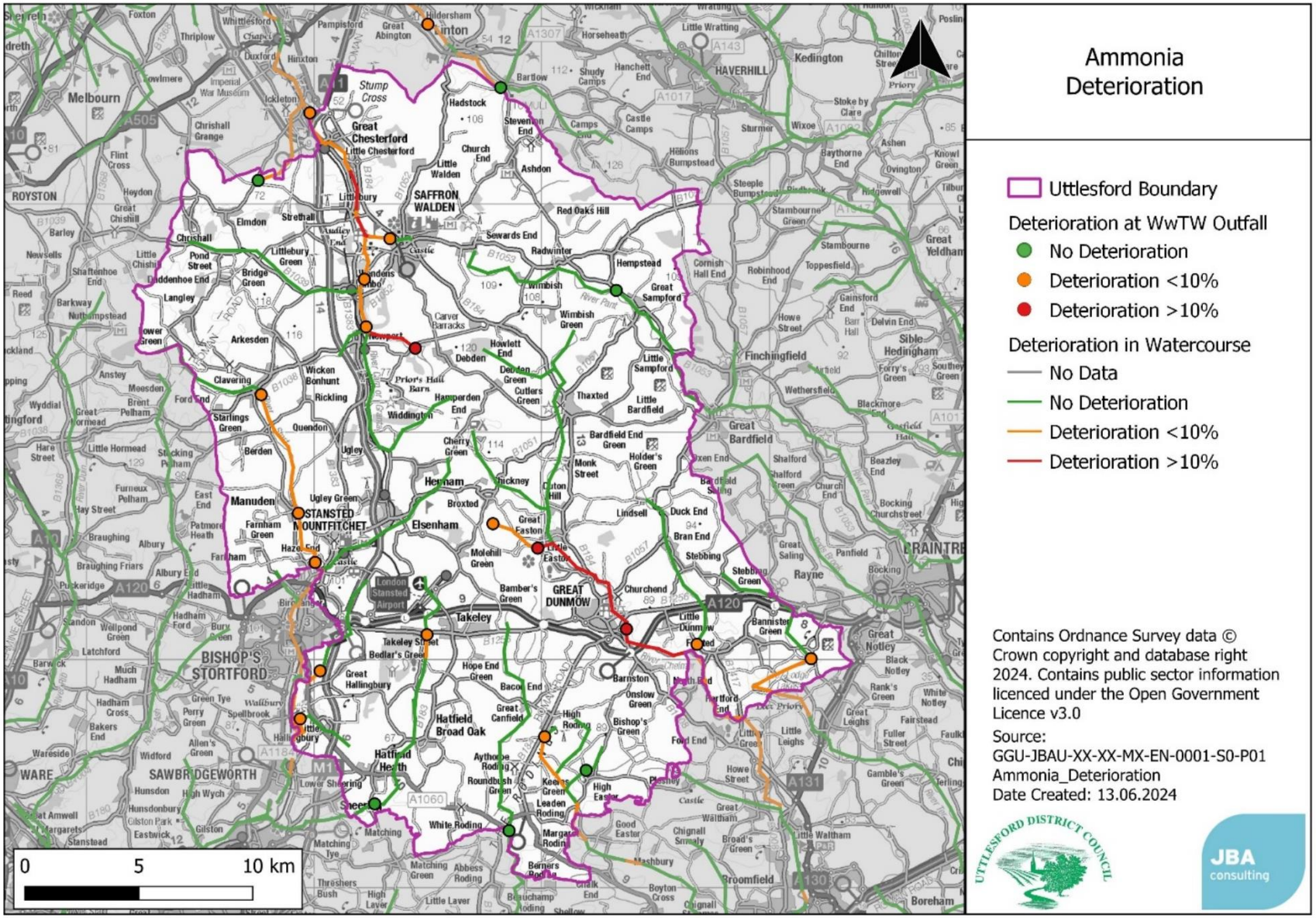
Aspect	Action	Responsibility	Timescale
	Thames Water detailing projected housing growth.		
Wastewater treatment	Anglian Water and Thames Water to assess growth demands as part of their wastewater asset planning activities and feedback to the Council if concerns arise.	UDC	Ongoing
Water quality	Provide annual monitoring reports to TW and AW detailing projected housing growth in the Local Authority	UDC	Ongoing
Water quality	Take into account the full volume of growth (From UDC and neighbouring authorities) within the catchment	TW and AW	Ongoing
Water quality	Identify the feasibility of new development expected to connect to Takeley WwTW being connected to Bishops Stortford, or an equivalent flow diverted.	TW and the site promoters	Early in Local Plan period
Environmental impact	Consider the environmental impact of development on protected sites downstream of receiving wastewater treatment works in the Habitats Regulations Assessment	Uttlesford District Council	Local Plan development
Environmental impact	The Local Plan should include policies that require all development proposals with the potential to impact on areas with environmental designations to be considered in line with the relevant legislation and where stated, in consultation with Natural England (for national and international designations and priority habitats).	Uttlesford District Council	Local Plan development

Aspect	Action	Responsibility	Timescale
Environmental impact	The Local Plan should include policies that require development sites to adopt SuDS to manage water quality of surface runoff.	Uttlesford District Council	Local Plan development
Environmental impact	In partnership, identify opportunities for incorporating SuDS into open spaces and green infrastructure, to deliver strategic flood risk management and meet WFD water quality targets.	Uttlesford District Council, Developers, Anglian Water, Thames Water, Environment Agency.	Ongoing
Environmental impact	Developers should include the design of SuDS at an early stage to maximise the benefits of the scheme.	Developers	Ongoing
Environmental impact	Opportunities for Natural Flood Management that include schemes aimed at reducing / managing runoff should be considered to reduce nutrient and sediment pollution within Uttlesford.	Uttlesford District Council, Environment Agency, Natural England.	Ongoing
Environmental impact	Have regard to the Chalk Stream recommendations from the Chalk Stream Evidence Base when preparing Local Plan policies.	Uttlesford District Council	Local Plan development

A Appendix A - Water quality mapping

A.1 Future scenario

The set of maps below show the modelled results if wastewater discharges increased by the volume predicted during the Local Plan period. They show a result at the point of mixing (i.e., where the WwTW discharges) and the results downstream in the river. These are colour coded based on whether deterioration is greater (red) or less than (amber) 10%. Areas where no deterioration is predicted are coloured green.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Deterioration
Uttlesford Boundary
Deterioration at WwTW Outfall
No Deterioration
Deterioration <10%
Deterioration >10%
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
Contains Ordnance Survey data © Crown copyright and database right 2024. Contains public sector information licenced under the Open Government Licence v3.0
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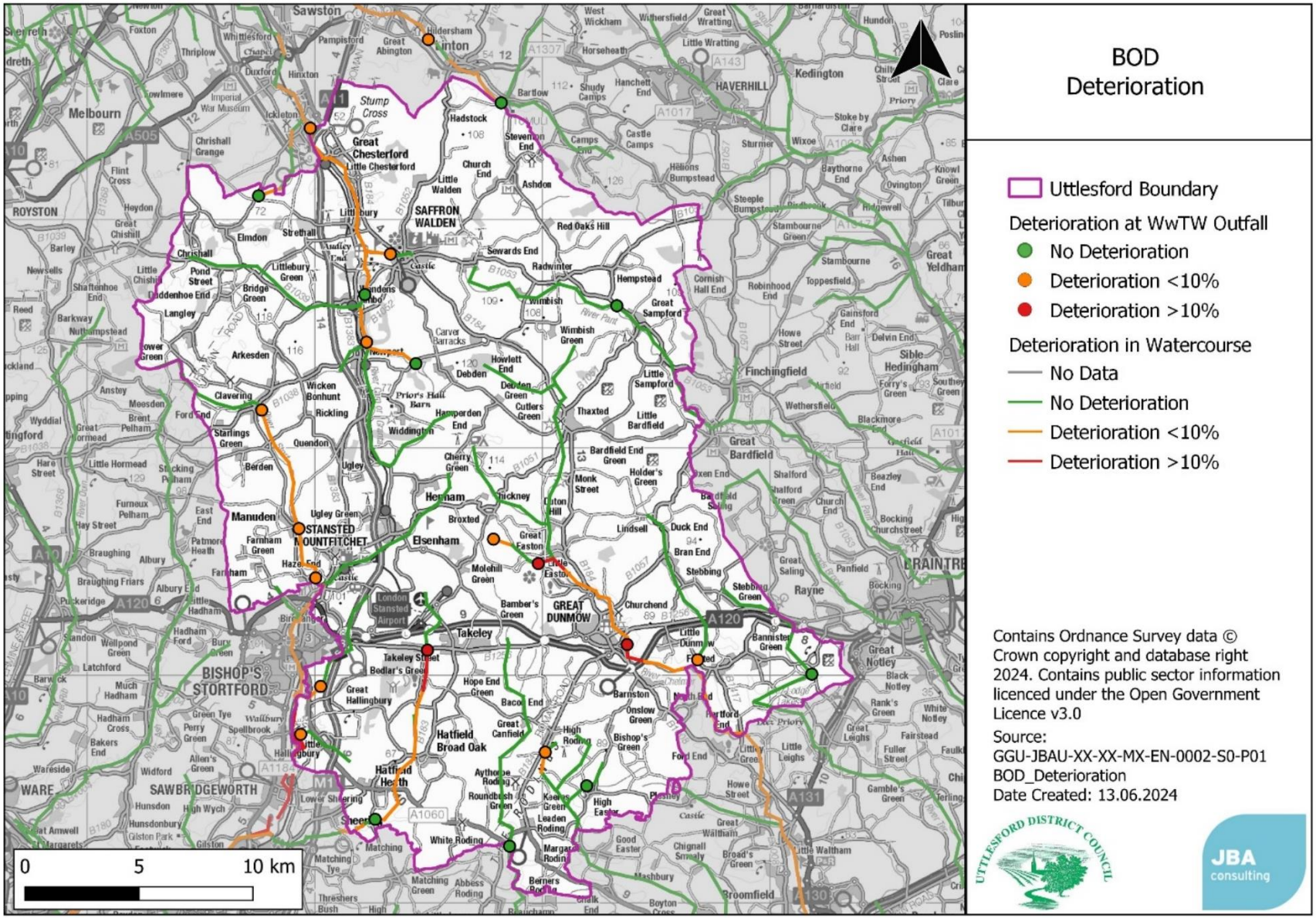
5
10 km
UTTLESFORD DISTRICT COUNCIL
JBA consulting


BOD
Deterioration
Uttlesford Boundary
Deterioration at WwTW Outfall
No Deterioration
Deterioration <10%
Deterioration >10%
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
Contains Ordnance Survey data © Crown copyright and database right 2024. Contains public sector information licenced under the Open Government Licence v3.0
Source:
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Date Created: 13.06.2024
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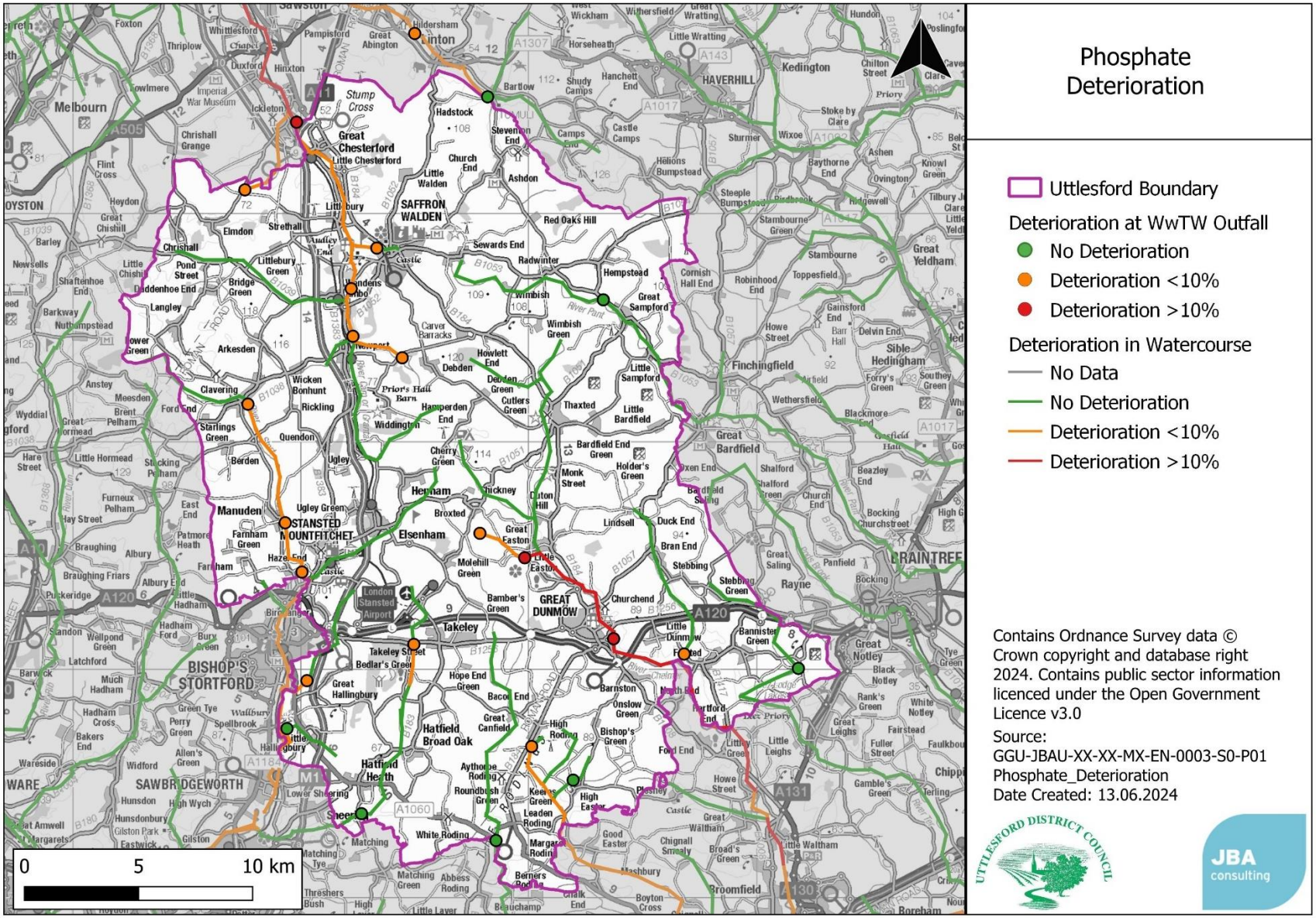
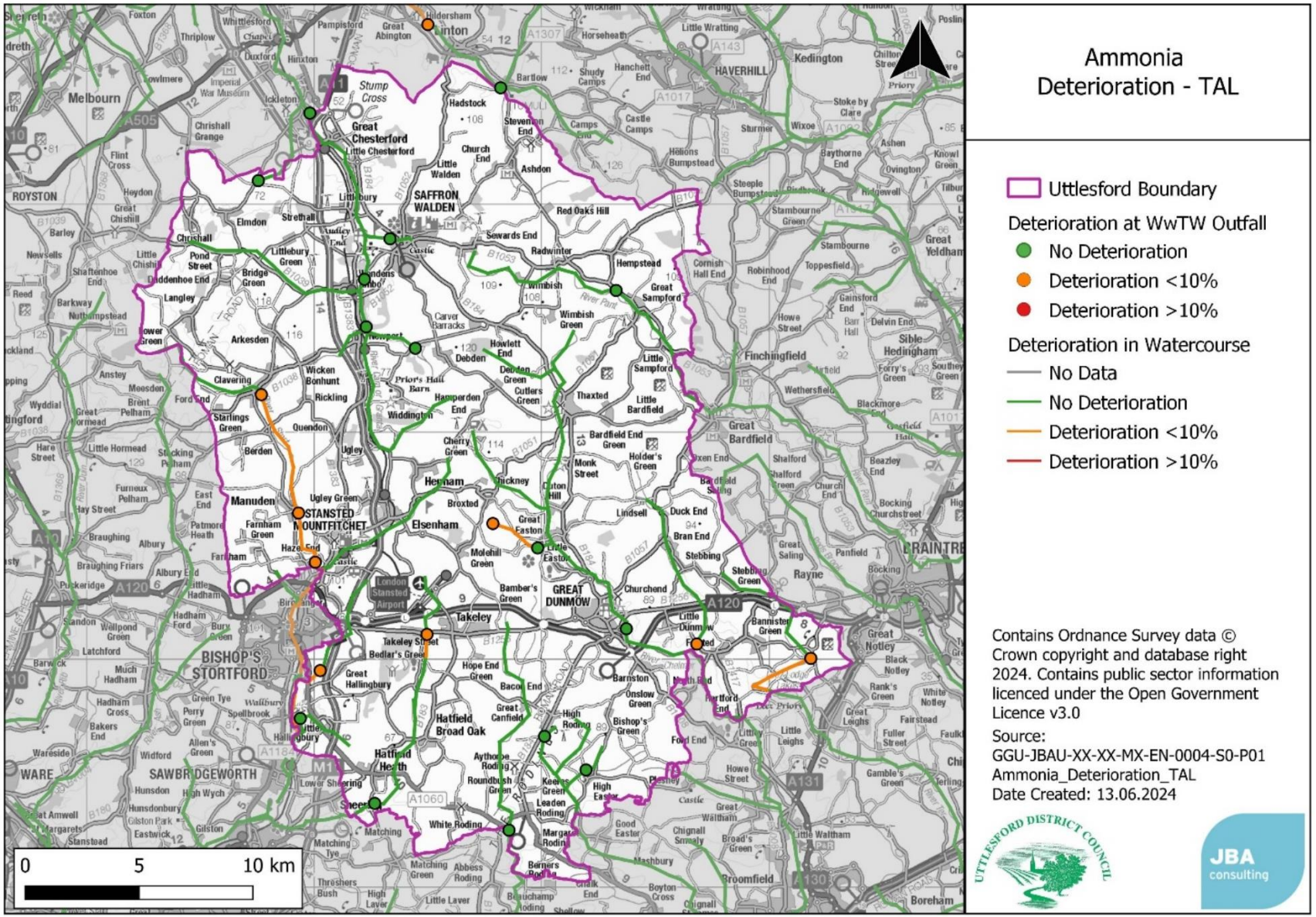

Phosphate Deterioration
Uttlesford Boundary
Deterioration at WwTW Outfall
No Deterioration
Deterioration <10%
Deterioration >10%
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
0
5
10 km
Contains Ordnance Survey data © Crown copyright and database right 2024. Contains public sector information licenced under the Open Government Licence v3.0
Source: GGU-JBAU-XX-XX-MX-EN-0003-S0-P01 Phosphate_Deterioration
Date Created: 13.06.2024
UTTLESFORD DISTRICT COUNCIL
JBA consulting

A.2 TAL scenario

This second set of maps show the modelled results in the TAL scenario, where each WwTW has been upgraded to the technically achievable limit (TAL). This shows areas where deterioration could not be prevented. In each case this is less than 10%.


Ammonia
Deterioration - TAL
Uttlesford Boundary
Deterioration at WwTW Outfall
No Deterioration
Deterioration <10%
Deterioration >10%
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
0
5
10 km
Contains Ordnance Survey data © Crown copyright and database right 2024. Contains public sector information licenced under the Open Government Licence v3.0
Source:
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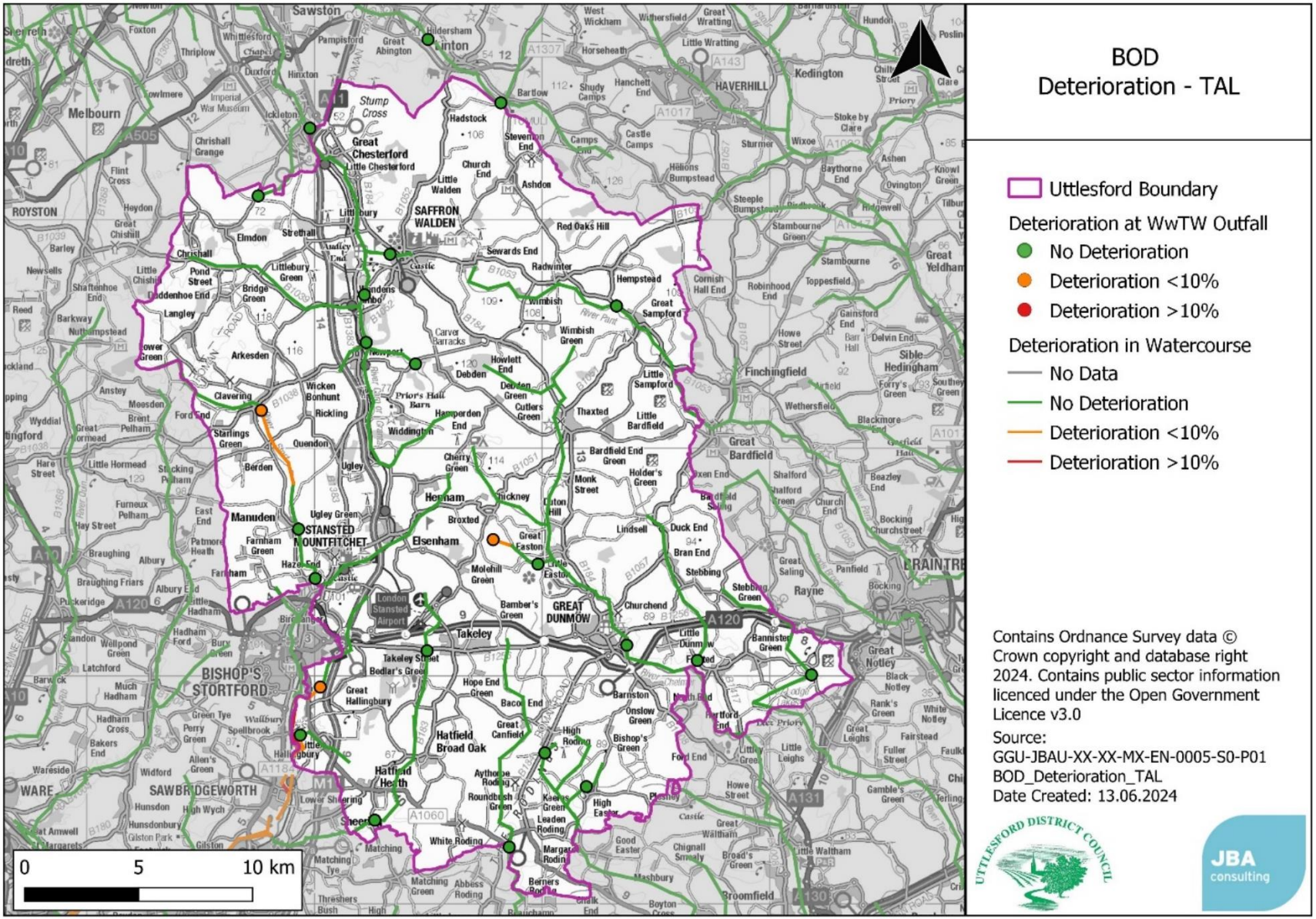
UTTLESFORD DISTRICT COUNCIL
JBA consulting


BOD
Deterioration - TAL
Uttlesford Boundary
Deterioration at WwTW Outfall
No Deterioration
Deterioration <10%
Deterioration >10%
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
Contains Ordnance Survey data © Crown copyright and database right 2024. Contains public sector information licenced under the Open Government Licence v3.0
Source:
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BOD_Deterioration_TAL
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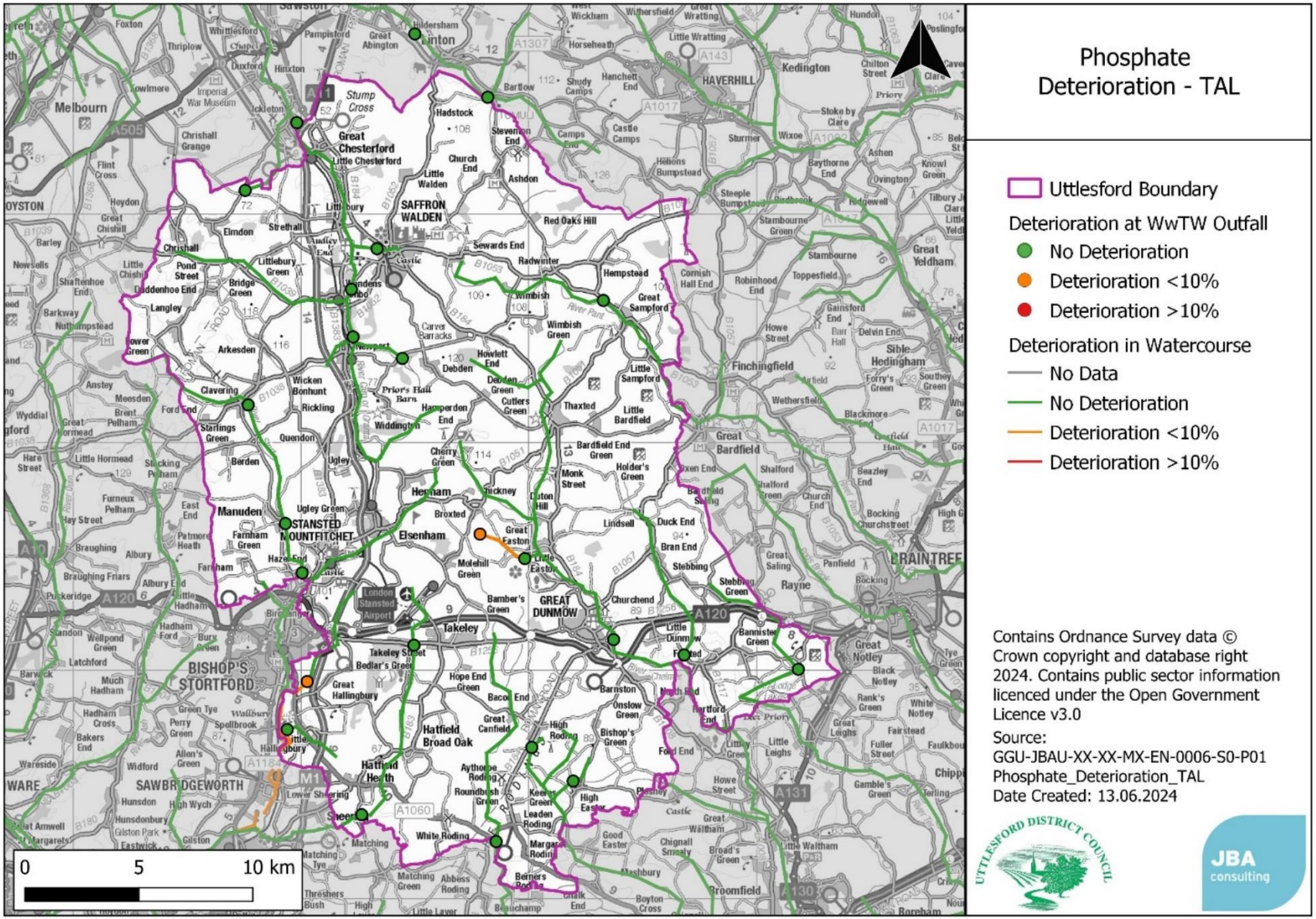
0
5
10 km


Phosphate
Deterioration - TAL
Uttlesford Boundary
Deterioration at WwTW Outfall
No Deterioration
Deterioration <10%
Deterioration >10%
Deterioration in Watercourse
No Data
No Deterioration
Deterioration <10%
Deterioration >10%
Contains Ordnance Survey data © Crown copyright and database right 2024. Contains public sector information licenced under the Open Government Licence v3.0
Source:
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Date Created: 13.06.2024
0
5
10 km

B Appendix B - Water Quality results

B.1 Ammonia

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
ASHDON STW	0.0773	0.0773	0%	3%	-60%	HIGH	HIGH	HIGH
Bishops Stortford STW	0.266	0.278	5%	28%	5%	HIGH	HIGH	HIGH
BROXTED STW	1.3257	1.3831	4%	138%	4%	POOR	POOR	POOR
Clavering STW	0.251	0.259	3%	26%	3%	HIGH	HIGH	HIGH
DEBDEN STW	0.174	0.199	14%	4%	-77%	HIGH	HIGH	HIGH
ELMDON STW	0.223	0.224	0%	17%	-24%	HIGH	HIGH	HIGH
FELSTED(LR CHELMER)	0.098792	0.10226	4%	10%	4%	HIGH	HIGH	HIGH
GREAT CHESTERFORD STW	0.115	0.12	4%	0.107	-0.06957	HIGH	HIGH	HIGH
GREAT DUNMOW STW	0.062665	0.075113	20%	6%	-4%	HIGH	HIGH	HIGH

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
GREAT EASTON(ESSEX)	1.4562	1.7912	23%	53%	-63%	POOR	POOR	GOOD
GREAT SAMPFORD STW	0.16169	0.1619	0%	10%	-38%	HIGH	HIGH	HIGH
Hatfield Heath STW	0.208	0.205	-1%	21%	-1%	HIGH	HIGH	HIGH
HIGH EASTER STW	1.9959	1.9991	0%	0.30741	-0.84598	POOR	POOR	GOOD
HIGH RODING STW	1.1032	1.14	3%	0.26668	-0.75827	POOR	POOR	HIGH
Leaden Roding STW	0.126	0.126	0%	12%	-5%	HIGH	HIGH	HIGH
LINTON STW	0.19	0.2	5%	20%	4%	HIGH	HIGH	HIGH
Little Hallingbury STW	0.441	0.445	1%	25%	-43%	GOOD	GOOD	HIGH
Manuden STW	0.139	0.142	2%	14%	2%	HIGH	HIGH	HIGH
NEWPORT STW	0.254	0.27	6%	15%	-42%	HIGH	HIGH	HIGH

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
SAFFRON WALDEN STW	0.848	0.904	7%	55%	-35%	MODERATE	MODERATE	GOOD
Stansted Mountfitchet STW	0.236	0.252	7%	25%	7%	HIGH	HIGH	HIGH
Takeley STW	0.156	0.159	2%	16%	2%	HIGH	HIGH	HIGH
Wendens Ambo	0.157	0.164	4%	10%	-38%	HIGH	HIGH	HIGH
WILLOWS GREEN STW	0.1338	0.13658	2%	14%	2%	HIGH	HIGH	HIGH

B.2 BOD

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
ASHDON STW	2.46	2.46	0%	2.42	-2%	HIGH	HIGH	HIGH
Bishops Stortford STW	4.41	4.63	5%	4.63	5%	GOOD	GOOD	GOOD
BROXTED STW	6.0217	6.1414	2%	6.14	2%	MODERATE	MODERATE	MODERATE

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
Clavering STW	1.81	1.84	2%	1.85	2%	HIGH	HIGH	HIGH
DEBDEN STW	2.76	2.77	0%	2.76	0%	HIGH	HIGH	HIGH
ELMDON STW	9.48	9.48	0%	9.39	-1%	BAD	BAD	BAD
FELSTED(LR CHELMER)	1.4764	1.537	4%	1.11	-25%	HIGH	HIGH	HIGH
GREAT CHESTERFORD STW	2.38	2.41	1%	2.12	-11%	HIGH	HIGH	HIGH
GREAT DUNMOW STW	2.2169	2.4695	11%	2.09	-6%	HIGH	HIGH	HIGH
GREAT EASTON(ESSEX)	5.7741	6.5035	13%	3.76	-35%	MODERATE	POOR	HIGH
GREAT SAMPFORD STW	3.1438	3.1466	0%	2.75	-12%	HIGH	HIGH	HIGH
Hatfield Heath STW	1.84	1.83	-1%	1.49	-19%	HIGH	HIGH	HIGH
HIGH EASTER STW	4.843	4.8482	0%	2.93	-40%	GOOD	GOOD	HIGH

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
HIGH RODING STW	3.4263	3.4667	1%	2.97	-13%	HIGH	HIGH	HIGH
Leaden Roding STW	1.31	1.31	0%	1.26	-4%	HIGH	HIGH	HIGH
LINTON STW	2.49	2.52	1%	2.32	-7%	HIGH	HIGH	HIGH
Little Hallingbury STW	2.73	2.75	1%	1.65	-40%	HIGH	HIGH	HIGH
Manuden STW	1.3	1.33	2%	1.29	-1%	HIGH	HIGH	HIGH
NEWPORT STW	2.54	2.55	0%	2.44	-4%	HIGH	HIGH	HIGH
SAFFRON WALDEN STW	5.63	5.9	5%	3.67	-35%	MODERATE	MODERATE	HIGH
Stansted Mountfitchet STW	2.76	3	9%	2.51	-9%	HIGH	HIGH	HIGH
Takeley STW	2.39	2.74	15%	2.05	-14%	HIGH	HIGH	HIGH
Wendens Ambo	2.39	2.39	0%	2.28	-5%	HIGH	HIGH	HIGH
WILLOWS GREEN STW	2.6845	2.685	0%	2.69	0%	HIGH	HIGH	HIGH

B.3 Phosphate

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
ASHDON STW	0.181	0.181	0%	0.0147	-92%	MODERATE	MODERATE	HIGH
Bishops Stortford STW	0.226	0.233	3%	0.233	3%	POOR	POOR	POOR
BROXTED STW	0.54855	0.59999	9%	0.59999	9%	POOR	POOR	POOR
Clavering STW	0.25	0.256	2%	0.141	-44%	POOR	POOR	MODERATE
DEBDEN STW	0.457	0.47	3%	0.37	-19%	POOR	POOR	POOR
ELMDON STW	0.354	0.356	1%	0.0307	-91%	POOR	POOR	HIGH
FELSTED(LR CHELMER)	0.60813	0.61282	1%	0.50112	-18%	POOR	POOR	POOR
GREAT CHESTERFORD STW	0.427	0.549	29%	0.158	-63%	POOR	POOR	MODERATE
GREAT DUNMOW STW	0.59763	0.70724	18%	0.2563	-57%	POOR	POOR	POOR

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
GREAT EASTON(ESSEX)	2.0047	2.417	21%	0.38759	-81%	BAD	BAD	POOR
GREAT SAMPFORD STW	1.4246	1.4248	0%	1.0251	-28%	BAD	BAD	POOR
Hatfield Heath STW	0.37	0.37	0%	0.26	-30%	POOR	POOR	POOR
HIGH EASTER STW	1.0414	1.0432	0%	0.078956	-92%	POOR	POOR	GOOD
HIGH RODING STW	0.74958	0.78526	5%	0.077701	-90%	POOR	POOR	GOOD
Leaden Roding STW	0.684	0.686	0%	0.246	-64%	POOR	POOR	POOR
LINTON STW	0.235	0.239	2%	0.0552	-77%	MODERATE	MODERATE	GOOD
Little Hallingbury STW	0.146	0.146	0%	0.146	0%	MODERATE	MODERATE	MODERATE
Manuden STW	0.149	0.152	2%	0.107	-28%	MODERATE	MODERATE	MODERATE

WwTW (SIMCAT name)	Baseline concentration (mg/l)	Future concentration (mg/l)	Percentage deterioration (%)	TAL concentration (mg/l)	Percentage deterioration (%)	Baseline Class	Future Class	TAL Class
NEWPORT STW	0.267	0.272	2%	0.172	-36%	POOR	POOR	MODERATE
SAFFRON WALDEN STW	0.587	0.622	6%	0.207	-65%	POOR	POOR	MODERATE
Stansted Mountfitchet STW	0.172	0.179	4%	0.162	-6%	MODERATE	MODERATE	MODERATE
Takeley STW	0.467	0.476	2%	0.334	-28%	POOR	POOR	POOR
Wendens Ambo	0.283	0.287	1%	0.217	-23%	POOR	POOR	MODERATE
WILLOWS GREEN STW	0.54602	0.54801	0%	0.54801	0%	POOR	POOR	POOR

C Appendix C - Groundwater Dependent Terrestrial Ecosystems

SSSI Code	GWTDE Name	WB Name	SWMI for flow
1002236	Snailwell Meadows (SSSI)	Cam and Ely Ouse Chalk	No
1001079	Fowlmere Watercress Beds (SSSI)	Cam and Ely Ouse Chalk	No
1002144	Wretham Park Meres (SSSI)	Cam and Ely Ouse Chalk	No
1002160	Crouch & Roach Estuaries (SSSI)	Essex Gravels	No
1003726	Redgrave & Lopham Fens (SSSI)	Cam and Ely Ouse Chalk	No
1004291	Waltham Abbey (SSSI)	North Mymms Tertiaries	Yes
1004467	Lakenheath Warren (SSSI)	Cam and Ely Ouse Chalk	No
1002960	Houghton Regis Marl Lakes (SSSI)	Upper Bedford Ouse Chalk	Yes
1003307	Cornard Mere, Little Cornard (SSSI)	North Essex Chalk	Yes
1002450	Foulden Common (SSSI)	Cam and Ely Ouse Chalk	No
1001329	L-moor, Shepreth (SSSI)	Cam and Ely Ouse Chalk	No
1002433	Thriplow Peat Holes (SSSI)	Cam and Ely Ouse Chalk	No
1002984	Foulness (SSSI)	Essex Gravels	No
1000696	Middle Harling Fen (SSSI)	Cam and Ely Ouse Chalk	No
1000167	Brackland Rough (SSSI)	Cam and Ely Ouse Chalk	No
1000192	Thetford Golf Course & Marsh (SSSI)	Cam and Ely Ouse Chalk	No
1005772	The Gardens, Great Ashfield (SSSI)	Cam and Ely Ouse Chalk	No

SSSI Code	GWTDE Name	WB Name	SWMI for flow
1001093	Fulbourn Fen (SSSI)	Cam and Ely Ouse Chalk	No
1000575	Sawbridgeworth Marsh (SSSI)	North Mymms Tertiaries	Yes
1000899	Pashford Poors Fen, Lakenheath (SSSI)	Cam and Ely Ouse Chalk	No
1000547	Barnhamcross Common (SSSI)	Cam and Ely Ouse Chalk	No
1002282	Thundersley Great Common (SSSI)	Essex Gravels	No
1000583	Kenninghall & Banham Fens with Quidenham Mere (SSSI)	Cam and Ely Ouse Chalk	No
1003780	East Harling Common (SSSI)	Cam and Ely Ouse Chalk	No
1000633	Blo' Norton & Thelnetham Fens (SSSI)	Cam and Ely Ouse Chalk	No
1003253	Hanningfield Reservoir (SSSI)	Essex Gravels	No
1000877	Whittlesford-Thriplow Hummocky Fields (SSSI)	Cam and Ely Ouse Chalk	No
1005849	Pakenham Meadows (SSSI)	Cam and Ely Ouse Chalk	No
1004157	Freston & Cutler's Woods (SSSI)	Essex Gravels	No
1003787	Roydon Common (SSSI)	North west Norfolk Sandringham Sands	No
1003495	Cornmill Stream & Old River Lea (SSSI)	North Mymms Tertiaries	Yes
1002271	Great Wilbraham Common (SSSI)	Cam and Ely Ouse Chalk	No
1000005	Stanford Training Area (SSSI)	Cam and Ely Ouse Chalk	No
1003517	Bugg's Hole, Thelnetham (SSSI)	Cam and Ely Ouse Chalk	No
1001871	Wangford Warren & Carr (SSSI)	Cam and Ely Ouse Chalk	No

SSSI Code	GWTDE Name	WB Name	SWMI for flow
1002331	Barnham Heath (SSSI)	Cam and Ely Ouse Chalk	No
1003284	Wilbraham Fens (SSSI)	Cam and Ely Ouse Chalk	No
1002332	Stow cum Quy Fen (SSSI)	Cam and Ely Ouse Chalk	No
1000134	Swangey Fen, Attleborough (SSSI)	Cam and Ely Ouse Chalk	No
1002950	Roman River (SSSI)	Essex Gravels	No
1000350	Wayland Wood (SSSI)	Cam and Ely Ouse Chalk	No
1003172	Garrold's Meadow (SSSI)	Essex Gravels	No
1002256	Sawston Hall Meadows (SSSI)	Cam and Ely Ouse Chalk	No
1001867	Thorley Flood Pound (SSSI)	Upper Lee Chalk	Yes
1002072	Blake's Wood & Lingwood Common (SSSI)	Essex Gravels	No
1000249	Thompson Water, Carr & Common (SSSI)	Cam and Ely Ouse Chalk	No
1006650	Newmarket Heath (SSSI)	Cam and Ely Ouse Chalk	No
1002194	Cattawade Marshes (SSSI)	Essex Gravels	No
1006373	Upper Colne Marshes (SSSI)	Essex Gravels	No
1003809	Wilde Street Meadow, Mildenhall (SSSI)	Cam and Ely Ouse Chalk	No
1005495	Blow's Down (SSSI)	Upper Lee Chalk	Yes
2000068	Lackford Lakes (SSSI)	Cam and Ely Ouse Chalk	No
1004495	Lineage Wood & Railway Track, Long Melford (SSSI)	North Essex Chalk	Yes

SSSI Code	GWTDE Name	WB Name	SWMI for flow
1002925	Debden Water (SSSI)	Cam and Ely Ouse Chalk	No
1002559	Knettishall Heath (SSSI)	Cam and Ely Ouse Chalk	No
2000085	Elm Road Field, Thetford (SSSI)	Cam and Ely Ouse Chalk	No
1002204	Chalkney Wood (SSSI)	Essex Gravels	No
1000663	Boughton Fen (SSSI)	Cam and Ely Ouse Chalk	No
2000025	The Brinks, Northwold (SSSI)	Cam and Ely Ouse Chalk	No
1000561	Great Cressingham Fen (SSSI)	Cam and Ely Ouse Chalk	No
1005773	Westhall Wood & Meadow (SSSI)	Cam and Ely Ouse Chalk	No
1006349	Holland Haven Marshes (SSSI)	Essex Gravels	No
1001619	Chippenham Fen & Snailwell Poor's Fen (SSSI)	Cam and Ely Ouse Chalk	No
1002262	Arger Fen (SSSI)	North Essex Chalk	Yes
1004452	Lakenheath Poors Fen (SSSI)	Cam and Ely Ouse Chalk	No
1003677	Potter's Carr, Cranworth (SSSI)	Cam and Ely Ouse Chalk	No
1000593	Ashwell Springs (SSSI)	Cam and Ely Ouse Chalk	No
1000993	Stallode Wash, Lakenheath (SSSI)	Cam and Ely Ouse Chalk	No
1000388	Dernford Fen (SSSI)	Cam and Ely Ouse Chalk	No
1002294	Soham Wet Horse Fen (SSSI)	Cam and Ely Ouse Chalk	No
1002410	Thriplow Meadows (SSSI)	Cam and Ely Ouse Chalk	No
1000666	Colne Estuary (SSSI)	Essex Gravels	No

SSSI Code	GWTDE Name	WB Name	SWMI for flow
1001341	Out & Plunder Woods (SSSI)	Cam and Ely Ouse Chalk	No
1000992	Cavenham-Icklingham Heaths (SSSI)	Cam and Ely Ouse Chalk	No
1004395	Hopton Fen (SSSI)	Cam and Ely Ouse Chalk	No
1001708	East Winch Common (SSSI)	North west Norfolk Sandringham Sands	No
1001678	Didlington Park Lakes (SSSI)	Cam and Ely Ouse Chalk	No
1003828	Scoulton Mere (SSSI)	Cam and Ely Ouse Chalk	No
1002523	Moor Hall Meadows (SSSI)	Upper Lee Chalk	Yes
1003600	Old Buckenham Fen (SSSI)	Cam and Ely Ouse Chalk	No
1001149	Hooks Well Meadows, Great Cressingham (SSSI)	Cam and Ely Ouse Chalk	No
1003078	Bridgham & Brettenham Heaths (SSSI)	Cam and Ely Ouse Chalk	No
1004192	Weeleyhall Wood (SSSI)	Essex Gravels	No
1003217	Cherry Hill & The Gallops, Barton Mills (SSSI)	Cam and Ely Ouse Chalk	No
1002899	Danbury Common (SSSI)	Essex Gravels	No
1001827	Tewinbury (SSSI)	Upper Lee Chalk	Yes
1004142	New Buckenham Common (SSSI)	Cam and Ely Ouse Chalk	No
1003973	Alder Carr (SSSI)	Cam and Ely Ouse Chalk	No
1002000	Basildon Meadows (SSSI)	Essex Gravels	No
1001965	Ashdon Meadows (SSSI)	Cam and Ely Ouse Chalk	No
1001506	Knebworth Woods (SSSI)	Upper Lee Chalk	Yes

SSSI Code	GWTDE Name	WB Name	SWMI for flow
1001552	Cranberry Rough, Hockham (SSSI)	Cam and Ely Ouse Chalk	No
1004426	Blackwater Estuary (SSSI)	Essex Gravels	No
1005851	Little Hallingbury Marsh (SSSI)	Upper Lee Chalk	Yes
1002511	Orwell Estuary (SSSI)	Essex Gravels	No
1003531	Hunsdon Mead (SSSI)	North Mymms Tertiaries	Yes
1001970	West Stow Heath (SSSI)	Cam and Ely Ouse Chalk	No
1005499	Delph Bridge Drain (SSSI)	Cam and Ely Ouse Woburn Sands	No
1001738	East Wretham Heath (SSSI)	Cam and Ely Ouse Chalk	No
2000373	Mill Meadows, Billericay (SSSI)	Essex Gravels	No
1004414	Benfleet & Southend Marshes (SSSI)	Essex Gravels	No
1005497	Rye Meads (SSSI)	Upper Lee Chalk	Yes
1001985	Weston Fen (SSSI)	Cam and Ely Ouse Chalk	No

D Appendix D - Protected sites adjacent to rivers within WRZs serving UDC

D.1 SSSIs

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Arger Fen	TL932357	GB105036040942	Stour (Lamarsh - R. Brett)	No
Arger Fen	TL932357	GB105036040942	Stour (Lamarsh - R. Brett)	No
Amwell Quarry	TL377128	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Amwell Quarry	TL377128	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Thriplow Peat Holes	TL450475	GB105033038120	Hoffer Brook	No
Blackwater Estuary	TL975098	GB105037033530	Chelmer (d/s confluence with Can)	Yes
Blagrove Common	TL325336	GB106038040140	Rib (upper stretches, above confluence with the Quin)	No
The Brinks, Northwold	TL757955	GB205033000040	Cut-off Channel	No
Cornmill Stream and Old River Lea	TL379012	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	No
Cattawade Marshes	TM090329	GB105036041000	Stour (d/s R. Brett)	No
Fulbourn Fen	TL530561	GB105033042700	Bottisham Lode - Quy Water	No
Debden Water	TL536340	GB105033037490	Debden Water	No
Debden Water	TL536340	GB105033037480	Cam (US Newport)	No

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Great Wilbraham Common	TL533576	GB105033042700	Bottisham Lode - Quy Water	No
Stow-cum-Quy Fen	TL514627	GB105033042700	Bottisham Lode - Quy Water	No
Wangford Warren and Carr	TL755839	GB205033000040	Cut-off Channel	No
Glemsford Pits	TL838463	GB105036040941	Stour (Wixoe - Lamarsh)	No
Little Hallingbury Marsh	TL491171	GB106038033250	Little Hallingbury Brook	No
Lakenheath Poors Fen	TL701827	GB205033000070	Ely Ouse (South Level)	No
Hunsdon Mead	TL418109	GB106038033282	Stort and Navigation, Harlow to Lee	No
Hunsdon Mead	TL418109	GB106038033220	Cannons Brook	No
Ingrebourne Marshes	TQ535835	GB106037028130	Ingrebourne	No
Ingrebourne Marshes	TQ535835	GB106037028130	Ingrebourne	No
Ingrebourne Marshes	TQ535835	GB106037028130	Ingrebourne	No
Inner Thames Marshes	TQ531802	GB106037028090	Southall Sewer and Runningwater Brook	No
Moor Hall Meadows	TL329265	GB106038033310	Beane (from confluence with Stevenage Brook to Lee)	No
Delph Bridge Drain	TL567768	GB205033000070	Ely Ouse (South Level)	No
Plashes Wood	TL381205	GB106038033360	Rib (from confluence with Quin to Lee Navigation)	No
Roding Valley Meadows	TQ436953	GB106037028181	Lower Roding (Loughton to Thames)	No
Sawbridgeworth Marsh	TL492158	GB106038033281	Stort and Navigation, B Stortford to Harlow	No

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Upware North Pit	TL544727	GB205033000070	Ely Ouse (South Level)	No
Cam Washes	TL538728	GB105033042750	Cam	No
Cam Washes	TL538728	GB105033042720	Burwell Lode	No
Cam Washes	TL538728	GB105033042750	Cam	No
Shippea Hill	TL637850	GB205033000070	Ely Ouse (South Level)	No
Rye Meads	TL387102	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Rye Meads	TL387102	GB106038033282	Stort and Navigation, Harlow to Lee	No
River Ter	TL735158	GB105037033940	Ter	No
Thriplow Meadows	TL437469	GB105033038120	Hoffer Brook	No
Stallode Wash, Lakenheath	TL675853	GB205033000070	Ely Ouse (South Level)	No
Thorley Flood Pound	TL489181	GB106038033281	Stort and Navigation, B Stortford to Harlow	No
Wilbraham Fens	TL519591	GB105033042700	Bottisham Lode - Quy Water	No
Fleam Dyke	TL542548	GB105033042700	Bottisham Lode - Quy Water	No
Upware South Pit	TL539709	GB105033042750	Cam	No
Waltham Abbey	TL375019	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	Yes
Walthamstow Marshes	TQ351875	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes
Wretton	TL684992	GB205033000040	Cut-off Channel	No

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Sawston Hall Meadows	TL491490	GB105033037590	Cam (Audley End to Stapleford)	Yes
Chingford Reservoirs	TQ370953	GB106038027950	Lea Navigation Enfield Lock to Tottenham Locks	Yes
Chingford Reservoirs	TQ370953	GB106038027950	Lea Navigation Enfield Lock to Tottenham Locks	Yes
Hilgay Heronry	TL635992	GB205033000070	Ely Ouse (South Level)	No
Ouse Washes	TL490879	GB205033000070	Ely Ouse (South Level)	No
Northaw Great Wood	TL282040	GB106038033180	Turkey Brook and Cuffley Brook	No
Wormley-Hoddesdonpark Wood South	TL321059	GB106038033180	Turkey Brook and Cuffley Brook	No
Breckland Forest	TL819835	GB205033000040	Cut-off Channel	No
Breckland Forest	TL819835	GB205033000040	Cut-off Channel	No
Breckland Forest	TL819835	GB205033000040	Cut-off Channel	No
Ely Pits and Meadows	TL558807	GB205033000070	Ely Ouse (South Level)	No
Ely Pits and Meadows	TL558807	GB205033000070	Ely Ouse (South Level)	No
Ely Pits and Meadows	TL558807	GB205033000070	Ely Ouse (South Level)	No
Alder Carr	TL542489	GB105033037810	Granta	Yes
Breckland Farmland	TL760783	GB205033000040	Cut-off Channel	No
Breckland Farmland	TL760783	GB205033000040	Cut-off Channel	No
Breckland Farmland	TL760783	GB205033000040	Cut-off Channel	No

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Walthamstow Reservoirs	TQ351891	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes
Walthamstow Reservoirs	TQ351891	GB106038027950	Lea Navigation Enfield Lock to Tottenham Locks	Yes
Walthamstow Reservoirs	TQ351891	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes
Soham Wet Horse Fen	TL612725	GB205033000070	Ely Ouse (South Level)	No
Soham Wet Horse Fen	TL612725	GB205033000070	Ely Ouse (South Level)	No
Curtismill Green	TQ518963	GB106037028120	Rom (Bourne Brook to Ravensbourne)	No
Wicken Fen	TL554701	GB105033042720	Burwell Lode	No
Whittlesford - Thriplow Hummocky Fields	TL447484	GB105033037600	Cam (Stapleford to Hauxton Junction)	No
Wormley-Hoddesdonpark Woods North	TL343080	GB106038033200	Small River Lee (and tributaries)	No
Wormley-Hoddesdonpark Woods North	TL343080	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	Yes
Epping Forest	TQ418971	GB106037033481	Cripsey Brook	No
Epping Forest	TQ418971	GB106038027930	Ching Brook	No
Epping Forest	TQ418971	GB106038027930	Ching Brook	No
Epping Forest	TQ418971	GB106037028181	Lower Roding (Loughton to Thames)	No
Epping Forest	TQ418971	GB106038027930	Ching Brook	No

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Epping Forest	TQ418971	GB106037033481	Cripsey Brook	No
Epping Forest	TQ418971	GB106037033481	Cripsey Brook	No
Turnford & Cheshunt Pits	TL370027	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	Yes
Turnford & Cheshunt Pits	TL370027	GB106038033200	Small River Lee (and tributaries)	No
Turnford & Cheshunt Pits	TL370027	GB106038033200	Small River Lee (and tributaries)	No

D.2 SACs

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Fenland	UK0014782	GB105033042720	Burwell Lode	No
Wormley-Hoddesdonpark Woods	UK0013696	GB106038033180	Turkey Brook and Cuffley Brook	No
Wormley-Hoddesdonpark Woods	UK0013696	GB106038033200	Small River Lee (and tributaries)	No
Wormley-Hoddesdonpark Woods	UK0013696	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	Yes
Epping Forest	UK0012720	GB106038027930	Ching Brook	No
Epping Forest	UK0012720	GB106038027930	Ching Brook	No
Epping Forest	UK0012720	GB106037028181	Lower Roding (Loughton to Thames)	No
Epping Forest	UK0012720	GB106038027930	Ching Brook	No

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Essex Estuaries	UK0013690	GB105037033530	Chelmer (d/s confluence with Can)	Yes
Breckland	UK0019865	GB205033000040	Cut-off Channel	No
Ouse Washes	UK0013011	GB205033000070	Ely Ouse (South Level)	No

D.3 SPAs

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK9009245	GB105037033530	Chelmer (d/s confluence with Can)	Yes
Lee Valley	UK9012111	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes
Lee Valley	UK9012111	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	Yes
Lee Valley	UK9012111	GB106038027950	Lea Navigation Enfield Lock to Tottenham Locks	Yes
Lee Valley	UK9012111	GB106038033200	Small River Lee (and tributaries)	No
Lee Valley	UK9012111	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Lee Valley	UK9012111	GB106038033200	Small River Lee (and tributaries)	No
Lee Valley	UK9012111	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Lee Valley	UK9012111	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Lee Valley	UK9012111	GB106038033282	Stort and Navigation, Harlow to Lee	No
Lee Valley	UK9012111	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Stour and Orwell Estuaries	UK9009121	GB105036041000	Stour (d/s R. Brett)	No
Breckland	UK9009201	GB205033000040	Cut-off Channel	No
Breckland	UK9009201	GB205033000040	Cut-off Channel	No
Breckland	UK9009201	GB205033000040	Cut-off Channel	No
Breckland	UK9009201	GB205033000040	Cut-off Channel	No
Breckland	UK9009201	GB205033000040	Cut-off Channel	No
Breckland	UK9009201	GB205033000040	Cut-off Channel	No

D.4 Ramsar sites

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK11007	GB105037033530	Chelmer (d/s confluence with Can)	Yes
Lee Valley	UK11034	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes
Lee Valley	UK11034	GB106038077851	Lea Navigation (Fieldes Weir to Enfield Lock)	Yes
Lee Valley	UK11034	GB106038027950	Lea Navigation Enfield Lock to Tottenham Locks	Yes

Name	Code	Waterbody ID	Waterbody Name	SWMI for flow
Lee Valley	UK11034	GB106038033200	Small River Lee (and tributaries)	Yes
Lee Valley	UK11034	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Lee Valley	UK11034	GB106038033200	Small River Lee (and tributaries)	No
Lee Valley	UK11034	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Lee Valley	UK11034	GB106038077852	Lee (Tottenham Locks to Bow Locks/Three Mills Locks)	Yes
Lee Valley	UK11034	GB106038033282	Stort and Navigation, Harlow to Lee	No
Lee Valley	UK11034	GB106038033240	Lee Navigation (Hertford to Fieldes Weir)	Yes
Ouse Washes	UK11051	GB205033000070	Ely Ouse (South Level)	No
Wicken Fen	UK11077	GB105033042720	Burwell Lode	No
Stour and Orwell Estuaries	UK11067	GB105036041000	Stour (d/s R. Brett)	No

E Appendix E - Environmental sites water quality impact

E.1 SSSIs

The tables within this appendix detail the predicted deterioration in water quality in the river adjacent to each SSSI, SAC and SPA downstream of WwTWs serving growth in the Local Plan period. It includes the protected site name, reference and the point in the SIMCAT model used to obtain the result. The first three results show the predicted deterioration at the end of the plan period if all planned growth were delivered. The final three columns show the result of the TAL scenario where all WwTWs are upgraded to their technically achievable limit. A negative number indicates an improvement in water quality compared to the future scenario, i.e. deterioration can be prevented.

SSSI name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Alder Carr	TL542489	WQ 28M04	6%	1%	2%	4%	-5%	-76%
Blackwater Estuary	TL975098	GB105037033530 Boundary	-1%	0%	0%	-73%	-47%	-83%
Cam Washes	TL538728	Extra Plot Point - Reach 295 No 2	0%	0%	2%	-9%	-11%	-55%
Cam Washes	TL538728	WQ 34M15	-1%	-1%	3%	-12%	-18%	-56%
Cam Washes	TL538728	Start Of Reach 295	0%	0%	3%	-12%	-12%	-55%
Chingford Reservoirs	TQ370953	CSO 105	-1%	1%	-1%	-4%	-2%	-34%

SSSI name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Cornmill Stream and Old River Lea	TL379012	Extra Plot Point - Reach 1115 No 1	-1%	0%	-1%	-4%	-2%	-36%
Curtismill Green	TQ518963	Extra Plot Point - Reach 998 No 9	0%	0%	0%	-44%	-8%	-18%
Debden Water	TL536340	DEBDEN STW	14%	0%	3%	-77%	0%	-19%
Debden Water	TL536340	Extra Plot Point - Reach 254 No 1	15%	0%	2%	-76%	0%	-13%
Delph Bridge Drain	TL567768	Start Of Reach 297	0%	0%	2%	-11%	-10%	-53%
Dersingham Bog	TF673288	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Ely Pits and Meadows	TL558807	STORM_Ely STW "	0%	0%	2%	-10%	-9%	-53%
Ely Pits and Meadows	TL558807	WQ 36M03	0%	0%	2%	-15%	-11%	-56%
Hilgay Heronry	TL635992	Start Of Reach 351	0%	0%	2%	-10%	-4%	-56%
Hunsdon Mead	TL418109	Extra Plot Point - Reach 1048 No 1	-3%	8%	2%	-4%	5%	-3%

SSSI name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Hunstanton Cliffs	TF675420	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Inner Thames Marshes	TQ531802	CSO 512	0%	0%	0%	-1%	-7%	-28%
Islington Heronry	TF568159	Extra Plot Point - Reach 409 No 2	0%	0%	0%	-11%	-1%	-48%
Lakenheath Poors Fen	TL701827	Extra Plot Point - Reach 316 No 1	0%	0%	2%	-11%	-4%	-58%
Little Hallingbury Marsh	TL491171	WQ PLER0152	8%	13%	6%	8%	11%	5%
Ouse Washes	TL490879	LITTLEPORT (PLAINS LANE) STW	0%	0%	2%	-11%	-4%	-58%
River Ter	TL735158	WQ TE0152	0%	0%	0%	-4%	-5%	-47%
Roding Valley Meadows	TQ436953	FS Roding Loughton	0%	0%	0%	-28%	-17%	-43%
Rye Meads	TL387102	CSO 288	-2%	4%	-2%	-3%	2%	-5%
Sawbridgeworth Marsh	TL492158	Start Of Reach 1029	2%	12%	6%	-2%	8%	5%

SSSI name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Setchey	TF632131	Extra Plot Point - Reach 398 No 6	0%	0%	0%	-5%	-3%	-74%
Shippea Hill	TL637850	Extra Plot Point - Reach 316 No 1	0%	0%	2%	-11%	-4%	-58%
Stallode Wash, Lakenheath	TL675853	Extra Plot Point - Reach 316 No 4	0%	0%	2%	-10%	-4%	-58%
The Wash	TF537402	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Thorley Flood Pound	TL489181	Start Of Reach 1020	9%	13%	6%	9%	11%	5%
Turnford & Cheshunt Pits	TL370027	Extra Plot Point - Reach 1111 No 2	-1%	0%	-1%	-3%	-3%	-39%
Turnford & Cheshunt Pits	TL370027	Extra Plot Point - Reach 1090 No 4	-1%	0%	-1%	-3%	-3%	-40%
Turnford & Cheshunt Pits	TL370027	Extra Plot Point - Reach 1091 No 3	-1%	0%	-1%	-3%	-2%	-40%
Upware North Pit	TL544727	WQ 34M02	0%	0%	2%	-9%	-11%	-55%
Upware South Pit	TL539709	Start Of Reach 295	0%	0%	3%	-12%	-12%	-55%

SSSI name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Waltham Abbey	TL375019	Start Of Reach 1115	-1%	0%	-1%	-4%	-2%	-36%
Walthamstow Marshes	TQ351875	CSO 393	-1%	-1%	-1%	-1%	-1%	-29%
Walthamstow Reservoirs	TQ351891	Start Of Reach 1107	0%	0%	0%	-1%	0%	-35%
Walthamstow Reservoirs	TQ351891	Extra Plot Point - Reach 1118 No 1	-1%	1%	0%	-4%	-1%	-26%
Walthamstow Reservoirs	TQ351891	CSO 509	-2%	-1%	-1%	-2%	-1%	-29%
Wicken Fen	TL554701	Extra Plot Point - Reach 294 No 2	0%	-1%	2%	-14%	-17%	-56%
Wiggenhall St. Germans	TF588138	CSO 156	0%	0%	1%	-24%	-3%	-49%

E.2 SACs

SAC name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Essex Estuaries	UK0013690	GB105037033530 Boundary	-1%	0%	0%	-73%	-47%	-83%
Fenland	UK0014782	Extra Plot Point - Reach 294 No 2	0%	-1%	2%	-14%	-17%	-56%
Inner Dowsing, Race Bank and North Ridge	UK0030370	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Margate and Long Sands	UK0030371	GB105037033530 Boundary	-1%	0%	0%	-73%	-47%	-83%
Ouse Washes	UK0013011	LITTLEPORT (PLAINS LANE) STW	0%	0%	2%	-11%	-4%	-58%
Roydon Common & Dersingham Bog	UK0012801	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Southern North Sea	UK0030395	GB105037033530 Boundary	-1%	0%	0%	-73%	-47%	-83%

SAC name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
The Wash & North Norfolk Coast	UK0017075	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%

E.3 SPAs

SPA name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK9009245	X_Totham Lodge nursing home	-1%	-1%	0%	-74%	-49%	-84%
Greater Wash	UK9020329	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Lee Valley	UK9012111	Start Of Reach 1119	-1%	-1%	-1%	-1%	-1%	-30%

SPA name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Lee Valley	UK9012111	Extra Plot Point - Reach 1111 No 2	-1%	0%	-1%	-3%	-3%	-39%
Lee Valley	UK9012111	Extra Plot Point - Reach 1118 No 1	-1%	1%	0%	-4%	-1%	-26%
Lee Valley	UK9012111	Extra Plot Point - Reach 1090 No 4	-1%	0%	-1%	-3%	-3%	-40%
Lee Valley	UK9012111	CSO 288	-2%	4%	-2%	-3%	2%	-5%
Lee Valley	UK9012111	Extra Plot Point - Reach 1091 No 3	-1%	0%	-1%	-3%	-2%	-40%
Lee Valley	UK9012111	CSO 509	-2%	-1%	-1%	-2%	-1%	-29%
Ouse Washes	UK9008041	LITTLEPORT (PLAINS LANE) STW	0%	0%	2%	-11%	-4%	-58%

SPA name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Outer Thames Estuary	UK9020309	Extra Plot Point - Reach 82 No 11	0%	0%	0%	-73%	-27%	-92%
The Wash	UK9008021	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%

E.4 Ramsar sites

Ramsar name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK11007	GB105037033530 Boundary	-1%	0%	0%	-73%	-47%	-83%
Colne Estuary (Mid-Essex Coast Phase 2)	UK11015	GB105037033530 Boundary	-1%	0%	0%	-73%	-47%	-83%
Gibraltar Point	UK11027	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Lee Valley	UK11034	Start Of Reach 1119	-1%	-1%	-1%	-1%	-1%	-30%
Lee Valley	UK11034	Extra Plot Point - Reach 1111 No 2	-1%	0%	-1%	-3%	-3%	-39%
Lee Valley	UK11034	Extra Plot Point - Reach 1118 No 1	-1%	1%	0%	-4%	-1%	-26%
Lee Valley	UK11034	Extra Plot Point - Reach 1090 No 4	-1%	0%	-1%	-3%	-3%	-40%

Ramsar name	Reference ID	SIMCAT Model Point	Ammonia Deterioration	BOD Deterioration	Phosphate Deterioration	Ammonia Deterioration TAL	BOD Deterioration TAL	Phosphate Deterioration TAL
Lee Valley	UK11034	CSO 288	-2%	4%	-2%	-3%	2%	-5%
Lee Valley	UK11034	Extra Plot Point - Reach 1091 No 3	-1%	0%	-1%	-3%	-2%	-40%
Lee Valley	UK11034	CSO 509	-2%	-1%	-1%	-2%	-1%	-29%
Ouse Washes	UK11051	LITTLEPORT (PLAINS LANE) STW	0%	0%	2%	-11%	-4%	-58%
The Wash	UK11072	Extra Plot Point - Reach 421 No 3	0%	0%	0%	-21%	-3%	-45%
Wicken Fen	UK11077	Extra Plot Point - Reach 294 No 2	0%	-1%	2%	-14%	-17%	-56%

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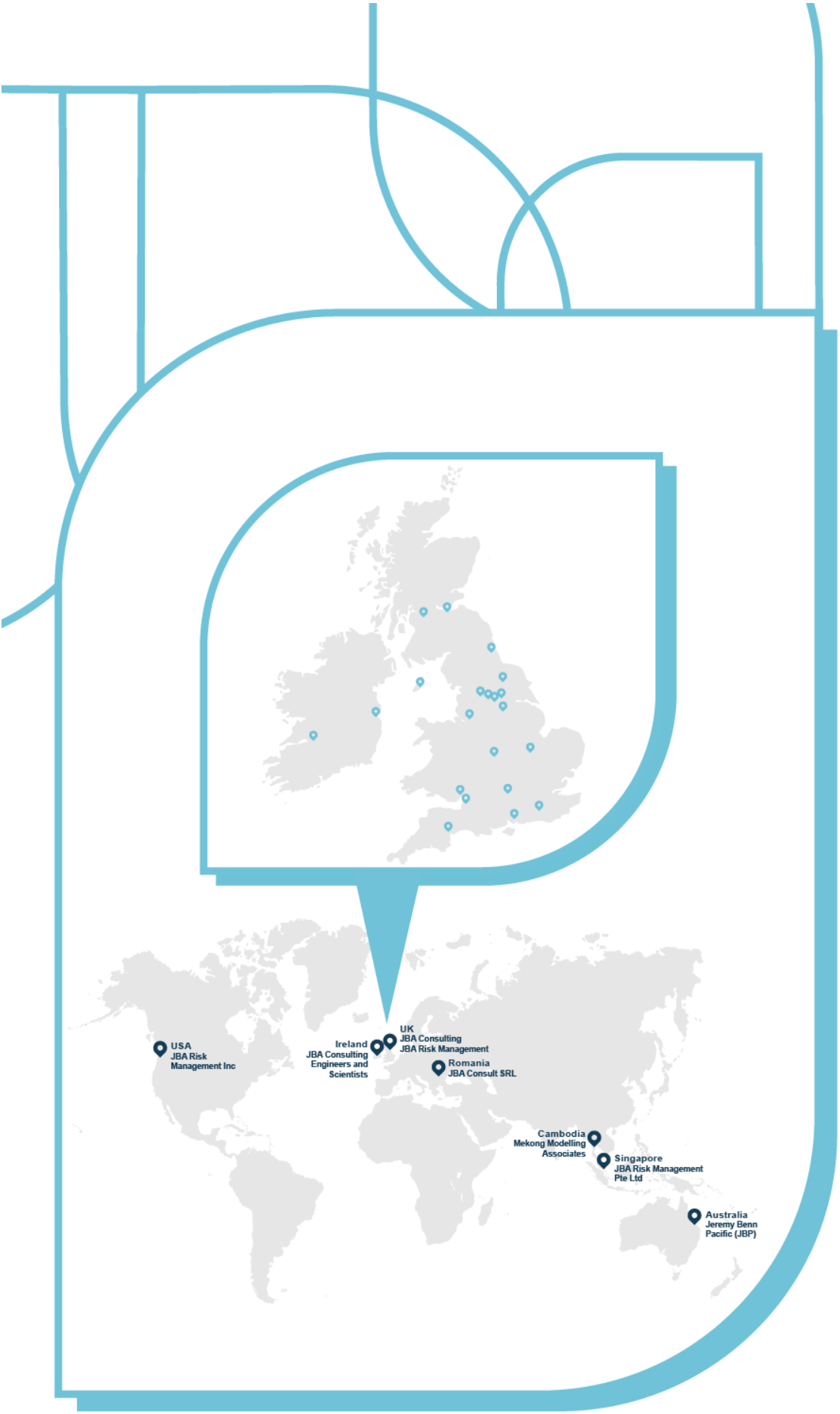

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Uttlesford District Council Chalk Streams

Final Report

June 2024

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Revision History

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S3-P01 05/07/2022	Draft Report	Lois Bowser (UDC)
A1-C01 14/06/2024	Final Report	Tim Fearn (UDC)
A1-C02 27/06/2024	Minor amendments	Tim Fearn (UDC)

Contract

This report describes work commissioned by Uttlesford District Council on 20 May 2022. Jessica Creber and Richard Pardoe of JBA Consulting carried out this work. It was carried out alongside the Stage 1 Water Cycle Study in June 2022, and a partial update carried out alongside the Stage 2 Water Cycle Study in June 2024.

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Purpose

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Executive summary

JBA Consulting was commissioned by Uttlesford District Council (UDC) to undertake a Water Cycle Study (WCS) for the Uttlesford District. The purpose of the WCS is to form part of a comprehensive and robust evidence base to inform the preparation of the new Local Plan, which will set out a vision and framework for development in the area up to 2041 and will be used to inform decisions on the location of future development.

The north-western part of Uttlesford District is drained by two chalk streams, the River Stort and River Cam, and their tributaries. A chalk stream is broadly defined as a river that derives most of its flow from chalk-fed groundwater. Chalk streams flow from chalk aquifers, stores of underground water that are replenished when it rains. England is home to 85 per cent of the world's chalk streams. These rivers, together with the chalk aquifer from which they spring, are crucial water resources providing millions of people with water as well as supporting unique ecosystems. Businesses and farms also rely on chalk streams as without a reliable water source they would not be able to operate.

Balancing the needs of people and the environment is a challenge and it is getting harder. Population growth, particularly in the south and east of England, means that more and more water is required at a time when climate change is reducing the amount of water that is available.

England's chalk streams are therefore under considerable pressure. The Environment Agency's 'Reasons for Not Achieving Good' database indicates that one of the reasons for some of the watercourses in the district are not meeting 'Good' Water Framework directive (WFD) standards can be related to groundwater and surface water abstractions. Other pressures on chalk streams include pollution from wastewater discharges and agriculture, encroachment by development.

Chalk streams are an important and rare habitat and opportunities should be taken within the Local Plan to define policies to protect these river ecosystems. This report provides an evidence base to identify and characterise the chalk rivers in Uttlesford, and to recommend policies to protect them.

This report makes the following recommendations that can be adopted by Uttlesford District Council to provide greater protection for chalk streams and mitigate the impacts of development during the Local Plan period:

Measure type	Recommendation
Water efficiency	Recommendation 1 – Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford Recommendation 2 – Require all new non-residential buildings achieve BREEAM "Outstanding" for water throughout Uttlesford
Water neutrality	Recommendation 3 – Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study
Riparian Buffer Zone	Recommendation 4 – Apply a riparian buffer zone in chalk stream areas to exclude all development within the natural flood plain or 15m of the bank, whichever is larger. A buffer of 10m should be applied to ditches that feed chalk streams. Recommendation 5 – Apply a vegetated buffer strip on agricultural land within 15m of a chalk stream and 10m from a ditch feeding a chalk stream.

Cattle fencing	Recommendation 6 – Encourage responsible land management such as cattle fencing through the Nature Recovery Strategy
Education	Recommendation 7 – Undertake a public engagement exercise to raise awareness of chalk streams and encourage responsible riparian ownership
Sustainable Drainage Systems (SuDS)	Recommendation 8 – Enforce the SuDS hierarchy as defined in the Essex SuDS guidance with a focus on encouraging infiltration SuDS and deep borehole SuDS where appropriate.
Neighbouring authority engagement	Recommendation 9 – Continue and strengthen existing partnerships with neighbouring authorities and other stakeholders to define coordinated policies for chalk stream protection

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Abbreviations

BGS	British Geological Society
BNG	Biodiversity Net Gain
CaBA	Catchment Based Approach
CSO	Combined Sewer Overflow
EA	Environment Agency
NE	Natural England
NFU	National Farmers Union
RBD	River Basin District

RBMP	River Basin Management Plan
RFD	Reason for Deterioration
RNAG	Reasons for Not Achieving Good
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWMI	Significant Water Management Issue
UDC	Uttlesford District Council
WCS	Water Cycle Study
WFD	Water Framework Directive
WINEP	Water Industry National Environment Programme
WRMP	Water Resource Management Plan
WwTW	Wastewater Treatment Works

1 Introduction

1.1 Objectives

JBA Consulting was commissioned by Uttlesford District Council (UDC) to undertake a Water Cycle Study (WCS) for the Uttlesford District. The purpose of the WCS is to form part of a comprehensive and robust evidence base to inform the preparation of the new Local Plan, which will set out a vision and framework for development in the area up to 2041 and will be used to inform decisions on the location of future development.

The north-western part of Uttlesford District is drained by two chalk streams, the River Stort and River Cam, and their tributaries. A chalk stream is broadly defined as a river that derives most of its flow from chalk-fed groundwater. Chalk streams flow from chalk aquifers, stores of underground water that are replenished when it rains. England is home to 85 per cent of the world's chalk streams. These rivers, together with the chalk aquifer from which they spring, are crucial water resources providing millions of people with water as well as supporting unique ecosystems. Businesses and farms also rely on chalk streams as without a reliable water source they would not be able to operate.

During the summer months when temperatures are higher and plants are using water, rainfall is less effective at recharging the aquifer. In many cases, this can cause sections of chalk streams to be dry for much of the year. This natural hydrological variation – which can vary from year to year, is separate to the artificial impact of overabstraction.

Balancing the needs of people and the environment is a challenge and it is getting harder. Population growth, particularly in the south and east of England, means that more and more water is required at a time when climate change is reducing the amount of water that is available.

England's chalk streams are therefore under considerable pressure. The Environment Agency's 'Reasons for Not Achieving Good' database indicates that one of the reasons for some of the watercourses in the district are not meeting 'Good' Water Framework directive (WFD) standards can be related to groundwater and surface water abstractions. Other pressures on chalk streams include pollution from wastewater discharges and agriculture, encroachment by development.

Chalk streams are an important and rare habitat and opportunities should be taken within the Local Plan to define policies to protect these river ecosystems. This report provides an evidence base to identify and characterise the chalk rivers in Uttlesford, and to recommend policies to protect them.

1.2 Existing evidence

River Basin Management Plans (RBMP)[1] are required under the Water Framework Directive (WFD) and document the baseline classification of each waterbody in the plan area, the objectives, and a programme of measures to achieve those objectives. Uttlesford straddles both the Anglian River Basin District (RBD) and the Thames RBD. Local Planning Authorities (LPAs) must have regard to the Water Framework Directive as implemented in the Environment Agency's River Basin Management Plans. Within the Anglian RBMP, the need to protect chalk streams is stated.

The Catchment Based Approach (CaBA) chalk stream restoration group consists of Defra, the Environment Agency (EA), Natural England (NE), Ofwat, the water companies, National Farmers Union (NFU) and environmental voluntary groups and many independent members. The group published a Chalk Stream Strategy in 2021[2] which defines the chalk streams in England, the pressures they are under, and proposed a roadmap for their restoration.

1 Draft River Basin Management Plans: 2021, Environment Agency (2021). Accessed online at: https://www.gov.uk/government/collections/draft-river-basin-management-plans-2021 on: 04/07/2022
2 Chalk Stream Strategy, CaBA (2021). Accessed online at: https://catchmentbasedapproach.org/wp-content/uploads/2021/10/CaBA-CSRG-Strategy-MAIN-REPORT-FINAL-12.10.21-Low-Res.pdf on: 19/04/2024

The Government's Environmental Improvement Plan 2023 (EIP23)[3] is the first revision of the 25 Year Environment Plan, published under the Environment Act 2021. This contains ten goals aimed at achieving the overall objective of restoring nature. Goal 3: "Clean and Plentiful Water", contains a recognition of the importance of chalk streams and states that "In recognition of this, Defra will continue to work with the Catchment Based Approach to support the implementation of the Chalk Stream Strategy. We will develop plans to outline actions to improve each chalk catchment, including £1 million investment in partnership projects each year".

The CaBA chalk Stream Strategy is therefore a key piece of evidence, supported by Government, and as such will be used to inform this report where possible.

1.3 Structure of report

Section 2 of this report provides an overview of what makes chalk streams unique and identifies the chalk streams present within Uttlesford. Section 3 outlines the pressures they are under from over-abstraction, development, agriculture and wastewater discharges. What is currently being done by stakeholders to protect chalk streams is summarised in Section 4 before recommendations to protect the chalk streams in Uttlesford are made in chapter 5.

[3] Environmental Improvement Plan 2023, HM Government (2023). Accessed at: https://assets.publishing.service.gov.uk/media/64a6d9c1c531eb000c64fffa/environmental-improvement-plan-2023.pdf on: 31/05/2024

2 Defining chalk streams in Uttlesford

2.1 Chalk stream characteristics

A chalk stream or river is a waterbody which originates from a chalk aquifer. Chalk is permeable and porous, meaning that in a natural chalk catchment, a high proportion of rainfall is soaked up into the rocks to recharge the aquifer. Water is then released slowly to the river via groundwater. A low proportion of flow reaches the chalk stream via surface runoff, resulting in flow that is generally stable.

The ratio between high and low flows is generally less than 10:1 in a chalk stream compared with ratios of 100:1 in clay-dominated catchment where overland flow is the principal flow route[4]. A natural chalk stream may also be at "bank-full" level (the river channel is full) 30% of the year in comparison to only 5% for a river where run-off dominates.

Occasional low flows during dry periods in the summer months are also a feature of many chalk streams with some channels naturally dry for a few weeks per year. Depending on local hydrogeological conditions, some channels may only flow for a few months each year; such channels are referred to as winterbournes. Some upper reaches of chalk streams only flow during exceptionally wet years. These are known as ephemeral streams.

The flow regime also results in a very stable temperate range (typically approximately 10-11 degrees Celsius) and as water filters through the chalk, the result is a low suspended sediment "gin clear" look to the water and clean, gravelly beds which is one of the defining characteristic of chalk streams.

Nutrient levels are typically very low, with total phosphorus levels in the range of 0.01 – 0.03 mg/l in a natural chalk catchment.

Despite deposits of chalk geology being relatively common across Europe, chalk streams are globally rare due to the unique geological characteristics that caused them to form, with a combination of glacial activity and weathering resulting in a band of chalk close to the surface across south and eastern England and north west France. England is therefore home to 85% of the world's Chalk streams.

The CaBA Chalk Stream Strategy groups chalk streams into four types. These are defined in Appendix B. All of the chalk streams in Uttlesford are categorised as A/D, a mix of classic slope-face chalk streams that rise directly from the chalk, and Pleistocene ice-impacted chalk streams that rise from chalk directly impacted by glacial action.

Ditches that feed chalk streams should also be considered when assessing the overall health of a chalk stream, as they form part of the wider riverine habitat. They may offer a route for surface water runoff containing pollutants to enter chalk streams, and also offer opportunities for attenuation of surface water, infiltration to allow recharge of chalk aquifers and filtration of pollutants. The Defra Biodiversity Net Gain calculations require ditches to be scoped in where a site boundary includes a ditch, or intersects the riparian zone of a ditch (5m from the bank top).

2.2 Chalk stream ecology

2.2.1 Habitat

Chalk streams are naturally slow flowing rivers which were created by multi-phase glaciation 70,000-9,000 BC in the Devensian (last glacial period). The freeze and thaw cycle of glaciation generated large amounts of melted water which carved chalk river channels. Post-glaciation (10,000 years ago), the chalk aquifers fed into these channels, creating the pre-human chalk streams.

Post-human, many chalk streams have been straightened and dredged, creating fragmented habitat and degrading the chalk streams natural meandering courses. Subsequently, the

4 Chalk Stream Restoration Strategy 2021 – Main Report, Catchment Based Approach (2021). Accessed online at: https://catchmentbasedapproach.org/wp-content/uploads/2021/10/CaBA-CSRG-Strategy-MAIN-REPORT-FINAL-12.10.21-Low-Res.pdf on: 20/06/2022

straightening of the rivers leads to the characteristic gravel of chalk streams being washed away with the increase in flow velocity.

Chalk streams often have an alkaline pH between 7.4-8.7. This is due to the chalk bedrock the source water is filtered through. The stable temperature climate creates a unique habitat that many invertebrates and fish have adapted to. As well as a steady temperature, chalk streams provide a calcium-rich environment which is commonly well oxygenated. Having such specific characteristics makes chalk streams, and many of the species that live in them sensitive to any change.[5]

2.2.2 Species

When there is water flow in the rivers, the previously mentioned meanders create varied movement of water distributing gravel and silt creating areas for fish spawning and invertebrates. Brown Trout (*Salmo trutta*) are a common fish species in chalk streams due to their cool temperatures. The Grayling (*Thymallus thymallus*) is typically native to chalk streams and has been reintroduced in chalk streams across the UK with the aim of increasing its overall population numbers. Unlike the Atlantic Salmon, the Brown Trout and Grayling are potadromous, meaning they migrate in freshwater rather than to the sea. This means they are more susceptible to the impacts of physical barriers in rivers. Weir removals and migration channels have been implemented in the Greater Cambridge chalk stream project to help fish migration.

Due to seasonal temperature and rainfall changes, some chalk streams can naturally run dry from summer to early autumn. This commonly occurs at upper river sections. Winterbourne species, specifically winterbourne stoneflies (*Plecoptera*), black flies (*Simuliidae*) and scarce brown sedges (*Trichoptera*) are usually present in chalk streams. These species have adapted throughout their lifecycle to withstand dry stages of the year. With temperature being a harsh selective pressure, it makes these populations unique.

When over-abstraction occurs, these species need to withstand dry periods for longer, which even if they are adapted to these conditions, can interrupt their life cycles if prolonged. Winterbourne plant species can also be affected by abstraction rates such as the Pondwater Crowfoot (*Ranunculus aquatilis*) and Watercress (*Nasturtium officinale*).

Typical of chalk streams are the Water crowfoot, an aquatic plant species and a member of the buttercup *(Ranunculus*) family. The Stream Water-crowfoot (*Ranunculus penicillatus penicilatus*) are common in chalk streams, with the River Water-crowfoot (*Ranunculus fluitans*) more common in larger rivers.

Water-crowfoot species act as a home for Simuliidae larvae which filter diatoms, also known as algae. Water starworts are also common in chalk streams. These species prefer slower flows, with shaded areas and siltier substrate, they are a complicated genus but, as a genus, are easily recognised by their clumped, densely green-leaved growth and yellow anthers.

On the banks of the chalk streams, reeds such as Reed Canary grass (*Phalaris arundinacea*) and Reed Sweet (*Glyceria maxima*) are often present, which act as shade for fish and invertebrate species.

A number of invertebrates are also present in chalk streams. Chalk stream populations are mainly made up of:

- Ephemera (mayflies)
- Plecopteran (stoneflies)
- Trichoptera (caddis fly)
- Coleoptera (beetles)
- molluscs (snails and slugs)

5 Chalk Stream Strategy, Catchment Based Approach (2021). Accessed online at: https://catchmentbasedapproach.org/wp-content/uploads/2021/10/CaBA-CSRG-Strategy-MAIN-REPORT-FINAL-12.10.21-Low-Res.pdf on: 04/07/2022

- crustaceans (crayfish)
- Hirundea (such as leeches)

Although all of the above groups are present in chalk streams, they can be hard to find due to habitat degradation, and may not be all present at once. Other invertebrates including the white clawed crayfish (*Austropotamobius pallipes*) are found in chalk streams yet not exclusively. A key survival pressure on the White-clawed Crayfish is the presence of American Signal Crayfish (*Pacifastacus leniusculus*) in the waterbody, which out-competes the White-clawed Crayfish for habitat and food and carries crayfish plague (*Aphanomyces astaci*).

2.3 Chalk streams in Uttlesford

2.3.1 Summary

Natural England recently published (March 2022) a new chalk stream map for England updating previous mapping based on the Priority Habitat map from 2006. This contains a larger number of streams and their tributaries than the previous mapping (which was included in the scoping WCS), and aids the identification of relevant streams within Uttlesford. Missing from this map is Wenden Brook, a tributary to the River Cam. This River was included in the index of chalk streams within the CaBA chalk Stream Strategy and so will be included as a chalk stream in this report.

Uttlesford has several chalk streams, mainly in the north-west of the district, see Figure 2.1. Many of the smaller streams are tributaries of the two larger rivers in Uttlesford: the River Stort and the River Cam.

The Natural England chalk stream mapping took account of superficial geology in its definition of chalk streams, but the intention is for this mapping to be modified by local knowledge. There is an opportunity to engage with local interest groups or river stakeholders to help update this map.

The British Geological Society (BGS) bedrock geology map indicates much of Uttlesford is underlain by chalk geology suggesting that many other streams not included in the Natural England mapping should be classified as chalk streams. However, the superficial geology needs to be taken into account. Much of the chalk bedrock geology is overlain by superficial deposits such as glacial till. In the areas indicated on the mapping as chalk streams, this superficial layer has been eroded to expose the underlying chalk, resulting in direct connectivity between the chalk aquifer, the streams and their valleys, which is why much the River Cam catchment can be said to be a chalk stream. By contrast, the River Pant catchment is largely overlain by superficial deposits and the chalk can be 20-30m below the surface resulting in little connectivity, such that the chalk has minimal influence on the behaviour of the river.

The difference can also be seen in the hydrology of the two rivers. Chalk streams rely mostly on groundwater, and the ratio between high and low flows is low, typically 10:1. If the Q5 (flow that is exceeded 5% of the time – the high flow) and Q95 (flow that is exceeded 95% of the time – the low flow) are compared the River Cam (as recorded at Chesterford) has a ratio of 11:1, whereas the Pant (measured at Copford Hall) has a ratio of 91:1, indicating the Pant is not behaving as a typical chalk stream.

Bedrock and superficial geology maps can be found in Appendix A.

The River Bourne is a tributary of the River Granta (and eventually the River Cam). It is not included in the Natural England mapping, however it is listed in Appendix H of the CaBA chalk Stream Strategy as a chalk stream. The river flows south to north through the village of Ashdon. North of Ashdon the geology mapping does not show any superficial geology overlaying the chalk bedrock suggesting the river may be directly connected to the chalk. South of Ashdon, a superficial layer of Til is present which may prevent this connectivity, so chalk may have less influence on the river. Further investigation may be required into the flow regime of this river (no flow gauges were present to inform this report) in order to

define whether the whole or part of the River Bourne should be classified as a chalk stream. This has been marked in Figure 2.1 as a possible chalk stream.

Should the River Bourne not be classified as a true chalk stream along part of its length, it should be noted that it is a tributary to a chalk stream and so development, agriculture and other activities may still have an influence on chalk streams downstream.

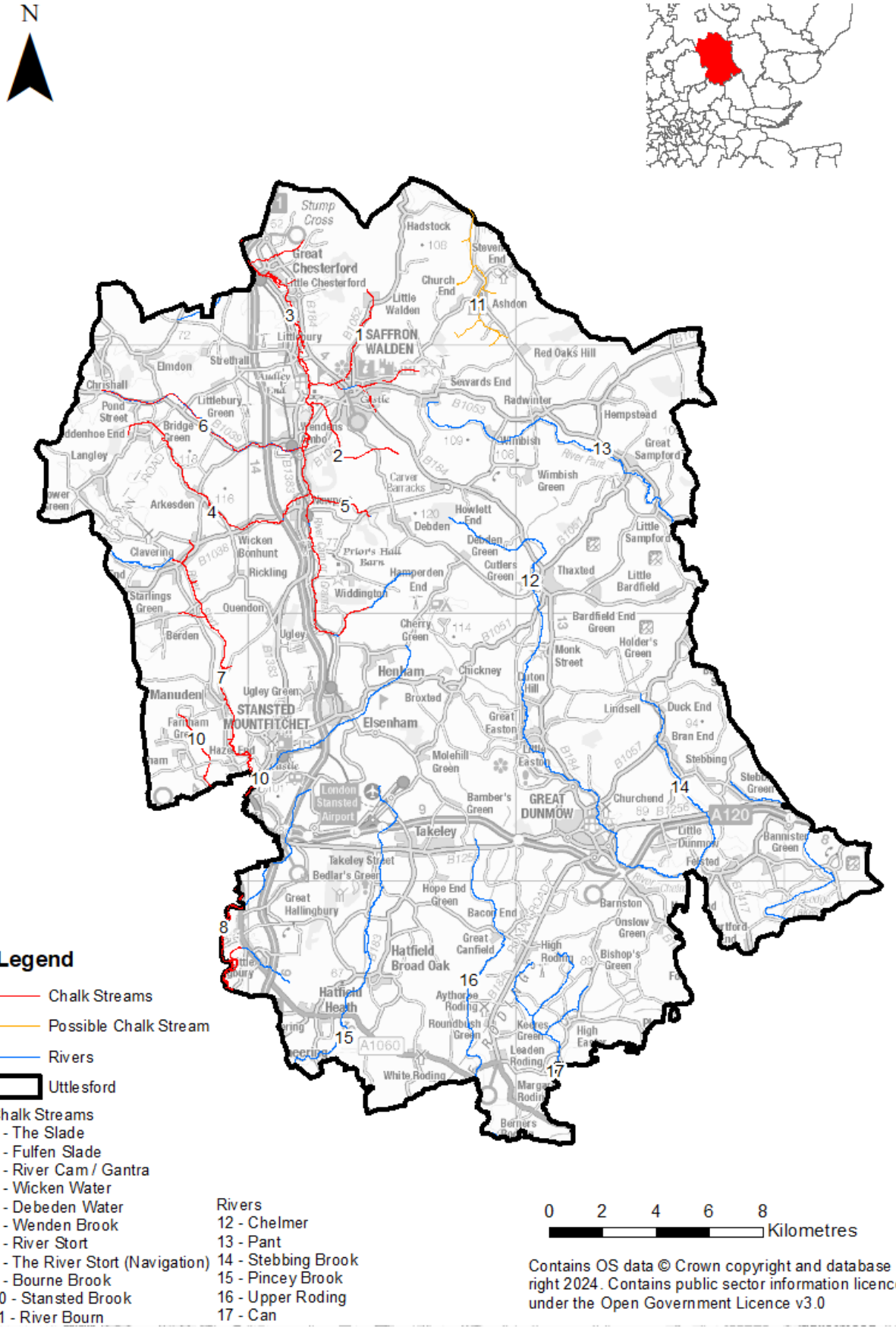

Figure 2.1 The location of chalk streams in Uttlesford

2.3.2 The Slade

The Slade runs through arable and horticultural land in its headwaters before passing through the town of Saffron Walden. Sections of the river are culverted, and many appear artificially straightened. Through the town the river is heavily constrained by the presence of buildings and gardens limiting the opportunity for future restoration work. West of Saffron Walden there is a Wastewater Treatment Works (WwTW) which discharges to the river.

2.3.3 Fulfen Slade

The Fulfen Slade runs through predominantly arable and horticultural land before its confluence with the River Cam to the south of Audley End. Audley End WwTW discharges to the Fulfen Slade close to this confluence.

2.3.4 River Cam/ Granta

The main channel of the River Cam runs to the east of the M11 through the settlements of Newport, Wendens Ambo, Littlebury, Little Chesterfield and Great Chesterfield before leaving Uttlesford under the M11. Landuse along the river is a mix of acid, calcareous, and neutral grassland and broadleaved, mixed and yew woodland. Arable and horticulture land is prominent along much of the river.

Six WwTWs discharge into the river (Quendon, Debden (via Debden Water), Newport, Audley End (via the Fulfen Slade), Saffron Walden (via the Slade), and Great Chesterfield.

2.3.5 Wicken Water

Wicken Water rises near Duddenhoe End and flows through the settlements of Arkesden and Wicken Bonhunt before joining the Cam through Newport. Arable and horticulture land is mainly present on the banks of Wicken Waters as well as acid, calcareous, and neutral grassland.

2.3.6 Debden Water

Debden Water primarily runs through acid, calcareous, and neutral grassland and broadleaved, mixed and yews woodland. Arable and horticultural land is also present with a patch of improved grassland at the head of the river. It joins the River Cam at Newport.

2.3.7 Wenden Brook

The Wenden Brook is predominantly surrounded by agricultural land. It is a tributary of the Cam/ Granta running parallel to Wicken Waters. Acid, calcareous and neutral grassland are also present intermittently. The Wenden Brook runs almost parallel to the B1039 running through Littlebury Green.

2.3.8 River Stort

The River Stort runs along the north western boundary of the study area. At the head of the river built up areas and gardens are common, with the main course of the river covered by arable and horticultural land. The River Stort also has several WwTW along its banks.

2.3.9 The River Stort (Navigation)

Also running along the boundary of the study area, the River Stort (Navigation) which flows through a mosaic of land types including grassland, woodland, and improved pasture. It is a canalised channel running from Bishop Stortford to the confluence with the Lea navigation, and is interlinked with the main Stort channel.

2.3.10 Bourne Brook

Acid, neutral, and calcareous grassland is present around Bourne Brook, but arable and horticultural land predominantly outline the brook. Bourne Brook runs through a section of

improved grassland close to Farnham Green and Hazel End before leaving the study area and joining the River Stort downstream.

2.3.11 Stansted Brook

A small length of Stanstead Brook has been designated as a chalk stream in the NE mapping. This section runs through broadleaved, mixed and yew woodland, but upstream of this (and on a reach not classified as chalk stream) is Stanstead Mountfitchet.

3 Pressures on Chalk Streams

3.1 Introduction

The health of chalk streams depends on three main factors: water quantity, water quality and physical habitat quality. The following sections will identify the main pressures facing The Rivers Cam and Stort and their tributaries. Many of these factors are also linked, for example a reduction in water quantity can impact water quality.

3.2 Water Framework Directive status

The Water Framework Directive (WFD) was first published in December 2000 and transposed into English and Welsh law in December 2003. It introduced a more rigorous concept of what "good status" should mean than the previous environmental quality measures. By 2027 the WFD has committed to all member states waterbodies achieving good status.

Uttlesford's chalk streams, like a large percentage of rivers in the UK, have a "poor" or "moderate" WFD status. Summaries of water framework directive (WFD) catchments in Uttlesford were presented in the Stage 1 Water Cycle Study. These have been reproduced in Appendix D for the chalk stream catchments.

Flow is a Significant Water Management Issue (SWMI) in most chalk stream catchments in Uttlesford. Consequently, many streams are not achieving good status and have flow as a Reason For Deterioration (RFD). Other pressures include sewage discharge and agricultural and rural land management.

3.3 Water abstraction

Development and its corresponding rise in population increase demand for water. The whole of the Affinity Water supply area – which includes Uttlesford has been classified by the Environment Agency as being under serious water stress[6]. As the WFD summary of the above shows, most of the chalk stream catchments cite groundwater abstraction as one of the reasons for not achieving good status. The groundwater bodies in Uttlesford are shown in A.3, and their status summarised in the Stage 1 WCS.

Abstraction causes groundwater levels to drop, and as chalk streams are predominantly groundwater fed, river flow will also decrease.

Many chalk streams have periods of naturally low flow during dry weather, and have species specially adapted to these environments. Groundwater abstraction lengthen these periods of low or no flow, and cause them in areas where this is not a natural phenomenon.

The Catchment Based Approach (CaBA) Chalk Stream Strategy summarises the impact on ecology of chronic and unnaturally low flows caused by excessive groundwater abstraction:

- Reduction in current velocity
- Reduction in water depth and the spatial volume of in-channel habitat
- Increase in the residence time of water in the river channel
- Increase in the temperature of water in the channel
- Increase in the concentration of pollutants
- Reduction in oxygen levels
- Increase in sediment deposition
- Reduction or interruption of lateral connectivity between the river and its marginal riparian habitats and floodplain
- Disruption in the passage of migratory fish

6 Water stressed areas – final classification, Environment Agency (2021). Accessed online at: https://www.gov.uk/government/publications/water-stressed-areas-2021-classification on: 20/06/22

Many of these effects interact. For example, Brook Water Crowfoot (*Ranunculus*), a plant that thrives in healthy chalk streams with high flow, has its growth limited when channel flow drops. In turn this reduction in channel flow causes an increase in sedimentation – which also limits the growth of Crowfoot. A feature of Crowfoot is the scour between heads of Crowfoot that acts to flush sediment from the channel making the problem of sedimentation worse.

A reduction in channel flow can also increase water temperature and reduce oxygen content, causing stress and decreased growth rates in invertebrates as well as making them more susceptible to infectious diseases (Mattson et al, 2008). Ground and surface water abstraction also affects macrophytes, and phytobenthos a group of sediment organisms. Both macrophytes and phytobenthos are indicator species for a healthy aquatic environment because of their specific habitat needs.

CaBA carried out a survey of 55 chalk streams assessing groundwater abstraction as a percentage of catchment recharge between 2017 and 2019. In simple terms this is a ratio of how much water is abstracted per year compared with the potential recharge from annual rainfall in the catchment. This metric, although simplistic, provides a quick comparison between rivers. A deficit figure is included in the assessment showing the volume of water that would need to be left in the ground for the catchment to deviate by less than 10% from the modelled natural flow at Q95 (this is the river flow that is exceeded 95% of the time – often called the "low flow" condition).

The River Cam shows a very high ratio of abstraction to recharge (52%) and a deficit of 12.3Ml/d indicating a catchment under significant pressure. The River Stort has a lower ratio (18.5%) but a similar deficit of 11.5Ml/d.

The Water Industry National Environment Programme (WINEP) is a set of actions that the EA have requested all 20 water companies operating in England to complete in a particular Asset Management Period (AMP) as part of their environmental commitments. Actions may include investigations or actual measures, examples could be reductions in abstraction in a particular river to maintain flow to support WFD objectives, or a reduction in phosphate pollution in a catchment through upgrades to a WwTW.

A number of investigations are currently underway within the Cam and Stort catchments as part of the Water Industry National Environment Programme (WINEP).

Table 3.1 WINEP actions on Groundwater bodies in Uttlesford

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Cam and Ely Ouse Chalk	EAN00015, EAN00016, EAN00017, EAN00018, EAN00034	7AF100043	DEBDEN ROAD, SAFFRON WALDEN NEWPORT	Investigation and options appraisal This is an investigation to determine whether increased use of groundwater abstraction will cause deterioration of the status of the groundwater body. If it is shown that increased abstraction causes deterioration of status, then the investigation needs to look at the costs of options to provide alternative sources of public water supply. It is the opinion of EA that increased use

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
				of the licence beyond maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3 may cause deterioration.
Cam and Ely Ouse Chalk	EAN00453	7AF200012	Newport PS nitrate investigation	Investigation To investigate the current inputs of nitrate to groundwater and gain a more detailed understanding of the likely long-term trends in nitrate groundwater concentrations at the abstraction. The concentrations of nitrate at the abstraction show rising trend in nitrate concentrations, which has increased rapidly since 2016, posing a risk of exceeding the drinking water standard in the future.
North Essex Chalk	EAN02374 EAN00005 EAN02375 EAN00006	7AF100006	SPRINGWELL SOURCE UTTLESFORD BRIDGE SOURCE WENDEN	Investigation and options appraisal Investigate whether abstraction is causing a failure of the status of North Essex Chalk groundwater body. Ensure No deterioration due to planned abstraction

Table 3.2 WINEP actions on chalk surface waterbodies in Uttlesford

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Cam (US Newport)	EAN00013 EAN00035	7AF100033	NEWPORT	Sustainability Change This is an implementation scheme to prevent deterioration of flows in these rivers. EA will seek to cap abstraction licences based on maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3.

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
Wicken Water	EAN00028 EAN00010 EAN00014	7AF100033	UTTLESFORD BRIDGE SOURCE WENDEN NEWPORT	Sustainability Change This is an implementation scheme to prevent deterioration of flows in these rivers. EA will seek to cap abstraction licences based on maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3.
Wendon Brook	EAN00024 EAN00030 EAN00012	7AF100033	DEBDEN ROAD, SAFFRON WALDEN UTTLESFORD BRIDGE SOURCE WENDEN	Sustainability Change This is an implementation scheme to prevent deterioration of flows in these rivers. EA will seek to cap abstraction licences based on maximum peak use between 2005 and 2015 rounded up to nearest 1000 m^3.
Cam (Newport to Audley End)	EAN00026 EAN00029 EAN02413 EAN00011 EAN00019	7AF100034	SPRINGWELL SOURCE UTTLESFORD BRIDGE SOURCE UTTLESFORD BRIDGE SOURCE WENDEN DEBDEN ROAD, SAFFRON WALDEN	Sustainability Change This Scheme for flow improvement for River Cam has three aspects. 1. EA to seek to cap the licence to prevent deterioration based on maximum peak use 2005 to 2015 rounded to nearest 1000 m3. 2. Carry out river restoration works (Options 19, 20 and 21 from options appraisal). 3. Change the flow trigger condition on Uttlesford/Springwell licence from 12.72 Ml/d to 15.64 Ml/d.
Cam (Audley End to Stapleford)	EAN00023 EAN00385 EAN00036 EAN00025 EAN00027 EAN02412 EAN00037	7AF100034	DEBDEN ROAD, SAFFRON WALDEN RIVER RESTORATION: IMPLEMENTATION SCHEME NEWPORT	Sustainability Change This Scheme for flow improvement for River Cam has three aspects. 1. EA to seek to cap the licence to prevent deterioration based on maximum peak use 2005 to 2015 rounded to nearest 1000 m^3. 2.

Waterbody Name	WINEP ID	Unique ID	Scheme Name(s)	Type of scheme / notes
			SPRINGWELL SOURCE UTTLESFORD BRIDGE SOURCE UTTLESFORD BRIDGE SOURCE WENDEN	Carry out river restoration works (Options 19, 20 and 21 from options appraisal). 3. Change the flow trigger condition on Uttlesford/Springwell licence from 12.72 Ml/d to 15.64 Ml/d.
Stort and Bourne Brook	HNL00026 HNL00023 HNL00028 HNL00022	7AF100075	NORTH STORTFORD PUMPING STATION STANSTED MOUNTFITCHET PUMPING STATION STANSTED PUMPING STATION THE CAUSEWAY BISHOPS STORTFORD	Investigation and Options Appraisal WFD Flow investigation – no details given
Stort (at Clavering)	HNL00025 HNL00030	7AF100078	STANSTED MOUNTFITCHET PUMPING STATION STANSTED PUMPING STATION	Investigation and Options Appraisal WFD Flow investigation – no details given

3.4 Agriculture and industry

Natural chalk streams are characterised by their "gin-clear" waters and low nutrient concentrations. Run-off from agricultural land and effluent from industry can cause a reduction in water quality – exacerbated where flows are already lower due to abstraction resulting in less dilution of pollutants. Due to chalk streams needing "soggy" flood plains agriculture has over time, had a negative effect on chalk streams by disconnecting the river from its natural flood plain, and draining flood plains to increase agricultural productivity.

The Natural England Living Habitats Map was used to show the main landcover types in Uttlesford. As seen in figures Figure 3.1 to Figure 3.4, acid, calcareous and neutral grassland and arable and horticultural land predominantly cover Uttlesford. Agricultural runoff is a large risk to chalk stream health because of their environmental sensitivity. Fertilisers and poor field management commonly lead to runoff containing phosphate and ammonia polluting watercourses.

It should be noted that the Natural England Living Habitats Map shows a snapshot in time and may change as farmers change land use.

Natural England Living Habitats Map

- Chalk Streams Uttlesford
- Rivers
- Uttlesford
- Acid, Calcareous, Neutral Grassland
- Arable and Horticultural
- Bare Ground
- Bare Sand
- Bog
- Broadleaved, Mixed and Yew Woodland
- Built-up Areas and Gardens
- Coniferous Woodland
- Dwarf Shrub Heath
- Fen, Marsh and Swamp
- Improved Grassland
- Unclassified
- Water

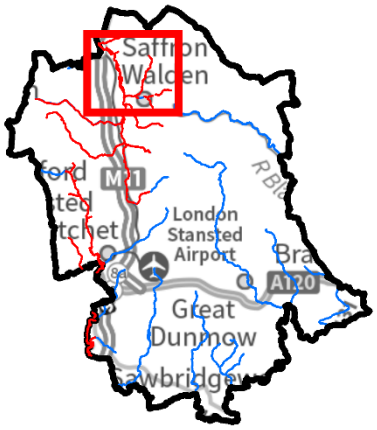

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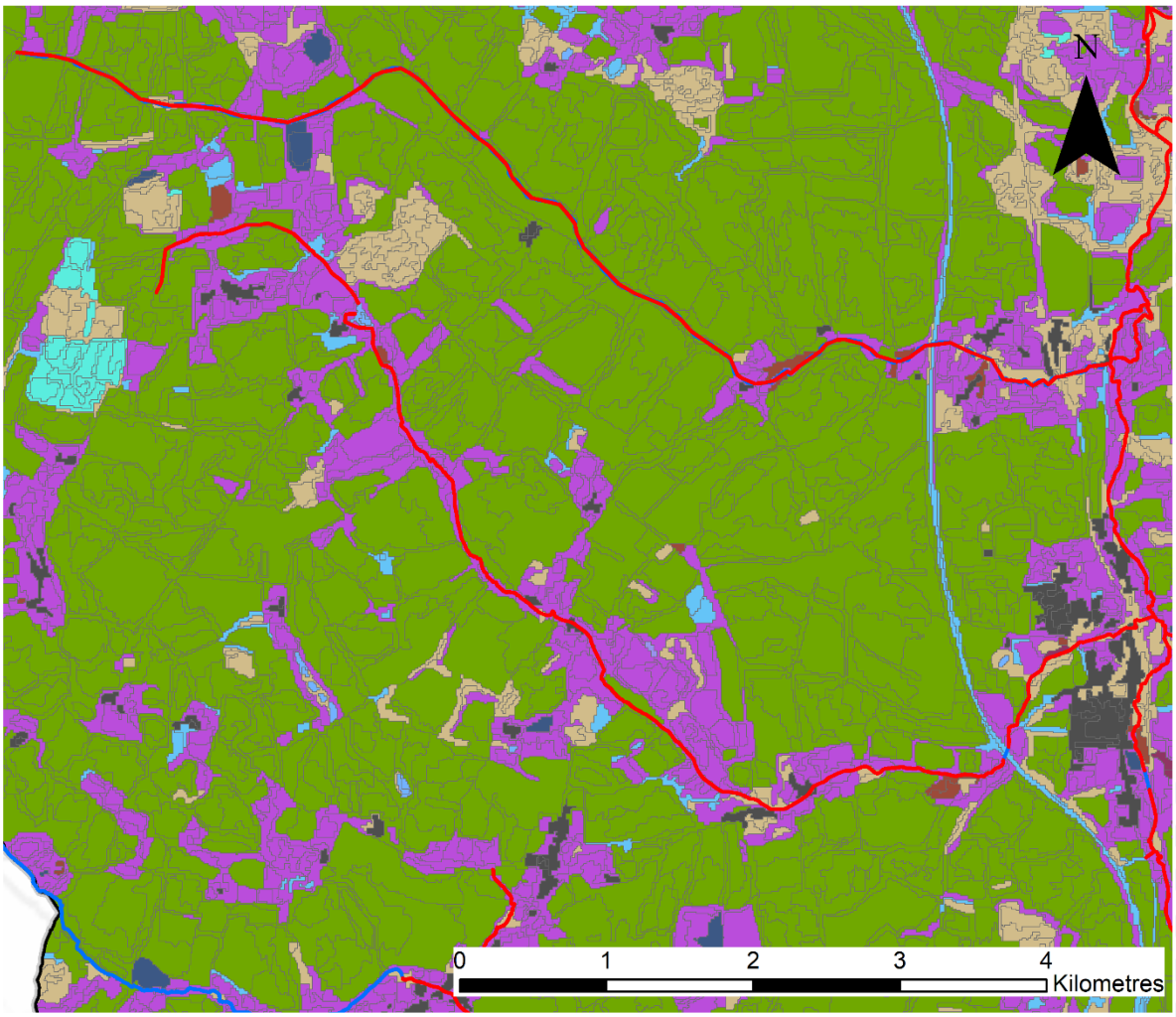
Figure 3.1 Landcover in Uttlesford Part 1



Natural England Living Habitats Map

- Chalk Streams Uttlesford
- Rivers
- Uttlesford
- Acid, Calcareous, Neutral Grassland
- Arable and Horticultural
- Bare Ground
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- Coniferous Woodland
- Dwarf Shrub Heath
- Fen, Marsh and Swamp
- Improved Grassland
- Unclassified
- Water

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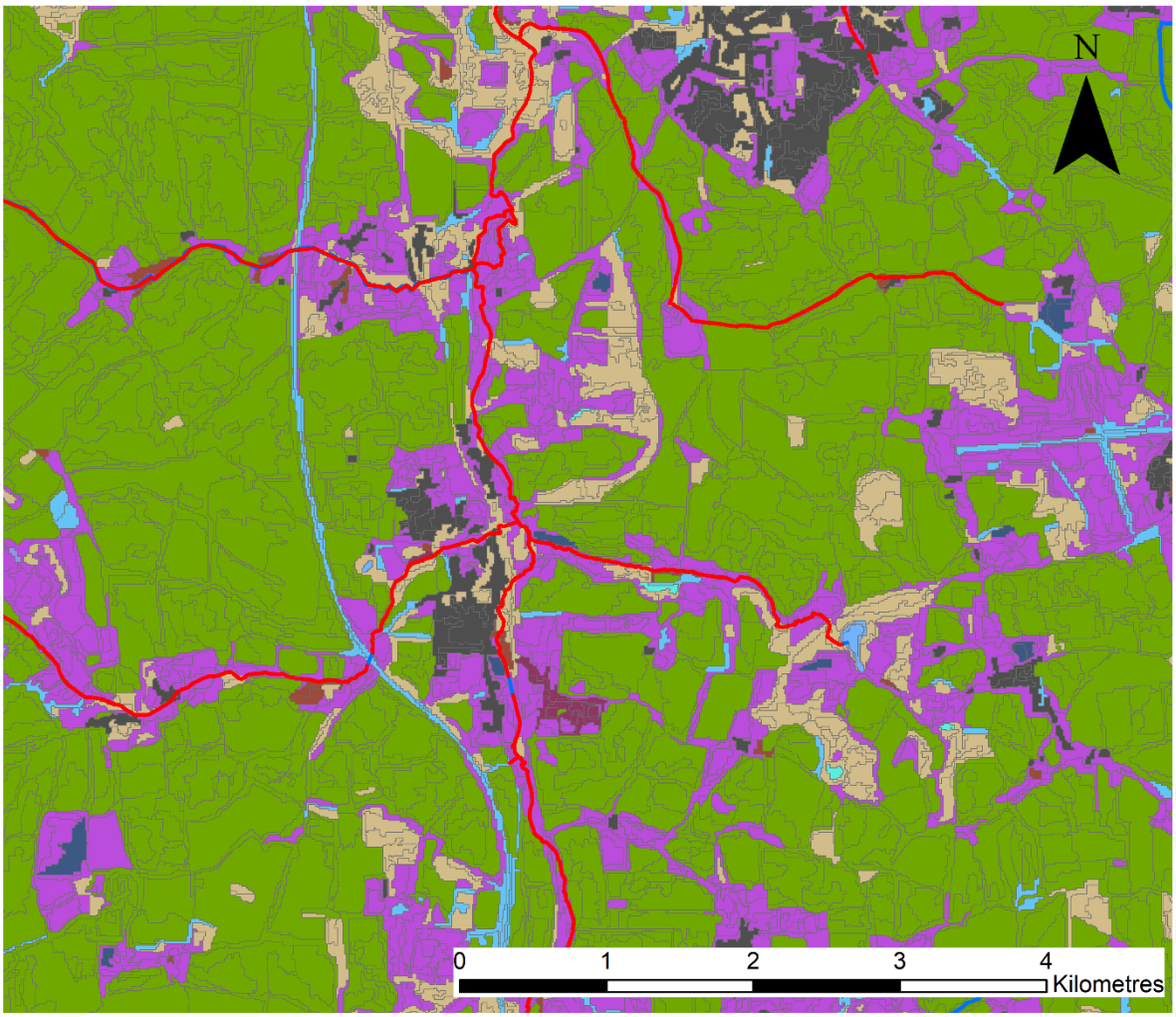
Figure 3.2 Landcover in Uttlesford Part 2



Natural England Living Habitats Map

- Chalk Streams Uttlesford
- Rivers
- Uttlesford
- Acid, Calcareous, Neutral Grassland
- Arable and Horticultural
- Bare Ground
- Bare Sand
- Bog
- Broadleaved, Mixed and Yew Woodland
- Built-up Areas and Gardens
- Coniferous Woodland
- Dwarf Shrub Heath
- Fen, Marsh and Swamp
- Improved Grassland
- Unclassified
- Water

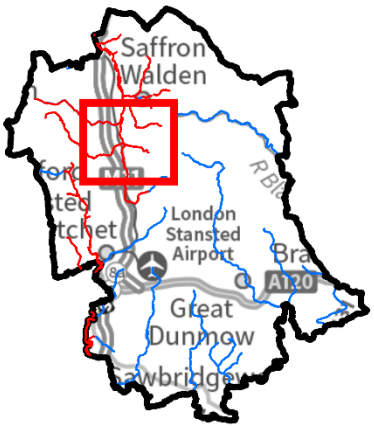


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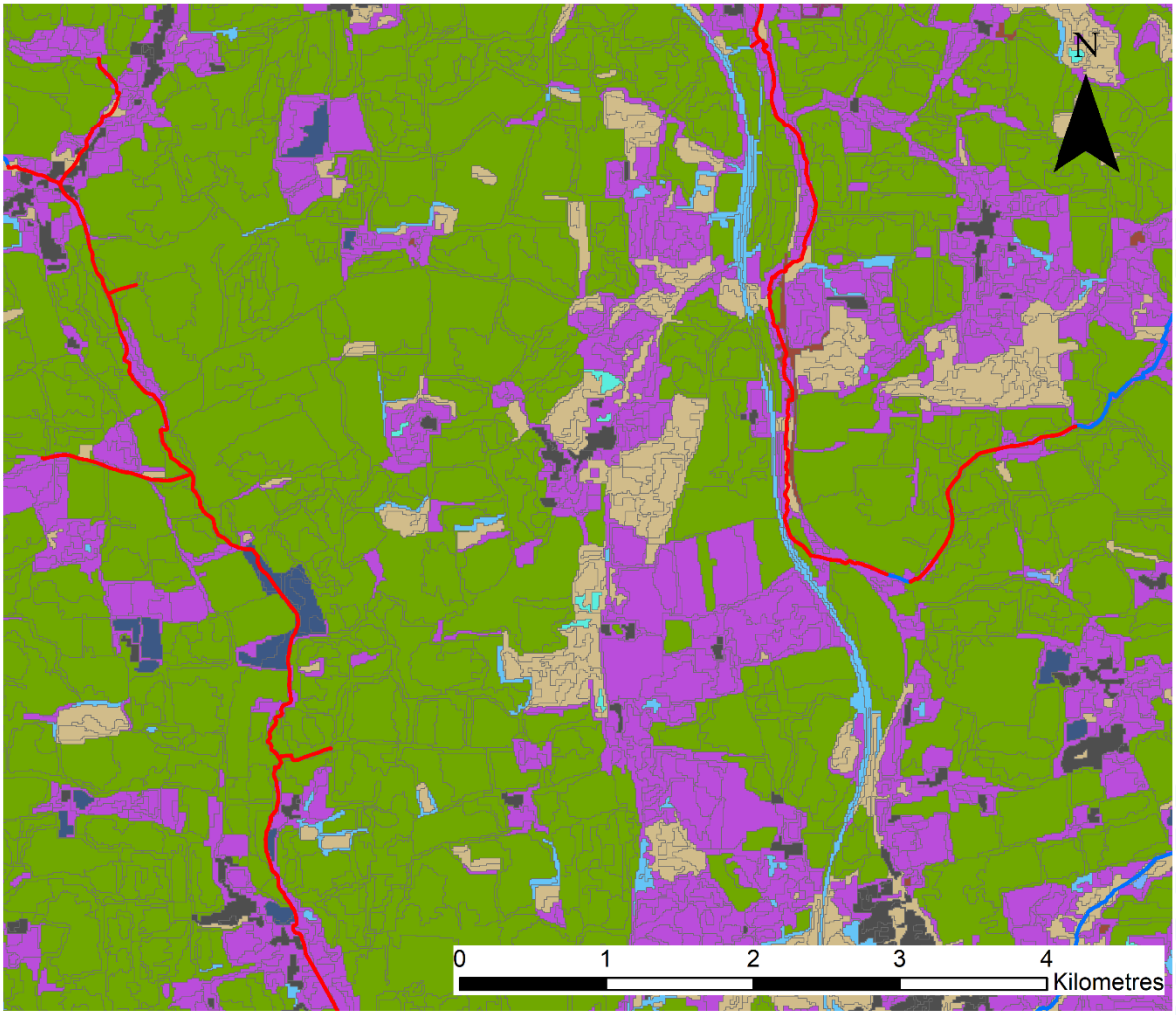
Figure 3.3 Landcover of Uttlesford Part 3



Natural England Living Habitats Map

- Chalk Streams Uttlesford
- Rivers
- Uttlesford
- Acid, Calcareous, Neutral Grassland
- Arable and Horticultural
- Bare Ground
- Bare Sand
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- Coniferous Woodland
- Dwarf Shrub Heath
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- Improved Grassland
- Unclassified
- Water

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Figure 3.4 Landcover of Uttlesford Part 4

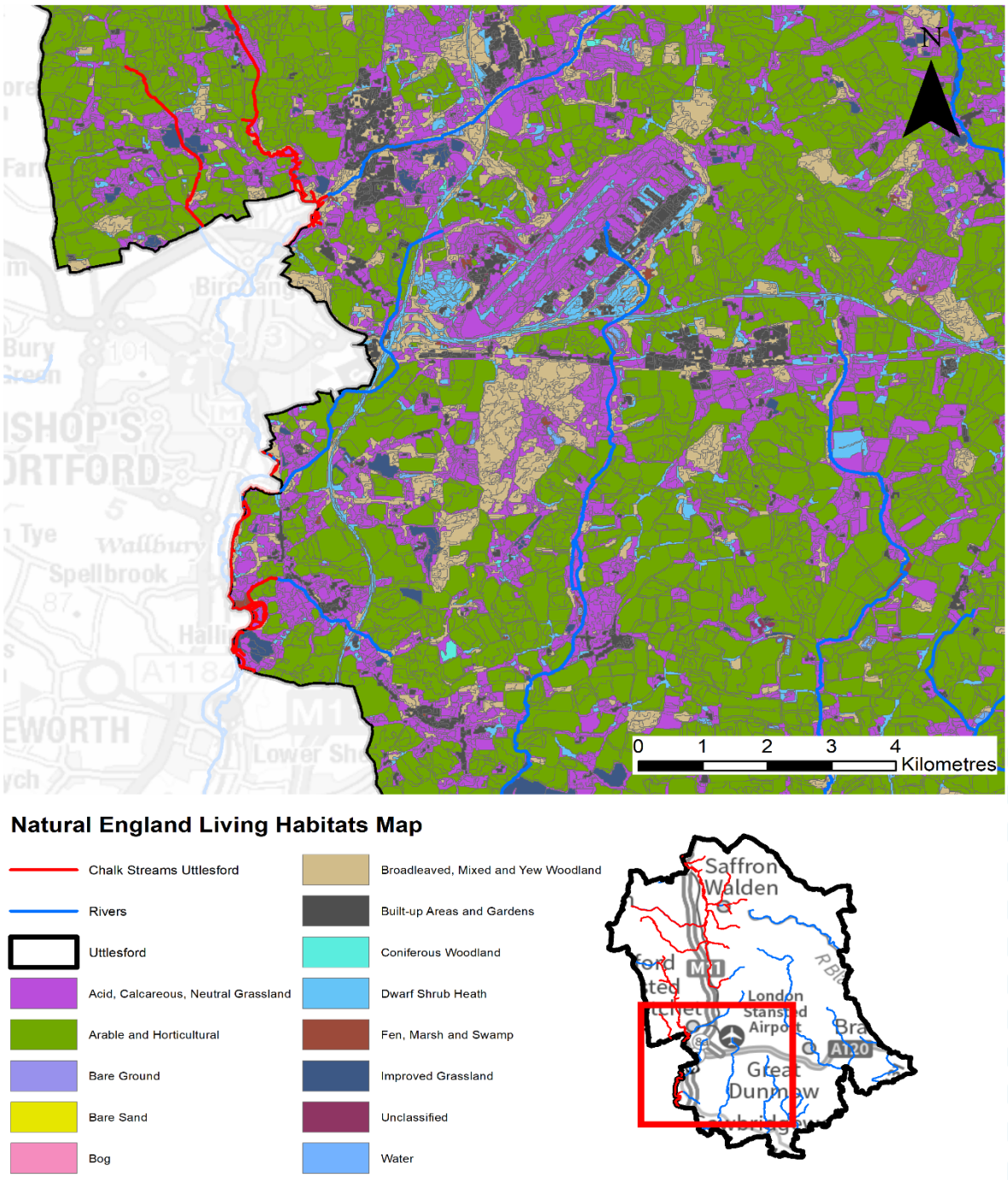

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Figure 3.5 Landcover of Uttlesford Part 5

High phosphate levels are prevalent in Uttlesford, this can lead to eutrophication and subsequently algal blooms and a reduction of dissolved oxygen within the watercourse. Not only can this be detrimental to invertebrates but can also have damaging effects on plant and fish populations.

Ammonia is another common agricultural pollutant. Ammonia pollution is commonly linked to agricultural runoff which has negative effects on macrophyte populations (large aquatic plants). Ammonia, in high amounts, is toxic to aquatic life decreasing biodiversity levels.

3.4.1 Cattle Grazing

Another risk to chalk streams from agriculture is cattle grazing. Factors such as reduced water depth and reduced shade can occur from cattle grazing subsequently having effects on trout spawning and increased turbidity. Ungrazed sites typically have higher levels of macroinvertebrate species than grazed sites[7]. This can be because of the increase in sediment from eroded river banks occurring from cattle drinking from the rivers. As seen in Figure 3.1 to Figure 3.3 arable and horticultural land mainly cover Uttlesford, consequently, cattle grazing may not be a significant catchment-wide issue, although local problems may occur.

Cattle trails, the pathways cattle use to walk to and from the bankside, can act as channels for surface water thus increasing levels of ammonia and phosphate runoff into rivers.

3.4.2 Sediment from agriculture

Soil erosion can have a significant impact on water quality and sediment accumulation in watercourses[8] with 76% of the sediment load in UK rivers resulting from erosion of agricultural land[9]. The soil erosion rate on arable land is typically double that of pasture, but is highly dependent on the topography and land management practices.

3.5 Development and urbanisation

3.5.1 Runoff from developed sites

Within developed sites, pollutants from gardens and vehicles can be carried by rainwater either directly overland into watercourses, or via surface water drains. The speed and volume of runoff is higher than those on undeveloped sites due to the higher proportion of impermeable surfaces.

Pollutants present in runoff from roads could include metals such as Cadmium, Zinc and Copper (from vehicles), particulates from tyres and exhausts, oil, washer fluids etc. Other pollutants present in runoff from developed sites could include fertilizers / pesticides from gardens.

Sediment and other pollutants can disrupt the natural ecology of chalk streams making developed sites drainage systems and wastewater management a prominent factor in Uttlesford's chalk streams health.

3.5.2 Construction runoff

Runoff and sediment from construction sites is also a risk to chalk streams that need to be managed. Runoff from construction sites may include, but is not limited to, oil, pesticides and soil/ sediment, all of which can damage a habitat. Runoff is influenced by various factors such as climate and topography, as well as soil type.

7 Harrison, S. S. C. and Harris, I. T. (2002) The effects of bankside management on chalk stream invertebrate communities. Freshwater Biology, 47, 2233-2245.
8 Can control of erosion mitigate water pollution by sediments?, Rickson, R.J. (2014), Science of the Total Environment [online]. 468–469 pp. 1187–1197
9 The potential impact of projected change in farming by 2015 on the importance of the agricultural sector as a sediment source in England and Wales, Collins, A.L., et al. (2009). Catena [online]. 79 pp. 243–250.

3.6 Riparian squeeze

Natural rivers are rarely fixed in the landscape and natural hydromorphological processes cause them to move and meander over time. These natural processes are interrupted when rivers are straightened or diverted to accommodate agriculture or development, or left perched when drainage ditches are used to drain adjacent land. This can be particularly significant in chalk streams, where the floodplain is a zone of high groundwater level which regulates the interaction of water between the chalk aquifer and the stream.

Development right up to the river bank can also pin the banks in place preventing future movement, often leaving a canalised stream with an artificial flow and a degraded habitat. Figure 3.6 shows an example of where the natural flood plain may have been encroached upon by development (this is not suggesting that this development is at increased flood risk).

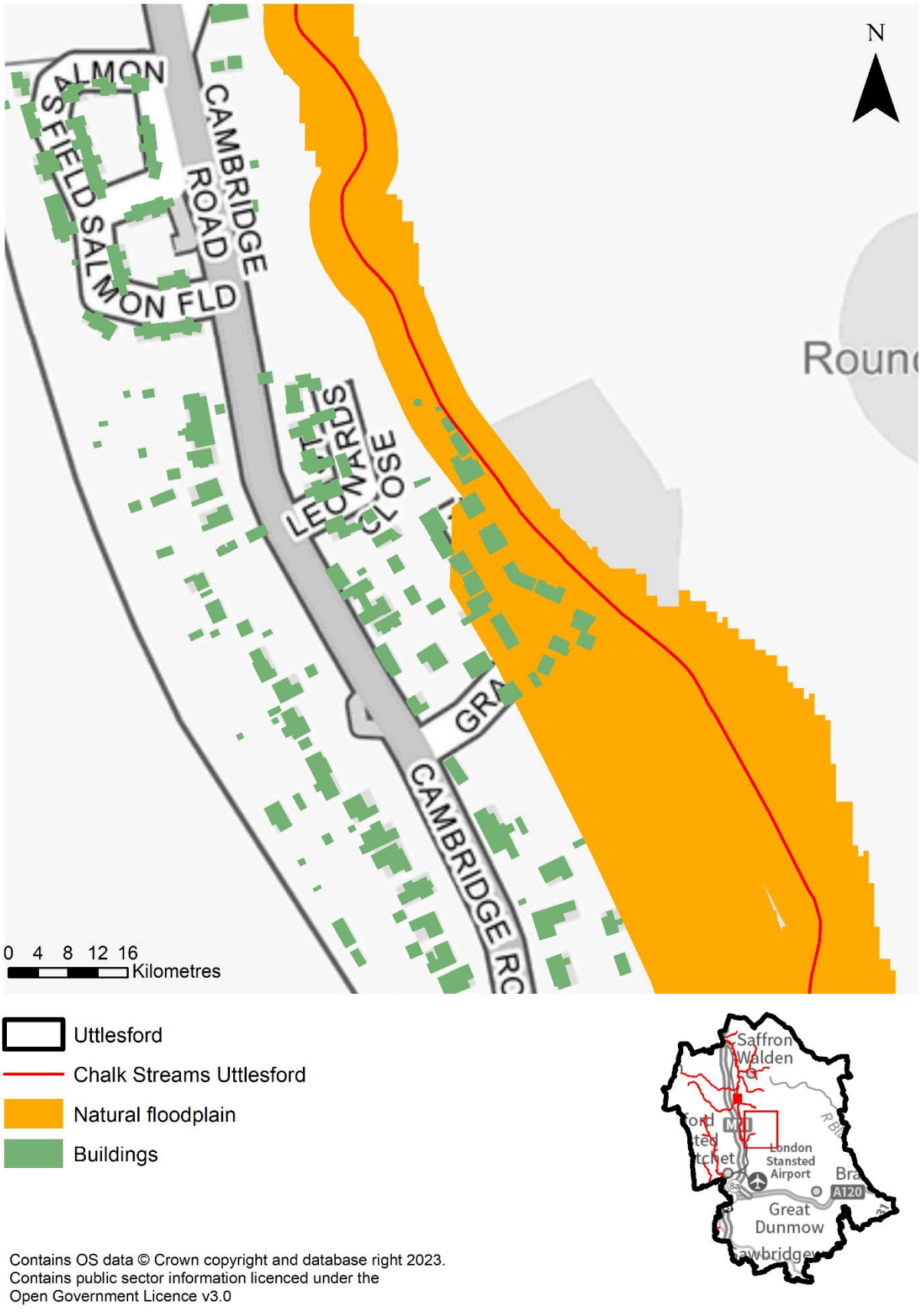


Figure 3.6 Building encroachment on chalk streams and floodplains

3.7 Discharges from Wastewater Treatment Works

With a growing population and increased abstraction, it follows that the volume of treated wastewater being discharged to the environment is also increased. Although an environmental permit is applied to discharges of wastewater, defining the level of treatment required and the maximum concentration of certain pollutants, increases in wastewater discharge that aren't accompanied by a tightening of the environmental permit and / or improvements in treatment technology are still a threat to the sensitive environments in chalk streams. If a WwTW is within its existing permit (either for volume of effluent, or concentration of pollutants), growth can be accommodated without any changes being made. This can lead to a small deterioration in water quality that may not be considered to be significant (less than 10% deterioration and no change in WFD class), but still increases the pressure on what is a sensitive habitat.

Wastewater discharges are a source of phosphate and ammonia pollution in Uttlesford chalk streams. As mentioned previously, high phosphate and ammonia levels can have harmful effects on the surrounding environment. 82% (9/11) of Uttlesford catchments have high phosphate levels under the WFD classification. This is due to a combination of wastewater discharges and agricultural runoff. See Figure 3.7 for the locations of WwTWs in Uttlesford.

Anglian Water and Thames Water are the sewerage undertakers for Uttlesford, and manage the wastewater treatment works (WwTW) and storm overflows in the study area. The Stage 1 and 2 WCS reports contain details of all of the WwTWs present in the study area.

It is important that should either new or upgraded infrastructure be required to accommodate growth, that delivery of this is aligned with the delivery of new development to minimise the impact of additional treated effluent. Consideration should be given to how improvements at WwTWs that discharge to chalk stream catchments can contribute to improvements in water quality.

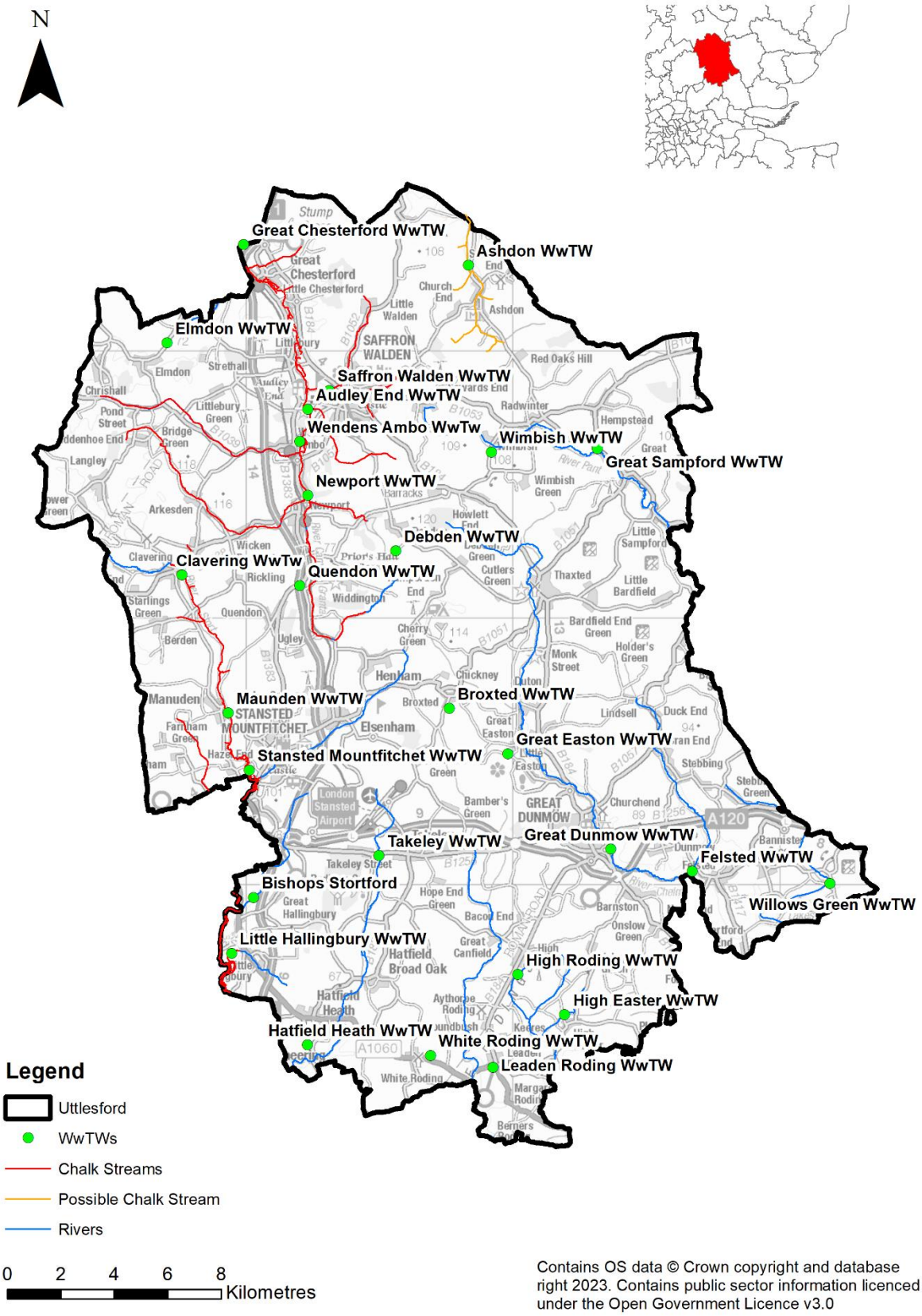


Figure 3.7 WwTW in Uttlesford

3.8 Storm overflows

Storm overflows are an essential component in combined sewer networks, reducing the risk of sewer flooding during intense rainfall – however when they operate frequently, they can cause environmental damage. They occur on combined sewer systems where the sewer takes both foul flow (sewage from homes and offices) and rainwater runoff. In normal conditions all of this flow passes through the sewer network and is treated at a wastewater treatment works. In periods of exceptional rainfall, the capacity in a combined sewer may be used up by the additional flow from rooftops and storm drains. Once the capacity is exceeded, wastewater would back up into homes, businesses and on to roads. A storm overflow acts as a relief valve, preventing this from happening. As well as being present on the sewerage network, they also exist on storm tanks at WwTW.

Storm overflows become problematic when they are operating in moderate or light rainfall – possibly in breach of their permit. This can occur when the area of impermeable surfaces connected to the sewerage system has increased as a result of development and urban creep, and as a result of infiltration of soil and ground water into sewers and private drains through the fabric of the pipes and chambers.

There are seven network storm overflows and three WwTW storm tank overflows in Uttlesford's chalk stream catchments, see Figure 3.8. Many of the WwTWs present in chalk stream catchments do not appear in the Event Duration Monitoring (EDM) data, but are likely to have a storm tank overflow.

Unlike treated wastewater effluent discharges, storm overflows are only subject to screening to remove gross solids, meaning raw, diluted sewage is discharged into watercourses. Subsequently, storm overflows can impact water quality in chalk streams.

Table 3.3 Storm overflow operation in Chalk stream catchments

Storm Overflow	Storm Overflow Number	Receiving watercourse	No. of operations in 2021	Duration of operation in 2021 (hours)	No. of operations in 2022	Duration of operation in 2022 (hours)	No. of operations in 2023	Duration of operation in 2023 (hours)
Castle Street/ High Street	4	River Slade	46	69.75	28	14.5	17	6
Little Chesterford	8	Cam (Audley End to Stapleford)	0	0	0	0	3	5.25
Little Hallingbury (WwTW)	25	Little Hallingbury Brook	59	969.55	31	404.9	61	846.75
Saffron Walden WRC (storm tank overflow)	26	River Slade	7	7	8	6.75	1	0.5
Saffron Walden WRC (network overflow)	10	River Slade	13	19.25	17	13	26	15.5
Saffron Walden-George Abbey OV	11	River Slade	0	0	0	0	4	1.5

Storm Overflow	Storm Overflow Number	Receiving watercourse	No. of operations in 2021	Duration of operation in 2021 (hours)	No. of operations in 2022	Duration of operation in 2022 (hours)	No. of operations in 2023	Duration of operation in 2023 (hours)
SO Gasworks Crossroads	12	River Slade	0	0	0	0	0	0
Stansted Mountfitchet WwTW	27	Stort and Bourne Brook	30	383.07	17	146.47	35	325.25
Thaxted Road. Victoria Avenue CSO	16	River Slade	1	1	0	0	2	0.5
Wicken Bonhunt PS	18	Wicken Water	0	0	0	0	2	9.75

The Environment Agency's Storm Overflow Assessment Framework (SOAF)[10] requires that water companies undertake investigations where an overflow spills more than 60 times per year in one year, 50 times per year over two years or 40 times per year over three or more years.

10 Storm Overflow Assessment Framework, Environment Agency (2018). Accessed online at: https://www.water.org.uk/wp-content/uploads/2018/12/SOAF.pdf on: 01/07/2022

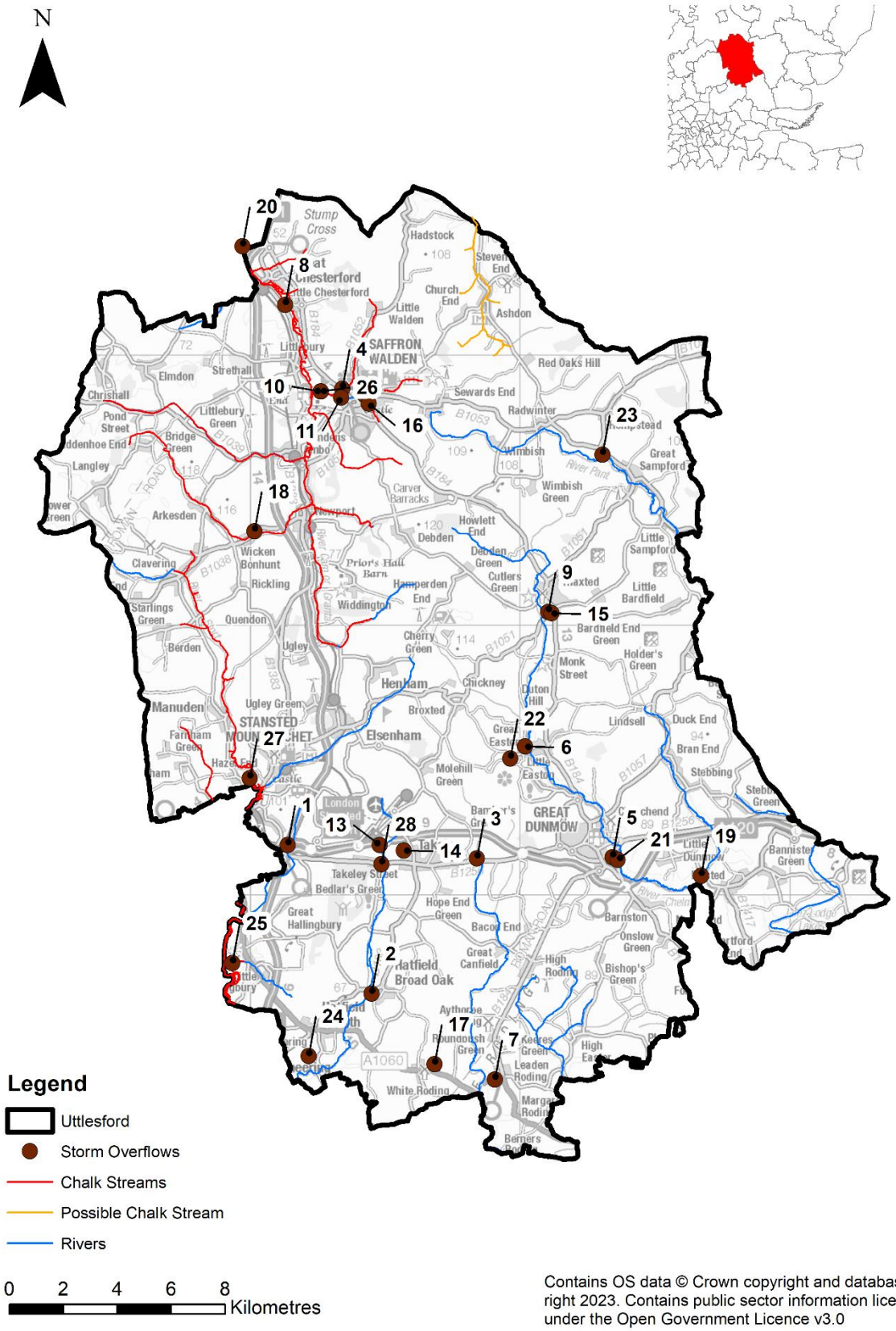


Figure 3.8 Uttlesford storm overflows in relation to chalk streams

4 Current mitigation measures and initiatives

4.1 Introduction

Various organisations have been involved in or made recommendations for the protection of chalk streams. These include the Environment Agency and water companies through their statutory obligations, and other stakeholders such as Catchment Based Approach Chalk Stream Restoration Group who have published a Chalk Stream Strategy, and the Angling Trust who published a charter for Chalk Streams in 2013. Since 2013, community groups have carried out work on chalk streams including those in Greater Cambridge who conducted an audit of the chalk streams in the Upper Cam catchment (downstream of Uttlesford).

The following section summarises the work that is already underway and the recommendations that have been made in recent reports.

The legal status of chalk streams and the relevant environmental legislation is also discussed.

4.2 Environmental Legislation

There is no specific legal protection for chalk streams in the UK. Environmental legislation provides legal protection to designated species and habitats through a number of different means such as the Conservation of Habitats and Species Regulations 2017 (As amended), which defines Special Areas of Conservation (SAC) and Special Protection Areas (SPA), and the Wildlife and countryside Act 1981 which designates Sites of Special Scientific Interest (SSSI). There are three SSSIs in chalk stream catchments in Uttlesford, and no SACs or SPAs. The three SSSIs are summarised in Appendix C below, however all three are designated for habitat adjacent to the river, and not for the chalk streams themselves.

The Natural Environment and Rural Communities Act 2006 (commonly referred to the as the NERC Act), was intended to implement key aspects of the Government's Rural Strategy published in 2004 and established Natural England as a new independent body responsible for conserving, enhancing and managing England's natural environment.

Section 40 of the NERC Act places a duty to conserve biodiversity on public authorities, including Local Planning Authorities and water companies. "The public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."[11]

Section 41 requires the Secretary of State to publish and maintain a list of species and types of habitat which in the Secretary of State's opinion (in consultation with Natural England) are of "principal importance for the purpose of conserving biodiversity." Chalk streams are not specifically mentioned in this list and fall within the general classification of "rivers".

The lack of a formal statutory driver for chalk stream enhancement and protection has held back the restoration of chalk streams and is a key recommendation of the Catchment Based Approach Chalk Stream Strategy.

4.3 Environment Agency

The Environment Agency has been working to limit the damage dry weather can cause and to ensure that water supplies are sustainable for the future. This includes taking immediate action to restrict the amount of water taken, developing long-term plans to reduce reliance on chalk streams, working with partners on projects to improve water quality and stepping in to limit damage to wildlife and the environment when river levels are too low.

They have also been working to make sure that water abstractions are sustainable. The Environment Agency regulate water abstraction through their licensing system. By reviewing licences and reducing the amount of water people can take the Environment

11 Natural Environment and Rural Communities Act 2006, HM Government (2006). Accessed online at: http://www.legislation.gov.uk/ukpga/2006/16/section/40 on: 24/01/2022

Agency have returned 16 billion litres of water back to chalk aquifers and streams since 2008 and removed the risk of another 14.9 billion litres being taken[12].

The Environment Agency have also been working with water companies to find long term solutions for water supply by finding alternative water supply sources and reducing demand such as new reservoirs and pipes to transfer water from other parts of the country.

4.4 Affinity Water

Affinity Water (AfW) provide the water supply to Uttlesford and to neighbouring areas to the south and west. They divide their supply area into eight water resource zones - which are defined by the EA as areas in which the management of supply and demand is largely self-contained and where the supply infrastructure is linked such that customers within the zone experience the same risk of supply failure. Uttlesford is covered by the Stort WRZ which sits in their Central region (consisting of six adjacent WRZs).

Within a WRZ a customer may receive their water from anywhere within the zone, or from water transferred from other zones, and not necessarily from the nearest source. For this reason, it is not possible to say that an individual development site will increase abstraction from a particular water source. It is for the water company to balance the water sources they have to provide a sufficient supply for the WRZ, while meeting their environmental obligations and staying within their abstraction licences.

Water Resource Management Plans (WRMPs) are 50-year strategies that water companies are required to prepare, with full updates every five years. They define the expected demand for water and how this demand will be met from their supply. Affinity Water have published their revised draft Water Resources Management Plan 2024 (rdWRMP24) with a final version expected later in 2024.

Within the rdWRMP24 they outline their role in achieving sustainable abstraction:

"Flows in the Chalk rivers in our area are dictated primarily by the amount of seasonal rainfall that we get, and, in particular, the amount that percolates through to and recharges the Chalk aquifer. This 'recharge' is released from aquifer storage through the bed of the streams over time and provides differing levels of baseflow that are related to how much aquifer recharge there has been. Hence flows reduce or even disappear naturally in some reaches, as a result of dry weather or drought.

However, in some catchments we also currently abstract from those Chalk aquifers via our boreholes. This affects groundwater levels and, in some cases, can affect the low flows within the streams and rivers. Where this has a detrimental impact on the health of the stream, as described through the ecology, quality or geomorphology of the river, then we regard that the abstraction is unsustainable and we need to reduce or even cease the abstraction to help restore that steam or river to a healthy condition. The definition of 'unsustainable' will require further exploration and definition with stakeholders through AMP8 (2025-2030), as described in our Monitoring Plan …. For this plan we have used the requirements of existing legislation (the Water Framework Directive) and guidance from our regulators, along with testing of parameters that underpin that guidance to evaluate ranges of abstraction reduction need."

Sustainability reductions are planned reductions in the amount of water than is abstracted from the environment, in particular from the chalk aquifers. Affinity Water have a programme of sustainability reductions planned in response to Environment Agency requirements. In order to achieve these, alternative sources of water (or reduced demand) is needed.

Additional to sustainability reductions, AfW have included catchment and nature-based solutions which complement the proposed reductions in abstraction and will provide

12 Protecting our precious chalk streams, Environment Agency (2019) Accessed online at: https://environmentagency.blog.gov.uk/2019/10/02/protecting-our-precious-chalk-streams/ on: 24/01/2022

additional environmental resilience in the Chalk catchments. These types of solutions also contribute towards natural capital and biodiversity net gain.

The EA define different changes to abstraction licences for water companies based on the current WFD status of waterbodies, and the expected growth in groundwater abstraction. Most of the waterbodies within AfW's supply area are not in good WFD status, with the reasons for not achieving good status including "flow, not supporting good status" (which is affected by abstraction). As there is no planned growth in abstraction, their licences have been capped at the maximum peak abstraction value. They intend to implement this by using a six-year rolling licence cap on their sources, set to the "recent actual" values (mean abstraction from the period 2010 to 2016), with an allowance to abstract up to the maximum peak abstraction within the rolling period in any one year. They note that the criteria for capping licences will become more stringent in the future and there is the potential for licences to be capped at the recent actual (mean abstraction for the period 2010 to 2016) rather than the maximum peak abstraction.

Alongside this, AfW have confirmed that they are committed to "progressively ending unstainable abstractions" where this is identified. Where there are known potential impacts then sources are schedules for reduction in AMP8 (2025-2030). Their abstraction reduction strategy is intended to provide a balance between the pace at which they end unsustainable abstraction and affordability. An adaptive strategy, on a catchment-by-catchment basis, will allow the impact of the programme to be assessed, and the risks of groundwater emergence to be managed as groundwater levels recover.

Alongside the Stage 1 WCS, AfW confirmed that they cannot guarantee at this stage there won't be a requirement for a new source or new infrastructure. It would however be their responsibility to ensure that no adverse environmental impacts would arise from any new infrastructure or source of water.

4.5 Chalk stream strategy

Catchment Based Approach (CaBA) and the Chalk Stream Restoration Group (CSRG) have published a Chalk Stream Strategy Report (2021[13]) with the goal to enhance chalk streams across the UK. CaBA recommend an approach that addresses all three facets of the health chalk streams – flow, water quality and habitat. Recommendations and actions are laid out in their strategy report.

Their recommendations include:

- A national time-bound commitment to meet targets on chalk stream health which is feasible and beneficial.
- Decrease nutrient run off into chalk streams
- Abstraction limits where flows are reduced by no more than 10%
- A review on waterbody boundaries and assessment methods to ensure water quality measures are accurate.
- Prioritisation of chalk stream head waters
- Using A Nature Recovery Network (NRN) and Environmental Land Management (ELM) schemes to increase biodiversity in chalk catchments
- A national network to implement restoration strategies in catchment areas
- Cost-benefit analysis/ economic appraisal review

Within the report CaBA also suggest there should be a "development and planning rules for chalk streams" section of the National Planning Policy Framework, that mirrors their own

13 CaBA CSRG Strategy MAIN REPORT FINAL 12.10.21 (catchmentbasedapproach.org)

advice on "farming rules for chalk streams". A list of similar recommendations has been produced for new developments[14]:

- LPAs should take account of implications for water resources and sewerage systems of major housing developments in the Local Plan.
- Developers should make water company developer contributions to help cover the costs of negative impacts on water resources from developments.
- CaBA suggest no work to be done within 25m of gateways to decrease run off channels on agricultural land and a 10m buffer from chalk streams on arable land. This can be repurposed in a new development setting with "no development" chalk stream buffer zones implemented.
- SuDs on all new development in chalk catchments
- Highest standard of water efficiency possible, including the possibility of water neutrality, for new developments in chalk stream catchments (90 l/p/d)
- Chalk streams and their associated habitats should be featured strongly in Local Nature Recovery Strategies and Biodiversity Net Gain.

Although not all of the above points are within the power of the LPA to change, it gives a concise overview of recommendations that could benefit chalk stream health and protection.

4.6 Angling Trust

In 2013 The Angling Trust put forward a Charter for Chalk Streams[15]. This included a list of recommendations such as compulsory water metering and education, as well as immediate start pilot schemes to restore channel morphology and connectivity.

4.7 Greater Cambridge Chalk Stream Project

Greater Cambridge is home to several chalk streams predominantly to the southwest of the city. Over the last 10 years Cambridge residents have been campaigning and carrying out practical conservation efforts to try and regenerate the chalk streams within their district. This Greater Cambridge Chalk Stream Project report (GCCSPR) was commissioned by Cambridge City Council and Cambridge Water as part of an audit of chalk streams in the Cam catchment. This report covers an area downstream of Uttlesford.

4.7.1 Pressures

Many of Cambridge's chalk streams, like Uttlesford's, are in "poor" or "moderate" condition according to the WFD classification. Reasons for this have been recognised within the Chalk Streams Project Report as:

- Flow pressures - Because of the increase in population, abstraction rates have increased. If groundwater levels are too low, the water can't be retained by the ground and consequently, the stream run dry.
- Channel modifications - Modified channels can become deeper and straighter increasing water flow. Subsequently, natural gravels and silt get washed away which are important for flora and fauna species.
- Poor water quality - Aquifers feed chalk streams, but so does rainwater runoff. Runoff from fields can increase silt, nitrates and phosphates causing poor water quality.

4.7.2 Assessment

Species can be a good indicator of healthy watercourses, including chalk streams. 20 watercourses within the Greater Cambridge district have been assessed using Rapid Assessment of Biodiversity and Community Value to record species richness and general

14 CaBA Chalk Stream Strategy Report: CaBA CSRG Strategy MAIN REPORT FINAL 12.10.21 (catchmentbasedapproach.org)
15 Angling Trust- Chalk Stream Charter: https://anglingtrust.net/keeping-rivers-flowing/chalkstream-charter-2/

river features. This assessment resulted in RAG ratings of factors such as flow regime with overall results leading to actions being put in place for each river[16]. Many of the rivers were rated red for connectivity/ fish barriers and flow regime.

4.7.3 Management:

Once the assessment results were reviewed initial projects were put forward for each chalk stream. These projects included actions such as habitat creation and assessment of fish passage, as well as possible methods of funding to carry them out.

Many of the suggested projects can be grouped into five general headings:

- Hinging of trees and creation of low brash hedges: Hinging of trees is where a cut is made half way through the tree in question making a 90-degree angle to give shade to species such as trout in the stream.
- Gravel placement: Due to dredging, gravel is lacking in some water bodies which decreases habitat.
- Bank re-profiling: Straight riverbanks are steep and uniform which degrades habitat.
- "Dig 'n' dump": Creating more varied river channels by moving materials dug up from the riverbed can create new habitat.
- Long-term ambitions: Projects such as large-scale bed-raising and the removal of weirs will aid in fish passages and increasing the flow of the river.

4.7.4 Applying this knowledge to Uttlesford

Drawing on the GCCSPR, restoration recommendations of the chalk streams themselves will be valuable in working towards achieving "good" WFD status in the future.

The "dig and dump" recommendation is possible within Uttlesford, although the locations should be carefully assessed to avoid damage to existing habitat / species. Structures such as berms could be a less disruptive alternative to creating new habitat. Berms are commonly made of woody material placed on river margins and secured to the riverbank using stakes. By increasing flow rate around meanders, it varies gravel distribution. Another way to improve flow are flow deflectors. This is where large logs are secured in the riverbed and the waters altered flow creates varied gravel coverage (Wessex River Trust, 2022).

Other alternatives defined within the report could be Himalayan balsam removal to let native species thrive and planting water crowfoot which provides habitat for common chalk stream invertebrates.

[16] Greater Cambridge Chalk Streams Project Report - Cambridge City Council

5 Recommendations

5.1 Introduction

When considering chalk stream protection and new developments, it is important to consider the three main points to protecting chalk streams; flow, water quality and habitat. In addition, it is imperative to understand the effects of new developments on chalk streams' natural hydrology and ecology.

The section below outlines measures that could be taken to mitigate the pressures identified in Section 3.

It should be noted that changes to the abstraction and aquifer recharge may result in changes in groundwater levels in the catchment. Where development has occurred in areas that are artificially dry due to long term suppression of groundwater levels, consideration should be made of the impact of increasing groundwater levels in these areas.

5.2 Water efficiency

Residential development in Uttlesford is currently required to meet the Building Regulations optional standard of 110 litres per person per day (l/p/d). Continuing with this standard a business as usual approach in the new Local Plan would result in a large increase in water demand during the plan period. This is outlined in the Stage 2 WCS and is predicted to be an additional 5.46Ml/d by the end of the plan period. The impact of different water efficiency targets is also summarised in the Stage 2 WCS. The CaBA strategy recommends a minimum of 90l/p/d in chalk stream areas.

This could be achieved through a mix of water efficient fittings and rainwater harvesting (RwH) / greywater recycling (GwR) into new build housing.

Demand from non-household development should also be addressed and non-household development required to achieve the appropriate BREEAM standard.

BREEAM is an efficiency assessment criteria for measuring the sustainability of buildings. The BREEAM New Construction Standard awards credits across nine categories, four of which are related to water: water consumption, water monitoring, leak detection and water efficient equipment. This leads to a percentage score and a rating from "Pass" to "Outstanding". Home Quality Mark (HQM) is another assessment measure for developments. HQM measures environmental performance and is a badge for developers to use to show their builds are to a good environmental standard. The Council has the opportunity to seek BREEAM or HQM status for all new, residential and non-residential buildings.

As Uttlesford is entirely within one water resource zone, development anywhere within Uttlesford has the potential to increase water demand, and therefore abstraction from chalk aquifers. Measures to improve water efficiency should therefore be applied to the whole of Uttlesford regardless of whether the development is in a chalk stream catchment.

Recommendation 1 – Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford

Recommendation 2 – Require all new non-residential buildings achieve BREEAM "Outstanding" for water throughout Uttlesford

5.3 Water Neutrality

The Council may wish to consider achieving water neutrality for the Uttlesford Local Plan. Achieving water neutrality involves a twin track approach. First the demand for water from the new development must be reduced as far as is practicable, then this remaining demand should be offset within the region. In following this approach, the volume that requires offsetting can be reduced, reducing the cost of the overall scheme. This is noted in the

Waterwise neutrality definition, and they define three steps to achieve water neutrality in their recent review[17]:

- Reduce water demand in the new development through improvements in efficiency
- Re-use water where possible
- Offset the remaining water demand from new development. Offsetting can be done by RwH and GwR retrofitting mentioned above.

Potential measures to offset additional water demand could include retrofitting water efficient fittings in council houses, and RwH in schools within Uttlesford. Retrofitting such measures in schools is particularly attractive as they are more likely to be maintained and could form part of a wider educational benefit.

In order to further reduce the additional demand from growth, policies could be defined that seek to offset some or all of the additional demand (after water efficiency measures). This approach could allow the Local Plan to be water neutral or to approach neutrality. Pilot studies looking at approaches to water neutrality are underway with Affinity Water and other stakeholders as part of Ofwat's Water Breakthrough Challenge scheme[18], but delivery is some way off. Some LPAs within the south east are currently looking at a water neutrality strategy in response to a Natural England requirement to for the local plan to be water neutral to protect sensitive habitats, but this is the first of its kind in the UK, a strategy will not be completed until later in 2022 and defining, setting up and running such a scheme is complex and costly.

Recommendation 3 – Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study

5.4 Riparian Buffer Zones

5.4.1 The need for a buffer zone

Development or agricultural encroachment close to a chalk stream, or on the natural flood plain has the potential to cause the following problems:

- Water quality impact through surface-water runoff
- Reduction in groundwater flow by diverting runoff straight to surface water drainage
- Loss of habitat / biodiversity
- Disconnection of the river from its natural flood plain, the chalk aquifer and superficial deposits e.g. gravels.
- Prevention or restriction of future river restoration work.

These issues could be managed in part by designating a buffer zone around chalk streams to prevent further development or encroachment by agriculture.

5.4.2 Definition of a buffer zone

A buffer zone should be of sufficient size to prevent or reduce the problems listed above, and this may be different distances in different parts of the catchment based on local conditions and the size of the natural floodplain, a zone which is critical to the interaction of water between the aquifer, alluvial deposits and the river channel. To define the natural flood plain, a combination of Flood Zone 2 and the British Geological Survey (BGS) "Geological Indicators of Flooding" dataset was used to create a GIS shapefile defining the floodplain.

17 A Review of Water Neutrality in the UK (2021) – Waterwise
18 Water neutrality at NAV sites, Ofwat (2021). Accessed online at: https://waterinnovation.challenges.org/winners/water-neutrality-at-nav-sites/ on: 22/06/2022

In some areas Flood Zone 2 does not extend far beyond the bank, in these areas the buffer zone should be extended in order to provide the required benefit. Under the Water Resources Act 1991 and the Land Drainage Byelaws 1981 current Environment Agency guidance already defines an area of 8m from the bank of a main river, within which development is not allowed unless exempt by the local council. For chalk streams this should be extended to 15m, and would contain the principle of "no development" except for some exemptions such as essential infrastructure, soft landscaping and recreational uses (following an impact assessment).

For agriculture, the EA provides guidance for buffer strip design[19] that suggests a width of 5-15m dependent on field conditions, with steeper slopes (potentially faster flow) requiring wider strips. Due to the sensitive nature of chalk stream ecosystems a 15m buffer strip on all agricultural land would provide a precautionary approach. Considering this guidance alongside CaBA's agricultural buffer zone suggestions, see section 4.5, 15m has been adopted as a suitable distance for the protection of the chalk streams and incorporated into the natural flood plain layer to create a provisional riparian buffer zone.

Although agricultural practices are not, on the whole, regulated by the planning system, local authorities are considered as partners in the delivery of the national Nature Recovery Network[20] and are required, through the NPPF, to conserve and enhance the natural environment. It is therefore recommended that a minimum 15m buffer zone is adopted on both agricultural land and new development sites with buffer strips used on field margins adjacent to chalk streams, in addition to the principle of no development within the buffer zone. This zone should extend further than 15m where necessary in line with the natural flood plain.

A zone of this type would prevent further riparian squeeze and provide room for future river restoration work to renaturalise channels. More opportunities would exist to manage runoff and infiltrate the water rather than provide overland flow routes to the river if hard standing were allowed closer to the riverbanks.

This approach is also recommended by CaBA chalk stream strategy (P128). Note that, where a proposed development is partly within a proposed buffer zone, it is recommended that the red-line boundary of the development is drawn to the site boundaries, including to the river centreline where the site includes river ownership. Trimming site boundaries to exclude buffer zones can result in strips of inaccessible and unmaintained land beside rivers. Rather, the buffer zone should be integrated into the site masterplan, and utilised for biodiversity and amenity benefits.

The provisional riparian buffer zone is defined in Appendix E.

As discussed in 2.1, ditches form an important part of the habitat, and are required to be scoped-in to BNG calculations. The riparian zone for a ditch is considered to be 5m from the bank top, but due to the sensitive nature of chalk streams, and in-line with the recommendations for rivers, the riparian zone should be increased for ditches feeding chalk streams to 10m, and the same protections applied.

Recommendation 4 – Apply a riparian buffer zone in chalk stream areas to exclude all development within the natural flood plain or 15m of the bank, whichever is larger. A buffer of 10m should be applied to ditches that feed chalk streams.

Recommendation 5 – Apply a vegetated buffer strips on agricultural land within 15m of a chalk stream and 10m from a ditch feeding a chalk stream.

5.5 Cattle fencing

As mentioned previously, cattle can have increase sediment within chalk streams, degrading habitat. By implementing fencing, bank erosion and thus sediment pollution can be reduced. Other alternatives alongside fencing are creating alternative drinking troughs within the

19 Rural Sustainable Drainage Systems (RSuDS), Environment Agency (2012). Accessed online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/291508/scho0612buwh-e-e.pdf on: 22/06/2022

20 DEFRA (2022) Nature Recovery Network

field, and construction of crossing points if the streams are being degraded by cattle walkways.

Recommendation 6 – Encourage responsible land management such as cattle fencing through the Nature Recovery Strategy

5.6 Education

Public engagement can often help environmental issues by providing low budget, high impact work. Many of the chalk streams go through built up areas and public engagement with communities and riparian owners would be beneficial to raise awareness of chalk streams and responsible riparian ownership. This could be done through a combination of community meetings and leafleting. An example of this is at Watlington in Oxfordshire at the head of the Chalgrove Brook chalk stream. The Watlington Climate Action Group[21] have carried out leafletting and raised awareness through local artists to engage the community. This has resulted in public engagement in practical conservation clearing the brook and creating trout spawning habitat.

Recommendation 7 – Undertake a public engagement exercise to raise awareness of chalk streams and encourage responsible riparian ownership

5.7 SuDS

Runoff from development sites that makes its way directly to a chalk stream is a potential route for diffuse pollution as well as not being available to recharge the chalk aquifer. The SuDS hierarchy (as required in Essex County Council's SuDS guidance[22]) should be enforced for all development.

Infiltration SuDS (where appropriate based on Source Protection Zones) are strongly recommended, with deep borehole SuDS being an option where the surface geology makes a typical infiltration scheme unfavourable. This would allow the chalk bedrock underneath to be accessed, increasing recharge of the aquifer.

Within chalk stream catchments (as defined by the WFD surface water catchments), a particular focus should be paid to water quality management.

Due to the importance of the chalk aquifers as a water source for public consumption, attention must be paid to the source protection zones (SPZs). Implemented by the Environment Agency (EA) the zones are based on an estimate of the time it would take for a pollutant which enters the saturated zone of an aquifer to reach the source of abstraction or discharge point (Zone 1 = 50 days, Zone 2 = 400 days, Zone 3 is the total catchment area). The Environment Agency will use SPZs (alongside other datasets such as the Drinking Water Protected Areas (DrWPAs) and aquifer designations as a screening tool. The EA have published a position paper[23] outlining its approach to groundwater protection which includes direct discharges to groundwater, discharges of effluents to ground and surface water runoff.

This guidance defines runoff from roofs or from roads as "clean water" discharges which may not require a permit. However, they are still a potential source of groundwater pollution if they are not appropriately designed and maintained.

Where infiltration SuDS schemes are proposed to manage surface runoff they should:

- Be suitably designed;
- Meet Government non-statutory technical standards[24] for sustainable drainage systems – these should be used in conjunction with the NPPF and PPG; and

21 Chalk Streams | Watlington Climate Action Group: https://www.watlingtonclimateaction.org.uk/chalkstreams
22 The sustainable Drainage Systems Design Guide for Essex, Essex County Council (2022). Accessed online at: https://www.essexdesignguide.co.uk/suds on: 22/06/2022

24 Sustainable Drainage Systems: non-statutory technical standards, Department for Environment, Food & Rural Affairs (2015). Accessed online at: https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards on: 24/01/2022

- Use a SuDS management treatment train

A hydrogeological risk assessment is required where infiltration SuDS is proposed for anything other than clean roof drainage in a SPZ1. The SPZs covering Uttlesford are shown in Figure 5.1 Source protection zones in Uttlesford.

Where infiltration to the ground is not possible, SuDS systems draining to chalk streams either directly or via a surface water sewerage system must implement appropriate measures to address the peak flow, volume and quality of runoff. Details advice on designing SuDS to manage water quality are provided in the CIRIA SuDS manual.

Managing pollution close to its source can help keep pollutant levels and accumulation rates low, allowing natural processes to be more effective. Treatment can often be delivered within the same components that are delivering water quantity design criteria, requiring no additional cost or land-take.

SuDS designs should control the 'first flush' of pollutants (usually mobilised by the first 5mm of rainfall) at source, to ensure contaminants are not released from the site. Best practise is that no runoff should be discharged from the site to receiving watercourses or sewers for the majority of small (e.g. less than 5mm) rainfall events.

Recommendation 8 – Enforce the SuDS hierarchy as defined in the Essex SuDS guidance with a focus on encouraging infiltration SuDS and deep borehole SuDS where appropriate.

5.8 Neighbouring authorities

The River Stort leaves Uttlesford and passes through Bishops Stortford before re-entering and running along the Uttlesford boundary. The River Cam also continues north of Uttlesford into Cambridgeshire. Protecting chalk streams will therefore require a collaborative approach, working with neighbouring authorities and other stakeholders.

Recommendation 9 – Continue and strengthen existing partnerships with neighbouring authorities and other stakeholders to define coordinated policies for chalk stream protection.

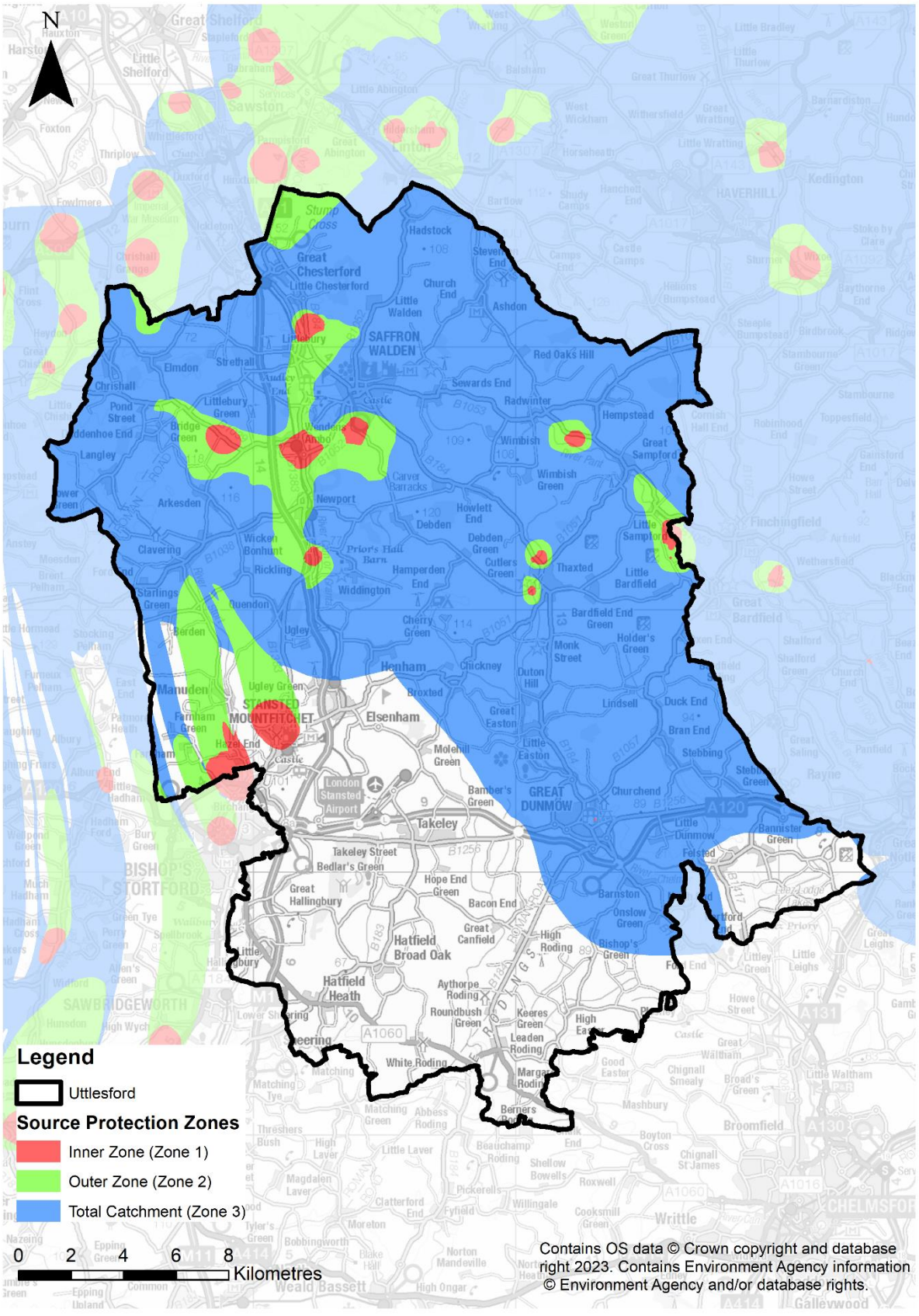


Figure 5.1 Source protection zones in Uttlesford

6 Summary and overall conclusions

6.1 Conclusions and recommendations

With the UK having stewardship over most of the worlds chalk streams it is important that these unique habitats are protected and their deterioration is reversed. Alongside the growing population and need for housing this is not always an easy balance.

Over-abstraction, encroachment by agriculture and development on the natural floodplain and pollution from runoff, and wastewater discharges are causing damage to chalk streams in Uttlesford. Opportunities exist through Local Plan policy to prevent further damage being caused by planned development during the plan period, and provide opportunities for future river restoration work. The focus of this report is on measures that can be taken by the local authority.

The following measures are recommended:

Table 6.1 Recommendations for chalk stream protection

Measure type	Recommendation
Water efficiency	Recommendation 1 – Adopt CaBA strategy recommendation of 90l/p/d throughout Uttlesford Recommendation 2 – Require all new non-residential buildings achieve BREEAM "Outstanding" for water throughout Uttlesford
Water neutrality	Recommendation 3 – Explore the feasibility of achieving water neutrality in the Stage 2 Water Cycle Study
Riparian Buffer Zone	Recommendation 4 – Apply a riparian buffer zone in chalk stream areas to exclude all development within the natural flood plain or 15m of the bank, whichever is larger. A buffer of 10m should be applied to ditches that feed chalk streams Recommendation 5 – Apply a vegetated buffer strips on agricultural land within 15m of a chalk stream and 10m from a ditch feeding a chalk stream
Cattle fencing	Recommendation 6 – Encourage responsible land management such as cattle fencing through the Nature Recovery Strategy
Education	Recommendation 7 – Undertake a public engagement exercise to raise awareness of chalk streams and encourage responsible riparian ownership
Sustainable Drainage Systems (SuDS)	Recommendation 8 – Enforce the SuDS hierarchy as defined in the Essex SuDS guidance with a focus on encouraging infiltration SuDS and deep borehole SuDS where appropriate.
Neighbouring authority engagement	Recommendation 9 – Continue and strengthen existing partnerships with neighbouring authorities and other stakeholders to define coordinated policies for chalk stream protection

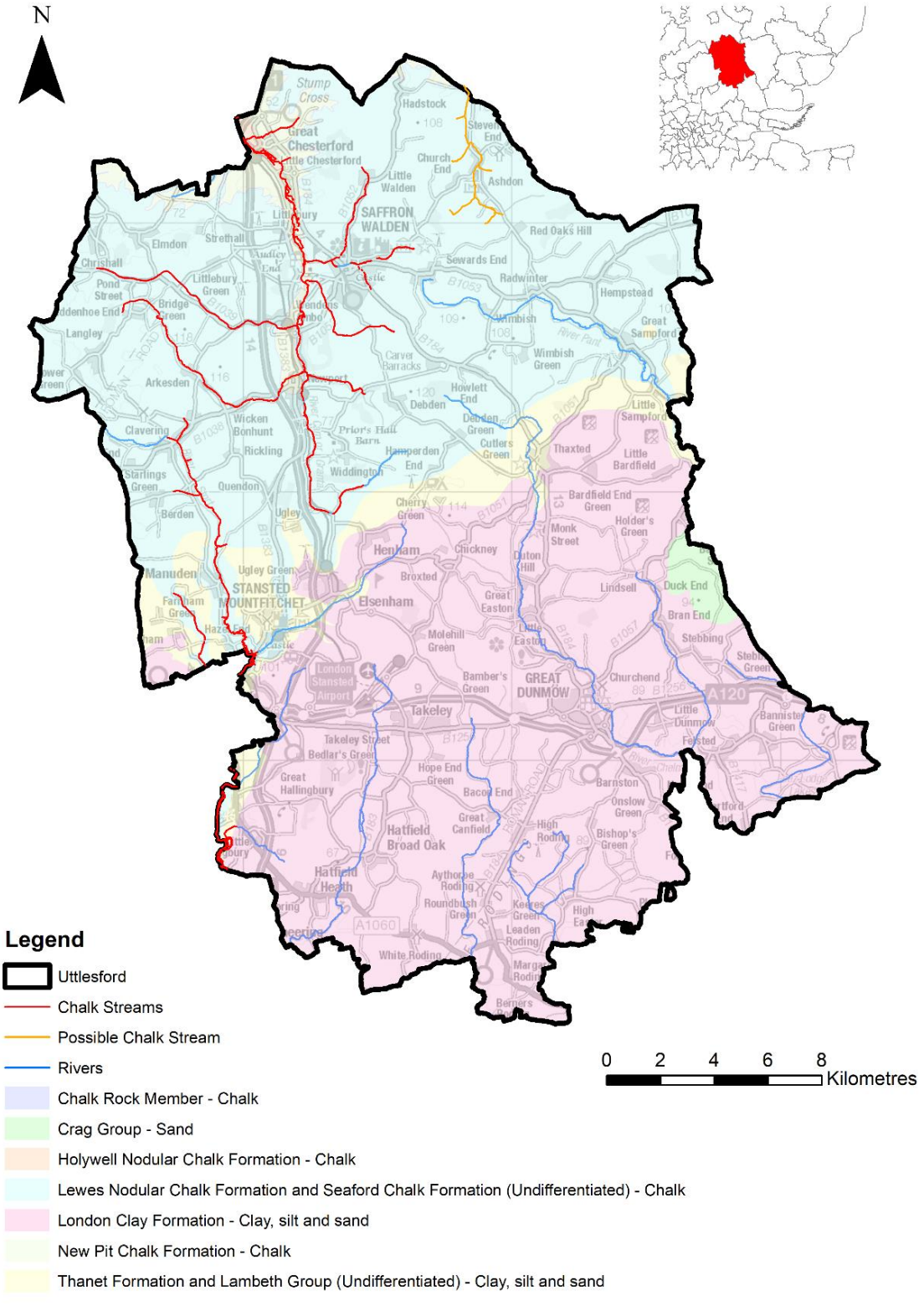
The Chalk Stream Strategy published by CaBA contains a number of recommendations that may be outside of Local Authority control, but should be encouraged where possible.

Balancing the needs of nature and the growing population is difficult but achievable. By building on the current measures and recommendations in place it is possible to enhance Uttlesford's chalk streams and surrounding habitat biodiversity.

Appendices

A Appendix: Geology of Uttlesford

A.1 Bedrock Geology of Uttlesford



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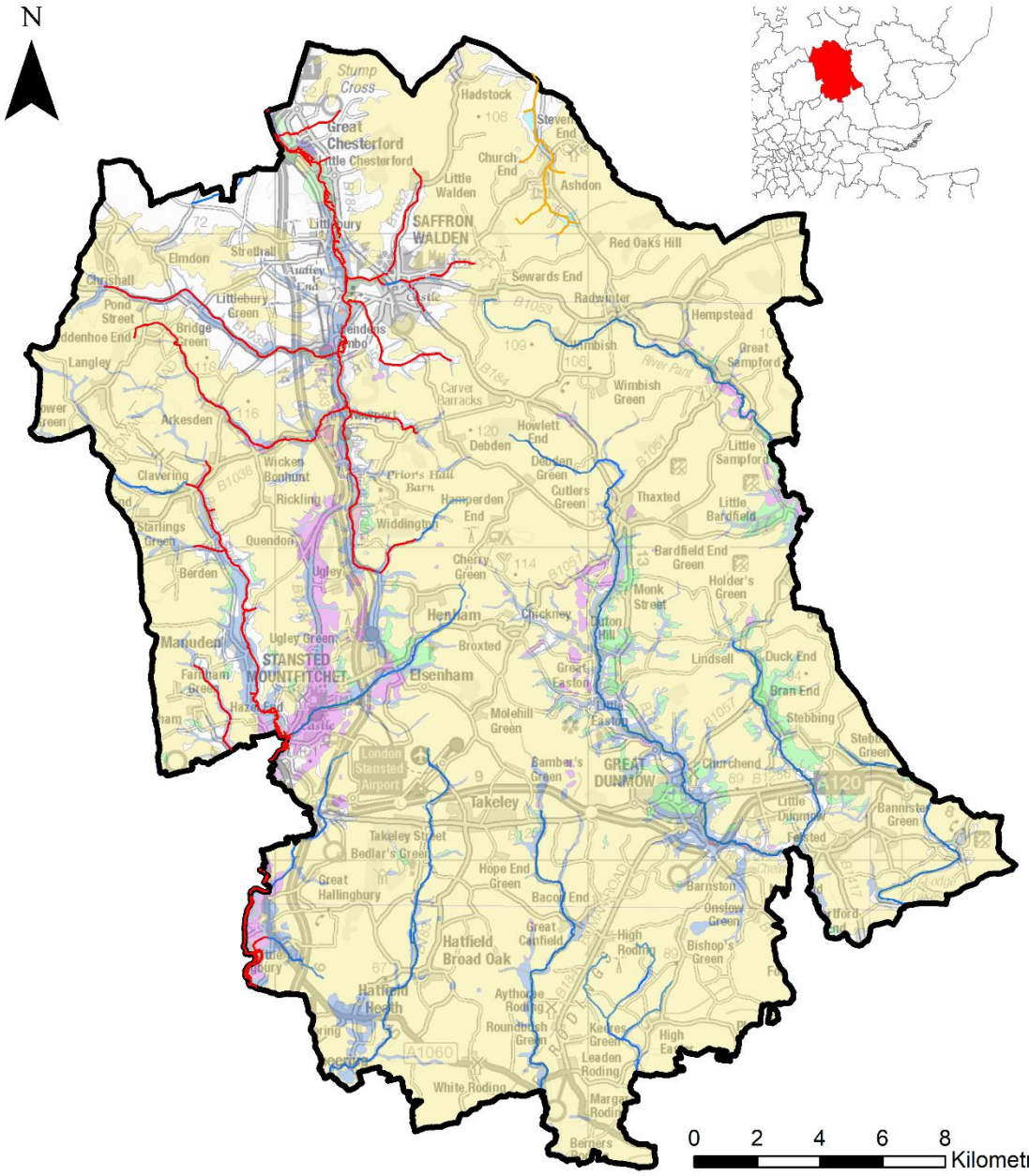
A.2 Superficial Geology of Uttlesford



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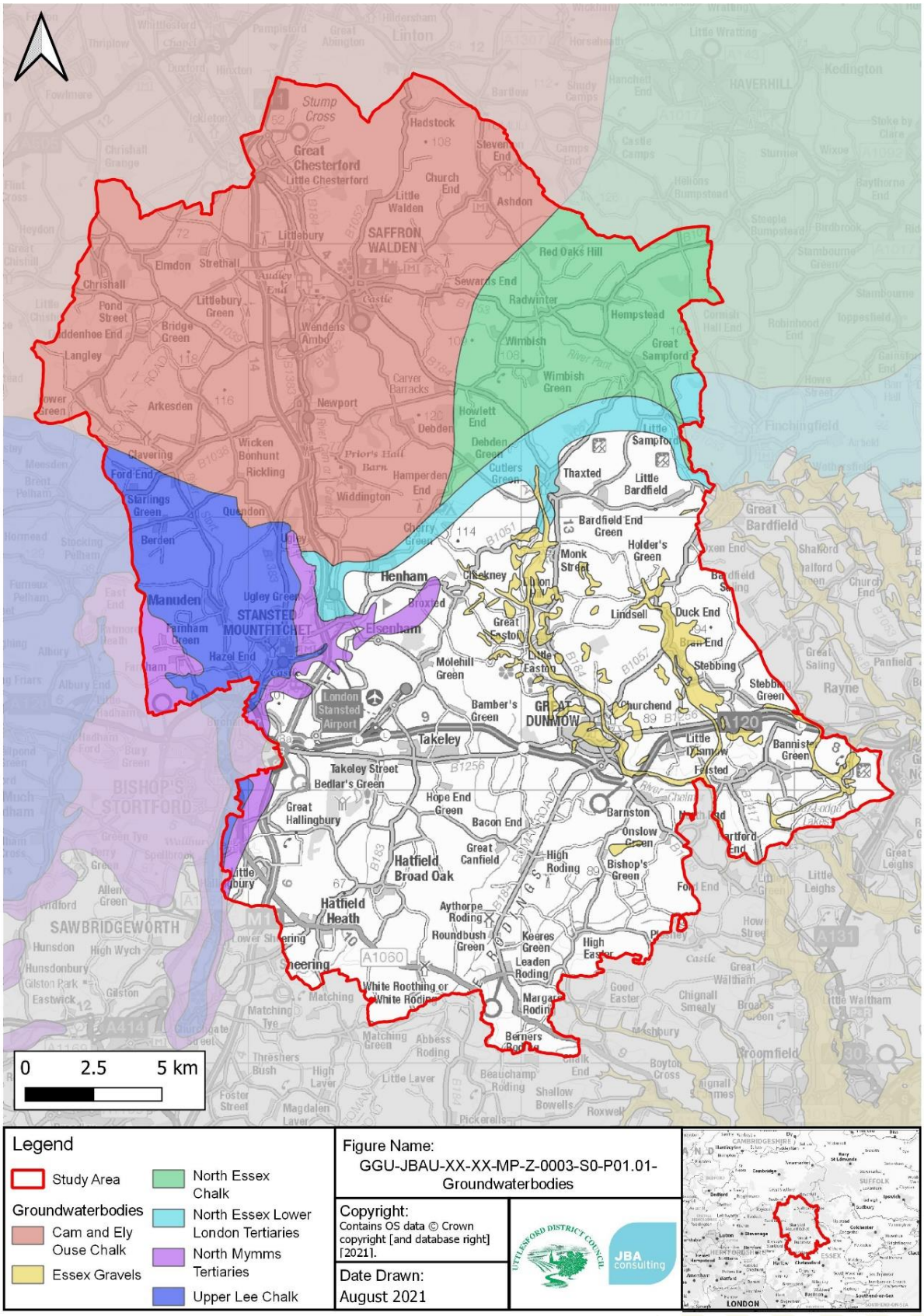
A.3 Groundwater bodies in Uttlesford



B Appendix: Chalk stream categories

The CaBA Chalk Stream Strategy groups chalk streams into four types:

(Reproduced from CaBA Chalk Stream Strategy 2021)

"Group A: classic slope-face chalk streams. These are streams that rise directly from the chalk, flow over chalk and then in some cases – usually in their lower reaches – over younger tertiary (sand and clay) deposits. This group would include the majority of the Hampshire-basin streams and the majority of those that flow into the Thames basin. Most of the iconic chalk streams like the Itchen or Test or Kennet are in this group. Group A can be sub-divided into slope-face streams that flow from and largely across chalk (e.g. Chess) and those that rise from chalk but mostly flow over tertiary outcrops (e.g. Wandle).

Group B: mixed-geology chalk streams. These are streams which tend to rise beyond (i.e. to the north and west) of the chalk but then flow over / through the chalk – this is a minority of chalk streams but the Great Stour in Kent is a good example, rising on gault clay / greensand and then flowing through the chalk. The Nadder is another example, as is the Hampshire / Wiltshire Avon and the Dorset Frome. These streams will have 'flashier' flow regimes, will tend to colour after heavy rain and take longer to clear too, because of the influence of the headwater geology.

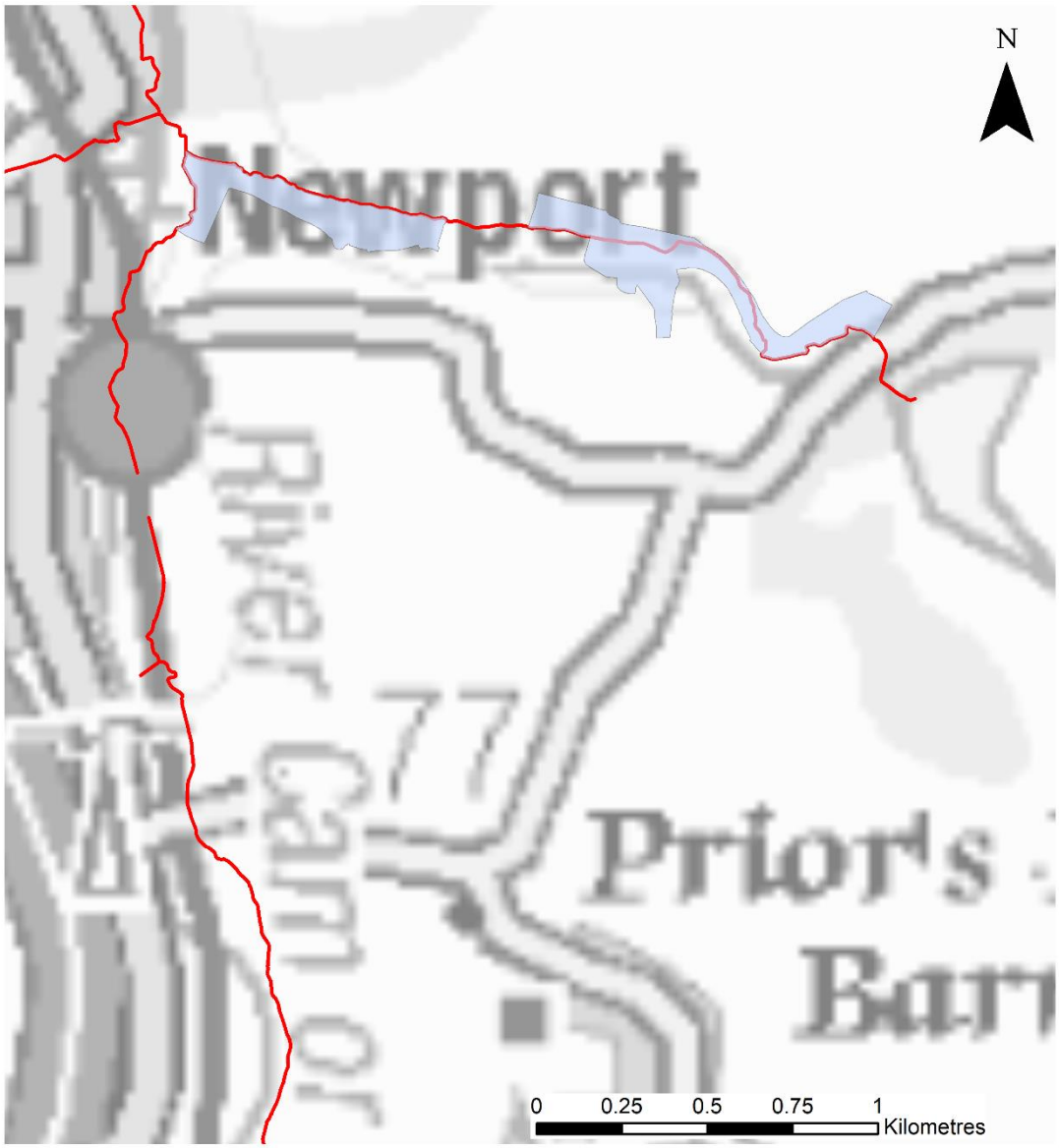
Group C: scarp-face chalk streams. These are the scarp-slope streams which rise at the base of the chalk and tend to run for a short distance over older (clay rich) chalk and then flow out onto the underlying gault clay and greensand beds. The Fontmell Brook in Dorset is a scarp-slope stream, as are the Lewknor and Chalgrove west of the Chilterns, likewise the streams rising along the spring-line of the Sussex Downs, or the north-flowing streams of the Gog Magog Hills, the westward flowing streams in north-west Norfolk and all the streams west of the Yorkshire Wolds.

Group D: Pleistocene ice-impacted chalk streams can fall into any one of the above categories but these streams rise from chalk that was directly impacted by major glacial action during the Pleistocene. This group would include the northern Chiltern streams and the East Anglian, Lincolnshire and Yorkshire streams. Group D could be further subdivided into streams that flow from chalk over glacial outwash deposits (the Wensum) and those that flow from chalk onto older (pre-glacial) river deposits, such as the pre-glacial Bytham River which flowed eastwards from the Midlands across Norfolk and emptied into the North Sea north of Lowestoft: the streams that lie between the Chilterns and Norfolk."

C Appendix: Sites of Special Scientific Interest

C.1 Debden Water

Debden water is a freshwater stream and a tributary of the River Cam. Debden Water has several disused gravel pits throughout the site with varied topography which supports numerous habitats such as calcareous grassland. Species present include Lady's Bedstraw (*Galium verum*) and Pyramidal Orchids *(Anacamptis pyramidalis*). Like many other orchid species, the pyramidal orchid is declining in number making it important to protect this site.



Uttlesford
Debden Water SSSI
Chalk Streams Uttlesford
Possible Chalk Stream

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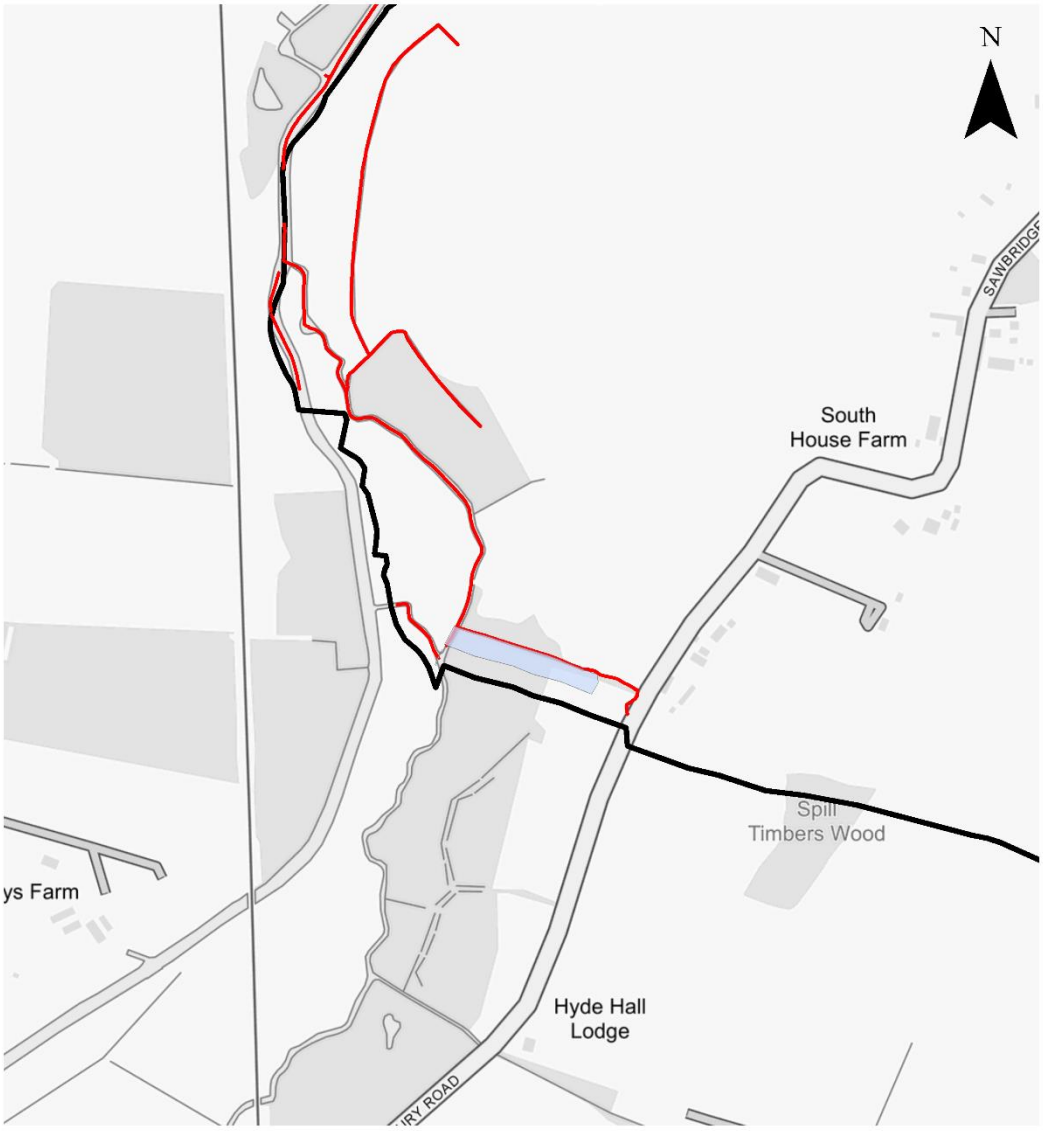
C.2 Sawbridgeworth Marsh

Sawbridgeworth Marsh is a tributary of the River Stort which is known to have an established Water Vole (*Arvicola amphibius*) population and managed by Essex Wildlife Trust[25]. It is home to numerous rare plants such as the Southern Marsh Orchid (*Dactylorhiza praetermissa*) and Marsh Valerian (*Valeriana dioica*) as well as being a valuable nesting habitat for Reed (*Scirpaceus*)and Sedge Warblers (*Acrocephalus schoenobaenus*).



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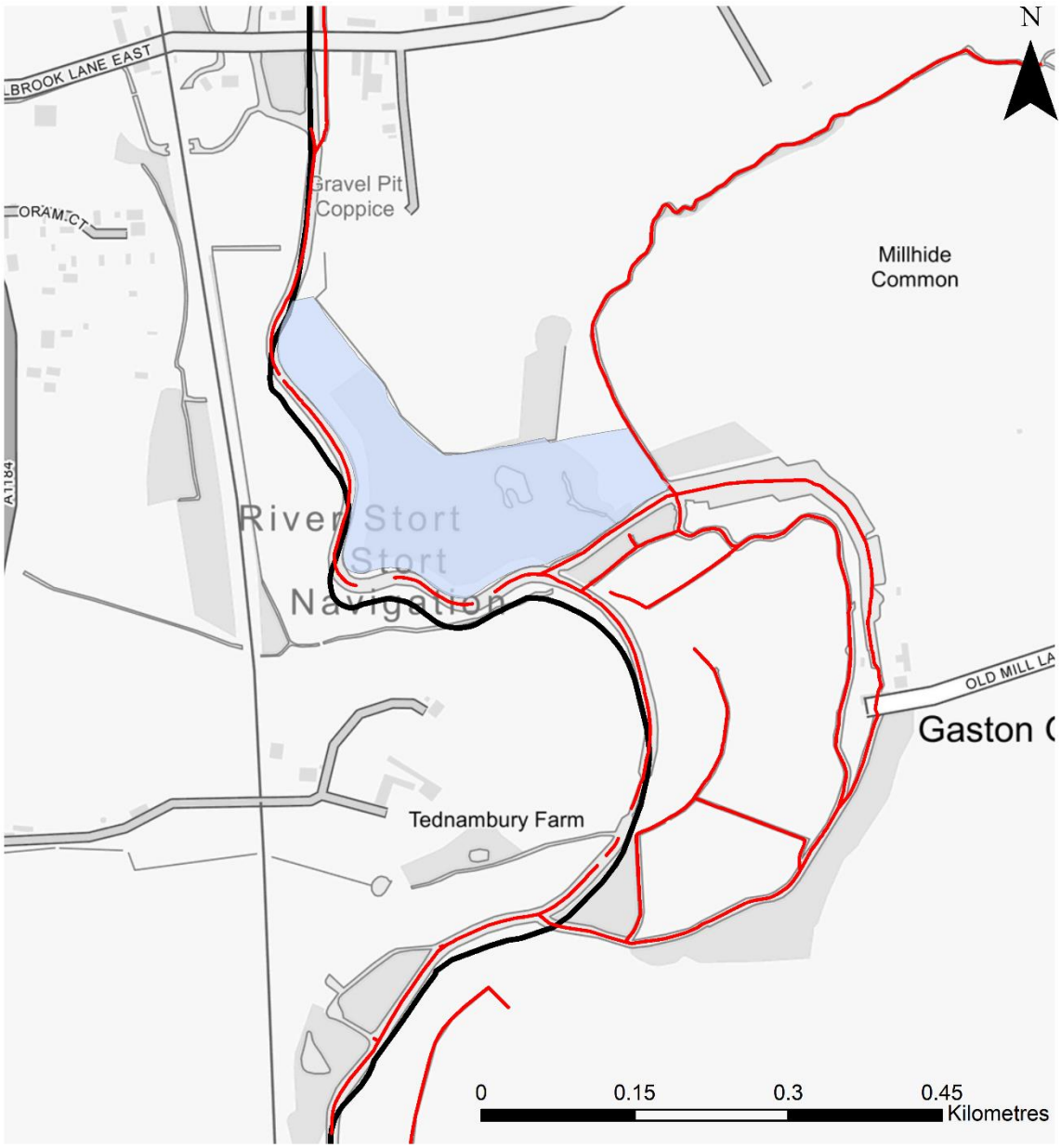
25 Sawbridgeworth Marsh Nature Reserve | Essex Wildlife Trust (essexwt.org.uk)

C.3 Little Hallingbury Marsh

The third SSSI in close proximity of the Uttlesford chalk streams is Little Hallingbury Marsh. An unimproved wet grassland, Little Hallingbury Marsh is commonly used by overwintering birds for nesting and feeding. The marsh is mainly covered by reed sweet-grass (*Glyceria maxima*) and has a patch of woodland to the east edge of the site.



Uttlesford

Little Hallingbury Marsh SSSI

Possible Chalk Stream

Chalk Streams Uttlesford

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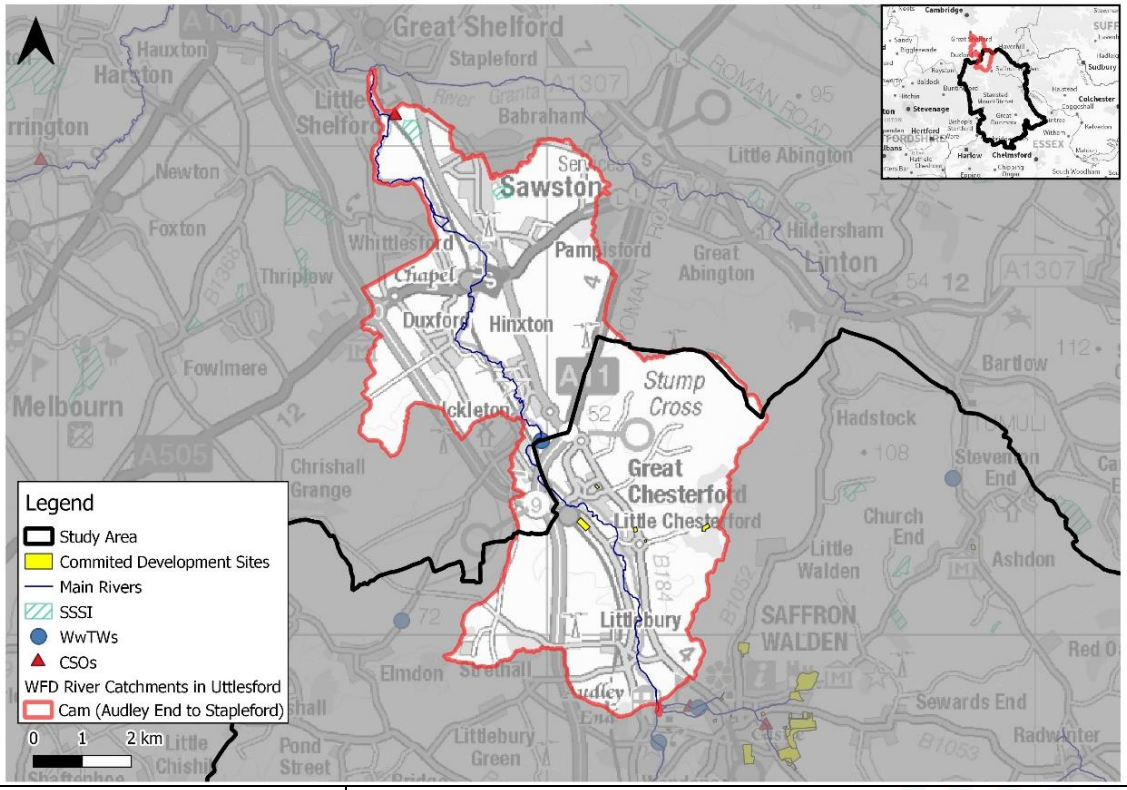
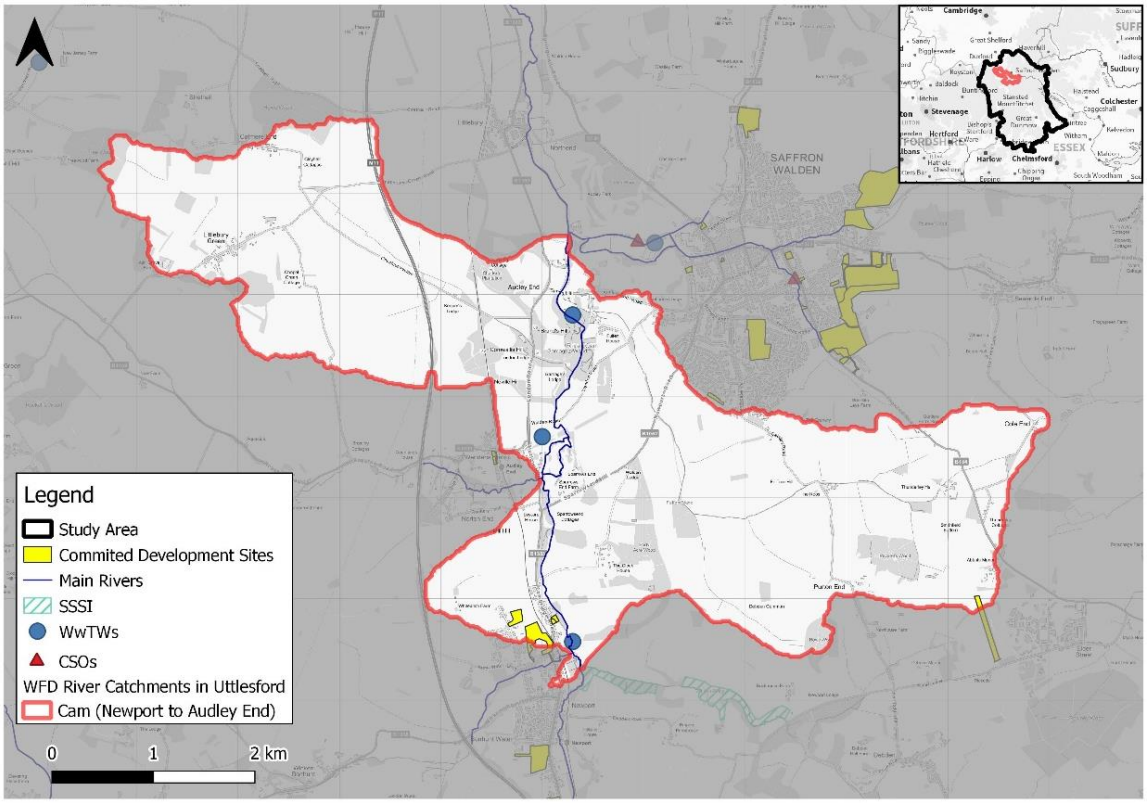
D Appendix: WFD Catchment summaries

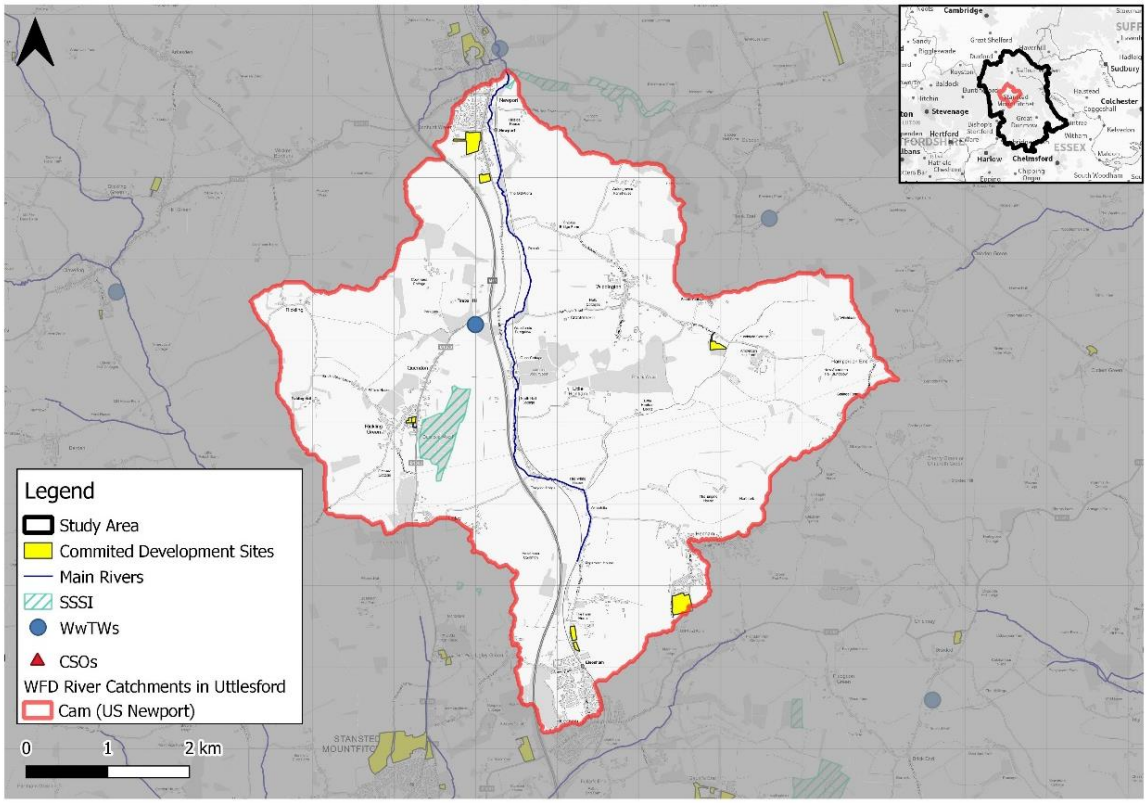
The mapping included in this section was produced alongside the Stage 1 WCS, and based on the growth information available at the time. It has not been updated as part of the Stage 2 WCS. The acronym CSO in the mapping refers to Combined Sewer Overflows (also known as storm overflows).

WFD Catchment name	Cam (Audley End to Stapleford)
	
WwTWs	• Great Chesterford WwTW – Capacity likely to be used early in plan period based on just current commitments • One development site not within sewer catchment
Chalk Stream	• Yes - River Cam
Storm Overflows	• Great Chesterford WwTW and Sawston WwTW (outside district) storm overflows. Both of these are located downstream of the Uttlesford District. Operating below threshold for investigation.
How many development sites are located in the catchment?	• Commitments and Consents - 5 Sites- 19 houses and 3,735m^2 of employment land • New Settlement - Great Chesterford in Option 2b
WFD Status (2019)	• Overall Status - Poor • Ammonia - High • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, industry, and agriculture and rural land management are impacting flow, physical modification and point sources, leading to increased levels of phosphate and changes in the

	hydrological regime.
Potential issues in the catchment	• Chalk stream (Cam) present in catchment. • Discharge from industry and sewers has prevented the catchment from achieving good status. • Storm overflow present – but is performing ok • The Great Chesterford new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

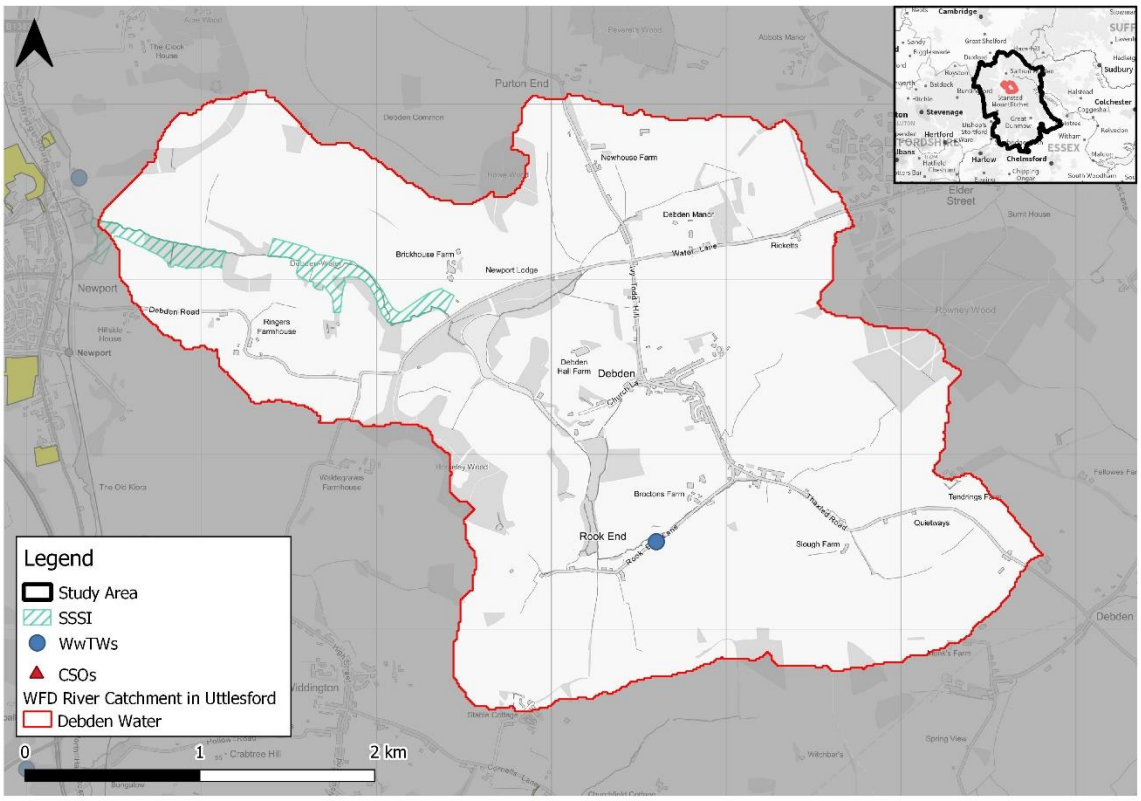
WFD Catchment name	Cam (Newport to Audley End)
	
WwTWs	• Newport WwTW – currently at DWF permit limit • Wendens Ambo WwTW – flow not monitored – small WwTW with limited capacity • Audley End WwTW - flow not monitored – small WwTW with limited capacity
Chalk Stream	• Yes- River Cam
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 3 Sites- 43 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Bad

	• Reasons for not achieving good status: The water industry, and agriculture and rural land management are impacting the flow and point sources, leading to increased levels of phosphate and changes in the hydrological regime.
Potential issues in the catchment	• Chalk stream present (Cam) • Discharge from industry and sewers has prevented the catchment from achieving good status. • Committed development in the WFD catchment falls into the Newport WwTW catchment.

WFD Catchment name	Cam (US Newport)
	
WwTWs	• Quendon WwTW – has capacity after commitments (135 dwellings) • One development site is located outside of the Quendon WwTW catchment.
Chalk Stream	• Yes- River Cam
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 8 Sites - 178 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate

	• Reasons for not achieving good status: The water industry, and agriculture and rural land management are impacting point and diffuse sources, the flow and physical modification, leading to increased levels of phosphate, dissolved oxygen, and changes to the hydrological regime and invertebrates.
Potential issues in the catchment	• Discharge from sewage discharge, poor nutrient management, groundwater abstraction and land drainage has prevented the catchment from achieving good status. • Committed development in the WFD catchment falls into the Quendon and Stansted Mountfitchet WwTW catchments.

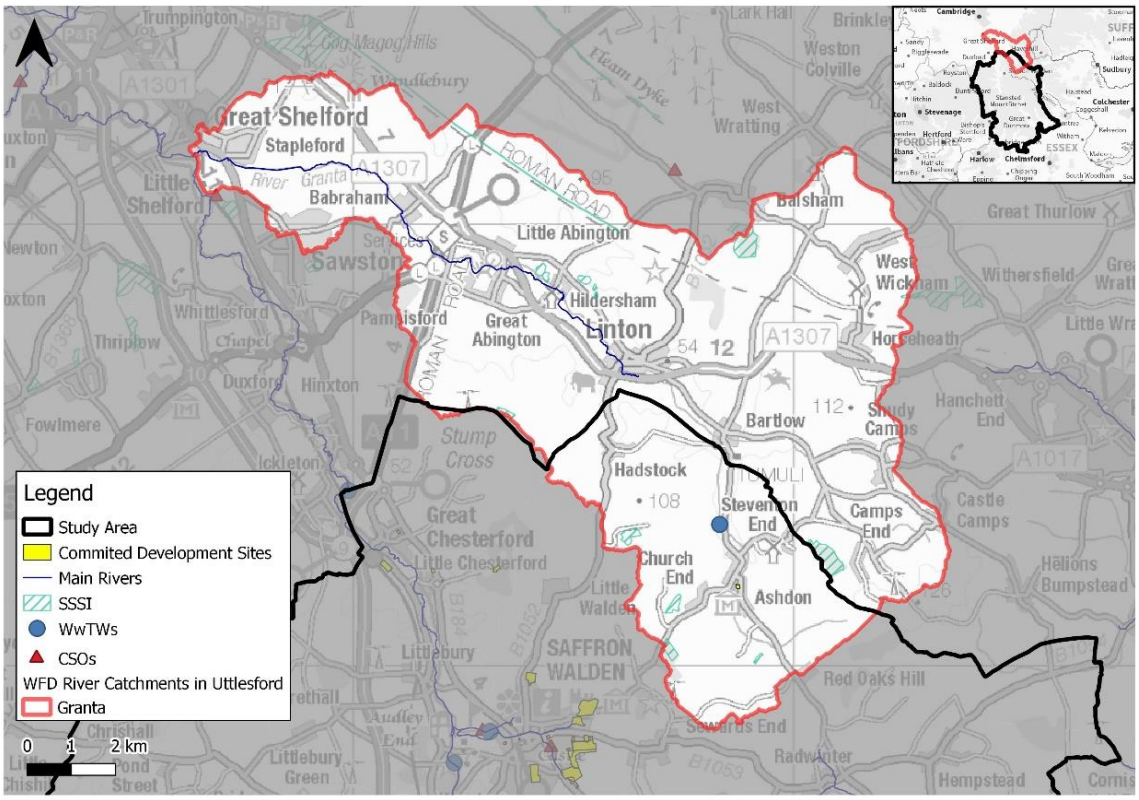
WFD Catchment name	Debden Water



WwTWs	• Debden WwTW – has capacity after commitments (247 houses)
Chalk Stream	• Yes - The catchment is underlain by chalk (headwaters of Cam)
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - None • New Settlement - None
WFD Status (2019)	• Overall Status - Poor • Ammonia - N/A • BOD - N/A

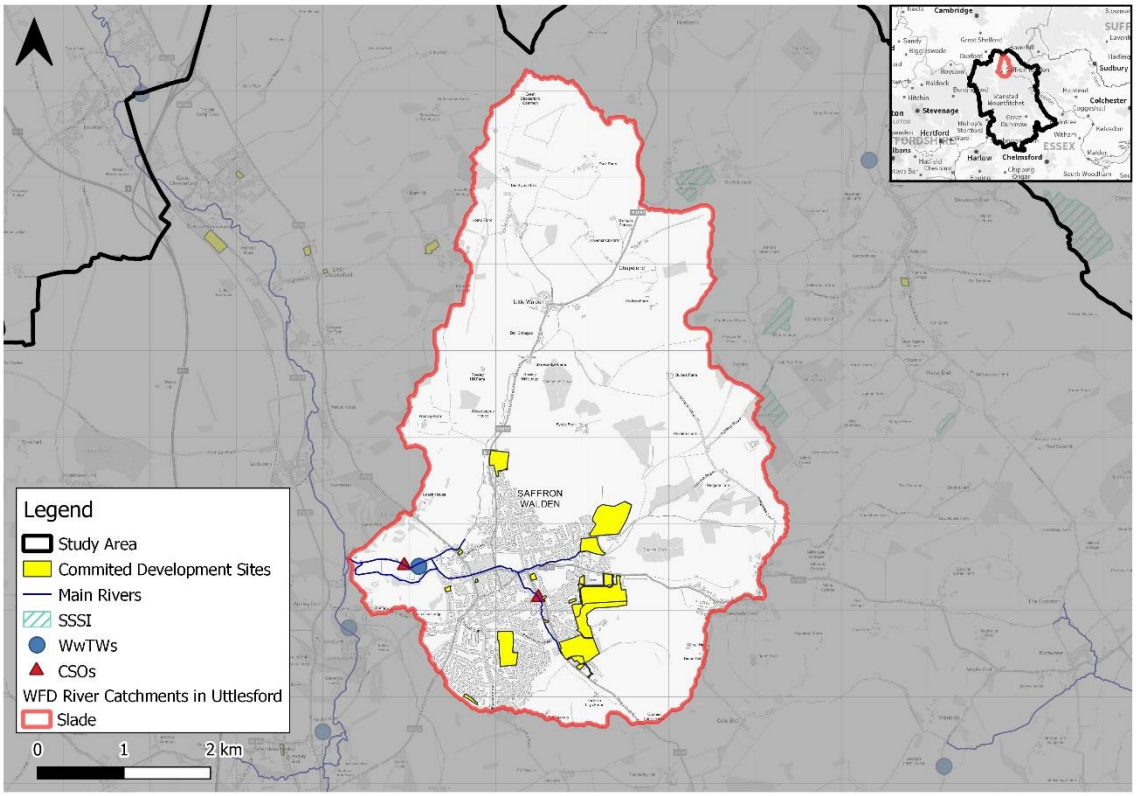
	• Phosphate - N/A • Reasons for not achieving good status: The water industry is impacting physical modification leading to changes in mitigation measures assessments.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer.

WFD Catchment name	Granta

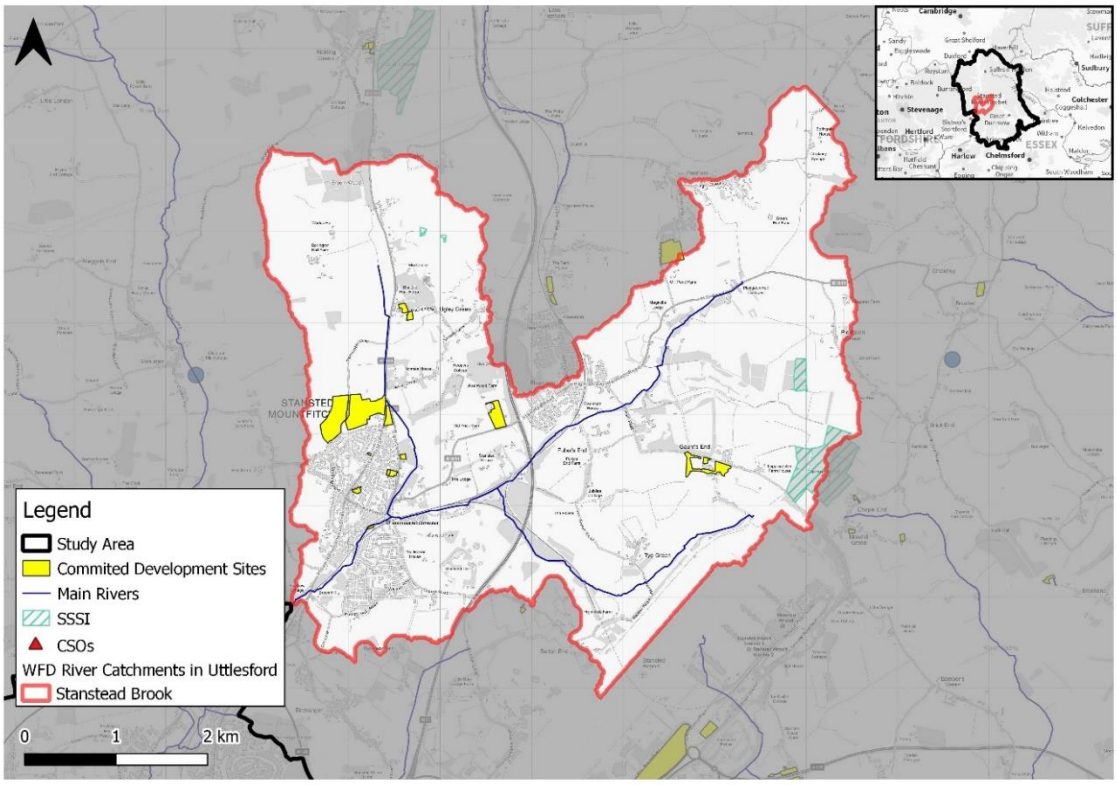


WwTWs	• Ashdon WwTW – has capacity (1,285 houses)
Chalk Stream	• Yes - The catchment is underlain by chalk.
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents – none • New Settlement - none
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD – N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, and agriculture and rural land management are affecting the flow and point sources, leading to changes in the hydrological regime and phosphate levels.

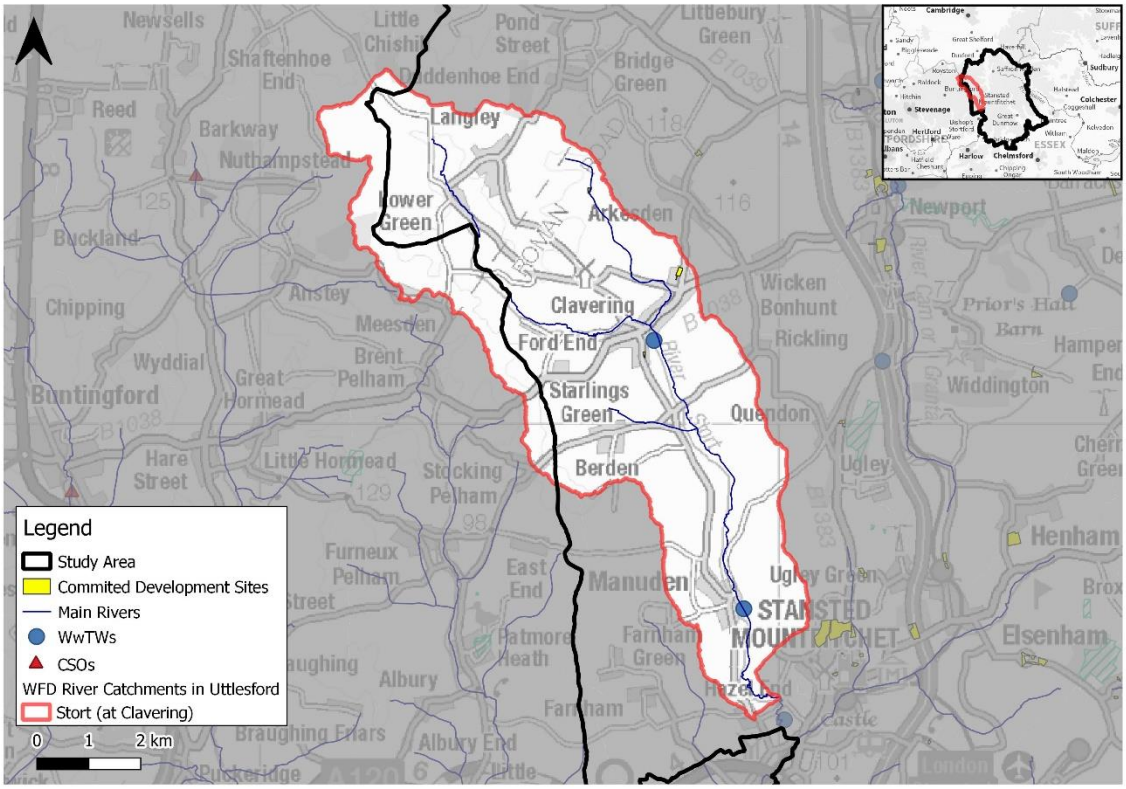
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Discharge from abstractions and sewage discharge has prevented the catchment from achieving good status.

WFD Catchment name	Slade
	
WwTWs	• Saffron Walden WwTW – has capacity after commitments (3,390 houses)
Chalk Stream	• Yes - River Slade (tributary of Cam)
Storm Overflows	• Saffron Walden WwTW and Saffron Walden Victoria THX OV storm overflows. The Saffron Walden WwTW storm overflow discharged five times for a total of 7.75 hours. The Saffron Walden Victoria THX OV discharged 3 times in 2020 for a total of 1 hour.
How many development sites are located in the catchment?	• Commitments and Consents - 18 Sites - 424 houses and 6,884m^2 of employment land • New Settlement - Great Chesterford
WFD Status (2019)	• Overall Status - Moderate • Ammonia - Good • BOD - N/A • Phosphate - Poor • Reasons for not achieving good status: The water industry, agriculture and rural land

	management, and urban and transport sectors are impacting the flow, point sources and physical modification, leading to changes in phosphate, and macrophytes and phytobenthos combined levels and invertebrates.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Discharge from sewers, urbanisation and agriculture has prevented the catchment from achieving good status. • The Great Chesterford new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to. Significant development is also proposed around Saffron Walden which would put further pressure on the watercourse – which is a tributary of the River Cam (chalk stream)

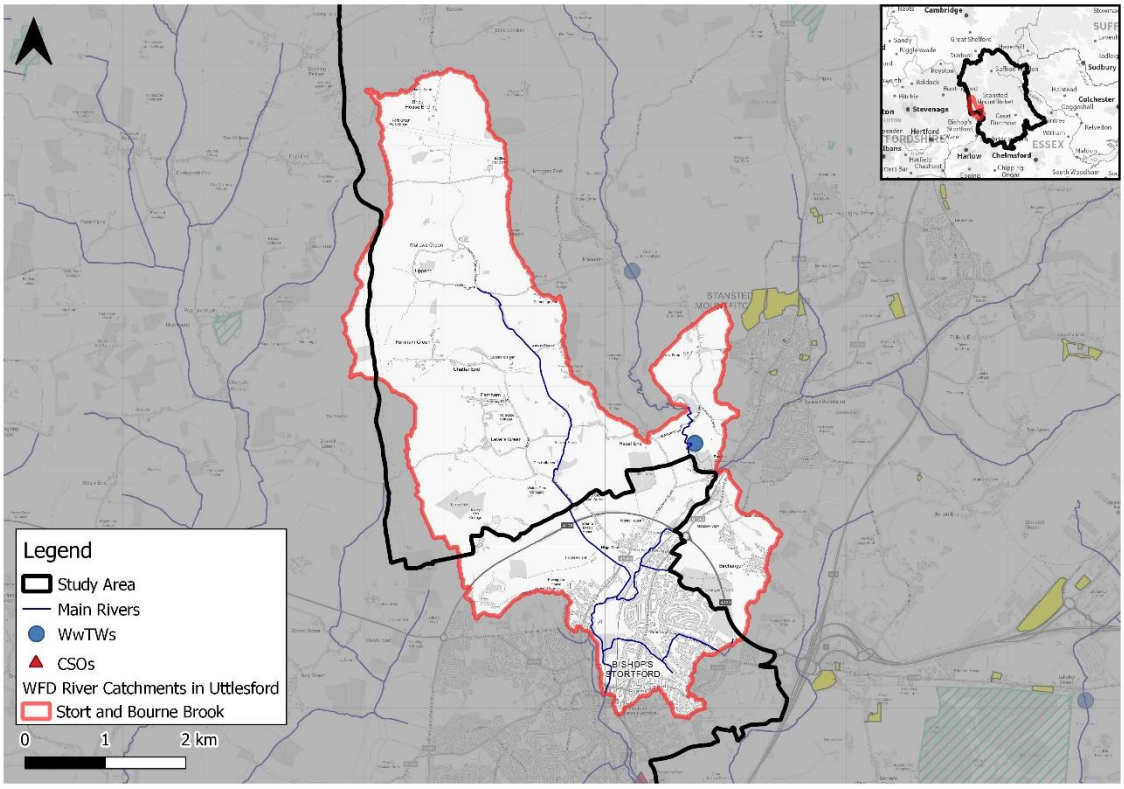
WFD Catchment name	Stanstead Brook
	
WwTWs	• None
Chalk Stream	• Partially - Part of the watercourse is underlain by chalk with parts of the catchment underlain by are underlain by Lambeth Group and Thames Group bedrock formations.
Storm Overflows	• None

How many development sites are located in the catchment	• Commitments and Consents – Sites - 349 houses and 8242m^2 of employment land • New Settlement - Ugley
WFD Status (2019)	• Overall Status - Poor • Ammonia - High • BOD - N/A • Phosphate - Good • Reasons for not achieving good status: Mining and quarrying are impacting point sources and flow, leading to changes in the hydrological regime and invertebrates.
Potential issues in the catchment	• Part of the catchment is underlain by a chalk and the watercourse is likely to be fed by the chalk aquifer. • Mining and quarrying activity is thought to be the cause of the watercourse not achieving good status due (ecological elements). • Further deterioration in a waterbody already classified as "Bad" would be unacceptable • The Ugley new settlement would be a significant development in this area and would likely put a strain on any wastewater infrastructure and on the quality of the river it was discharging to.

WFD Catchment name	Stort (at Clavering)
	
WwTWs	• Manuden WwTW – has capacity after commitments (581 houses) • Clavering WwTW – currently at or exceeding its DWF permit • One development site is located outside of a public sewer catchment.
Chalk Stream	• Yes - River Stort
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 3 Sites - 9 houses and 1,594m^2 of employment land • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry and agriculture and rural land management sectors are impacting point and diffuse sources, and suspect data, leading to changes in phosphate and dissolved oxygen levels, and the hydrological regime.

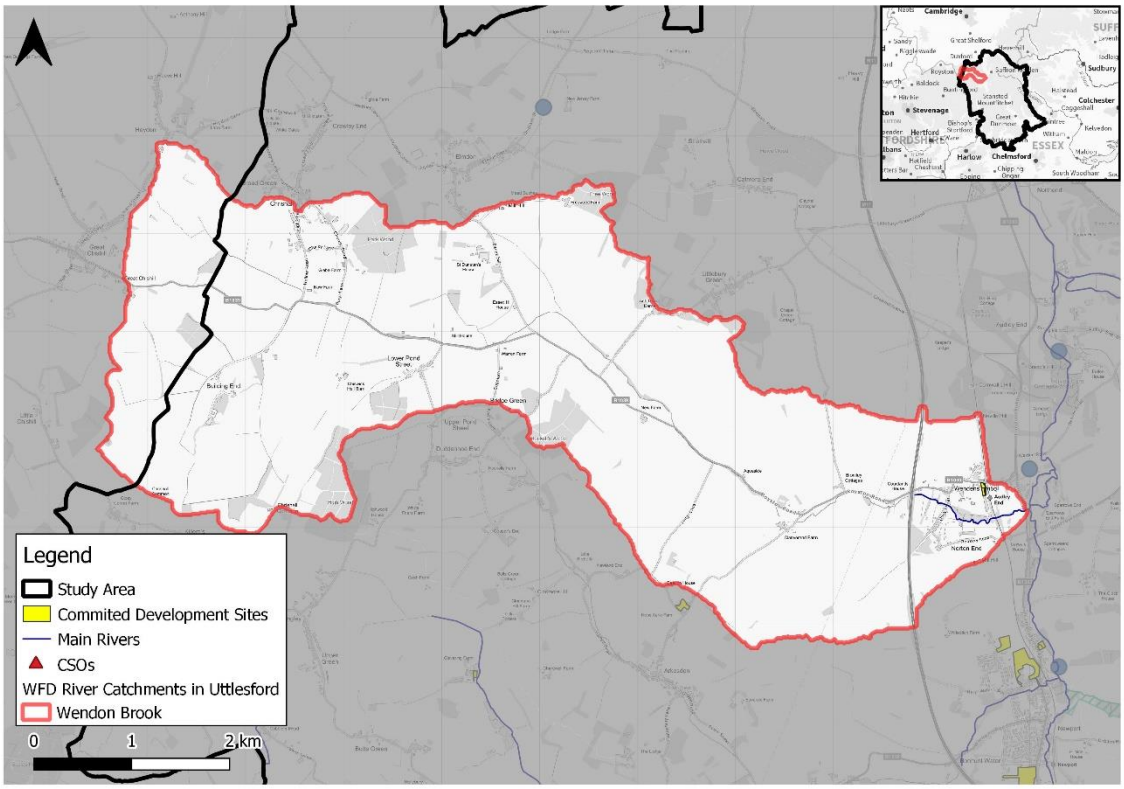
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Discharge from sewers and poor soil management has prevented the catchment from achieving good status.

WFD Catchment name	Stort and Bourne Brook



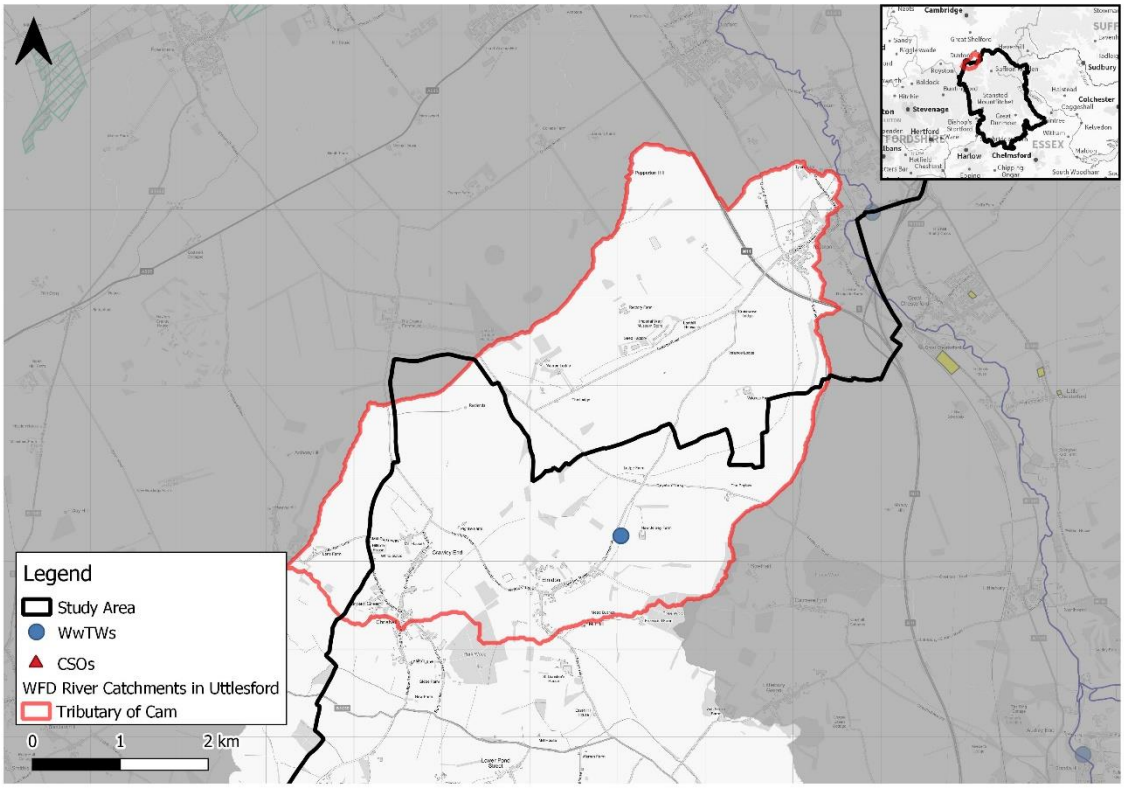
WwTWs	• Stansted Mountfitchet WwTW – has capacity (2,140 houses) • New Nickel permit being applied and TW have expressed concerns about future growth preventing this being met
Chalk Stream	• Yes - River Stort and Bourne Brook
Storm Overflows	• The Stansted Mountfitchet WwTW storm overflow discharged 39 times in 2020 for a total of 305 hours – under threshold for investigation but this is into a chalk stream so should be addressed.
How many development sites are located in the catchment?	• Commitments and Consents - None • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status:

	The water industry is impacting point sources, leading to increased phosphate and dissolved oxygen levels.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Sewage discharge has prevented the catchment from achieving good status. • The Stansted Mountfitchet Storm Overflow discharges to a chalk stream and its impact should be addressed. Further unmitigated growth could exacerbate this

WFD Catchment name	Wendon Brook
	
WwTWs	• None
Chalk Stream	• Yes - Wendon Brook
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - 2 Sites- 23 houses • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Good • Reasons for not achieving good status: The agriculture and rural land management, and

	water industry are impacting flow and diffuse sources, leading to changes in the hydrological regime and phosphate levels.
Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Surface and groundwater abstraction has caused some elements to not achieve good status.

WFD Catchment name	Tributary of the Cam



WwTWs	• Elmdon WwTW – has capacity after commitments (434 houses)
Chalk Stream	• Yes - River Cam
Storm Overflows	• None
How many development sites are located in the catchment?	• Commitments and Consents - None • New Settlement - None
WFD Status (2019)	• Overall Status - Moderate • Ammonia - High • BOD - N/A • Phosphate - Moderate • Reasons for not achieving good status: The water industry is impacting point sources and flow, leading to changes in phosphate and dissolved oxygen levels, and invertebrates.

Potential issues in the catchment	• The catchment is underlain by a chalk and the watercourse is therefore predominantly fed by the chalk aquifer. • Sewage discharge and groundwater abstraction have prevented the catchment from achieving good status.

E Appendix: Uttlesford Chalk Stream Exclusion Zone

<PROVIDED AS SEPARATE HIGH RESOLUTION MAP>

Offices at

Coleshill
Doncaster
Dublin
Edinburgh
Exeter
Haywards Heath
Isle of Man
Limerick
Newcastle upon Tyne
Newport
Peterborough
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
Warrington

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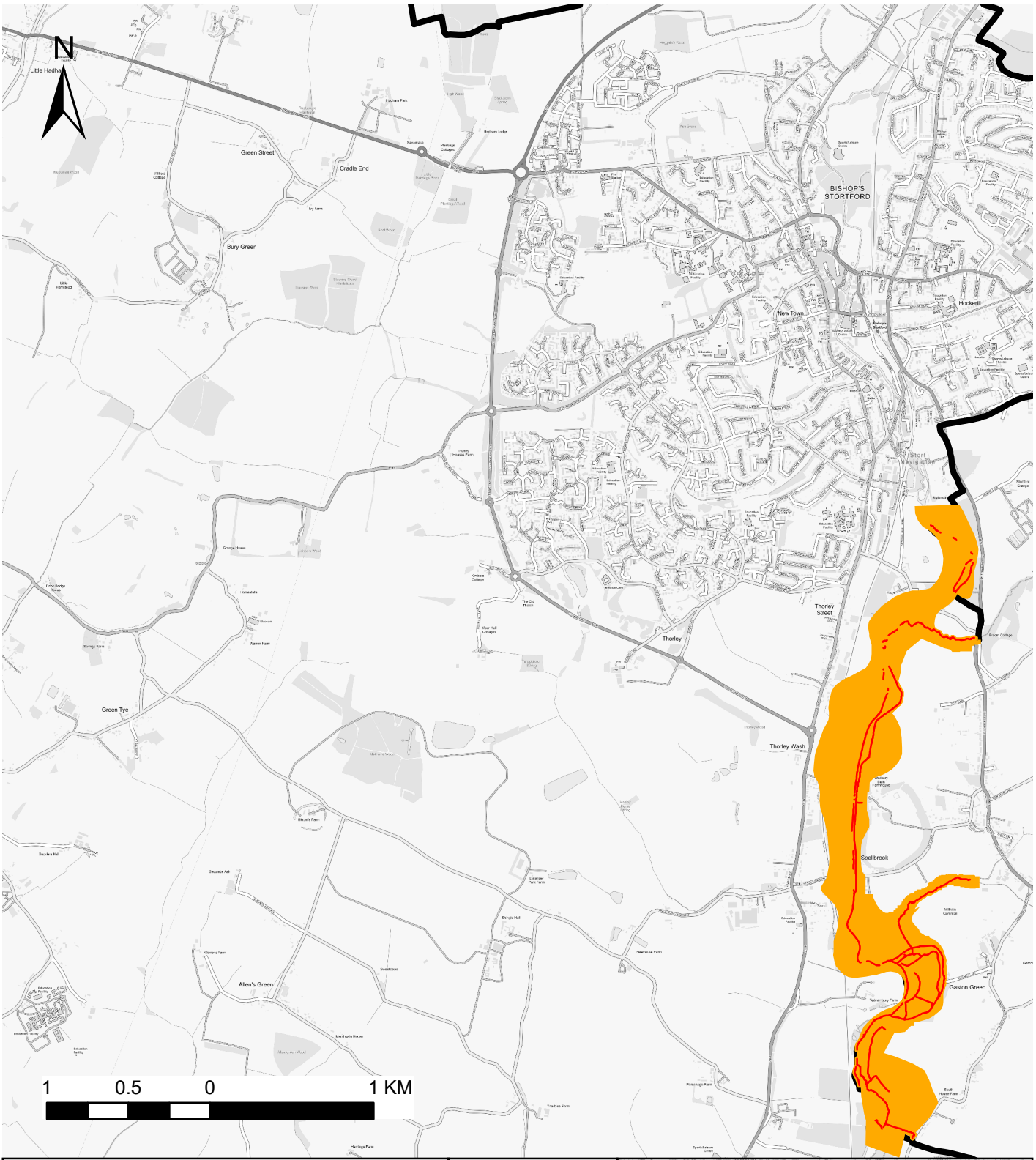

Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

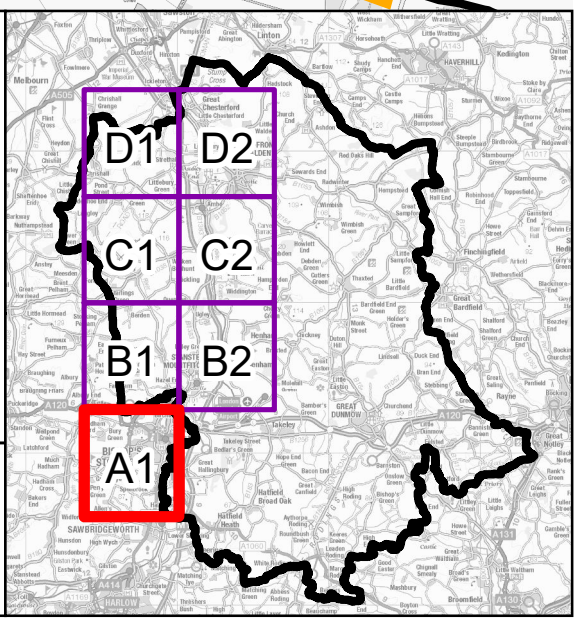

Figure Name: Riparian Buffer Zone A1

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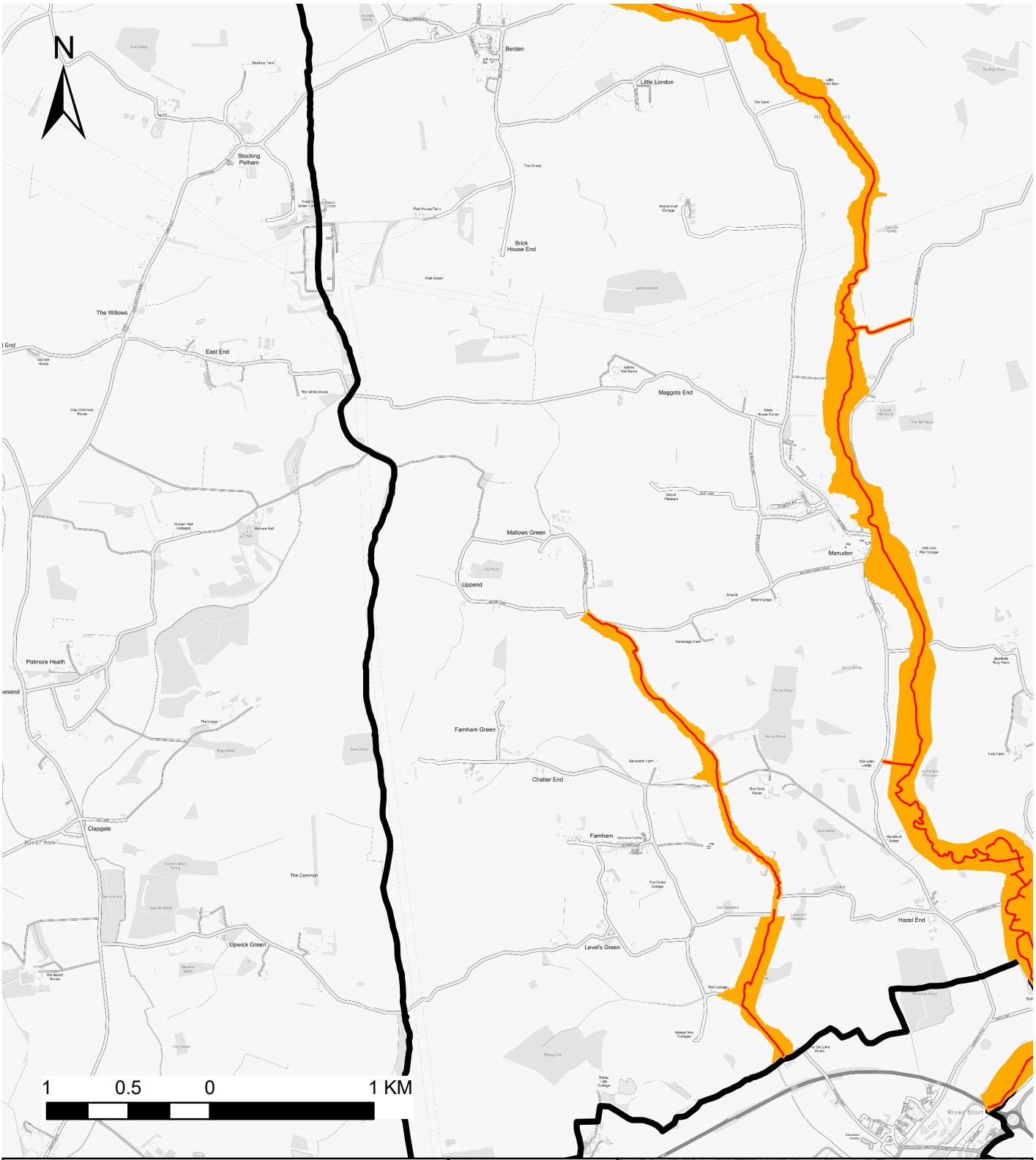
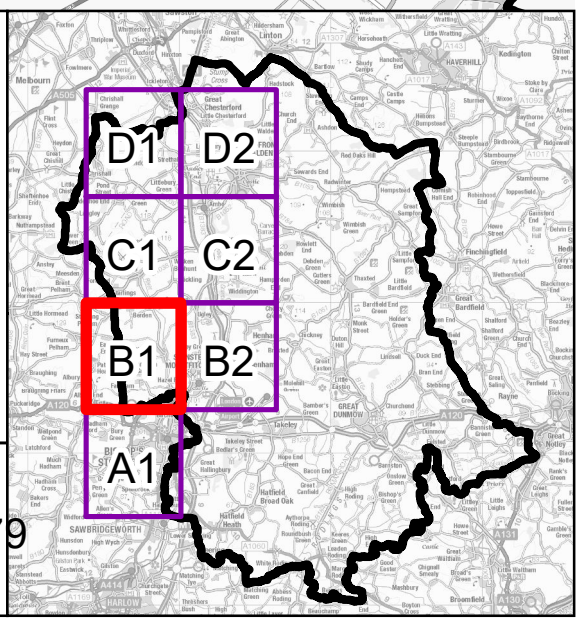


Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

Figure Name: Riparian Buffer Zone B1



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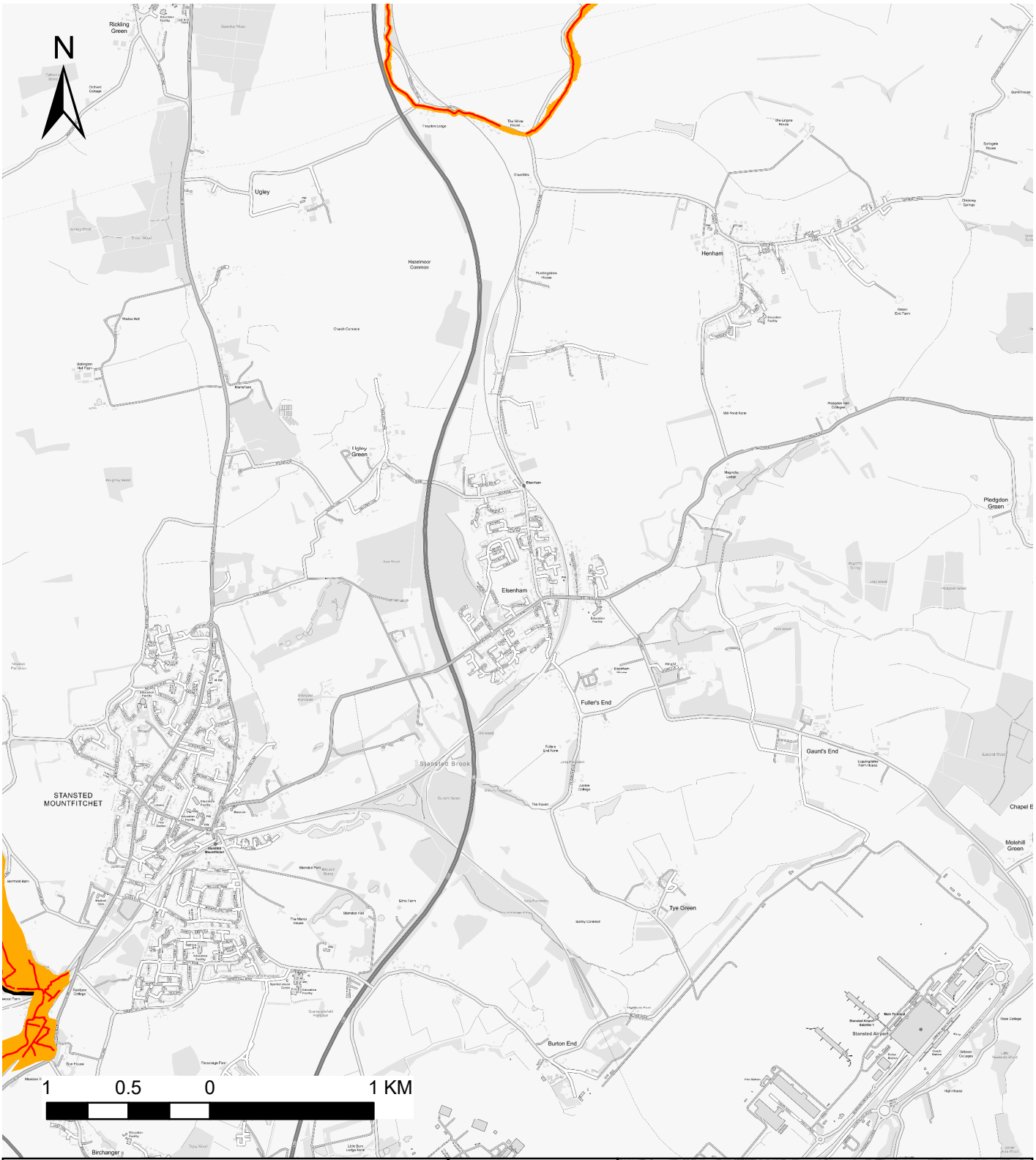
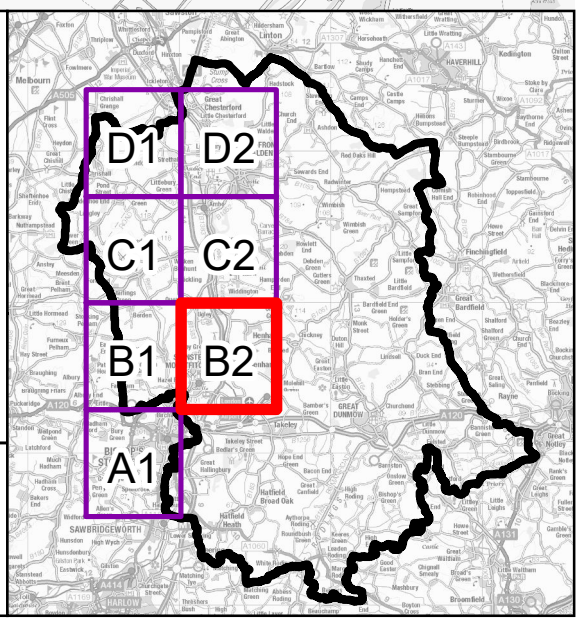


Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

Figure Name: Riparian Buffer Zone B2



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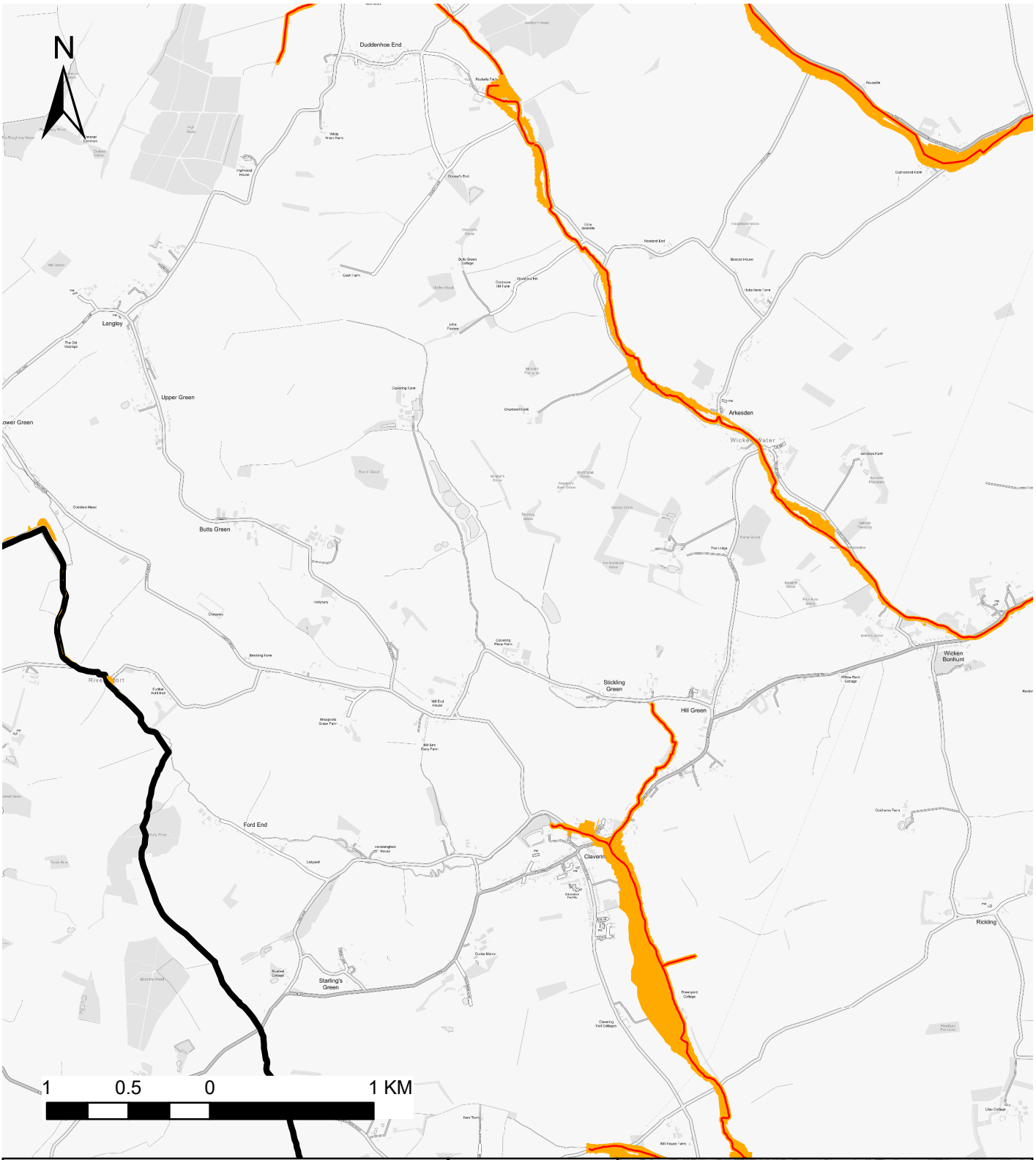

Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

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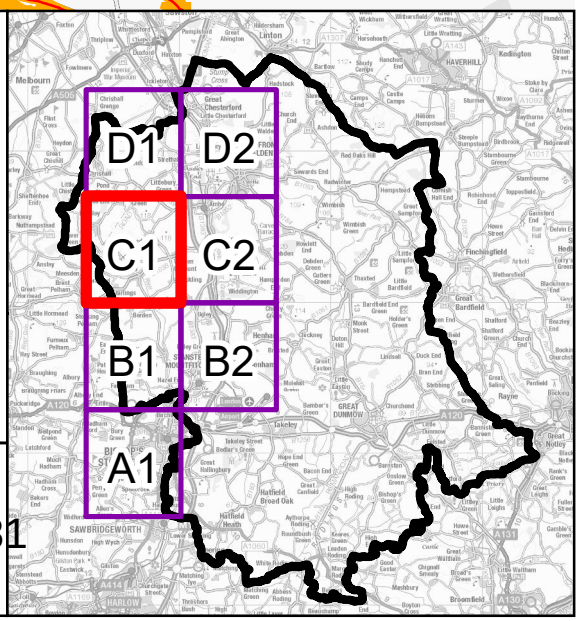

Figure Name: Riparian Buffer Zone C1

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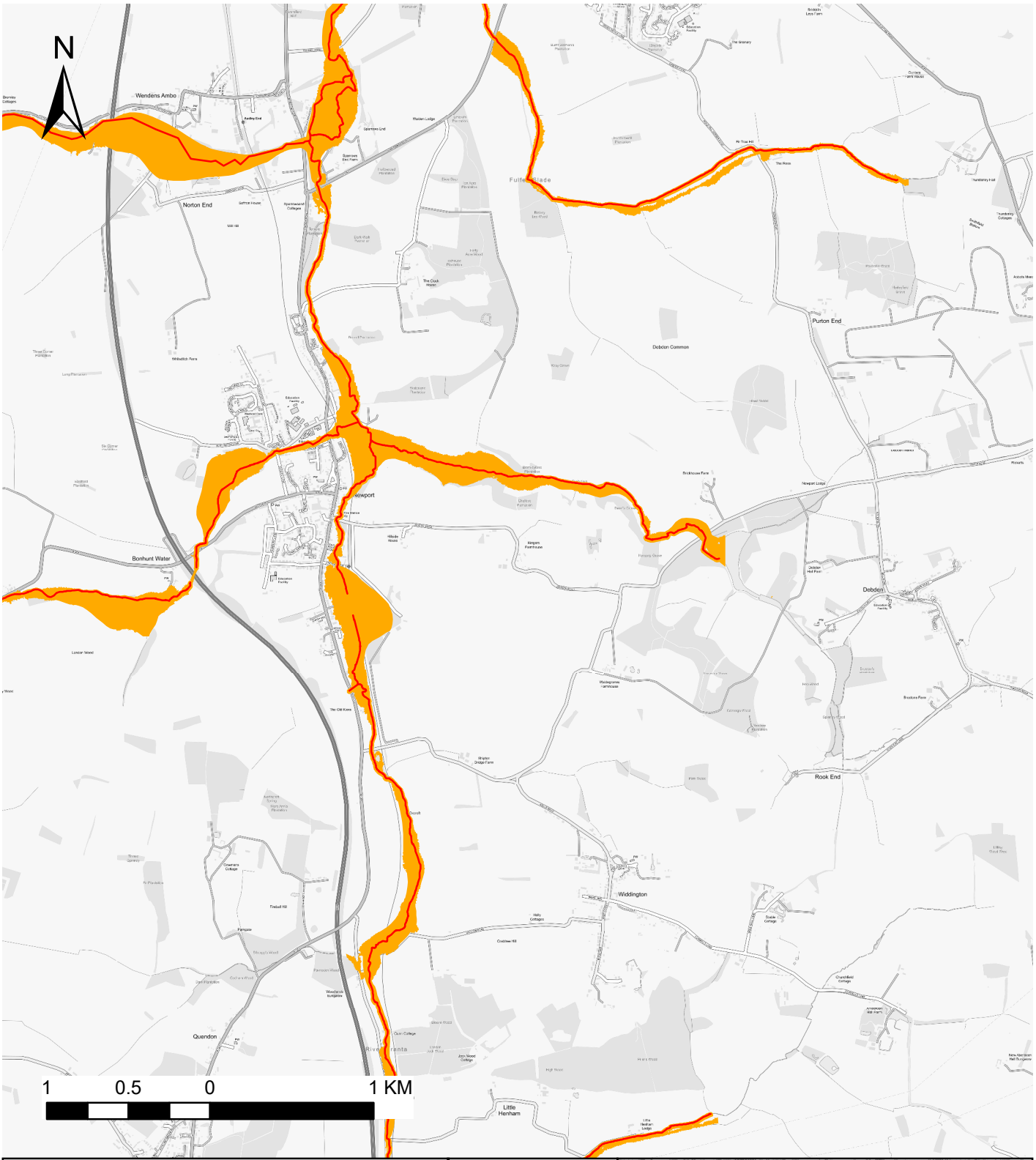

Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

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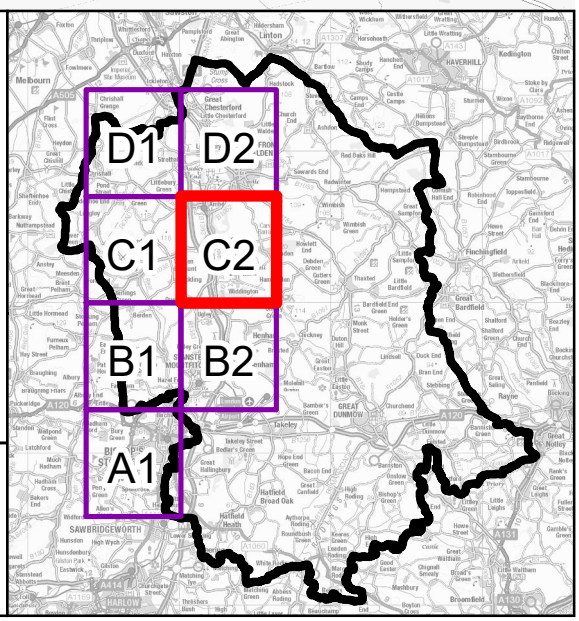

Figure Name: Riparian Buffer Zone C2

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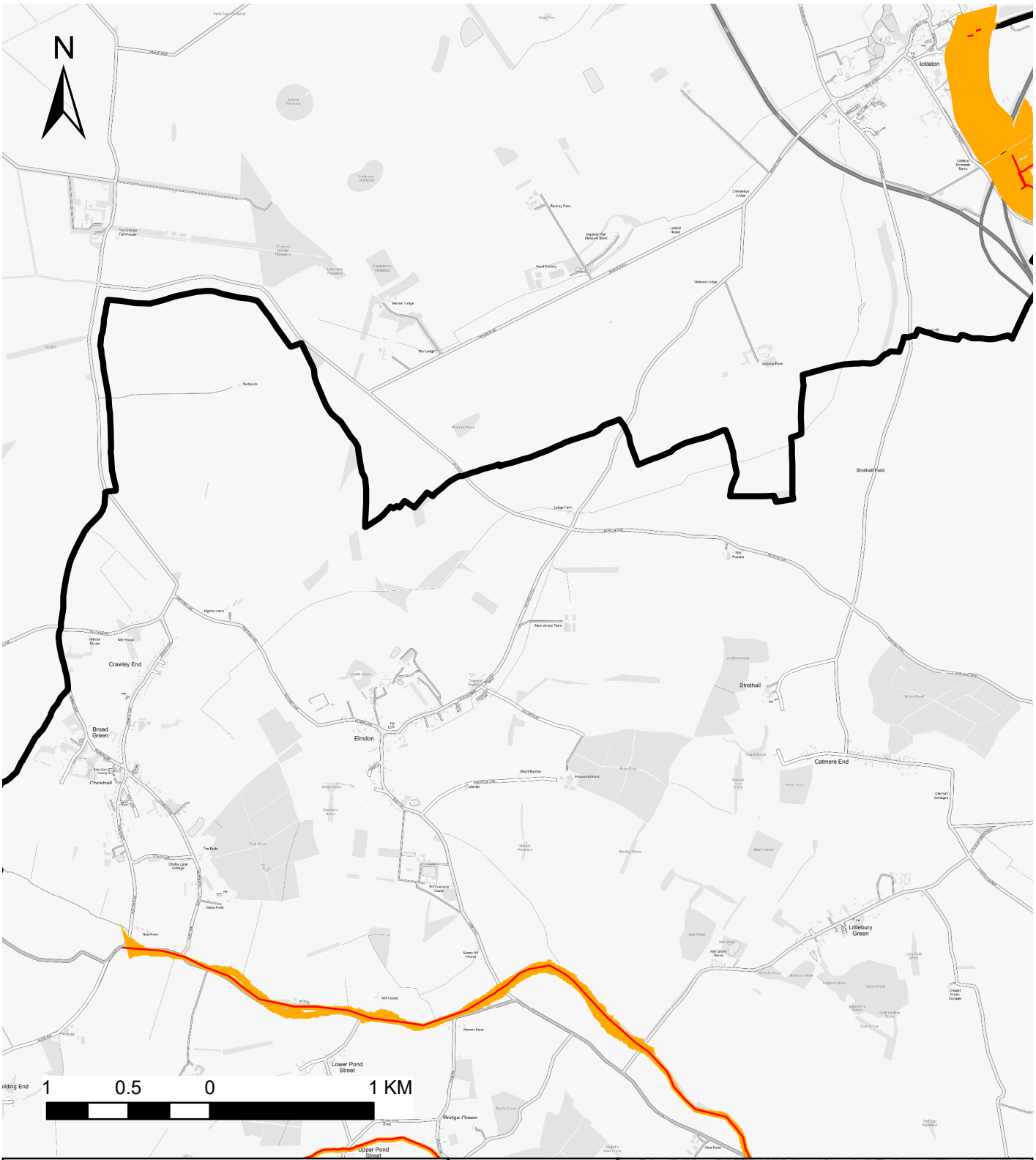
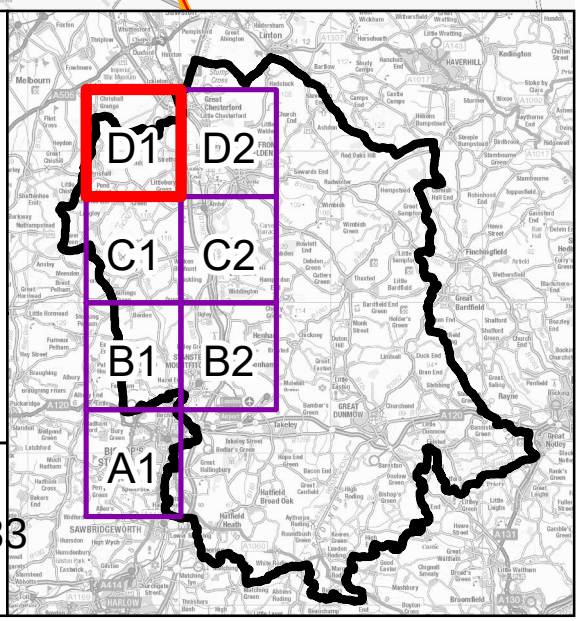


Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

Figure Name: Riparian Buffer Zone D1



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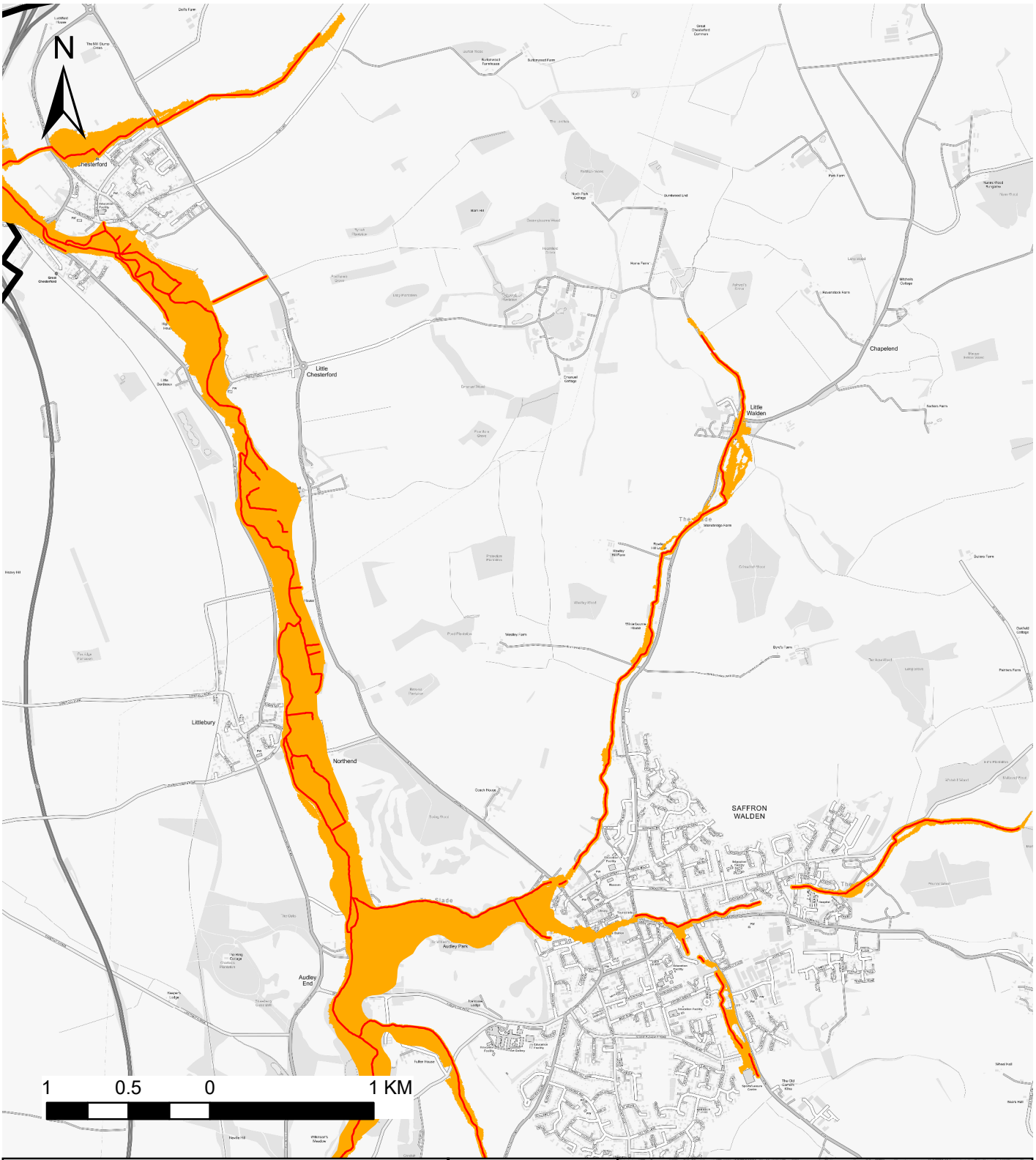

Chalk Streams Uttlesford

Riparian Buffer Zone

Uttlesford

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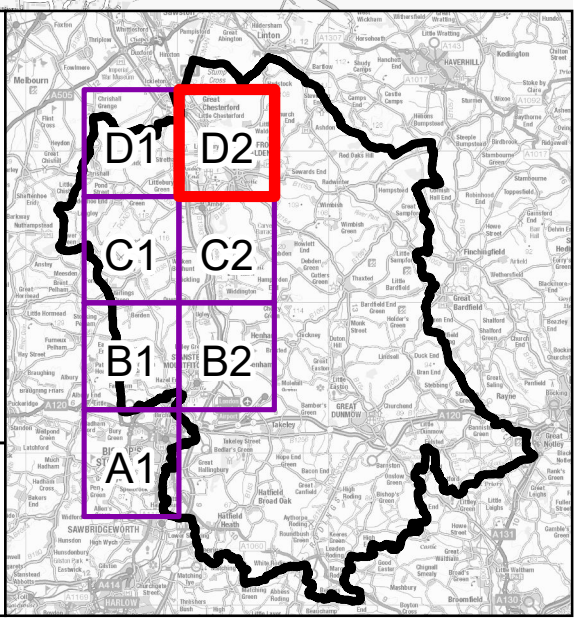

Figure Name: Riparian Buffer Zone D2

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July 2022

Uttlesford Local Plan 2021-2041 (Regulation 19)
Employment Site Selection Topic Paper

Uttlesford District Council

July 2024

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1. Introduction

1.1 This site selection topic paper has been prepared to set out the residual need for employment land, the sites that have been put forward from the HELAA for employment or mixed use, and the reasons for allocating the sites that are put forward in the Local Plan.

2. Uttlesford's employment needs

2.1 The Employment Need Assessment Update 2023 sets out the overall need for employment land over the plan period, the residual need to be met through new allocations (once permissions and completions are taken into account), and makes the recommendations outlined in Table 1 below.

Table 2.1. Uttlesford Employment Needs Update 2023 Recommendations

Employment type	Recommendation
Research and Development (R&D)	For **R&D** the sector is performing well and past forecasts and trends may under estimate the potential for investment and high quality jobs growth. A shortfall of c25,000 sq. m in needs can be met at **Chesterford Research Park and an allocation towards the full masterplan would be justified**, which will include some office space.
Offices	For offices beyond existing commitments there is a need for a range of between 3.2 to 6.5 ha based on past completions, the range depending on the contribution that Northside Class E makes. Whilst windfalls in town centres can provide general local requirements, there is potential to meet further business related needs with a **3-5 ha allocation in the wider Stansted area** based on some evidence of historic demand for this in the longer term, albeit current market signals are weak.
Industrial	For industrial the Northside permission will make a substantial contribution to employment provision. It is expected that around half the development will cater for large-scale logistics type needs that do not relate to the locally derived demands of Uttlesford. The remaining components of Stansted are expected to be taken up by Stansted related type occupiers based on a continuation of past absorption of space at the airport. Beyond Stansted there is a remaining need of around 136,900 sq. m or 30.4 ha based on past trends in completions and space leased. Taking into account market signals, it is recommended that: • **Great Dunmow** has a 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 **(up to 5 ha**) would therefore be

warranted through the Local Plan having regard to current provision and to support sustainable development.

- 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 in the broad Stansted proximity where it can access the M11, population centres at Bishop's Stortford and supply chain and business benefits of Stansted Airport. It is recommended that **more land is allocated in the Stansted vicinity around Takeley / Bishop's Stortford borders / Stansted Mountfitchet / Birchanger of 15 ha. A larger allocation(s) may be preferable to piecemeal to improve deliverability**.

Updated monitoring data

2.2 The supply and residual requirements identified in Table 5.9 of the Employment Needs Update were based on the latest available monitoring data at the time from August 2023. This includes completions during the plan period and supply from planning permission.

2.3 New monitoring data is available with a 1st April 2024 base date, therefore it is necessary to recalculate the residual need to allow for completions, new permissions granted, lapsed planning permissions and permissions which the developer has informed the Council are no longer being implemented.

2.4 The recalculation is presented against the separate employment use classes in the Employment Needs Update.

2.5 It should be noted that the net floorspace figures in the monitoring data are collected in square metres (sqm) whilst the land allocation recommendations in the Employment Needs Update are presented in hectares (ha). It is possible to convert between the two numbers by use of a plot ratio – which accounts for the need to provide space for other uses on the site such as parking, access roads and landscaping – as explained in paragraph 5.5 of the Employment Needs Update.

R&D

2.6 Table 5.9 of the Employment Needs Update identifies a net supply of 7,290 sqm R&D floorspace against a recommended need of 65,000 sqm (although this is for both office and R&D combined). Paragraph 5.63 identifies that around 50% of the overall need is for office (32,500 sqm), with the remaining 50% need for R&D (32,500 sqm). This results in a shortfall of 25,210 sqm floorspace.

2.7 The latest monitoring data shows that the net supply of R&D floorspace at 1st April 2024 remains 7,290 sqm therefore the shortfall of 25,210 sqm or 8.4ha remains.

2.8 Table 2.2 below uses the 0.3 plot ratio for R&D in the Employment Needs Update to show the residual floorspace (sqm) and land (ha) need at 1st April 2024.

Table 2.2: R&D residual need calculation with 2023 and 2024 monitoring data

R&D floorspace (unit)	Recommended needs	2023 supply	2023 residual need	2024 supply	2024 residual need
Net floorspace (sqm)	32,500	7,290	25,210	7,290	25,210
Land requirement (ha)	10.8	2.4	8.4	2.4	8.4

Office

2.9 As for R&D, Table 5.9 of the Employment Needs Update identifies a need of 32,500 sqm office floorspace. Table 5.9 of the Employment Needs Update identifies a net supply of 27,832 sqm office floorspace which results in a shortfall of 4,668 sqm.

2.10 The latest monitoring data shows that the net supply of office floorspace at 1st April 2024 is 4,116 sqm plus 9,755 sqm from Northside Class E (13,871 sqm). This is due to the loss of office floorspace to redevelopment but also confirmation from the new landowner at the Trisail development confirming that the permitted scheme (UTT/1473/11/FUL) for 6,596 sqm office floorspace is not going to be implemented. This results in a shortfall of 18,628 sqm or 6.2ha.

2.11 Table 2.3 below uses the 0.3 plot ratio for office in the Employment Needs Update to show the residual floorspace (sqm) and land (ha) need at 1st April 2024.

Table 2.3: Office residual need calculation with 2023 and 2024 monitoring data

Office floorspace (unit)	Recommended needs	2023 supply	2023 residual need	2024 supply	2024 residual need
Net floorspace (sqm)	32,500	27,832	4,668	13,872	18,628
Land requirement (ha)	10.8	9.3	1.6	4.6	6.2

2.12 The residual need has grown by 4.6ha. The recommendation in the Employment Needs Update is for a 3-5ha allocation in the wider Stansted area (potentially Gaunts End or Takeley) plus windfall development. Adding 4.6ha to this recommendation results in a 7.6-9.6ha need in the wider Stansted area, however some of this additional need could be met through windfall, particularly as market signals remain weak.

Industrial and logistics

2.13 Table 5.9 of the Employment Needs update identifies a net supply of 16,901 sqm industrial and logistics plus 82,123 from Stansted Northside which excludes Class E floorspace and assumes that half of the industrial and logistics floorspace caters for strategic needs (i.e. do not meet the needs of Uttlesford District).

2.14 The need for the District is 234,500 sqm which has been broken down into 80,700 sqm at Stansted and 153,800 sqm in the rest of the District. The Stansted need is met by the Stansted Northside permission, however the shortfall in the "Rest of the District" the 2023 Employment Needs Update is 136,899 sqm or 30.4ha.

2.15 Dealing with the "Rest of the District" figures, the latest monitoring data shows that the net supply of industrial and logistics floorspace at 1st April 2024 is 11,920 sqm therefore the shortfall has increased to 141,880 sqm.

2.16 Table 2.4 below uses a 0.45 plot ratio (blended from 0.4 industrial and 0.5 logistics) as identified in the Employment Needs Update to show the residual floorspace (sqm) and land (ha) need at 1st April 2024.

Table 2.4: Industrial and logistics residual need calculation with 2023 and 2024 monitoring data

Industrial and logistics floorspace (rest of district) (unit)	**Recommended needs**	**2023 supply**	**2023 residual need**	**2024 supply**	**2024 residual need**
Net floorspace (sqm)	153,800	16,901	136,899	11,920	141,880
Land requirement (ha)	34.2	3.8	30.4	2.6	31.5

2.17 The residual need has grown by 1.1ha from 30.4ha to 31.5ha. Given the relatively minor difference between 2023 and 2024 it is not considered necessary to depart from the recommendations in the Employment Needs Update to allocate sites to meet the needs of a 5-10ha allocation in Great Dunmow; an allocation of up to 5ha in Saffron Walden; and 15ha in the Stansted vicinity around Takeley / Bishop's Stortford borders / Stansted Mountfitchet / Birchanger.

Residual employment need conclusions

2.18 For R&D, the 2024 residual need position has not changed. Given the clear steer from the Employment Need Assessment to allocate the Chesterford Research Park to meet R&D (and some office) needs over the plan period, this has not been taken forward for further assessment. The site is suitable, available and achievable and is being actively promoted.

2.19 The potential site options for 7.6-9.6 hectares (ha) of Office development in the wider Stansted area; plus the Industrial need of 5-10ha or more in Great Dunmow, up to 5ha in Saffron Walden, and 15ha in the Stansted vicinity are explored further below.

3. Potential site allocations to meet the residual need

3.1 The Housing and Economic Land Availability (HELAA) 2024 assesses the sites submitted to the council for residential and employment development. The HELAA has a base date of 1st April 2024 and reflects the latest completions and commitments data.

3.2 The majority of HELAA sites, whilst promoting an employment or mixed use, have not specified an exact amount of employment floorspace being put forward. The HELAA has estimated capacities in such circumstances. Converting from net floorspace figures (in square metres) to land requirements (in hectares) requires the use of the appropriate plot ratios from the Employment Needs Update.

3.3 Taking into account the location requirements set out in the conclusions in Section 2, HELAA 'Category B' sites in the following areas are shortlisted for further consideration:

- The "Wider Stansted Area" (office and industrial):
  - Elsenham
  - Great Hallingbury
  - Hatfield Broad Oak
  - Stansted Mountfitchet
  - Takeley
- Great Dunmow (Industrial):
  - Great Dunmow
  - Little Canfield
  - Little Easton
- Saffron Walden (Industrial)

3.4 The 'wider Stansted Area' includes Green Belt land. Given the number of suitable, available and achievable sites that are outside of the Green Belt it is not considered that exceptional circumstances exist to justify amending the Green Belt boundaries in the District. Employment sites in the Green Belt have therefore not been considered for allocation for employment use, and are rejected as 'unsuitable' in the HELAA.

3.5 The sites that are outside of the Green Belt and are potentially capable of meeting the quantitative and qualitative employment need outlined in Table 3.1, which shows the use class being promoted by the landowner through the Call for Sites.

3.6 Following the HELAA assessment a short list of 27 sites that are suitable, available and achievable for employment or mixed use development over the plan period were identified. These 'Category B' sites do not have planning permission, are potentially

developable from years 5-15 and would be additional to the existing supply. These 27 sites could potentially be allocated for development to meet the residual need.

Table 3.1: UDC Developable HELAA sites promoted for employment that can meet residual need

Site reference	Site size (ha)	Employment Total (m²)	Office	Industrial	Mixed employment
Elsenham 002 EMP	181	519,360			519,360
Elsenham 003 MIX	18.59	55,770	55,770		
Elsenham 004 EMP	1	2,840	2,840		
GtDunmow 004 OTH	0.77	7,700			7,700
GtDunmow 006 MIX / 007 MIX*	134	750 - 1500			750 - 1500
GtDunmow 019 MIX	9	40,860			40,860
GtHallingbury 002 EMP	0.28	2,750	2,750		
GtHallingbury 004 EMP	0.43	1,720			1,720
GtHallingbury 008 EMP	0.78	3,120		3,120	
GtHallingbury 014 EMP	5.17	20,680		20,680	
HatfieldBO 003 EMP	18.71	74,840			74,840
LtCanfield 001 EMP	1.53	6,120			6,120
LtCanfield 002 EMP	6.33	25,320			25,320
LtCanfield 004 EMP	23.46	93,840	Small scale office	93,840	
LtEaston 004 MIX	809	5,600			5,600
SafWalden 016 MIX	0.09	266	266		
SafWalden 037 MIX	2.5	11,250		11,250	
Stansted 007 EMP	0.55	2,200	2,200		
Stansted 020 EMP	0.18	600			600
Takeley 002 MIX / Takeley 031 EMP*	35	135,826		135,826	
Takeley 005 EMP	27	109,360	Small scale office	109,360	
Takeley 006 MIX	307	12,025,272			12,025,272
Takeley 007 MIX	88	6,080			6,080

Site reference	Site size (ha)	Employment Total (m²)	Office	Industrial	Mixed employment
Takeley 012 EMP	1.25	5,000	5,000		
Takeley 013 EMP	3.8	15,200			15,200
Takeley 014 EMP	1.3	5,200			5,200
Takeley 021 EMP	5.15	20,600		20,600	
Total	**1,374.87**	**13,198,124- 13,198,874**	**68,826**	**394,676**	**12,733,872**

UDC HELAA 2024

** site overlaps with another in the HELAA with slightly different use class mixes, therefore the site is treated as a single site in this topic paper.*

Office

3.7 The recommendation in the study is for 7.6-9.6ha of floorspace in the "wider Stansted area". The identified need could potentially be met by up to 12 sites promoted for employment land in this location. This means looking further at:

- Elsenham 003 MIX
- Elsenham 004 EMP
- GtHallingbury 002 EMP
- GtHallingbury 004 EMP
- HatfieldBO 003 EMP
- Stansted 007 EMP
- Stansted 020 EMP
- Takeley 005 MIX (small scale office)
- Takeley 006 MIX
- Takeley 007 MIX
- Takeley 012 EMP
- Takeley 014 MIX

3.8 Given the conclusion in the study that "current market signals are weak" it is considered reasonable to refine the list of sites to those which are established office locations and are actively promoting office (rather than other employment) development. This refines the list to the following 8 sites:

- Elsenham 003 MIX (Water Circle)
- Elsenham 004 EMP (Water Circle)
- GtHallingbury 002 EMP (Thremhall Park)
- Stansted 007 EMP Land South of Alsa Business Park
- Takeley 005 MIX (small scale office adjacent to Thremhall Park)
- Takeley 007 MIX (adjacent to Seven Acres Business Park)
- Takeley 012 EMP (Stansted Courtyard)
- Takeley 014 EMP (Stansted Courtyard)

Industrial

Great Dunmow

3.9 The recommendation is 5-10ha or more at Great Dunmow. The following 7 sites have the potential to meet the residual requirement and have been assessed further in Section 4:

- GtDunmow 004 OTH
- GtDunmow 006 MIX / GtDunmow 007 MIX

- GtDunmow 019 MIX
- LtCanfield 001 EMP
- LtCanfield 002 EMP
- LtCanfield 004 EMP
- LtEaston 004 MIX

Saffron Walden

3.11 The recommendation in the study is for “up to 5ha” of industrial floorspace at Saffron Walden. Following SafWalden 009 EMP being granted permission[1] for residential development on 10th April 2024, the site is no longer available for employment development. This means that the HELAA contains only one strategic scale site which is being promoted for employment use at Saffron Walden that can fit this scale of development, which is SafWalden 037 MIX. This site was originally submitted for residential use however through engagement with the Council on the wider Saffron Walden strategic allocation the landowner has confirmed that 2.5ha of the site is available for industrial and employment use and is supportive of an allocation to deliver this. In the absence of any alternatives to meet the need it is therefore proposed that this suitable, available and achievable site is allocated in full in the plan.

Wider Stansted Area

3.12 The recommendation is for an allocation of 15ha to be made in the Takeley / Bishop’s Stortford borders / Stansted Mountfitchet / Birchanger area. The following 12 sites are outside of the Green Belt and have the potential to meet the residual requirement, and have been assessed further in Section 4:

- Elsenham 002 EMP
- GtHallingbury 004 EMP
- GtHallingbury 008 EMP
- GtHallingbury 014 EMP
- HatfieldBO 003 EMP
- Stansted 020 EMP
- Takeley 002 MIX / Takeley 031 EMP
- Takeley 005 EMP
- Takeley 006 MIX
- Takeley 007 MIX
- Takeley 013 EMP
- Takeley 014 EMP

[1] Reference UTT/23/3112/PINS

4. Assessment of sites

Office:

4.1 The Stansted area contains a local designation, the Countryside Protection Zone (CPZ). The CPZ is a designation, first introduced in 1995, that seeks to protect land parcels around the airport from development in order to safeguard the rural nature and setting of Stansted. The designation pre-dates the construction of the A120 bypass around Takeley and Great Dunmow (opened in 2004), although the 2005 Local Plan retained the CPZ designation (with boundary changes).

4.2 An updated CPZ study has been produced in May 2024. The CPZ study recommends an amended boundary that expands the CPZ southwards, but reflects development that has taken place since 2005. The study identifies areas of critical and wider separation of settlements and the airport, and notes where the A120 provides a 'separation feature' within the landscape.

4.3 The CPZ study recommends a policy approach that protects the rural character of the area around the airport from development, and seeks to preserve these 'open characteristics' and settlement identity.

4.4 In light of updated landscape evidence and the strategic intent behind the CPZ, which is retained and updated in the Local Plan, sites that would diminish the gap between the airport and settlements are not deemed appropriate for allocation.

4.5 Takeley 012 EMP and Takeley 014 EMP would be extensions of the Existing Employment Site at Stansted Courtyard. Stansted Courtyard is a successful and established office location however the CPZ study identifies this location as an area of 'critical separation' and relative openness in the landscape southeast of the airport. Small-scale extension may be appropriate under DM policy but not considered suitable for strategic scale allocation in the Local Plan.

4.6 Elsenham 003 MIX and Elsenham 004 EMP both involve expanding the Water Circle Estate at Gaunts End. This is an established office and employment location with Molton Brown based there and planning permission granted for the TriSail development , where a technical start has been made to implement this consent, although it is acknowledged that the new site owner will not fully implement this permission. It is an established employment site in the 2005 Local Plan and identified as an Existing Employment Site in the new Local Plan, although it is in the Countryside Protection Zone. The CPZ is a consideration however it is potentially less sensitive in this location owing to the existing buildings at the Water Circle Estate and further buildings south of the site along Green Street between the airport and Gaunts End. Coalescence would not occur and the site allocation could be seen to be 'rounding off' within landscaping implemented as part of the technical start for the Trisail scheme.

4.7 The site is served by a bus route and is located near to Stansted Airport, train station and bus station. Engagement since Regulation 18 stage with the new site owners at the Water Circle Estate has confirmed that a revised, non-HQ office scheme at the TriSail site is viable and deliverable at the site and a planning application is being prepared. Elsenham 003 MIX is promoted alongside this revised office development and therefore is considered to be deliverable over the plan period for office

development. The smaller Elsenham 004 EMP site is smaller and appears to be under different ownership.

4.8 GtHallingbury 002 EMP (Thremhall Park) is a designated Existing Employment Site within the Local Plan. Development management policy is supportive in principle of intensification of employment use on Existing Employment Sites however at this location there are heritage (Grade II Listed Building) and Tree Preservation Order constraints, as well as proximity to Ancient Woodland, that limit the scale of additional floorspace that could be delivered. A strategic allocation for significant additional employment floorspace is not appropriate.

4.9 Stansted 007 EMP is a proposed extension to Alsa Business Park which is a small-scale site promoted adjacent to a proposed residential allocation in the Reg 18 plan. It is of a scale that may be possible to be extended under DM policy rather than meeting strategic needs.

4.10 Takeley 005 MIX is promoted as a predominantly industrial and logistics site, with small scale office floorspace supported by the promoter. Given the nature of the proposal the site is considered fully under the Industrial: Wider Stansted Area section of this topic paper.

4.11 Takeley 007 MIX is a large mixed-use proposal consisting of mainly residential development that is adjacent to the office development at Parsonage Road where Weston Homes is based (Seven Acres). Part of the site along the western boundary has permission for industrial/flexible Class E use reference UTT/22/2744/FUL. As a result of further engagement with the promoter as part of the plan-making process and masterplanning of the mixed-use allocation at Takeley to the east, the landowner is not actively promoting any further office development in this location beyond that which is permitted. It is not considered that there is potential for further strategic scale office floorspace at this location.

4.12 Given the scale of office floorspace required, the established location for office development and accessibility to public transport and Stansted Airport, Elsenham 003 MIX is considered the most appropriate site to allocate, expanding the Existing Employment Site at the Water Circle Estate and allowing a re-plan of the part-implemented Trisail scheme. An allocation of the land east of Green Street (approximately 5.5ha) would facilitate the development of a part-brownfield site and support the Existing Employment Site at the Water Circle Estate. This would result in a slight shortfall in office space against the residual need however as noted there is potential for Existing Employment Sites such as Thremhall Park and Stansted Courtyard to deliver additional floorspace under DM policy, plus support for windfall development for office.

Industrial

Great Dunmow

4.13 There are a total of 7 sites identified which can meet the residual need which are discussed below.

4.14 The main location of existing industrial land at Great Dunmow is to the south of the town at Chelmsford Road Industrial Estate. This benefits from good accessibility to the A120 providing east-west connectivity to Harwich, Felixstowe and Stansted Airport. This location is an established location for employment and thus would likely

be an attractive location for additional development. However, the sites nearest this location are located south of the A120 (GtDunmow 006 MIX / 007 MIX) which may be challenging to access via sustainable transport modes, or are small-scale and promoted for Electric Vehicle Charging with a small amount of employment land (GtDunmow 004 OTH).

4.15 To the east of the town GtDunmow 019 MIX is promoted however it is less well-located with regards to the strategic road network and Great Dunmow town centre itself. Furthermore GtDunmow 019 MIX is partially permitted for residential with the western part of the site an approved custom and self-build housing site since the site was submitted through the Call for Sites, therefore the availability of the remainder of the site for employment to the east is also potentially uncertain.

4.16 To the west of Great Dunmow are LtEaston 004 MIX; LtCanfield 001 EMP, LtCanfield 002 EMP and LtCanfield 004 EMP which all are located between Takeley and Great Dunmow on the A120 corridor. LtEaston 004 MIX has been granted outline permission by the Secretary of State[2] with a relatively small amount of Class E floorspace and is considered unavailable for strategic scale industrial land. The landowner is promoting the parcel to the south, LtCanfield 004 EMP solely for employment.

4.17 The remainder of the sites in this location have good accessibility to the A120, with the location of LtCanfield 004 EMP at the junction providing good potential for highways improvements and a park and ride/mobility hub along an important local corridor (the B1258). At over 23ha LtCanfield 004 EMP could meet the residual need for 5-10 hectares at Great Dunmow whilst also contributing towards the need for Takeley/the wider Stansted Area owing to its relative proximity to Stansted. The promoter has also confirmed that a small amount of office floorspace could be delivered on the site, helping to meet the district-wide need for office floorspace. LtCanfield 004 EMP is strategically located to meet both need figures and also has the potential to deliver wider benefits through improving sustainable transport connectivity on the A120 corridor. This site is considered to best meet the residual need for Great Dunmow and has the potential to lead to wider benefits.

Wider Stansted Area

4.18 As with the discussion for Office floorspace above, sites to the north of the A120 in the CPZ have been considered less suitable for allocation for large industrial units due to the impact on the rural and open setting of the airport. This affects Takeley 013 EMP and Takeley 014 EMP. The sites adjacent to Stansted Airport, which could lead to coalescence, would have a harmful impact on the CPZ and are not assessed further. This includes Elsenham 002 EMP and Takeley 006 MIX.

4.19 The Takeley 005 EMP and Takeley 002 MIX/031 EMP sites to the south of the A120, which was built after the original CPZ designation was introduced, whilst physically close to Stansted Airport, are prevented from coalescing with the airport due to the ‘separation feature’ of the road, which is screened with mature trees. This means that sites in this part of the CPZ are considered to have less of a strategic role and can be considered for plan-led redevelopment owing to the strong locational requirements of industrial floorspace set out in the Employment Needs Assessment Update.

4.20 Takeley 002 MIX / 031 MIX and Takeley 005 EMP perform similarly in that they have access to the B1256 and in turn M11 J8 and the airport; however Takeley 002 MIX/031 EMP would rely on demolishing buildings along the B1256 to access the road. Takeley 005 EMP on the other hand is promoted solely for employment and has multiple potential access points, and is considered more deliverable as a result. Both sites are located in close proximity to Hatfield Forest SSSI which suffers from recreational pressures; however employment development in this location (compared to residential or mixed use) is less likely to have an adverse impact on the Forest. Proximity to Priory Wood Ancient Woodland would require the inclusion of a sufficiently wide buffer to avoid negative impacts. The B1256 corridor is an existing public transport corridor with numerous buses running past the site to Bishop's Stortford, Takeley and Great Dunmow.

4.21 HatfieldBO 003 EMP is also located at Takeley Street however it is relatively less accessible to the B1256 and strategic road network and is not as well served via public transport. GtHallingbury 004 EMP and 008 EMP are located even further to the south and so are less accessible, and the size of the site is a significant scale which has the potential to add a significant number of HGV and other vehicle movements onto a rural road network west of Hatfield Forest, where public transport is limited.

4.22 Stansted 020 EMP is small scale brownfield site promoted for residential and employment. Not capable of delivering strategic scale development and would be acceptable in principle for small-scale employment development as a windfall site under development management policy.

4.23 As per the above discussion of Takeley 007 MIX under 'Office' above, the site is not considered suitable for allocation for additional floorspace.

4.24 On balance it is considered that the site promotion at Takeley 005 EMP performs best as it is being actively promoted for industrial use, has multiple access points, is accessible via public transport and has good access to the strategic road network. It is also well located for residents at Takeley and the new residential developments being allocated in the area.

5. Recommendations

5.1 Further to the assessment of the sites in Section 4 this site selection topic paper recommends the following allocations are made.

Table 5.1: Site Selection Topic Paper recommendations

Employment type	Site Selection Topic Paper Recommendation
Research and Development (R&D)	For **R&D** the recommendation is to allocate Chesterford Research Park in full for R&D and office use. This directly addresses the recommendation from the Employment Needs Update 2023.
Offices	For offices it is recommended to allocate the Elsenham 003 MIX site for 5.5. This is the extension of an established office and industrial location (Water Circle Estate) in the Stansted vicinity which has previously been granted permission for the TriSail development. The

Employment type	Site Selection Topic Paper Recommendation
	extended allocation will help facilitate the delivery of a revised office scheme at the site. There is a slight shortfall against the residual need however all strategic allocations can include flexible allocations with support in principle for office floorspace, in order to assist with meeting the overall residual need, subject to market conditions.
Industrial	• There is only one option for an employment allocation at **Saffron Walden,** therefore the recommendation is to allocate the site in full for 2.5ha. This meets the ENA recommendation of "up to 5ha". • Given the need for employment land at both Great Dunmow (5-10ha) and the Stansted area (15ha) it is proposed to allocate the LtCanfield 004 EMP site on the A120 west of Great Dunmow (18ha) which can contribute towards meeting both the Great Dunmow and the Stansted area requirements. There is also the potential to deliver sustainable transport improvements in this strategic location along the A120 corridor and some office floorspace, subject to market conditions. • Another 18ha allocation at Takeley Street (Takeley 005 EMP) is proposed which leads to a technical oversupply against the requirement, but it is considered pragmatic to plan on the basis for some headroom should any of the industrial allocations not come forward in full or be delayed, plus allowing for some flexible employment floorspace on the site to respond to market conditions and potentially deliver office floorspace to meet the residual office need in the District. The Takeley Street site is well located to the M11 and Stansted with no significant transport constraints identified that would preclude development.